PORT OF PORTLAND
P.O. Box 3529
Portland, Oregon 97208

P R O J E C T M A N U A L

Including Specifications

for

PORTLAND INTERNATIONAL AIRPORT
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

Solicitation No. 2015-6304

EAN 2013D056

April 2015

DOCUMENT 000107
APPROVALS

PORTLAND INTERNATIONAL AIRPORT
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

Project Manager: _____

Project Engineer: _____

Consultant:

Professional Roof Consultants
1108 S.E. Grand Avenue, Suite 300
Portland, OR 97214
(503) 280-8759

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PORTLAND INTERNATIONAL AIRPORT
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

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DOCUMENT 001100
INVITATION TO BID

THE PORT OF PORTLAND

PORTLAND INTERNATIONAL AIRPORT
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

Solicitation No. 2015-6304

Sealed bids for the Portland International Airport Cargo Center Exterior Building Rehabilitation project will be received at the office of the Manager, Contracts and Procurement, of The Port of Portland, 7200 N.E. Airport Way, 8th Floor, Portland, Oregon 97218 (mailing address: Post Office Box 3529, Portland, Oregon 97208) until, but not after, 2 p.m. on May 6, 2015, and thereafter publicly opened and read.

The work includes but is not limited to:

> Replacement of exterior Z-purlins supporting roof and screen wall; modifications to screen walls and screen wall mounting; gutter and downspout modifications; roof access enhancements; rerouting of existing interior heating flues through roofing; general roof repair and coating of deteriorating through-fastened structural roof panels; sectional door repairs; and selected window replacements. See Section 011100, Summary of Work, for further details.

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 at 1:15 p.m. on April 22, 2015, in the Anchor Room on the first floor of the Port of Portland Headquarters Building, 7200 N.E. Airport Way, Portland, Oregon, to discuss all phases of the work. From Airport Way, follow the signs to park in the long-term parking garage. Use the garage elevators at the east end of the garage to enter the Headquarters Building at the first floor level. Parking validation is not available.

Contractors, subcontractors, consultants, and suppliers are strongly encouraged to register through the Port's online bidding system, which can be accessed at www.portofportland.com under "Business Opportunities." All firms can view current business opportunities. Registered firms may receive electronic notification of Port solicitations, and have access to view, download, or request copies of solicitations, addenda, and solicitation-holders lists.

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

The project manual and drawings may be examined at Port offices (address above); however hard copies of drawings and specifications are not available directly from the Port. Registered firms may download the project manual and drawings or order them for the cost of reproduction 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: The Port requires contractors to provide on-the-job training opportunities for approved and registered apprentices on construction projects over $500,000. The Port's overall target for registered apprentice participation is 15 percent of total labor hours. The Port supports efforts to build a diverse and skilled workforce for the construction industry and to increase the representation of diverse apprentices on Port projects.

Small Business Participation Program: The Port is committed to increasing small business participation in Port contracts. The Port's small business participation goal for this contract is **12.50 percent** of the total amount bid (excluding additive alternates, if any). This contract will be awarded to the lowest responsive and otherwise responsible bidder who either demonstrates its commitment to meet the goal by properly submitting the Small Business Goal Compliance Report and associated Confirmation of Participation forms or who, upon request of the Port, submits adequate evidence that it made good faith efforts to meet the participation goal. See the Supplementary Instructions to Bidders for more information related to small business participation.

THE PORT OF PORTLAND

Craig Johnsen, Manager
Contracts and Procurement

April 15, 2015

CPD/CON

DOCUMENT 002100
INSTRUCTIONS TO BIDDERS

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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 opening date. 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. 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 bid opening. 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 opening date. 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 opening date.

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 his/her 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 himself 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 either view and download construction design and related documents electronically, or obtain hard copies by ordering them through the Port's online bidding system at the then-current cost of reproduction. 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, etc., as additional information that may pertain to the advertised project. 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. 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 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.

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 promptly returned.

8.3 The bid security of those other than the three lowest responsive bidders will be returned promptly following bid opening.

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 of the date and time the bids were due, the bidder shall disclose first-tier subcontractors on Document 004335, First-Tier Subcontractor Disclosure Form.

10.2 Disclosure of first-tier subcontractors must be submitted either with the bid form or delivered by fax (fax number 503-548-5812) or by clearly labeled envelope, within the time allowed, to the Contracts and Procurement office. For the purposes of this article, working hours are between 8 a.m. and noon, and 1 p.m. and 5 p.m. Monday through Friday, except Port holidays. The Contracts and Procurement office is closed between the hours of noon and 1 p.m.

ARTICLE 11 – SUBMISSION OF BID

11.1 Seal the bid in a separate envelope, addressed to the Manager, Contracts and Procurement, The Port of Portland, 7200 N.E. Airport Way, Portland, Oregon (Mailing address: P.O. Box 3529, Portland, Oregon 97208) showing on the outside of the envelope the name of the bidder, the bidder's State of Oregon Construction Contractors Board registration number, and the contract title preceded by the words "SEALED BID." To deliver bids to the above address, park in the long term parking garage. Use the garage elevators at the east end of the garage to enter the Headquarters Building at the first floor level and then use the Port office

elevators to check in with the receptionist on the eighth floor. Bidders should allow extra time to hand deliver their bids. Parking validation is not available.

11.2 Bids will be received at the place and until the time stated in the Invitation to Bid.

11.3 A bid received after the scheduled closing time for receipt of bids will be returned to the bidder unopened.

ARTICLE 12 – WITHDRAWAL OF BID

12.1 Prior to bid opening, a bidder may withdraw his/her bid. This will not preclude submission of another bid by such bidder prior to the time set for bid opening.

ARTICLE 13 – OPENING OF BIDS

13.1 The Port reserves the right to postpone a bid opening.

13.2 At the time and place set for the opening and reading of bids, bids received prior to the scheduled closing time for receipt of bids will be publicly opened and read aloud.

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 bids are opened, the bids will be returned to the bidders unopened, except that the Port may open a bid to determine the identity and address of the bidder if the name and address are not shown on the outside of the envelope. If a solicitation is canceled after bids are opened, 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 opening date (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 his/her bid. If withdrawn, the Port will return the bid security. 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

TO _____

PROJECT _____

SPECIFIED ITEM _____

SECTION _____ **PAGE** _____ **PARAGRAPH** _____

DESCRIPTION _____

PROPOSED SUBSTITUTION _____

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request. Applicable data is clearly identified.

Attached data also includes description of changes to Contract Documents the proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned will pay for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies the function, appearance, and quality of the proposed substitution are equivalent or superior to specified item.

Undersigned agrees to terms and conditions for substitutions found in Bidding Documents to this proposed substitution.

Submitted By:

Name (Printed or typed)	General Contractor (if after award of Contract)
Signature	For use by A/E
Firm Name	☐ Approved ☐ Approved as noted
Address	☐ Not Approved ☐ Received too late
City, State, Zip	By
Date	Date
Tel:	Remarks

DOCUMENT 002200
SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1.1 GENERAL

A. These supplements modify, delete from, or add to the Instructions to Bidders.

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

1.2 SMALL BUSINESS PARTICIPATION

A. The Port is committed to increasing small business participation in Port contracts. Small business means, for the purpose of this contract, a for-profit small business enterprise that has been certified by the Oregon State Office of Minority, Women, and Emerging Small Business (OMWESB) or by the Washington State Office of Minority and Women's Business Enterprises (OMWBE). A certified small business enterprise includes a certified minority-owned business enterprise (MBE), certified women-owned business enterprise (WBE), certified emerging small business (ESB), and certified disadvantaged business enterprise (DBE). A listing of certified firms is available on the OMWESB and the OMWBE websites at http://www.oregon4biz.com/certification and http://www.omwbe.wa.gov/certification.

1.3 SMALL BUSINESS PARTICIPATION GOAL

A. A small business participation goal is defined as the percentage of the total amount bid (excluding additive alternates, if any) required to be performed by small businesses for a specific contract. When calculating whether the goal has been met, bidders should carefully review Article 1.4 of these Supplementary Instructions to Bidders, entitled "Limitations on Counting Small Business Participation."

B. When a small business goal is stated in Document 004100 (Bid Form), the bidder must, as described in more detail below, either demonstrate its commitment to meet the goal by properly submitting Document 004336, Small Business Goal Compliance Report and Document 004337, Confirmation of Participation or, upon request by the Port, submit adequate evidence, documenting that it made good faith efforts to meet the goal.

1. Every bidder should complete the Small Business Goal Compliance Report and associated Confirmation of Participation forms. The Small Business Goal Compliance Report and associated Confirmation of Participation forms should be submitted within two working hours of the date and time of the deadline when bids are due. Both documents should be completed even if the small businesses listed are inadequate to meet the goal. On the Small Business Goal Compliance Report, bidders should indicate in the space provided whether they believe the small businesses they listed meet the small business goal for this contract. A Confirmation of Participation form should be submitted for each small business listed in the Small Business Goal Compliance Report. If the lowest apparent responsive and responsible bidder (a) fails to complete or submit one or both documents, (b) submits the documents but indicates it did not meet the small business goal, or (c) submits the documents, indicates it met the goal, but fails to adequately demonstrate its goal compliance on the documents, the bidder must submit, within 24 hours of the Port's request, adequate documentation to establish that the bidder made good faith efforts prior to bid opening to meet the goal. The documentation may include, without limitation, affidavits, telephone

logs, copies of published advertisements, and any other documents relevant to showing the bidder's good faith efforts. No particular format is required for the documentation. Refer to subsection 2 immediately below for more information about establishing good faith efforts. The Port may make a post-bid investigation to confirm, clarify, or expand upon facts set forth in the documentation submitted by the bidder, which investigation may, in the Port's sole discretion, exceed the 24-hour time period stated above. Such investigation may include, among other things, requests for further documentation from the bidder. In the event the Port requests good faith efforts documentation from more than one bidder, which the Port reserves the right to do in its sole discretion, the 24-hour period stated above runs from the date and time of the Port's request to each such additional bidder.

2. Good Faith Efforts Documentation:

   a. The following nonexclusive list of good faith actions is in substantial accordance with ORS 200.045. Evidence of such good faith actions or other factors and efforts (as may be appropriate) will be considered by the Port in deciding whether a bidder made good faith efforts to meet the small business goal. Unless required to overcome the rebuttable presumptions described in sections c and d below, not all of the actions in section b below are necessary in all cases. The sample checklist and contact log available on the Port's online bidding system are optional and are intended to help bidders optimize and document their good faith actions, but what actions and evidence of actions are adequate to demonstrate good faith efforts will be determined by the Port at its sole discretion on a case-by-case basis.

   b. Good Faith Efforts:

      1) The bidder attended any pre-solicitation or pre-bid meetings that were scheduled by the Port to inform small businesses of contracting and subcontracting or material supply opportunities available on the project;

      2) The bidder identified and selected specific economically feasible units of the project to be performed by small businesses in order to increase the likelihood of participation by such enterprises;

      3) The bidder advertised in general circulation, trade association, minority and trade-oriented, women-focus publications, if any, concerning the subcontracting or material supply opportunities;

      4) The bidder provided written notice to a reasonable number of specific small businesses, identified from a list of certified small businesses provided or maintained by the Oregon Business Development Department for the selected subcontracting or material supply work in sufficient time to allow the small businesses to participate effectively;

      5) The bidder followed up initial solicitations of interest by contacting the small businesses to determine with certainty whether they were interested;

      6) The bidder provided interested small businesses with adequate information about the drawings, specifications, and requirements for the selected subcontracting or material supply work;

      7) The bidder negotiated in good faith with the small businesses submitting bids and did not without justifiable reason reject as unsatisfactory bids prepared by any small business;

      8) Where applicable, the bidder advised and made efforts to assist interested small businesses in obtaining bonding, lines of credit, or insurance required by the Port or the bidder;

      9) The bidder's efforts to obtain small business participation were reasonably expected to produce a level of participation sufficient to meet the goals of the Port; and

      10) The bidder used the services of minority community organizations, minority contractor groups, local, state, and federal minority business assistance offices,

and other organizations identified by the State of Oregon's Advocate for Minority, Women, and Emerging Small Business that provide assistance in the recruitment and placement of small business enterprises.

c. If the bidder rejects a small business's bid as unsatisfactory based on price alone, the Port will presume such rejection to be unreasonable if:
   1) The rejected small business's bid is no more than:
      a) 20 percent higher than the lowest bid received for the same type of work if the lowest bid for that type of work is less than $100,000;
      b) 15 percent higher than the lowest bid received for the same type of work if the lowest bid for that type of work is between $100,000 and $200,000;
      c) 10 percent higher than the lowest bid received for the same type of work if the lowest bid for that type of work is between $200,000 and $300,000;
      d) 5 percent higher than the lowest bid received for the same type of work if the lowest bid for that type of work is between $300,000 and $400,000;
      e) 0 percent higher than the lowest bid received for the same type of work if the lowest bid for that type of work is greater than $400,000; or
   2) The bidder failed to contact the small business and attempt to negotiate a lower price (the Port is not inviting bid shopping, but rather is inviting good faith negotiation in accordance with law and good ethical practices, without the direct or indirect disclosure of competitors' prices).

d. If the bidder fails to meet the goal, the Port will presume the bidder could not reasonably have expected to obtain small business participation at a level sufficient to meet the goal if the bidder failed to:
   1) Contact all of the small businesses certified for the particular element of work or document why they were not contacted; and
   2) Use the services of minority community organizations, minority contractor groups, local, state, and federal minority business assistance offices, and other organizations identified by the State of Oregon's Advocate for Minority, Women, and Emerging Small Business that provide assistance in the recruitment and placement of small businesses.

C. Bidders may submit written evidence to rebut the Port's presumptions, if any, under paragraphs c and d. The Port may accept or reject such evidence at its sole discretion.

1.4 LIMITATIONS ON COUNTING SMALL BUSINESS PARTICIPATION

A. When a small business participates in a contract, count only the value of the work actually performed by the small business toward the small business goal.
   1. Count the entire amount of that portion of a construction contract (or other contract not covered by paragraph A, 2 of this section) that is performed by the small business's own forces. Include the cost of supplies and materials obtained by the small business for the work of the contract, including supplies purchased or equipment leased by the small business (except supplies and equipment the small business subcontractor purchases or leases from the prime contractor or its affiliate).
   2. Count the entire amount of fees or commissions charged by a small business firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a

contract, toward small business goals, provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.

3. When a small business subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward small business goals only if the small business's subcontractor is itself a small business. Work that a small business subcontracts to a firm that is not a small business does not count toward small business goals.

B. When a small business performs as a participant in a joint venture, count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the small business performs with its own forces toward small business goals.

C. Count expenditures to a small business contractor toward small business goals only if the small business is performing a commercially useful function on that contract.

1. A small business performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the small business must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.
2. A small business does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of small business participation.
3. If a small business does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the small business subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it is presumed that the small business is not performing a commercially useful function.

D. Use the following factors in determining whether a small business trucking company is performing a commercially useful function:

1. The small business must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting small business goals.
2. The small business must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
3. The small business receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
4. The small business may lease trucks from another small business firm, including an owner-operator who is certified as a small business. The small business who leases trucks from another small business receives credit for the total value of the transportation services the lessee small business provides on the contract.
5. The small business may also lease trucks from a non-small business firm, including from an owner-operator. The small business who leases trucks from a non-small business is entitled to credit for the total value of transportation services provided by non-small business lessees not to exceed the value of transportation services provided by small business-owned trucks on the contract. Additional participation by non-small business lessees receives credit only for the fee or commission it receives as a result of the lease arrangement. If a recipient chooses this approach, it must obtain written consent from the Port. Example to this paragraph D, 5: small business Firm X uses two of its own trucks on a contract. It leases two trucks from small business Firm Y and six trucks from non-small business Firm Z. Small business credit would be awarded for the total value of transportation services provided by Firm X and Firm Y, and may also be awarded for the total value of

transportation services provided by four of the six trucks provided by Firm Z. In all, full credit would be allowed for the participation of eight trucks. With respect to the other two trucks provided by Firm Z, small business credit could be awarded only for the fees or commissions pertaining to those trucks Firm X receives as a result of the lease with Firm Z.

6. For purposes of this paragraph D, a lease must indicate that the small business has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the small business, so long as the lease gives the small business absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the small business.

E. Count expenditures with small businesses for materials or supplies toward small business goals as provided in the following:

1. Small Business Manufacturer
    a. If the materials or supplies are obtained from a small business manufacturer, count 100 percent of the cost of the materials or supplies toward small business goals.
    b. For purposes of this paragraph E, 1, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.
2. Small Business Regular Dealer
    a. If the materials or supplies are purchased from a small business regular dealer, count 60 percent of the cost of the materials or supplies toward small business goals.
    b. For purposes of this section, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
        1) To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
        2) A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in this paragraph E, 2, b if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.
        3) Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph E, 2.
3. With respect to materials or supplies purchased from a small business which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward small business goals, provided the fees are reasonable and not excessive as compared with fees customarily allowed for similar services. Do not count any portion of the cost of the materials and supplies themselves toward small business goals, however.

DOCUMENT 004100
BID FORM

To The Port of Portland
P.O. Box 3529
Portland, Oregon 97208
Solicitation No. 2015-6304

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

PORTLAND INTERNATIONAL AIRPORT
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

The bidder further warrants that he has examined, or did not avail himself of the opportunity to examine, the proposed work area independently of the indications in the contract documents and has made, or did not avail himself 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, he will contract with The Port of Portland in the form of Agreement hereto annexed and will to the extent of his 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 130 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 $100 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 60 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

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 bid security. The amount is 10 percent of the total amount bid. 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. 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.

A small business participation goal of **12.50 percent** of the total amount bid (excluding additive alternates, if any) has been established for this Contract. This Contract will be awarded to the lowest responsive and otherwise responsible bidder who either demonstrates its commitment to meet the goal by properly submitting the Small Business Goal Compliance Report and associated Confirmation of Participation forms or who, upon request by the Port, submits adequate evidence that it made good faith efforts to meet the participation goal. See the Supplementary Instructions to Bidders for more information related to small business participation goals.

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.

Name of 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 004336, Small Business Goal Compliance Report
- Document 004337, Confirmation of Participation forms

Submit within 24 hours of the Port's request:

- Documentation of good faith efforts to meet the small business goal for the project

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 the name of each subcontractor who will be furnishing labor or will be furnishing labor and materials, the category of work that the subcontractor will be performing, and the dollar value of the subcontract. There are no dollar thresholds and first-tier subcontractors of any dollar amount must be included. 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 004336
SMALL BUSINESS GOAL COMPLIANCE REPORT

List **ALL** certified small businesses the bidder submits for participation in this project. Also list self-performed work if the bidder itself is a certified small business. Bidders should list all committed small businesses even if, in total, they are inadequate to meet the small business project goal. Small businesses can include, without limitation and at any tier, contractors, trucking companies, suppliers (including but not limited to equipment suppliers and rental companies), manufacturers, regular dealers, or other service providers (including but not limited to professional service providers). Small business participation will be calculated and counted towards the goal as described in the Supplementary Instructions to Bidders. Enter "NONE" if there are no small businesses committed to the project. (ATTACH ADDITIONAL SHEETS IF NEEDED.)

CONTRACTOR: _____ **PROJECT NAME: _____** **GOAL: _____%**

FORM COMPLETED BY: _____ **PHONE:_____**

Name, Address, Telephone of Small Business	Dollar Amount of Participation Calculated	Description of Work to be Performed by Small Business and Basis for Calculated Dollar Amount of Participation Toward Goal (See Limitations on Counting in Supplementary Instructions to Bidders, Article 1.4)	Is Proof of Commitment from Small Business Attached?

Total Dollar Amount and Small Business Percentage Committed On This Page: **$_____ / _____%**

Total Dollar Amount and Small Business Percentage Committed On All Pages (Grand Total): **$_____ / _____%**

The undersigned bidder agrees to use the small business(es) as listed above:

_____ _____ Does bidder believe the small business(es) listed meet the project goal? ☐ **YES** ☐ **NO**

Authorized Signature Date

ATTACH DOCUMENT 004337, CONFIRMATION OF PARTICIPATION, from each small business listed above confirming that it will participate in the contract as provided in the bidder's commitment above.

SEE THE SUPPLMENTARY INSTRUCTIONS TO BIDDERS for further information about requirement of bidders to submit evidence of good faith efforts upon request of the Port.

DOCUMENT 004337
CONFIRMATION OF PARTICIPATION

Submit from each small business listed on the Small Business Goal Compliance Report. Enter "NONE" if there are no small businesses committed to the project.

Solicitation No. _____ **Project Title:** _____

_____

Bidder: Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Small Business: Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Certification State (circle one): OREGON / WASHINGTON

Certification No. _____

Contact person: Name: _____

Phone: _____

Estimated dollar amount of the work: $_____

Description of work to be performed: _____

_____

_____

CONFIRMATION

The above-named small business confirms to the Port of Portland for purposes of the bidder's Small Business Goal Compliance Report that the small business will participate in the bidder's contract with the Port of Portland for the project identified above in the estimated dollar amount and for the work described above.

By: _____

Print name: _____

Title: _____

Date signed: _____

DOCUMENT 005200
AGREEMENT

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

PORTLAND INTERNATIONAL AIRPORT
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

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
CARGO CENTER
EXTERIOR BUILDING REHABILITATION

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; and (10) 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 130 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 $100 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 60 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 _____. These bonds shall insure 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 CORPORATION)

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	**SURETY**
By: _____	By: _____
Name: _____	Name: _____
Title: _____	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

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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 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.

He, Him, His - Used solely for legibility and ease of writing and applies equally to both genders.

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 Chief Engineer is authorized to represent the Port with respect to this Contract, provided that his authority to amend this Contract is limited to the amount set by Port policy. The Chief Engineer will appoint a Construction Contract Manager in writing to exercise all or part of his 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.

Communications

2.3 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.

Copies of Project Manual and Drawings

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

Commencement of Contract Time

2.5 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

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

Before Starting Construction

2.7 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 this meeting, the Contractor shall submit to the Port for review 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 preliminary submittal schedule shall be finalized and submitted to the Port one week after the preconstruction meeting. The submittal schedule shall demonstrate that submittals will be submitted in time to allow the Port's review and comment and the Contractor's submission of revised submittals before the Work covered by the submittals is scheduled to start under the work progress schedule.

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 the contractor safety information form for safety planning purposes. The Port expects that the Contractor will abide by all Oregon 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. Material safety data sheets (MSDS) 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.

2.8 In the case of a lump-sum agreement or lump-sum bid items, the Contractor shall, no later than one week after receipt of the Notice to Proceed, 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.

2.9 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.

2.10 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 Investigations, reports, or tests which the Port may make available to the Contractor are the Port's best known information at the time the Work is designed. However, the Port makes no warranty or representation regarding accuracy or completeness unless the investigations, reports, or tests have 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 differing materially from those shown in this Contract. 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 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 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 his 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 he has reasonable objection.

6.16 The Contractor is responsible for: (1) all acts and omissions of his Subcontractors, (2) persons and organizations directly or indirectly employed by his Subcontractors, (3) persons and organizations for whose acts any of his 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 his employees and those of his 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. No person shall be employed 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 it, and in such cases the employee shall be paid at least time and a half pay:

1. For all overtime in excess of eight hours in any one day or 40 hours in any one week when the work week is five consecutive days, Monday through Friday; or

2. For all overtime in excess of ten hours in any one day or 40 hours in any one week when the work week is four consecutive days, Monday through Friday; and

3. For work performed 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.

4. The Contractor shall ensure that each employer of employees working on this Contract gives those employees the written notice required by ORS 279C.520(2) and 279C.520(5)(b), either at the time of hire or before commencement of work 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 employees may be required to work.

5. The requirements of this section are subject to the exceptions established by ORS 279C.540 including, but not limited to, the exception when the Contractor is a party to a collective bargaining agreement in effect with any labor organization.

6. When specifically agreed to under a written labor-management negotiated labor agreement, an employee may be paid at least time and a half for work performed on Martin Luther King, Jr.'s birthday on the third Monday in January, Veterans Day on November 11, and every day appointed by the Governor as a holiday.

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 his 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 his subcontracts and to require each of his 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.

Environmental Responsibilities

6.25 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

6.26 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.

6.27 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.

6.28 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.

6.29 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

6.30 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.

Use of Premises

6.31 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.

6.32 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.

6.33 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

6.34 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.

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

6.36 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.

6.37 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.

6.38 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.

6.39 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.

6.40 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.

6.41 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

6.42 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.

Submittals (Shop Drawings, Product Data, Maintenance Data, and Samples)

6.43 The Contractor shall check and verify all field measurements associated with the fit and function of supplied equipment, products, and material. He shall then submit Shop Drawings, Product Data, Maintenance Data, and Samples to the Port for review in accordance with the accepted submittal schedule, with such promptness as to cause no delay in the Work. All submittals shall be identified as the Port requires, and shall be accompanied by the Port's standard submittal form. Submittals shall be reviewed and stamped with the approval of the Contractor prior to submittal to the Port.

A. Shop Drawings, Maintenance Data, and Product Data: Seven copies of Shop Drawings and Maintenance Data are required unless otherwise specified. Product data shall be submitted electronically unless otherwise specified. Data shown in submittal information shall be complete with respect to quantities, dimensions, material, and specified performance and design criteria, to allow the Port to verify conformance with this Contract.

B. Samples: The Contractor shall submit to the Port for review the specified number of Samples required by this Contract. Samples shall be identified clearly as to material, manufacturer, pertinent catalog numbers, and intended use.

6.44 The Contractor shall call the Port's attention to any deviations from the requirements of this Contract that the Shop Drawings, Product Data, Maintenance Data, or Samples may have. This shall be in writing at the time of submission.

6.45 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 notify the Contractor of the reason for delay in return. 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 means, methods, sequences, techniques, or procedures of construction; nor will it extend to safety precautions or programs related thereto, or to the assembly in which an item functions.

6.46 The Contractor shall make any corrections required by the Port and proceed according to the Port's stamp and directions. The Contractor shall return the required number of corrected copies of submittal information and 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.

6.47 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) has reviewed and coordinated each Shop Drawing, Product Data, Maintenance Data, or Sample with the requirements of this Contract.

6.48 When submission of a Shop Drawing, Product Data, Maintenance Data, or Sample is required by this Contract, no related Work shall be commenced until the submittal has successfully completed the review process.

6.49 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 at the time of submission and accepted by the Port. Changes in the Work shall follow procedures outlined for a Change Order. Review by the Port shall not relieve the Contractor from responsibility for errors or omissions in the submittal.

6.50 Submittals that have successfully completed the review process shall become binding upon the Contractor. He shall be obligated to perform in accordance with the reviewed submittal.

Access to the Work

6.51 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

6.52 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

6.53 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

6.54 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

6.55 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

6.56 The Contractor shall be responsible for labor relations and shall seek to resolve disputes between himself and his 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

6.57 The Contractor shall retain all 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.

6.58 The Port or its designee may inspect, audit, and copy any of the Contractor's financial records retained pursuant to Item 6.57 and any other records 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; or (2) evaluate any claim asserted by the Contractor against the Port.

6.59 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.

6.60 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.

6.61 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 extracts of data files in a computer readable format on data disks, e-mail with attached files, or suitable alternative computer data exchange formats or devices.

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

6.63 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. He shall allow storage of material and execution of work by others. He shall properly connect and coordinate his 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.

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, the Port may, at any time, authorize additions, deletions, or revisions to the Work by written Change Order. All such Work shall be executed under the applicable conditions of this Contract. A Change Order will be executed to provide an equitable adjustment if any Port-issued change directive or Port-provided Contract interpretation or clarification causes an increase or decrease in the Contract Price, or an extension or shortening of the Contract Time.

9.2 No addition to Contract Price or extension of Contract Time will be allowed because of any condition of which the Contractor could have informed himself either by examination, testing, sampling, review of records, or otherwise.

9.3 Prior to the execution of, or in the absence of, a Change Order the Port may issue a change directive that will define the revision to the Work, may direct the Contractor as to what method to use for price and time adjustments, and may direct the Contractor to proceed with the Work.

9.4 If the Contractor believes that a change directive or Contract interpretation or clarification 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 or Contract interpretation or clarification.

9.5 The Contractor shall submit, in the format requested by the Port, an itemized cost estimate of any adjustment to the Contract Price, either additive or deductive, resulting from the change directive or Contract interpretation or clarification. If applicable, the Contractor shall also submit a work progress schedule analysis or summary which demonstrates the effect of the change directive or

Contract interpretation or clarification on the Contract Time. The itemized estimate or analysis shall be submitted within 15 days of receipt of the change directive, Contract interpretation, or clarification from the Port or the submittal of the Contractor's written notice under Item 9.4. 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.

9.6 The Port may order the Contractor, in writing, to commence the added 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.

9.7 The Contractor shall proceed with the work involved upon receipt of a Change Order or direction to proceed with the Work prior to execution of a Change Order. 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.

9.8 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.

9.9 No payment will be made for additions, deletions, or revisions to the Work until a Change Order has been executed.

9.10 Additional work performed without written direction from the Port or authorization by a Change Order will not entitle the Contractor to an increase in the Contract Price or an extension of the Contract Time. Emergencies, as provided in Item 6.42, 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 will 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.

   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 to him 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. Rates charged 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. 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 liable. Negligence costs include 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 direct cost, regardless of the number of subcontract tiers existing. No markup is allowed for direct 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 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 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 in excess of 25 percent, the remaining quantity shall be subject to a negotiated change in 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, an equitable adjustment will be negotiated on the items of Work remaining.

Force Account Method

10.4 The force account method changes the Contract Price in accordance with the sum of all costs 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 2.8. 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 unit of Work. Force account costs may include:

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 completion of the Work in accordance with Item 10.2, A, 3.

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. 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 above, 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 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 and 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, and 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.

F. Force account method 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 (No markup allowed for Item 10.4, E) — 15 percent

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.

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

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, Primedia Corp., 1735 Technology Drive, Suite 410, San Jose, California 95110, will be 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 by showing a star next to the model number. 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 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 2.8.

Deleted Work

10.8 Deletion of 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. No allowance will be made for 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 his 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 his 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 he 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. 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 follows these General Conditions) 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 Subcontractor Payment and Utilization Report and 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 (forms follow these General Conditions).

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, he 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. Warranties and operation and maintenance manuals shall be submitted and approved 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, he 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. Bonds, if any.

C. Software or code use rights documentation.

D. Certificates of inspection from jurisdictional authorities.

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

F. 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.

G. 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 Time is of the essence of this Contract. The Port will be harmed if the Work is not substantially complete by the Substantial Completion date established by this Contract. The parties agree that ascertaining the actual operational or business impact damages suffered by the Port as a result of that harm is impractical. Therefore, the Contractor shall pay the Port liquidated damages at the rate established by this Contract. The parties agree that, as of the date this Contract is signed, the established rate of liquidated damages is a reasonable forecast of the Port's actual operational or business impact damages for late Substantial Completion. The parties agree that the Port does not waive its right to liquidated 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 does not release the Contractor from any duty under this Contract (other than the duty to pay liquidated damages). The parties further agree that the liquidated damages required by this Contract are compensation to the Port only for harm the Port sustains from late completion. They are not compensation for additional effort required by the Port because the Work has been extended over a longer period, or for other harm the Port may sustain from the Contractor's other breaches of this Contract. The Port may withhold liquidated damages from progress payments, or may withhold the full amount of accrued liquidated damages from final payment.

Other Damages

13.21 In addition to the liquidated damages described above, the Port may recover from the Contractor, withhold from payments under this Contract, or both, actual costs incurred by the Port due to the extra effort necessitated because the Work is extended over a longer period of time, such as the actual costs of additional engineering and inspections by the Port. This right to actual damages shall apply to both late Substantial Completion and late Final Acceptance.

13.22 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 he 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 his 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 his 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, he 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. The parties shall agree upon a single arbitrator, the applicable rules for arbitration, and the time and place of arbitration.

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.

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.

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

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

C. 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 _____

THE PORT OF PORTLAND
CONTRACTOR'S REQUEST FOR PAYMENT

CONTRACTOR: _____

PROJECT TITLE: _____

PROJECT NO.: _____ AIP NO.: _____

Work performed through: _____

☐ Wage certifications for all labor are attached, or have been submitted previously in accordance with ORS 279C.845.

☐ The undersigned certifies that to the best of the undersigned's knowledge:

1) work covered by this invoice is in accordance with the contract documents, and

2) the Contractor is entitled to payment of the amount requested by the invoice, and

3) all subcontractors have been paid, and retainage released in accordance with ORS Chapter 279C and, for federally funded work, 49 CFR Part 26.

☐ Waiver of Claims to Date attached (not required for first application for payment).

☐ Subcontractor Payment and Utilization Report attached (not required for first application for payment; required for all subsequent applications for payment).

☐ Site Waste Recycling Form (if applicable)

☐ Monthly Workforce Report (if applicable)

☐ ESPC Inspection Records (if applicable)

_____
Contractor's Representative

TOTAL WORK COMPLETE TO DATE:

Total Bid Item Work	$ _____
Total Change Order Work	$ _____
Total Material on Hand	$ _____
Total to Date	$ _____
Less 5% Retainage	$ _____
Less Previous Payments	$ _____
PAYMENT NOW DUE	$ _____

PORT OF PORTLAND REVIEW ACTION:

Inspector: Approved (Date): _____
Disapproved (Date): _____

By: _____

Construction Contracts Manager:
Approved (Date): _____
Disapproved (Date): _____

By: _____

Date: _____

PORT OF PORTLAND

Bid Item Payment Summary

Project Title _____ Contractor _____ App. No. _____

Port EAN _____ AIP No. _____ Page _____ of _____

Project No. _____

Bid Item No.	Description	BID Quantity	BID Unit	BID Unit Price	BID Item Total	Complete To Date Quantity	Complete To Date Item Price	Complete This Period Quantity	Complete This Period Item Price

REV: 5/25/04

S:\Masters\Forms-GCs\2_BidItemPaymentSumm.xls

PORT OF PORTLAND

Change Order Payment Summary

Project Title _____ Contractor _____ App. No. _____

Port EAN _____ AIP No. _____ Page _____ of _____

Project No. _____

CO No.	CC No.	Description	Quantity	Unit	Unit Price	Item Total	Complete To Date Quantity	Complete To Date Item Price	Complete This Period Quantity	Complete This Period Item Price

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

Project Name: _____ Project Number: _____

Prime Contractor: _____

Scope of Work Summary – Include location(s):

_____

_____

_____

_____

_____

_____

_____

_____

_____

Potential Work Hazards/Concerns Identified (check ALL that apply):

☐ Fall Exposure	☐ Traffic Control	☐ Scaffolding
☐ Excavation	☐ Chemicals	☐ Ladders
☐ Confined Space Entry	☐ Crane/Rigging	☐ Aerial Lift
☐ Electrical	☐ Demolition	☐ Airborne Contaminants/Dust
☐ Hazardous Energy/Lockout-Tagout	☐ Public Safety	☐ High Noise
☐ Asbestos/Lead	☐ Hot Work/Fire Hazard	☐ Painting
☐	☐	☐
☐	☐	☐

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

Please note any Port facilities safety-related information you request that relates to your work at the Port:

_____

_____

_____

_____

_____

Responsible Persons

List Competent Person(s) responsible ON SITE to monitor 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.

Name:	Certification:	Phone (Mobile/Pager/Office):

Contractor's Project Manager

Name: _____ Phone (Mobile/Pager/Office): _____

Contractor's Primary On-Site Safety Contact:

Name: _____ Phone (Mobile/Pager/Office): _____

Worksheet Prepared by:

Name: _____ Title: _____ Date: _____

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

Port CCM/Project Manager

Name: _____ Phone (Mobile/Pager/Office): _____

Lead Inspector(s)

Name: _____ Phone (Mobile/Pager/Office): _____

Name: _____ Phone (Mobile/Pager/Office): _____

Distribution:

☐ Risk Management, Loss Control

Ops Safety (Check applicable) ☐ Aviation ☐ Marine ☐ Ind. Properties ☐ Navigation

PORT OF PORTLAND

APPLICATION NO. _____
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THE PORT OF PORTLAND
SUBCONTRACTOR PAYMENT AND UTILIZATION REPORT

1. PRIME CONTRACTOR _____
2. CONTACT NAME AND PHONE NO. _____
3. PROJECT NAME _____
4. CONTRACT NUMBER _____ 5. SOLICITATION NUMBER _____
6. PRIME CONTRACT AMOUNT $ _____
7. REQUEST FOR PAYMENT PERIODS FROM: _____ TO: _____ (PRIME) FROM: _____ TO: _____ (SUBCONTRACTORS)
8. REPORT DATE _____

IS THIS THE PRIME CONTRACTOR'S FINAL REQUEST FOR PAYMENT? ☐ YES ☐ NO

9 All First-Tier Subcontractors Utilized	10 Type of Work	11 Original Subcontract Amount	12 Amended Subcontract Amount	13 Amount Paid This Payment Period	14 Total Paid To Date

IT IS HEREBY CERTIFIED THAT THE ABOVE LISTED FIRMS HAVE BEEN UTILIZED BY OUR COMPANY IN THE AMOUNTS REPRESENTED ABOVE AND THAT THE INFORMATION CONTAINED HEREIN IS COMPLETE AND ACCURATE.

_____ _____
Authorized Signature of Contractor Representative Date

Submit with Contractor's Monthly Request for Payment to Construction Contract Manager.

INSTRUCTIONS FOR COMPLETING THE SUBCONTRACTOR PAYMENT AND UTILIZATION REPORT

File this form with each monthly application for payment, beginning with the second application. If no Subcontractors were used during the period for which payment is being requested, write "none" in Column 8. Following final payment, the Port will contact the Contractor within 60 days for verification that final payments to the Subcontractors have been made.

1. **PRIME CONTRACTOR:** Indicate the name of the prime Contractor.
2. **CONTACT NAME AND PHONE NUMBER:** Indicate the name and phone number of the prime Contractor's contact.
3. **PROJECT NAME:** Indicate the project name as shown on the contract documents.
4. **CONTRACT NUMBER:** Indicate the contract number for this project, as recorded on the cover of the signed project manual.
5. **SOLICITATION NUMBER:** Indicate the solicitation number for this project, as recorded on the cover of the signed project manual.
6. **PRIME CONTRACT AMOUNT:** Indicate the total dollar amount of the prime contract.
7. **REQUEST FOR PAYMENT PERIOD:** Indicate the time periods for reported payments. Subcontractor payment period should be for the month preceding the prime Contractor's payment period.
8. **REPORT DATE:** Indicate the date report is being filed. Also indicate if this is the Contractor's final request for payment.
9. **ALL FIRST-TIER SUBCONTRACTORS UTILIZED:** Names of first-tier Subcontractors. Subcontractors do not include firms serving as suppliers only.
10. **TYPE OF WORK:** Briefly describe Subcontractor's work (i.e., landscaping, electrical, paving, etc.).
11. **ORIGINAL SUBCONTRACT AMOUNT:** Indicate the dollar amount for each subcontract at time of award.
12. **AMENDED SUBCONTRACT AMOUNT:** This amount should be the total dollar value (original subcontract amount plus any additions or deletions) of the subcontract.
13. **AMOUNT PAID THIS PAYMENT PERIOD:** This amount should be the dollar amount paid to the Subcontractor this payment period.
14. **TOTAL PAID TO DATE:** This amount should be the total dollar amount paid to the Subcontractor to date.

COMMENTS (Include explanation if any payment amounts made to the Subcontractor are less than requested by the Subcontractor):

PORT OF PORTLAND

APPRENTICE UTILIZATION PLAN

PROJECT NAME _____

PRIME CONTRACTOR _____

CONTACT NAME AND PHONE NUMBER _____

CONTRACT NO. _____ SOLICITATION NO. _____

PRIME CONTRACT AMOUNT $ _____

			ESTIMATED TOTALS		
Start Date (mm/dd/yy)	Contractor or Subcontractor	Trade/Craft (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.

PORT OF PORTLAND

MONTHLY WORKFORCE REPORT

1. PRIME CONTRACTOR _____

2. CONTACT NAME AND PHONE NUMBER _____

3. PROJECT NAME _____

4. CONTRACT NUMBER _____ 5. SOLICITATION NUMBER _____

6. PRIME CONTRACT AMOUNT $ _____ 7. REPORT PERIOD FROM: _____ TO: _____

	TOTALS			
	8 Prime Contractor Apprentice Hours	9 Subcontractor(s) Apprentice Hours	10 Prime Contractor Journeyman Hours	11 Subcontractor(s) Journeyman Hours
BRICK MASON, STONE MASON				
CARPENTERS				
CARPET INSTALLERS				
CEMENT MASON				
DRYWALL INSTALLERS				
ELECTRICIANS				
GLAZIERS, GLASSWORKERS				
INSULATION WORKERS				
LABORERS				
OPERATING ENGINEERS				
PAINTERS				
PLASTERERS				
PLUMBERS & PIPEFITTERS				
ROOFERS				
SHEET METAL WORKERS				
TRUCK DRIVERS				
WELDERS & CUTTERS				
TOTALS				

It is hereby certified that the above listed apprentice/journeyman hours are the total craft hours, and that information contained herein is complete and accurate.

_____ _____

Contractor Authorized Signature Print Name

_____ _____

Title Date

Submit with Contractor's Monthly Request for Payment to Construction Contract Manager.

INSTRUCTIONS FOR COMPLETING THE MONTHLY WORKFORCE REPORT

File this form with each monthly application for payment, beginning with the first application. If no labor hours were used during the period for which payment is being requested, write "none" in Column 8.

1. **PRIME CONTRACTOR:** Indicate the name of the prime Contractor.
2. **CONTACT NAME AND PHONE NUMBER:** Indicate the name and phone number of the prime Contractor's contact.
3. **PROJECT NAME:** Indicate the project name as shown on the contract documents.
4. **CONTRACT NUMBER:** Indicate the contract number for this project, as recorded on the cover of the signed project manual.
5. **SOLICITATION NUMBER:** Indicate the solicitation number for this project, as recorded on the cover of the signed project manual.
6. **PRIME CONTRACT AMOUNT:** Indicate the total dollar amount of the prime contract.
7. **REPORT PERIOD:** Indicate the time period being reported.
8. **PRIME CONTRACTOR APPRENTICE HOURS:** Indicate the total hours worked by apprentices employed by the prime Contractor.
9. **SUBCONTRACTOR(S) APPRENTICE HOURS:** Indicate the total hours worked by apprentices employed by Subcontractors.
10. **PRIME CONTRACTOR JOURNEYMAN HOURS:** Indicate the total hours worked by apprentices employed by the prime Contractor's journeyman.
11. **SUBCONTRACTOR(S) JOURNEYMAN HOURS:** Indicate the total hours worked by apprentices employed by Subcontractors' journeymen.

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 INCREASED LIABILITY INSURANCE

A. See General Conditions Item 5.4. Delete the first sentence and replace with, "The Contractor shall maintain liability coverages in the amounts set forth below."

B. See General Conditions Item 5.4, A. Delete the first sentence and replace with, "The Contractor shall maintain commercial general liability insurance in an amount not less than $2,000,000 to protect against liability for bodily injury and property damage which may arise out of the Contractor's operations under this Contract."

C. See General Conditions Item 5.4, B. Delete the first sentence and replace with, "The Contractor and any vendor delivering materials to the construction site which involves active airfield access at PDX shall provide business automobile liability insurance in an amount not less than $5,000,000 per occurrence (primary or combined primary and excess 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."

1.3 CITY OF PORTLAND FACILITIES PERMIT

A. This project is subject to the Facilities Permit Program of the City of Portland. Delete General Conditions Item 6.20 in its entirety.

B. Building Permit: The Port will submit plans with the Facility Plan Intake form to the City of Portland facility program supervisor for review and issuance of the building permit.

C. The Contractor shall submit the appropriate application(s) (i.e., plumbing, mechanical, electrical, etc.) to the City of Portland facility program supervisor for review and issuance of respective permit(s) prior to commencement of work.

D. All plan review and inspection fees will be billed to and paid by the Port. Traditional permit fees will not be charged.

1.4 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 using the monthly workforce report form that follows these General Conditions. 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 his 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.

1.5 SMALL BUSINESS PARTICIPATION PROGRAM

A. Prior to Notice to Proceed:

1. The apparent successful bidder, upon contract award and prior to Notice to Proceed, shall submit to the Manager, Contracts and Procurement, copies of binding small business subcontracts.

B. Post-Contracting Changes in Small Business Participation:

1. If circumstances arise after Notice to Proceed which reduce small business participation, the Contractor shall immediately notify the Port and request a meeting with the Construction Contract Manager and the Small Business Program Manager. At this meeting, the Contractor shall:

   a. Present the circumstances which brought about the reduction in small business participation; and

   b. Present plans or actions to bring the small business participation back to the level promised.

C. Replacing a Small Business:

1. The Contractor shall notify the Port and obtain its written approval before replacing a small business or making any change in the small business participation listed.

2. If a small business is unable to fulfill the original obligation to the contract, the Contractor shall demonstrate to the Port its good-faith efforts to replace that small business with another small business.

D. Liaison Officer, Records, and Reports:

1. The Contractor shall designate a small business liaison officer who will administer the Contractor's small business program and submit the Contractor's "Subcontractor Payment and Utilization Report" (form follows the General Conditions) to the Port with each application for payment verifying that the Contractor has subcontracted with or purchased materials from the small businesses identified to meet contract goals.

2. The participation of a small business subcontractor will not be counted toward the Contractor's small business goals until payments due the subcontractor, including retainage due the subcontractor, have been paid.

E. Material Breach:

1. Failure to comply with the small business requirements of the contract is a material breach of the contract.

PREVAILING WAGE RATES

for

Public Works Contracts in Oregon

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.

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.

BOLI

OREGON BUREAU OF LABOR AND INDUSTRIES

Brad Avakian
Commissioner
Bureau of Labor and Industries

Effective: January 1, 2015

SECTION 011100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work includes but is not limited to:
   1. Replacement of exterior Z-purlins supporting roof and screen wall; modifications to screen walls and screen wall mounting; gutter and downspout modifications; roof access enhancements; rerouting of existing interior heating flues through roofing; general roof repair and coating of deteriorating through-fastened structural roof panels; sectional door repairs; and selected window replacements. Specific work by location includes but is not limited to the following:
      a. East Cargo Center:
         1) Remove and replace all exterior Z-purlins supporting roof and screen wall at the gutter edges; utilization of the existing building frame for jacking and temporary support will be permitted.
         2) Install metal panel rib stiffeners in ribs at roof overhang where panel overlaps do not occur and where indicated on the drawings.
         3) Clean existing gutters of debris, seal seams, and install new downspouts and outlets in bottom of gutter.
         4) Fabricate and install ground-based exterior roof access ladder with protective bollards and landing at roof; install roof-to-roof access ladder with landings at screen wall of upper roof area.
         5) Install exhaust flue penetrations through metal panel roofing at all locations where existing exhaust flues penetrate exterior walls.
         6) Clean, detail, and install fluid-applied coating over the entire area of metal panel roofing.
         7) Repair sectional doors and replace exterior windows.
      b. West Cargo Center:
         1) Remove and replace secondary exterior Z-purlins supporting roof and screen wall at the gutter edges; utilization of the existing building frame for jacking and temporary support will be permitted.
         2) Clean existing gutters of debris, seal seams, and install new downspouts and outlets in bottom of gutter.
         3) Fabricate and install ground-based exterior roof access ladder with protective bollards and landing at roof; install roof-to-roof access ladder with landings at screen wall of upper roof area.
         4) Clean, detail, and install fluid-applied coating over the entire area of metal panel roofing.
         5) Repair sectional doors.

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.

C. The work will require the Contractor, his employees, and subcontractors to obtain and display security identification badges.

1.2 KNOWN SITE CONDITIONS AFFECTED BY REGULATORY AGENCIES

A. The following materials or conditions are known to exist on the construction site. The Contractor shall comply with federal, state, or local agencies' ordinances or regulations pertaining to these conditions:
   1. Paint containing lead, cadmium, hexavalent chromium, or other metals of toxic significance.
   2. Grease, oils, fuels, and other hydrocarbons.
   3. Polychlorinated biphenyls (PCBs).
   4. Chlorofluorocarbons (CFCs).
   5. Volatile organic compounds (VOCs).

1.3 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 his employees to these facts and shall assure that no operations occur that disturb the suspected hazardous or environmentally sensitive condition.

1.4 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.

1.5 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.

1.6 MECHANICAL CODE

A. Work shall comply with the International Mechanical Code and International Fuel Gas Code as amended by the Oregon Mechanical Specialty Code (OMSC) by the State of Oregon and as enforced by the City of Portland Bureau of Development Services.

1.7 ELECTRICAL CODE

A. Work shall comply with the National Electrical Code (NEC), as amended by the Oregon Electrical Specialty Code (OESC) by the State of Oregon and as enforced by the City of Portland Bureau of Development Services.

B. The Contractor shall be, and remain, in compliance with licensing requirements of the State of Oregon and the City of Portland including required individual state electrical licensing for personnel performing electrical work on this project.

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. Welding
   2. High-Strength Bolting
   3. Spray-Applied Fireproofing

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 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. The Port, airline, or tenant operations may require that certain of the Contractor's operations be scheduled around Port, airline, or tenant activities, and certain areas of the work may be required to be bypassed and accomplished when Port, airline, or tenant 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. 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 (such as foundations, electric wiring, access door locations, etc.) in ample time for their installation.

D. Consult with the trades doing the work of other divisions so that, whenever possible, motors, motor controls, pumps, valves, etc., shall be of the same manufacturer.

E. 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 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 the preconstruction meeting, 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. The contract schedule submittal shall be developed in Critical Path Method (CPM) format using Primavera Project Management (P6)®, Microsoft Project®, or pre-bid approved 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.
    q. All Port-required activities shall be shown as part of the critical path.
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 pre-bid approved 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 pre-bid approved 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, the Contractor shall 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 he 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 must 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 ABBREVIATIONS

A. DOC/DOCX – Microsoft Word file type extension

B. GST – General Submittal Transmittal form.

C. PDF – Portable Document Format

D. SFT – Secure File Transfer

E. XLS/XLSX – Microsoft Excel file type extension

1.3 PROCESS, CONTENT, AND FORMAT – ALL SUBMITTALS

A. Unless specified otherwise in the applicable technical sections, transmit submittals electronically to the Port as described in this section. The Contractor shall use Adobe Acrobat X Professional software, or pre-bid approved equal, as part of this process.

B. Accompany all submittals with the Port General Submittal Transmittal (GST) form. A copy of the form is attached to this section as a sample. An electronic PDF version of the GST form will be forwarded to the Contractor after contract execution.
   1. The GST form shall be filled out electronically and inserted as the first page of each electronic submittal package. The GST form shall not be printed or scanned, nor shall it be flattened, locked, or protected with security passwords or protections without prior approval.

C. The electronic submittal process utilizes a secure file transfer (SFT) site that allows users to transmit large electronic files that may exceed the limits of some e-mail systems. The Contractor shall use this system to send electronic submittals to the Port. The Contractor will receive an invitation to the Port SFT site (http://fta.portofportland.com) to set up an account with a user name (e-mail address) and password.
   1. Using the Port's SFT site, all electronic submittals shall be transmitted to the following Port email account: popcs@portofportland.com.

D. Accepted File Types:
   1. PDF: Each submittal in PDF format shall consist of one multipage file. The first page shall always be the Port GST form.

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. The Port GST form in PDF format shall also be included.
3. The use of any other file types requires the Port's approval prior to submission.

E. File Naming Conventions:
1. Transmit one submittal to the Port at a time.
2. Name the electronic submittal files in the following format, where "XX.XX" is the submittal number and "ext" is the file extension: Submittal XX.XX.ext. If the submittal consists of multiple files, add "Part X of X" to the end of the file name.
   a. Single File Example: Submittal number 8.1 consists of one file. It is a multipage PDF file consisting of the completed Port GST form and subsequent PDF cut sheets that describe the product characteristics. The electronic file shall be named as follows:
      1) Submittal 08.01.pdf
   b. Multiple File Example: Submittal number 2.3 consists of two files: the Port GST form in PDF format and a Microsoft Word document. The files shall be named as follows:
      1) Submittal 02.03 Part 1 of 2.pdf
      2) Submittal 02.03 Part 2 of 2.doc

F. Organize each submittal by specification section and paragraph number.

G. Include the following information with each submittal:
1. The Contractor's submittal identification number marked on each item.
2. Date and revision dates.
3. Port project title and number.
4. The names of: The Contractor, subcontractor, supplier, and manufacturer.
5. Identification of product or material, with the appropriate specification section and paragraph number marked on each item.
6. Relation to adjacent critical features of work or materials.
   a. 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.
7. Field dimensions, clearly identified as such.
8. Applicable standards.
9. Identification of deviations from contract documents. Products shall be accompanied by a substitution request form.
10. The Contractor's stamp.

H. Resubmission Requirements:
1. Revise initial submittals as directed by the Port and resubmit as specified for the initial submittal. Use the same submittal identification number, except add ".01" to each successive resubmittal (14.00, 14.01, 14.02, etc.). Mark each item with the Contractor's submittal identification number and the appropriate Port specification section and paragraph number.
2. Indicate on the submittals any changes which have been made to the initial submittal.

I. 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. Submit a completed electronic Port GST form, noting in the "CONTRACTOR/CONSULTANT/PORT NOTES" section that hard copies are being forwarded under separate cover.
   2. Submit one hard copy of the GST form and seven packages of sorted and collated documentation and samples.

1.4 MATERIAL SUPPLIERS/SUBCONTRACTORS LIST

A. Provide a complete list of material suppliers and subcontractors to the Port at the preconstruction conference.

1.5 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.

1.6 PRODUCT/MATERIAL DATA

A. Submit for Port review prior to commencement of on-site work all product/material data 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, or models.
   2. Show dimensions, weights, and clearances required.

3. Show performance data consisting of capabilities, RPM, KW, pressure drops, design and operating pressures, temperatures, performance curves, noise level curves, power characteristics and consumption; conforming as closely as possible to the test methods referenced in the drawings and specifications.
4. Show wiring or piping diagrams and controls.
5. Modify manufacturer's standard schematic drawings and diagrams to indicate which information is not applicable.
6. Supplement standard information to provide information specifically applicable to the work.

1.7 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.

1.8 OPERATION AND MAINTENANCE MANUALS

A. At substantial completion, submit three draft copies of final operation and maintenance manuals. Allow 15 days for the Port to review and return with comments. Within 30 days following substantial completion, revise and resubmit those items noted as deficient.

B. As a condition of final acceptance, submit seven complete sets of final operation and maintenance manuals.

C. Manuals shall be clearly organized and loose-leaf bound, complete with information needed or useful for the continued operation, maintenance, and repair of the system. If the Contractor's standard maintenance manuals and parts catalogs apply to more than one model or size of unit, cross out nonapplicable data.
   1. The binders shall be D-ring and maximum 3-inch.
   2. Do not overfill the binders.
   3. Organize with tabs to match specification section and section title. Organize in order of specification section number and paragraph number.
   4. Include an index at the beginning of each new section listing all the items included in that section.

D. Manuals shall include:
   1. A cover page containing the name and date of the project, the Contractor's company name, address, and telephone number, the names of the Contractor's project managers and foremen. Additionally, if applicable, list the company names, addresses, telephone numbers, and staff personnel of subcontractors utilized on the project.
   2. A detailed table of contents for all items included in each division and section.
   3. For each section include a separate tab with all applicable information in that section. Include for each of these items:
      a. The supplier's company name;
      b. The local representative's name and telephone number;
   4. A complete copy of as-constructed data, including the following:
      a. Copy of approved product and material data, including description of the equipment, products, quantities supplied, and physical locations;
      b. Operating data, operating instructions including sequence of operation and response to the total system;
      c. Maintenance data, installation, repair, overhaul, and maintenance instructions, including adjustments, tolerances, and replacement and repair procedures; recommended practices, logic diagrams, and troubleshooting procedures; and preventative maintenance procedures and schedules.
      d. Shop drawings, including illustrations and/or exploded views identifying each part and subassembly by name, applicable catalog or part number; schematics of electrical, electronic, and any other type of control equipment, and electronic circuit board diagrams, in a separate manual, for all printed circuit diagrams, including parts lists with commercial part numbers. Manufacturers' part numbers will not be acceptable. The Port acknowledges the proprietary nature of circuit diagrams. Subject to the requirements of evaluation of the manufacturer and public disclosure laws, the Port will endeavor to protect against unnecessary disclosure of information, drawings, or design details so designated.
      e. Test reports, certificates, warranties, calculations, valve tag directory, equipment nameplate directory, and other information which would be required by an owner to be able to operate and maintain that equipment.
      f. Recommended spare parts list noting the location of each item, and a cross-reference to local available sources.
      g. Software documentation, in a separate user's manual, with complete description of all functions, including sample written programs and reports.

E. Cross out non-applicable data from the Contractor's standard maintenance, operation, or software manuals or parts catalogs which include data for other models.

1.9 REDLINE (AS-CONSTRUCTED) DRAWINGS

A. At the start of construction, the Port will provide the Contractor with a full size 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. Depths of foundations below the first floor.
d. Locations and depths of underground utilities (if different by more than 1 inch in depth or more than 1 foot in location).
e. Changes to routing of piping and conduits (if different by more than 1 foot from where shown).
f. Changes to electrical circuitry.
g. Actual equipment locations (located to within 1 inch).
h. Routing and size of ductwork, piping, and conduit (located to within 1 inch).
i. Locations of concealed internal utilities (located to within 1 inch).
j. Details not on original drawings.

2. Completely and accurately redline contract drawings or shop drawings, whichever is most capable of showing actual physical conditions. Where shop drawings are redlined, show cross-reference on contract drawings location.
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, submit the final redline drawings in both electronic and hardcopy format for Port review and approval. Revise and resubmit any items noted as deficient.

1.10 APPRENTICE UTILIZATION PROGRAM

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

1.11 OTHER SUBMITTALS

A. Other submittals include but are not limited to:

Section	013200	1.2, 3.1, 3.2, 3.3, 3.5, 3.7
	013513	1.4, 1.5
	014500	1.2
	015000	1.4, 1.13
	015719	1.2, 1.4, 1.6, 1.7

017000	1.3
017419	1.3
017700	1.1, 1.4, 1.5
055000	1.3
074100	1.4
076200	1.4
077200	1.2
083613	1.2
085313	1.3
099100	1.3, 2.2
133419	1.4
230529	1.3
230545	1.3, 1.4
235523	1.2
260500	3.8

END OF SECTION 013300

GENERAL SUBMITTAL TRANSMITTAL FORM

Please fill in all information as completely as possible. One "submittal type" per form. Highlighted areas are information necessary for documents sent to the Technical Reference Center.

Submittal Type: ☑ One	**Submittal No.**	**Port Project Name**	**Port Business Unit:**	**Port EAN**
☐ **Material Description**				
☐ **Shop Drawing**				
☐ **O&M Manual**				
☐ **Specification**				
☐ **Calculations**				
☐ **Warranty**				
☐ **Other:**				

Submitted By (name of person)	**General Contractor**	Contractor Job No.

Port Drawing Reference		Router	Sub-Contractor
Drawing No.	**Sht. No.**		**Primary Consultant**

Port of Portland

Transmittal Routing ("From" > "To")	Copies	Attention (destination	Date Sent	Date Rec'd	Date Due
Contractor > Port Const.					
Port Const. > Consultant					
Consultant > Sub-Consultant					
Sub-Consultant > Consultant					
Consultant > Port Engineering					
Port Const. > Port Engineering					
Port Const. >					
Port Engineering > Port Const.					
Port Const. > Contractor					
Port Const. > TRC		**TRC Specialist**			

Specification Reference			**Action**			
Section No.	**Paragraph No.**	**Submittal Title or Description**	**A**	**B**	**C**	**D**

CONTRACTOR/CONSULTANT/PORT NOTES:

TRC USE ONLY	For Port Use
	☐
	☐
Date Rec'd At TRC:	☐
Index No:	☐
Document Quality:	
OK / Resubmit	☐
	☐

SUBJECT TO ALL CONTRACT REQUIREMENTS

A = PROCEED

B = CORRECT AS NOTED & PROCEED

C = REVISE AND RESUBMIT

D = FOR INFORMATION ONLY

SECTION 013513 - AIRPORT SECURITY, SAFETY, AND OPERATING REGULATIONS

PART 1 - GENERAL

1.1 AIRFIELD SECURITY

A. The Contractor shall maintain security against unauthorized access to the airfield area through openings in the building exterior, which are within the work area, into portions of the Sterile Area and/or Restricted Area.

B. Any modification to the airport security perimeter system shall require 45 days' advance notification and coordination with the Aviation Security Department.

C. Access to the work site located within the Restricted Area shall be through the project security gate as shown on the drawings. The Port will provide a security officer at this gate who will control access to the Restricted Area. Valid PDX security badges and appropriate vehicle markings will be verified at each checkpoint. Individual vehicles and/or contents may be subject to inspection.

D. All equipment and vehicles shall be positioned a minimum of 10 feet away from either side of the perimeter security fence.

1.2 REGULATIONS FOR CONTRACTORS

A. This section contains rules and regulations related to construction activities at Portland International Airport (PDX). To the extent that any rules and regulations contained in this section conflict with the rules and regulations now or hereafter adopted by the Port (PDX Rules), the PDX Rules shall control.

B. The regulations contained in this section and the PDX Rules are subject to change at any time without notice. Current PDX Rules can be found on the Port's public website at http://www.portofportland.com/Rules_Ord_Pol.aspx.

1.3 DEFINITIONS AND ABBREVIATIONS

A. Airside Operations Construction/Maintenance Coordinator: Airside Operations Supervisor who is responsible for coordinating all airfield construction/maintenance projects.

B. Airside Operations Supervisor (Airfield-1): Port representative who is responsible for managing the day-to-day operations on the airfield.

C. Air Operations Area (AOA): This area includes aircraft movement areas, aircraft parking areas, loading ramps, and safety areas for use by aircraft regulated under TSA regulations, and any adjacent areas (such as general aviation areas) that are not separated by adequate security systems, measures, or procedures. This area does not include the Secured Area, but is part of the Restricted Area (RA). The AOA is a Security Identification Display Area (SIDA).

D. Apron: All areas and facilities used for aircraft support and servicing operations. It includes the following subcomponents:
   1. Aircraft parking positions - used for parking aircraft to enplane and deplane passengers, load or unload cargo.
   2. Aircraft service areas - on or adjacent to an aircraft parking position. These areas are used by airline personnel/equipment for servicing aircraft and staging baggage, freight, and mail for loading and unloading of aircraft.
   3. Taxilane - reserved to provide taxiing aircraft with access to and from parking positions.
   4. Service/Fire lanes - identified routes on apron designated for aircraft ground service vehicles and fire equipment.

E. Airport Security Coordinator (ASC): The person appointed by the airport operator to serve as the primary and immediate contact for security-related activities and communications with TSA.

F. Airport Security Program (ASP): A PDX security program that describes security measures, policies, and procedures which are mandated and regulated by the TSA.

G. Authorized Signatory: Person(s) named by each Contractor employee who will sign for the company's PDX security badges and will validate that each applicant from their company and any subcontractors have a valid need for a PDX security badge and construction keys.

H. Criminal History Record Check (CHRC): A review of a fingerprint-based criminal history record to determine if a person has been convicted of a disqualifying crime as mandated in TSR §1542.209.

I. Central Utility Plant (CUP) environment: Areas restricted to public access within the fenced area surrounding the CUP or within the CUP itself.

J. Equipment: Every self-propelled vehicle not capable of being used on a street or roadway.

K. Ground control procedures: System of metering aircraft access between the parking and movement area that is controlled by the FAA Air Traffic Control Tower (ATC).

L. Loading bridge: A device that facilitates the movement of passengers to/from a terminal gate to/from a parked aircraft.

M. Movement area: The area of an airport open and used by aircraft for taxiing, takeoff, and landing. Aircraft or vehicle operations within this area require an air traffic control clearance.

N. Restricted Area (RA): All the areas within the perimeter fence, including the SA and AOA, are classified as Restricted Areas and access is limited to those personnel who possess and appropriately display PDX security badges issued in accordance with this ASP. The GA is the only non-SIDA portion of the RA.

O. Ramp: Paved areas adjacent to runways and taxiways where aircraft are positioned for servicing or parking.

P. Secured Area (SA): The area around the terminal where aircraft operators enplane and deplane passengers and sort and load baggage, and any adjacent areas not separated by adequate security measures. The SA is designated as a SIDA.

Q. Security gate: Any controlled, securable opening in the security fence.

R. SIDA: Security Identification Display Area.

S. Security Threat Assessment (STA): The TSA process of verifying that an individual is not a threat to civil aviation security by checking the individual against various U.S. Department of Homeland Security records.

T. Sterile Area: The area in the terminal beyond the security screening checkpoints providing access to aircraft boarding gates and to which access is controlled by the TSA through the screening of persons and property.

U. Terminal gate: An area where passengers enplane and deplane to/from an aircraft.

V. Transportation Security Administration (TSA): The U.S. federal agency under the Department of Homeland Security responsible for regulating aviation security standards.

W. Vehicle: Every licensed, self-propelled vehicle capable of being used on a street or roadway.

X. Work Area: Limits of work established by a perimeter boundary shown on the drawings or otherwise designated by the Port.

1.4 PERSONNEL SECURITY REGULATIONS

A. Access to Restricted Areas (Secured Area, AOA, CUP) and Sterile Areas:
   1. The Contractor shall obtain and thoroughly review all PDX security badging requirements and PDX Rules pertaining to badging and airport security before commencing any work under this contract. Copies of security and badging information, and PDX Rules are available from the Port upon request. The Contractor shall warrant and ensure that any person who receives a PDX security badge meets all of the requirements for having a badge.
   2. No personnel will be permitted within the airfield, CUP, Restricted Area, or Sterile Area environment without PDX security badges or authorized escorts. PDX security badges shall be obtained through the PDX Security Badging Office once all requirements have been met. Security training and fingerprint appointments shall be scheduled through the PDX Security Badging Office.
   3. PDX security badges will be issued at the sole discretion of the Port and only to personnel physically working in the Airfield, CUP, Restricted Area, or Sterile Area environments.
   4. All unbadged Contractor personnel, subcontractor personnel, material delivery personnel, or visitors with a legitimate business need shall be escorted by an individual who has been issued a valid PDX Secured Area badge in the Secured Area or a valid PDX AOA badge in the AOA locations. An individual with an appropriate and valid PDX security badge may escort no more than three unbadged personnel at any one time. Without exception, the PDX security badged individual must stay with the unbadged personnel at all times. An individual who has been disqualified through the CHRC or STA process will not be allowed access to the Secured Area, AOA, CUP, and Sterile Area; no exceptions will be made and escorting is not authorized.
   5. The Contractor shall ensure that his employees, agents, subcontractors, suppliers or other invitees obtain PDX security badges and wear the badges provided by the Port at all

times, or be escorted, when they are engaged in work at the airport. The PDX security badge shall be worn above the waist and in plain view of those interacting with the employee. The Contractor shall ensure that any PDX security badge provided by the Port is returned promptly to the PDX Security Badging Office when the person to whom the PDX security badge was provided leaves the Contractor's employment, no longer engages in work under this contract at the airport, or has an expired PDX security badge.

B. Additional Access Requirements for Sterile Areas:

1. In addition to requirements of Paragraph 1.4 A, above, access to Sterile Areas necessitates the following be met:
    a. Tools and other prohibited items may not be carried through any TSA-controlled security screening checkpoint into the Sterile Area. Arrangements must be made for delivery of tools into the Sterile Area from the Secured Area. Tools and other prohibited items carried or utilized in the Sterile Area shall be under the direct control of the Contractor at all times, and shall not be left unattended and unsecured in the Sterile Area. Failure to adhere to this requirement will prompt an investigation as a violation of the ASP and PDX Rules.
    b. No Contractor personnel may enter the Sterile Area in a manner that circumvents security screening at a TSA-controlled security screening checkpoint and board a plane as a passenger.

C. Airport Security Identification Badges:

1. All PDX security badge applicants will be required to complete a CHRC and STA prior to issuance of a PDX security badge. The background check information will be evaluated for disqualifying criminal convictions before a PDX security badge is issued. Applicants authorized to receive PDX security badges shall successfully complete PDX security badge and applicable construction and endorsement/icon training classes provided by the Port. The average background investigation process takes approximately 1 to 2 weeks. However, it may take 30 to 60 days to gain applicant approval in some situations.
2. There are four main types of PDX security badges and four endorsement/badge icons:
    a. Badges
        1) AOA Badge: This pink photo identification badge shall be worn by all Contractor personnel (including subcontractors) who are working in AOA areas of the airport and are not authorized to enter the Secured Area and Sterile Area.
        2) Secured Area Badge: This orange photo identification badge shall be worn by all Contractor personnel (including subcontractors) who enter the Secured Area.
        3) Sterile Area Badge: This purple photo identification badge shall be worn by all Contractor personnel (including subcontractors) who enter the Sterile Area without needing access to the AOA or Secured Area.
        4) General Aviation Badge: This yellow badge shall be worn by all Contractor personnel (including subcontractors) who are working in general aviation areas.
    b. Endorsements/badge icons
        1) All endorsements/icons will be issued at the sole discretion of the Port.
        2) Escort driver endorsement/icon: This icon will be issued to a limited number of designated Contractor personnel who will be trained to provide escort driver services. Prior to issuance, all designees shall successfully

complete an escort driver "hands-on" training class in addition to the security badge, construction, and non-movement driver training classes. This training will be provided by the Port.

3) Superintendent endorsement/icon: This icon will be issued to a limited number of the Contractor's and subcontractors' on-site supervisors. Prior to issuance, all designees shall successfully complete a superintendent driver "hands-on" training class in addition to the security badge, construction, and non-movement driver training classes. This training will be provided by the Port.

4) Flagger endorsement/icon: This icon will be issued to a limited number of designated Contractor personnel who will be trained to provide flagging services. Prior to issuance, all designees shall successfully complete a flagger "hands-on" training class in addition to the security badge and construction training classes. This training will be provided by the Port.

5) Driver endorsement/icon: This icon will be issued to a limited number of personnel who will be trained to drive vehicles on the Airfield. Prior to issuance, all designees shall successfully complete the security badge and non-movement driver training classes. In some situations, the construction training class may also be required. This training will be provided by the Port.

D. The Contractor shall submit to the Port the names of those Authorized Signatories who have the authority to sign for all Contractor and subcontractor personnel.

1. The Authorized Signatories will be required to obtain and maintain a PDX security badge:
2. In addition, the Authorized Signatories shall complete an Authorized Signatory training course and all training courses associated with applicable endorsement/icon training courses.

E. The Contractor's Authorized Signatories shall be responsible for the following:

1. Verify the accurate completion of the PDX security badge application form for all Contractor and subcontractor personnel scheduled to receive Secured Area access badges, AOA access badges, Sterile Area access badges, or General Aviation access badges.
2. Verify each applicant's identity and employment eligibility by requiring the presentation of specific pieces of identification as outlined below. Applicant may either present a document from List A or must present documents from both List B and List C. All applicants shall present original and unexpired documents. Acceptable forms of identification and eligibility shall consist of the following:
   a. List A (documents that establish both identity and employment eligibility):
      1) U.S. Passport or U.S. Passport Card.
      2) Permanent Resident Card or Alien Registration Receipt Card (Form I-551).
      3) Foreign passport that contains a temporary I-551 stamp or temporary I-551 printed notation on a machine-readable immigrant visa.
      4) Employment Authorization Document containing a photograph (Form I-766).
      5) In the case of a non-immigrant alien authorized to work for a specific employer incident to status, a foreign passport with Form I-94 or Form I-94A bearing the same name as the passport and containing an endorsement of the alien's non-immigrant status, as long as the period of endorsement has

not yet expired and the proposed employment is not in conflict with any restrictions or limitations identified on the form.

6) Passport from the Federated States of Micronesia (FSM) or the Republic of the Marshall Islands (RMI) with Form I-94 or Form I-94A indicating non-immigrant admission under the Compact of Free Association Between the United States and the FSM or RMI.

b. List B (documents that establish identity):

1) Driver's license or ID card issued by a state or outlying possession of the United States provided it contains a photograph or information such as name, date of birth, gender, height, eye color, and address.
2) ID card issued by federal, state, or local government agency or entity provided it contains a photograph or information such as name, date of birth, gender, height, eye color, and address.
3) School ID card with a photograph.
4) Voter's registration card.
5) U.S. military card or draft record.
6) Military dependent's ID card.
7) U.S. Coast Guard Merchant Mariner Card.
8) Native American tribal document.
9) Driver's license issued by a Canadian government authority.
10) For persons under age 18 who are unable to present a document listed above:
    a) School record or report card.
    b) Clinic, doctor, or hospital record.
    c) Daycare or nursery school record.

c. List C (documents that establish employment authorization):

1) Social Security Account Number card other than one that specifies on the face that the issuance of the card does not authorize employment in the United States.
2) Certification of Birth Abroad issued by the Department of State (Form FS-545).
3) Certification of Report of Birth issued by the Department of State (Form DS-1350).
4) Original or certified copy of a birth certificate issued by a state, county, municipal authority, or territory of the United States bearing an official seal.
5) Native American tribal document.
6) U.S. Citizen ID Card (Form I-197).
7) Identification Card for Use of Resident Citizen in the United States (Form I-179).
8) Employment authorization document issued by the Department of Homeland Security.

3. The following additional requirements apply for employees born outside the U.S.:
   a. If employees are not U.S. citizens, they must provide an Alien Registration card or an I-94 Arrival/Departure Form.
   b. If employees hold non-immigrant visas, they must present them.
   c. If employees are U.S. citizens born abroad, they must present either a U.S. Passport, a Certificate of Naturalization, or a Certification of Birth Abroad.
4. Ensure that each applicant for a PDX security badge completes and submits those forms required by the Port and TSA for an STA and CHRC. The forms shall be obtained prior

to the fingerprinting appointment so that they can be completed and submitted, with appropriate Authorized Signatory signature, at the time of fingerprinting.

Note: Knowingly or willfully making a false statement on the Application for Fingerprinting regarding prior convictions may be punishable by fine, imprisonment, or both under United States Code, Title 18, Section 1001.

a. If the criminal history record check does not disclose any of the following disqualifying convictions during the previous 10 years as specified in the most current version of TSR Part 1542.209, and if the STA passes, the individual will be issued a Secured Area, AOA, or Sterile Area access badge:
    1) Forgery of certificates, false marking of aircraft, and other aircraft registration violation.
    2) Interference with air navigation.
    3) Improper transportation of a hazardous material.
    4) Aircraft piracy.
    5) Interference with flight crew members or flight attendants.
    6) Commission of certain crimes aboard aircraft in flight.
    7) Carrying a weapon or explosive aboard aircraft.
    8) Conveying false information and threats.
    9) Aircraft piracy outside the special aircraft jurisdiction of the United States.
    10) Lighting violations involving transporting controlled substances.
    11) Unlawful entry into an aircraft or airport area that serves air carriers or foreign air carriers contrary to established security requirements.
    12) Destruction of an aircraft or aircraft facility.
    13) Murder.
    14) Assault with intent to murder.
    15) Espionage.
    16) Sedition.
    17) Kidnapping or hostage taking.
    18) Treason.
    19) Rape or aggravated sexual abuse.
    20) Unlawful possession, use, sale, distribution, or manufacture of an explosive or weapon.
    21) Extortion.
    22) Armed or felony unarmed robbery.
    23) Distribution of, or intent to distribute, a controlled substance.
    24) Felony arson.
    25) A felony involving a threat.
    26) A felony involving:
        a) Willful destruction of property;
        b) Importation or manufacture of a controlled substance;
        c) Burglary;
        d) Theft;
        e) Dishonesty, fraud, or misrepresentation;
        f) Possession or distribution of stolen property;
        g) Aggravated assault;
        h) Bribery; or
        i) Illegal possession of a controlled substance punishable by a maximum term of imprisonment of more than 1 year.
    27) Violence at international airports.
    28) Conspiracy or attempt to commit any of the criminal acts listed here.

b. If an individual's CHRC discloses a conviction for any of the above disqualifying crimes within the previous 10 years, the Port security compliance specialist or designee will so advise the individual and/or the Contractor's Authorized Signatory. The individual will be afforded an opportunity to correct any information that the individual believes to be inaccurate. If the individual is successful in correcting this information to the satisfaction of the Port security compliance specialist, the application may be accepted.

5. Set appointment times with the PDX Security Badging Office to fingerprint applicants. Currently, fingerprinting is done Monday through Friday between the hours of 8 a.m. and noon, and between 2 p.m. and 4 p.m. Allow approximately 1/2 hour to fingerprint.
6. After the CHRC and the STA have been approved, the Contractor may then schedule appropriate training class(s).

F. At the pre-construction meeting, the Contractor shall submit an estimated number of Secured Area, AOA, Sterile Area, or General Aviation badges necessary to adequately perform the work. The Port will pay all fingerprinting, background, and badging costs for the estimated number of each type of PDX security badge. If the Contractor exceeds the estimated number by more than 25 percent, he will be charged for each additional application requested. The cost to fingerprint and check criminal history is $49 per individual for Secured Area and AOA badges, and $39 per individual for Sterile Area and General Aviation access badges. The cost for each Secured Area, Sterile Area, AOA, or General Aviation badge application denied will be deducted from any payments due.

G. Report lost PDX security badges to the PDX Security Badging Office and/or Port police immediately. The charge for replacement of a lost PDX security badge is $50 for the first occurrence, $75 for the second and $100 for the third. Any person who loses three PDX security badges will not be eligible to obtain additional badges.

H. Prior to final acceptance of the work, the Contractor shall return all PDX security badges to the PDX Security Badging Office and obtain written acknowledgement from the PDX Security Badging Office of their return. Submit a copy of the written acknowledgement to the Port construction contract manager. At final acceptance of the work, $500 will be deducted from the final payment for each PDX security badge not returned to the PDX Security Badging Office.

I. Employees of Contractors who are continuously working on multiple airport projects without a break in service may keep their PDX security badges from project to project. PDX security badges are deactivated on the expiration date of each project. Personnel changing projects will not be required to repeat the Port training class if they have received security badge training, and they have not been without a PDX security badge for more than 30 days, unless a change in one or more endorsement/icon is requested. Security and endorsement/icon training is valid for a maximum of 2 years. Contact the PDX Security Badging Office for additional guidance.

J. If the Contractor fails to comply with any PDX security badge regulations described herein, the Port may stop the work until compliance is attained. The Contractor will also be subject to any fines levied against the Port, as described in Article 1.9, Remedies of the Port Upon Violation of Regulations Referenced or Contained in this section, as a result of his failure to comply.

1.5 CONSTRUCTION KEYS

A. Non-Security Keys
   1. Non-security keys unlock doors or gates that do not provide direct access to any part of the Restricted Area, or any area with critical infrastructure components, as determined by the Port.
   2. To receive a non-security key, the Contractor shall follow the same process as for security keys.

B. Security Keys
   1. Security keys unlock doors or gates providing direct access to any part of the Restricted Area or any area with critical infrastructure components, as determined by the Port.
   2. Security keys providing direct access to any part of the Restricted Area will be issued only to those persons in possession of valid PDX security badges which authorize unescorted access to that area.

C. Application for Construction Keys
   1. At the pre-construction meeting, the Contractor shall submit the estimated number of keys necessary to adequately perform the work.
   2. Security keys identifiable by the Port logo are not transferable.
   3. The Contractor or his Authorized Signatories shall complete application forms for all Contractor and subcontractor personnel scheduled to receive keys.
   4. Allow a minimum of 5 days to process key applications.
   5. Report lost keys to the PDX Security Badging Office immediately. The charge for replacement of a lost security key is $50 for the first occurrence, $50 for the second and $50 for the third. Any person who loses three keys will not be eligible to obtain additional keys.
   6. When keys are no longer needed for access to a Restricted Area or area with critical infrastructure components, the Contractor shall return it to the PDX Security Badging Office.
   7. At final acceptance of the work, $500 will be deducted from the final payment for each key not returned to the Port's badging office.

1.6 TRAINING INFORMATION

A. As part of the requirements to obtain a PDX security badge, all Contractor personnel who will be working within the Restricted Area shall complete security badge training and, if applicable, endorsement/icon training classes with additional "hands-on" training conducted by the Port. Upon successful completion of training, the Port may issue an airfield driving permit for personnel required to operate vehicles within the Restricted Area such as superintendents, supervisors, foreman, and escorts. In accordance with FAA policy, driving permits will be kept to a minimum and only issued on an as-required basis, as determined by the Port.

B. The Contractor shall contact the PDX Security Badging Office by calling 503-460-4500 to schedule training classes for all Contractor's and subcontractors' personnel. A limited number of people can be trained at one time. Training classes are available Monday through Friday at varying times. Personnel approved to receive an escort, flagger, or superintendent endorsement/icon shall successfully complete additional "hands-on" training with Airside Operations staff before the appropriate icons are added to the PDX security badge.

C. The Contractor shall provide as much notice as possible, a minimum of 2 business days, to schedule training class requests for large PDX security badge groups.

D. Classes will not be scheduled until the CHRC and STA have been completed and approved.

E. The approximate duration of the training classes are as follows:

1.	Security badge training class (no endorsements/icons)	1 hour
2.	Security badge, Construction and Non-Movement driver training	3 hours
3.	Escort/Superintendent/Flagger (hands-on training)	1 hour

1.7 DRIVING REGULATIONS

A. The purpose of these regulations is to maintain the safety of vehicle operations in the Restricted Area.

B. Enforcement of these regulations will be by Port police and Port Airside Operations.

C. Violations of the regulations may be cause for the project to be stopped and project safety procedures evaluated. The Port will decide if and when work will continue.

D. The driving regulations are as follows:

1. Yield the right-of-way to moving aircraft, whether under tow or their own power, and pedestrians.
2. Within the Restricted Area, equipment, vehicle, and personnel travel outside the work area is restricted to the route(s) shown on the drawings.
3. Obey stop signs and markings.
4. Do not drive under loading bridge or between an aircraft and a terminal gate.
5. Under no circumstances may a vehicle drive between an aircraft and a terminal gate during ramp deplaning or enplaning of passengers.
6. Yield right-of-way to emergency vehicles displaying rotating beacons (other than yellow) and/or using sirens and other audible emergency signals.
7. Observe the posted speed limits.
8. Regardless of a posted speed limit, a lower speed may be required in order to account for congestion, reduced visibility, slippery surfaces, or other hazardous condition. No vehicle shall be driven in a manner that endangers persons or property.
9. The speed limit of off-ramp service roads (perimeter road) is 35 MPH or as posted.
10. Non-motorized equipment shall have reflective devices displayed on the front, back, and sides.
11. Operators shall have a current and valid state driver’s license on their person.
12. Do not leave the engine running on an unattended vehicle.
13. Park unattended vehicles clear of service and perimeter roads.
14. Loads being carried shall be contained by sufficient means to assure no loss of any portion of the load.

E. Vehicles within the Restricted Area shall display professionally manufactured company identification markings on both sides of the vehicle. In accordance with FAA AC 150/5210-20, decals, corporate signs, or company logos shall be at least 12 inches in diameter/square. Lettering shall be at least 2 inches in height with contrasting background color. Vehicles shall also be equipped with headlights, taillights, and flashers that shall be used between sunset and sunrise, or when visibility is low.

F. Vehicles which operate unescorted within the Restricted Area but outside the work area shall be equipped with an omni-directional amber flashing light mounted above the cab, which can be seen from a distance of 300 feet, and which shall be used whenever the vehicles is within the Restricted Area. Such vehicles shall be operated by personnel possessing authorized PDX security badges and Port driving permits.

G. When outside the work area, all Contractor personnel, vehicle, and equipment movement within the airside security fence shall be under control of the Contractor's personnel authorized by the Port to perform escort driver responsibilities with the Contractor's approved escort vehicle(s).

1. In addition to being equipped with the amber omni-directional flashing light and company identification markings described in Paragraphs E and F above, the Contractor's escort vehicle(s) shall have signs mounted on the front and back. Signs shall consist of a black background and yellow lettering containing the Contractor's name and the words, "ESCORT ONLY." Signs shall be readable from a distance of 300 feet. Escort vehicle(s) shall have an FAA orange and white checked flag, 3 feet by 3 feet minimum, attached to a pole mounted on the rear bumper, and visible from 300 feet at all angles.
2. Prior to assuming escort driver responsibilities, the escort vehicle driver shall possess an authorized PDX security badge with escort driver endorsement/icon.
3. The escort vehicle driver shall serve as liaison and shall be responsible for transporting all workers to and from the work area.
4. Personnel and vehicles authorized to be in the Restricted Area shall remain with the escort vehicle(s) while traveling to and from the work area.
5. Vehicles may be escorted in convoy formation. Convoy vehicles shall travel in close formation, and the escort vehicle driver shall control speed to maintain safety. Convoys shall normally consist of no more than three vehicles or two trucks and trailers plus the escort vehicle, unless otherwise approved by the Port.
6. All of the Contractor's activities within aircraft movement areas shall have an additional escort provided by Port personnel.

1.8 OTHER SECURITY AND SAFETY REGULATIONS

A. No smoking will be allowed within the Restricted Area except as designated by the Port.

B. Adequate hearing protection (earplugs or earmuffs) shall be furnished by the Contractor for personnel in AOA's to eliminate the chance of ear damage.

C. While driving or working in the Restricted Area, there shall be no devices in or on ears other than those used to protect hearing or communicate company business.

D. Use a guide person when it is necessary to back vehicles out of work areas within the Restricted Area.

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

F. Construction equipment that extends 15 feet or more above ground level shall be approved by the Port prior to being moved onto worksite. Equipment that may be lowered readily shall be lowered at night, during reduced daytime visibility, and when not in use.

G. If directed by the Port, construction equipment that cannot be lowered below the 15-foot height limitation shall be lighted at night and during periods of reduced daytime visibility. Light shall

be mounted on highest point of equipment; shall be omni-directional; and shall consist of, as a minimum, one 100-watt bulb enclosed within an aviation red lens. Also, for daytime operations, mount an FAA-approved three-foot-square orange and white checkered flag at the high point.

H. Place barricades or stakes around perimeters of work areas as shown on the drawings. Work area limits shall be staked with 3-foot stakes at 50-foot intervals in areas of dirt or grass. Barricades or cones used to delineate work area limits on paved surfaces shall be spaced a maximum of 20 feet apart, or as specifically described for each work area. Firmly anchor or weight barricades as required. Additional barricades shall be kept in the staging area to be placed around the project area as directed by the Port.

I. All radio communication with FAA ground control will be coordinated through Port Airside Operations and performed by Port personnel only.

J. Ensure that the Restricted Area is kept continuously free of construction debris, equipment, and/or materials that might endanger or be ingested by aircraft.

K. For emergency purposes, all escort vehicles shall be equipped with radio, telephone, or similar devices for contact by Port security or operations personnel. In the event of an emergency, be prepared to move workers, vehicles, and equipment immediately at the direction of the Port.

L. Report emergencies to the Port and to the airport communications center (503-460-4000).

M. When cranes are used, the following requirements shall be met:
   1. An FAA-approved, 3-foot orange and white checkered flag and a solid red light shall be mounted at the highest point on the crane.
   2. During daylight hours with severe visibility problems or heavy fog, cranes shall not operate.
   3. The Port will determine when visibility problems exist and will coordinate and designate requirements for position and location of flag and light.

1.9 REMEDIES OF THE PORT UPON VIOLATION OF REGULATIONS REFERENCED OR CONTAINED IN THIS SECTION

A. In addition to any other rights or remedies that the Port may have in the event that the Contractor, subcontractor, anyone directly or indirectly employed by any of them, and anyone for whose acts any of them may be liable fails to comply with the regulations referenced or contained in this section, the Port shall have the right to:
   1. Revoke the PDX security badge, superintendent endorsement/icon, escort driver endorsement/icon, flagger endorsement/icon, or driving permission of the offending individual and/or the Contractor permanently or for a prescribed period of time.
   2. Suspend the work or any portion thereof and continue the suspension until completion of any investigation or evaluation by the Port and full compliance with any corrective measures which the Port may reasonably require.
   3. Require the Contractor to provide to the Port a written plan, satisfactory to the Port, to demonstrate the Contractor's ability to prevent future violations.

B. The Contractor shall be fully liable to the Port for any costs or damages incurred by the Port as a result of any breach of security or violation of security regulations by the Contractor. The

Contractor shall also be liable to reimburse the Port for any fines, penalties, assessments, judgments or other costs imposed upon the Port as a result of the Contractor's breach of security or violation of security regulations, as described herein. As used herein, reference to the Contractor shall include all of his employees, agents, subcontractors, suppliers, or other invitees.

C. The Contractor shall defend, indemnify, and hold harmless the Port against any and all claims of any nature made against the Port by any party resulting, in whole or in part, from the Contractor's breach of security or security violations. Defense shall be provided by legal counsel acceptable to the Port. As used herein, reference to the Contractor shall include all of his employees, agents, subcontractors, suppliers, or other invitees.

END OF SECTION 013513

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, or other analyses deemed necessary by the Port.

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

F. 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.

G. 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.

H. 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).

I. 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 D1.1-10, Clause 6.

C. All fabrication/erection welds will be inspected 100 percent visually and all "tension complete penetration" welds will be 100 percent nondestructively tested by the designated welding inspector(s) unless otherwise approved by the Port. All "compression complete penetration" welds will be 25 percent nondestructively tested. The inspection/acceptance criteria of all welds will be AWS D1.1-10, Clause 6.

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

E. 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.

F. 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.

G. All welders, welding operators, and tackers shall be specifically tested for this project and 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. Testing shall be within one month prior to performing any work on this project. The testing and certification shall be as specified in AWS D1.1-10. 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. Provide and maintain sanitary facilities which meet the requirements of Oregon Revised Statutes (ORS) 654.150 and other applicable state and local health regulations. Bear the costs that may be incurred in complying with ORS 654.150 and the rules adopted pursuant thereto.

1.3 FIRE PROTECTION

A. Provide adequate fire fighting 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.

1.4 WATER VALVES

A. Existing domestic water and fire protection services shall be maintained operational at all times unless specified, scheduled, and/or approved otherwise.

B. All requests for scheduling water valve closures of any type shall be submitted 3 business days in advance.
   1. Requests shall include a proposed shutdown plan indicating which valves will be closed, how long each valve will be closed, and the purpose of the closure.

C. Broken water lines or other water emergencies shall be reported to the PDX maintenance trouble line at 503-460-4683 and to the Port inspector.

1.5 DUST CONTROL

A. If work includes general demolition or other activities that will create dust or blowing soil, review the work plan with the Port prior to starting the work. The work plan shall include all methods required to retain or control dust and soil so that they do not leave the immediate work site, present health hazards, or enter any public areas.

B. 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. Covering excavated, graded, disturbed areas, or stockpiles with tarps or sheeting until removed from the site or finished in accordance with the contract documents.
   2. Cleaning, sweeping, or vacuuming areas to remove the dust source.
   3. Removing or relocating dust-creating materials or activities to other areas that will eliminate the dust problem.
   4. 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.

C. 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.

1.6 NOISE CONTROL

A. Comply with local noise control regulations.

1.7 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.

1.8 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 a river, stream, wetland, or other waterway or waterfront is not permitted.

1.9 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.

1.10 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, 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.

1.11 STAGING, PARKING, AND WORK AREA

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

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

C. Only marked Contractor-owned or operated vehicles required for proper execution of the work will be allowed in the work area. No private passenger vehicles will be admitted.

1.12 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.

1.13 CRANE LIFTS

A. Coordinate all lift activities with the Port.

B. Submit a complete lift plan for review by the Port. The lift plan shall be prepared by a qualified person, as defined by OSHA, and shall include, but not be limited to, the following information:

1. A brief narrative describing the reason for the lift, a description of the lift, the lift procedure, and any safety concerns. Include date and time of lift, anticipated weather conditions and wind speeds, and the load weights. Calculated load weights may be used in lieu of measured load weights only when the latter are unavailable.
2. A scaled plan view of the lift site including:
    a. Work area, including position and configuration of the crane, and any set-up, support, and/or haul vehicles. Include any buildings or other obstructions that may interfere with the lift.
    b. Initial lifting position and final placement of the load including load radius.
    c. Safety zones to be established and demarcated around the crane to deter entry into the work area.
    d. Safety zones to be established, demarcated, and controlled by qualified Contractor personnel inside buildings, if applicable, to identify the swing of the load with a buffer.
    e. Utilities above and below ground and associated structures located within the work area.
3. A scaled elevation view of the lift site including:
    a. Crane location relative to the final placement site.
    b. Buildings with heights clearly marked.
    c. Boom height and lifting radius.
4. Specification for the crane to be used in the lift including make, model, dimensions, weights, working range diagram, and lift capacity chart. Include a copy of the crane's current certification.
5. A lift analysis including:

a. Tabulation of the gross load weight including the weight of all blocks and rigging tackle.
b. Rigging attachment points and special rigging requirements. Include a rigging diagram showing the configuration of all rigging to be used in the lift.
c. Gross rated capacity of the crane in the configuration specified.
d. Calculation of the percentage of the crane's rated capacity at which the lift will be made.
e. Crane-imposed loads.
    1) Axle loads of crane in transit configuration.
    2) Outrigger loads at load radius in the configuration that produces the greatest load effect on any one outrigger.
    3) If required by the Port, provide calculations signed and stamped by a structural engineer licensed in the State of Oregon showing these loads do not exceed Port design criteria of lift site and access route.

6. A list of all personnel involved and a copy of their National Commission for the Certification of Crane Operators (NCCCO) certifications, if applicable. Designate one qualified person to supervise and manage all lift activities.
7. A communications plan detailing methods of communication to be used with personnel operating the crane. Provide radio communications for all nighttime lifts and any time Contractor personnel are not in visual contact with the crane operator. Provide make, model, and operating frequency of radios used for approval (by FAA if within airport transition zones). Designate one person to handle all communications with the crane operator.
8. A list of all Port, tenant, or other activities affected by the lift activities and how each effect will be remedied.

C. Upon request, the Port will provide existing drawings of the work area and/or design criteria for work area and access route.

1.14 EXTERIOR SITE PROTECTION

A. Take extreme care to ensure no work-related debris or other loose items are allowed to be blown by wind or jet engine blast. The Contractor shall be responsible for any resulting damage to jet engines and/or other property arising from failure to secure and/or protect debris, tools, supplies, or other loose items.

1.15 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.

1.16 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. 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.

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

1.17 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.

1.18 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.
   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 Material Safety Data Sheets (MSDS) 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 www.portofportland.com 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.

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. Before ordering material or doing work, verify measurements of the building and be responsible for the correctness of same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the measurements indicated on the drawings; submit any difference which may be found to the Port for consideration before proceeding with the work.

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 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. Metals (ferrous and non-ferrous).
   2. Wood.
   3. Corrugated cardboard.
   4. Plastics.

1.3 SUBMITTALS

A. Initial Pre-Construction Estimate: Before site work begins, submit a completed site waste recycling form for work performed on this project. The initial form submitted shall identify the types of construction or demolition materials that are expected to be recycled over the duration of the work.

B. Monthly Reports: Submit updated site waste recycling forms on a monthly basis. The updates shall include the actual amounts of construction or demolition materials recycled during the previous 30-day period.
   1. Report quantities of materials recycled or salvaged in tons, based on weight slips, bills of lading, etc. Estimated weights shall be calculated to the nearest 0.5 ton.

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 during the duration of the project. Attach the following information to the form:
   1. Summary statement identifying and explaining any discrepancies between the amounts originally estimated and the actual amounts recycled.
   2. Copies of receipts, weight slips, bills of lading, etc. for recycled or reused materials.

1.4 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.

1.5 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 *

MATERIAL 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 Coordinator Certifying Accuracy of this Report | Title | Date

_____ _____
Print Name | Contact Telephone Number

See reverse for instructions and additional information.

INSTRUCTIONS FOR COMPLETING SITE WASTE RECYCLING FORM

This form is to be used multiple times throughout the project as shown in the examples below.

MATERIAL SUMMARY [X] 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		
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				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.

MATERIAL SUMMARY [X] Monthly Report (from: 4/1 to 4/30 , 20 05)

RECYCLED MATERIAL	Not generated at this site	Collected for offsite recycling (tons)	Collected for salvage/ reuse (tons)	Collected for disposal (tons)
Concrete		35		
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				X

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.

MATERIAL SUMMARY [X] 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		220		
Asphalt	X			
Metals (ferrous)	X			
Metals (non-ferrous)	X			
Land-clearing debris		65		
Wood			4.5	
Corrugated cardboard	X			
Plastics		0.5		
Electronics and electrical components	X			
Other				6.5

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 throughout the entire project. 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 you report.

- Forms shall be filled out completely and legibly. All amounts shall be reported in tons.

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 AS-CONSTRUCTED 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 OPERATION AND MAINTENANCE MANUALS

A. See Section 013300, Submittal Procedures, for requirements.

1.3 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.

1.4 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.

1.5 RETURN OF SECURITY IDENTIFICATION BADGES

A. Prior to final acceptance of the work, return all Port security identification badges to the Port badging office and obtain a receipt for their return. Submit a copy of the receipt to the Port's Construction Contract Manager.

END OF SECTION 017700

SECTION 055000 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes items made from iron and steel shapes, plates, bars, strips, tubes, pipes, and castings which are not a part of structural steel or other metal systems specified elsewhere.

1.2 REFERENCED STANDARDS

A. AISC: American Institute of Steel Construction

B. AISI: American Iron and Steel Institute

C. ANSI: American National Standards Institute
   1. ANSI A14.3: Ladders-Fixed - Safety Requirements
   2. ANSI A1264.1: Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace Floor, Wall and Roof Openings; Stairs and Guardrails Systems
   3. ANSI A202.1: Metal Bar Grating

D. ASTM: American Society for Testing and Materials (www.astm.org)
   1. ASTM A36: Carbon Structural Steel
   2. ASTM A123: Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   3. ASTM A153: Zinc Coating (Hot-Dip) on Iron and Steel Hardware
   4. ASTM A1011: Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
   5. ASTM F2329: Zinc Coating, Hot Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners

E. AWS: American Welding Society

F. NAAMM: National Association of Architectural Metal Manufacturers

G. OR-OSHA: Oregon Occupational Safety and Health Administration

1.3 SUBMITTALS

A. Submit the following:
   1. Product Data: Submit manufacturer’s specifications, anchor details, and installation instructions for products to be used in the fabrication of metalwork, including paint products and grout.
   2. Shop drawings: Show fabrication and erection of metal fabrications. Include drawings, elevations, and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation under other sections.
   3. Submit sample corners of handrails and railings as requested.

B. Where design of members and connections is specified as part of the work of this section, submit structural analysis showing loadings and stresses, stamped and signed by a structural engineer registered in Oregon with shop drawings showing these items, similarly stamped and signed.

C. Welder qualification records, for shop welders, field welders, welding operators, and tackers shall be submitted to the Port directly from the Port-approved testing laboratory.

D. Submit written procedures for all welded joints to the Port for review and approval. Procedures shall be prepared in a manner so that field personnel can understand and use them without referencing the applicable codes. Welding procedures may be AWS prequalified as listed in AWS D1.1-2010, or they shall be qualified in accordance with AWS by the testing laboratory.

E. Welder certification documentation, as required by the City of Portland Bureau of Development Services, to the Port for all welding to be done within the City of Portland.

F. For site welding work, submit a detailed plan of safety procedures that includes fume control and shielding.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Comply with the provisions of the following codes, standards and specifications, except where more stringent requirements are shown or specified:
   1. AISC, "Specifications for Structural Steel Buildings," including the "Commentary on the AISC Specifications."
   2. AISI, "Specification for the Design of Cold-Formed Steel Structural Members."
   3. ANSI, "Standard Specification for Open Web Steel Joists," including the "Code of Standard Practice for Steel Joists and Joist Girders."
   4. AWS, "Structural Welding Code – Steel."

B. Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting wherever taking field measurements before fabrication might delay work.

C. Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of metalwork. Coordinate delivery with other work to avoid delay.

D. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

PART 2 - PRODUCTS

2.1 MATERIALS AND COMPONENTS

A. For fabrication of metalwork which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names, and roughness.

B. Fabricate metal fabrications from ASTM A36 Structural Steel, or as recommended by fabricator for the specific application; except where material is specifically identified.

C. Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners of the type, grade, and class required.

D. Metal Primer Paint:
   1. Zinc-coated steel:
      a. Acceptable Manufacturers and Products: Amchem Galv-A-Prep, Tnemec Galv-Gard #22; Rustoleum System, or equal.
   2. Black Steel:
      a. Acceptable Manufacturers and Products: Amchem Metal-Prep, Tnemec #37 Chem Prime; Rustoleum System, or equal.
   3. Verify compatibility with the required finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified elsewhere.

2.2 FABRICATION, GENERAL

A. Workmanship:
   1. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in finished product. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components of work.
   2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise shown. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

B. Weld corners and seams continuously, complying with AWS recommendations. Grind exposed welds smooth and flush, to match and blend with adjoining surfaces.

C. Form exposed connection with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, socket type flathead (countersunk) screws or bolts. Provide sufficient backing at screw locations to cover at least three threads.

D. Provide for anchorage of type suitable for use with supporting structure. Fabricate and space anchoring devices as shown and as required to provide adequate support for intended use.

E. Cut, reinforce, drill, and tap metal fabrications as required to receive finish hardware and similar items.

F. Galvanizing: Provide a zinc coating for those items shown or specified to be galvanized, as follows:
   1. ASTM A123 for galvanizing iron and steel products.
   2. ASTM A153 for galvanizing iron and steel hardware.
   3. ASTM F2329 for galvanizing fasteners.

2.3 METAL FABRICATIONS

A. Rough Hardware:
   1. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other steel and iron shapes as required.
   2. Manufacture or fabricate items of sizes, shapes, and dimensions required.

B. Steel Grating:
   1. Use materials of the size and thickness shown, or if not shown, of the size recommended by NAAMM tables for 100 pounds per square foot live load with 1/2 inch maximum deflection. Work to the dimensions shown using proven details of fabrication and support.
   2. Metal Bar Grating: Comply with ANSI/NAAMM A202.1 "Metal Bar Grating Manual" except where more stringent requirements are specified.
   3. Steel Gratings: "Welded" steel bar type, with plain surface. Hot-dip galvanize after fabrication.
   4. Notching of bearing bars at supports to maintain elevations will not be permitted.
   5. Cut, drill and fit as required for installation. Set grating accurately in location, alignment and elevation, plumb, level, true and free of rack.

C. Railings and Handrails:
   1. Provide steel pipe railings, consisting of top rail, intermediate rails, and posts, and handrails at walls.
   2. Provide railings and handrails designed to support minimum live loads required by applicable codes and the OSHA requirement of at least 200 pounds applied in any direction at any point.
   3. Join posts and rails by welded joints made by fitting post to top rail and intermediate rail to post, groove welding joints, and grinding smooth. Butt railing splices and reinforce by a tight fitting interior sleeve not less than 6 inches long.
   4. Bend railings at corners; uniformly form in jigs, with cylindrical cross-section of pipe maintained throughout the entire bend.

D. Ladders:
   1. Fabricate ladders for the locations shown, with dimensions, spacings, details, and anchorages as required. Comply with the requirements of ANSI A14.3, except as otherwise noted.
      a. Provide 3/4-inch-diameter solid structural steel bar rungs, uniformly spaced not over 12 inches o.c.

E. Miscellaneous Framing and Supports:
   1. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work. Galvanize items at exterior and in exterior walls.
   2. Fabricate miscellaneous units to sizes, shapes, and profiles shown or, if not shown, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware and similar items.

F. Provide other miscellaneous steel items. Work of this section is not limited to the items listed above.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine areas and conditions under which metal fabrications are to be installed. Correct conditions which are detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

3.2 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction including threaded fasteners for concrete inserts, toggle bolts, through-bolts, and other connectors as required.

B. Cutting, Fitting and Placement:
   1. Perform cutting, drilling, and fitting required for installation of metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels with lines visually parallel. Provide temporary bracing or anchors in framework for items which are to be built into concrete or masonry of similar construction.
   2. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop-welded because of shipping size limitations. Grind joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

C. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.
   1. Fume Control: Provide welding fume control to protect personnel and the public from exposure to heavy metals.
   2. Shielding: Provide shielding for arc welding operations to protect personnel and the public that may have visual or other access during the work.

D. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 1.0-mils.

END OF SECTION 055000

SECTION 074100- METAL PANEL ROOF REPAIRS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section includes sheet metal repairs to existing sheet metal roof system, including:
   1. Fluid applied elastomeric coating system for the repair of roof penetrations, gutter seams, flashing seams, and panel seams on sheet metal roof systems.
   2. Selective replacement of structural standing seam sheet metal roof panels.
   3. Repair of existing sheet metal flashings.
   4. Repair of existing sheet metal gutter systems.

1.2 DEFINITIONS

A. Metal Roof Panel Assembly: Metal roof panels, attachment system components, miscellaneous metal framing, thermal insulation, and accessories necessary for a complete weathertight roofing system.

B. National Association of Architectural Metal Manufacturers (NAAMM) - Metal Finishes Handbook; Metal Finishes Manual for Architectural and Metal Products.

C. National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition.

D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) - Architectural Sheet Metal Manual, Sixth Edition.

E. ASTM A 653 (formerly A 525) - Steel Sheet, Zinc-coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.

1.3 PERFORMANCE REQUIREMENTS

A. General: Installed elastomeric systems shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacturer, fabrication, installation, or other defects in construction. Completed coating system shall not crack, craze, split, blister, or delaminate, and shall remain watertight.

1.4 SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Show extent of coating system. Include details for treating substrate joints, flashings, roof penetrations, and other termination conditions.

C. Material Test Reports: For coating system.

D. Material Certificates: For coating system, signed by manufacturers.

E. Maintenance Data: For coating system to include in maintenance manuals. Identify substrates of coating system applied. Include recommendations for periodic inspections, cleaning, care, maintenance, and repair of coating system.

F. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
   1. Metal Roof Panels: 12 inches long by actual panel width. Include fasteners, clips, battens, closures, and other metal roof panel accessories.
   2. Trim and Closures: 12 inches long. Include fasteners and other exposed accessories.
   3. Accessories: 12-inch- long Samples for each type of accessory.

G. Warranty: Special warranty specified in this Section.

1.5 PRECONSTRUCTION TESTING

A. Prior to application of coating system field testing of coating system adhesion shall be performed in accordance with ASTM D3359 – Standard Test Method for Measuring Adhesion by Tape Test.
   1. Test method A shall be utilized and sufficient cure time of coating system shall be allowed prior to testing.
   2. Test results will be evaluated on adhesive / cohesive failure.
      a. Adhesive Failure: Fail.
      b. Cohesive Failure: Pass.
   3. Testing shall yield passing results in all conditions and any additional efforts required for passing results will need to be replicated and employed during system installation.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Manufacturer's authorized representative who is trained and approved for installation of elastomeric coating systems required for this Project.
   2. Company specializing in sheet metal flashing work and installation of coating systems with five (5) years minimum experience.

B. Manufacturer Qualifications: A qualified manufacturer that has UL listing, and FMG approval for sheet metal coating systems identical to that used for this project.

C. Source Limitations:
   1. Obtain coating system from a single manufacturer.
   2. Obtain primary elastomeric coating materials, including primers, from coating system manufacturer. Obtain secondary materials including joint sealants, and substrate repair materials of type and from source recommended in writing by primary material manufacturer.

D. Pre-construction Conference: Conduct conference at Project site. Review methods and procedures related to sheet metal roof repairs including, but not limited to, the following:
   1. Meet with Port, steel building Installer, sheet metal coating system manufacturer's representative, and installers whose work interfaces with or affects sheet metal roof repairs including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to elastomeric coating system installation, including manufacturer's written instructions.
3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Discuss limitations of metal panels with regard to material loading and storage and susceptibility to damage from foot traffic.
5. Examine substrate conditions and finishes for compliance with requirements.
6. Review governing regulations and requirements for insurance and certificates if applicable.
7. Review temporary protection requirements for coating system during and after installation.

E. Review coating system observation and repair procedures after installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing repair materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by coating system manufacturer. Protect stored liquid material from direct sunlight.
1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of metal panel roofing.

1.8 WARRANTY

A. Contractor’s Warranty: The contractor shall provide a written warranty guaranteeing all roof repairs against defects of quality of work and materials for a period of two years from the date of final acceptance. The warranty shall be delivered to the Port prior to final acceptance of work.

B. Manufacturer’s Warranty: Coating material manufacturer shall provide a written warranty covering performance of the coating materials and systems for a period of 5 years.

PART 2 - PRODUCTS

2.1 ELASTOMERIC COATING SYSTEM

A. Two Part SEBS (Styrene Ethylene Butylene Styrene) modified elastomeric fluid applied coating system, consisting of a primer coat, a fluid applied base coat, fluid applied topcoat, butyl faced sealing tape, and seam coating.
1. Manufacturers:
a. Karnak Corporation - 502 Elasto-Kote System.

b. Inland Coating - RC 2000.
c. Henry – HE517/HE518 Metal Shield.
d. Or pre-bid approved equal.

B. Top Coat: Highly elastic, solvent based, single component elastomeric coating intended to be applied as a topcoat of a multi-component system, with a cured dry film thickness of no less than 24 mils. Standard Manufacturer color "Grey". Cured top coat characteristics:

a.

Properties	Test	Result
Hardness Shore A:	ASTM D-2240	65
Elongation:	ASTM D-412	300%
Tensile Strength:	ASTM D-412	350 psi

1. Base Coat: Highly elastic, SEBS (Styrene Ethylene Butylene Styrene) based, elastomeric sealant intended to be applied as a base coat of a multi-component system, with a cured dry film thickness of no less than 24 mils.
2. Sealing tape: Butyl adhesive fabric designed for use with coating system.
3. Seam Coating: Highly elastic, solvent based, single component elastomeric coating intended to be applied in a single layer when used with butyl adhesive fabric, with a cured dry film thickness of no less than 24 mils. Standard Manufacturer color "Grey".

2.2 ACCESSORIES

A. Sealant: One part liquid elastomeric, low modulus Type II, Class A, non-sag, silyl-terminated polyether. Provide backer rods, bond breaker, primers, and cleaning agents as recommended by the manufacturer.
1. Manufacturer:
1) Sonneborne Sonolastic 150 with VLM Technology.
2) Or pre-bid approved equal.

B. High Temperature Sealant: Silicone sealant, of type, grade, class, and use classifications required to seal joints and perform in high temperature applications up to 500° F (260°C).
1. Manufacturer:
a. Dow Corning; Hi-Temp Silicone Sealant.
b. Or pre-bid approved equal.

C. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement. Provide backer rods, bond breaker, primers, and cleaning agents as recommended by manufacturer.

D. Pipe Flashing: Flexible, preformed, premolded, graduated weather resistant round EPDM or Silicone flashing with an aluminum reinforced flanged base for a formable compression seal to metal panels. Use high temperature silicone product where required.
1. ITW Buildex; Dektite.
2. ITW Buildex; High Temp Dektite (for temperatures above 200°F).
3. Or prebid approved equal.

E. Galvanized Wire: 17 gauge galvanized steel wire.

F. Machine Screws: 1/2" long #10 stainless steel screws; machine thread.

G. Locking nuts: Stainless steel locking nuts with nylon insert, for use with #10 machine thread screws.

H. Provide all miscellaneous items as required for a complete and proper installation.

I. Rust inhibitive primer: Water based acrylic primer for use on metal roof systems.
   1. Manufacturer:
      a. Karnak Corporation, 505-P Rust Inhibiting Primer
      b. Or pre-bid approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Contractor shall locate and identify all torn flashings, abandoned fastener holes, tears, loose seams and other defects in existing metal panels or flashings, which may allow water to by-pass existing roofing and flashings, and where also shown on the drawings.

B. Verify related work areas are completed or completed to a point where further roof repairs will not affect work specified within this section.

C. Beginning of installation means acceptance of existing conditions.

D. Verify all locations that will receive new materials:
   1. Locations scheduled for the installation of coating system and sealing tape material shall include penetrations through roof, ridge flashing laps, rake flashings, field panel end laps, gutter seams and penetrations, and other areas where indicated on the drawings.

3.2 PROTECTION

A. Protect the roofing surface from damage during application until final acceptance by the Port. Repair damaged areas prior to final acceptance of the work.

3.3 REPAIR OF EXISTING SHEET METAL FLASHINGS

A. Broken/loose sheet metal seams:
   1. Where seams can be re-joined, install continuous bead of sealant between seams.
   2. Re-seam existing seam as originally intended and secure with new replacement fasteners placed into existing fastener location. Provide new fasteners at additional locations as required to properly secure flashing in place.

3.4 SEALANT REPAIRS

A. Storm Collar at hot pipe flue penetrations:
   1. Locate all storm collars at roof areas to be repaired, and clean existing sealant from termination point.
   2. Install new high temperature sealant in a continuous bead around perimeter of storm collar; tool sealant to drain.

3. Replace existing storm collars with new sheet metal storm collars where existing collars are missing or damaged.

3.5 PREPARATION - ELASTOMERIC COATING SYSTEM,

A. The roof shall be power washed maintaining a minimum of 3000 PSI of working pressure. Remove all dirt, dust and waste products, i.e. grease, animal fats, solvents, loose roofing products and any air borne pollutants.

B. Deteriorated-through panels or sections shall be replaced.

C. Heavily deteriorated areas shall be wired brushed down to clean, stable metal.

D. Prepare all surfaces and details in accordance with standards as set forth within manufacturers published installation instructions, and in accordance with these Contract Documents.

E. Inspect all flashings for defects and verify with items noted on drawings. Familiarize locations and mark each defect for repair.

F. If required by manufacturer, utilize a non-phosphate cleaning solution with water to assist in removing dirt and scale. Thoroughly rinse all surfaces of cleaning solution prior to allowing to dry.
   1. If solutions other than water are used for cleaning, prevent runoff from entering the roof drains. Properly collect runoff and dispose offsite or obtain a batch discharge permit through the City of Portland BES and discharge into the sanitary sewer.

G. Familiarize all crew members with the intent of the project, the project drawings, and locations to receive repairs.

H. Clean entire roof area of all debris, including removal of debris from ponded areas, and gutter systems.

I. Fasteners:
   1. Locate all loose and backed-out fasteners within roof system, including fasteners at eaves, panel end laps, penetrations, and flashings.
   2. Resecure all loose fasteners using power drivers and sockets sized to fit existing fasteners. Secure to substrate to achieve tight fit. Do not over tighten.
   3. Replace all fasteners with damaged or deteriorated rubber washers.
   4. Stripped fasteners shall be replaced with larger replacement fasteners. All fasteners shall include an EPDM washer.

J. Details and Penetrations:
   1. All existing repair materials are to be removed from all sheet metal roof surfaces unless otherwise noted on the drawings.
   2. Rusted areas must be wire brushed and coated with a rust inhibitive primer.

3.6 INSTALLATION - ELASTOMERIC COATING SYSTEM

A. Verify all locations that will receive new materials. Locations scheduled for repairs are indicated on the drawings.

B. Mix coating materials as specified within the coating manufacturer's installation instructions, prior to installation.

C. Remove all rust and asphaltic repair materials prior to application of coating system. Rusted areas must be wire brushed and coated with a rust inhibitive primer.

D. Install base coat materials using brushes, rollers, or spray equipment. Apply as required to achieve proper thickness of materials. All base coat applications shall achieve a minimum dry film thickness of 0.0625-inches thick.

E. Install top coat materials using spray method. Apply as required to achieve proper thickness of materials. All top coat applications shall achieve a minimum dry film thickness of 0.018-inches thick.

F. Install top coat materials so that they extend over all base coat materials.

G. Where indicated on the drawings, seams scheduled for repair must be treated in the following manner:
   1. Peel back the release sheet and apply sealing tape exactly to the horizontal seam. Do not stretch tape.
   2. Misaligned tape requiring adjustment must be removed and discarded as this will damage the tape.
   3. Press down firmly starting at the center and working towards the outside edge, removing bubbles. Slight wrinkling should not affect the performance of the seal. Edges must be free of fishmouths, uplifts and tunnels.
   4. Press down firmly where tape goes over fasteners.
   5. Finish seam by applying seam coating over the taped seam. Apply seam coating with a 3-inch brush. Apply at an average thickness of 1/16-inch to completely cover the polyester face of the sealing tape and feather out.

H. Fasteners in the field of the roof not already protected as part of a seam detail shall receive a dollop (swirl coat) of seam coating to completely enclose the fastener.

I. Where indicated on the drawings, protrusions and curbs should be flashed with the elastomeric coating system.

J. Allow all repairs and seam details with sealing tape and seam sealer to cure for 24-48 hours.

3.7 CLEANING - EXISTING SHEET METAL ROOF SYSTEM

A. Remove solid debris, including leaves, rubbish, dirt, scale, algae, and other surface matter that would impair adhesion of new materials not intended to be on roof surfaces, and dispose of.

B. Clean surface of sheet metal roof areas at repair locations, including flashings and penetrations, using power-washing equipment. Maintain a minimum working pressure of 3000 psi.

C. Utilize a non-phosphate cleaning solution with water to assist in removing dirt and scale. Thoroughly rinse all surfaces of cleaning solution prior to allowing to dry.

END OF SECTION 074100

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes:
   1. Precoated galvanized steel counter flashings, edge flashings, transition flashings, wall panels, and other roof related flashings associated with roofing installation.
   2. Precoated galvanized steel seamless gutter and downspout system.

1.2 REFERENCED STANDARDS

A. ASTM A 653 – Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.

B. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) – Architectural Sheet Metal Manual, Sixth Edition.

C. National Association of Architectural Metal Manufacturers (NAAMM) – Metal Finishes Handbook; Metal Finishes Manual for Architectural and Metal Products.

D. National Roofing Contractors Association (NRCA) – Roofing and Waterproofing Manual, Fifth Edition.

1.3 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Fabricate and install all pre-coated galvanized steel capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
   1. Wind Zone 2: For velocity pressures of 31 to 45 lbf/sq. ft.: 90-lbf/sq. ft. perimeter uplift force, 120-lbf/sq. ft. corner uplift force, and 45-lbf/sq. ft. outward force.

C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 150 degrees F (67 degrees C), ambient; 180 degrees F (100 degrees C), material surfaces.

D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

A. Submit product data for each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Submit shop drawings. Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following.
1. Material, thickness, weight, and finish for each item and location in project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.

C. Submit samples for each type of sheet metal flashing and trim indicated with factory-applied color finishes.
1. Include similar samples of trim and accessories involving color selection.

1.5 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
1. Applicator: Company specializing in sheet metal flashing work with five (5) years minimum experience.

1.6 WARRANTY

A. Provide a written warranty guaranteeing all sheet metal flashings against defects of quality of work and materials for a period of two years from the date of final acceptance. The warranty shall be delivered to the Port prior to final acceptance of work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weather tight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.8 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak proof, secure, and non-corrosive installation.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. Precoated Galvanized Steel: ASTM A 653, G90, 24 gauge core steel, shop precoated with "Kynar 500" or "Hylar 5000", or equal, paint system coating. Color shall be selected from manufacturer's full line of standard colors available.

B. Zinc-Coated (Galvanized) Steel Sheet (un-exposed cleats): ASTM A 653/A 653M, G90 coating designation; structural quality, 22 gauge galvanized core steel.

C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; with smooth, flat surface.
   1. Finish: 2D (dull, cold rolled).

2.2 UNDERLAYMENT MATERIALS

A. Self-Adhering High Temperature Sheet (SAHTS): Rubberized asphalt self-adhering sheet, with high strength polyethylene film on one side, minimum 0.040-inch thick, 36-inch wide rolls.
   1. Grace: Vycor.
   2. Or pre-bid approved equal.

2.3 ACCESSORIES

A. Provide backer rods, bond breakers, primers, and cleaning agents as recommended by the materials manufacturer.

B. Solder: FS QQ-S-571; ANSI/ASTM B32; 50/50 type.

C. Flux: FS O-F-506

D. Touch up Paint: To match precoated flashings as recommended and provided by the materials manufacturer.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Fasteners: Self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
   1. Exposed Fasteners: Galvanized steel with soft neoprene or EPDM washers, with hex washer head. Finish exposed fasteners same as flashing metal.
   2. Blind Fasteners: High-strength stainless-steel rivets with stainless steel mandrels.

C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, nonstaining tape.
   1. Tremco 440 Tape.
   2. Or pre-bid approved equal.

D. Sealant: One part liquid elastomeric, low modulus Type II, Class A, non-sag, silyl-terminated polyether. Provide backer rods, bond breaker, primers, and cleaning agents as recommended by the manufacturer.
   1. Manufacturer:
      1) Sonneborne Sonolastic 150 with VLM Technology.
      2) Or pre-bid approved equal.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, and polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.
   1. Tremco Butyl Sealant.
   2. Or pre-bid approved equal.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop-fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

D. Sealed Joints: Form nonexpanding but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with elastomeric sealant concealed within joints.

F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

G. Fabricate cleats and attachment devices from compatible, non-corrosive metal.
   1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" and FMG Loss Prevention Data Sheet 1-49 for application but not less than thickness of metal being secured.
   2. Galvanized core steel: ASTM A 653 G90, 22-gauge.

2.6 SHEET METAL FABRICATIONS

A. Cover Flashing: Fabricate in longest lengths possible, nut no less than 10-foot-long, sections.
   1. Joint Style: Lapped, 12-inches wide.
   2. Material: 22 gauge precoated galvanized steel.
   3. Color: Light grey.

B. Diverter Flashing: Fabricate in two-piece sections in lengths verified in field, hemmed edges, formed to contour metal panel.
   1. Joint style: Lapped, riveted, and soldered seams.
   2. Materials: 22-gauge galvanized steel; shop painted to match color and finish of roof panels.
   3. Color: Light grey.

C. Fascia Flashing: Fabricate in longest lengths possible, but no less than 10-feet in length.
   1. Joint Style: lapped 6-inch minimum with two (2) continuous beads of sealant within seam.
   2. Materials: 22-gauge precoated galvanized steel.
   3. Profile: Fabricate to match existing.
   4. Color: Match existing adjacent.

D. Downspouts:
   1. Material: 22-gauge precoated galvanized steel.
   2. Form downspouts and leaders rectangular in profile, sized 6-inches wide by 4-inches deep.
   3. Seal all precoated galvanized steel joints, seams, and splices.
   4. Color: White to match existing.

E. Gutter Reinforcing: Fabricate with profile to contour gutter.
   1. Material: 24-gauge stainless steel.

F. Gutter Outlet: Fabricate in multiple pieces as required to conform to gutter profile and downspout.
   1. Rivet and solder all joints watertight.
   2. Material: 24-gauge stainless steel.

G. Closure Flashing: Fabricate Z-closure or end closures in longest lengths practical, cut and profiled to contour metal roof and wall panels.
   1. Material: 24-gauge precoated galvanized steel.
   2. Joint Style: Lapped and sealed.
   3. Color: Match adjacent.

H. Signage: Fabricate in one piece rectangular with rounded corners.
   1. Material: 24-gaguge precoated galvanized steel.
   2. Color: Royal Blue.

I. Jamb Flashing: Fabricate in one piece with profiles as shown.
   1. Material: 24-gauge precoated galvanized steel.
   2. Joint Style: Lapped and sealed.
   3. Color: Match adjacent.

J. Sill Flashing: Fabricate in one piece with profiles as shown.
   1. Material: 24-gauge precoated galvanized steel.
   2. Joint Style: Sealed.
   3. Color: Match adjacent.

K. Head Flashing: Fabricate in one piece with profiles as shown.
   1. Material: 24-gauge precoated galvanized steel.
   2. Joint Style: Lapped and sealed.
   3. Color: Match adjacent.

2.7 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of finished work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, to verify actual locations, dimensions and other conditions affecting performance of work.
   1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
   2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION – GENERAL

A. General: Install sheet metal flashings to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of adjoining sheet metal flashings.
   1. Field measure site conditions prior to fabricating work.
   2. Install starter and edge strips, and cleats before starting installation.
   3. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations indicated.
   4. Seam and seal all joints watertight; install sealant to drain water.
   5. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

C. Self-Adhering High Temperature Sheet (SAHTS):
   1. Install a course of self-adhering underlayment at changes in plane, such as roof to wall transitions, transitions in roof plane, wall penetrations, and where otherwise directed or recommended by roofing system manufacturer.

D. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

E. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of elastomeric sealant.

F. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

G. Anchor sheet metal flashing and trim and other components of the work securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

H. Utilize exposed fasteners only where indicated on the drawings; used concealed fasteners and clips at all locations possible, and where indicated on the drawings.

I. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

J. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 3/4 inches.

K. Weatherlap all components of the roofing and flashing; provide minimum of 2-inch weather lap. Sealant dependent detailing shall not be considered acceptable.

3.3 FLASHING INSTALLATION

A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.

B. Coordinate all work with metal panel coating installation where flashing is to be installed prior to, or after coating.

C. Flashing: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.

1. Extend roof edge flashing a minimum of 8 inches weather lapped, or seamed, under pre-manufactured metal roof system. Lap roof edge flashing joints a minimum of 4 inches in bed of elastomeric sealant.

D. Diverter Flashing: Coordinate installation of diverter flashing with installation of premanufactured metal roof system and adjacent flashings. Lap adjoining flashing minimum of 4-inches in a bed of elastomeric sealant.
   1. Field solder two-piece diverter flashing.

3.4 DOWNSPOUT INSTALLATION

A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof purlins with installation of roof drainage system.

B. Downspouts: Join sections with 1-1/2-inch telescoping joints.
   1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60-inches o.c. in between.
   2. Terminate downspouts into underground drainage system risers where existing.
      a. Provide necessary square to round reducer where downspout meets risers. Fabricate and install reducers in a manner that permits independent removal without requiring disassembly of downspout system.
   3. Provide elbows at base of downspout to direct water away from building where not connected to underground drainage systems.

3.5 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed.

B. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing.

C. Maintain in a clean condition during construction.

END OF SECTION 076200

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section includes the following:
   1. Roof hatch.
   2. Fall protection equipment.

1.2 SUBMITTALS

A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show fabrication and installation details for roof accessories. Show layouts of roof accessories including plans and elevations. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other work.

C. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
   1. Size and location of roof accessories specified in this Section.
   2. Method of attaching roof accessories to roof or building structure.
   3. Other roof-mounted items including fall restraint or arrest equipment.

1.3 QUALITY ASSURANCE

A. Sheet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Pack, handle, and ship roof accessories properly labeled in heavy-duty packaging to prevent damage.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify required openings for each type of roof accessory by field measurements before fabrication and indicate measurements on Shop Drawings.

1.6 COORDINATION

A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers listed in other Part 2 articles.

2.2 MISCELLANEOUS MATERIALS

A. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, complying with AWPA C2; not less than 1-1/2 inches thick.

B. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by roof accessory manufacturer. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners.

C. Elastomeric Sealant: ASTM C 920, polyurethane sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

2.3 ROOF HATCH ACCESSORIES

A. Ladder Safety Post: Manufacturer's standard ladder safety post. Post to lock in place on full extension. Provide release mechanism to return post to closed position.
   1. Height: 42 inches above finished roof deck.
   2. Material and Finish: Steel tube, baked enameled.
   3. Diameter: Pipe with 1-1/2-inch square tube.

B. Safety Railing System: Manufacturer's standard complete system including rails, clamps, fasteners, safety barrier at railing opening, and all accessories required for a complete installation.
   1. Height: 42 inches above finished roof deck.
   2. Pipe or Tube: 1-1/4-inch ID galvanized pipe or 1-5/8-inch OD galvanized tube.
   3. Flat Bar: 2-inch- high by 3/8-inch- thick galvanized steel.
   4. Chain Passway Enclosure: Galvanized proof coil chain with quick link on fixed end.
   5. Self-Latching Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism.
   6. Pipe Ends and Tops: Covered or plugged with weather-resistant material.
   7. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members that are exposed to exterior or to moisture from condensation or other sources.
   8. Fabricate joints that will be exposed to weather in a watertight manner.

9. Close exposed ends of handrail and railing members with prefabricated end fittings.
10. Fasteners: Manufacturer's standard.

C. Manufacturers:
1. Bilco.
2. Milcor.
3. Or pre-bid approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of work.
1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored and is ready to receive roof accessories.
2. Verify dimensions of roof openings for roof accessories.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install roof accessories according to manufacturer's written instructions. Anchor roof accessories securely in place and capable of resisting forces specified. Use fasteners, separators, sealants, and other miscellaneous items as required for completing roof accessory installation. Install roof accessories to resist exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Install roof accessories to fit substrates and to result in watertight performance.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

D. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.

E. Attach safety railing system to roof hatch curb.

F. Attach ladder safety post according to manufacturer's written instructions.

G. Seal joints with elastomeric sealant as required by manufacturer of roof accessories.

3.3 CLEANING

A. Clean exposed surfaces according to manufacturer's written instructions.

END OF SECTION 077200

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section includes repair of electrically operated sectional doors including replacement of worn and broken parts, general door maintenance and repair of physical damage and misalignment.

1.2 SUBMITTALS

A. Product Data: For each type and size of sectional door and accessory.
   1. Include construction details, material descriptions, and dimensions of individual components, profile door sections, and finishes.
   2. Include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
   1. Include plans, elevations, sections, and mounting details.
   2. Include details of equipment assemblies. Indicate dimensions, required clearances, and method of field assembly, components, and location and size of each field connection.
   3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
   4. Include diagrams for power, signal, and control wiring.

C. Qualification Data: For Installer.

D. Sample Warranties: For special warranties.

E. Maintenance Data: For sectional doors to include in maintenance manuals.

F. As Built Drawings: Maintain detailed records of repair activities and component replacement on Project Drawings.

1.3 QUALITY ASSURANCE

A. Wood Sectional Door Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1.4 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of sectional doors that installer provided that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including, but not limited to, excessive deflection.
      b. Failure of components or operators before reaching required number of operation cycles.
      c. Faulty operation of hardware.
      d. Operating tolerances exceeded.
      e. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
      f. Delamination of exterior or interior facing materials.
   2. Warranty Period: Two years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer agrees to repair or replace components provided that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Warranty Period: 10-years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

A. Source Limitations: Obtain all components for sectional door repair from single source from original manufacturer.
   1. Obtain operators and controls from sectional door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Sectional doors shall comply with performance requirements specified without failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.
   1. Design Wind Load: Uniform pressure (velocity pressure) of 20 lbf/sq. ft., acting inward and outward.
   2. Testing: According to ASTM E 330.
   3. Deflection Limits: Design sectional doors to withstand design wind loads without evidencing permanent deformation or disengagement of door components.
      a. Deflection of door sections in horizontal position (open) shall not exceed 1/120 of the door width.
      b. Deflection of horizontal track assembly shall not exceed 1/240 of the door height.

2.3 DOOR ASSEMBLY

A. Steel Sectional Door: Sectional door formed with hinged sections and fabricated according to DASMA 102 unless otherwise indicated.

B. Operation Cycles: Door components and operators capable of operating for not less than 20,000 match cycle crating of adjacent components. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

C. Steel Sections: Zinc-coated (galvanized) steel sheet with G90 zinc coating.
   1. Section Thickness: Match existing thickness.
   2. Exterior-Face, Steel Sheet Thickness: No less than 0.028-inch- nominal coated thickness. Match existing exterior face thickness.
      a. Surface: Flat.
      b. Surface: Manufacturer's standard, grooved.
   3. Insulation: Formed in place, match existing.
   4. Interior Facing Material: Zinc-coated (galvanized) steel sheet with a nominal coated thickness not less than 0.028-inch to match existing.
   5. Interior Facing Material: 1/8-inch- thick, manufacturer's standard material to match existing.

D. Track Configuration: Standard-lift track or high lift track.

E. Weatherseals: Fitted to bottom and top and around entire perimeter of door.

F. Windows: Rectangular full section glass units.
   1. Clear Float Glass: 3-mm thick and complying with ASTM C 1036, Type I, Class 1, Quality Q3. Match existing where broken.

G. Rollers and Roller-Tire Material: Match existing.

H. Locking Devices: Replace in kind where indicated.

I. Electric Door Operator Safety, and Operation Components: Replace components indicated to match existing:
   1. Manufacturers:
      a. Link.
      b. Wayne Dalton.
      c. Or pre-bid approved equal.

J. Door Finish:
   1. Factory Prime Finish: Manufacturer's standard color.
   2. Finish of Exterior and Interior Facing Material: Match finishes of adjacent sections.

2.4 MATERIALS, GENERAL

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.5 STEEL DOOR SECTIONS

A. Exterior Section Faces and Frames: Zinc-coated (galvanized), cold-rolled, commercial steel (CS) sheet, complying with ASTM A 653/A 653M, with indicated zinc coating and thickness.

1. Fabricate section faces from single sheets to provide sections not more than 24 inches high and of indicated thickness. Roll horizontal meeting edges to a continuous, interlocking, keyed, rabbeted, shiplap, or tongue-in-groove weather-resistant seal, with a reinforcing flange return.
2. For insulated doors, provide sections with continuous thermal-break construction, separating the exterior and interior faces of door.

B. Section Ends and Intermediate Stiles: Enclose open ends of sections with channel end stiles formed from galvanized-steel sheet not less than 0.064-inch- nominal coated thickness and welded to door section. Provide intermediate stiles formed from not less than 0.064-inch- thick galvanized-steel sheet, cut to door section profile, and welded in place. Space stiles not more than 48 inches apart.

C. Reinforce bottom section with a continuous channel or angle conforming to bottom-section profile.

D. Reinforce sections with continuous horizontal and diagonal reinforcement, as required to stiffen door and for wind loading. Provide galvanized-steel bars, struts, trusses, or strip steel, formed to depth and bolted or welded in place.

E. Provide reinforcement for hardware attachment.

F. Board Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard polystyrene or polyurethane board insulation, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E 84; or with glass-fiber-board insulation. Secure insulation to exterior face sheet. Enclose insulation completely within steel sections and the interior facing material, with no exposed insulation.

G. Foamed-in-Place Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard polyurethane insulation, foamed in place to completely fill interior of section and pressure bonded to face sheets to prevent delamination under wind load, and with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E 84. Enclose insulation completely within steel sections and the interior facing material, with no exposed insulation.

H. Fabricate sections so finished door assembly is rigid and aligned, with tight hairline joints and free of warp, twist, and deformation.

2.6 TRACKS, SUPPORTS, AND ACCESSORIES

A. Tracks: Manufacturer's standard, galvanized-steel track system of configuration indicated, sized for door size and weight, designed for lift type indicated and clearances indicated on Drawings. Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides for required door type, size, weight, and loading.
1. Galvanized Steel: ASTM A 653/A 653M, minimum G60 zinc coating.
2. Slope tracks at an angle from vertical or design tracks to ensure tight closure at jambs when door unit is closed.
3. Track Reinforcement and Supports: Galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors. Slot vertical sections of track spaced 2 inches apart for door-drop safety device.

a. For Vertical Track: Continuous reinforcing angle attached to track and attached to wall with jamb brackets.
b. For Horizontal Track: Continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members.

B. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and top of sectional door unless otherwise indicated.

C. Windows: Manufacturer's standard window units of type, size, and in arrangement indicated. Set glazing in vinyl, rubber, or neoprene glazing channel for metal-framed doors and elastic glazing compound for wood doors, as required. Provide removable stops of same material as door-section frames.

2.7 HARDWARE

A. General: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.

B. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch- nominal coated thickness at each end stile and at each intermediate stile, according to manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is impossible. Provide double-end hinges where required, for doors more than 16 feet wide unless otherwise recommended by door manufacturer.

C. Rollers: Heavy-duty rollers with steel ball-bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide 3-inch- diameter roller tires for 3-inch- wide track and 2-inch-diameter roller tires for 2-inch- wide track.

D. Push/Pull Handles: Equip each push-up operated or emergency-operated door with galvanized-steel lifting handles on each side of door, finished to match door.

2.8 LOCKING DEVICES

A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.

B. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded deadbolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.
   1. Lock Cylinders: Cylinders standard with manufacturer and keyed to building keying system.
   2. Keys: Three for each cylinder.

C. Chain Lock Keeper: Suitable for padlock.

D. Safety Interlock Switch: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.

2.9 COUNTERBALANCE MECHANISM

A. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from steel-spring wire complying with ASTM A 229/A 229M, mounted on torsion shaft made of steel tube or solid steel. Provide springs designed for number of operation cycles indicated.

B. Cable Drums and Shaft for Doors: Cast-aluminum or gray-iron casting cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft. Provide one additional midpoint bracket for shafts up to 16 feet long and two additional brackets at one-third points to support shafts more than 16 feet long unless closer spacing is recommended by door manufacturer.

C. Cables: Galvanized-steel, multistrand, lifting cables match existing cable size for appropriate cable safety factor.

D. Cable Safety Device: Include a spring-loaded steel or spring-loaded bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if either lifting cable breaks.

E. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.

F. Bumper: Provide spring bumper at each horizontal track to cushion door at end of opening operation.

2.10 MANUAL DOOR OPERATORS

A. General: Equip door with manual door operator by door manufacturer.

B. Chain-Hoist Operator: Consisting of endless steel hand chain, chain-pocket wheel and guard, and gear-reduction unit with a maximum 25-lbf force for door operation. Provide alloy-steel hand chain with chain holder secured to operator guide.

2.11 ELECTRIC DOOR OPERATORS

A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and "operation cycles" requirement specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.
   1. Comply with NFPA 70.
   2. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24-V ac or dc.

B. Usage Classification: Electric operator and components capable of operating for not less than number of cycles per hour indicated for each door.

C. Door-Operator Type: Unit consisting of electric motor, gears, pulleys, belts, sprockets, chains, and controls needed to operate door and meet required usage classification.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

B. Examine locations of electrical connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 REPAIR AND COMPONENT REPLACEMENT

A. Repair sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

3.3 STARTUP SERVICES

A. Complete installation and startup checks according to manufacturer's written instructions.

B. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

C. Adjust doors and seals to provide weather-resistant fit around entire perimeter.

END OF SECTION 083613

SECTION 085313 - VINYL WINDOWS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section includes vinyl-framed windows.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   2. Review, discuss, and coordinate the interrelationship of vinyl windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes.
   3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
   4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.3 SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for vinyl windows.

B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

C. Samples: For each exposed product and for each color specified, 2 by 4 inches in size.

D. Samples for Initial Selection: For units with factory-applied color finishes.
   1. Include similar Samples of hardware and accessories involving color selection.

E. Samples for Verification: For vinyl windows and components required, prepared on Samples of size indicated below:
   1. Exposed Finishes: 2 by 4 inches.
   2. Exposed Hardware: Full-size units.

F. Product Schedule: For vinyl windows. Use same designations indicated on Drawings.

G. Qualification Data: For manufacturer and Installer.

H. Product Test Reports: For each type of vinyl window, for tests performed by a qualified testing agency.

I. Field quality-control reports.

J. Sample Warranties: For manufacturer's warranties.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to vinyl window manufacturer for installation of units required for this Project.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Build mockup of typical wall area as shown on Drawings.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless the Port specifically approves such deviations in writing.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace vinyl windows that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Failure to meet performance requirements.
      b. Structural failures including excessive deflection, water leakage, and air infiltration.
      c. Faulty operation of movable sash and hardware.
      d. Deterioration of materials and finishes beyond normal weathering.
      e. Failure of insulating glass.
   2. Warranty Period:
      a. Window: 10 years from date of Substantial Completion.
      b. Glazing Units: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Vinyl Windows:
   1. Basis of Design: VPI Quality Windows; Product Endurance PVC Series
   2. Or pre-bid approved by the Port.

B. Source Limitations: Obtain vinyl windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
   1. Window Certification: WDMA certified with label attached to each window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
   1. Minimum Performance Class: HC.
   2. Minimum Performance Grade: 40.

C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.29 Btu/sq. ft. x h x deg F.

D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.33.

E. Windborne-Debris Resistance: Capable of resisting impact from windborne debris based on testing glazed windows identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction.

2.3 VINYL WINDOWS

A. Operating Types: Provide the following operating types in locations indicated on Drawings:
   1. Horizontal sliding.
   2. Fixed.

B. Frames and Sashes: Impact-resistant, UV-stabilized PVC complying with AAMA/WDMA/CSA 101/I.S.2/A440.
   1. Finish: Integral color, white.
   2. Gypsum Board Returns: Provide at interior face of frame.

C. Insulating-Glass Units: ASTM E 2190, certified through IGCC as complying with requirements of IGCC.
   1. Glass: ASTM C 1036, Type 1, Class 1, q3.
      a. Tint: Clear.
      b. Kind: Fully tempered.
   2. Lites: Two.
   3. Low-E Coating: Pyrolytic on second surface.

D. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

E. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
   1. Exposed Hardware Color and Finish: As indicated by manufacturer's designations.

F. Horizontal-Sliding Window Hardware:
   1. Sill Cap/Track: Manufacturer's standard of dimensions and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.
   2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
   3. Roller Assemblies: Low-friction design.

G. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

H. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
   1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 INSECT SCREENS

A. General: Fabricate insect screens to fully integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
   1. Type and Location: Half, outside for sliding sashes.

B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.
   1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
   2. Finish for Exterior Screens: Matching color and finish of cladding.

C. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch- diameter, coated aluminum wire.
   1. Wire-Fabric Finish: Charcoal gray.

2.5 FABRICATION

A. Fabricate vinyl windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Glaze vinyl windows in the factory.

C. Weather strip each operable sash to provide weathertight installation.

D. Hardware: Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: The Port will engage a qualified testing agency to perform tests and inspections.
   1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Testing Services: Testing and inspecting of installed windows shall take place as follows:
   1. Testing Methodology: Testing of windows for water resistance shall be performed according to AAMA 501.2.09. Follow AAMA requirements for testing operable windows.
   2. Air-Infiltration Testing:
      a. Test Pressure: None.
   3. Water-Resistance Testing:
      a. Test Pressure: None.
      b. Allowable Water Infiltration: No water penetration.
   4. Testing Extent: Three windows of each type as selected by the Port and a qualified independent testing and inspecting agency. Windows shall be tested after perimeter sealants have cured.
   5. Test Reports: Prepared according to AAMA 501.2.09.

C. Remove and replace noncomplying windows and retest as specified above.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

E. Prepare test and inspection reports.

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.
   1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085313

SECTION 099100 – PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes painting work, generally as follows:
   1. Exterior items and surfaces that are new, or indicated on drawings by notes or symbols, or both. In addition, paint items specified in this section to be painted which are not otherwise indicated to be painted.
   2. If a new item or surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. Resolve any conflicts of material colors with the Port prior to application.
   3. Repair of existing surfaces as specified in this section.
   4. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified in other sections.

B. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
   1. Prefinished items include the following factory-finished components:
      a. Glass and glazing.
      b. Metal ceilings.
      c. Rubber base.
   2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
      a. Furred areas.
      b. Ceiling plenums.
      c. Duct shafts.
   3. Finished metal surfaces include the following:
      a. Anodized aluminum.
      b. Stainless steel.
      c. Chromium plate.
   4. Operating parts include moving parts of operating equipment and the following:
      a. Coiling doors.
      b. Exposed door closer arms.
   5. Labels: Do not paint over Underwriters Laboratories Inc. (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.2 REFERENCES

A. OAR: Oregon Administrative Rules
   1. OAR 340-242-0700 to 340-242-0750: Spray Paint

B. PDCA: Painting and Decorating Contractors of America, Oregon Council

1.3 SUBMITTALS

A. Product Data: Describe every required paint system.
   1. Material List: Provide an inclusive list of surfaces and proposed coating materials, including anticipated minimum dry film thickness of each coat. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification. Include composition of pigment and vehicle, with percentages.
   2. Manufacturer's certification that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

B. Submit 8" x 10" drawdowns for review of color and texture only. Resubmit samples as requested until required sheen, color and texture is achieved.

C. Samples: Provide samples of all paint materials as specified in the Color Schedule article at the end of this section.

D. Apply and reduce materials only as specified or recommended by the manufacturer's printed instructions. Where manufacturer has made additional recommendations apparently in conflict with these specifications, allow for review and approval of additional recommendations before proceeding.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: The quantity of VOC's in materials supplied under this section shall not exceed the limits permitted under Oregon Administrative Rule 340-242-700 through 340-242-750 for architectural coatings (applicable on the date bids are received) used in the Portland Oregon Air Quality Management Area.

B. Reference Standard for Workmanship: Oregon Council, PDCA.

C. Show product name on label of containers identical with that used in product data submitted as specified above.

D. Field Control Samples:
   1. Request review of first finished room, space, or item of each color scheme required as a sample of selected colors, finish, texture and workmanship; under illumination equal to that expected at occupancy.
   2. For spray or roller application, paint at least 100 sq. ft. of surface.
   3. Consider approved samples as the project standard.

E. The thickness of the dry paint film will be verified at various intervals and locations during the course of the painting work. At each test, several readings will be taken to determine the average mil thickness.
   1. An area will be considered deficient where, when compared to the dry film thickness specified by the manufacturer or calculated from the recommended spreading rate, the average of 5 readings is more than 10 percent low or a single reading is more than 30 percent low.
   2. Paint will be considered testable after twice the manufacturer's recommended time for recoating or 24 hours, whichever is longer.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original containers, materials specified by name, manufacturer or standard with labels legible and intact.

B. Store in suitable location as directed, in accordance with label instructions.

C. Do not store paint-soiled rags, waste, etc., on premises, except where stored in metal containers with tight metal covers.

1.6 PROJECT CONDITIONS

A. Comply with paint manufacturer's recommendations concerning environmental conditions under which coatings and coating systems may be applied.
   1. Apply paint only when surface and air temperatures are above 50ºF.
   2. Do not apply exterior paint in rainy weather.
   3. Do not apply paint in direct sun or when surface is hot or under other conditions which prevent proper application and drying.

B. Do not apply finish in areas where dust is being generated.

C. Protect work of other trades. Correct painting related damage by cleaning, repairing or replacing and refinishing, as directed.

D. Do not paint any moving parts of operating units, or over any equipment identification, performance rating, name or nomenclature plates or code-required labels.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS OF PAINT MATERIALS

A. Use only manufacturers and products listed in the Oregon Council PDCA "Revised Table of Products."

2.2 MATERIALS

A. See painting schedule at the end of this section.

B. Provide brands and qualities of materials for use on work exactly as specified.

C. Provide products of a single manufacturer for coating systems applied to each type of surface.

D. Coordination: Provide finish coats which are compatible with prime paints used. Provide barrier coats over incompatible primers where required. Submit written notification of anticipated problems using specified coatings with substrates primed by others.

E. Paint Colors:
   1. Colors as indicated.
   2. Paint area of each color for observation, review and revisions before batch mixing of colors, or shipping large quantities of that color to job. Allow revisions to approved colors and textures after review of initial area of each color.
   3. Vary top coats in shade from preceding coat without affecting finish color.

F. Mixing and Tinting:
   1. Job mix or job tint only if approved. Mix only in pails in suitably sized non-ferrous or oxide-resistant metal pans.
   2. Strain to remove lumps and specks.
   3. Use tinting colors recommended by manufacturer for the specific type of finish.
   4. Add non-mercuric fungicidal agent to exterior finishes by manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

A. Verify that spaces are broom clean, with surfaces free of foreign matter.

B. Moisture Content:
   1. Surfaces: Suitably dry and adequately protected from dampness.
   2. Follow recommendations of paint manufacturer for allowable moisture for specific type surfaces.

C. Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into an acceptable condition through preparatory work as specified. Correct unsatisfactory conditions.

D. Proceed with surface preparation and coating application only after conditions are suitable.

3.2 SURFACE PREPARATION

A. Do not apply finishes until surfaces are dry and clean and in proper condition to receive finish.

B. In addition to painting specified, sand and patch prime coats specified under other sections.

C. Perform preparation and cleaning procedures in accordance with coating manufacturer's instructions for each substrate condition.

D. Remove hardware and accessories, machined surfaces, plates, lighting fixtures and similar items in place and not to be finish-painted, or provide surface-applied protection. Reinstall removed items.

E. Plaster and Wallboard Materials:
   1. Test plaster with one percent solution of phenolphalein in alcohol for dryness and excess acid. Treat excess lime with zinc sulfate solution after observation.
   2. Rake cracks, scratches and abrasions. Fill with thin layers of patching plaster or joint cement as appropriate.
   3. Sand smooth; do not raise nap of paper on wallboard.

F. Ferrous Metal Surfaces:
   1. Remove dirt and grease with mineral spirits.
   2. Remove dust, mill scale, and defective paint down to sound surface using scraper, sandpaper or wire brush as necessary. Clean rusted surfaces down to bare metal.
   3. Feather edges of sound paint by grinding.
   4. Where areas of bare metal are exposed prime with anti-rust primer recommended for this exposure.

G. Galvanized Steel and Aluminum Surfaces:
   1. Clean surface with solvent to remove oily residue. Dry with clean cloth.
   2. Prime with anti-rust 2-coat primer system recommended for this exposure.

H. For surface preparation of other materials not specifically noted, provide appropriate primers and cleaning agents.

3.3 SURFACE PREPARATION, EXISTING SURFACES

A. For surfaces damaged during construction, or indicated as being re-painted: Remove existing loose, blistered, scaled or crazed finish to bare base material surface. Where new work joins existing work, prepare existing surfaces extending to the nearest break in the plane. Wash surfaces with Port approved cleaner and water or other solution as permitted.
   1. Prevent impaired bond or bleed through by removing accumulated films of wax, oil, grease, smoke or other foreign matter.
   2. After washing, rinse with potable water and let thoroughly dry.

B. High-Gloss and Semi-Gloss surfaces: Wash and rinse as noted above, then wipe with liquid de-glosser or other acceptable preparation compound.

C. Existing Painted Ferrous Metal:
   1. Remove rust and loose paint to bare metal; solvent wash and prime as specified for new work.
   2. Sand rough edges of bare areas to feather edge at adjacent sound paint before priming.

D. Existing Gypsum Board Walls and Ceilings:
   1. Bring to attention of appropriate trades, in timely manner, broken and disintegrated wallboard or areas with major damage or holes.
   2. Fill cracks and defects with spackle, “Swedish putty” or approved patching plaster; vinyl base spackle may be used at gypsum board. Apply texture as required to match existing adjacent surfaces.
   3. Prime bare, filled and patched surfaces with primer specified.

3.4 APPLICATION

A. Paint materials may be applied to fields of walls, ceilings and painted doors with rollers or airless spray equipment. Brush-paint other work except as specifically indicated.
   1. Doors:
      a. Where silk-screened signage is applied to painted doors as specified elsewhere, apply paint to doors with airless spray equipment.
      b. Lay off other painted doors with roller of acceptable texture after application of paint.
   2. Apply each coat evenly, without brush marks, skipped or missed areas; and without sags, runs or other blemishes.
   3. Where spray application is permitted, spray each coat without streaking, lapping or pile up of paint, and lay off with roller for light stippled surface (except as noted).

B. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted. Apply prime coat to material which is required to be painted or finished, and which has not been prime coated by others.

C. Apply each material at not less than the manufacturer's recommended spreading rate, to provide a total dry film thickness of not less than 3.0 mils for the coating systems applied under this section.

D. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

E. Observation of Surfaces:
   1. Do not apply additional coats until completed coat has been reviewed and approved.
   2. Only observed coats of paint will be considered in determining number of coats applied.

F. Paint surfaces behind furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only, wherever possible.
   1. Paint interior surfaces, where visible through registers or grilles, flat, non-specular black.
   2. Paint backsides of access panels, and removable or hinged covers to match exposed surfaces.

G. Sand lightly between succeeding coats.

H. Finish door edges, tops and bottoms to match faces.

I. Refinish whole wall where portion of finish has been damaged or is not acceptable.

J. Make edges of paint adjoining other materials or colors clean and sharp without overlapping. Exercise care that paint does not lap or splatter onto surfaces scheduled to receive other finishes or which are not to be painted.

3.5 CLEANING

A. Remove spilled, splashed or spattered paint.

B. Do not mar surface finish of item being cleaned.

C. Leave storage space clean and in condition required for equivalent spaces in project.

D. Produce a satisfactory finish by painting or repainting as directed, surfaces from which paint spatters cannot satisfactorily be removed.

3.6 PAINTING SCHEDULE

A. Architecturally Exposed Structural Steel:
   1. Touch-up primer.
   2. Provide two coats of water based gloss enamel.
   3. Water Based Gloss Enamel: As listed in the Oregon Council PDCA "Revised Table of Products."
   4. Colors: See color schedule.
   5. Provide two coats with total dry film thickness not less than 4.0 mils.

B. Other Exterior Metalwork:
   1. Same system as architecturally exposed structural steel, except reduce gloss as directed.
   2. Apply to:
      a. Ladders, gratings, stairs, railings, bollards, and equipment stands.
      b. Metal doors and frames.
      c. Rooftop mechanical and electrical items, whether prefinished or not.
      d. Electrical panels, wireways, and weatherproof electrical outlets.
      e. Paint other exterior metalwork items; work of this article is not limited to the items listed above.

C. Take special care to keep the items scheduled for "No Finish" clean; finish not required.

END OF SECTION 099100

SECTION 133419 - STEEL BUILDING SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes:
   1. Pre-engineered building and components including the following:
      a. Structural secondary steel framing.
      b. Roof covering system including exterior roof panels, panel attachments, sealants, mastics, trim and flashings.

1.2 REFERENCED STANDARDS

A. ASTM A 36/ASTM A 36M – Standard Specification for Carbon Structural Steel.

B. ASTM A 325 – Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

C. ASTM A 563 – Standard Specification for Carbon and Alloy Steel Nuts.

D. ASTM A 653 / A 653M – Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

E. ASTM A 792/A 792M – Standard Specification for Steel Sheet, 55 percent Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

F. ASTM A 1011 – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low Alloy with Improved Formability.

G. AWS D1.1 – Structural Welding Code; American Welding.

H. Factory Mutual (FM): Wind classification rating system.

I. IAS AC472 International Accreditation Services.

J. UL 580 – Test for Wind Uplift Resistance of Roof Assemblies; Underwriters Laboratories Inc.

K. UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.

1.3 SYSTEM DESCRIPTION

A. General:
   1. Provide metal roof purlin, metal roof panels, accessories and miscellaneous materials for a complete enclosure including supports for building components specified in other sections.
   2. Design structural systems according to professionally recognized methods and standards and legally adopted building codes.
   3. Design under supervision of professional engineer licensed in the jurisdiction of the Project.

B. Design Requirement:
   1. Bay Size: See Drawings.
   2. Roof Pitch: 1/12.
   3. Minimum Roof Snow Load: 25 psf.
   4. Roof Live Load: 20 psf, non-reducible.
   5. Ground Snow Load: 20 psf.
   6. Collateral Loads: 5 psf (include how much Collateral load will resist uplift 0 psf)
   7. Seismic Loads: Calculate in accordance with applicable code.
   8. Building use/importance Category II, Soil Profile D.
   9. Dead Loads, including the weight of all indicated permanent construction:
      a. Elements required for support of lights and light battens, hanging fixtures, mechanical equipment, piping, ceiling hanger wires, and all other items required to provide a complete building and not specifically indicated on the Drawings.
   10. Wind Loads:
      a. Roof Wind Load: Calculate in accordance with applicable code, using 120 mph. Basic Wind Speed or pressure, Exposure Category C, and Importance Factor of 1.0. Wind Enclosure enclosed.
      b. SSR Roof System tested and certified to meet Underwriters Laboratories UL 90 wind uplift rating.
         1) Panels tested in accordance with U.S. Corp of Engineers ASTM E 1592.
         2) Panels fastening meeting uplift requirements based on tested fastener values with appropriate Safety Factors.
         3) Purlin strength with SSR roof panel determined and tested in accordance with AISI procedures.
      c. All loads and code information must be obtained directly from the Authority Having Jurisdiction.
   11. Sprinkler Loads: Coordinate all sprinkler loads with supplier.

1.4 SUBMITTALS

A. Submit under provision of Section 013300 – Submittals.

B. Design Data: Provide detailed design criteria and calculations prepared by a licensed Oregon Professional Engineer.

C. Shop Drawings: Show building layout, primary and secondary framing member sizes and locations, cross-sections, and product and connection details.

D. Information on manufactured products to be incorporated into the project.

E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

F. Verification Samples: For each finish product specified, two (2) samples, minimum size 6-inches square, representing actual product, color, and patterns.

G. Certificates: Welder certifications.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Not less than five (5) years' experience in the actual production of specified products.
   1. Member of the Metal Building Manufacturer's Association (MBMA).
   2. Primary manufacturer of frames, secondary steel, roof and wall sheeting, and trim.

B. Installer Qualifications: Firm experienced in application or installation of systems similar in complexity to those required for this project, plus the following:
   1. Acceptable to or licensed by manufacturer.
   2. Five (5) years' experience with systems.
   3. Successfully completed not less than five (5) projects of comparable scale.

C. Preinstallation Conference: Conduct conference at Project site.
   1. Meet with Port, Port Tenant Representative, elastomeric coating installer and other installers whose work interfaces with steel building repairs.
   2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
   3. Review safety measure and procedures required to protect workers and public during the course of the project.
   4. Review job site access and storage procedures.
   5. Review weather protection measures to prevent water intrusion to building interior.
   6. Discuss Port building requirements and security protocol.
   7. Review temporary protection requirements for glazing during and after installation.
   8. Discuss limitations of metal panels with regard to material loading and storage and susceptibility to damage from foot traffic.
   9. Review of shoring and temporary bracing strategies and submittals.
   10. Verify all preinstallation testing has been performed and additional testing or material changes are not required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install product under environmental conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:
   1. AEP Span (Tacoma, WA).
   2. The Purlin Mill (Hubbard, OR).
   3. Or pre-bid approved equal.

2.2 SECONDARY FRAMING

A. Purlins: Zee-shaped; depth as required, with minimum yield strength of 55,000 psi; simple span or continuous span as required for design G-60 galvanized standard material.
   1. Purlin Size: 8x2.5.

B. Deflection: Limit purlin total deflection to L/180 of span.

C. Wind Bracing: Portal, torsional, diagonal bracing or diaphragm in accordance with manufacturer's standard design practices; utilizing rods, angles, and other members, with minimum yield strength as required for design but in most cases, 50 ksi.

D. Primary Frame Flange Bracing: Attached from purlins or girts to the primary framing, minimum yield strength as required for design but in most cases 60 ksi.

2.3 ROOF COVERING SYSTEM

A. Roof Panels: PBR style through fastened roof panels; 36-inch wide net coverage with 1-1/2-inches high major ribs formed at 12-inches on center.
   1. Side Joints: Factory applied or field applied sealant within panel overlaps.

2. Material: Galvalume steel.
3. Thickness: 22-gauge.
4. Side Laps: One overlapping weather sealed joint.
5. Length:
    a. Varies not to exceed 26-feet in length.
    b. Minimum length to be no less than 10-feet.
6. End Laps, where required: 6-inches wide, located at a support member.
7. Panel-to-Roof-Purlin Structural Attachments: Panel fasteners.
8. The paint system is a PVDF finish applied to the galvanized surface to give a long life color that resists fading and chalking. PVDF finish with 70 percent Kynar 500 or Hylar 5000 standard.
9. Exposed fasteners are stainless steel capped with self-sealing washers.

2.4 ROOF ACESSORIES

A. Downspouts: Roll-formed 26 gauge steel sheet, with gutter straps, fasteners and joint sealant; manufacturer's standard color.
    1. 22-gauge, as sized on Drawings, with downspout elbows and downspout straps; same color as wall panels unless specified otherwise.

B. Roof Curbs: Welded units fabricated for shingled installation with roof panels; minimum 18 gauge. Galvalume coated steel or stainless steel, with welds cleaned and treated with protective coating compatible with the Galvalume substrate.
    1. Top of curbs horizontal with 1-1/2-inch perimeter flange.
    2. Curb walls insulated with 1-1/2-inch, 3 pcf density rigid glass fiber insulation.
    3. Water Diversion: Integral 4-inch high by full length cricket on upslope side.
    4. Upslope and down slope curb flanges with integral welded inside and outside cell closures compatible with the roof panel profile.
    5. Curb Framing: Mounted on secondary structural members and installed from the top; compatible with the thermal expansion and contraction properties of the roof on which it is used.
    6. Opening Size: As indicated on Drawings.
    7. Curbs for SSR Roof Panels: One-piece type.

2.5 MATERIALS

A. Structural Steel Plate, Bar, Sheet, And Strip for Use in Bolted and Welded Constructions: ASTM A 572 / A 572M, A 529 / A 529M, A 1011 or A36 / A 36M Modified 50, with minimum yield strength of 55, 000 psi.

B. Galvanized Structural Steel Material for Use in Roll Formed or Press Broken Secondary Structural Members: ASTM A 653, with minimum yield strength of 55,000 psi.

C. Structural Bolts and Nuts Used with Primary Framing: High strength, ASTM A 325 bolts and ASTM A563 Grade C nuts.

D. Bolts and Nuts Used with Secondary Framing Members: High Strength ASTM A 325 Bolts and ASTM A 563 Grade C nuts.

E. Panel Fasteners:
   1. For Roof Panels: Stainless steel-capped carbon steel fasteners with integral sealing washer.
   2. Concealed Fasteners: Self-drilling type, of size as required.
   3. Provide fasteners in quantities and location as required by the manufacturer.

F. Flashing and Trim: Match material, finish and color of adjacent components. Provide trim at rakes, including peak and corner assemblies, high and low eaves, corners, bases, framed openings and as required or specified to provide weathertightness and a finished appearance.

G. Sealants, Mastics and Closures: Manufacturer's standard type.
   1. Provide at roof panel end laps, side laps, rake, eave, transitions and accessories as required to provide a weather resistant roof system; use tape mastic or gun grade sealant at side laps and end laps.
   2. Provide at wall panel rakes, eaves, transitions an accessories.
   3. Closures: Formed to match panel profiles; closed cell elastic material, manufacturer's standard color.
   4. Tape Mastic: Pre-formed butyl rubber-based, non-hardening, non-corrosive to metal; white or light gray.
   5. Gun Grade Sealant: Non-skinning synthetic Elastomeric based material; gray or bronze.

2.6 FABRICATION

A. Fabricate according to manufacturer's standard practice.
   1. Field Connections: Prepare members for bolted field connection by making punched, drilled, or reamed holes in the shop.

B. Component Identification: Mark all fabricated parts, either individually or by lots or group, using an identification marking corresponding to the marking shown on the Drawings, using a method that remains visible after shop painting.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.

3.2 PREPARATION

A. Framing Erection: Erect framing in compliance with AIS Specification and the latest edition of the MBMA metal building systems manual.

B. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing. Locate braced bays as required by manufacturer.

3.3 INSTALLATION

A. Install in compliance with manufacturer's instructions.

B. Exercise care when cutting pre-finished material to ensure cuttings do not remain on finish surface.

C. Fasten cladding system to structural supports, aligned level and plumb.

D. Locate end laps over supports. End lap panels according to manufacturer's recommendation. Place side laps over adjacent panel and mechanically seam or stitch fastener per erection guidelines.

E. Provide expansion joints where required.

F. Install sealant and gaskets to prevent weather penetration.

G. Install system free of rattles, noise due to thermal movement, and wind whistles.

H. Seal wall and roof accessories watertight and weathertight with sealant in compliance with building manufacturer's standard procedures.

I. Rigidly support and secure downspouts. Joint lengths with formed seams sealed watertight. Flash and seal gutters to downspouts.

J. Tolerances:
   1. Framing Members: 1/4-inch from level; 1/8-inch from plumb.
   2. Racking: 1/8-inch from true position. Provide shoring to maintain position prior to cladding installation.

3.4 FIELD QUALITY CONTROL

A. Testing by Contractor:
   1. Provide any required testing or special inspection as required to validate construction.

B. Testing by the Port:

1. High Strength Bolted Connections: Specification for Structural Joints Using ASTM A 325.
2. Welded Connections: ASW. Visual inspection of 100 percent of welds.
3. General Testing: For materials and installed tolerances.

3.5 REPLACEMENT SHEET METAL ROOF PANELS

A. Where indicated on the drawings, replace deteriorated and damaged roof panels in the following manner:

1. Utilizing equipment designed for the opening of panel seams, open and disengage sheet metal panel seams as required to remove the damaged panel without damaging existing panels and panel seams that are to remain.
2. Remove and discard damaged panel, including all associated fasteners, previous repair materials, and sealants.
3. Replace all damaged clips, and hardware.
4. Install new panels.
5. Panel laps shall:
    a. Occur over purlins.
    b. Be weather-lapped 10” minimum with existing panel system.
    c. Sealed with two lines of continuous butyl sealant centered under area of fastener placement, within panel lap.
6. Replace all panels damaged by repair procedure.

END OF SECTION 133419

SECTION 230529 – HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes the following:
   1. Hangers, supports, and anchors for equipment and ductwork.
   2. Supplementary steel for support or attachment of equipment and ductwork to general construction elements of the project.

1.2 REFERENCES

A. ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers.
   1. ASHRAE Chapter 41: Absorption, Cooling, Heating, and Refrigeration Equipment.

B. ASTM: American Society for Testing and Materials.
   1. ASTM A36: Standard Specification for Carbon Structural Steel.

C. SMACNA: Sheet Metal and Air Conditioning Contractors' National Association.

D. OSSC: Oregon Structural Specialty Code.

1.3 SUBMITTALS

A. Product Data: Submit product data for products specified herein.

B. Shop Drawings:
   1. Suspended Piping and Ductwork: Submit shop drawings of piping and ductwork indicating point loads and support locations, along with applicable details keyed to layouts.
   2. Support Frames, Piping, Equipment Supports, and Anchorage: Submit shop drawings indicating point loads and support locations, along with engineers' calculations and details keyed to the layouts pertaining to supports, support frames, and anchorages, if required.
   3. Supplementary Steel: Submit shop drawings showing details of fabrication and installation. Indicate materials, thicknesses, gauges, sizes, dimensions, methods of joining and fastening, welds, finishes, details of reinforcement and embedment, attachments, anchorages, miscellaneous metal items incidental to basic fabrication shown, provisions for work of other trades, and other pertinent information. Submit structural calculations for necessary supplementary steel for supports, anchors, and attachment of equipment, pipes, and ducts to general construction. Calculations shall be prepared and stamped by a registered professional structural engineer licensed in the state of Oregon.
   4. As-Constructed Drawings and Data: Submit as-constructed data and as-constructed drawings.

1.4 QUALITY ASSURANCE

A. Supports and hangers for piping systems subject to expansion and contraction shall be chosen with careful consideration. The hanger support type selection depends on the directions in which the piping system will expand.

PART 2 - PRODUCTS

2.1 SUPPORTS AND ANCHORAGE

A. Provide pipe and equipment hangers and supports in accordance with the following:
   1. When supports and anchorages, equipment, conduit, piping, and ductwork are not shown on the drawings, the Contractor shall be responsible for their design.
   2. Supports and anchorages shall resist forces due to hydraulic testing and seismic forces as specified in the IBC for the ground motion accelerations corresponding to the project location.
   3. Supports and anchorages shall not introduce stresses in the piping caused by thermal expansion or contraction.
   4. Connections to structural framing shall not introduce twisting, torsion, or lateral bending in the framing members. Provide supplementary steel as required.

B. The following engineered support systems shall be designed, detailed, and bear the seal of a registered professional structural engineer licensed in the state of Oregon:
   1. Supports, floor and roof-mounted tanks, and supports for suspended tanks and equipment.
   2. Support frames, such as pipe racks or stanchions, for piping and equipment which provide support from below.
   3. Tank, equipment and piping support frame anchorage to supporting slab or structure.

2.2 SUPPORTS, GENERAL

A. Acceptable Manufacturers: B-Line Systems, Anvil, Powerstrut and Kinline, Superstrut, Unistrut, or Pre-Bid approved equal.

B. Fabricate support members from welded standard structural shapes, pipe, and plate. Carry the necessary rollers, hangers, and accessories as required. Piping less than 4-inch pipe size may be supported from or by prefabricated roll-formed channels as specified in this section with necessary accessories to adequately support piping system.

C. Supports and Accessories: Preformed roll-formed channels and accessories with matching compatible accessories as shown, as specified, and as required.

D. Dissimilar Metal Protection: Cush-a-Strip, Hydra-Zorb cushions, or pre-bid approved equal.

E. Attachments to roof and floor decks are not allowed.

2.3 PIPE ATTACHMENTS

A. Acceptable Manufacturers: B-Line Systems, Elcen, Anvil, Michigan Hanger, Superstrut, Telco, or pre-bid approved equal.

B. Clamps: Superstrut Series 700 through 702.

C. Insulated Horizontal Steel Piping:
   1. Chilled Water, 2-inches and Under: Anvil 65 with Fig. 167 shield.
   2. Chilled, Over 2-inches: Anvil Fig. 260 with Fig. 167 shield.
   3. Other, 2-inches and Under: Anvil Fig. 65 with Fig. 167 shield.
   4. Other, Over 2-inches: Anvil Fig. 260 with Fig. 167 shield.

D. Uninsulated Horizontal Steel Piping:
   1. 2-inches and Under: Anvil Fig. 65.
   2. Over 2-inches: Anvil Fig. 260.

E. Insulated Horizontal Copper Piping:
   1. Chilled Water, 2-inches and Under: Anvil Fig. 65 with Fig. 167 shield.
   2. Chilled Water, Over 2-inches: Anvil 260 with Fig. 167 shield.

F. Uninsulated Horizontal Copper Piping:
   1. 2-inches and Under: Anvil Fig. CT65, CT69.
   2. Over 2-inches: Anvil Fig. CT65.

G. Riser Clamps, Steel and Cast Iron Pipe: 3/4-inch to 20-inch, Anvil Fig. 261.

H. Riser Clamps, Copper Pipe: Anvil Fig. CT-121.

2.4 PIPE ROLLERS

A. Supported: Anvil Fig. 274, pipe roll chair, adjustable; or equivalent product by B-Line Systems, Elcen, Superstrut, Telco, or pre-bid approved equal.

B. Supported: Superstrut C728H, pipe roller, aluminum wheels, steel brackets, or equivalent product by B-Line Systems, Elcen, Anvil, Telco, or pre-bid approved equal.

C. Suspended: Anvil Fig. 171 or Fig. 177 adjustable pipe roller; or equivalent product by B-Line Systems, Elcen, Superstrut, Telco, or pre-bid approved equal.

2.5 PIPE RACKS

A. Acceptable Manufacturers: Kin-Line, Superstrut, Uni-Strut, or pre-bid approved equal.

B. Supports and Accessories: Preformed roll-formed channels and accessories with electrochromate or equal finish and matching compatible accessories as shown, as specified, and as required.

2.6 PROTECTION SHIELDS

A. Select protection shields based on actual outside diameter of pipe plus insulation. Protection shields shall be used at hanger or roller assemblies on chilled or cold water piping, where hangers are installed around insulation, and on both sides of clamps or U-bolts where installed around insulation. Use Anvil Fig. 167, or pre-bid approved equal.

2.7 BUILDING ATTACHMENTS

A. Acceptable Manufacturers: B-Line Systems, Elcen, Anvil, Superstrut, Telco, or pre-bid approved equal.

B. Beam Hangers – Beam Clamps: Anvil Fig. 218, adjustable malleable iron beam clamp, or Fig. 228, adjustable forged steel beam clamp.

C. Beam Hangers – C-Type Clamps: Anvil Fig. 93. Sized for required rod to support load being carried.

D. Beam Hangers – Welded: Anvil Fig. 66. Sized for required rod to support load being carried.

E. Inserts:
   1. Malleable iron or steel inserts, Superstrut M-732CB or S. Inserts sized for required rod to support load being carried.
   2. Malleable iron or steel inserts, Grinnell, Fig. 152. Inserts sized for required rod to support load being carried.

F. Expansion Plugs: Similar and equal to Phillips “red-head” self-drilling flush shell, selected for safety factor of 4.

G. Powder-actuated fasteners with silencers as approved by the Port.

2.8 PIPE ANCHORS

A. Fabricate from steel plate as detailed (steam, condensate, pumped condensate, and hot water).

B. Insulated Pipe Anchors (Chilled Water):
   1. Acceptable Manufacturers: Pipe Shields Inc., Rilco, or pre-bid approved equal.
   2. Insulated pipe anchors shall maintain vapor barrier and a positive axial, lateral, and vertical stop.
      a. Steel Inner Thrust Plates: Welded attachments, material shall be compatible with pipe, shipped loose.
      b. Structural Inserts: High-density calcium silicate, compressive strength 600 psi minimum. Asbestos-free treated with water repellant.
      c. Jackets: Galvanized steel.
      d. Steel Straps Base and Outer Thrust Plates: Carbon steel.
      e. Fasteners: Cadmium plated.
   3. The anchor shall bear the piping system design load. Pipe Shields models C4000 through C4300.

PART 3 - EXECUTION

3.1 HANGERS AND SUPPORTS

A. General:
   1. Install all support systems as detailed and in accordance with manufacturer's recommendations. Provide pipe racks, pipe stands, trapeze hangers, etc., as required and as detailed on the drawings.
   2. Provide adjustable hangers complete with inserts, adjusters, bolts, nuts, swivels, all-thread rods, etc., for all pipes, except where specified otherwise.
   3. Size hangers to clear insulation for piping services conveying liquids less than 70ºF.
   4. Support fire protection piping independently of other piping.
   5. Prevent electrolysis in support of copper tubing by use of hangers and supports which are copper plated, or by other recognized industry methods. Do not use tape for isolation.
   6. Arrange for grouping of parallel runs of horizontal piping to be supported together on trapeze type hangers where possible. Where piping of various sizes is to be supported together by trapeze hangers, space hangers for smallest pipe size or install intermediate supports for smaller diameter pipe. Do not use wire or perforated metal to support piping, and do not support piping from other piping.
   7. Except as otherwise indicated for exposed continuous pipe runs, install hangers and supports of same type and style as installed for adjacent similar piping.
   8. Install piping systems in accordance with SMACNA standards.

B. Vertical Piping:
   1. Support with U-clamps fastened to wall to hold piping away from wall unless otherwise approved.
   2. Riser clamps shall be directly under fitting or welded to pipe.
   3. Risers shall be supported at each floor of penetration.
   4. Provide structural steel supports at the base of pipe risers. Size supports to carry all forces exerted by piping system when systems are in operation.

C. Horizontal Piping:
   1. On all insulated piping, provide insulation protection shields at all roller locations.
   2. Cold and Hot Piping Systems:
      a. Install hangers outside of insulation.
      b. On all piping, provide insulation protection shields at each hanger location.

D. Trapeze Hangers: Multiple pipe runs where indicated shall be supported on channels with rust resistant finish. Provide all necessary supporting steel.
   1. Channels: Unistrut with electro-chromate finish, or pre-bid approved equal.

E. Hanger Spacing: Provide hangers at minimum spacing in accordance with Chapter 41, 2010 ASHRAE Guide and as follows:
   1. Steel Pipe, Copper Tubing: For straight runs of horizontal piping with no concentrated loads such as valves, flanges, expansion joints, or other components. Sections of piping with concentrated loads will have to be considered carefully and a determination made as to appropriate spacing and rod size for the given situation.

Pipe Size	Max. Span Steel	Max. Span Copper	Rod Size
1" and smaller	7 feet	5 feet	3/8"
1-1/4" to 2"	8 feet	8 feet	3/8"
2-1/2" to 3"	11 feet	9 feet	1/2"
4" to 5"	14 feet	10 feet	1/2"
6"	17 feet	12 feet	5/8"
8"	19 feet	14 feet	7/8"
10"	20 feet	N/A	7/8"
12"	20 feet	N/A	7/8"
14"	20 feet	N/A	1"
16"	20 feet	N/A	1"
18"	20 feet	N/A	1 1/4"
20"	20 feet	N/A	1 1/4"
24"	20 feet	N/A	1 1/2"

2. Maximum Rod Load: Below are maximum loads for hanger rods based on Chapter 41 of ASHRAE Guide and as follows for ASTM A36, with a safety factor of 5.

Nominal Rod Diameter	Load
3/8"	610 pounds
1/2"	1,130 pounds
5/8"	1,810 pounds
3/4"	2,710 pounds
7/8"	3,770 pounds
1"	4,960 pounds
1 1/4"	8,000 pounds
1 1/2"	11,630 pounds

F. Insulation Protection:
   1. Where piping is suspended from insulation, provide 16-gauge galvanized steel protection shields, 12-inches long.
   2. Where pipe clamps are installed on insulated piping, provide 16-gauge galvanized steel protection shields, 12-inches long on both sides of insulated pipe.
   3. Band shields firmly to insulation to prevent slippage.

G. Building Attachments:
   1. Do not fasten or attach to steel deck structure. Support all piping from structural members, beams, joists, or provide intermediate angle iron supporting members between joists.
   2. Provide transverse and longitudinal bracing on piping at 75-foot intervals, 40-foot intervals for domestic cold water and to provide a stabilized piping system. Bracing shall not introduce stresses in the piping system caused by thermal expansion or contraction.
   3. Provide additional structural steel angles, channels, or other members to support piping where structures do not occur as required for proper support.
   4. Arrange supports to prevent eccentric loading of joists and joist girders. Locate supports at joist panel points.

H. Pipe Racks:
   1. General: Provide racks as shown with additional elements to adequately support piping.
   2. Coordination: Where mechanical piping, tubing, etc., and electrical conduit, wiremold, wireways, etc., follow common routings, coordinate routing. Allow sufficient clearance to adequately operate, access, and maintain all devices without dismantling racks.

I. General: Support all piping within 2 feet of change of direction on both sides of fitting.

J. Insulated Pipe Anchors: Apply a wet coat of vapor barrier on all butt joints and seal the joints with a minimum of 3-inch-wide vapor barrier tape or band.

END OF SECTION 230529

SECTION 230545 - SEISMIC RESTRAINTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes seismic restraints for piping, ductwork, conduit and equipment, including clamps, rods, channels, struts, anchor bolts, nuts, and accessories.

1.2 REFERENCES

A. AISC: American Institute of Steel Construction
   1. AISC Steel Construction Manual

B. ASTM: American Society for Testing and Materials
   1. ASTM A36: Standard Specification for Carbon Structural Steel

C. AWS: American Welding Society
   1. AWS D1.1: Structural Welding Code – Steel, 2010

D. OSSC: Oregon Structural Specialty Code

1.3 QUALITY ASSURANCE

A. The seismic restraint and anchorage of permanent equipment and associated systems listed below to building structure shall be designed to resist the total design seismic force prescribed in the OSSC.
   1. Floor- or roof-mounted equipment.
   2. Suspended or wall-mounted equipment.
   3. Vibration-isolated equipment.
   4. Potentially hazardous or life-safety piping systems 1 inch or larger throughout the building.
   5. Piping 1 1/4 inches nominal diameter and larger located in mechanical equipment rooms.
   6. Piping 2 1/2 inches nominal diameter and larger.
   7. Ductwork 6 square feet and larger in cross sectional area.
   8. Round ductwork 28 inches in diameter and larger.
   9. Electrical conduit 2 1/2 inches trade size and larger.
   10. Any piece of equipment that is not floor mounted with a weight greater than or equal to 25 pounds.

B. Except for those which would individually require bracing, pipes, ducts, and conduit supported by a trapeze need not be braced if connections to the pipe/duct/conduit or directional changes do not restrict movement of the trapeze. If this flexibility is not provided, bracing shall be required when the combined operating weight of all elements supported by the trapeze is 10 pounds per foot or greater.

C. All seismic restraints, including anchors to building structure, shall be designed by a registered professional structural engineer licensed in the state of Oregon. Design shall include:
   1. Number, size, capacity, and location of anchors for floor- or roof-mounted equipment. For curb-mounted equipment, provide design of attachment of both the unit to the curb and the curb to the structure. For units weighing greater than 2500 pounds, or curbs more than 10 feet long, provide substantiating calculations the curb can accept the prescribed seismic forces.
   2. Number, size, capacity, and location of seismic restraint devices and anchors for vibration-isolation and suspended equipment. Provide calculations, test data, or California OSHPD approval number verifying the horizontal and vertical ratings of the seismic restraint devices.
   3. Number, size, capacity, and location of braces and anchors for suspended piping, ductwork, conduit, and cable trays on as-built plan drawings.
      a. The Contractor shall select a single seismic restraint system pre-designed to meet the requirements of the OSSC such as the 1999 Mason Industries Seismic Restraint Guidelines for Suspended Piping, Ductwork and Electrical Systems.
      b. Details or designs from separate seismic restraint guidelines are not acceptable. Installation not addressed by the selected system shall be designed, detailed and submitted alone with the as-built plan drawings.
      c. Maximum seismic loads shall be indicated on drawings at each brace location. Drawings shall bear the stamp and signature of the registered professional structural engineer licensed in the state of Oregon who designed the layout of the braces.

D. Supports, Hangers, and Anchors: Comply with the requirements of Section 230529, Hangers and Supports for HVAC piping and Equipment, except anchor (expansion) bolts used for connection Level 3 shall have expansion anchor capacities equal to 50 percent of the ICC research report values.

1.4 SUBMITTALS

A. Product Data: Submit product data for products specified herein.

B. Shop Drawings: Submit shop drawings complying with the requirements of the Quality Assurance article of this section. Shop drawings shall be stamped and signed by a professional structural engineer licensed in the state of Oregon.

C. Calculations: Submit seismic calculations indicating restraint loadings resulting from the design seismic forces presented in the Quality Assurance article of this section. Calculations shall include proper anchorage details and when applicable shall include consideration of the types of concrete. Calculations shall be stamped and signed by a professional structural engineer licensed in the state of Oregon.

D. Certifications: Submit certification of seismic restraint's and building structural member's capability to safely accept loads resulting from seismic forces calculated in the previous paragraph. Tests in three planes clearly showing ultimate strength and appropriate safety factors, performed by independent laboratories, stamped, and signed by a professional structural engineer licensed in the state of Oregon or calculations by a professional structural engineer licensed in the state of Oregon are acceptable.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Seismic Bracing: Steel fabrication, in accordance with AISC Steel Construction Manual, with structural steel shapes of ASTM A36 steel. Welding shall be in accordance with AWS D1.1-10. Design and sizes shall be as required. Fastenings, bracing and assembly shall be selected by a professional structural engineer licensed in the state of Oregon. Design calculations shall show that the maximum stress in any structural steel member will not exceed 18,000 psi.

B. Channel type elements shall be No. 12 gauge formed steel; 1 5/8-inch square prime painted or chromate dip finish. Use spring-in nuts with grooves.

C. Bolting accessories shall be machine bolts with semi-finished nuts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Equipment and tanks shall be braced or anchored to conform to the requirements listed under the Quality Assurance article of this section.

B. Ductwork and piping shall be seismically braced to conform to the requirements listed under the Quality Assurance article of this section.

C. Provide pipeline seismic flexible connectors where piping crosses building earthquake joints. Arrange piping and connectors for the amount of motion required. Provide vent and drain valves for all liquid filled systems.

D. Provide ductwork seismic flexible connectors where ductwork crosses building earthquake joints. Arrange ductwork and connectors for the amount of motion required.

E. Powder-actuated inserts shall not be used.

F. Seismic restraints shall be attached to structural members of the building which are capable of withstanding the design load of the seismic restraint. Ensure load capacity of the structural members is greater than or equal to the capacity of the seismic restraint.

G. Seismic restraints shall not introduce stresses in piping caused by thermal expansion or contraction.

END OF SECTION 230545

SECTION 235523 – GAS-FIRED RADIANT HEATER

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes modifications to exhaust system of gas-fired radiant heating systems.

1.2 SUBMITTALS

A. For systems, equipment, and components specified herein, submit product/material data; shop drawings; as-constructed data; installation, startup, and testing manuals; and as-constructed drawings.
   1. Shop Drawings: Include dimensioned drawings showing location of exhaust piping. Hanger locations shall be approved by the Port prior to fabrication. Show clearances to combustible material.
   2. Product Data: Include performance data.

PART 2 - PRODUCTS

2.1 GAS FIRED RADIANT HEATER

A. General:
   1. Verify heaters are equipped with a direct sense silicon-carbide hot surface ignition control system with 100 percent shut-off ignition device.
   2. Verify burner is equipped with totally enclosed motor with thermal overload protection, balance air rotor, combustion air proving safety switch, nickel plated burner cup, and combustion chamber with sight glass for visual inspection of igniter element and burner flame.
   3. Verify reflector is aluminum, designed to reflect all radiant output below horizontal centerline of tube. Nickel plated hangers, chrome plated hardware with all in good working order.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify each existing heater to be modified is in working order and is acceptable for new work.

B. Notify Port of any unsatisfactory conditions.

C. Proceed with installations only after all unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install exhaust systems and components in accordance with applicable codes and regulations and the manufacturer's instructions, diagrams, and prints.

B. Clearances to combustible materials shall not exceed those specified by the manufacturer.

C. Prior to installation, verify equipment locations and mounting height with all other shop equipment.

D. Support Hangers, Anchors, and Seismic Restraints: Comply with the requirements of Sections 230529 and 230545.

E. Pitch piping down at least 1/2-inch per 20-feet on radiant lines.

F. End Vent Assembly:
   1. Install in accordance with the manufacturer's instructions.
   2. Install gas flue between heater tube and roof vent termination hood.

3.3 ADJUSTMENTS

3.4 Perform minor adjustments and correct damaged or dislocated components as required for safe operation.

3.5 TESTING

A. Check out, start up, and test systems, equipment, and components specified herein.
   1. Installation checkout, startup, and operational testing shall be under the supervision of manufacturer's representative who shall certify when installation is complete and system is adjusted and operating satisfactorily.

END OF SECTION 235523

SECTION 260500 – COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 DESCRIPTION

A. This division includes the electrical requirements of the work including, but not restricted to, the following key elements:
   1. Disconnection, re-connection, repair, replacement, or abandonment of existing electrical conditions in an immediately adjacent to all areas requiring upgrades as a result of roof repair activities.
   2. Investigation of existing wiring, fixtures, and materials to confirm code compliance and condition.

B. See Division 1 for general procedural and administrative specifications.

1.2 REFERENCES

A. All equipment and materials shall be installed in accordance with the applicable standards of the following organizations:
   1. ANSI: American National Standards Institute
   2. FAA: Federal Aviation Administration
   3. IBC: International Building Code
   4. ICEA: Insulated Cable Engineers Association
   5. IEEE: Institute of Electrical and Electronic Engineers
   6. NEC: National Electrical Code
   7. NEMA: National Electrical Manufacturers Association
   8. NFPA: National Fire Protection Association
   9. OAR: Oregon Administrative Rules
   10. OSHA: Occupational Safety and Health Administration
   11. UL: Underwriters Laboratories

1.3 CODES, PERMITS, AND CERTIFICATES

A. See Division 1 for specific requirements relating to codes enforced, permits, and inspections.

B. Provide notification 48 hours prior to covering concealed electrical work to allow inspection.

C. Notify the electrical inspector of jurisdiction having authority sufficiently in advance to completely inspect the work in the various stages necessary. Uncover concealed work and provide qualified staff to assist inspectors.

D. In preparation for final inspection, all electrical equipment shall have wires installed and under terminal posts, and circuit schedule and labeling complete.

E. Deliver certificates from inspection authorities, certifying work is complete and satisfactory, before acceptance of the work.

1.4 ELECTRICAL SAFETY PROGRAM

A. Contractors doing work on Port property are required to have an electrical safety program that meets or exceeds all OR-OSHA requirements.

B. Prior to commencement of electrical work, the Contractor shall meet with Port facility safety personnel and inform each other of existing known hazards, personal protective equipment requirements, safe work practice procedures, and emergency/evacuation procedures applicable to the work to be performed. This coordination shall include a meeting and documentation.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store and handle materials to protect against corrosion or mechanical damage. Remove damaged materials from site immediately after detection.

B. Deliver materials in manufacturer's packaging. Deliver conductors and cables in complete coils.

1.6 ELECTRICAL DRAWINGS

A. Electrical drawings have not been provided and all drawing references are diagrammatic and do not show every detail of modification.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Supply all materials to complete and provide the operating system specified, unless it is specifically indicated that materials are being furnished by others, or that existing equipment shall or may be reused.

B. All materials shall be new and meet the requirements of these specifications. Materials shall be subject to Port approval via the submittal process.

C. All components and equipment provided and normally tested and labeled by Underwriters Laboratories (UL), or similar recognized third party approval authority, shall be so labeled.

2.2 GENERAL SUPPORT AND ANCHORING HARDWARE

A. All anchors, nuts, washers, and bolts shall be rust resistant, plated type, unless specified otherwise. Anchors, nuts, washers, and bolts for exterior use shall be stainless steel.

B. Brackets and miscellaneous hardware shall be rust resistant, plated type, unless specified otherwise.

C. Bolts associated with lighting fixture installation shall be applied with anti-seize lubricant such as Never-Seez, or equal, prior to installation.

D. Exterior channel-type support or where noted on drawings shall be hot-dipped galvanized. Interior channel-type support shall be electro-galvanized plus zinc chromate finish. Kindorf, Superstrut, Unistrut, or equal.

E. Clamps, brackets, and similar hardware utilized with the channel support system shall be of the same manufacturer and be similarly galvanized.

PART 3 - EXECUTION

3.1 LAYOUT AND COORDINATION

A. Work under this division shall be conducted in a cooperative manner with work of other divisions employed on the project, for proper installation of all items of equipment.

B. Verify the physical dimensions of each item of electrical equipment to fit the available space and provide prompt notification prior to roughing-in if conflicts appear. Coordinate equipment to fit into the available spaces and coordinate access routes through the construction site.

3.2 PROTECTION

A. Electrical work, wire and cable, materials, and other equipment specified in this division shall be protected against damage by other construction activities, weather conditions, or any other causes as a part of this work. Equipment found damaged or in other than new condition shall be rejected as defective.

3.3 GENERAL INSTALLATION METHODS

A. All material and equipment shall be installed in accordance with the manufacturer's recommendations, instructions, and/or installation drawings, and in accordance with NEC and specifications.

B. Unless otherwise noted on the drawings, all wiring in finished spaces shall be concealed. Exposed conduit is acceptable only when and where prior specific authorization is obtained from Port. If exposed conduit is installed, it shall be parallel to structural lines.

C. Provide necessary rigid conduit sleeves, openings, and chases where conduits or cables are required to pass through floors, ceilings, or walls. Seal all openings around conduits against leaks and in a manner to maintain the fire rating of the structure penetrated. Prevent unnecessary cutting in connection with the finished work. Make all repairs and seals in a manner acceptable to the Port.

D. Cutting or notching shall be kept to a minimum and done in a method only as approved by the Port. Structural members shall not be disturbed or cut in any way without specific written approval from the Port on a case-by-case basis. Patch and correct finished surfaces damaged by electrical work.

E. The extent of the branch circuiting and control wirings shown shall not be changed.

F. Provide all backing and mounting hardware required to complete the electrical systems in a safe, working condition as part of the contract work.

G. Comply with code requirements and methods.

3.4 EXISTING ELECTRICAL SYSTEMS

A. Existing electrical services shall be maintained operational at all times unless specified, scheduled, and/or approved otherwise.

B. The Contractor shall be responsible for ensuring the safety of Contractor's personnel when working on Port electrical systems. Those responsibilities include:
   1. Compliance with Oregon Administrative Rules, Chapter 437, when working on or near exposed de-energized or energized parts.
   2. Confirming that the equipment has, in fact, been de-energized by testing and installing grounds to the system being worked on.
   3. Providing the spider and locking device necessary to lock out the disconnect switch.
   4. Providing a circuit breaker locking device or disconnecting the branch circuit conductor from the circuit breaker and tagging the conductor.
   5. Providing the personnel responsible for attaching tags and locks with a mobile telephone.

C. An example of an approved lockout tag will be provided to be used by the electrician responsible for the work being performed and for installing and removing the lock and tag. The electrician shall attach the tag to the lockout device using a tie string or wire indicating the following: The electrician's name, company, time of lockout, mobile telephone number, estimated time the circuit can be energized, and who authorized the outage.

D. The individual responsible for signing the tag shall be required to remove the lock and, unless the circuit has been approved for an extended outage, that person shall remain on site until all related work is completed and the tags and locks are removed. No one else shall be allowed to remove them even if told to do so. Where shift work is in progress, he can remove his tag and the responsible individual on the next shift shall immediately install his tag.

3.5 DEMOLITION

A. Remove or relocate electrical wiring, equipment, luminaires, etc., as encountered in existing area affected by this work. Wiring which serves usable existing outlets shall be restored and routed clear of the construction or demolition. Cable and conduit to be demolished shall be removed at the exterior of the structure and terminated at the point where it exits the exterior wall from the interior.

3.6 CUTTING AND PATCHING

A. Include cutting, patching, and restoration of finishes necessary for the work. Surfaces damaged by the work and spaces around conduits passing through walls shall be neatly patched and finished to match the adjacent construction, including painting or other finishes. Patch, clean, and remove all dirt and debris.

3.7 GENERAL EQUIPMENT SUPPORT

A. Each fastening device and support for electrical equipment, luminaires, panels, outlets and cabinets shall be capable of supporting no less than four times the ultimate weight of the object or objects fastened to or suspended from the building structure and shall be installed to resist seismic forces as specified in the IBC for the ground motion accelerations corresponding to the project location.

B. Support all junction boxes, pull boxes, or other conduit terminating housings located above the suspended ceiling from the floor above or roof structure to prevent sagging or swaying.

C. Conduits:
   1. Support suspended conduits from the overhead structural system with metal ring or trapeze hangers and threaded steel rod having a safety factor of 4.
   2. Anchor conduit installed in poured concrete to the steel reinforcing with No. 14 black iron wire.

D. Powder-actuated or similar shot-in fastening devices will not be permitted for any electrical work except by special permission from the Port.

3.8 TESTING

A. Upon completion, systems shall be tested to show the equipment installed operates as designed and specified, free of faults and unintentional grounds. Submit testing plans per Section 013300 for review prior to testing. The system tests shall be set up for as many at one time as possible to work into construction phasing. Tests shall be done in the presence of the Port, and shall be scheduled 48 hours in advance.

B. A journeyman electrician with required tools shall be available to conduct all tests, with or without the equipment factory representative present.

C. Systems to be tested shall include, but not be limited to the following:
   1. High voltage distribution system.
   2. Low voltage distribution system.
   3. Lighting systems.

D. A written record of performance tests shall be compiled, dated, witnessed, and submitted along with operating and maintenance data, to the Port prior to substantial completion.

E. See other sections for possible testing requirements as they apply to those sections. Notify the Port prior to testing.

END OF SECTION 260500

FOR PORT USE ONLY

2013D056 **CARGO CENTER** *4/14/2015*
EXTERIOR BUILDING REHABILITATION

Location: PDX
PM: MCGINJ **CCM: HARRIB** **Type: Cont.**
PE: WHARTT **SW: DOHERC**

Project No.	Status	Title
101982	**O**	**CARGO CENTER** **EXTERIOR BUILDING REHABILITATION**