

PORT OF TACOMA
TACOMA, WASHINGTON
WOODEN LIGHT POLE REPLACEMENT PROGRAM

PROJECT NO. 201148.01
PROCUREMENT NO. 092026-1058

Thais Howard, PE
Sr. Director, Engineering

Brett Ozolin, PE
Project Manager

END OF SECTION

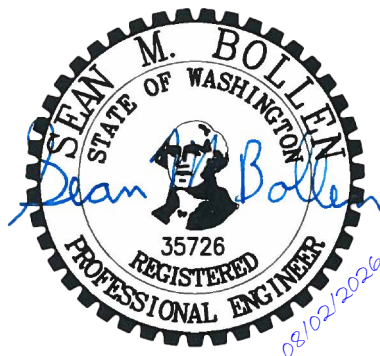
This page intentionally left blank

DOCUMENT 00 01 07
SEALS PAGES

The undersigned hereby certifies that the Technical Specifications in this Project Manual listed below were prepared by me or under my direct supervision, and that I am duly registered under the laws of the State of Washington and hereby affix my "Professional Seal".

Section 26 00 10 – Electrical Provisions
Section 26 05 00 – Common Work Results for Electrical
Section 26 05 20 – Wire and Cable (600 Volts and Less)
Section 26 05 26 – Grounding and Bonding for Electrical Systems
Section 26 05 30 – Raceway and Boxes
Section 26 05 45 – Underground Ducts
Section 26 22 10 – Dry Type Transformers
Section 26 24 16 – Panelboards
Section 26 27 15 – Cabinets and Enclosures
Section 26 28 20 – Enclosed Circuit Breakers
Section 26 56 00 – Exterior Lighting
Section 26 56 00 – Attachment A - Existing Exterior Light Fixture Support Photos
Section 27 05 26 – Grounding and Bonding for Communications Systems
Section 27 13 00 – Communications Backbone Cabling
Section 27 15 00 – Communications Horizontal Cabling

Wood Harbinger, Inc.
Sean M. Bollen, PE



The undersigned hereby certifies that the Technical Specifications in this Project Manual listed below were prepared by me or under my direct supervision, and that I am duly registered under the laws of the State of Washington and hereby affix my "Professional Seal".

03 10 00 – Concrete Forming and Accessories

03 20 00 – Concrete Reinforcing

03 30 00 – Cast-in-Place Concrete

03 60 00 – Grouting

26 56 13.00 40 – Lighting Poles and Standards

33 42 13 – Corrugated Metal Pipe

KPFF
Bob Riley, PE



The undersigned hereby certifies that the Technical Specifications in this Project Manual listed below were prepared by me or under my direct supervision, and that I am duly registered under the laws of the State of Washington and hereby affix my "Professional Seal".

02 41 13 – Selective Site Demolition

31 00 00 – Earthwork

31 23 19 – Dewatering

32 11 23 – Crushed Surfacing

32 12 16 – Asphalt Paving

KPFF
Steven Wade Kingsley, PE



END OF DOCUMENT

This page intentionally left blank

PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

- 00 01 01 - Project Title Page
- 00 01 07 - Seals Page
- 00 01 10 - Table of Contents
- 00 01 15 - List of Drawing Sheets
- 00 11 13 - Advertisement for Bids
- 00 21 00 - Instructions to Bidders
- 00 26 00 - Substitution Procedures
- 00 31 00 - Available Project Information
- 00 31 26 - Existing Hazardous Material Information
- 00 41 00 - Bid Form
- 00 43 13 - Bid Security Form
- 00 45 13 - Responsibility Detail Form
- 00 52 00 - Agreement Form
- 00 61 13.13 - Performance Bond
- 00 61 13.16 - Payment Bond
- 00 61 23 - Retainage Bond
- 00 72 00 - General Conditions
- 00 73 16 - Insurance Requirements
- 00 73 46 - Washington State Prevailing Wage Rates
- 00 73 63 - Security Requirements

SPECIFICATIONS

DIVISION 01 -- GENERAL REQUIREMENTS

- 01 10 00 - Summary
- 01 14 00 - Work Restrictions
- 01 20 00 - Price and Payment Procedures
- 01 26 00 - Change Management Procedures
- 01 29 73 - Schedule of Values
- 01 30 00 - Administrative Requirements
- 01 31 23 - Web-based Construction Management
- 01 32 16 - Construction Progress Schedule
- 01 33 00 - Submittal Procedures
- 01 35 29 - Health, Safety, and Emergency Response Procedures

01 35 43.13 - Hazardous Materials Handling Procedure
01 35 43.19 - Export Soil Management
01 35 47 - Air and Noise Control Procedures
01 41 00 - Regulatory Requirements
01 42 19 - Reference Standards
01 45 00 - Quality Control
01 50 00 - Temporary Facilities and Controls
01 55 00 - Vehicular Access and Parking
01 57 13 - TESC and Project SWPPP
01 60 00 - Product Requirements
01 74 13 - Construction Cleaning
01 74 19 - Construction Waste Management and Disposal
01 77 00 - Closeout Procedures
DIVISION 02 - EXISTING CONDITIONS
02 41 13 - Selective Site Demolition
DIVISION 03 - CONCRETE
03 10 00 - Concrete Forming and Accessories
03 20 00 - Concrete Reinforcing
03 30 00 - Cast-in-Place Concrete
03 60 00 - Grouting
DIVISION 26 - ELECTRICAL
26 00 10 - Electrical Provisions
26 05 00 - Common Work Results for Electrical
26 05 20 - Wire and Cable (600 Volts and Less)
26 05 26 - Grounding and Bonding for Electrical Systems
26 05 30 - Raceway and Boxes
26 05 45 - Underground Ducts and Manholes
26 22 10 - Dry Type Transformer
26 24 16 - Panelboards
26 27 15 - Cabinets and Enclosures
26 28 20 - Enclosed Circuit Breakers
26 56 00 - Exterior Lighting
26 56 13.00 40 - Lighting Poles and Standards

DIVISION 27 - COMMUNICATIONS

27 05 26 - Grounding and Bonding for Communications Systems

27 13 00 - Communications Backbone Cabling

27 15 00 - Communications Horizontal Cabling

DIVISION 31 - EARTHWORK

31 00 00 - Earthwork

31 23 19 - Dewatering

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 11 23 - Crushed Surfacing

32 12 16 - Asphalt Paving

DIVISION 33 - UTILITIES

33 42 13 - Corrugated Metal Pipe

APPENDICES

Appendix A - Port of Tacoma Construction SWPPP Short Form

Appendix B - Tacoma Rail - Right of Entry Agreement Application

Appendix C - Estimated TOTE Contamination Plumes

Appendix D - City of Tacoma Site Development Permit (SDEV24-0428)

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

Sheet No.	Drawing Title
G0.00	COVER SHEET
G0.01	ELECTRICAL, CIVIL AND STRUCTURAL SHEET LISTS
C0.01	GENERAL NOTES AND ABBREVIATIONS
C0.02	TESC DETAILS
C1.01	PARCEL 69 (UP YARD)
C1.02	PARCEL 69 (UP YARD) POLE PLANS
C1.03	PARCEL 69 (UP YARD) POLE PLANS
C2.01	PARCEL 69A (SIM)
C2.02	PARCEL 69A (SIM) POLE PLANS
C3.01	PARCEL 17 (EB1)
C3.02	PARCEL 17 (EB1) POLE PLANS
C3.03	PARCEL 17 (EB1) POLE PLANS
C4.01	PARCEL WHT
C4.02	PARCEL WHT POLE PLANS
C5.01	PARCEL 1A (TOTE) SITE PLAN
C5.02	POLE PLANS POLE 130
C5.03	POLE PLANS POLE 131
C5.04	PARCEL 1A (TOTE) POLE PLANS
C5.05	PARCEL 1A (TOTE) POLE PLANS
C5.06	PARCEL 1A (TOTE) POLE PLANS
C5.07	PARCEL 1A (TOTE) POLE PLANS
C6.01	PARCEL 27 (NIM) SITE PLAN
C6.02	PARCEL 27 (NIM) POLE PLANS
C6.03	PARCEL 27 (NIM) POLE PLANS
C6.04	PARCEL 27 (NIM) POLE PLANS
C6.05	PARCEL 27 (NIM) POLE PLANS
C6.06	PARCEL 27 (NIM) POLE PLANS
C7.01	PARCEL 27 (T7) SITE PLAN
C7.02	PARCEL 27 (TERMINAL 7) POLE PLANS
C7.03	PARCEL 27 (TERMINAL 7) POLE PLANS
C7.04	PARCEL 27 (TERMINAL 7) POLE PLANS
C7.05	PARCEL 27 (TERMINAL 7) POLE PLANS
C7.06	PARCEL 27 (TERMINAL 7) POLE PLANS
C7.07	PARCEL 27 (TERMINAL 7) POLE PLANS
C7.08	PARCEL 27 (TERMINAL 7) POLE PLANS
C8.01	CIVIL DETAILS
C8.02	CIVIL DETAILS

Sheet No.	Drawing Title
C8.03	TRAFFIC CONTROL PLAN
S0.01	STRUCTURAL NOTES, SYMBOLS, LEGENDS AND ABBREVIATIONS
S1.01	POLE SCHEDULE AND FOUND DETAILS
S2.01	FOUND DETAILS
S2.02	FOUND DETAILS
E0.001	ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES
E0.002	ELECTRICAL VICINITY MAP
E0.003	ELECTRICAL CONSTRUCTION REQUIREMENTS MATRIX
E0.004	ELECTRICAL GENERAL CONSTRUCTION NOTES
E2.001	ENLARGED SITE PLAN - PARCEL 69 (UP YARD)
E2.002	ENLARGED SITE PLAN - PARCEL 69A (SOUTH INTERMODAL YARD)
E2.003	ENLARGED SITE PLAN - PARCEL 17 (EB1)
E2.004	ENLARGED SITE PLAN - PARCEL WHT (WEST HYLEBOS TERMINAL LOG YARD)
E2.005	ENLARGED SITE PLAN - PARCEL 1A (TOTE)
E2.006	ENLARGED SITE PLAN - PARCEL 27 (NORTH INTERMODAL YARD)
E2.007	ENLARGED SITE PLAN - PARCEL 27 (TERMINAL 7)
E6.001	ELECTRICAL DETAILS
E6.002	ELECTRICAL SCHEDULES
E7.001	POLE DETAILS - POLE 1
E7.006	POLE DETAILS - POLE 6
E7.011	POLE DETAILS - POLE 11
E7.012	POLE DETAILS - POLE 12
E7.013	POLE DETAILS - POLE 13
E7.015	POLE DETAILS - POLE 15
E7.016	POLE DETAILS - POLE 16
E7.017	POLE DETAILS - POLE 17
E7.018	POLE DETAILS - POLE 18
E7.022	POLE DETAILS - POLE 22
E7.025	POLE DETAILS - POLE 25
E7.029	POLE DETAILS - POLE 29
E7.031	POLE DETAILS - POLE 31
E7.032	POLE DETAILS - POLE 32
E7.034	POLE DETAILS - POLE 34
E7.035	POLE DETAILS - POLE 35
E7.039	POLE DETAILS - POLE 39
E7.040	POLE DETAILS - POLE 40
E7.041	POLE DETAILS - POLE 41

Sheet No.	Drawing Title
E7.042	POLE DETAILS - POLE 42
E7.044	POLE DETAILS - POLE 44
E7.045	POLE DETAILS - POLE 45
E7.050	POLE DETAILS - POLE 50
E7.055	POLE DETAILS - POLE 55
E7.069	POLE DETAILS - POLE 69
E7.073	POLE DETAILS - POLE 73
E7.075	POLE DETAILS - POLE 75
E7.079	POLE DETAILS - POLE 79
E7.089	POLE DETAILS - POLE 89
E7.092	POLE DETAILS - POLE 92
E7.102	POLE DETAILS - POLE 102
E7.103	POLE DETAILS - POLE 103
E7.105	POLE DETAILS - POLE 105
E7.112	POLE DETAILS - POLE 112
E7.116	POLE DETAILS - POLE 116
E7.124	POLE DETAILS - POLE 124
E7.128	POLE DETAILS - POLE 128
E7.130	POLE DETAILS - POLE 130
E7.131	POLE DETAILS - POLE 131
E7.144	POLE DETAILS - POLE 144
E7.149	POLE DETAILS - POLE 149
E7.151	POLE DETAILS - POLE 151
E7.153	POLE DETAILS - POLE 153
E7.156	POLE DETAILS - POLE 156
E7.157	POLE DETAILS - POLE 157
E7.158	POLE DETAILS - POLE 158
E8.001	POLE IMAGES - POLE 1
E8.006	POLE IMAGES - POLE 6
E8.011	POLE IMAGES - POLE 11
E8.012	POLE IMAGES - POLE 12
E8.012	POLE IMAGES - POLE 13
E8.015	POLE IMAGES - POLE 15
E8.016	POLE IMAGES - POLE 16
E8.017	POLE IMAGES - POLE 17
E8.018	POLE IMAGES - POLE 18
E8.022	POLE IMAGES - POLE 22
E8.025	POLE IMAGES - POLE 25
E8.029	POLE IMAGES - POLE 29
E8.031	POLE IMAGES - POLE 31

Sheet No.	Drawing Title
E8.032	POLE IMAGES - POLE 32
E8.034	POLE IMAGES - POLE 34
E8.035	POLE IMAGES - POLE 35
E8.039	POLE IMAGES - POLE 39
E8.040	POLE IMAGES - POLE 40
E8.041	POLE IMAGES - POLE 41
E8.042	POLE IMAGES - POLE 42
E8.044	POLE IMAGES - POLE 44
E8.045	POLE IMAGES - POLE 45
E8.050	POLE IMAGES - POLE 50
E8.055	POLE IMAGES - POLE 55
E8.069	POLE IMAGES - POLE 69
E8.073	POLE IMAGES - POLE 73
E8.075	POLE IMAGES - POLE 75
E8.079	POLE IMAGES - POLE 79
E8.089	POLE IMAGES - POLE 89
E8.092	POLE IMAGES - POLE 92
E8.102	POLE IMAGES - POLE 102
E8.103	POLE IMAGES - POLE 103
E8.105	POLE IMAGES - POLE 105
E8.112	POLE IMAGES - POLE 112
E8.116	POLE IMAGES - POLE 116
E8.124	POLE IMAGES - POLE 124
E8.128	POLE IMAGES - POLE 128
E8.130	POLE IMAGES - POLE 130
E8.131	POLE IMAGES - POLE 131
E8.144	POLE IMAGES - POLE 144
E8.149	POLE IMAGES - POLES 149 & 150
E8.151	POLE IMAGES - POLES 151 & 152
E8.153	POLE IMAGES - POLE 153
E8.156	POLE IMAGES - POLE 156
E8.157	POLE IMAGES - POLE 157
E8.158	POLE IMAGES - POLE 158

PART 2 - PRODUCTS - NOT USED**PART 3 - EXECUTION - NOT USED****END OF SECTION**

WOODEN LIGHT POLE REPLACEMENT PROGRAM

PROJECT NO. 201148.01 | PROCUREMENT NO. 092026-1058

Scope of Work: The Work required for this Project includes demolishing and replacing 46 timber poles at 7 different within the Port of Tacoma. The Work is to replace deteriorated timber poles in-kind and restore the operational condition of the pole.

The work shall include the following: Select demolition, salvage and disposal of existing light pole fixtures and hardware. Work includes demolition and disposal of existing timber light poles and foundations as well as removal and reattachment of existing LED fixtures. Work includes installation of new light pole foundations and new timber light poles, including concrete, HMA paving and traffic protection work as needed to restore work areas to their preconstruction condition. The work includes reinstalling and commissioning removed LED light fixtures and furnishing and installing associated electrical hardware to restore light pole operation. The work includes select demolition, salvage, furnishing and installing branch and feeder power conductors, raceway, conduit, breakers and other electrical system components. The work includes select demolition, furnishing and installing feeder and branch associated communication hardware as well as reinstallation of existing communication hardware and miscellaneous attachments. The work includes temporary provisions to maintain security lighting and communication network operation.

Bid Estimate: Estimated cost range is \$6,000,000 to \$7,000,000, plus Washington State Sales Tax (**WSST**).
In accordance with RCW 39.04.320, fifteen (15) percent apprenticeship participation is required for certain projects estimated to cost one million (\$1,000,000) dollars or more. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530, by phone (360) 902-5320, or e-mail at Apprentice@lni.wa.gov, to obtain information on available apprenticeship programs.

Sealed Bid Date/ Bids will be received at the Front Reception Desk, Port
Time/Location: Administration Office, One Sitcum Plaza, Tacoma, Washington
98421 until **2:00 P.M. on November 12th, 2026**, at which time they will be publicly opened and read aloud and the apparent low bid will be determined.

Pre-Bid	A pre-Bid conference and site visit have been set for Friday, October 16th, 2026 at 12:00 P.M. until 3:30 P.M. The pre-Bid conference will include an agenda, a discussion of the Work, and site tours of representative poles with the Engineer and project design team. A second site visit has been set for Thursday, October 21st, 2026 at 10:30 A.M. until 1:30 P.M. The second site visit will be by reservation as requested by email to procurement@portoftacoma.com. The site visit will include poles, locations, and facilities as requested by Bidders. Physical inspection of all poles identified for replacement will require accessing multiple secured sites and Terminal areas. Marked vans driven by Port personnel will be provided for transportation. The tours will be planned to provide access to each pole or until Bidders are satisfied of representative conditions.
Conference and Site Tour:	The site visit will convene at the Port's Administrative building, located at One Sitcum Plaza. The following Personal Protective Equipment is required for the site visit: sturdy shoes and reflective vest. Attendees will be required to sign a Release and Acceptance of Responsibility and Acknowledgement of Risks Form prior to entering the site and shall provide their own Personal Protection Equipment (PPE) as required above.
Bid Security:	Each Bid must be accompanied by a Bid security in an amount equal to five (5) percent of the Base Bid in a form allowed by the Instructions to Bidders.
Contact Information:	Any questions to the Port may be submitted to the Procurement Department through the Procurement and Question Submission Portal (Portal link is accessible via this specific procurements website. See left side of page.). A direct link is also available here: Procurement and Question Portal Link. No oral responses will be binding by the Port. Instructions for utilizing the portal can be found here: Procurement and Question Submission Portal Instructions. Questions will not be accepted after seven (7) days prior to the Bid Date.
Bidding Documents:	Plans, Specifications, Addenda, and Plan Holders List for this Project are available on-line through The Port of Tacoma's Website portoftacoma.com. Click on "Contracts," "Procurement," and then the Procurement Number 092026-1058. Bidders must subscribe to the Holder's List on the right hand side of the screen in order to receive automatic email notification of future addenda and to be placed on the Holder's List. Holder's Lists will be updated regularly and posted to the specific procurements page. Additional Instructions available in Section 00 21 00 - Instructions to Bidders.

Public Works Effective July 1, 2019, all businesses are required to have training
Training before bidding on public works projects and prevailing wage under
Requirements: RCW 39.04.359 and RCW 39.12, or is on the list of exempt businesses
 maintained by the Department of Labor and Industries. The bidder must
 designate a person or persons to be trained on these requirements. The training
 will be provided by the Department of Labor and Industries or by a training
 provider whose curriculum is approved by the Department of Labor and
 Industries.
 Please refer to Labor and Industries' web site
 ([https://www.lni.wa.gov/TradesLicensing/PrevWage/Contractors/Training](https://www.lni.wa.gov/TradesLicensing/PrevWage/Contractors/Training.asp?utm_medium=email&utm_source=govdelivery)
 .asp?utm_medium=email&utm_source=govdelivery) for more information and
 training dates, requirements, and exemptions. Failure to attend this training could
 result in a determination of "not responsible" and the bidder not being awarded a
 public works contract.

END OF SECTION

This page intentionally left blank

PART 1 - SUMMARY

1.01 DEFINITIONS

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

- A. "Addenda" are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections. The contents of an Addendum are issued in no particular order and therefore should be carefully and completely reviewed.
- B. An "Apprentice" is a worker for whom an apprenticeship agreement has been registered and approved by the Washington State Apprenticeship and Training Council (RCW 49.04 and WAC 296-05).
- C. "Award" means the formal decision by the Port of Tacoma ("Port") notifying a Responsible Bidder with the lowest responsive Bid of the Port's acceptance of their Bid and intent to enter into a Contract with the Bidder.
- D. The "Award Requirements" include the statutory requirements as a condition precedent to Award.
- E. The "Base Bid" is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.
- F. A "Bid" is a complete and properly signed proposal to do the Work, submitted in accordance with the Bidding Documents, for the sums therein stipulated and supported by any data called for by the Bidding Documents.
- G. The "Bid Date" is the day and hour specified in the Bidding Documents, as may be changed through an Addendum, by which Bidders are required to submit Bids to the Port.
- H. The "Bid Form" is the form(s) included with the Bidding Documents, with Specification Section 00 41 00, through which a Bidder submits a Bid.
- I. A "Bidder" is a person or entity who submits a Bid.
- J. The "Bidding Documents" include the Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, any other sample bidding and contract forms, including those provided by reference, the Bid security, and the proposed Contract Documents, including any Addenda issued prior to the Bid Date.
- K. The "Contract Documents" proposed for the Work consist of the Agreement, the General Conditions of the Contract (as well as any Supplemental, Special, or other conditions included in the Project Manual), the Drawings, the Specifications, and all Addenda issued prior to, and all modifications issued after, execution of the Contract.
- L. The "Schedule of Unit Prices" is a separate schedule on the Bid Form for Unit Pricing as an all-inclusive price per unit of measurement for materials, equipment, or services as described in the Bidding Documents or in the proposed Contract Documents for the optional use of the Port. Quantities are not predictions of amounts anticipated. The Port may, but is not obligated to, accept a Schedule of Unit Price if it accepts the Base Bid. The Schedule of Unit Prices are not factored into the evaluation of determining the low bid amount and are not included as part of the bid award amount.

- M. A "Sub-Bidder" is a person or entity of any tier who submits a bid or proposal to or through the Bidder for materials, equipment or labor for a portion of the Work.

1.02 BIDDER'S REPRESENTATIONS

By making its Bid, each Bidder represents that:

- A. **BIDDING DOCUMENTS.** The Bidder has read and understands the Bidding Documents, and its Bid is made in accordance with them.
- B. **PRE-BID MEETING.** The Bidder has attended pre-Bid meeting(s) required by the Bidding Documents. Attendance at a mandatory meeting or training session means that, in the sole opinion of the Port, a Project representative of a Bidder has attended all or substantially all of such meeting or session.
- C. **BASIS.** Its Bid is based upon the materials, systems, services, and equipment required by the Bidding Documents, and is made without exception.
- D. **EXAMINATION.** The Bidder has carefully examined and understands the Bidding Documents, the Contract Documents including, but not limited to, any liquidated damages, insurance provisions, and the Project site, including any existing buildings, it has familiarized itself with the local conditions under which the Work is to be performed, has correlated its observations with the requirements of the proposed Contract Documents, and it has satisfied itself as to the nature, location, character, quality, and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services, and other items to be furnished, and all other requirements of the Contract Documents. The Bidder has also satisfied itself as to the conditions and other matters that may be encountered at the Project site or that may affect performance of the Work or the cost or difficulty thereof, including, but not limited to, those conditions and matters affecting transportation, access, disposal, handling and storage of materials, equipment and other items; availability and quality of labor, water, electric power, and utilities; availability and condition of roads; climatic conditions and seasons; physical conditions at the Project site and the surrounding locality; topography and ground surface conditions; and equipment and facilities needed preliminary to, and at all times during, the performance of the Work. The failure of the Bidder to fully acquaint itself with any applicable condition or matter shall not in any way relieve the Bidder from the responsibility for performing the Work in accordance with, and for the Contract Sum and within the Contract Time provided for in, the Contract Documents.
- E. **PROJECT MANUAL.** The Bidder has checked its copies of the Project Manual (if any) with the table of contents bound therein to ensure the Project Manual is complete.
- F. **SEPARATE WORK.** The Bidder has examined and coordinated all Drawings, Contract Documents, and Specifications with any other contracts to be awarded separately from, but in connection with, the Work being Bid upon, so that the Bidder is fully informed as to conditions affecting the Work under the Contract being Bid upon.
- G. **LICENSE REQUIREMENTS.** The Bidders and Sub-Bidders are registered and hold all licenses required by the laws of Washington, including a certificate of registration in compliance with RCW 18.27, for the performance of the Work specified in the Contract Documents.
- H. **CERTIFICATION.** The Bidder verifies under penalty of perjury that the Bidder has not have been determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, or 49.52 RCW within the three (3) year period immediately preceding the Bid Date.

- I. NO EXCEPTIONS. Bids must be based upon the materials, systems, and equipment described and required by the Bidding Documents, without exception.

1.03 BIDDING DOCUMENTS

A. COPIES

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

B. INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

1. Format. The Contract Documents are divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the Specification sections into Work performed by the various building trades, any Work by separate contractors, or any Work required for separate facilities in, or phases of the Project.
2. Duty to Notify. Bidders shall promptly notify the Port in writing of any ambiguity, inconsistency, or error that they may discover upon examination of the Bidding Documents or of the site and local conditions.
3. Products and Installation. All Bidders shall thoroughly familiarize themselves with specified products and installation procedures and submit to the Port any objections (in writing) no later than seven (7) days prior to the Bid Date. The submittal of the Bid constitutes acceptance of products and procedures specified as sufficient, adequate, and satisfactory for completion of the Contract.
4. Written Request. Bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Procurement Department through the Procurement and Question Submission Portal at least seven (7) days prior to the Bid Date (Portal link is accessible via this specific procurements website. See left side of page.). A direct link is also available here: [Procurement and Question Portal Link](#). No oral responses will be binding by the Port.

Instructions for utilizing the portal can be found here: [Procurement and Question Submission Portal Instructions](#).

5. Request to Modify Responsibility Criteria. No later than seven (7) days prior to the Bid Date, a potential Bidder may request in writing that the Port modify the Responsibility Criteria. The Port will evaluate the information submitted by the potential Bidder and respond before the Bid Date. If the evaluation results in a change of the Criteria, the Port will issue an Addendum identifying the new Criteria.

6. Addenda. The Bidder shall not rely on oral information provided at any pre-Bid meetings or during site visits. Verbal statements made by representatives of the Port are for informational purposes only. Any interpretation, correction, or change of the Bidding Documents will be made solely by written Addendum. Interpretations, corrections, or changes of the Bidding Documents made in any manner other than by written Addendum, including but not limited to, oral statements will not be binding, and Bidders shall not rely upon such statements, interpretations, corrections, or changes. The Port is not responsible for explanations or interpretations of the Bidding Documents other than in a written Addendum.
7. Site Visits. Any site visits are provided as a courtesy to potential Bidders to assist them in becoming familiar with the Project site conditions. However, only the Bidding Documents, including any issued Addenda, may be relied upon by Bidders.
8. Singular References. Reference in the singular to an article, device, or piece of equipment shall include as many of such articles, devices, or pieces as are indicated in the Contract Documents or as are required to complete the installation.
9. Utilities and Runs. The Bidder should assume that the exact locations of any underground or hidden utilities, underground fuel tanks, and plumbing and electrical runs may be somewhat different from any location indicated in the surveys or Contract Documents.

C. SUBSTITUTIONS

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

D. ADDENDA

1. Distribution. All Addenda will be written and will be made available on the Port's website or any other source specified by the Port for the Project.
2. Copies. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
3. Verification and Acknowledgment of Receipt. Prior to submitting a Bid, each Bidder shall ascertain that it has received all Addenda issued. Each Bidder shall acknowledge its receipt and consideration of all Addenda in its Bid.

1.04 BIDDING PROCEDURE

A. FORM AND STYLE OF BIDS

1. Form. Bids (including required attachments) shall be submitted on forms identical to the Bid Form included with the Bidding Documents. No oral, email, or telephonic responses or modifications will be considered.
2. Entries on the Bid Form. All blanks on the Bid Form shall be filled in by typewriter, printer, or manually in ink.
3. Figures. All sums shall be expressed in figures, not words. Portions of the Bid Form may require the addition or multiplication of component bids to a total or the identification of component amounts within a total. In case of discrepancy between unit prices listed and their sum(s), the unit prices listed shall govern (rather than the sum).
4. Initial Changes. Any interlineation, alteration, or erasure shall be initialed by an authorized representative of the Bidder.

5. Bid Breakdown. The Bid Form may contain, for the Port's accounting purposes only, a breakdown of some or all of the components included in the Base Bid.
 - a. For lump-sum Bids, the total Contract Sum shall be submitted.
 - b. For unit-price Bids, a price shall be submitted for each item of the Work, an extension thereof, and, if requested, the total Contract Sum.
6. Schedule of Unit Prices. All Unit Prices under this schedule shall be bid. The Port reserves the right, but is not obligated, to reject any Bid on which all requested Schedule of Unit Prices are not Bid.
7. No Conditions. The Bidder shall make no conditions or stipulations on the Bid Form, nor qualify its Bid in any manner.
8. Identity of Bidder. The Bidder shall include in the specified location on the Bid Form, the legal name of the Bidder and, if requested, a description of the Bidder as a sole proprietor, a partnership, a joint venture, a corporation, or another described form of legal entity. The Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. The Port verifies signature authority on the Labor and Industries website <https://fortress.wa.gov/lni/bbip/Search.aspx> under the contractor registration business owner information. If the business owner information is not current, the Bidder shall show proof of authority to sign at the request of the Port. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder
9. Bid Amounts Do Not Include Sales Tax. The Work to be performed constitutes a "retail sale" as this term is defined in RCW 82.04.050. Thus, the Base Bid amount shall include in the sum stated all taxes imposed by law, EXCEPT WASHINGTON STATE AND LOCAL SALES TAX due on the Base Bid. The engaged Contractor will pay retail sales tax on all consumables used during the performance of the Work and on all items that are not incorporated into the final Work; this tax shall be included in the Base Bid price and in any other prices set forth on the Bid Form. The Port will pay state and local retail sales tax due on each progress payment and final payment to the engaged Contractor for transmittal by the Contractor to the Washington State Department of Revenue or to the applicable local government.

B. POTENTIAL LISTING OF SUB-BIDDERS (SUBCONTRACTORS)

1. Procedure. On projects equal to or greater than \$1,000,000, the Bid Form includes a requirement that certain Sub-Bidders be listed, in which case the Bidder must complete the required list. In these circumstances, and regardless of the anticipated cost of the Project, the Bidder must name the Sub-Bidder or Sub-Bidders with whom the Bidder, if awarded the Contract, will subcontract directly (i.e., not lower-tier Sub-Bidders) for performance of the Work of:
 - a. HVAC (heating, ventilation, and air conditioning) Work;
 - b. Plumbing Work as described in RCW 18.106;
 - c. Electrical Work as described in RCW 19.28; and
 - d. Any other categories of Work listed on the Sub-Bidder listing form and/or Bid Form.
2. Self-Performance. If the Bidder intends to self-perform any of these categories of Work, it must name itself for each such category of Work.

3. Multiple Entries. The Bidder shall not list more than one (1) entity for a particular category of Work identified, unless a Sub-Bidder will vary based on an Alternate Bid, in which case the Bidder shall identify the Sub-Bidder to be used for the Alternate and the affected portion of the Work.
4. Failure to Submit. In accordance with RCW 39.30.060, failure of a Bidder to submit, as part of the Bid, the names of such proposed HVAC, plumbing, and electrical Sub-Bidders, or to name itself to perform such Work, or the naming of two (2) or more Sub-Bidders to perform the same Work, shall render the Bidder's Bid non-responsive and; therefore, void.
5. Requirement to Subcontract. The Bidder, if Awarded the Contract, will subcontract with the listed Sub-Bidders for performance of the portion of the Work designated on the Bid Form, subject to the provisions of the Contract for Construction and RCW 39.30.060. The Bidder shall not substitute a listed Sub-Bidder in furtherance of bid shopping or bid peddling.
6. Sub-Bidder Qualification. Listed Sub-Bidders may be required to provide evidence of their qualifications, including a statement of experience and references, prior to Award, or at any time during the Contract Time. Such information shall be provided within twenty-four (24) hours of request. This evidence shall demonstrate that the Sub-Bidder meets or exceeds all requirements for experience, qualifications, manufacturer's certifications, or any other requirements specified in any of the technical sections of the Contract Documents for which the Sub-Bidder proposes to perform Work.
7. Replacement. If a listed Sub-Bidder fails to provide adequate evidence of qualifications, is unable to comply with any bonding requirements of the Bidding Documents or with other requirements of the Contract or Bidding Documents, is not properly licensed, or fails to meet the Responsibility Criteria of the Bidding Documents, the Port may require the Bidder to replace the Sub-Bidder with another subcontractor reasonably acceptable to the Port at no change in the Contract Sum or Contract Time.
8. Sub-Bidder Standards. Sub-Bidders shall meet contractual and technical qualification standards, and provide specialized certification, licensing, and/or payment and performance bonding, if required.
9. MWBE, Veteran-owned, and small business participation encouraged. The Port's policy is to encourage the Contractor to solicit and document participation, and to provide and promote the maximum lawful, practicable opportunity for increased participation, by MWBE firms certified by the Office of Minority and Women's Business Enterprises (OMWBE), Veteran-owned businesses (defined in RCW 43.60.010, and Small, Mini and Micro business enterprises (defined in RCW 39.26.010).

C. BID SECURITY

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

D. SUBMISSION OF BIDS

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

3. Delivery. The Bidder assumes full responsibility for timely delivery at the location designated for receipt of Bids.
4. Form. Oral, facsimile, telephonic, electronic, or email Bids are invalid and will not be considered.

E. MODIFICATION OR WITHDRAWAL OF BID

1. After the Bid Date. A Bid may not be modified, withdrawn, or canceled by the Bidder during a ninety (90) day period following the Bid Date, and each Bidder so agrees by virtue of submitting its Bid.
2. Before the Bid Date. Prior to the Bid Date, any Bid submitted may be modified or withdrawn only by notice to the party receiving Bids at the place designated for receipt of Bids. The notice shall be in writing, with the signature of the Bidder, and shall be worded so as not to reveal the amount of the original Bid. Email notice will not be accepted. It shall be the Bidder's sole responsibility to verify that the notice has been received by the Port in time to be withdrawn before the Bid opening.
3. Resubmittal. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids, provided that they are then fully in conformance with these Instructions to Bidders.
4. Bid Security with Resubmission. Bid security shall be in an amount sufficient for the Bid as modified or resubmitted.

F. COMMUNICATIONS

Communications from a Bidder related to these Instructions to Bidders must be in writing to the Procurement Department through the Procurement and Question Submission Portal (Portal link is accessible via this specific procurements website. See left side of page.). A direct link is also available here: [Procurement and Question Portal Link](#). Communications, including but not limited to, notices and requests by Sub-Bidders shall be made through the Bidder and not directly by a Sub-Bidder to the Port. No oral responses will be binding by the Port.

Instructions for utilizing the portal can be found here: [Procurement and Question Submission Portal Instructions](#).

1.05 CONSIDERATION OF BIDS

- A. OPENING OF BIDS. Unless stated otherwise in the Advertisement or Invitation to Bid or an Addendum, the properly identified Bids received on time will be opened publicly and will be read aloud. An abstract of the Base Bids and any Alternate Bids will promptly (and generally within twenty-four (24) hours) be made available to Bidders and other interested parties.
- B. REJECTION OF BIDS. The Port shall have the right, but not the obligation, to reject any or all Bids for any reason, or for no reason, to reject a Bid not accompanied by the required Bid security, or to reject a Bid which is in any way incomplete or irregular.
- C. BIDDING MISTAKES. The Port will not be obligated to consider notice of claimed Bid mistakes received more than twenty-four (24) hours after the Bid Date. In accordance with Washington law, a low Bidder that claims error and fails to enter into the Contract is prohibited from Bidding on the Project if a subsequent call for Bids is made for the Project.
- D. ACCEPTANCE OF BID (AWARD)

1. Intent to Accept. The Port intends, but is not bound, to Award a Contract to the Responsible Bidder with the lowest responsive Bid, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Port has the right to waive any informality or irregularity in any Bid(s) received and to accept the Bid which, in its judgment, is in its own best interests.
2. Requirements for Award. Before the Award, the lowest responsive Bidder must be deemed Responsible by the Port and must satisfy all Award Requirements.

E. BID PROTEST PROCEDURES

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

1.06 POST BID INFORMATION

A. THE LOWEST RESPONSIVE BIDDER SHALL:

1. Responsibility Detail Form. Within 24 hours of the Low Responsive Bidder Selection Notification, the apparent low Bidder shall submit to the Port the Responsibility Detail Form and other required documents (Section 00 45 13) executed by an authorized company officer. As requested from the Port, the low responsive Bidder shall provide written confirmation that the person signing the Bid on behalf of the Bidder was duly authorized at the time of bid, a detailed breakdown of the Bid in a form acceptable to the Port, and other information required by the Port.
2. The apparent low Bidder shall submit to the Port upon request:

- a. Additional information regarding the use of the Bidder's own forces and the use of subcontractors and suppliers;
 - b. The names of the persons or entities (including a designation of the Work to be performed with the Bidder's own forces, and the names of those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work (i.e., either a listed Sub-Bidder or a Sub-Bidder performing Work valued at least ten (10) percent of the Base Bid), consistent with the listing required with the Bid; and
 - c. The proprietary names and the suppliers of the principal items or systems of materials and equipment proposed for the Work.
 3. Failure to provide any of the above information in a timely manner will constitute an event of breach permitting forfeiture of the Bid security.
 4. Bidder Responsibility. The Bidder will be required to establish, to the satisfaction of the Port, the reliability and responsibility of itself and the persons or entities proposed to furnish and perform the Work described in the Bidding Documents. If requested, the Bidder shall meet with the Port to discuss the Bid, including any pricing, the Bid components, and any assumptions made by the Bidder.
 5. Sub-Bidder Responsibility. The Responsibility of the Bidder may be judged in part by the Responsibility of Sub-Bidders. Bidders must verify the Responsibility Criteria for each first-tier Sub-Bidder. A Sub-Bidder of any tier that hires other Sub-Bidders must verify Responsibility Criteria for each of its lower-tier Sub-Bidders. The verification shall include a representation that each Sub-Bidder, at the time of subcontract execution, is Responsible and possesses required licenses.
 6. Objection. Prior to an Award of the Contract, the Port will notify the Bidder in writing if the Port, after due investigation, has reasonable objection to the Bidder or a person or entity proposed by the Bidder. Upon receiving such objection, the Bidder may, at Bidder's option: (a) withdraw their Bid, (b) submit an acceptable substitute person or entity with no change in the Contract Time and no adjustment in the Base Bid or any Alternate Bid, even if there is a cost to the Bidder occasioned by such substitution, or (c) file a protest in accordance with the Bidding Documents.
 7. Change. Persons and entities proposed by the Bidder to whom the Port has made no reasonable objection must be used on the Work for which they were proposed and shall not be changed, except with the written consent of the Port.
 8. Right to Terminate. The Bidder's representations concerning its qualifications will be construed as a covenant under the Contract. If a Bidder makes a material misrepresentation on a Qualification Statement, the Port has the right to terminate the Contract for cause and may then pursue any remedies that exist under the Contract or that are otherwise available.
- B. INFORMATION FROM OTHER BIDDERS: All other Bidders designated by the Port as under consideration for Award of a Contract shall also provide a properly executed Qualification Statement, if so requested by the Port.

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

- A. **BOND REQUIREMENTS.** Within ten (10) days after the Port's Notice of Award of the Contract, the successful Bidder shall obtain and furnish statutory bonds pursuant to RCW 39.08 covering the faithful performance of the Contract and the payment of all obligations arising thereunder in the form and amount prescribed in the Contract Documents. Bonds shall be written for one hundred (100) percent of the contract award amount, plus Washington State Sales Tax and Change Orders. The cost of such bonds shall be included in the Base Bid.
1. On contracts of one hundred fifty thousand dollars (\$150,000) or less, at the option of the Contractor or the General Contractor/Construction Manager as defined in RCW 39.10.210, the Port may, in lieu of the bond, retain ten (10) percent of the contract amount for a period of thirty days after date of final acceptance, or until receipt of all necessary releases from the department of revenue, the employment security department, and the department of labor and industries and settlement of any liens filed under RCW 60.28, whichever is later. The recovery of unpaid wages and benefits must be the first priority for any actions filed against retainage held by a state agency or authorized local government.
 2. On contracts of one hundred fifty thousand dollars (\$150,000) or less, the Port may accept a full payment and performance bond from an individual surety or sureties.
- B. **TIME OF DELIVERY AND FORM OF BONDS.** The successful Bidder shall deliver an original copy of the required bonds to the Port, 1 Sitcum Plaza, Tacoma, WA 98421, within the time specified in the Contract Documents.
- C. **INSURANCE.** The successful Bidder shall deliver a certificate of insurance from the Bidder's insurance company that meets or exceeds all requirements of the Contract Documents.
- D. **GOVERNMENTAL REQUIREMENTS.** Notwithstanding anything in the Bidding or Contract Documents to the contrary, the Bidder shall provide all bonding, insurance, and permit documentation as required by governmental authorities having jurisdiction for any portions of the Project.

1.08 FORM OF AGREEMENT

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 DEFINITIONS/CLARIFICATIONS

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

1.03 SUBMITTALS

- A. Substitution Request Form. Use copy of form located at the end of this Section.
- B. Pre-Bid Substitution Requests. Submit one (1) PDF of the Substitution Request Form along with all supporting documentation for consideration of each request. Identify product, fabrication, or installation method to be replaced. Include Drawing numbers and titles. Substitution requests prior to the Bid Date may originate directly from a prime Bidder, or from a prospective Sub-Bidder.
1. Documentation. Show compliance with requirements for substitutions with the following, as applicable:
 - a. Statement indicating why specified product, fabrication, or installation cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c. Product Data, including drawings and descriptions of products, fabrication, and installation procedures.
 - d. Samples, where applicable or requested.
 - e. Certificates and qualification data, where applicable or requested.
 - f. Research reports evidencing compliance with building code in effect for the Project.
 2. Engineer's Action. Engineer will review substitution requests if received through the Procurement and Question Submission Portal at least seven (7) days prior to the Bid Date (Portal link is accessible via this specific procurements website. See left side of page.) A direct link is also available here: [Procurement and Question Portal Link](#). No oral responses will be binding by the Port.
 - a. Forms of Acceptance. Substitution requests will be formally accepted via written addendum prior to the Bid Date. Bidders shall not rely upon approvals made in any other manner.

- b. Use product originally specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.
- c. The Port's decision of approval or disapproval of a proposed substitution shall be final.

Instructions for utilizing the portal can be found here: [Procurement and Question Submission Portal Instructions](#).

- C. Post-Award Substitution Requests must be submitted by the Contractor and not a Subcontractor nor Supplier.
 - 1. Documentation. Show compliance with requirements for substitutions with the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification Section. Significant qualities may include, but are not limited to, attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses. Also provide names and addresses of the applicable architect, engineer, and owner.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for the Project.
 - j. Comparison of the approved Baseline Project Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Engineer's Action. If necessary, Engineer will request additional information or documentation for evaluation within seven (7) calendar days of receipt of a request for substitution. Engineer will notify Contractor through Port of acceptance or rejection of proposed substitution within fifteen (15) calendar days of receipt of request, or seven (7) calendar days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance. Change Order or Minor Change in Work.
 - b. Use product originally specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.
3. Substitutions for Cause. Submit requests for substitution immediately upon discovery of need for change, but not later than fourteen (14) days prior to date required for preparation and review of related submittals.
 - a. Conditions. Engineer will consider Contractor's request for substitution when the following conditions are satisfied:
 - 1) Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 2) Requested substitution will not adversely affect the Baseline Project Schedule.
 - 3) Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 4) Requested substitution is compatible with other portions of the Work.
 - 5) Requested substitution has been coordinated with other portions of the Work.
 - 6) Requested substitution provides specified warranty.
 - 7) If requested substitution involves more than one (1) contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
4. Substitutions for Convenience. Engineer will consider Contractor's requests for substitution if received within fourteen (14) days after the Notice of Award.
 - a. Conditions. Engineer will consider Contractor's request for substitution when the following conditions are satisfied:
 - 1) Requested substitution offers Port a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Port must assume. Port's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Port, and similar considerations.
 - 2) Requested substitution does not require extensive revisions to the Contract Documents.
 - 3) Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 4) Requested substitution will not adversely affect the Baseline Project Schedule.
 - 5) Requested substitution has received necessary approvals of authorities having jurisdiction.

- 6) Requested substitution is compatible with other portions of the Work.
- 7) Requested substitution has been coordinated with other portions of the Work.
- 8) Requested substitution provides specified warranty.
- 9) If requested substitution involves more than one (1) contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

D. Substitutions will not be considered when:

1. Indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this Section.
2. Acceptance will require substantial revision of Contract Documents or other items of the Work.
3. Submittal for substitution request does not include point-by-point comparison of proposed substitution with specified product.

1.04 QUALITY ASSURANCE

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

PROJECT TITLE: Wooden Light Pole Replacement Program **PROJECT NO.:** 201148.01

SUBMITTED BY: _____ CONTRACT NO.: 071916

PRIME/SUB/SUPPLIER: _____ DATE: _____

Specification Title: _____ Section No.: _____

Description: _____ Paragraph: _____

Page No.: _____

Proposed Substitution: _____

Trade Name: _____ Model No.: _____

Manufacturer: _____

Address: _____ Phone No.: _____

Installer: _____

Address: _____ Phone No.: _____

Differences between proposed substitution and specified product: _____

☐ Point-by-Point comparative data attached - REQUIRED

Reason for not providing specified item: _____

Similar Installation:

Project: _____ A/E: _____

Address: _____

Owner: _____ Date Installed: _____

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

Supporting Data Attached:

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

Applicable to Substitution Requests During Construction:

Proposed to Port for accepting substitution: \$ _____

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

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.

- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay Baseline Project Schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted By: _____

Signed By: _____ Firm: _____

Address: _____

Telephone: _____ Email: _____

Attachments: _____

A/E's REVIEW AND RECOMMENDATION

- ☐ Approved Substitution
- ☐ Approved Substitution as Noted
- ☐ Reject Substitution - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

ENGINEER'S REVIEW AND ACTION

- ☐ Substitution Approved - Make submittals in accordance with this Specification Section. If during construction, prepare Change Order.
- ☐ Substitution Approved as Noted - Make submittals in accordance with this Specification Section. If during construction, prepare Change Order.
- ☐ Substitution Rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

END OF SECTION

PART 1 - GENERAL

1.01 EXISTING CONDITIONS

- A. Certain information relating to existing surface and subsurface conditions and structures is available to Bidders online at www.portoftacoma.com, but will not be part of the Contract Documents, as follows:
 - 1. Geotechnical Memorandum: Entitled Preliminary Light Pole Foundation Recommendations for the Port of Tacoma Light Pole Replacement Project, dated February 2, 2023.
 - a. This report identifies properties of below grade conditions and offers recommendations for the design of foundations, prepared primarily for the use of Engineer.
 - b. The recommendations described shall not be construed as a requirement of this Contract, unless specifically referenced in the Contract Documents.
 - c. This report, by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this report, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price accruing to the Port.

1.02 AVAILABILITY

- A. Reference Documents are available online through the Port of Tacoma's Website www.portoftacoma.com. Click on "Contracts," "Procurement," and then the Procurement Number.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 HAZARDOUS MATERIALS NOTICE

- A. The Port is reasonably certain that asbestos and lead will not be disturbed by the project. If the Contractor encounters material suspected of containing lead or asbestos which will interfere with the execution of the work, the Contractor shall stop work and notify the Engineer.
- B. Parcel 1A - TOTE
1. There is a potential to encounter soil and groundwater contamination at the property during the scoped activities (i.e., extracting/replacing poles, and pumping out vaults).
 2. Possible chemicals of concern include PAHs, TCE, Vinyl Chloride, petroleum products, and benzene.
 3. Much of the groundwater contamination has been encountered at 25 feet below ground surface, however, further investigation and site characterization is still needed especially in site soils.
 4. It is recommended that soil and groundwater is assumed to be contaminated during site work.
 5. Site background information:
 - a. [TOTE](https://apps.ecology.wa.gov/cleanupsearch/document/113597) has its own ongoing soil and groundwater cleanup investigation associated with 26 former USTs (petroleum/PAHs. The latest technical document is here: <https://apps.ecology.wa.gov/cleanupsearch/document/113597> (<https://apps.ecology.wa.gov/cleanupsearch/site/7619>))
 - b. [The Occidental property](https://apps.ecology.wa.gov/cleanupsearch/site/4326) (GW: VOCs, high pH) (<https://apps.ecology.wa.gov/cleanupsearch/site/4326>)
 - c. [The AAPTF property](https://apps.ecology.wa.gov/cleanupsearch/site/743) (GW: benzene/petroleum). (<https://apps.ecology.wa.gov/cleanupsearch/site/743>)

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

BIDDER'S NAME: _____

PROJECT TITLE: WOODEN LIGHT POLE REPLACEMENT PROGRAM _____

The undersigned Bidder declares that it has read the Contract Documents (including documents provided by reference), understands the conditions under which the Work will be performed, has examined the Project site, and has determined for itself all situations affecting the Work herein Bid upon. Bidder proposes and agrees, if this Bid is accepted, to provide at Bidder's own expense, all labor, machinery, tools, materials, etc., including all Work incidental to, or described or implied as incidental to such items, according to the Contract Documents, and that the Bidder will complete the Work within the time stated, and that Bidder will accept in full the lump sum or unit price(s) set forth below:

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE (QTY. x UNIT PRICE)
1	Project Administration	1	LS		
2	Parcel 69 (UP Yard) Mobilization and Demolition	1	LS		
3	Parcel 69 (UP Yard) Demolition	1	LS		
4	Parcel 69 (UP Yard) Civil Site Improvements	1	LS		
5	Parcel 69 (UP Yard) Foundations	1	LS		
6	Parcel 69 (UP Yard) New Timber Poles	1	LS		
7	Parcel 69 (UP Yard) Temporary Provisions	1	LS		
8	Parcel 69 (UP Yard) New Electrical, Communications and Attachments	1	LS		
9	Parcel 69 (UP Yard) Pole Commissioning	1	LS		
10	Parcel 69A (SIM) Mobilization and Demobilization	1	LS		
11	Parcel 69A (SIM) Demolition	1	LS		
12	Parcel 69A (SIM) Civil Site Improvements	1	LS		
13	Parcel 69A (SIM) Foundations	1	LS		
14	Parcel 69A (SIM) New Timber Poles	1	LS		
15	Parcel 69A (SIM) Temporary Provisions	1	LS		
16	Parcel 69A (SIM) New Electrical, Communications and Attachments	1	LS		

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE (QTY. x UNIT PRICE)
17	Parcel 69A (SIM) Pole Commissioning	1	LS		
18	Parcel 17 (EB1) Mobilization and Demobilization	1	LS		
19	Parcel 17 (EB1) Demolition	1	LS		
20	Parcel 17 (EB1) Civil Site Improvements	1	LS		
21	Parcel 17 (EB1) Foundations	1	LS		
22	Parcel 17 (EB1) New Timber Poles	1	LS		
23	Parcel 17 (EB1) Temporary Provisions	1	LS		
24	Parcel 17 (EB1) New Electrical, Communications and Attachments	1	LS		
25	Parcel 17 (EB1) Pole Commissioning	1	LS		
26	Parcel 105 (West Hylebos Terminal) Mobilization and Demobilization	1	LS		
27	Parcel 105 (West Hylebos Terminal) Demolition	1	LS		
28	Parcel 105 (West Hylebos Terminal) Civil Site Improvements	1	LS		
29	Parcel 105 (West Hylebos Terminal) Foundations	1	LS		
30	Parcel 105 (West Hylebos Terminal) New Timber Poles	1	LS		
31	Parcel 105 (West Hylebos Terminal) Temporary Provisions	1	LS		
32	Parcel 105 (West Hylebos Terminal) New Electrical, Communications and Attachments	1	LS		
33	Parcel 105 (West Hylebos Terminal) Pole Commissioning	1	LS		
34	Parcel 1A (TOTE) Mobilization and Demobilization	1	LS		
35	Parcel 1A (TOTE) Demolition	1	LS		
36	Parcel 1A (TOTE) Civil Site Improvements	1	LS		

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE (QTY. x UNIT PRICE)
37	Parcel 1A (TOTE) Foundations	1	LS		
38	Parcel 1A (TOTE) New Timber Poles	1	LS		
39	Parcel 1A (TOTE) Temporary Provisions	1	LS		
40	Parcel 1A (TOTE) New Electrical, Communications and Attachments	1	LS		
41	Parcel 1A (TOTE) Pole Commissioning	1	LS		
42	Parcel 27 (NIM) Mobilization and Demobilization	1	LS		
43	Parcel 27 (NIM) Demolition	1	LS		
44	Parcel 27 (NIM) Civil Site Improvements	1	LS		
45	Parcel 27 (NIM) Foundations	1	LS		
46	Parcel 27 (NIM) New Timber Poles	1	LS		
47	Parcel 27 (NIM) Temporary Provisions	1	LS		
48	Parcel 27 (NIM) New Electrical, Communications and Attachments	1	LS		
49	Parcel 27 (NIM) Pole Commissioning	1	LS		
50	Parcel 27 (NIM) Traffic Control	60	Day		
51	Parcel 27 (Terminal 7) Mobilization and Demobilization	1	LS		
52	Parcel 27 (Terminal 7) Demolition	1	LS		
53	Parcel 27 (Terminal 7) Civil Site Improvements	1	LS		
54	Parcel 27 (Terminal 7) Foundations	1	LS		
55	Parcel 27 (Terminal 7) New Timber Poles	1	LS		
56	Parcel 27 (Terminal 7) Temporary Provisions	1	LS		
57	Parcel 27 (Terminal 7) New Electrical, Communications and Attachments	1	LS		
58	Parcel 27 (Terminal 7) Pole Commissioning	1	LS		

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE (QTY. x UNIT PRICE)
59	Replacement Bollard	48	EA		
60	Trench Safety Systems	1	LS		

TOTAL BID AMOUNT	
10.3% WASHINGTON STATE SALES TAX (WSST) ON BASE BID SUBTOTAL	
BID TOTAL (WITH WSST)	

Note: Show prices in figures only.

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

Schedule of Unit Prices. The unit prices are proposed to apply only in the event of additions to, or deletions from, the work required and ordered. All prices shall include complete installation without Washington State Sales Tax. The bidder shall propose a price for each item; failure to propose a price for each item may render the bid non-responsive. The Port reserves the right to accept or reject the unit prices proposed.

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

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

Principal Subcontractors/Suppliers. For Bids greater than one million (\$1,000,000) dollars, the Bidder shall list below the name of each subcontractor or supplier to whom the Bidder proposes to subcontract the portions of the work listed below, or name itself for the work, in accordance with RCW 39.30.060.

Work to be Performed	Name of Firm
HVAC (Heating, Ventilation and Air Conditioning) Work	
Plumbing Work	
Electrical Work	
Structural Steel Installation	

Rebar Installation	
--------------------	--

Non-Collusion Representation. The Bidder declares under penalty of perjury that the Bid submitted is genuine and not a sham or collusive bid, or made in the interest or on behalf of any person or firm not therein named; and further represents that the Bidder has not directly or indirectly induced or solicited any other bidder to submit a sham bid, or encouraged any other person or corporation to refrain from bidding; and that the Bidder has not in any manner sought by collusion to secure to the Bidder an advantage over any other bidder or bidders.

RCW 39.04.350 Certification. The Bidder represents and certifies, under penalty of perjury, that within the three- (3-) year period immediately preceding the Bid Date, the Bidder has not been determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries, nor through a civil judgment entered by a court of limited or general jurisdiction, to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, nor 49.52 RCW.

Addenda. Bidder acknowledges receipt and acceptance of all Addenda through No. ____ (Identify Last Addenda By Number)

Bid Security. A certified check, cashier's check, or other obligation of a bank, or a bid bond in substantially the form set forth in Section 00 43 13, Bid Security Form for at least five (5) percent of the Base Bid Subtotal, shall be submitted with this Bid.

Apprenticeship Requirements. For Bids greater than one million (\$1,000,000) dollars, the apprentice labor hours required for this project are fifteen (15) percent of the total labor hours. The Bidder agrees to utilize this level of apprentice participation.

Name of Firm

Date

Signature

By Title

Mailing Address

City, State, Zip Code

Telephone Number

Email Address

WA State Contractor's License No.

Employment Security Department No.

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

END OF SECTION

This page intentionally left blank

KNOW ALL MEN BY THESE PRESENTS:

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

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

SIGNED, SEALED AND DATED THIS _____ DAY OF _____, 20__

BY _____
PRINCIPAL

BY _____
SURETY

AGENT AND ADDRESS

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

END OF SECTION

This page intentionally left blank

THIS IS NOT TO BE SUBMITTED WITH A BID.

THE LOW RESPONSIVE BIDDER SHALL BE REQUIRED TO COMPLETE THIS RESPONSIBILITY DETAIL FORM AS SPECIFIED IN SECTION 00 21 00 - INSTRUCTIONS TO BIDDERS. **THIS COMPLETED RESPONSIBILITY DETAIL FORM SHALL BE SUBMITTED ELECTRONICALLY (PDF) VIA EMAIL TO THE CONTACT(S) IDENTIFIED IN THE LOW RESPONSIVE BIDDER SELECTION NOTIFICATION.**

BIDDER'S COMPANY NAME: _____

For the below Mandatory Bidder Responsibility Criteria, please mark the appropriate choice.

1.01 MANDATORY BIDDER RESPONSIBILITY CRITERIA

- A. The Bidder shall meet the following mandatory responsibility criteria as described in RCW 39.04.350(1). The Bidder shall be rejected as not responsible if any answer to questions 1 through 6 is "No" or any answer to questions 7 through 11 is "Yes."

1. Does the Bidder have a Certificate of Registration in compliance with RCW 18.27?

☐ Yes ☐ No

2. Does the Bidder have a current Washington State Unified Business Identifier number?

☐ Yes ☐ No

3. Does the Bidder have Industrial Insurance Coverage for the Bidder's employees working in Washington State as required in RCW 51?

☐ Yes ☐ No

4. Does the Bidder have an Employment Security Department number as required in RCW 50?

****Attach letter dated within six (6) months of Bid Date.***

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

☐ Yes ☐ No

5. Does the Bidder have a Washington State Excise Tax Registration number as required in RCW 82?

☐ Yes ☐ No

6. Has the Bidder completed the training required by RCW 39.04.350, or is the Bidder on the list of exempt businesses maintained by the Department of Labor and Industries?

☐ Yes ☐ No

7. Has the Bidder been disqualified from bidding on any public works project under RCW 39.06.010 or 39.12.065(3)?

☐ Yes ☐ No

8. Has the Bidder violated RCW 39.04.370 more than one (1) time as determined by the Washington State Department of Labor and Industries?
- ☐ Yes ☐ No
9. Has the Bidder ever been found to be out of compliance with Apprenticeship Utilization requirements of RCW 39.04.320?
- ☐ Yes ☐ No
10. Has the Bidder ever been found to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, or 49.52 RCW within the three- (3-) year period immediately preceding the date of this bid solicitation?
- ☐ Yes ☐ No
11. Has the bidder been subject to a revocation of a minor work permit under RCW 49.12.390.(4)?
- ☐ Yes ☐ No

If any answer to questions 1 through 6 is "No" or any answer to questions 7 through 11 is "Yes" - **STOP HERE** and contact the Contract Administrator. The Bidder is not responsible for this Work. Otherwise proceed to 1.02. **Provide attached to this completed form documentation to confirm responsibility criteria.**

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

1.02 CONTRACT AND REGULATORY HISTORY

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

1. Has the Bidder had a contract terminated for cause or default in the last five (5) years?
- ☐ Yes, **If YES, explain below.** ☐ No
- _____
2. Has the Bidder required a Surety to take over all, or a portion of, a project to cure or respond to an asserted default or material breach of contract on the part of the Bidder on any public works project in the last five (5) years?
- ☐ Yes, **If YES, explain below.** ☐ No
- _____

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

☐ Yes, **If YES, explain below.** ☐ No

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

☐ Yes, **If YES, explain below.** ☐ No

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

☐ Yes, **If YES, explain below.** ☐ No

1.03 ACCIDENT/INJURY EXPERIENCE

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

Year	Effective Year	Experience Factor
1		
2		
3		
4		
5		

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

1.04 WORK PERFORMED BY BIDDER

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

%

1.05 ADDITIONAL CONTRACTOR INFORMATION

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

1. Bidder's recent job resume, including a list of similar projects performed and contact information for the similar project owner(s), a brief description of work, start and end dates, and contract amount.
 2. Resumes of Bidder's proposed project manager and job superintendent.
- B. The Bidder's failure to provide the required project information may result in a determination of the Bidder being declared non-responsible by the Port.
- C. The Bidder shall submit this completed, **SIGNED** Responsibility Detail Form electronically (PDF), with all requested backup documentation, via email to the contact(s) noted on the Low Responsive Bidder Selection Notification.
- D. The Bidder and its subcontractors to verify that its subcontractors at each tier meet the responsibility criteria as required by RCW 39.06.020 and 39.04.350.
1. Bidder shall verify major subcontractors meet the responsibility criteria required. Fill out one Port of Tacoma Public Works Project Bidder Evaluation Checklist for Subcontractors for each major subcontractor and submit to the Port with this form. Backup documentation is not required to be submitted.

PROJECT: Wooden Light Pole Replacement Program**PROJECT NO.: 201148.01****CONTRACT NO.: 071916****Responsibility Certification Form**

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

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

The information provided herein is true and complete.

Signature of Authorized Representative

Date

Print Name and Title

**PORT OF TACOMA PUBLIC WORKS PROJECT BIDDER EVALUATION CHECKLIST FOR
SUBCONTRACTORS**

PROJECT TITLE: Wooden Light Pole Replacement Program

BIDDER: _____

CONTRACT AND PROJECT NUMBER: 071916/ 201148.01 _____

This checklist shall be completed by the Bidder and its subcontractors to verify that its subcontractors at each tier meet the responsibility criteria as required by RCW 39.06.020 and RCW 39.04.350.

This checklist should be submitted to the Port of Tacoma Contracts Administrator within twenty-four (24) hours of request.

Document verification information or backup data is not to be submitted to the Port, this information should remain on file with the Contractor and be presented to the Port if requested at a later date.

Item No.	Item	Initials/ Comments
1.	At the time of Bid submittal, have a certificate of registration in compliance with RCW 18.27: Check the Department of Labor & Industries web site https://secure.lni.wa.gov/verify/ Verify that a subcontractor has an electrical contractor license, if required by RCW 19.28, or an elevator contractor license, if required by RCW 70.87.	
2.	While reviewing registration information above, also check contractor's Employer Liability Certificate to verify workers' comp (industrial insurance) premium status – current account. Complete a "Submit Contractor Tracking Request" to be notified if the contractor fails to pay workers' comp premiums or renew their contractor registration or if their electrical contractor license is suspended or revoked within one year.	
3.	State excise tax registration number (Department of Revenue). (contractor's Washington State Unified Business Identifier and tax registration number) http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/ .	
4.	Not disqualified from bidding on any public works contract under RCW 39.06.010 or RCW 39.12.065(3) . Check the Department of Labor and Industries https://secure.lni.wa.gov/verify/	
5.	Verify subcontractors are registered with the Washington State Employment Security Department (ESD) and have an account number. Request a letter to be sent from the subcontractor electronically by clicking on the following link https://esd.wa.gov/ or by emailing a request to	

Item No.	Item	Initials/ Comments
	publicworks@esd.wa.gov. Include ESD#, UBI#, and business name in the email. Certificate of Coverage letter issued/dated within the last six (6) months. Document if subcontractor confirms in writing, under penalty of perjury, that it has no employees and this requirement does not apply.	

END OF SECTION

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

The "Contractor" is: _____ (Legal Name)

_____ (Address)

_____ (Address 2)

_____ (Phone No.)

The "Project" is: Wooden Light Pole Replacement Program (Title)

201148.01 | 071916 (Project/Contract No.)

Parcel 69 (UP Yard)| 1738 Milwaukee Way (Project Address 1A)

Tacoma, WA 98421 (Project Address 1B)

Parcel 69A (SIM)| 1738 Milwaukee Way (Project Address 2A)

Tacoma, WA 98421 (Project Address 2B)

Parcel 17 (EB1)| 2940 E Alexander Ave (Project Address 3A)

Tacoma, WA 98421 (Project Address 3B)

Parcel 105 (WHT)| 3401 Taylor Way (Project Address 4A)

Tacoma, WA 98421 (Project Address 4B)

Parcel 1A (TOTE)| 500 E Alexander Ave (Project Address 5A)

Tacoma, WA 98421 (Project Address 5B)

Parcel 27 (NIM)| 1101 Port of Tacoma Rd. (Project Address 6A)

Tacoma, WA 98421 (Project Address 6B)

Parcel 27 (Terminal 7)| 2209 E 11th St (Project Address 7A)

Tacoma, WA 98421 (Project Address 7B)

The "Engineer" is: **Thais Howard, PE** (Engineer)

Sr. Director of Engineering (Title)

thoward@portoftacoma.com (Email)

(253) 888-4718 (Phone No.)

The "Contractor's Representative" is: (Representative)

(Title)

(Email)

(Phone No.)

BACKGROUND AND REPRESENTATIONS:

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

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

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

AGREEMENT:

The Port and the Contractor agree as follows:

1.0 CONTRACTOR TO FULLY PERFORM THE WORK

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

2.0 DATE OF COMMENCEMENT

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

3.0 CONTRACT TIME AND LIQUIDATED DAMAGES

The Contractor shall achieve all interim milestones as set forth in the Contract Documents and Substantial Completion of the entire Work not later than 500 calendar days from execution of the Contract, subject to adjustments of this Contract Time as provided in the Contract Documents. The Contractor shall achieve Final Completion of the entire Work within 45 calendar days of the date on which Substantial Completion is achieved.

Provisions for liquidated damages as a reasonable estimate of future loss, as of the date of this Agreement, are included in the Contract Documents. The parties agree that the stated liquidated damages are reasonable and not penalties individually nor cumulatively.

The liquidated damages for failure to achieve Substantial Completion by the required date shall be \$500 per calendar day. After the required Final Completion date, the liquidated damages for failure to achieve Final Completion shall be \$250 per calendar day.

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

4.0 CONTRACT PRICE

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

6.0 INSURANCE AND BONDS

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

This Agreement is entered into as of the Execution date listed below:

CONTRACTOR

PORT OF TACOMA

By: _____ By: _____

Title: _____ Title: _____

Date: _____ Execution _____
Date: _____

END OF SECTION

PERFORMANCE BOND # _____

CONTRACTOR (NAME AND ADDRESS)

SURETY (NAME AND PRINCIPLE PLACE OF BUSINESS)

OWNER (NAME AND ADDRESS)

PORT OF TACOMA
P.O. BOX 1837
TACOMA, WA 98401-1837

AGENT OR BROKER (FOR INFORMATION ONLY)

KNOW ALL MEN BY THESE PRESENTS:

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

WHEREAS:

Contractor shall execute an agreement with the Port for Wooden Light Pole Replacement Program, Project No. 201148.01/Contract No. _____, a copy of which Contract is by reference made a part hereof (the term "Contract" as used herein to include the aforesaid agreement together with all the Contract Documents, addenda, modifications, all alterations, additions thereto, deletions therefrom, and any other document or provision incorporated into the Contract) and is hereinafter referred to as the Contract.

This bond is executed and issued pursuant to the provisions of RCW 39.08.

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

FURTHER:

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

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

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

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

SURETY

CONTRACTOR

Surety Company Name

Contractor Company Name

Signature

Signature

Printed Name and Title

Printed Name and Title

Power of Attorney attached.

END OF SECTION

LABOR AND MATERIAL PAYMENT BOND # _____**CONTRACTOR (NAME AND ADDRESS)**

SURETY (NAME AND PRINCIPLE PLACE OF BUSINESS)

OWNER (NAME AND ADDRESS)

PORT OF TACOMA

P.O. BOX 1837

TACOMA, WA 98401-1837

AGENT OR BROKER (FOR INFORMATION ONLY)

KNOW ALL MEN BY THESE PRESENTS:

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

WHEREAS:

Contractor shall execute an agreement with the Port for Wooden Light Pole Replacement Program, Project No. 201148.01/Contract No. _____, a copy of which Contract is by reference made a part hereof (the term "Contract" as used herein to include the aforesaid agreement together with all the Contract Documents, addenda, modifications, alterations, additions thereto, deletions therefrom, and any other document or provision incorporated into the Contract) and is hereinafter referred to as the Contract.

This bond is executed pursuant to the provisions of RCW 39.08.

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

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

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

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

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

SURETY**CONTRACTOR**

Surety Company Name

Construction Company Name

Signature

Signature

Printed Name and Title

Printed Name and Title

Power of Attorney attached.

END OF SECTION

BOND NO.: _____

PROJECT TITLE: Wooden Light Pole Replacement Program

PROJECT NO.: 201148.01 _____

CONTRACT NO.: 071916 _____

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

WHEREAS, on the _____ day of _____, the said Principal herein executed Contract No. 071916 with the Port for Wooden Light Pole Replacement Program, Project No. 201148.01.

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

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

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

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

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

IN WITNESS WHEREOF, said Principal and said Surety have caused these presents to be duly signed and sealed this _____ day of _____, 20____.

By: _____
Principal

Address: _____

City/ST/Zip: _____

Phone: _____

Surety Name: _____

By: _____
Attorney-In-Fact

Address: _____

City/ST/Zip: _____

Phone: _____

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

END OF SECTION

TABLE OF CONTENTS		PAGE
ARTICLE 1 - THE CONTRACT DOCUMENTS		3
1.01	GENERAL	3
1.02	DEFINITIONS	3
1.03	INTENT OF THE CONTRACT DOCUMENTS	4
1.04	CORRELATION OF THE CONTRACT DOCUMENTS	4
1.05	OWNERSHIP OF THE CONTRACT DOCUMENTS	5
ARTICLE 2 - PORT OF TACOMA		5
2.01	AUTHORITY OF THE ENGINEER	5
2.02	ADMINISTRATION OF THE CONTRACT	5
2.03	INFORMATION PROVIDED BY THE PORT	6
2.04	CONTRACTOR REVIEW OF PROJECT INFORMATION	6
2.05	PORT'S RIGHT TO REJECT, STOP, AND/OR CARRY-OUT THE WORK	6
2.06	SEPARATE CONTRACTORS	7
2.07	OFFICERS AND EMPLOYEES OF THE PORT	7
ARTICLE 3 - CONTRACTOR'S RESPONSIBILITIES		7
3.01	DUTY TO PERFORM THE ENTIRE WORK	7
3.02	OBSERVED ERRORS, INCONSISTENCIES, OMISSIONS OR VARIANCES IN THE CONTRACT DOCUMENTS	7
3.03	SUPERVISION AND RESPONSIBILITY FOR SUBCONTRACTORS	8
3.04	MATERIALS AND EQUIPMENT	8
3.05	CONTRACTOR WARRANTIES	8
3.06	REQUIRED WAGES	9
3.07	STATE AND LOCAL TAXES	9
3.08	PERMITS, LICENSES, FEES, AND ROYALTIES	10
3.09	SAFETY	10
3.10	CORRECTION OF WORK	10
3.11	UNCOVERING OF WORK	11
3.12	RELOCATION OF UTILITIES	11
3.13	LABOR	12
3.14	INDEMNIFICATION	12
3.15	WAIVER OF CONSEQUENTIAL DAMAGES	13
ARTICLE 4 - SUBCONTRACTORS AND SUPPLIERS		13
4.01	RESPONSIBILITY FOR ACTIONS OF SUBCONTRACTORS AND SUPPLIERS	13
4.02	AWARD OF CONTRACTS TO SUBCONTRACTORS AND SUPPLIERS	13
4.03	SUBCONTRACTOR AND SUPPLIER RELATIONS	14
ARTICLE 5 - WORKFORCE AND NON-DISCRIMINATION REQUIREMENTS		15
5.01	COMPLIANCE WITH NON-DISCRIMINATION LAWS	15
5.02	MWBE, VETERAN-OWNED, AND SMALL BUSINESS ENTERPRISE PARTICIPATION	15
5.03	APPRENTICESHIP PARTICIPATION	15
ARTICLE 6 - CONTRACT TIME AND COMPLETION		16
6.01	CONTRACT TIME	16
6.02	PROGRESS AND COMPLETION	16
6.03	SUBSTANTIAL COMPLETION	17

6.04	COMPLETION OF PUNCH LIST	17
6.05	FINAL COMPLETION	17
6.06	FINAL ACCEPTANCE	18
6.07	PORT'S RIGHT TO USE THE PREMISES	18
ARTICLE 7 - PAYMENT		18
7.01	ALL PAYMENTS SUBJECT TO APPLICABLE LAWS AND SCHEDULE OF VALUES.....	18
7.02	APPLICATIONS FOR PAYMENT	19
7.03	PROGRESS PAYMENTS	19
7.04	PAYMENT BY CONTRACTOR TO SUBCONTRACTORS	19
7.05	FINAL PAYMENT	19
7.06	RETAINAGE	20
7.07	DISPUTED AMOUNTS	21
7.08	EFFECT OF PAYMENT	21
7.09	LIENS	21
ARTICLE 8 - CHANGES IN THE WORK		21
8.01	CHANGES IN THE WORK	21
8.02	CHANGES IN THE CONTRACT SUM	23
8.03	CHANGES IN THE CONTRACT TIME	26
8.04	RESERVATION OF RIGHTS	27
8.05	UNIT PRICES	27
ARTICLE 9 - SUSPENSION AND TERMINATION OF CONTRACT		27
9.01	PORT'S RIGHT TO SUSPEND WORK	27
9.02	TERMINATION OF CONTRACT FOR CAUSE BY THE PORT	28
9.03	TERMINATION OF CONTRACT FOR CONVENIENCE BY THE PORT	28
9.04	TERMINATION OF CONTRACT BY THE CONTRACTOR	28
9.05	SUBCONTRACT ASSIGNMENT UPON TERMINATION	29
ARTICLE 10 - BONDS		29
10.01	CONTRACTOR PERFORMANCE AND PAYMENT BONDS	29
ARTICLE 11 - DISPUTE RESOLUTION		30
11.01	NOTICE OF PROTEST AND CLAIM	30
11.02	MEDIATION	31
11.03	LITIGATION	32
ARTICLE 12 - MISCELLANEOUS		32
12.01	GENERAL	32
12.02	WAIVER	32
12.03	GOVERNING LAW	33
12.04	COMPLIANCE WITH LAW	33
12.05	ASSIGNMENT	33
12.06	TIME LIMIT ON CAUSES OF ACTION	33
12.07	SERVICE OF NOTICE	33
12.08	RECORDS	34
12.09	STATUTES	34

ARTICLE 1 - THE CONTRACT DOCUMENTS

1.01 GENERAL

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

1.02 DEFINITIONS

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

- J. "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, tools, equipment, materials, services, and incidentals necessary to complete all obligations under the Contract Documents. The Work may constitute only a part of the Project, and may interface and need to be coordinated with the work of others.

1.03 INTENT OF THE CONTRACT DOCUMENTS

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

1.04 CORRELATION OF THE CONTRACT DOCUMENTS

- A. Precedence. In the event of a conflict or discrepancy between or among the Contract Documents, the conflict or discrepancy will be resolved by the following order of precedence: with an addendum or Change Order having precedence over an earlier document, and computed dimensions having precedence over scaled dimensions, and large scale drawings take precedence over small scale drawings:
 - 1. The signed Agreement
 - a. Supplemental Conditions
 - b. Division 00 General Conditions
 - c. Division 01 General Requirements of Specifications
 - d. All other Specifications, including all remaining divisions, material and system schedules and attachments, and Drawings
 - e. All other sections in Division 00 not specifically identified herein by Section
- B. Inconsistency between or among Contract Documents. If there is any inconsistency between the Drawings, schedules, or Specifications, or any attachments, the Contractor will make an inquiry to the Engineer to determine how to proceed, and, unless otherwise directed, the Contractor will provide the better quality or greater quantity of any work or materials, as reasonably interpreted by the Port, at no change in the Contract Sum or Contract Time. Thus, if Work is shown on Drawings, but not contained in Specifications or schedules, or contained in Specifications or schedules, but not shown on the Drawings, the Work as shown or contained will be provided at no change in the Contract Sum or Contract Time, according to Specifications or Drawings to be issued by the Port.

- C. Inconsistency with law. In the event of a conflict between the Contract Documents and applicable laws, codes, ordinances, regulations, or orders of governmental authorities having jurisdiction over the Work, or in the event of any conflict between such laws, the most stringent requirements govern.
- D. Organization of Contract Documents. The organization of the Specifications and Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of the Work to be performed. The Port assumes no responsibility for the division and proper coordination of Work between particular Subcontractors.
- E. Bid quantities are estimates only. Any "bid quantities" set forth in the Contract Documents are estimates only. The Port does not warrant that the actual amount of Work will correspond to any estimates. The basis of payment will be the actual quantities performed in accordance with the Contract Documents.

1.05 OWNERSHIP OF THE CONTRACT DOCUMENTS

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

ARTICLE 2 - PORT OF TACOMA

2.01 AUTHORITY OF THE ENGINEER

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

2.02 ADMINISTRATION OF THE CONTRACT

- A. Port will administer Contract. The Port will provide administration of the Contract through the Engineer or the Engineer's designee. All communications with the Port or its consultants related to the Contract will be through the designated representative.
- B. Port not responsible for means and methods. The Port is not responsible for, and will have no control or charge of, the means, methods, techniques, sequences, or procedures of construction, or for safety precautions or programs incidental thereto, because these are the sole responsibility of the Contractor. If the Port makes any suggestion of means, methods, techniques, sequences, or procedures, the Contractor will exercise its independent judgment in deciding whether to adopt the suggestion, except as otherwise provided in the Contract Documents.
- C. Port not responsible for acts or omissions of Contractor or Subcontractors. The Port is not responsible for, and will have no control or charge of, the acts or omissions of the Contractor, Subcontractors of any tier, suppliers, or any of their agents or employees, or any other persons performing a portion of the Work.

- D. Port not responsible for the Work. The Port is not responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The presence of the Engineer or others at the Project site at any time does not relieve the Contractor from its responsibility for non-conforming Work.
- E. Port will have access to the Work. The Port and its representatives will at all times have access to the Work in progress, and the Contractor will provide proper facilities for such access and for inspection.

2.03 INFORMATION PROVIDED BY THE PORT

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

2.04 CONTRACTOR REVIEW OF PROJECT INFORMATION

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

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

- A. Port may reject Work. The Port has the authority, but not the obligation, to reject work, materials, and equipment that is defective or that otherwise does not conform to the Contract Documents, and to decide questions concerning the Contract Documents. However, the failure to so reject, or the presence of the Port at the site, shall not be construed as assurance that the Work is acceptable or being completed in compliance with the Contract Documents.

- B. Port may stop Work. If the Contractor fails to correct Work that does not comply with the requirements of the Contract Documents, or repeatedly or materially fails to properly carry out the Work, the Port may issue an order to stop all or a portion of the Work until the cause for the order has been eliminated. The Port's right to stop the Work shall not impose a duty on the Port to exercise this right for the benefit of the Contractor or any third party.
- C. Port may carry-out Work. If the Contractor fails to perform the Work properly, fails to perform any provision of this Contract, or fails to maintain the Baseline Project Schedule, or if the Port reasonably concludes that the Work will not be completed in the specified manner or within the Contract Time, then the Port may, after three (3) days' written notice to the Contractor and without prejudice to any other remedy the Port may have, perform itself or have performed any or all of the Work and may deduct the cost thereof from any payment then or later due the Contractor.

2.06 SEPARATE CONTRACTORS

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

2.07 OFFICERS AND EMPLOYEES OF THE PORT

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

ARTICLE 3 - CONTRACTOR'S RESPONSIBILITIES

3.01 DUTY TO PERFORM THE ENTIRE WORK

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

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

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

3.03 SUPERVISION AND RESPONSIBILITY FOR SUBCONTRACTORS

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

3.04 MATERIALS AND EQUIPMENT

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

3.05 CONTRACTOR WARRANTIES

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

3.06 REQUIRED WAGES

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

3.07 STATE AND LOCAL TAXES

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

3.08 PERMITS, LICENSES, FEES, AND ROYALTIES

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

3.09 SAFETY

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

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

3.10 CORRECTION OF WORK

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

3.11 UNCOVERING OF WORK

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

3.12 RELOCATION OF UTILITIES

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

3.13 LABOR

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

3.14 INDEMNIFICATION

- A. Duty to defend, indemnify, and hold harmless. To the fullest extent permitted by law and subject to this Section 3.14, the Contractor shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify, and hold harmless the Port and the Northwest Seaport Alliance, including their respective Commissions, officers, managers, and employees, the Engineer, any consultants, and the agents and employees, successors and assigns of any of them (the "Indemnified Parties") from and against claims, damages, lawsuits, losses (including loss of use), disbursements, liabilities, obligations, fines, penalties, costs, and expenses, whether direct and indirect or consequential, including but not limited to, consultants' fees, and attorneys' fees incurred on such claims and in proving the right to indemnification ("Claims"), arising out of, or resulting from, the acts or omissions of the Contractor, a Subcontractor of any tier, their agents, and anyone directly or indirectly employed by any of them or anyone for whose acts they may be liable (individually and collectively, the "Indemnitor").
- B. Duty to defend, indemnify, and hold harmless for sole negligence. The Contractor will fully defend, indemnify, and hold harmless the Indemnified Parties for the sole negligence or willful misconduct of the Indemnitor.
- C. Duty to defend, indemnify, and hold harmless for concurrent negligence. Where Claims arise from the concurrent negligence of (1) the Port; and (2) the Indemnitor, the Contractor's obligations to indemnify and defend the Indemnified Parties under this Section 3.14 shall be effective only to the extent of the Indemnitor's negligence.
- D. Duty to indemnify not limited by workers' compensation or similar employee benefit acts. In claims against any of the Indemnified Parties by an employee of the Contractor, a Subcontractor of any tier, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under this Section 3.14 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable under workers' compensation acts, disability benefit acts, or other employee benefit acts. After mutual negotiation of the parties, the Contractor waives immunity as to the Indemnified Parties under Title 51 RCW, "Industrial Insurance."
- E. Intellectual property indemnification. The Contractor will be liable for and shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify, and hold the Indemnified Parties harmless for Claims for infringement by the Contractor of copyrights or patent rights arising out of, or relating to, the Project.
- F. Labor peace indemnification. If the Contractor fails to satisfy its labor peace obligations under the Contract, the Contractor will be liable for and shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify, and hold harmless the Indemnified Parties for Claims brought against the Port by third parties (including but not limited to lessees, tenants, contractors, customers, licensees, and invitees of the Port) for injunctive relief or monetary loss.
- G. Cyber risk indemnification. Contractor shall defend, indemnify, and hold harmless the Indemnified Parties from and against any liability, expense, fines, penalties, cost, demand, or other obligation, resulting from or out of any cyber-related risk that includes theft, loss or misuse of data, release of private information as result of a network breach, penetration, compromise, or loss of IT systems control.

- H. Joinder. The Contractor agrees to being added by the Port as a party to any arbitration or litigation with third parties in which the Port alleges indemnification or seeks contribution from the Indemnitor. The Contractor shall cause each of its Subcontractors of any tier to similarly stipulate in their subcontracts; in the event any does not, the Contractor shall be liable in place of such Subcontractor(s) of any tier.
- I. Other. To the extent that any portion of this Section 3.14 is stricken by a court or arbitrator for any reason, all remaining provisions shall retain their vitality and effect. The obligations of the Contractor under this Section 3.14 shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity which would otherwise exist. To the extent the wording of this Section 3.14 would reduce or eliminate an available insurance coverage, it shall be considered modified to the extent necessary so that the insurance coverage is not affected. This Section 3.14 shall survive completion, acceptance, final payment, and termination of the Contract.

3.15 WAIVER OF CONSEQUENTIAL DAMAGES

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

ARTICLE 4 - SUBCONTRACTORS AND SUPPLIERS

4.01 RESPONSIBILITY FOR ACTIONS OF SUBCONTRACTORS AND SUPPLIERS.

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

4.02 AWARD OF CONTRACTS TO SUBCONTRACTORS AND SUPPLIERS

- A. Contractor to provide proposed Subcontractor information. The Contractor, within ten (10) days after the Port's notice of award of the Contract, shall provide the Engineer with the names of the persons or entities proposed to perform each of the principal portions of the Work (i.e., either a Subcontractor listed in a bid or proposal or a Subcontractor performing Work valued at least ten percent (10%) of the Contract Sum) and the proprietary names, and the suppliers of, the principal items or systems of materials and equipment proposed for the Work. No progress payment will become due until after this information has been furnished.

- B. Port to respond promptly with objections. The Port may respond promptly to the Contractor in writing stating: (1) whether the Port has reasonable objection to any proposed person or entity, or (2) whether the Port requires additional time for review. If the Port makes a reasonable objection, the Contractor shall replace the Subcontractor with no increase to the Contract Sum or Contract Time. Such a replacement shall not relieve the Contractor of its responsibility for the performance of the Work and compliance with all of the requirements of the Contract within the Contract Sum and Contract Time.
- C. Reasonable objection defined. "Reasonable objection" as used in this Section 4.02 includes, but is not limited to: (1) a proposed Subcontractor of any tier different from the entity listed with the bid, (2) lack of "responsibility" of the proposed Subcontractor, as defined by Washington law and the Bidding Documents, or lack of qualification or responsibility of the proposed Subcontractor based on the Contract or Bidding Documents, or (3) failure of the Subcontractor to perform satisfactorily in the Port's opinion (such as causing a material delay or submitting a claim that the Port considers inappropriate) on one or more projects for the Port within five (5) years of the bid date.
- D. No substitution allowed without permission. The Contractor shall not substitute a Subcontractor, person, or organization without the Engineer's written consent.

4.03 SUBCONTRACTOR AND SUPPLIER RELATIONS

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

ARTICLE 5 - WORKFORCE AND NON-DISCRIMINATION REQUIREMENTS

5.01 COMPLIANCE WITH NON-DISCRIMINATION LAWS

- A. Contractor to comply with non-discrimination laws. The Contractor shall fully comply with all applicable laws, regulations, and ordinances pertaining to non-discrimination.
- B. Non-discrimination Provision - Implementing SB 5186

1. Nondiscrimination Requirement. During the term of this Contract, Contractor, including any subcontractor, shall not discriminate on the bases enumerated at RCW 49.60.530(3). In addition, Contractor, including any subcontractor, shall give written notice of this nondiscrimination requirement to any labor organizations with which Contractor, or subcontractor, has a collective bargaining or other agreement.
2. Obligation to Cooperate. Contractor, including any subcontractor, shall cooperate and comply with any Washington state agency investigation regarding any allegation that Contractor, including any subcontractor, has engaged in discrimination prohibited by this Contract pursuant to RCW 49.60.530(3).
3. Default. Notwithstanding any provision to the contrary, POT may suspend Contractor, including any subcontractor, upon notice of a failure to participate and cooperate with any state agency investigation into alleged discrimination prohibited by this Contract, pursuant to RCW 49.60.530(3). Any such suspension will remain in place until POT receives notification that Contractor, including any subcontractor, is cooperating with the investigating state agency. In the event Contractor, or subcontractor, is determined to have engaged in discrimination identified at RCW 49.60.530(3), POT may terminate this Contract in whole or in part, and Contractor, subcontractor, or both, may be referred for debarment as provided in RCW 39.26.200. Contractor or subcontractor may be given a reasonable time in which to cure this noncompliance, including implementing conditions consistent with any court-ordered injunctive relief or settlement agreement.
4. Remedies for Breach. Notwithstanding any provision to the contrary, in the event of Contract termination or suspension for engaging in discrimination, Contractor, subcontractor, or both, shall be liable for contract damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, which damages are distinct from any penalties imposed under Chapter 49.60, RCW. POT shall have the right to deduct from any monies due to Contractor or subcontractor, or that thereafter become due, an amount for damages Contractor or subcontractor will owe POT for default under this provision.

5.02 MWBE, VETERAN-OWNED, AND SMALL BUSINESS ENTERPRISE PARTICIPATION.

- A. In accordance with the legislative findings and policies set forth in RCW 39.19, the Port encourages participation in all of its contracts by MWBE firms certified by the Office of Minority and Women's Business Enterprises (OMWBE). Participation may be either on a direct basis in response to this invitation or as a subcontractor to a Bidder. However, unless required by federal statutes, regulations, grants, or contract terms referenced in the Contract Documents, no preference will be included in the evaluation of Bids, no minimum level of MWBE participation shall be required as a condition for receiving an award, and Bids will not be rejected or considered non-responsive on that basis. Any affirmative action requirements set forth in federal regulations or statutes included or referenced in the Contract Documents will apply.

The Port encourages participation in all of its contracts by Veteran-owned businesses (defined in RCW 43.60.010) and located at <http://www.dva.wa.gov/program/certified-veteran--and-servicemember-owned-businesses> and Small, Mini, and Micro businesses (defined in RCW 39.26.010)

5.03 APPRENTICESHIP PARTICIPATION

- A. In accordance with RCW 39.04.320, fifteen (15) percent Apprenticeship Participation is required for all projects estimated to cost one million (\$1,000,000) dollars or more.
- B. Apprentice participation, under this contract, may be counted towards the required percentage (%) only if the apprentices are from an apprenticeship program registered and approved by the Washington State Apprenticeship and Training Council (RCW 49.04 and WAC 296-05).
- C. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 by phone at (360) 902-5320, or e-mail at Apprentice@lni.wa.gov, to obtain information on available apprenticeship programs.
- D. For each project that has apprentice requirements, the contractor shall submit a "Statement of Apprentice and Journeyman Participation" on forms provided by the Port of Tacoma, with every request for project payment. The Contractor shall submit consolidated and cumulative data collected by the Contractor and collected from all subcontractors by the Contractor. The data to be collected and submitted includes the following:
 - 1. Contractor name and address
 - 2. Contract number
 - 3. Project name
 - 4. Contract value
 - 5. Reporting period "Beginning Date" through "End Date"
 - 6. Name and registration number of each apprentice by contractor
 - 7. Total number of apprentices and labor hours worked by them, categorized by trade or craft.
 - 8. Total number of journeymen and labor hours worked by them, categorized by trade or craft
 - 9. Cumulative combined total of apprentice and journeymen labor hours
 - 10. Total percentage of apprentice hours worked
- E. No changes to the required percentage (%) of apprentice participation shall be allowed without written approval of the Port. In any request for the change, the Contractor shall clearly demonstrate a good faith effort to comply with the requirements for apprentice participation.

ARTICLE 6 - CONTRACT TIME AND COMPLETION

6.01 CONTRACT TIME

- A. Contract Time is measured from Contract execution. Unless otherwise provided in the Agreement, the Contract Time is the period of time, including authorized adjustments, specified in the Contract Documents from the date the Contract is executed to the date Substantial Completion of the Work is achieved.

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

6.02 PROGRESS AND COMPLETION

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

6.03 SUBSTANTIAL COMPLETION

- A. Substantial Completion defined. Substantial Completion is the stage in the progress of the Work, or portion or phase thereof, when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Port can fully occupy or utilize the Work, or the designated portion thereof, for its intended use, all requirements in the Contract Documents for Substantial Completion have been achieved, and all required documentation has been properly submitted to the Port in accordance with the Contract Documents. All Work, other than incidental corrective or punch list Work and final cleaning, must be completed. The fact that the Port may occupy the Work or a designated portion thereof does not indicate that Substantial Completion has occurred or that the Work is acceptable in whole or in part.
- B. Work not Substantially Complete unless Final Completion attainable. The Work is not Substantially Complete unless the Port reasonably judges that the Work can achieve Final Completion within the period of time specified in the Contract Documents.

- C. Notice of Substantial Completion. When the Work or designated portion has achieved Substantial Completion, the Port will provide a notice to establish the date of Substantial Completion. The notice shall establish responsibilities of the Port and Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall finish all remaining Work. If the notice of Substantial Completion does not so state, all responsibility for the foregoing items shall remain with the Contractor until Final Completion.

6.04 COMPLETION OF PUNCH LIST

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

6.05 FINAL COMPLETION

- A. Final Completion. Upon receipt of written notice from the Contractor that all punch list items and other Contract requirements are completed, the Contractor will notify the Port, and the Port will perform a final inspection. If the Port determines that some or all of the punch list items have not been addressed, the Contractor shall be responsible to the Port for all costs, including re-inspection fees, for any subsequent reviews to determine completion of the punch list. When the Port determines that all punch list items have been satisfactorily addressed, that the Work is acceptable under the Contract Documents, and that the Work has fully been performed, the Port will promptly notify the Contractor of Final Completion.
- B. Contractor responsible for costs if Final Completion is not timely achieved. In addition to any liquidated damages, the Contractor is liable for, and the Port may deduct from any amounts due the Contractor, all costs incurred by the Port for services performed after the contractual date of Final Completion, whether or not those services would have been performed prior to that date had Final Completion been timely achieved.
- C. Final Completion submittals. The Port is not obligated to accept the Project as complete until the Contractor has submitted all required submittals to the Port.
- D. Contractor responsible for the Work until Final Completion. The Contractor shall assume the sole risk of loss and responsibility for all Work under the Contract, and all materials to be incorporated in the Work, whether in storage or at the Project site, until Final Completion. Damage from any cause to either permanent or temporary Work, utilities, materials, equipment, existing structures, the site, or other property owned by the Port or others, shall be repaired by the Contractor to the reasonable satisfaction of the Port at no change in the Contract Sum.

6.06 FINAL ACCEPTANCE

- A. Final Acceptance. Final Acceptance is the formal action of the Port accepting the Project as complete. Public notification of Final Acceptance will be posted on the Port's external website (<http://www.portoftacoma.com/final-acceptance>).

- B. Final Acceptance not an acceptance of defective Work. Final Acceptance shall not constitute acceptance by the Port of unauthorized or defective Work, and the Port shall not be prevented from requiring the Contractor to remove, replace, repair, or dispose of unauthorized or defective Work or recovering damages due to the same.
- C. Completion of Work under RCW 60.28. Pursuant to RCW 60.28, "Lien for Labor, Materials, Taxes on Public Works," completion of the Contract Work shall occur upon Final Acceptance.

6.07 PORT'S RIGHT TO USE THE PREMISES

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

ARTICLE 7 - PAYMENT

7.01 ALL PAYMENTS SUBJECT TO APPLICABLE LAWS AND SCHEDULE OF VALUES

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

7.02 APPLICATIONS FOR PAYMENT

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

7.03 PROGRESS PAYMENTS

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

7.04 PAYMENT BY CONTRACTOR TO SUBCONTRACTORS

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

7.05 FINAL PAYMENT

- A. Final payment. Final applications for payment are due within seven (7) days following Final Completion. Final payment of the unpaid balance of the Contract Sum, except retainage, will be made following Final Completion and within thirty (30) days of the Contractor's submission of an approved final Application for Payment.
- B. Releases required for final payment. The final payment shall not become due until the Contractor delivers to the Port a complete release of all liens arising out of the Contract, as well as an affidavit stating that, to the best of Contractor's knowledge, its release includes all labor and materials for which a lien could be filed. If a Subcontractor of any tier refuses to furnish a release or waiver required by the Port, the Port may (a) retain in the fund, account, or escrow funds in such amount as to defray the cost of foreclosing the liens of such claims and to pay attorneys' fees, the total of which shall be no less than 150% of the claimed amount, or (b) accept a bond from the Contractor, satisfactory to the Port, to indemnify the Port against the lien. If any such lien remains unsatisfied after all payments from the retainage are made, the Contractor shall refund to the Port all moneys that the Port may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

- C. Contractor to hold Port harmless from liens. The Contractor shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify, and hold harmless the Port from any liens, claims, demands, lawsuits, losses, damages, disbursements, liabilities, obligations, fines, penalties, costs, and expenses, whether direct or indirect, including but not limited to, attorneys' fees and consultants' fees and other costs and expenses, except to the extent a lien has been filed because of the failure of the Port to make a contractually required payment.

7.06 RETAINAGE

- A. Retainage to be withheld. In accordance with RCW 60.28, a sum equal to five percent (5%) of each approved Application for Payment shall be retained. Prior to submitting its first Application for Payment, the Contractor shall exercise one of the options listed below:
 - 1. Retained percentages will be retained by the Port in a fund; or
 - 2. Deposited by the Port in an interest-bearing account or escrow account in a bank, mutual savings bank, or savings and loan association designated by the Contractor, not subject to withdrawal until after the final acceptance of said improvement or work as completed, or until agreed to by both parties; provided that interest on such account shall be paid to the Contractor. Contractor to complete and submit Port provided Retainage Escrow Agreement (Section 00 61 23.13); or
 - 3. If the Contractor provides a bond in place of retainage, it shall be in an amount equal to 5% of the Contract Sum plus Change Orders. The retainage bond shall be based on the form furnished in Section 00 61 23 or otherwise acceptable to the Port and duly completed and signed by a licensed surety or sureties registered with the Washington State Insurance Commissioner and on the currently authorized insurance list published by the Washington State Insurance Commissioner. The surety or sureties must be rated at least "A-, FSC(6)" or higher by A.M. Best Rating Guide and be authorized by the Federal Department of the Treasury. Attorneys-in-fact who sign the retainage bond must file with each bond a certified and effective Power of Attorney statement.
- B. Contractor may withhold retainage from Subcontractors. The Contractor or a Subcontractor may withhold not more than five percent (5%) retainage from the monies earned by any Subcontractor or lower-tier Subcontractor, provided that the Contractor pays interest to the Subcontractor at the same interest rate it receives from its reserved funds. If requested by the Port, the Contractor shall specify the amount of retainage and interest due a Subcontractor.
- C. Release of retainage. Retainage will be withheld and applied by the Port in a manner required by RCW 60.28 and released in accordance with the Contract Documents and statutory requirements. Release of the retainage will be processed in the ordinary course of business within sixty (60) days following Final Acceptance of the Work by the Port provided that no notice of lien has been given as provided in RCW 60.28, that no claims have been brought to the attention of the Port, that the Port has no claims under this Contract, and that release of retention has been duly authorized by the State. The following items must also be obtained prior to release of retainage: pursuant to RCW 60.28, a certificate from the Department of Revenue; pursuant to RCW 50.24, a certificate from the Department of Employment Security; and appropriate information from the Department of Labor and Industries including approved affidavits of wages paid for the Contractor and each subcontractor.

7.07 DISPUTED AMOUNTS

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

7.08 EFFECT OF PAYMENT

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

7.09 LIENS

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

ARTICLE 8 - CHANGES IN THE WORK

8.01 CHANGES IN THE WORK

- A. Changes in the Work authorized. Without invalidating the Contract and without notice to the Contractor's surety, the Port may authorize changes in the Work after execution of the Contract, including changes in the Contract Sum or Contract Time. Changes shall occur solely by Change Order, Unilateral Change Directive, or Minor Change in Work. All changes in the Work are effective immediately, and the Contractor shall proceed promptly to perform the change, unless otherwise provided in the Change Order or Directive.
- B. Changes in the Work Defined.
 - 1. A Change Order is a written instrument signed by the Port and Contractor stating their agreement to a change in the Work and the adjustment, if any, in the Contract Sum and/or Contract Time.
 - 2. A Unilateral Change Directive is a written instrument issued by the Port to transmit new or revised Drawings, issue additions or modifications to the Contract, furnish other direction and documents adjustment, if any, to the Contract Sum and/or Contract Time. A Unilateral Change Directive is signed only by the Port, without requiring the consent or signature of the Contractor.

3. A Minor Change in the Work is a written order from the Port directing a change that does not involve an adjustment to the Contract Sum or the Contract Time.
- C. Request for Proposal: At any time, the Port may issue a Proposal Request directing the Contractor to propose a change to the Contract Sum and/or Contract Time, if any, based on a proposed change in the Work. The Contractor shall submit a responsive Change Order proposal as soon as possible, and no later than fourteen (14) days after receipt, in which the Contractor specifies in good faith the extent to which the Contract Sum and/or Contract Time would change. All cost components shall be limited to the manner described in Section 8.02(B). If the Contractor fails to timely respond to a Proposal Request, the Port may issue the change as a Unilateral Change Directive.
1. Fixed price method is default for Contractor Change Order proposal. When the Port has requested that the Contractor submit a Change Order proposal, the Port may specify the basis on which the Contract Sum will be adjusted by the Contractor. The Engineer's preference, unless otherwise indicated, is for changes in the Work to be priced using Lump Sums or Unit Prices or on a time and material (Force Account) basis if unit pricing or lump sums cannot be negotiated or determined. In all instances, however, proposed changes shall include a not-to-exceed price for the change and shall be itemized for evaluation purposes in accordance with Section 8.02(B), as requested by the Engineer.
 2. The Port may accept or reject the Contractor's Change Order proposal, request further documentation, or negotiate acceptable terms with the Contractor. If The Port and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order.
 3. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment. The Port may reject a proposal, in which case the Port may either not effectuate the change or issue a Unilateral Change Directive. The Port will not make payment to the Contractor for any work until that work has been incorporated into an executed Change Order.
- D. Unforeseen Conditions: If the Contractor encounters conditions at the site that are: (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or any soils reports made available by the Port to the Contractor, or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall immediately provide oral notice to the Engineer before conditions are disturbed, followed within 24 hours by an initial written notice. The Contractor shall submit a detailed proposal no later than seven (7) days following discovery of differing site conditions. The Engineer will promptly investigate these conditions and, if the Engineer determines that they differ materially and cause an increase or decrease in the Contractor's cost or time required for performance of any part of the Work, will establish a change in the Contract Sum or Contract Time, or both, consistent with the requirements of the Contract Documents. If the Contractor disputes the Engineer's determination, the Contractor may proceed as provided in the dispute resolution procedure (Article 11). No increase to the Contract Sum or the Contract Time shall be allowed if the Contractor does not comply with the contractual requirements or if the Contractor knew, or reasonably should have known, of the concealed conditions prior to executing the Contract.

- E. Proceed Immediately: Pending agreement on the terms of the Change Order or upon determination of a differing site condition as defined in 8.01(D), the Engineer may direct Contractor to proceed immediately with the change in the Work. Contractor shall not proceed with any change in the Work until it has obtained the Engineer's written approval and documentation of the following:
1. The scope of work
 2. An agreed upon maximum not-to-exceed amount
 3. The method of final cost determination
 4. Estimated time to complete the changed work
 5. As a change in the Work is performed, unless the parties have signed a written Change Order to establish the cost of the change, the Contractor shall maintain an itemized accounting of all costs related to the change based on the categories in Section 8.02(B) and provide such data to the Port upon request. This includes, without limitation, invoices, including freight and express bills, and other support for all material, equipment, Subcontractor, and other charges related to the change and, for material furnished from the Contractor's own inventory, a sworn affidavit certifying the actual cost of such material. Failure to provide data to the Port within seven (7) days of a request constitutes a waiver of any claim. The Port may furnish any material or equipment to the Contractor that it deems advisable, and the Contractor shall have no claim for any costs or fee on such material or equipment.
- F. Procedure for Unilateral Change Directive. Whether or not the Port has rejected a Contractor's proposal, the Port may issue a Unilateral Change Directive and the Contractor shall promptly proceed with the specified Work. If the Contractor disagrees with a Unilateral Change Directive, the Contractor shall advise the Port in writing through a Change Order proposal within seven (7) days of receipt. The Contractor's Change Order proposal shall reasonably specify the reasons for any disagreement and the adjustment it proposes. Without this timely Change Order proposal, the Contractor shall conclusively be deemed to have accepted the Port's proposal.
- G. Payment pending final determination of Force Account work. Pending final determination of the total cost of Force Account Work, and provided that the Work to be performed under Force Account is complete and any reservations of rights have been signed by the Port, the Contractor may request payment for amounts not in dispute in the next Application for Payment accompanied by documentation indicating the parties' agreement. Work done on a Force Account basis must be approved in writing on a daily basis by the Engineer or the Engineer's designee and invoices shall be submitted with an Application for Payment within sixty (60) days of performance of the Work.

8.02 CHANGES IN THE CONTRACT SUM

- A. Port to Decide How Changes are Measured. The Port may elect, in its sole discretion, how changes in the Work will be measured for payment. Change in the Work may be priced on a lump sum basis, through Unit Prices, as Force Account, or by another method documented in the executed Change Order, Unilateral Change Directive, or Minor Change in the Work.
- B. Determination of Cost of Change. The total cost of any change in the Work, including a claim under Article 11, shall not exceed the prevailing cost for the Work in the locality of the Project. In all circumstances, the change in the Work shall be limited to the reasonable, actual cost of the following components:

1. Direct labor costs: These are the actual labor costs determined by the number of additional craft hours at their normal hourly rate necessary to perform a change in the Work. The hourly cost of labor will be based upon the following:
 - a. Basic wages and fringe benefits: The hourly wage (without markup or labor burden) and fringe benefits paid by the Contractor as established by the Washington Department of Labor and Industries or contributed to labor trust funds as itemized fringe benefits, whichever is applicable, not to exceed that specified in the applicable "Intent to Pay Prevailing Wage," for the laborers, apprentices, journeymen, and foremen performing or directly supervising the change in the Work on site. These wages do not include the cost of Contractor's project manager or superintendent or above, and the premium portion of overtime wages is not included unless pre-approved in writing by the Port. Costs paid or incurred by the Contractor for vacations, per diem, subsistence, housing, travel, bonuses, stock options, or discretionary payments to employees are not separately reimbursable. The Contractor shall provide to the Port copies of payroll records, including certified payroll statements for itself and Subcontractors of any tier, upon the Port's request.
 - b. Workers' insurance: Direct contributions to the State of Washington as industrial insurance; medical aid; and supplemental pension by class and rates established by the Washington Department of Labor and Industries.
 - c. Federal insurance: Direct contributions required by the Federal Insurance Compensation Act (FICA); Federal Unemployment Tax Act (FUTA); and State Unemployment Compensation Act (SUCA).
2. Direct material costs: This is an itemization, including material invoices, of the quantity and actual cost of additional materials necessary to perform the change in the Work. The cost will be the net cost after all discounts or rebates, freight costs, express charges, or special delivery costs, when applicable. No lump sum costs will be allowed unless approved in advance by the Port.
3. Construction equipment usage costs: This is an itemization of the actual length of time that construction equipment necessary and appropriate for the Work is used solely on the changed Work times the applicable rental cost as established by the lower of the local prevailing rates published in www.equipmentwatch.com, as modified by the AGC/WSDOT agreement, or the actual rate paid to an unrelated third party. If more than one rate is applicable, the lowest available rate will be utilized. Rates and quantities of equipment rented that exceed the local fair market rental costs shall be subject to the Port's prior written approval. Total rental charges for equipment or tools shall not exceed 75% of the fair market purchase value of the equipment or the tool. Actual, reasonable mobilization costs are permitted if the equipment is brought to the site solely for the change in the Work. Mobilization and standby costs shall not be charged for equipment already present on the site.

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

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

The total summed markup of the Contractor and all Subcontractors of any tier shall not exceed 30% of the direct costs of the change in the Work. If the markup would otherwise exceed 30%, the Contractor shall proportionately reduce the markup for the Contractor and all Subcontractors of any tier.
7. Cost of change in insurance or bond premium. This is defined as:
 - a. Contractor's liability insurance: The actual cost (expressed as a percentage submitted with the certificate of insurance provided under the Contract Documents and subject to audit) of the Contractor's liability insurance arising directly from the changed Work; and
 - b. Public works bond: The actual cost (expressed as a percentage submitted under the Contract Documents and subject to audit) of the Contractor's performance and payment bond arising directly from the changed Work.

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

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

8.03 CHANGES IN THE CONTRACT TIME

- A. Extension of the Contract Time. If the Contractor is delayed at any time in the commencement or progress of the Work by events for which the Port is responsible, by unanticipated abnormal weather (subject to Section 8.03(E) below), or by other causes not the fault or responsibility of the Contractor that the Port determines may justify a delay in the Contract Time, then the Contract Time shall be extended by Change Order for such reasonable time as the Port may determine. In no event, however, shall the Contractor be entitled to any extension of time absent proof of: (1) delay to an activity on the critical path of the Project, or (2) delay transforming an activity to the critical path, so as to actually delay the anticipated date of Substantial Completion.
- B. Allocation of responsibility for delay not caused by Port or Contractor. If a delay was not caused by the Port, the Contractor, or anyone acting on behalf of any of them, the Contractor is entitled only to an increase in the Contract Time but not an increase in the Contract Sum.
- C. Allocation of responsibility for delay caused by Port. If a delay was caused by the Port or someone acting on behalf of the Port and affected the critical path, the Contractor shall be entitled to a change in the Contract Time and Contract Sum in accordance with Section 8.02. The Contractor shall not recover damages, an equitable adjustment, or an increase in the Contract Sum or Contract Time from the Port; however, where the Contractor could reasonably have avoided the delay. The Port is not obligated directly or indirectly for damages for any delay suffered by a Subcontractor of any tier that does not increase the Contract Time.
- D. Allocation of responsibility for delay caused by Contractor. If a delay was caused by the Contractor, a Subcontractor of any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum.
- E. Adverse weather. If adverse weather is identified as the basis for a claim for additional time, the claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not reasonably have been anticipated and had an adverse effect on the critical path of construction, and that the Work was on schedule (or not behind schedule through the fault of the Contractor) at the time the adverse weather conditions occurred. Neither the Contract Time nor the Contract Sum will be adjusted for normal inclement weather. For a claim based on adverse weather, the Contractor shall be eligible only for a change in the Contract Time (but not a change in the Contract Sum) if the Contractor can substantiate that there was significantly greater than normal inclement weather considering the full term of the Contract Time.

- F. Damages for delay. In the event the Contractor (including any Subcontractors of any tier) is held to be entitled to damages from the Port for delay beyond the amount permitted in Section 8.02(B), the total combined damages to the Contractor and any Subcontractors of any tier for each day of delay shall be limited to the reasonable, actual costs of the delay for which the Port is wholly responsible. The limitation on damages set forth in this Section does not apply to any damages arising exclusively from delay to which the Contractor is entitled to recover under Section 8.03(F).
- G. Limitation on damages. The Contractor shall not be entitled to damages arising out of loss of efficiency; morale, fatigue, attitude, or labor rhythm; constructive acceleration; home office overhead; expectant under run; trade stacking; reassignment of workers; rescheduling of Work, concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended or increased overhead or general conditions; profit upon damages for delay; impact damages including cumulative impacts; or similar damages. Any effect that such alleged costs may have upon the Contractor or its Subcontractors of any tier is fully compensated through the markup on Change Orders paid through Section 8.02(B).

8.04 RESERVATION OF RIGHTS

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

8.05 UNIT PRICES

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

ARTICLE 9 - SUSPENSION AND TERMINATION OF CONTRACT

9.01 PORT'S RIGHT TO SUSPEND WORK

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

9.02 TERMINATION OF CONTRACT FOR CAUSE BY THE PORT

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

9.03 TERMINATION OF CONTRACT FOR CONVENIENCE BY THE PORT

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

9.04 TERMINATION OF CONTRACT BY THE CONTRACTOR

- A. Contractor may terminate for cause. The Contractor may terminate the Contract if the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor of any tier, for either of the following reasons:
1. Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or
 2. An act of government, such as a declaration of national emergency, that requires all Work to be stopped.
- B. Procedure for Contractor termination. If one of the reasons described in Section 9.04A exists, the Contractor may, upon seven (7) days' written notice to the Port (during which period the Port has the opportunity to cure), terminate the Contract and recover from the Port payment for Work executed through the date of termination in accordance with the Contract Documents and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit on Work executed and direct costs incurred by reason of such termination. The total recovery of the Contractor shall not exceed the unpaid balance of the Contract Sum.
- C. Contractor may stop the Work for failure of Port to pay undisputed amounts. The Contractor may stop Work under the Contract if the Port does not pay undisputed amounts due and owing to the Contractor within fifteen (15) days of the date established in the Contract Documents. If the Port fails to pay undisputed amounts, the Contractor may, upon fifteen (15) additional days' written notice to the Port, during which the Port can cure, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay, and start-up.

9.05 SUBCONTRACT ASSIGNMENT UPON TERMINATION

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

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

ARTICLE 10 - BONDS

10.01 CONTRACTOR PERFORMANCE AND PAYMENT BONDS

- A. Contractor to furnish performance and payment bonds. Within ten (10) days following its receipt of a notice of award, and as part of the Contract Sum, the Contractor shall secure and furnish duly executed performance and payment bonds using the forms furnished by the Port. The bonds shall be executed by a surety (or sureties) reasonably acceptable to the Port, admitted and licensed in the State of Washington, registered with the Washington State Insurance Commissioner, and possessing an A.M. Best rating of "A-, FSC (6)" or better and be authorized by the U.S. Department of the Treasury. Pursuant to RCW 39.08, the bonds shall be in an amount equal to the Contract Sum, and shall be conditioned only upon the faithful performance of the Contract by the Contractor within the Contract Time and upon the payment by the Contractor of all taxes, fees, and penalties to the State of Washington and all laborers, Subcontractors, and suppliers, and others who supply provisions, equipment, or supplies for the performance of the Work covered by this Contract. The bonds shall be signed by the person or persons legally authorized to bind the Contractor.
- B. On contracts of one hundred fifty thousand dollars or less, at the option of the contractor as defined in RCW 39.10.210, the Port may, in lieu of the bond, retain ten percent of the contract amount for a period of thirty days after date of final acceptance, or until receipt of all necessary releases from the department of revenue, the Employment Security Department, and the Department of Labor and Industries and settlement of any liens filed under chapter 60.28 RCW, whichever is later. The recovery of unpaid wages and benefits must be the first priority for any actions filed against retainage held by a state agency or authorized local government.

For contracts of one hundred fifty thousand dollars or less, the Port may accept a full payment and performance bond from an individual surety or sureties.
- C. Port may notify surety. If the Port makes or receives a claim against the Contractor, the Port may, but is not obligated to, notify the Contractor's surety of the nature and amount of the claim. If the claim relates to a possibility of a Contractor's default, the Port may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

ARTICLE 11 - DISPUTE RESOLUTION

11.01 NOTICE OF PROTEST AND CLAIM

- A. Dispute resolution procedure mandatory. All claims, direct or indirect, arising out of, or relating to, the Contract Documents or the breach thereof, shall be decided exclusively by the following alternative dispute resolution procedure, unless the parties mutually agree otherwise. If the Port and Contractor agree to a partnering process to assist in the resolution of disputes, the partnering process shall occur prior to, and not be in place of, the mandatory dispute resolution procedures set forth below.

- B. Notice of protest defined. Except for claims requiring notice before proceeding with the affected Work as otherwise described in the Contract Documents, the Contractor shall provide immediate oral notice of protest to the Engineer prior to performing any disputed Work and shall submit a written notice of protest to the Port within seven (7) days of the occurrence of the event giving rise to the protest that includes a clear description of the event(s). The protest shall identify any point of disagreement, those portions of the Contract Documents believed to be applicable, and an estimate of quantities and costs involved. When a protest relates to cost, the Contractor shall keep full and complete records and shall permit the Port to have access to those records at any time as requested by the Port.
- C. Claim defined. A claim is a demand by one of the parties seeking adjustment or interpretation of the Contract terms, payment of money, extension of time, or other relief with respect to the terms of the Contract Documents. The term "claim" also includes all disputes and matters in question between the Port and Contractor arising out of, or relating to, the Contract Documents. Claims must be initiated in writing and include a detailed factual statement and clear description of the claim providing all necessary dates, locations, and items of Work, the date or dates on which the events occurred that give rise to the claim, the names of employees or representatives knowledgeable about the claim, the specific provisions of the Contract Documents that support the claim, any documents or oral communications that support the claim, any proposed change in the Contract Sum (showing all components and calculations) and/or Contract Time (showing cause and analysis of the resultant delay in the critical path), and all other data supporting the claim. Claims shall also be submitted with a statement certifying, under penalty of perjury, that the claim as submitted is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the claim is fully supported, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes the Port is liable. A claim shall be deemed to include all changes, direct and indirect, in cost and in time to which the Contractor and Subcontractors of any tier are entitled and may not contain reservations of rights without the Port's written approval; any unapproved reservations of rights shall be without effect.
- D. Claim procedure. The Contractor shall submit a written claim within thirty (30) days of providing written notice of protest. The Contractor may delay submitting supporting data by an additional thirty (30) days if it notifies the Port in its claim that substantial data must be assembled. Any claim of a Subcontractor of any tier may be brought only through, and after review by and concurrence of, the Contractor.
- E. Failure to comply with notice of protest and claim requirements waives claims. Any notice of protest by the Contractor and any claim of the Contractor, whether under the Contract or otherwise, must be made pursuant to, and in strict accordance with, the applicable provisions of the Contract. Failure to properly and timely submit a notice of protest or to timely submit a claim shall waive the claim. No act, omission, or knowledge, actual or constructive, of the Port shall waive the requirement for timely written notice of protest and a timely written claim, unless the Port and the Contractor sign an explicit, unequivocal written waiver approved by the Port. The Contractor expressly acknowledges and agrees that the Contractor's failure to timely submit required notices of protest and/or timely submit claims has a substantial impact upon, and prejudices, the Port. For the purpose of calculating time periods, an "event giving rise to a claim," among other things, is not a Request for Information, but rather is a response that the Contractor believes would change the Contract Sum and/or Contract Time.

- F. False claims. The Contractor shall not make any fraudulent misrepresentations, concealments, errors, omissions, or inducements to the Port in the formation or performance of the Contract. If the Contractor or a Subcontractor of any tier submits a false or frivolous claim to the Port, which for purposes of this Section 11.01(F) is defined as a claim based in whole or in part on a materially incorrect fact, statement, representation, assertion, or record, the Port shall be entitled to collect from the Contractor by offset or otherwise (without prejudice to any right or remedy of the Port) any and all costs and expenses, including investigation and consultant costs, incurred by the Port in investigating, responding to, and defending against the false or frivolous claim.
- G. Compliance with lien and retainage statutes required. If a claim relates to, or is the subject of, a lien or retainage claim, the party asserting the claim may proceed in accordance with applicable law to comply with the notice and filing deadlines prior to resolution of the claim by mediation or by litigation.
- H. Performance required pending claim resolution. Pending final resolution of a claim, the Contractor shall continue to perform the Contract and maintain the Baseline Project Schedule, and the Port shall continue to make payments of undisputed amounts due in accordance with the Contract Documents.

11.02 MEDIATION

- A. Claims must be subject to mediation. At any time following the Port's receipt of a written claim, the Port may require that an officer of the Contractor and the Port's designee (all with authority to settle) meet, confer, and attempt to resolve a claim. If the claim is not resolved during this meeting, the claim shall be subject to mandatory mediation as a condition precedent to the initiation of litigation. This requirement can be waived only by an explicit, written waiver signed by the Port and the Contractor.
- B. Mediation procedure. A request for mediation shall be filed in writing with the other party to the Contract, and the parties shall promptly attempt to agree upon a mediator. If the parties have not reached agreement within thirty (30) days of the request, either party may file the request with the American Arbitration Association, or such other alternative dispute resolution service to which the parties mutually agree, with a copy to the other party, and the mediation shall be administered by the American Arbitration Association (or other agreed service). The parties to the mediation shall share the mediator's fee and any filing fees equally. The mediation shall be held in Pierce County, Washington, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof. Unless the Port and the Contractor mutually agree in writing otherwise, all claims shall be considered at a mediation session that shall occur prior to Final Completion.

11.03 LITIGATION

- A. Claims not resolved by mediation are subject to litigation. Claims not resolved through mediation shall be resolved by litigation, unless the parties mutually agree otherwise. The venue for any litigation shall be Pierce County, Washington. The Contractor may bring no litigation on claims, unless such claims have been properly raised and considered in the procedures of this Article 11. The Contractor must demonstrate in any litigation that it complied with all requirements of this Article.

- B. Litigation must be commenced promptly. All unresolved claims of the Contractor shall be waived and released, unless the Contractor has complied with the requirements of the Contract Documents, and litigation is served and filed within 180 days of the date of Substantial Completion approved in writing by the Port or termination of the Contract. The pendency of mediation (the time period between receipt by the non-requesting party of a written mediation request and the date of mediation) shall toll these deadlines until the earlier of the mediator providing written notice to the parties of impasse, or thirty (30) days after the date of the mediation session.
- C. Port not responsible for attorneys' fees. Neither the Contractor nor a Subcontractor of any tier, whether claiming under a bond or lien statute or otherwise, shall be entitled to attorneys' fees directly or indirectly from the Port (but may recover attorneys' fees from the bond or statutory retainage fund itself to the extent allowable under law).
- D. Port may join Contractor in dispute. The Port may join the Contractor as a party to any litigation or arbitration involving the alleged fault, responsibility, or breach of contract of the Contractor or Subcontractor of any tier.

ARTICLE 12 - MISCELLANEOUS

12.01 GENERAL

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

12.02 WAIVER

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

12.03 GOVERNING LAW

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

12.04 COMPLIANCE WITH LAW

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

12.05 ASSIGNMENT

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

12.06 TIME LIMIT ON CAUSES OF ACTION

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

12.07 SERVICE OF NOTICE

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

12.08 RECORDS

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

12.09 STATUTES

- A. Contractor to comply with Washington statutes. The Contractor shall abide by the provisions of all applicable statutes, regulations, and other laws. Although a number of statutes are referenced in the Contract Documents, these references are not meant to be, and are not, a complete list.
 - 1. Pursuant to RCW 39.06, "Registration, Licensing of Contractors," the Contractor shall be registered and licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27, "Registration of Contractors," and shall satisfy all State of Washington bonding and insurance requirements. The Contractor shall also have a current state Unified Business Identifier number; have industrial insurance coverage for the Contractor's employees working in Washington as required by Title 51 RCW; have an Employment Security Department number as required by Title 50 RCW; have a state excise tax registration number as required in Title 82 RCW; and not be disqualified from bidding on any public works contract under RCW 39.06.010 (unregistered or unlicensed contractors) or RCW 39.12.065(3) (prevailing wage violations).
 - 2. The Contractor shall comply with all applicable provisions of RCW 49.28, "Hours of Labor."
 - 3. The Contractor shall comply with pertinent statutory provisions relating to public works of RCW 49.60, "Discrimination."
 - 4. The Contractor shall comply with pertinent statutory provisions relating to public works of RCW 70.92, "Provisions in Buildings for Aged and Handicapped Persons," and the Americans with Disabilities Act.
 - 5. Pursuant to RCW 50.24, "Contributions by Employers," in general, and RCW 50.24.130 in particular, the Contractor shall pay contributions for wages for personal services performed under this Contract or arrange for an acceptable bond.

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

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes requirements for the Contractor's insurance.

1.02 SUBMITTAL REQUIREMENTS

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

1.03 COMMERCIAL GENERAL LIABILITY (CGL) INSURANCE

- A. The Contractor shall secure and maintain until Final Completion, at its sole cost and expense, the following insurance in carriers reasonably acceptable to the Port, licensed in the State of Washington, registered with the Washington State Insurance Commissioner, and possessing an A.M. Best rating of "A-, FSC six (6)" or better.
- B. The Port of Tacoma (Port) and the Northwest Seaport Alliance (NWSA) will be included as additional insureds for both ongoing and completed operations by endorsement to the policy using ISO Form CG 20 10 11 85 or forms CG 20 10 04 13 and CG 20 37 04 13 (or equivalent coverage endorsements). The inclusion of the Port and the NWSA as additional insureds shall not create premium liability for either the Port nor the NWSA.

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

- 1. An express waiver of subrogation in favor of the Port;
 - 2. A cross liabilities clause; and
 - 3. An endorsement stating that the Contractor's policy is primary and not contributory with any insurance carried by the Port.
- C. If the Contractor, Supplier, or Subcontractors will perform any work requiring the use of a licensed professional, per RCW 18, the Contractor shall provide evidence to the Port of professional liability insurance in amounts not less than \$1,000,000.
 - D. This insurance shall cover all of the Contractor's operations, of whatever nature, connected in any way with the Contract, including any operations performed by the Contractor's Subcontractors of any tier. **It is the obligation of the Contractor to ensure that all Subcontractors (at whatever level) carry a similar program that provides the identified types of coverage, limits of liability, inclusion of the Port and the NWSA as additional insured(s), waiver of subrogation and cross liabilities clause.** The Port reserves the right to reject any insurance policy as to company, form, or substance. Contractor's failure to provide, or the Port's acceptance of, the Contractor's certificate of insurance does not waive the Contractor's obligation to comply with the insurance requirements of the Contract as specifically described below:
 - 1. Commercial General Liability Insurance on an Occurrence Form Basis including, but not limited to:
 - a. Bodily Injury Liability;
 - b. Property Damage Liability;
 - c. Contractual Liability;

- d. Products - Completed Operations Liability;
 - e. Personal Injury Liability;
 - f. By endorsement to the policy, not exclude work within fifty feet of any railroad track;
- Alternatively, a Commercial General Liability (CGL) policy is acceptable if all of the above coverages are incorporated in the policy and there are no marine exclusions that will remove coverage for either vessels or work done by or above or around the water.
- 2. Comprehensive Automobile Liability including, but not limited to:
 - a. Bodily Injury Liability;
 - b. Property Damage Liability;
 - c. Personal Injury Liability;
 - d. Owned and Non-Owned Automobile Liability; and
 - e. Hired and Borrowed Automobile Liability.
 - 3. Railroad protective liability insurance naming the Port and Tacoma Rail as Insureds with coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate. The policy must be issued on a standard ISO form CG 00 35 10 93 and include the following:
 - a. Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93);
 - b. Endorsed to include the Limited Seepage and Pollution Endorsement;
 - c. Endorsed to include Evacuation Expense Coverage Endorsement;
 - d. No other endorsements restricting coverage may be added; and
 - e. The original policy must be provided to the Port prior to execution of the Contract; within ten (10) days of Notice of Award.
 - 4. Contractor's Pollution Liability (CPL) covering claims for bodily injury, property damage and cleanup costs, and environmental damages from pollution conditions arising from the performance of covered operations.
 - a. If the Work involves remediation or abatement of regulated waste to include, but not limited to asbestos containing materials, lead containing products, mercury, PCB, underground storage tanks, or other hazardous materials or substances, the CPL policy shall not exclude such coverage, or a specific policy covering such exposure shall be required from the Contractor and all Subcontractors performing such Work.
 - b. If the Work involves transporting regulated materials or substances or waste, a separate policy or endorsement to the CPL policy specifically providing coverage for liability and cleanup arising from an upset or collision during transportation of hazardous materials or substances shall be required from the Contractor and all Subcontractors performing such Work.
 - c. It is preferred that CPL insurance shall be on a true occurrence form without a sunset clause. However, if CPL insurance is provided on a Claims Made basis, the policy shall have a retroactive date prior to the start of this project, and this insurance shall be kept in force for at least three years after the final completion of this project. Alternatively, the contractor, at its option, may provide evidence of extended reporting period of not less than three (3) years in its place. The Contractor shall be responsible for providing the Port with certificates of insurance each year evidencing this coverage.

- d. The Port and the NWSA shall be named as an additional insured(s) on the CPL policy.
5. Technology Professional Liability Errors and Omissions Insurance appropriate to the Consultant's profession and work hereunder, with limits not less than \$2,000,000 per occurrence. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by the Vendor in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, copyright, trademark, invasion of privacy violations, information theft, release of private information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.
- The policy shall include, or be endorsed to include, **property damage liability coverage** for damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the Agency in the care, custody, or control of the Vendor.
- E. Except where indicated above, the limits of all insurance required to be provided by the Contractor shall be not less than \$2,000,000 for each occurrence. If the coverage is aggregated, the coverage shall be no less than two times the per occurrence or per claim limit. However, coverage in the amounts of these minimum limits shall not be construed as to relieve the Contractor from liability in excess of such limits. Any additional insured endorsement shall NOT be limited to the amounts specified by this Contract, unless expressly waived in writing by the Port.
- F. Contractor shall certify that its operations are covered by the Washington State Worker's Compensation Fund. The Contractor shall provide its Account Number or, if self-insured, its Certificate of Qualification Number. The Contractor shall also provide evidence of Stop-Gap Employers' Liability Insurance.
- G. The Contractor shall furnish, within ten (10) days following issuance of the Notice of Award, a certificate of insurance satisfactory to the Port evidencing that insurance in the types and minimum amounts required by the Contract Documents has been secured. The Certificate of Insurance shall be signed by an authorized representative of the insurer together with a copy of the endorsement, which shows that the Port and the NWSA are named as additional insured(s).
- H. Contractor shall provide at least forty-five (45) days prior written notice to the Port of any termination or material change, or ten (10) day's-notice in the case of non-payment of premium(s).
- I. If the Contractor is required to make corrections to the Work after Final Completion, the Contractor shall obtain at its own expense, prior to the commencement of any corrective work, insurance coverage as required by the Contract Documents, which coverage shall be maintained until the corrections to the Work have been completed and accepted by the Port.

1.04 BUILDER'S RISK INSURANCE

- A. Until Final Completion of the Work, the construction Work is at the risk of the Contractor and no partial payment shall constitute acceptance of the Work or relieve the Contractor of responsibility of completing the Work under the Contract.

- B. To the extent the Work provided under this Contract does not include the construction, rehabilitation or repair of any dam, road or bridge, and whenever the estimated cost of the Work is less than \$25,000,000, the Port and Contractor acknowledge that the Port will purchase, or has purchased, from a company or companies lawfully authorized and admitted to do business in Washington, property insurance written on a Builder's Risk "all-risk" (including Earthquake and Flood with applicable sub-limits) or equivalent policy form to cover the course of construction in the amount of the full insurable value thereof. This property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Port has an insurable interest in the property, whichever is later. Without further endorsement, the coverage afforded by this insurance includes the interests of the Port, the Contractor, and Subcontractors of any tier on the Project. Coverage for materials intended to be installed in the facility will be covered by the Builder's Risk policy. Losses up to the deductible amount, and payment of any deductible amount, shall be the responsibility of the Contractor. All tools and equipment not intended as part of the construction or installation (including but not limited to Contractor's equipment and tools) will NOT be covered by the policy.

To the extent the Work provided under this Contract involves any dam, roadway or bridge, the value of which exceeds \$250,000, or whenever the estimated cost of the Work is equal to or greater than \$25,000,000, Contractor will purchase from a company or companies lawfully authorized and admitted to do business in Washington, property insurance written on a Builder's Risk "all-risk" (excluding Earthquake and Flood with applicable sub-limits) or equivalent policy form to cover the course of construction in the amount of the full insurable value thereof. This Builder's Risk insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Port has an insurable interest in the property, whichever is later. Contractor shall provide evidence satisfactory to the Port confirming the coverage afforded by this insurance shall include the interests of the Port, the Contractor, and Subcontractors of any tier on the Project. Coverage for materials intended to be installed in the facility will be covered by the Builder's Risk policy purchased by the Contractor. Losses up to the deductible amount, and payment of any deductible amount, shall be the responsibility of the Contractor.

In all instances, the Contractor shall obtain property insurance for all Contractor-owned equipment and tools and, in the event of loss, payment of any deductible amount shall be the responsibility of the Contractor.

PART 2 - PRODUCTS - NOT USED

PART 3 - PRODUCTS - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 PREVAILING AND OTHER REQUIRED WAGES

- A. The Contractor shall pay (and shall ensure that all Subcontractors of any tier pay) all prevailing wages and other wages (such as Davis-Bacon Act wages) applicable to the Project.
- B. Pursuant to RCW 39.12, "Prevailing Wages on Public Works," no worker, laborer, or mechanic employed in the performance of any part of the Work shall be paid less than the "prevailing rate of wage" in effect as of the date that bids are due.
 - 1. Based on the Bid Date, the applicable effective date for prevailing wages for this Project is November 12, 2026.
- C. The State of Washington prevailing wage rates applicable for this public works Project, which is located in Pierce County, may be found at the following website address of the Department of Labor and Industries:

<https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx>
- D. The schedule of the prevailing wage rates is made a part of the Contract Documents by reference as though fully set forth herein, and a printed copy of the applicable prevailing wage rates are also available for viewing at the Port Administration Building, located at 1 Sitcum Plaza, Tacoma, WA 98421 (253-383-5841). Upon request to the Procurement Department at procurement@portoftacoma.com, the Port will email or mail a hard copy of the applicable Journey Level prevailing wages for this Project.
- E. Questions relating to prevailing wage data should be addressed to the Industrial Statistician.

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

Telephone: (360) 902-5335

Facsimile: (360) 902-5300

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

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 REQUIREMENTS APPLICABLE PORT-WIDE

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

1.02 TRANSPORTATION WORKER IDENTIFICATION CARD (TWIC) SUMMARY

- A. TWIC is required for all personnel needing unescorted access to secure and restricted areas of Port facilities subject to 33 CFR 105, including truckers, surveyors, construction personnel, and delivery personnel. Secure areas are those areas with security measures for access control in accordance with a Coast Guard approved security plan. Restricted areas are those areas within a secure area that require increased limited access and a higher degree of security protection. New terminals under construction prior to terminal operations may not be designated secure areas. Construction on existing maritime transportation facilities and punchlist or other type of work requirements on facilities that have been certified under 33 CFR will require a TWIC.
- B. Contractors should allow for application and enrollment for the security threat assessment and issuance of TWIC when submitting a bid.
- C. TWIC shall be required at the following facilities:
 - 1. Parcel 1A (TOTE)
 - 2. Parcel 27 (NIM)
 - 3. Parcel 27 (Terminal 7)

1.03 ESCORTING

- A. To access restricted Port facilities, all un-credentialed individuals must be accompanied by a person who has been issued a TWIC and trained as an escort at that specific facility. Each restricted facility has their own guidelines for escorting. Having escort training at one facility does not qualify you to escort at other facilities. Prior to conducting escort services for non-TWIC personnel, the escorts are required to contact the Facility Security Officer at the gate for verification they are on the escort list and to document who is being escorted. For required documentation, upon completion of escorting, the escort is to inform the Security officer that the escort is complete. It is the Contractor's responsibility to schedule escort training with the Facility Security Officer.
- B. For more information, refer to the Port Security website at:
<http://www.portoftacoma.com/shipping/security>
- C. For Project specific information, refer to Section 01 14 00 - Work Restrictions.

1.04 ELIGIBILITY FOR TWIC

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

1.05 TWIC USE AND DISPLAY

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SCOPE

- A. The accompanying Drawings and Specifications show and describe the location and type of Work to be performed under this project. Work is more specifically defined on the drawings listed in Section 00 01 15.
1. The Work under this contract is to provide, furnish and install all labor, materials and equipment required to complete the work, installed, tested, and ready for use, and as described in these documents.
 2. The Wooden Light Pole Replacement Program consists of: select demolition, salvage and disposal of existing light pole fixtures and hardware. Work includes Demolition and disposal of existing timber light poles and foundations as well as removal and reattachment of existing LED fixtures. Work includes installation of new light pole foundations and new timber light poles, including concrete, HMA paving and traffic protection work as needed to restore work areas to their preconstruction condition. The work includes installing and commissioning Port provided LED light fixtures and furnishing and installing associated electrical hardware to restore light pole operation. The work includes select demolition, furnishing and installing associated communication hardware as well as reinstallation of existing communication cabinets, fiber, cameras and miscellaneous attachments. The work includes temporary provisions to maintain security lighting and communication network operation.

1.02 LOCATION

- A. The work is located at: 1738 Milwaukee Way | 2340 E Alexander Ave. | 3401 Taylor Way | 500 E. Alexander Ave | 2209 E. 11th Street
Tacoma, WA 98421

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 CONTRACTOR ACCESS AND USE OF PREMISES

- A. Activity Regulations
 - 1. Ensure Contractor personnel deployed to the project become familiar with and follow all regulations or restrictions established by the Engineer.
- B. Working Facility
 - 1. The facilities will remain in operation for the duration of construction. The Contractor shall conduct all items of the Work in such a manner as to limit interference with the normal operations of the facilities.
 - 2. TWIC Escorting Requirements:
 - a. Access to Parcel 1A - TOTE, and Parcel 27 - Terminal 7 (East Sitcum Terminal, Terminal 7, NIM) shall require TWIC credentials.
 - b. Escorting of non-TWIC card holding personnel is at the discretion of the tenant for each parcel. Escorting may not be allowed and escorts cannot perform any contract work beyond escorting.
 - c. In general, at the discretion of the terminal, a maximum of three (3) contractor employees who currently hold TWIC cards will be trained and authorized as TWIC escorts for one parcel.
 - d. Each parcel has an independent security and escorting plan and training requirement. Approval as a certified escort at one parcel does grant escort privileges at another parcel.
 - e. Maintaining TWIC escort privileges at each parcel shall be the responsibility of the Contractor.
- C. Work Site Regulations
 - 1. Keep within the limits of work and assigned avenues of ingress and egress. Do not enter any areas outside the designated work location unless previously approved by the Engineer. The Contractor must comply with the following conditions:
 - a. Restore all common areas to a clean and useable condition that permits the resumption of Tenant operations after the Contractor ceases daily work.

- b. Be responsible for control and security of Contractor-owned equipment and materials at the work site. Report to Port Security (phone (253) 383-9472) any missing/lost/stolen property.
- c. Ensure all materials, tools and equipment will be removed from the site or secured within the designated laydown area at the end of each shift.
- d. Ensure work spaces and traffic are protected from possible falling debris throughout the project.
- e. Ensure no debris is allowed to enter the water. Contractor to provide debris containment. In the event that debris enters the water, Contractor shall notify the Engineer and retrieve debris immediately.

D. Site Specific Access and Use

- 1. The Port leases parcels to tenants. Per lease agreements the Port has reasonable access to facilities to complete maintenance. Tenants have been notified of proposed work.
 - a. Contractor will be required to execute an access agreement with The Greenbrier Companies, Inc. and provide separate insurance to perform work at that location as stated in the Access Agreement attached to the Bidding Documents as Attachment 2 - The Greenbrier Companies Access Agreement. Contractor must review the Access Agreement and include any and all costs associated with complying with the Access Agreement in the Bid.
- 2. The Laydown Areas as shown in the Contract Drawings are intended to be used for pole, hardware and equipment storage. The limits of the Laydown Areas shall be reduced and returned to existing use when no longer required by the Contractor.
- 3. The Work Areas as shown in the Contract Drawings are intended to be used for pole removal and installation. The limits of the Work Areas shall be reduced and returned to existing use when no longer required by the Contractor.

1.03 CONSTRAINTS - GENERAL

A. Constraints for Work at Site

- 1. Electrical Work Constraints:
 - a. The Contractor is to notify in writing to the Engineer at least (14) fourteen days prior to any outage or disconnection and reconnection of the electrical system. Current and updated schedules provided to the Engineer at the weekly construction meeting are sufficient notice.
- 2. Rail Work Constraints:
 - a. The Engineer shall provide rail flagging and coordination services by internal staff familiar with the equipment, rail operators and policies within the tide flats.
 - b. The Engineer shall determine the minimum rail safety requirements for each pole based on track usage, track location and planned Contractor equipment and operation.
 - c. Rail safety requirements shall be conveyed to the Contractor by a daily rail safety briefing.
 - d. Rail right-of-way entry will be secured by derail hardware (outage), active flagging, or passive flagging.

- e. Any person or object that can encroach within 25 feet of the rails will require a flagger and proper notifications.
- f. The Contractor may be allowed to work up to within 10' of the rails without a full-time flagger as long as no fouling of any track will occur, subject to each specific work area and approval by the Engineer.
- g. Rail schedules are highly variable and subject to daily changes. The Contractor shall be required to clear all equipment, personnel and material within 10 feet of the right-of-way with a 4-hour notice.
- h. Rail delays and associated downtime shall be reimbursed by the Engineer based on pre-approved crew and equipment rates submitted in accordance with Section 01 26 00 - Change Management Procedures. Additional consideration shall be given to delays that require an additional work day.
- i. Violations of rail safety policies or flagger instructions as passed on by Engineer can result in removal of the Contractor from rail right-of-way.
- j. The contractor shall notify the Engineer at least (14) fourteen days in advance of the proposed start date of work at impacted poles.
- k. Some pole work will require access over tracks. The Engineer shall provide a 10-foot-wide access corridor of timber or gravel. Damage or disturbance to site or hardware shall be the responsibility of the Contractor to restore to pre-existing condition.
- l. Contractor shall pay for and maintain a Tacoma Rail Right of Way Entry Agreement. Appendix B contains the application.

1.04 SITE SPECIFIC PARCEL 1A (TOTE) WORK RESTRICTIONS

A. Site Contamination

- 1. There is a potential to encounter soil and groundwater contamination at the property during the scoped activities.
 - a. Appropriate PPE and monitoring is recommended when handling soil and groundwater at this parcel.
 - b. Groundwater contamination has been encountered at 25 feet below ground surface but further investigation and site characterization is required for greater characterization of the site.
 - c. Soil and groundwater on the TOTE parcel should be treated as contaminated.
- 2. Employee Training
 - a. Contamination on the TOTE property is being addressed under MTCA.
 - b. Work shall require HAZWOPER-trained workers per WAC 296-843-100(4)(c) and (4)(d)(i).
- 3. Chemicals of Concern
 - a. Possible chemicals of concern includes PAHs, TCE, Vinyl Chloride, Petroleum Produces, and Benzene
 - b. TOTE has its own ongoing soil and groundwater cleanup investigation associated with 26 former USTs (petroleum/PAHs. The latest technical document is here:

<https://apps.ecology.wa.gov/cleanupsearch/document/113597>

- c. The Occidental property (GW: VOCs, high pH)

<https://apps.ecology.wa.gov/cleanupsearch/site/4326>

- d. The AAPTf property (GW: benzene/petroleum).

<https://apps.ecology.wa.gov/cleanupsearch/site/743>

B. Vault and Groundwater Handling

1. Water removed from vaults, trenches or excavations shall be collected, stored and tested for site contaminants in accordance with Section 31 23 19 - Dewatering.

C. Work Durations and Scheduling

1. Contractor shall limit disruptions and impacts in accordance with the following tables:

PARCEL 1A (TOTE) - ALL POLES
General Pole Work Restrictions
• Reattached or existing high mast light systems shall be operational Wednesday and Friday during terminal night operations with the following exception for Poles #116, #124, and #128 • Poles #116, #124, and #128 lighting systems can be inoperable on a Wednesday or Friday night operation if a temporary light stand is provided • Only one high mast lighting system may be inoperable during a terminal night shift • Alternative replacement schedules and temporary lighting details may be approved in advance through the Engineer based on terminal operations at the time of work execution
PARCEL 1A (TOTE) - POLE #103, #130, AND #131
Pole Specific Work Restrictions
• Network backbone node, network node to remain operational during business hours. Network shall only be offline Sunday from 0600 to Monday 0600. General Pole Work Restrictions shall also apply. • Pole #103 Camera may only be inoperable for 7 consecutive days
PARCEL 1A (TOTE) -POLE #112 AND #124
Pole Specific Work Restrictions
Network node terminus, pole cameras shall not be offline more than 7consecutive days. General Pole Work Restrictions shall also apply.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 SITE SOIL DISPOSAL

- A. See Section 01 35 43.19 - Export Soil Management for soil testing and disposal requirements.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Procedures for preparation and submittal of applications for progress payments.

1.02 PAYMENT PROCEDURES

- A. Monthly pay estimates shall clearly identify the work performed for the given time period based on the approved Schedule of Values.
 - 1. At the Pre-construction meeting, the Engineer and the Contractor shall agree upon a date each month when payment applications shall be submitted.
- B. For each pay estimate the Contractor shall submit the following:
 - 1. Completed Contractor invoice and updated Schedule of Values tracking sheet as required by Division 01.
 - 2. Baseline Project Schedule and narrative updated as required by Section 01 32 16 of the Project Manual.
 - 3. Completed "Amounts Paid to Subcontracts and Suppliers" showing total contract amount, amount paid this estimate, total paid to date, and balance owing.
 - 4. Completed "Conditional Release and Waiver of Liens and Claims."
 - 5. An estimated cashflow statement projecting the Contractor's monthly billings on the project shall be submitted with each payment application.
- C. Prior to submitting a payment application, the Contractor and Engineer shall meet each month to review the work accomplished to determine the actual quantities including labor, materials and equipment charges to be billed.
 - 1. Prior to the payment application meeting, the Contractor shall submit to the Engineer all measurement documentation as referenced in these contract documents; to include all measurement by weight, volume or field.
 - 2. For all change work being done on a force account basis, the Contractor shall submit prior to meeting with Engineer all Force Account back-up documentation as required to process the payment application where Force Account work is being billed. The Engineer and the Contractor shall review the documentation at the payment application meeting to verify quantities and review the work accomplished.
 - 3. The Contractor shall bring a copy of all documentation to the pay application meeting with the Engineer.
 - 4. The Contractor shall submit the updated baseline project schedule for review prior to submitting the payment application to ensure the payment processing is not held up due to necessary schedule revisions.
- D. Following the Engineers' review, the Contractor shall submit the agreed upon pay estimate electronically, with complete supporting documentation, using e-Builder®.

1.03 PAYMENT PRICING

- A. Pricing for the various lump sum or unit prices in the Bid Form, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work in accordance with the requirements of the Contract Documents.
- B. Pricing also includes all costs of compliance with the regulations of public agencies having jurisdiction, including safety and health requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).
- C. No separate payment will be made for any item that is not specifically set forth in the Bid Form, and all costs therefore shall be included in the prices named in the Bid Form for the various appurtenant items of work.
- D. All other work not specifically mentioned in the measurement and payment sections identified below shall be considered incidental to the work performed and merged into the various unit and lump sum prices bid. Payment for work under one item will not be paid for under any other item.
- E. The Port of Tacoma reserves the right to make changes should unforeseen conditions necessitate such changes. Where work is on a unit price basis, the actual quantities occasioned by such changes shall govern the compensation.

1.04 LUMP SUM MEASUREMENT

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

1.05 MEASUREMENT OF QUANTITIES FOR UNIT PRICES

- A. Measurement Standards:
 - 1. All Work to be paid for at a contract price per unit measurement, as indicated in the Contractor's submitted bid, will be measured by the Engineer in accordance with United States Standard Measures.
- B. Measurement by Weight:
 - 1. Reinforcing steel, steel shapes, castings, miscellaneous metal, metal fabrications, and similar items to be paid for by weight shall be measured by scale or by handbook weights for the type and quantity of material actually furnished and incorporated into the Work.

2. Unless shipped by rail, material to be measured and paid for by weight shall be weighed on sealed scales regularly inspected by the Washington State Department of Agriculture's Weights and Measures Section or its designated representative. Measurement shall be furnished by and at the expense of the Contractor. All weighing, measuring, and metering devices shall be suitable for the purpose intended and shall conform to the tolerances and specifications as outlined in Washington State Department of Transportation Standard Specifications, Division 1, General Requirements, Article 1-09.2, Weighing Equipment.
 3. Provide or utilize platform scales of sufficient size and capacity to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed. Scales shall be inspected and certified as often as the Engineer may deem necessary to ascertain accuracy. Costs incurred as a result of regulating, adjusting, testing, inspecting, and certifying scales shall be borne by the Contractor.
 4. A licensed weighmaster shall weigh all Contractor-furnished materials. The Engineer may be present to witness the weighing and to check and compile the daily record of such scale weights. However, in any case, the Engineer will require that the Contractor furnish weight slips and daily summary weigh sheets. In such cases, furnish a duplicate weight slip or a load slip for each vehicle weighed, and deliver the slip to the Engineer at the point of delivery of the material.
 5. If the material is shipped by rail, the certified car weights will be accepted, provided only actual weight of material will be paid for and not minimum car weights used for assessing freight tariff. Car weights will not be acceptable for material to be passed through mixing plants. Material to be measured by weight shall be weighed separately for each bid item under which it is to be paid.
 6. Trucks used to haul material being paid for by weight shall be weighed empty daily and at such additional times as the Engineer may require. Each truck shall bear a plainly legible identification mark. The Engineer may require the weight of the material be verified by weighing empty and loaded trucks on such other scales as the Engineer may designate.
- C. Measurement by Volume:
1. Measurement by volume will be by the cubic dimension indicated in the Contractor's submitted bid. Method of volume measurement will be by the unit volume in place or removed as shown on the Contract Drawings or as specified.
 2. When material is to be measured and paid for on a volume basis and it is impractical to determine the volume by the specified method of measurement, or when requested by the Contractor in writing and accepted by the Engineer in writing, the material may be weighed in accordance with the requirements specified for weight measurement. Such weights will be converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Resident Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities will be accepted.
- D. Measurement by Area: Measurement by area will be by the square dimension shown on the Contract Drawings or as specified. Method of square measurement will be as specified.
- E. Linear Measurement: Linear measurement will be by the linear dimension listed or indicated in the Contractor's submitted bid. Unless otherwise indicated, items, components, or Work to be measured on a linear basis will be measured at the centerline of the item in place.
-

F. Field Measurement for Payment:

1. The Contractor shall take all measurements by providing equipment, workers, and survey crews as required to measure quantities in accordance with the provisions for measurement specified herein. No allowance will be made for specified tolerances.
2. The Engineer will verify all quantities of Work performed by the Contractor on a unit-price basis, for progress payment purposes.

1.06 REJECTED, EXCESS, OR WASTED MATERIALS

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

1.07 MEASUREMENT AND PAYMENT

A. Item #1: Project Administration

1. Item Description: The Work of this item includes all administrative costs associated with administering and supervising the project including, but not limited to supervision of personnel, coordination of all work activities, coordination of subcontractors and/or suppliers, preparation and transmittal of submittals, receipt and implementation of SDEV-0024, other permit acquisitions, for premiums on bonds and insurance for the project, project access agreements, and project overhead. This item shall include all meetings as required by Section 01 30 00 - Administrative Requirements.
2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid. Incremental payments shall be made at a percentage of Project Administration that corresponds to the percentage of total amount invoiced versus total bid amount, excluding project administration.

B. Item #2: Parcel 69 (UP Yard) Mobilization and Demobilization

1. Payment for Mobilization and Demobilization shall be for preparatory work and operations performed by the Contractor including, but not limited to, those necessary for the movement of its personnel, equipment, supplies and incidentals to and from the project site; temporary storage; temporary facilities and controls; for the establishment and removal of other facilities necessary for work on the project; TESC materials and work; for other work and operations which it must perform or costs it must incur before beginning production work on the various items on the project site, and for removal of personnel, equipment, supplies, offices, building facilities, sheds, fencing, and other incidentals from the site. This work shall also include Base Lighting Photometrics for any relocated poles and light fixture As-Built which will be used as a basis for confirmation of installed lighting adequacy and aiming.

2. Mobilization and Demobilization shall be paid at the lump sum price listed in the Contractor's submitted bid. Incremental payment shall be made for each location as follows:
 - a. 40% after completion of 5% of the total parcel specific contract amount of other bid items have been earned.
 - b. 40% after completion of 20% of the total contract amount of other bid items have been earned.
 - c. 20% after completion of all work on the project has been completed, including cleanup and acceptance of the project by the Port.

C. Item #3: Parcel 69 (UP Yard) Demolition

1. Item Description: The Work of this item includes all tools, materials, labor and equipment as necessary for existing creosote light pole, lighting luminaire, bird deterrent, raceway, conduit, conductor, cabling, pullbox, circuit breaker and foundation salvage or removal and disposal. The work shall include existing CMP sleeve removal and disposal, existing concrete collar removal and disposal, and existing crushed rock removal and disposal. The work shall include excavation, trenching, dewatering, and earthworks required for new pole, electrical and communication installations. The work shall include ancillary civil site demolition, such as (but not limited to) pavement, miscellaneous site debris, bollards, fencing and traffic protection demolition as needed for installation of new poles. The work shall include salvaging and protecting existing communication or other hardware and attachments for reuse. The work shall include backfilling existing foundations for any relocated poles. Any excess soils generated as part of the work shall be included in this item and disposed of in accordance with Project Specifications.
2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.

D. Item #4: Parcel 69 (UP Yard) Civil Site Improvements

1. Item Description: The Work of this item includes all tools, materials, labor and equipment as necessary for restoring the Work Area to pre-construction condition. This work shall include earthwork, dewatering, crushed surfacing base course, hot mix asphalt, ecology block/barrier relocation, fencing replacement, paint striping and surface restoration or new paving. The work shall include removal, storage and reattachment of conduit guards if present.
2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.

E. Item #5: Parcel 69 (UP Yard) Foundations.

1. Item Description: The Work of this item includes all tools, materials, labor and equipment as necessary for installing new timber pole foundations. This work shall include new CMP sleeves, CMP sleeve installation, crushed rock sleeve fill, concrete collars, dewatering and concrete pole bases for traffic protection if present.

2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.
- F. Item #6: Parcel 69 (UP Yard) New Timber Poles
1. Item Description: The Work of this item includes all tools, labor and equipment as necessary for timber pole procurement and installation. The work shall include all transportation and storage fees.
 2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.
- G. Item #7: Parcel 69 (UP Yard) Temporary Provisions
1. Item Description: The Work of this item includes all tools, materials, labor and equipment as necessary for providing area and construction lighting, temporary support of existing boxes, and disconnects that are to remain, and maintenance of existing power and communications services.
 2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.
- H. Item #8: Parcel 69 (UP Yard) New Electrical, Communications and Attachments
1. Item Description: The Work of this item includes all tools, labor and materials as necessary for mounting and powering salvaged existing dome and flood LED luminaires with new bird deterrent on reinstalled fixture support structures. This shall include all feeder and branch power raceway, conduit, conductors, cabling, grounding, handholes, pullboxes, dewatering, and circuit breakers to restore a similar operational pole configuration prior to demolition.

This Item shall include all communication and miscellaneous hardware such as feeder and branch raceway, conduit, cabling, and boxes necessary to reinstall existing cameras, antennas, other accessories.
 2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.
- I. Item #9: Parcel 69 (UP Yard) Pole Commissioning
1. Item Description: The Work for this item includes all tools, labor and equipment as necessary to aim installed lights, test power circuits, lights, cameras and antennas to verify operation, as-built lighting photometrics of any relocated lights, and provide as-builts. Commissioning shall restore pole lighting, electrical and communication operations to pre-construction condition.

2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.
- J. Item #10: Parcel 69A (SIM) Mobilization and Demobilization
1. Description and Measurement: See 1.07.B.1
 2. Payment: See 1.07.B.2
- K. Item #11: Parcel 69A (SIM) Demolition
1. Item Description: See 1.07.C.1
 2. Measurement: See 1.07.C.2
 3. Payment: See 1.07.C.3
- L. Item #12: Parcel 69A (SIM) Civil Site Improvements
1. Item Description: See 1.07.D.1
 2. Measurement: See 1.07.D.2
 3. Payment: See 1.07.D.3
- M. Item #13: Parcel 69A (SIM) Foundations
1. Item Description: See 1.07.E.1
 2. Measurement: See 1.07.E.2
 3. Payment: See 1.07.E.3
- N. Item #14: Parcel 69A (SIM) New Timber Poles
1. Item Description: See 1.07.F.1
 2. Measurement: See 1.07.F.2
 3. Payment: See 1.07.F.3
- O. Item #15: Parcel 69A (SIM) Temporary Provisions
1. Item Description: See 1.07.G.1
 2. Measurement: See 1.07.G.2
 3. Payment: See 1.07.G.3
- P. Item #16: Parcel 69A (SIM) New Electrical, Communications and Attachments
1. Item Description See 1.07.H.1
 2. Measurement: See 1.07.H.2
 3. Payment: See 1.07.H.3
- Q. Item #17: Parcel 69A (SIM) Pole Commissioning
1. Item Description See 1.07.I.1
 2. Measurement: See 1.07.I.2

- 3. Payment: See 1.07.I.3
- R. Item #18: Parcel 17 (EB1) Mobilization and Demobilization
 - 1. Description and Measurement: See 1.07.B.1
 - 2. Payment: See 1.07.B.2
- S. Item #19: Parcel 17 (EB1) Demolition
 - 1. Item Description: See 1.07.C.1.
 - 2. Measurement: See 1.07.C.2
 - 3. Payment: See 1.07.C.3
- T. Item #20: Parcel 17 (EB1) Civil Site Improvements
 - 1. Item Description: See 1.07.D.1
 - 2. Measurement: See 1.07.D.2
 - 3. Payment: See 1.07.D.3
- U. Item #21: Parcel 17 (EB1) Foundations
 - 1. Item Description: See 1.07.E.1
 - 2. Measurement: See 1.07.E.2
 - 3. Payment: See 1.07.E.3
- V. Item #22: Parcel 17 (EB1) New Timber Poles
 - 1. Item Description: See 1.07.F.1
 - 2. Measurement: See 1.07.F.2
 - 3. Payment: See 1.07.F.3
- W. Item #23: Parcel 17 (EB1) Temporary Provisions
 - 1. Item Description: See 1.07.G.1. This item shall **also** include all tools, labor and equipment as necessary to support existing aerial lines during new pole installation.
 - 2. Measurement: See 1.07.G.2
 - 3. Payment: See 1.07.G.3
- X. Item #24: Parcel 17 (EB1) New Electrical, Communications and Attachments
 - 1. Item Description See 1.07.H.1.
 - 2. Measurement: See 1.07.H.2
 - 3. Payment: See 1.07.H.3
- Y. Item #25: Parcel 17 (EB1) Pole Commissioning
 - 1. Item Description See 1.07.I.1
 - 2. Measurement: See 1.07.I.2
 - 3. Payment: See 1.07.I.3
- Z. Item #26: Parcel 105 (West Hylebos Terminal) Mobilization and Demobilization

1. Description and Measurement: See 1.07.B.1
2. Payment: See 1.07.B.2

AA. Item #27: Parcel 105 (West Hylebos Terminal) Demolition

1. Item Description: See 1.07.C.1. for typical item description. This item shall **also** include demolition, excavation and disposal necessary for pole risers, time clock, transformer, panelboard, disconnects and wire gutter for Pole 158 as shown in the drawings. This work shall include removal and disposal of banded support poles at Poles 156 and 158.
2. Measurement: See 1.07.C.2
3. Payment: See 1.07.C.3

BB. Item #28: Parcel 105 (West Hylebos Terminal) Civil Site Improvements

1. Item Description: See 1.07.D.1
2. Measurement: See 1.07.D.2
3. Payment: See 1.07.D.3

CC. Item #29: Parcel 105 (West Hylebos Terminal) Foundations

1. Item Description: See 1.07.E.1
2. Measurement: See 1.07.E.2
3. Payment: See 1.07.E.3

DD. Item #30: Parcel 105 (West Hylebos Terminal) New Timber Poles

1. Item Description: See 1.07.F.1
2. Measurement: See 1.07.F.2
3. Payment: See 1.07.F.3

EE. Item #31: Parcel 105 (West Hylebos Terminal) Temporary Provisions

1. Item Description: See 1.07.G.1. This item shall **also** include all tools, labor and equipment as necessary to support existing aerial lines during new pole installation.
2. Measurement: See 1.07.G.2
3. Payment: See 1.07.G.3

FF. Item #32: Parcel 105 (West Hylebos Terminal) New Electrical, Communications and Attachments

1. Item Description See 1.07.H.1. for typical item description. This item shall **also** include all labor, tools and materials as necessary to furnish and install pole risers, transformer, panelboard, disconnects and wire gutter for Pole 158 as shown in the drawings.
2. Measurement: See 1.07.H.2
3. Payment: See 1.07.H.3

GG. Item #33: Parcel 105 (West Hylebos Terminal) Pole Commissioning

1. Item Description See 1.07.I.1
2. Measurement: See 1.07.I.2

3. Payment: See 1.07.I.3

HH. Item #34: Parcel 1A (TOTE) Mobilization and Demobilization

1. Description and Measurement: See 1.07.B.1. This item shall **also** include all labor, tools, and materials as necessary to complete waterline potholing and management of any soils or water produced by the operation per the Specifications.
2. Payment: See 1.07.B.2

II. Item #35: Parcel 1A (TOTE) Demolition

1. Item Description: See 1.07.C.1 for typical description. This item shall **also** include water disposal, testing and handling as outlined in Section 01 14 00 during demolition activities. This item shall **also** include additional demolition and disposal of existing sidewalk to field locate water line for Pole 130, and bumper wall demolition and disposal. This item shall also include additional demolition and disposal of the Abandoned Pole Foundation adjacent to Pole 131.
2. Measurement: See 1.07.C.2
3. Payment: See 1.07.C.3

JJ. Item #36: Parcel 1A (TOTE) Civil Site Improvements

1. Item Description: See 1.07.D.1. This item shall **also** include include sidewalk and fence restoration for Pole 130 and restoration of curbs.
2. Measurement: See 1.07.D.2
3. Payment: See 1.07.D.3

KK. Item #37: Parcel 1A (TOTE) Foundations

1. Item Description: See 1.07.E.1
2. Measurement: See 1.07.E.2
3. Payment: See 1.07.E.3

LL. Item #38: Parcel 1A (TOTE) New Timber Poles

1. Item Description: See 1.07.F.1
2. Measurement: See 1.07.F.2
3. Payment: See 1.07.F.3

MM. Item #39: Parcel 1A (TOTE) Temporary Provisions

1. Item Description: See 1.07.G.1. This item shall **also** include all tools, labor and equipment as necessary to support existing aerial lines during new pole installation.
2. Measurement: See 1.07.G.2
3. Payment: See 1.07.G.3

NN. Item #40: Parcel 1A (TOTE) New Electrical, Communications and Attachments

1. Item Description: See 1.07.H.1. for typical description.
2. Measurement: See 1.07.H.2
3. Payment: See 1.07.H.3

OO. Item #41: Parcel 1A (TOTE) Pole Commissioning

1. Item Description See 1.07.I.1
2. Measurement: See 1.07.I.2
3. Payment: See 1.07.I.3

PP. Item #42: Parcel 27 (NIM) Mobilization and Demobilization

1. Description and Measurement: See 1.07.B.1
2. Payment: See 1.07.B.2

QQ. Item #43: Parcel 27 (NIM) Demolition

1. Item Description: See 1.07.C.1.
2. Measurement: See 1.07.C.2
3. Payment: See 1.07.C.3

RR. Item #44: Parcel 27 (NIM) Civil Site Improvements

1. Item Description: See 1.07.D.1
2. Measurement: See 1.07.D.2
3. Payment: See 1.07.D.3

SS. Item #45: Parcel 27 (NIM) Foundations

1. Item Description: See 1.07.E.1
2. Measurement: See 1.07.E.2
3. Payment: See 1.07.E.3

TT. Item #46: Parcel 27 (NIM) New Timber Poles

1. Item Description: See 1.07.F.1
2. Measurement: See 1.07.F.2
3. Payment: See 1.07.F.3

UU. Item #47: Parcel 27 (NIM) Temporary Provisions

1. Item Description: See 1.07.G.1
2. Measurement: See 1.07.G.2
3. Payment: See 1.07.G.3

VV. Item #48: Parcel 27 (NIM) New Electrical, Communications and Attachments

1. Item Description: See 1.07.H.1.
2. Measurement: See 1.07.H.2
3. Payment: See 1.07.H.3

WW. Item #49: Parcel 27 (NIM) Pole Commissioning

1. Item Description: See 1.07.I.1
2. Measurement: See 1.07.I.2

3. Payment: See 1.07.I.3

XX. Item #50: Parcel 27 (NIM) Traffic Control

1. Item Description: The Work of this items shall include all signage, labor and equipment as necessary to develop, implement and operate traffic control around pole work zones in the NIM. The work shall include creation of traffic control plans and graphics to depict planned operation. The daily rate shall assume a 10-hour weekday workday.
2. Measurement: This item will be measured based on a daily rate.
3. Payment: This item will be paid for at the Contract lump sum daily rate as specified in the Contractor's submitted bid for the number of days required.

YY. Item #51: Parcel 27 (Terminal 7) Mobilization and Demobilization

1. Description and Measurement: See 1.07.B.1
2. Payment: See 1.07.B.2

ZZ. Item #52: Parcel 27 (Terminal 7) Demolition

1. Item Description: See 1.07.C.1. T
2. Measurement: See 1.07.C.2
3. Payment: See 1.07.C.3

AAA. Item #53: Parcel 27 (Terminal 7) Civil Site Improvements

1. Item Description: See 1.07.D.1. for typical description. This item shall **also** include all labor, tools and materials as necessary to extend or provide new curb and new matching bollard system around new pole.
2. Measurement: See 1.07.D.2
3. Payment: See 1.07.D.3

BBB. Item #54: Parcel 27 (Terminal 7) Foundations

1. Item Description: See 1.07.E.1
2. Measurement: See 1.07.E.2
3. Payment: See 1.07.E.3

CCC. Item #55: Parcel 27 (Terminal 7) New Timber Poles

1. Item Description: See 1.07.F.1
2. Measurement: See 1.07.F.2
3. Payment: See 1.07.F.3

DDD. Item #56: Parcel 27 (Terminal 7) Temporary Provisions

1. Item Description: See 1.07.G.1
2. Measurement: See 1.07.G.2
3. Payment: See 1.07.G.3

EEE. Item #57: Parcel 27 (Terminal 7) New Electrical, Communications and Attachments

1. Item Description: See 1.07.H.1. for typical description. This item shall **also** include all labor, tools and materials as necessary to furnish and install equipment mounting racks for Light Pole 17.
 2. Measurement: See 1.07.H.2
 3. Payment: See 1.07.H.3
- FFF. Item #58: Parcel 27 (Terminal 7) Pole Commissioning
1. Item Description: See 1.07.I.1
 2. Measurement: See 1.07.I.2
 3. Payment: See 1.07.I.3
- GGG. Item #59: Replacement Bollard
1. Item Description: The Work of this item includes all tools, labor, equipment, equipment and materials as necessary for furnishing and installing a Bollard Replacement for existing bollards demolished during pole replacement work.
 2. Measurement: This item will be measured based on a per each amount.
 3. Payment: This item will be paid for at the Contract per each price as specified in the Contractor's submitted bid.
- HHH. Item #60: Trench Safety Systems
1. Item Description: The Work of this item includes shoring and safety systems for all trench and other excavations exceeding 4-foot depths.
 2. Measurement: This item will be measured as a lump sum unit.
 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXEUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 SUBMITTALS

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

1.03 METHOD TO CALCULATE ADJUSTMENTS TO CONTRACT PRICE

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

1.04 MINOR CHANGES IN THE WORK

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

1.05 PROPOSAL REQUESTS

- A. Port-Initiated Proposal Requests: The Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Work Change Proposal Requests issued by Engineer are not instructions either to stop work in progress or to execute the proposed change.
 2. Contractor shall submit a written proposal within the time specified in the General Conditions. The proposal shall represent the Contractor's offer to perform the requested work, and the pricing set forth within the proposal shall represent full, complete, and final compensation for the proposed change and any impacts to any other Contract Work, including any adjustments in the Contract Time.
 - a. Include a breakdown of the changed work in sufficient detail that permits the Engineer to substantiate the costs.
 - 1) Generally, the cost breakdown should be divided into the time and materials categories listed in the General Conditions under Article 8.02.B for either Lump Sum Proposals or Force Account Proposals.
 - 2) For Unit Price Proposals, include the quantity and description of all work involved in the unit pricing being proposed, along with a not to exceed total cost.
 - b. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or differing site conditions require modifications to the Contract, the Contractor may initiate a claim by submitting a request for a change to the Engineer.
1. Notify the Engineer immediately upon finding differing conditions prior to disturbing the site.
 2. Provide follow-up written notification and differing site conditions proposal within the time frames set forth in the General Conditions.
 3. Provide the differing site condition change proposal in the same or similar manner as described above under 1.05.A.
 4. Comply with requirements in Section 00 26 00 Substitution Procedures if the proposed change requires substitution of one product or system for product or system specified.
 5. Proposal Request Form: Use form acceptable to Engineer.

1.06 PROCEEDING WITH CHANGED WORK

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

1.07 CHANGE ORDER PROCEDURES

- A. Issuance of Change Order

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 PREPARATION

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

1.03 SUBMITTAL

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 SCHEDULE OF VALUES

- A. Submit the Schedule of Values in a form acceptable to the Engineer.
- B. Provide updated Schedule of Values as required by the Engineer and as indicated in the Contract Documents.

END OF SECTION

PART 1 - GENERAL

1.01 SCOPE

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

1.02 NOTICE TO PROCEED

- A. Contract execution will be made per the requirements of the Contract Documents. Once the contract has been executed and all pre-work submittals have been received, the Engineer will issue a Notice to Proceed (NTP).
 - 1. In certain instances, the Engineer may issue to the Contractor a Limited NTP for specified elements of the work described in these Contract Documents.
- B. The Contractor shall submit all pre-work submittals within 20 days of contract execution.
 - 1. No contract time extension shall be granted for any delays in issuance of the NTP by the Engineer due to the Contractor's failure to provide acceptable submittals required by the Contract Documents.

1.03 COORDINATION

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

1.04 PROJECT MEETINGS

- A. Pre-Construction Meeting - Overall Project
 - 1. After execution of the contract, but prior to commencement of any work at the site, a mandatory one time meeting will be scheduled by the Engineer to discuss and develop a mutual understanding relative to the administration of the safety program, preparation of the Schedule of Values, change orders, RFI's, submittals, scheduling prosecution of the work. Major subcontractors who will engage in the work shall attend.
 - 2. Suggested Agenda: The agenda will include items of significance to the project.
 - 3. Location of the Pre-Construction Meeting will be held at the Port of Tacoma Administration Building or virtually as scheduled by the Engineer.
- B. Parcel Pre-Construction Meeting
 - 1. Project Work will occur in (7) seven different parcels or sites. Each site will have variations in operational protocols and activity constraints. Parcel tolerance and constraints for Contractor operations could have substantial seasonal, location or sequencing flexibility. The Parcel Pre-Construction meeting will provide a forum for the Contractor, Engineer and other project stakeholders to discuss and optimize work execution.
 - 2. The Contractor shall plan on attending (1) one Parcel Pre-Construction meetings for the following parcels:
 - a. Parcel 69 (UP Yard)
 - b. Parcel 69A (SIM)

- c. Parcel 105 (WHT)
 - d. Parcel 17 (EB1)
 - 3. The Contractor shall plan on attending (2) two Parcel Pre-Construction meetings for the following parcels:
 - a. Parcel 27 (NIM)
 - b. Parcel 27 (T7)
 - c. Parcel 1A (TOTE)
 - 4. Suggested Agenda: The agenda will include site specific Contractor schedule, operations, and concerns. Project stakeholders and parcel tenants may discuss options or opportunities for reducing work restrictions or modifying requirements of the contract based on the Contractor's work approach.
 - 5. Attendance is required for the Contractor's staff responsible for planning and scheduling.
- C. Weekly Progress Meetings – Progress meetings include the Contractor, Engineer, consultants and others affected by decisions made.
- 1. The Engineer will arrange meetings, prepare standard agenda with copies for participants, preside at meetings, record minutes and distribute copies within ten working days to the Contractor, meeting participants, and others affected by decisions made.
 - a. The Engineer will approve submitted meeting minutes in writing within 10 working days.
 - 2. Attendance is required for the Contractor's job superintendent, major subcontractors and suppliers, Engineer, and representatives of the Port as appropriate to the agenda topics for each meeting.
 - 3. Standard Agenda
 - a. Review minutes of previous meeting
 - b. Review of work progress
 - c. Field observations, problems, and decisions
 - d. Identification of problems that impede planned progress
 - e. Maintenance of Progress Schedule (3 weeks ahead; 1 week back)
 - f. Corrective measures to regain projected schedules
 - g. Planned progress during succeeding work period
 - h. Coordination of projected progress
 - i. Maintenance of quality and work standards
 - j. Effect of proposed changes on progress schedule and coordination
 - k. Demonstration that the project record drawings are up-to-date
 - l. Other business relating to the work

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

- A. The Port and Contractor shall use the Port's provided Project Management applications for electronic information exchange throughout the duration of the Contract, as later described. The joint use of these systems is to facilitate and coordinate the electronic exchange of Requests for Information, Submittals, Change Order Proposals, and project specific correspondence.

1.02 USER ACCESS LIMITATIONS

- A. Contractor's access to Port provided applications is granted and controlled by the Engineer.
 - 1. The users assigned by the Contractor shall be competent and experienced with the practices commonly employed in the industry for electronically submitting requests for information, submittals, product data, shop drawings and related items as required by the contract and the methods commonly used for project correspondence transmission and filing.
 - 2. Any users assigned by the Contractor whom the Engineer determines is incapable of performing the prescribed tasks in an accurate, competent and efficient manner will be removed upon request from the Engineer. The qualifications and identity of a replacement user shall be submitted within 24 hours for consideration by the Engineer. Once accepted by the Engineer, the user account will be modified accordingly.
 - 3. Each user must have their own account. Sharing accounts or login credentials is not allowed.

1.03 CONTRACTOR TECHNOLOGY REQUIREMENTS

- A. The Contractor is responsible for providing and maintaining web enabled devices capable of operating the Trimble Unity Construct web based application and any additional project specific software required by the Engineer effectively.

1.04 CONTRACTOR SOFTWARE REQUIREMENTS

- A. The Contractor is responsible for providing and maintaining the following:
 - 1. An office suite that is Microsoft Office 2013 compatible for generation and manipulation of correspondence.
 - 2. A program capable of editing, annotating and manipulating Adobe pdf files for inserting the Contractor's review stamp, clouding and adding notation to the files as necessary for review by the Engineer.

1.05 CONTRACTOR RESPONSIBILITY

- A. Provide all the equipment, internet connections, software, personnel and expertise required to support the use of Trimble Unity Construct as described in the contract documents.
 - 1. User account creation. Submit the full name and email of each requested user to the Engineer, or their designee. Trimble User Accounts cannot be shared and require a unique email for each user.

1.06 PORT RESPONSIBILITY

- A. Provide the Contractor with the following:
 - 1. Two (2) User Accounts to access Trimble Unity Construct as described above. Additional user accounts may be assigned at the Engineer's discretion.

2. Information, basic user guides and requirements on methods for using Trimble Unity Construct.
3. Instruction for the Contractor's staff utilizing Trimble Unity Construct.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 UTILIZATION OF TRIMBLE UNITY CONSTRUCT

- A. The Contractor shall provide required information in a timely manner that also supports the project schedule and meets the requirements of the Contract.
- B. The Contractor shall provide and maintain competent and qualified personnel to perform the various tasks required to support the work within Trimble Unity Construct
- C. The Port will not be liable for any delays associated from the usage of Trimble Unity Construct including, but not limited to: slow response time, Port maintenance and off-line periods, connectivity problems or loss of information. Under no circumstances shall the usage of Trimble Unity Construct software be grounds for a time extension or cost adjustment to the contract.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. This section includes the requirements to provide a preliminary schedule and construction progress schedule, bar chart type.

1.02 SUBMITTALS

- A. Within 10 days following execution of the contract, submit a baseline project schedule defining planned operations.
- B. If the baseline project schedule requires revision after review, submit revised baseline project schedule within 10 days.
- C. Within 20 days after review of baseline project schedule, submit draft of proposed complete baseline project schedule for review.
- D. Submit updated progress schedule monthly to the Engineer with each pay application as required in Section 01 20 00 Price and Payment Procedures.

1.03 QUALITY ASSURANCE

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

1.04 SCHEDULE FORMAT

- A. The baseline project schedule shall be produced using the CPM format.
- B. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- C. Sheet Size: Multiples of 11 x 17 (280 x 432 mm).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 BASELINE SCHEDULE

- A. Prepare baseline project schedule in the form of a horizontal bar chart.
- B. The baseline project schedule shall include all the activities listed in the Schedule of Values and be directly related to items listed in the Bid Form. The Contractor is encouraged to add sufficient activities to facilitate a clear understanding of the means and methods planned for the various work items.
- C. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction and critical path. At a minimum it shall include and show the following:
 - 1. A time scale showing the elementary work items needed to complete the work;
 - 2. Estimated time durations for each activity, defined as any single identifiable work step within the project;
 - 3. A graphical network diagram showing the logical sequence of activities, their precedence relationships, and estimated float or leeway available for each;

- 4. The different categories of work as distinguished by crew requirements, equipment requirements, and construction materials; and
 - 5. The different areas of responsibility, such as distinctly separate or subcontracted work, and identifiable subdivisions of work.
- D. It shall be maintained and updated as necessary to accurately reflect past progress and the most probable future progress.
- E. Activities shown shall include submittals, milestones, and sufficient task breakdown for major components of work.
- F. Identify work of separate stages and other logically grouped activities.
- G. Provide sub-schedules to define critical portions of the entire schedule.
- H. Provide separate schedule of submittal dates for shop drawings, product data, samples, owner-furnished products, products identified, and dates reviewed submittals will be required from the Engineer. Indicate decision dates for selection of finishes.

3.02 PROGRESS SCHEDULE

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

3.03 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Indicate changes required to maintain Date of Substantial Completion.
- E. Submit reports required to support recommended changes.
- F. Contractor shall submit an updated progress schedule with each pay application and include a written narrative describing the overall progress of the work. The narrative shall include the following key aspects:

1. Progress in the last period.
2. Critical Path progress and schedule concerns.
3. Changes to schedule logic or sequencing of the work.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes the requirements to provide a submittal log and project submittals.

1.02 SUBMITTAL LOG

- A. Contractor shall, within 14 days of contract execution prepare and submit for Engineer approval a detailed log of all the submittals required under this Contract, along with any other submittals identified by the Port or Contractor. The log shall include, but not be limited to, schedules, required construction Work plans, equipment and material cut sheets, shop drawings, project record documents, test results, survey records, record drawings, results of QC testing, and all other items for which a submittal is required. The submittal log shall be organized by CSI Specification Division, and Section number and include the following information:
1. Item Description
 2. Category
 3. Specification Section information of the applicable section
 4. After the submittal log is reviewed and approved by the Engineer, it shall become the basis for the submittal of all items by Contractor.

1.03 COMPLIANCE

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

1.04 SHOP DRAWINGS AND MANUFACTURERS' LITERATURE

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

1.05 SUBMITTAL REVIEW

- A. After review of each of Contractor's submittals, the submittal will be returned to Contractor with a form indicating one or more of the following:
1. No Exceptions Taken - Means, accepted subject to its compatibility with future submittals and additional partial submittals for portions of the work not covered in this submittal. But it does not constitute approval or deletion of specified or required items not shown in the partial submittal.

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 PREPARATION OF SUBMITTALS

- A. The Contractor shall submit all shop drawings, catalog cuts, brochures and physical samples using e-Builder® (a web based construction management software). All post-document-generated notations such as notes, arrows, stamps, clouding, or other items, are required to be shown directly on the submittal document. **Each submittal shall be accompanied by a transmittal developed within the e-Builder® software.**
- B. A separate submittal shall be prepared for each product or procedure and shall be further identified by referencing the Specification Section and paragraph number and each submittal shall be numbered consecutively.

- C. Product submittals that cannot be accomplished electronically shall be submitted electronically without attachments, marked as being hand delivered, and accompanied by a printed version of a transmittal.
- D. Shop and detail drawings shall be submitted in related packages. All equipment or material details which are interdependent, or are related in any way, must be submitted indicating the complete installation. Submittals shall not be altered once marked "No Exceptions Taken" Revisions shall be clearly marked and dated. Major revisions must be submitted for approval.
- E. The Contractor shall thoroughly review all shop and detail drawings, prior to submittal, to assure coordination with other parts of the work.
- F. Components or materials which require shop drawings and which arrive at the job site prior to approval of shop drawings shall be considered as not being made for this project and shall be subject to rejection and removal from the premises.
- G. All submittal packages including, but not limited to, product data sheets, mix designs, shop drawings and other required information for submittal must be submitted, reviewed and approved before the relevant scheduled task may commence. It is the responsibility of the Contractor to provide the submittal information which may drive a task on the construction schedule to submit items well enough in advance as to provide adequate time for review and comment from the Engineer without adversely impacting the construction schedule.
- H. When completing the e-Builder® submittal form, a Date Due field is required to be completed. This field is intended to inform the Port of the urgency of the submittal. Failure of the Port to return the submittal by the date provided by the Contractor will not be considered grounds for a contract time extension.

3.02 PRE-WORK SUBMITTALS

- A. Prior to issuance of Notice to Proceed, the following submittals must be submitted and returned to the Contractor as No Exceptions Taken, Make Corrections Noted, Reviewed, or Reviewed as Noted.
 - 1. Per 00 72 00 and 01 32 16, Baseline Project Schedule
 - 2. Per 00 73 63, Emergency Contact Numbers
 - 3. Per 01 35 29, Health and Safety Plan (HASP)
 - 4. Per 01 35 29, Spill Prevention and Countermeasures Plan (SPCC)
 - 5. Per 01 35 47, List of equipment and written certification

3.03 MAINTENANCE OF SUBMITTAL LOG

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

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 SUBMITTALS

- A. Prior to Notice to Proceed, the Contractor shall provide a site specific Health and Safety Plan (HASP), which meets all the requirements of local, state and federal laws, rules and regulations. The HASP shall address all requirements for general health and safety and shall include, but not be limited to:
 - 1. Description of work to be performed and anticipated chemical and/or physical hazards associated with the work;
 - 2. Map of the site(s) illustrating the location of the anticipated hazards and areas of control for those hazards (including containments, exclusion/work zones, and contaminant reduction/decontamination zones);
 - 3. Hazardous material inventory and safety data sheets (SDSs) for all chemicals which will be brought on site;
 - 4. Signage appropriate to warn site personnel and visitors of anticipated site hazards;
 - 5. Engineering controls/equipment to be used to protect against anticipated hazards;
 - 6. Personal protective equipment and clothing including head, foot, skin, eye, and respiratory protection;
 - 7. Procedures which will be used for:
 - a. Lockout/Tagout,
 - b. Fall protection,
 - c. Trenching and shoring,
 - d. Hot work,
 - e. Suspicious materials and/or unidentified materials,
 - 8. Site housekeeping procedures and personal hygiene practices;
 - 9. Railroad safety procedures;
 - 10. Administrative controls;

11. Emergency plan including locations of and route to nearest hospital;
 12. Name and qualification of person preparing the HASP and person designated to implement and enforce the HASP;
 13. Excavation, stockpiling, and truck loading procedures;
 14. Lighting and sanitation; and
 15. Signatory page for site personnel to acknowledge receipt, understanding, and agreement to comply with the HASP.
 16. Contamination on the TOTE property is being addressed under MTCA. Work will require documentation of HAZWOPER-trained workers per WAC 296-843-100(4)(c) and (4)(d)(i).
- B. Prior to the start of any Work, the Contractor shall provide a site specific Spill Prevention, Control and Countermeasures (SPCC) Plan, which meets all the requirements of local, state and federal laws, rules and regulations.
- C. Contractor may submit the HASP and SPCC Plan as one comprehensive document or may submit the plans as separate documents.

1.03 POTENTIAL CHEMICAL HAZARDS

A. Site Contaminants

1. The Contractor must provide site workers with Hazard Communication standard information for potential site contaminants (in accordance with WAC 296-843). The Contractor shall ensure that all site workers are aware of and understand this information. Additional information shall also be provided by the Contractor, as necessary, to meet the Hazard Communication Standard and HASP requirements as noted in WAC 296-901-14010 and 296-843. Workers shall be instructed on basic methods or techniques to assist in detecting suspicious material.

B. Potential Exposures Routes

1. Inhalation: Airborne dusts, fibers, particulates, or vapors may be released during site activities. Inhalation of airborne inorganic arsenic may occur.
2. Skin and Eye Contact: Dusts generated during site work activities may settle on the skin or clothing of site workers. Also, workers may contact potentially regulated sediments, or water, in the normal course of their work. Precautions to prevent skin or eye contact with hazardous materials will be included in the HASP. Arsenic exposure may cause skin irritation.
3. Ingestion: Inadvertent transfer of site contaminants from hands or other objects to the mouth could occur if site workers eat, drink, smoke, chew tobacco, or engage in similar activities in work areas. This could result in ingestion of site contaminants. Precautions to prevent accidental or inadvertent ingestion of hazardous materials will be included in the HASP.

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

1.04 POTENTIAL PHYSICAL AND OTHER HAZARDS

- A. The Work of the Contractor is described elsewhere in these specifications. Precautions to prevent all anticipated physical and other hazards, including heavy equipment and vessels, shall be addressed in the HASP.

- B. Specific aspects of construction resulting in physical hazards anticipated for this project include, but are not limited to the following:
 - 1. Major hazards associated with earthwork impacts from moving construction vehicles and trucks, noise, thermal stress, contact with unguarded machines, excavation hazards (i.e., cave-in, utility, etc.), strains from heavy lifting, and reduced visibility and communications difficulties in work area; and
 - 2. Operation of equipment, including excavators, loaders, and related equipment, presenting hazards of entrapment, ensnarement, and being struck by moving parts.
- C. Other anticipated physical hazards:
 - 1. Heat stress, such as that potentially caused by impermeable clothing (may reduce the cooling ability of the body due to evaporation reduction);
 - 2. Cold stress, such as that potentially caused during times when temperatures are low, winds are high, especially when precipitation occurs during these conditions;
 - 3. Biological hazards, such as mold, insect stings, or bites, poisonous plants (i.e., poison oak, sumac, etc.); and
 - 4. Trips and falls.

PART 2 - PRODUCTS

2.01 SAFETY SIGNAGE - NOT USED

2.02 PRODUCTS SPECIFIED FOR HEALTH AND SAFETY

- A. Provide the equipment and supplies necessary to support the work as described in the site-specific HASP. Equipment and supplies may include, but are not limited to:
 - 1. All chemicals to be used on site;
 - 2. A hazardous materials inventory and SDSs for the chemicals brought on site;
 - 3. Fencing and barriers;
 - 4. Warning signs and labels;
 - 5. Trenching equipment;
 - 6. Fire extinguishers;
 - 7. Equipment to support hot work;
 - 8. Equipment to support lockout/tagout procedures;
 - 9. Scaffolding and fall protection equipment;
 - 10. Personal protective equipment (hard hats, foot gear, skin, eye, and respiratory protection);
 - 11. First aid equipment;
 - 12. Spill response and spill prevention equipment; and
 - 13. Field documentation logs/supplies.

PART 3 - EXECUTION

3.01 WORK AREA PREPARATION

- A. Contractor shall comply with health and safety rules, regulations, ordinances promulgated by the local, state, and federal government, the various construction permits, and other sections of the Contract Documents. Such compliance shall include, but not be specifically limited to: any and all protective devices, equipment and clothing; guards; restraints; locks; latches; switches; and other safety provisions that may be required or necessitated by state and federal safety regulations. The Contractor shall determine the specific requirements for safety provisions and shall have inspections and reports by the appropriate safety authorities to be conducted to ensure compliance with the intent of the regulations.
- B. Contractor shall inform employees, subcontractors and their employees of the potential danger in working with any potentially regulated materials, equipment, soils and groundwater at the project site.
 - 1. The Contractor shall not proceed with jobsite activities that might result in exposure of employees to hazardous materials, including arsenic, until the HASP is reviewed by the Engineer.
 - 2. In addition, the Engineer will submit a copy of the Contractor's HASP to Ecology for review. Ecology and the Engineer will review but not approve HASP.
- C. All Contractor employees expected to work at the jobsite or individuals entering the jobsite shall read the Contractor HASP before they enter the jobsite, and will sign a statement provided by the Contractor that they have read and understand the HASP. A copy of the Contractor's HASP shall be readily available at the site at all times the work is being performed.
- D. The Contractor's HASP shall be amended as needed by the CIH or CSP to include special work practices warranted by jobsite conditions actually encountered. Special practices could include provisions for decontamination of personnel and equipment, and the use of special equipment not covered in the initial plan.
- E. Contractor shall perform whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees of the Engineer, Engineer's Representative, and Contractor) and property during the Contract period. This requirement applies continuously and is not limited to normal working hours.
- F. The Engineer's review of the Contractor's performance does not include an opinion regarding the adequacy of, or approval of, the Contractor's safety supervisor, the site-specific HASP, safety program or safety measures taken in, on, or near the job site.
- G. Accidents causing death, injury, or damage must be reported immediately to the Engineer and the Port Security Department in person or by telephone or messenger. In addition, promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- H. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing within 24 hours after occurrence, to the Engineer, giving full details of the claim.

3.02 SITE SAFETY AND HEALTH OFFICER

- A. Contractor shall provide a person designated as the Site Safety and Health Officer, who is thoroughly trained in rescue procedures, has a minimum current 40-hour HAZWOPER certification (minimum), and is trained to use all necessary safety equipment. The person must be available and/or present at all times while work is being performed, and conduct testing, as necessary.
- B. The Site Safety and Health Officer shall be empowered with the delegated authority to order any person or worker on the project site to follow the safety rules. Failure to observe these rules is sufficient cause for removal of the person or worker(s) from this project.
- C. The Site Safety and Health Officer is responsible for determining the extent to which any safety equipment must be utilized, depending on conditions encountered at the site.

3.03 SPILL PREVENTION AND CONTROL

- A. The Contractor shall be responsible for prevention, containment and cleanup of spilling petroleum and other chemicals/hazardous materials used in the Contractor's operations. All such prevention, containment and cleanup costs shall be borne by the Contractor.
- B. The Contractor is advised that discharge of oil, fuel, other petroleum, or any chemicals/hazardous materials from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.
- C. In the event of a discharge of oil, fuel or chemicals/hazardous materials into waters, or onto land with a potential for entry into waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of all spilled material and used cleanup materials.
- D. The Contractor shall, at a minimum, take the following measures regarding spill prevention, containment and cleanup:
 - 1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums and other equipment and facilities shall be inspected regularly for drips, leaks or signs of damage, and shall be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.
 - 2. All land-based chemical, oil and products' storage tanks shall be diked, contained and/or located so as to prevent spills from escaping into the water. Dikes and containment area surfaces shall be lined with impervious material to prevent chemicals or oil from seeping through the ground and dikes.
 - 3. All visible floating sheen shall be immediately contained with booms, dikes or other appropriate means and removed from the water prior to discharge into state waters. All visible spills on land shall be immediately contained using dikes, straw bales or other appropriate means and removed using sand, sawdust or other absorbent material, which shall be properly disposed of by the Contractor. Waste materials shall be temporarily stored in drums or other leak-proof containers after cleanup and during transport to disposal. Waste materials shall be disposed offsite in accordance with applicable local, state and federal regulations.
 - 4. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the Contractor shall immediately notify the Port Security at their listed 24-hour response number:
 - a. Port Security: 253-383-9472

- E. If there is a potential for petroleum products to spill or leak, the Contractor shall maintain the following materials (as a minimum) at each of the project sites:
1. Oil-absorbent booms: 100 feet;
 2. Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area;
 3. Oil-skimming system; and
 4. Oil dry-all, gloves, and plastic bags.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 NOTIFICATION AND SUSPENSION

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

- A. Soils that cannot be reused onsite and are anticipated to be exported to an off-site facility must have a completed soil profile prior to export. The Port will conduct testing of material as defined further in this specification. The Contractor is responsible for any additional testing necessary to satisfy requirements of the Contractor's receiving facility.
- B. Soils stockpiled for testing and export shall be stockpiled by Parcel (site) and Environmental Site as outlined in Part 3 of this section. Stockpiles may be per individual replacement light pole location or at a centralized location within the Contractor's laydown area, or an alternative Parcel location as approved by the Engineer.
- C. Soils excavated within the project area, as shown on the drawings, are anticipated to be free of regulated material; however, should the Contractor identify soil that cannot be reused as part of the project, the Contractor shall notify the Engineer to determine if the soil requires special handling.
 - 1. Soil with unexpected regulated material, as identified by visual and/or olfactory methods, shall be segregated from other excavated material until such time as appropriate testing and analysis can be completed by the Port. Upon completion of the soil profile, the Engineer will inform the Contractor of any special handling requirements based on the results.
 - 2. Soil beyond construction excavation limits will not require excavation unless free draining product is observed or other special conditions exist; in which case the Engineer will direct the Contractor in additional excavation. Soils determined to require special handling will be hauled and disposed of at an approved disposal facility.
- D. No soil shall be removed from the site without prior notification to the Engineer. The notification shall include:
 - 1. An estimate of the number of truck-trips, the haul destination, and the period in which these trips will be made (e.g., 20 truck-trips to the Waste Management Facility over the two-week period beginning on March 1, 2023).

1.02 DEFINITIONS

- A. Olfactory Indications (methods): Of or relating to the sense of smell. Soils containing petroleum and other volatile constituents typically exhibit characteristic odors that can be detected (and sometimes identified) by smell.
- B. Regulated Material: Any chemical, physical, biological, or radiological substance that does not occur naturally in the environment, or that occurs at concentrations higher than natural background levels, and is regulated by agencies as to the disposal/recycling facility(ies) the material can and cannot go (i.e., EPA, Department of Ecology, Tacoma-Pierce County Health Department).
- C. Soil (waste) Profile: A characterization of the chemical and physical properties of soil material designated for off-site disposal, including the presence of pollutants and their concentrations as measured by approved laboratory analytical methods. A profile is required by the receiving permitted disposal or recycling facility.

- D. Special Handling: Refers to hauling and disposal of soils that cannot be reused in place as backfill or as general fill at another (off-site) location due to the presence of pollutants in concentrations above allowable limits. Such soils must be hauled to and managed at a permitted disposal facility.
- E. Type A Regulated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain pollutants in concentrations that exceed state or federal dangerous or hazardous designations (respectively), or other special Port-determined criteria. Type A Regulated Soil requires disposal at an approved Subtitle C hazardous waste landfill.
- F. Type B Regulated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain pollutants in concentrations that are below dangerous or hazardous levels, but could negatively impact the quality of air, waters of the state, soils or sediments, or pose a threat to the health of humans or other living organisms, depending on where the soil is disposed. Type B Regulated Soil requires disposal at an approved Subtitle D solid waste landfill.
- G. Type C Regulated Soil: Soil that must be removed from the Project site and has been determined by Engineer to contain unknown constituent(s) and/or in unknown concentration(s) and requires further analysis and characterization. Type C Regulated soil will require disposal at an approved Subtitle C hazardous waste landfill or Subtitle D solid waste landfill if additional soil characterization indicates special handling is required.
- H. Type D Soil: Soil determined by the Engineer not to require special handling with regard to this Contract. Classification of material as Type D Soil by the Port is not a certification nor does it release the Contractor of liability or obligation to meet any disposal or storage facility acceptance or testing requirements.
- I. Unexpected Regulated Material: Regulated material unexpectedly found in an excavation or in other locations where there is no prior knowledge, information, or history to indicate possible spills or releases of regulated material.
- J. Visual Indications (methods): A preliminary evaluation of the potential presence of contamination based on visual observation. For example, soils containing petroleum are frequently discolored or stained relative to non-petroleum impacted native soils or clean fill.

1.03 HEALTH AND SAFETY

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

1.04 SUBMITTALS

- A. Prior to excavation of any subsurface materials, the Contractor shall submit a Soils Management Plan to the Engineer. The Soils Management Plan must be approved by the Engineer prior to any excavation of subsurface materials. The Soils Management Plan must include the following:
 - 1. Identification of all soil disposal facilities anticipated to be used for soils that are determined to be Type A or Type B Regulated Soil.

2. Identification of all fill sites, disposal/recycling facilities and/or end uses anticipated to be used for soil determined to be Type D Soil in accordance with paragraph 3.02 of this section.
3. Contingency for delivery and placement of Type C Regulated Soil at an onsite soil stockpile area.
4. Contingency for managing soil/debris encountered during excavation that may disqualify soil for disposal or recycle at the anticipated facilities.
5. General description of how equipment operators, safety staff and other applicable onsite personnel will identify and respond to soil containing potentially regulated material.
6. Contractor shall coordinate with the Engineer to facilitate handling of regulated soil in accordance with this specification.
7. Description of all haul routes to be used on the project.

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 SOIL STOCKPILING

- A. Soils that cannot be reused on site shall be placed in stockpiles separated by Parcel (site) and Environmental site in accordance with the following table:

Project Site	Environmental Site Name	Light Pole #	Contaminant of Concern
Parcel 69 (UP Yard)	Old Union Pacific Property	69, 73, 75, 79	RCRA 8 Metals, TPH Diesel, TPH Gasoline
Parcel 69A (SIM)	SIM	89, 92	RCRA 8 Metals, TPH Diesel
Parcel 17 (EB1)	East Blair One	144, 149, 150, 151, 152, 153	RCRA 8 Metals, TPH Diesel
Parcel 105 (WHT)	Weyerhaeuser Cascade	156, 157, 158	RCRA 8 Metals, TPH Diesel
Parcel 27 (Terminal 7)	Time Oil Terminal	1, 6, 11, 12, 13, 15, 16, 17, 18, 22, 25, 40, 41, 42, 44, 45	Petroleum, PCP, PAHs
Parcel 27 (Terminal 7)	Cascade Pole	29, 31, 32, 34, 35, 39	Petroleum, PCP, PAHs, DNAPL
Parcel 1A (TOTE)	TOTE	102, 103, 105, 112, 116, 124, 128, 130, 131	RCRA 8 Metals, TPH Diesel, TPH Gasoline, VOCs

- B. Soils shall be stockpiled on plastic and covered in plastic until testing is complete and the soils are ready for transportation and disposal.
- C. Provide berms or retention barriers around stockpiles with free draining soils.

3.02 EXCAVATION/TESTING

- A. The field-testing for soil to be exported off-site will be performed by the Port and will result in the following classification of material:
 - 1. Type A Regulated Soil as defined in 1.02(E) of this Section
 - 2. Type B Regulated Soil as defined in 1.02(F) of this Section
 - 3. Type C Regulated Soil as defined in 1.02(G) of this Section
 - 4. Type D Soil as defined in 1.02(H) of this Section
- B. Contractor shall give Port no less than one week notice for sampling export soil prior to disposal off-site. Contractor shall anticipate at least two weeks for lab results.
- C. Laboratory turnaround times may require additional time for analytical results; therefore, Contractor should coordinate with Engineer well in advance of anticipated disposal date. Samples that are required to have "rush" analysis performed due to the Contractor's failure to disclose the anticipated disposal date shall have the difference in service fees paid by the Contractor, or the Contractor may delay the disposal until the standard analysis turnaround time is complete, at no additional cost to the Port.

3.03 TRANSPORTATION AND OFF-SITE DISPOSAL OF SOILS

- A. The Contractor shall be responsible for handling, re-handling, loading, transporting, and legal off-site removal of all waste materials and excavated soils not reused onsite.
 - 1. Contractor shall ensure that transport truck gross weight meets federal and/or state Department of Transportation (DOT) requirements and the requirements of the receiving facility, whichever is more stringent.
 - 2. Contractor shall take measures to prevent debris from being spilled from trucks or tracked from the site to local streets. Contractor shall sweep streets adjacent to the site as necessary or as directed by the Engineer.
 - 3. Contractor shall ensure that any vehicle transporting materials off-site are properly labeled and placarded in accordance with federal and state DOT requirements.
- B. Type A Regulated and Type B Regulated Soil shall be hauled to an approved facility by the Contractor for disposal.
- C. Type C Regulated Soil is of unknown origin or special circumstances. Type C Regulated Soil shall be hauled to an onsite segregated stockpile area. The Contractor shall protect the material from weather and other disturbances once stockpiled. The Port will inform the Contractor of the soil profile following additional analysis of the suspect material (as needed), and the soil will be categorized as either Type A Regulated, Type B Regulated or Type D Soil and disposed of accordingly.
- D. Type D Soil that is not reused onsite shall be hauled by the Contractor to a site determined by the Contractor. If the receiving/disposal facility requires additional testing or certification of this soil, Contractor shall complete these requirements, at no additional cost to the Port. The Port will not certify or declare the material suitable for unrestricted use.

3.04 OTHER REQUIREMENTS

- A. Type A, Type B or Type C Regulated Soil may be, upon approval of the Engineer, temporarily stockpiled within the construction area. Contractor shall place an impervious liner beneath the soil and securely cover the stockpile with waterproof covering (e.g., plastic sheeting). Additional measures (e.g., berm, jersey barriers, silt fence, etc.) may be required to minimize soil runoff from the stockpile area. The soil shall be removed prior to completion of Work.
- B. Contractor shall provide the Engineer with all hauling receipts (or copies of receipts) from the disposal facility for all Type A, Type B or Type C Regulated Soil at least weekly.
- C. The Engineer may shut down excavation activities should unexpected regulated material be encountered during excavation.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 SUBMITTALS

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

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION

3.01 AIR POLLUTION CONTROL

- A. The Contractor shall meet or exceed EPA Tier 2 off-road diesel engine emission standards for off-road equipment ≥ 25 hp and meet or exceed EPA 1994 on-road diesel engine emission standards for on-road equipment except as follows:
 - 1. Equipment being used in an emergency or public safety capacity
- B. The Contractor shall not discharge smoke, dust, and other hazardous materials into the atmosphere that violate local, state or federal regulations.
- C. No vehicles can idle for more than 5 consecutive minutes, except as follows:
 - 1. Idling is required to bring or maintain the equipment to operating temperature;
 - 2. Engine idling is necessary to accomplish work for which the equipment was designed (i.e. operating a crane); or
 - 3. Idling vehicles being used in an emergency or public safety capacity.
- D. The Contractor shall minimize nuisance dust by cleaning, sweeping, vacuum sweeping, sprinkling with water, or other means. Equipment for this operation shall be on the job site or available at all times.

3.02 NOISE CONTROL

- A. The Contractor shall comply with all local controls and noise level rules, regulations and ordinances which apply to work performed pursuant to the Contract.
- B. All internal combustion engines used on the job shall be equipped with a muffler of a type recommended by the manufacturer.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 PERMITS, CODES, AND REGULATIONS

- A. The following permits have been applied for (or are on file) and incorporated into the Contract:
 - 1. City of Tacoma Site Development Permit (SDEV24-0428) (Appendix D)
 - 2. Obtain, pay and conform to Tacoma Rail - Right of Entry Agreement application (Appendix B)
- B. Conform with the requirements of listed permits and additional or other applicable permits, codes, and regulations as may govern the Work.
- C. Obtain and pay fees for licenses, permits, inspections, and approvals required by laws ordinances, and rules of appropriate governing or approving agencies necessary for proper completion of Work (other than those listed under item 1.01.A above and Special Inspections called for by the International Building Code).
- D. Conform with current applicable codes, regulations and standards, which is the minimum standard of quality for material and workmanship. Provide labor, materials, and equipment necessary for compliance with code requirements or interpretations, although not specifically detailed in Drawings or specifications. Be familiar with applicable codes and standards prior to bidding.
- E. Process through Engineer, request to extend, modify, revise, or renew any of the permits (listed in 1.01.A above). Furnish requests in writing and include a narrative description and adequate Drawings to clearly describe and depict proposed action. Do not contact regulatory agency with requests for permit extensions, modifications, revisions, or renewals without the prior written consent of the Engineer.

1.02 VARIATIONS WITH CODES, REGULATIONS AND STANDARDS

- A. Nothing in the Drawings and specifications permits Work not conforming to codes, permits, or regulations. Promptly submit written notice to the Engineer of observed variations or discrepancies between the Contract Documents and governing codes and regulations.
- B. Appropriate modifications to the Contract Documents will be made by Change Order to incorporate changes to Work resulting from code and/or regulatory requirements. Contractor assumes responsibility for Work contrary to such requirements if Work proceeds without notice.
- C. Contractor is not relieved from complying with requirements of Contract Documents which may exceed, but not conflict with requirements of governing codes.

1.03 COORDINATION WITH REGULATORY AGENCIES

- A. Coordinate Work with appropriate governing or regulating authorities and agencies.
- B. Provide advance notification to proper officials of Project schedule and schedule revisions throughout Project duration, in order to allow proper scheduling of inspection visits at proper stages of Work completion.
- C. Regulation coordination is in addition to inspections conducted by Engineer. Notify Engineer at least 48 hours in advance of scheduled inspections involving outside regulating officials, to allow Engineer to be present for inspections.

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes requirements relating to referenced standards.

1.02 QUALITY ASSURANCE

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 QUALITY CONTROL FOR COMPLIANCE:

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

1.02 QUALITY ASSURANCE - CONTROL OF INSTALLATION

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

1.03 TOLERANCES

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

1.04 TESTING SERVICES

- A. Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities.
 - 1. Neither observations by an inspector retained by the Port, the presence or absence of such inspector at the site, nor inspections, tests, or approvals by others, shall relieve the Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.

- B. Necessary materials testing shall be performed by an independent testing laboratory during the execution of the Work and paid for by the Port of Tacoma, unless otherwise specified. Access to the area necessary to perform the testing and/or to secure the material for testing, shall be provided by the Contractor.
- C. Testing does not relieve Contractor from performing work to contract requirements.
- D. Re-testing required because of non-conformance to specified requirements will be charged to the Contractor by deducting testing charges from the Contract Sum via Change Order.
- E. Material testing for initial material approval will be performed by an independent, certified laboratory and paid for by the Contractor. These tests must be dated within six (6) months of the submittal date.
- F. Subsequent sampling and testing, required as the work progresses to ensure continual control of materials and compliance with all requirements of the Contract documents, shall be the responsibility of the Port, except as required by other sections of these Specifications.

1.05 MANUFACTURER'S FIELD SERVICES

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

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes requirements relating to the following:
 - 1. Temporary utilities,
 - 2. Temporary telecommunications services,
 - 3. Temporary sanitary facilities,
 - 4. Temporary Controls: Barriers, enclosures, and fencing, and
 - 5. Field offices.

1.02 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes. Contractor is responsible for getting required permits and meters from the City of Tacoma.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TEMPORARY SANITARY FACILITIES

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

1.04 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for Port's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 FENCING

- A. Construction: Contractor's option.
- B. For pole demolition and installation requiring removal of site perimeter fence, the fence shall be reinstalled/secured whenever Contractor personnel will not be present at the fence opening. Temporary panels of similar height and make to the original fence may be securely chained in place to restore the secured perimeter.
- C. Any accessible opening of a secured perimeter shall be continuously monitored in-person for unauthorized access until the integrity of the fenceline is restored.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes requirements relating to the following:
 - 1. Access roads
 - 2. Parking
 - 3. Construction parking controls
 - 4. Traffic Control
 - 5. Flares and lights
 - 6. Haul routes
 - 7. Maintenance
 - 8. Removal, repair
 - 9. Mud from site vehicles

PART 2 - PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

- A. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.
- B. Flag Person Equipment: As required by local jurisdictions.

PART 3 - EXECUTION

3.01 PREPARATION

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

3.02 ACCESS TO SITE

- A. Contractor shall conduct all business through the gate assigned by the Engineer.
 - 1. The Contractor may be required to relocate entry and related work areas as required by Port Operations.
- B. Provide unimpeded access for emergency vehicles. Maintain 20 foot (6 m) width driveways with turning space between and around combustible materials.
- C. Provide and maintain access to fire hydrants free of obstructions.

3.03 PARKING

- A. Contractor's employees shall be expected to park off-site and the Contractor shall provide transportation in a branded company vehicle between parking and Work Areas. Off-site parking areas will be located within a 5-minute drive of the designated Work Areas.
- B. Parking regulations will vary by facility, pole location, facility operation and work hours. Contractor's employee cars and work vehicles may be parked in onsite areas as designated by the Engineer.

3.04 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Port operations.
- B. Prevent parking on or adjacent to access roads or in non-designated areas.

3.05 TRAFFIC CONTROL

- A. Provide equipped flag persons to regulate traffic when construction operations or traffic encroach on traffic lanes.
- B. The Contractor shall erect and maintain all construction signs, warning signs, detour signs, flaggers and other traffic control devices necessary for the safe ingress and egress of the Project Site. Traffic control shall include but is not limited to:
 - 1. The Contractor shall be liable for injuries and damages to persons and property suffered by reason of the Contractor's operations or any negligence in connection therewith.
 - 2. Flagging, signs, and all other traffic control devices furnished or provided shall conform to established WSDOT and City of Tacoma standards. No work shall be done on or adjacent to the above locations until all necessary signs and traffic control devices are in place. During the course of the work, the Contractor shall be responsible for providing and maintaining adequate traffic control measures for the protection of the Contractor's work and the public.

3.06 FLARES AND LIGHTS

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

3.07 HAUL ROUTES

- A. Confine construction traffic to designated haul routes.
- B. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.

3.08 MAINTENANCE

- A. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, Products, mud, snow, and ice.
- B. Maintain existing paved areas used for construction. Promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

3.09 REMOVAL, REPAIR

- A. Repair existing facilities damaged by use, to original condition.
- B. Repair damage caused by installation.

3.10 PUBLIC STREET AND ONSITE ROADWAY CLEANING

- A. The Contractor shall be responsible for preventing dirt and dust escaping from trucks and other vehicles operating on or departing the project site by sweeping, covering dusty loads, washing truck tires, and all other reasonable methods.
- B. When trucks and other equipment are operating on paved public streets and site roadways/paved surfaces, the Contractor will be required to clean said streets, roadways, and other paved surfaces at least daily, and at other times if required by the Engineer.

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

END OF SECTION

This page intentionally left blank

PART 1 – GENERAL

1.01 SUMMARY

- A. The Work shall consist of planning, installing, inspecting, maintaining and removing Temporary Erosion and Sediment Control (TESC) Best Management Practices (BMPs) to prevent pollution of air and water; and to control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract.
- B. The Contractor shall use a project-specific Construction Stormwater Pollution Prevention Plan ("SWPPP") to meet or exceed the control measures required by the Washington Department of Ecology (Ecology). The SWPPP describes the proposed construction activities and all Temporary and Permanent Erosion and Sediment Control (ESC) measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project. The Contractor shall have an individual who is a Certified Erosion and Sediment Control Lead (CESCL) on site or immediately available while the NPDES permit is active.
 - 1. The SWPPP consists of planning, installing, inspecting, maintaining, and removing TESC BMPs in accordance with Volume II of the Stormwater Management Manual for Western Washington (current version). The BMPs are designed to prevent pollution of air and water, to control peak volumetric flow rates and velocity of stormwater, and to control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract.
 - 2. The Contractor will be responsible for updating the SWPPP to reflect changes to BMPs, as needed, to comply with the Construction Stormwater General Permit at no additional cost to the Port.
- C. These TESC requirements shall apply to all areas associated with the Work, including but not limited to the following:
 - 1. Work areas;
 - 2. Equipment and material storage areas;
 - 3. Staging areas;
 - 4. Stockpiles; and
 - 5. All discharge points within or adjacent to the Work areas that receive stormwater runoff from the site.
- D. Acceptance of TESC plans shall not constitute an approval of permanent Work or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).
- E. Contractor shall read and conform to all requirements set forth in Washington Department of Ecology's (Ecology) NPDES General Permit for Discharges Associated with Construction Activities (CSGP).

1.02 REFERENCES

- A. The rules, requirements, and regulations that apply to this Work include, but are not necessarily limited to the following:
 - 1. Washington Department of Ecology, "Stormwater Management Manual for Western Washington," current version.

2. Washington Department of Ecology NPDES General Permit for Discharges Associated with Construction Activities (CSGP), current version.
3. Washington State Department of Transportation, current version, Standard Specification M41-10, Division 8-01 Erosion Control and Water Pollution Control.
4. Pierce County Stormwater and Site Development Manual, current version (if applicable).

1.03 SUBMITTALS

- A. Prior to the start of any construction activities, the Contractor shall submit a Construction Stormwater Pollution Prevention Plan (SWPPP), as required by the CSGP.
 1. Contractor must adopt and comply with either a Port project SWPPP, or provide an alternative project SWPPP.
 2. Contractor shall be responsible for updating the project SWPPP during construction to reflect the required changes to BMPs and personnel, as needed, to comply with the CSGP at no additional cost to the Port.
- B. Safety Data Sheet (SDS) for any dust palliative product.
- C. A copy of all Contractor site inspection logs and monthly Discharge Monitoring Reports (DMRs).
- D. The name and contact number of the Certified Erosion and Sediment Control Lead (CESCL).

1.04 AUTHORITY OF ENGINEER

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

PART 2 – PRODUCTS

2.01 DUST CONTROL

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

PART 3 – EXECUTION

3.01 GENERAL

- A. The Port is subject to a NPDES General Permit for Discharges Associated with Construction Activities (CSGP). The permit shall be transferred to the Contractor prior to ground disturbing activities. The Contractor shall be the responsible Operator and Permittee for the duration of the project.
- B. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply as determined by the Engineer.
- C. No project discharge of water shall be allowed that causes or contributes to an exceedance of regulated pollutant levels in Ecology's NPDES permit associated with the Project and any CSGP-associated Administrative Orders (if applicable).

- D. Contractor shall be solely responsible for all BMP modifications and upgrades to comply with the CSGP and the requirements of this Section, at no additional cost to the Port.
- E. Contractor shall be solely responsible for any damages and fines incurred because of Contractor, subcontractor, or supplier actions in implementing the requirements of this Section.
- F. The Contractor shall be solely responsible for schedule impacts incurred because of Contractor, subcontractor, or supplier actions in implementing the requirements of this Section.

3.02 TEMPORARY EROSION AND SEDIMENT CONTROL DEVELOPMENT

- A. The Contractor is responsible for developing the TESC BMPs and incorporating them into the SWPPP. The Contractor shall address the following issues as part of developing and implementing the BMPs.
 - 1. The TESC notes and details shown in the Drawings and the information in this Section of these Specifications are minimum requirements for the anticipated site conditions during the construction period. During the construction period the Contractor shall, at no additional cost to the Port, upgrade the TESC measures as needed for unexpected storm events and modify these measures for changing site conditions (such as relocation of ditches and silt fences, etc.) and update the SWPPP to document the modifications made.
 - 2. The Contractor shall inspect the TESC measures daily and maintain these measures to ensure continued proper functioning during the construction period. The Contractor will keep written records on site of inspections on a weekly basis during the wet season (October 1 through April 30) and on a monthly basis during the dry season (May 1 through September 30). The Contractor shall provide the Port with copies of the TESC inspections, as stated in Section 1.03 above.
 - 3. Any areas needing TESC measures not requiring immediate attention shall be addressed by the Contractor at the Port's discretion.
 - 4. The TESC measures in an inactive site shall be inspected and maintained by the Contractor at a frequency described in the Project Construction Stormwater NPDES General Permit.
 - 5. The Contractor shall be responsible for implementing the SWPPP and shall modify the SWPPP as required to reflect onsite activities and personnel.
- B. Contractor shall develop project-specific TESC BMPs and incorporate them into the SWPPP.
 - 1. The SWPPP shall comply with the requirements in Ecology's Volume II of the Stormwater Management Manual for Western Washington (current version) or equivalent.
 - 2. TESC notes and details shown in the Drawings and the information in this Section form a basis of the minimum requirements for a TESC Plan. Contractor shall develop a TESC Plan specific to the construction schedule and proposed means and methods prior to commencing construction activities for the duration of the Project.
- C. Contractor shall inspect the existing system and report to the Engineer the levels of existing material prior to installation of TESC BMPs.

3.03 TEMPORARY EROSION AND SEDIMENT CONTROL IMPLEMENTATION

- A. Contractor is responsible for implementing and updating the SWPPP including TESC BMPs.
 - 1. Contractor shall inspect the TESC measures daily and maintain these measures to ensure continued proper functioning for the duration of the Project.

2. Contractor will be responsible for documenting TESC site inspections on a weekly basis in areas of active construction and on a monthly basis in areas that have undergone stabilization. Contractor shall keep records of the inspections on site.
 3. During the construction period the Contractor shall, at no additional cost to the Port, upgrade and/or maintain TESC measures as needed, based on Contractor means and methods, work sequencing, and changing site conditions (e.g., changes to impervious surface coverage, proximity of work to storm conveyance systems, storm events, etc.). Contractor shall modify these measures for changing site conditions and update the SWPPP to document all modifications made.
- B. Contractor shall clean all stormwater components affected by construction debris prior to Work completion, per TESC BMPs for catch basin maintenance. The cleaning process shall not flush sediment-laden water into a downstream system.
 - C. Contractor shall ensure that water, or a dust palliative and a dispensing subcontractor, if needed, is available for project use. It is the responsibility of the Contractor to develop and adhere to appropriate safety measures pertaining to the palliative use. This also includes ensuring the dispensing subcontractor develops and adheres to the appropriate safety measures, if a dispensing subcontractor is used. Water used for dust suppression shall not be applied at such a rate or in a location that it will generate runoff from the site.
 - D. Areas of exposed soils, including embankments, which will not be disturbed for two days during the wet season (October 1 through April 30) or seven days during the dry season (May 1 through September 30), shall immediately be stabilized by the Contractor with an Ecology-approved TESC measure (e.g., seeding, mulching, plastic covering, etc.).
 - E. TESC measures in an inactive area shall be inspected and maintained by the Contractor until the area is permanently stabilized.
 - F. In the event that additional temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the Work as scheduled or as ordered by the Engineer, such work shall be performed by the Contractor at its own expense.
 - G. Contractor shall remove all TESC facilities, install permanent site surfacing improvements and permanent BMPs with minimal disturbance, and shall clean stormwater facilities prior to Work completion.
 - H. Contractor shall submit a Notice of Termination ("NOT") and terminate coverage under the CSGP upon final stabilization of the Site; in accordance with per.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes the requirements for preparing, submitting, and coordinating product data, shop drawings, and samples under the applicable specification section.

1.02 SUBMITTALS

- A. The Contractor shall submit the following in accordance with the Contract Documents:
 - 1. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data with information specific to the Project, including compatibility with adjacent Work where applicable.
 - 2. Shop Drawing Submittals: Prepared specifically for this Project; indicate dimensions, utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
 - 3. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - a. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns; unless otherwise approved by the Engineer.

PART 2 - PRODUCTS

2.01 NEW PRODUCTS

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

2.02 PRODUCT OPTIONS

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

PART 3 - EXECUTION

3.01 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas to minimize on-Site storage time, double handling, and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.02 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area to minimize waste, excessive handling, and misapplication.
- B. Store and protect products in accordance with manufacturers' written instructions and the requirements of the contract documents.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect stored products to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes information for progress and final cleaning and restoration of damaged work prior to final inspection.

PART 2 - PRODUCTS

2.01 MATERIALS

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

PART 3 - EXECUTION

3.01 PROGRESS CLEAN-UP

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

- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration until Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.02 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
 - f. Remove debris and surface dust from limited access spaces, including roofs, attics, and similar spaces.
 - g. Sweep concrete floors broom clean in unoccupied spaces.
 - h. Remove labels that are not permanent.
 - i. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - j. Leave Project clean and ready for occupancy.

3.03 REPAIR OF WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surface, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
2. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION

This page intentionally left blank

PART 1 GENERAL

1.01 SUMMARY

- A. This section includes construction waste management requirements.

1.02 DEFINITIONS

- A. Co-mingled or Off-site Separation: Collecting all material types into a single bin or mixed collection system and separating the waste materials into recyclable material types at an off-site facility.
- B. Construction, Demolition and Land-Clearing (CDL) Waste: Includes all nonhazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition, and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage. This also includes uncontaminated soils that are designated as geotechnically unsuitable or excess excavation.
- C. Hazardous/Dangerous Waste: As defined by Chapter 70.105.010 Revised Code of Washington and 40 Code of Federal Register 261 and by Washington Administrative Code 173-303.
- D. Proper Disposal: As defined by the jurisdiction receiving the waste.
- E. Recyclable Materials: Products and materials that can be recovered and remanufactured into new products.
- F. Recycling: The process of sorting, cleaning, treating and reconstituting materials for the purpose of using the material in the manufacture of a new product. Can be conducted onsite (as in the grinding of concrete).
- G. Recycling Facility: An operation that is permitted to accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
- H. Salvage for Reuse: Existing usable product or material that can be saved and reused in some manner on the project site or other projects off-site.
- I. Salvage for Resale: Existing usable product or material that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.
- J. Source-Separated Materials: Materials that are sorted at the site into separate containers for the purpose of reuse or recycling.
- K. Sources Separation: Sorting the recovered materials into specific material types with no, or a minimum amount of, contamination on site.
- L. Time-Based Separation: Collecting waste during each phase of construction or deconstruction that results in primarily one major type of recovered material. The material is removed before it becomes mixed with the material from the next phase of construction.
- M. Garbage: Product or material typically considered to be trash or debris that is unable to be salvaged for resale, salvaged and reused, returned, or recycled.

1.03 SUBMITTALS

- A. Waste Management Plan
- B. Waste Management Final Report

1.04 PERFORMANCE GOALS

- A. General: Divert CDL waste to the maximum extent practicable from the landfill by one or a combination of the following activities:
 - 1. Salvage
 - 2. Reuse
 - 3. Source separated CDL recycling
 - 4. Co-mingled CDL recycling
- B. CDL waste materials that can be salvaged, resold, reused or recycled, include, but are not limited to the following:
 - 1. Clean dimensional wood, pallet wood, plywood, OSB, and particleboard
 - 2. Asphalt
 - 3. Concrete and concrete masonry units
 - 4. Ferrous and non-ferrous metals
 - 5. Field office waste paper, aluminum cans, glass, plastic, and cardboard
- C. Hazardous/Dangerous Wastes, contaminated soils and other hazardous materials such as paints, solvents, adhesives, batteries, and fluorescent light bulbs and ballasts shall be disposed of at applicable permitted facilities.

1.05 WASTE MANAGEMENT PLAN

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

1.06 WASTE MANAGEMENT FINAL REPORT

- A. Provide a Waste Management Final Report, in a format approved by the Engineer. The Waste Management Final Report shall list the following for the project:
 - 1. A record of each waste material type and quantity recycled, reused, salvaged, or disposed from the Project. Include total quantity of waste material removed from the site and hauled to a landfill.
 - 2. Percentage of total waste material generated that was recycled, reused, or salvaged.
- B. Quantities shall be reported by weight (tons) unless otherwise approved by the Engineer.
- C. Submit copies of manifests, weight tickets, recycling/disposal receipts or invoices, which validate the calculations or a signed certification of completeness and accuracy of the final quantities reported.

1.07 QUALITY ASSURANCE

- A. Regulatory Requirements: The Contractor shall maintain compliance with all applicable Federal, State, or Local laws that apply to Construction Waste Management and material salvage, reuse, recycling and disposal.
- B. Disposal Sites, Recyclers and Waste Materials Processors: All facilities utilized for management of any materials covered under this specification must maintain all necessary permits as required by federal, state and local jurisdictions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 SOURCE-SEPARATED CDL RECYCLING

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

3.02 CO-MINGLED CDL RECYCLING

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

3.03 LANDFILL

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

3.04 REMOVAL OF CDL WASTE FROM PROJECT SITE

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

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 ACTION SUBMITTALS

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

1.03 PROJECT SUBMITTALS

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

1.04 SUBSTANTIAL COMPLETION PROCEDURES

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

- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request:
 - 1. Make final changeover of permanent locks and deliver keys to Port
 - 2. Complete startup and testing of systems and equipment
 - 3. Perform preventive maintenance on equipment used prior to Substantial Completion
 - 4. Instruct Port's personnel in operation, adjustment, and maintenance of products, equipment, and systems
 - 5. Advise Port of changeover in heat and other utilities
 - 6. Terminate and remove temporary facilities from Project site
 - 7. Complete final cleaning requirements
- D. Submit a written request for inspection to determine Substantial Completion a minimum of 21 days prior to the date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Notice of Substantial Completion after inspection or will notify Contractor of items, either on the Contractor's list or additional items identified by the Engineer, that must be completed or corrected before notice will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for final completion.

1.05 PUNCH LIST (LIST OF INCOMPLETE ITEMS)

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

1.06 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete and submit the following:
 - 1. Submittal of all remaining items, including as-built documents, final completion construction photographic documentation, damage or settlement surveys, surveys, and similar final record information and all other submittals defined in the Contract Documents.
 - 2. List of Incomplete Items: Submit copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (Punch List). Copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 21 days prior to date the work will be complete and ready for final inspection and tests. On receipt of request, the Engineer will either proceed with inspection or notify contractor of unfulfilled requirements.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

C. Execution of all Change Orders.

1.07 FINAL ACCEPTANCE PROCEDURES

A. Submittals Prior to Final Acceptance:

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

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

PART 2 - PRODUCTS

2.01 CONTRACTOR'S WARRANTY

- A. The Contractor warrants the labor, materials and equipment delivered under the contract to be free from defects in design, material, or workmanship, and against damage caused prior to final inspection. Unless otherwise specified, this warranty extends for a period of one (1) year from the date of Substantial Completion.
1. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit the Port's rights under warranty.
 2. Partial Occupancy: Submit properly executed warranties within 21 days of completion of designated portions of the Work that are completed and occupied or used by Port or Port tenants during construction.
 3. Submit Warranties to the Engineer as a submittal, as described in 01 33 00 – Submittal Procedures.
 4. Provide additional copies of each warranty in Operation and Maintenance Manuals as described in 01 78 23 – Operation and Maintenance Manuals.
- B. In the event of equipment failure, during such time or in such a location that immediate repairs are mandatory, the Contractor shall respond promptly (within 48 hours), irrespective of day of the week. If the Contractor is not available, the Port will affect repairs. The Contractor shall then reimburse the Port for parts and labor necessary to correct deficiencies as defined within the warranty clause and time.

2.02 AS-BUILT DRAWINGS

- A. Project As-Built Drawings: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

- B. Project As-Built Drawings shall be compiled by the Contractor and submitted to the Engineer for translation to the Record Drawings on a monthly basis.
 - 1. The Project As-Built Drawings will be submitted on paper full-sized (ANSI D) copy.
 - 2. Drawings shall be kept current and shall be done at the time the material and equipment is installed. Annotations to the record documents shall be made with an erasable colored pencil conforming to the following color code:
 - a. Additions – Red
 - b. Deletions – Green
 - c. Comments – Blue
 - d. Dimensions – Graphite
 - 3. Project As-Built Drawings must be complete and accepted by the Engineer before Final Completion is issued.
 - 4. As-Built Drawings shall be in accordance with horizontal and vertical control as shown on the drawings.

PART 3 – EXECUTION

3.01 MAINTENANCE OF AS-BUILT DRAWINGS

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

END OF SECTION

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent and location of the demolition work is indicated on the Drawings and in the specifications. The work includes, but is not limited to:
 - 1. The requirements for the removal, wholly or in part, and satisfactory disposal creosote light poles, concrete collars, CMP sleeves, bollards, pavements, crushed base course, fencing, miscellaneous site debris, and other obstructions which are designated to be demolished on the Drawings or within these Specifications.
 - 2. Payment of all costs required for disposal of items at legal disposal sites, including all permit fees and related costs.
 - 3. Backfilling and compaction of holes, voids, trenches or pits that result from such removal or otherwise noted on the plans.
- B. All demolition items not identified for salvage by the Engineer shall become the property of the Contractor. Disposal of all demolition items shall be in accordance with the specifications, local, state and federal requirements.

1.02 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures
- B. Section 01 74 19 – Construction Waste Management and Disposal
- C. Section 31 00 00 – Earthwork

1.03 SUBMITTALS

- A. Demolition Management Plan (DMP)
 - 1. The DMP shall provide the procedures proposed for the complete accomplishment of the demolition work and management of the demolition wastes and documentation. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged or disposed, protection of property to remain undisturbed, and coordination with other work in progress. The procedures shall include a detailed description of the methods, staff, and equipment to be used for each operation, the sequence of operations, and quality control measures to ensure compliance with the contract and regulatory requirements.
 - 2. Submittal requirements in Section 01 74 19 Construction Waste Management and Disposal may be included as part of the DMP plan or submitted separately.

PART 2 – PRODUCTS NOT USED

PART 3 – EXECUTION

3.01 PREPARATION

- A. Contractor shall pothole or complete utility locates prior to the start of demolition. Coordinate and resolve with the Port to turn off or de-energize affected services before starting demolition.
- B. Verify all items for demolition, disposal, and salvage as early as practicable prior to the start of work. Notify the Engineer immediately if observed conditions differ from anticipated conditions.
- C. Pothole investigations:

1. Potholes shall be 12-inch diameter air vacuum excavations.
2. Survey utilities located by potholing and provide survey data to the Engineer within 5 days of completing pothole investigations.
3. Backfill pothole excavations with crushed surfacing per Section 31 00 00, Earthwork. All potholes located within existing paved areas shall be backfilled with crushed surfacing and paved at the surface to match existing pavement depth.

3.02 DISPOSAL AND DISPOSTION OF MATERIALS

A. Disposition of Materials:

1. All materials and equipment removed, and not used for relay or reinstallation within the project, shall become the property of the Contractor and shall be removed from Port property.
2. The Contractor assumes full responsibility for proper disposal of all demolition materials under this Contract in a manner that meets the requirements of federal, state and local regulations for protecting the health and safety of employees, the public, and for protecting the environment.

B. Cleanup:

1. Haul route and paved site areas will be swept to remove any construction debris or soil tracked out by construction equipment and vehicles.
2. There shall be no debris, rubble, or litter left at the site from any of the demolition operations and the site shall be clean.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and General Requirements, apply to this work as if specified in this section. Work related to this section is described in:
 - 1. Section 03 20 00 – Concrete Reinforcing
 - 2. Section 03 30 00 – Cast-in-Place Concrete

1.02 DESCRIPTION OF WORK

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

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-20: Specifications for Structural Concrete.
- B. American Concrete Institute ACI 318-19: Building Code Requirements for Structural Concrete and Commentary.
- C. American Concrete Institute ACI 347-14: Guide to Formwork for Concrete.

1.04 QUALITY ASSURANCE

- A. Design all forms, falsework, accessories, and shoring to meet the requirements of the concrete type, sequence of placing, schedule, and other conditions of the project and in strict accordance with project permits.
- B. Before casting concrete, inspect all forms, falsework, and accessories.

1.05 SUBMITTALS

- A. Documentation demonstrating the falsework designer's qualifications and experience as described above.
- B. Documentation demonstrating each inspection worker's qualifications in and experience at inspecting or supervising concrete work, forms, falsework, accessories, and shoring as described above.
- C. Submit formwork drawings and calculations for review prior to executing the work.
 - 1. Drawings shall show details of member sizes, connections, product data, and other related elements.
 - 2. Drawings shall indicate the construction sequence, the methods for release, and the sequence of removal.
 - 3. Calculations shall clearly state the material weights, lateral pressures, rates of pour, direction of pour, and working loads for form ties, friction collars, wedges, she-bolts, and accessories used in the design.
 - 4. Drawings shall indicate how the formwork will be made watertight.
 - 5. Drawings and calculations for forms, falsework, accessories, and shoring designs shall be stamped by a Professional Engineer registered in the state of Washington.

- D. In the event patented or prefabricated systems are used for forms, submit complete drawings, details, and calculations for review. Paper, fiberglass, micarta, asphalt-impregnated fiber, and other miscellaneous form materials shall be approved by the Engineer prior to delivery, fabrication, and construction.

PART 2 – PRODUCTS

2.01 GENERAL

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

2.02 WOOD FORMS

- A. For all exposed concrete forms, Grade B-B or B-C Plyform Plywood shall be used.
- B. For unexposed concrete forms, plywood shall be exterior type without splits or knotholes and sanded smooth. The face grain of the plywood shall run perpendicular to the pile caps. All joints in surfaces of forms used on exposed surfaces shall be vertical or horizontal. Plywood shall not be less than ½-inch thick except where curved areas require the use of ¼-inch thick material. When ¼-inch-thick material is used, it shall be backed with heavier material.
- C. Use commercial Grade No. 2 or better for all species of framing lumber. Framing lumber shall be of standard dimensions and of such quality as to meet the requirements of the applied stresses or loads.
- D. Use metal, fiberglass, or other special form linings where required.

2.03 STEEL FORMS

- A. Steel forms shall be designed and fabricated to meet the requirements of the member/members to be cast. Use only new materials for steel form construction.
- B. Forms for round elements shall consist of self-supporting metal shell or tube which will give a smooth, even surface. Forms which produce a spiral appearance or those made of wood shall not be used except as approved by the Engineer.

2.04 FORM LINERS AND COATINGS

- A. Forms shall be lined, coated, or treated with a suitable release agent or bond-breaker to ensure their timely removal with no damage to the concrete.
- B. Release agents or bond-breakers shall be non-coloring and shall not leave a film on the concrete surface that may inhibit subsequent finishing activities required to attain the prescribed finish.

2.05 FORM TIES AND ACCESSORIES

- A. Wire ties and wood spacers shall not be used.
- B. Form ties shall be pre-manufactured items with published allowable stress values from the manufacturer. Form ties shall have a premeasured, break-back, weakened area so that ties can be removed 3/4-inch below the concrete surface.

- C. Tie rods for use with she-bolts shall be set back (1-1/2 inches) from the concrete surface. Tie-rod steel shall have published allowable stress values.
- D. Corner brackets, friction collars, column clamps, and other specialized accessories shall be utilized in accordance with the manufacturer's recommendations.

PART 3 – EXECUTION

3.01 GENERAL

- A. Do not construct forms until the Engineer has reviewed the drawings and calculations. Review by the Engineer does not relieve the Contractor of the responsibility for sufficiency of the forms.
- B. Set forms and falsework to allow for structural camber plus an allowance for shrinkage and settlement. The finished concrete shall conform to the location lines and grades indicated on the drawings.
- C. Forms shall be constructed as to be rigid, unyielding, true to line, level, and sufficiently tight to prevent escape of mortar.
- D. Openings, embedded objects, and reinforcement shall be placed at the locations shown on the drawings. They shall be formed and fastened securely in position to maintain minimum cover for all reinforcement, and to leave smooth surfaces, true openings, accurate geometry, etc., after the forms are removed.
- E. Clean forms of all waste, debris, or other objects and substances deleterious to the concrete, concrete surface, or concrete element, prior to casting.

3.02 FORM INSTALLATION

- A. Prior to installation of form work, forms for exposed concrete shall be treated with a release agent, bond-breaker, or parting compound. Apply the compound at a rate recommended by the manufacturer, to provide a smooth surface free of dusting action caused by the chemical reaction of the compound. Release agents, bond-breakers, or parting compounds shall not be applied to the forms while in place over the water.
- B. Immediately remove any release agent or bond-breaker that comes in contact with reinforcement or embedded objects.
- C. Forms may be set with a slight bevel or draft for easy removal, where approved by the Engineer. Use 3/4-inch chamfer strips on all exposed inside and outside corners including the bottoms of pile caps and all vertical faces.
- D. All forms shall be mortar-tight.
- E. Remove all debris, waste, foreign objects from forms before assembly. Standing water in the forms shall not be permitted. Forms shall be cleaned with fresh water before assembly and prior to placing concrete.

3.03 FORM REMOVAL

- A. Forms shall remain in place for a minimum of 7 days, provided the ambient temperature is 40 degrees Fahrenheit or higher during that time period.
- B. When temperatures lower than 40 degrees prevail, forms shall remain in place longer and at the Engineer's direction.
 - 1. All periods where the ambient temperature is below 40 degrees Fahrenheit shall be disregarded in determining the length of time forms are to remain in place.

2. The Contractor may submit for prior approval a cold-weather concreting plan in accordance with Section 03 30 00 – Cast-in-Place Concrete.
3. Development and incorporation of an approved cold-weather concreting plan shall be at the Contractor's expense.
- C. The removal of forms as stipulated herein shall in no case relieve the Contractor of responsibility for the performance, acceptability, or finish of the work.
- D. All form removal shall be accomplished in a manner that prevents damage to the concrete, concrete finishes, and adjacent work elements.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and General Requirements, apply to this work as if specified in this section. Work related to this section is described in:
 - 1. Section 03 10 00 – Concrete Forming and Accessories
 - 2. Section 03 30 00 – Cast-in-Place Concrete

1.02 DESCRIPTION OF WORK

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

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-20: Specifications for Structural Concrete for Buildings.
- B. American Concrete Institute MNL-66(20): ACI Detailing Manual (including ACI 315-18).
- C. American Concrete Institute ACI 318-19: Building Code Requirements for Structural Concrete and Commentary.
- D. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- E. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice (MSP), 2024, 31st Edition.
- F. Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction M41-10, 2025 Edition.
- G. Wire Reinforcement Institute (WRI): Structural Welded Wire Reinforcement.

1.04 QUALITY ASSURANCE

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

1.05 SUBMITTALS

- A. Documentation demonstrating the qualifications and experience of the supervisor's of the work, as described above.
- B. Detailed shop drawings that are coordinated and checked for all concrete reinforcement prior to casting concrete.
 - 1. Do not deliver concrete reinforcement to the site prior to acceptance of the shop drawings.
 - 2. The shop drawings shall include, but not be limited to, material specifications, bar lengths, bar bending schedules, order lists, splice lengths, and proposed splice locations.

- C. Mill certificates for each heat of reinforcing steel to be furnished, indicating specification compliance, yield strength, ultimate strength, and chemistry.
- D. Data sheets for chairs used for placing reinforcement.

PART 2 – PRODUCTS

2.01 HANDLING

- A. Protect from damage all reinforcement before, during, and after installation in the work. Protect from damage the installed work and materials of other trades.
- B. All reinforcement shall be new and free from rust, grease, oil, wax, paint, soil, dirt, kinks, bends, or other defects. Store in a manner to prevent corrosion, or fouling with bond-breaking or deleterious coatings.
- C. Maintain reinforcement identification after the bundles are broken. Indicate to the Engineer what bar types and grades are stored in each location.
- D. In the event of damage, immediately make all repairs and replacements necessary as directed by the Engineer and at no additional cost to the Port.

2.02 REINFORCEMENT

- A. All reinforcing bars, except as noted below, shall be deformed billet-steel bars conforming to ASTM A 615, Grade 60, deformed. Bars conforming to ASTM A 706 may be substituted for ASTM A 615 reinforcing bars at the Contractor's expense.
- B. All welded wire fabric shall conform to ASTM A 185, Grade 60.

PART 3 – EXECUTION

3.01 GENERAL

- A. Prior to installation of this section, carefully inspect the installed work of other trades and verify that such work is complete to the point where reinforcement installation may commence.
- B. Details of bending, placing, and splicing of all reinforcing steel shall conform to ACI 318 and ACI MNL-66, except as modified herein.

3.02 REINFORCING STEEL BARS

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

3. Maintain the minimum distance from the forms by means of stays, blocks, ties, hangers, or other approved supports.
 - a. Holding reinforcement from contact with the forms shall be by approved metal or plastic chairs. Metal chairs which are in contact with the exterior surface of the concrete shall be plastic-coated for the full depth of the indicated concrete cover.
 - b. Separate layers of bars by plastic chairs, spacing bars, or by other devices approved equal.
 - c. The minimum spacing between bars, except at lap splices, shall not be less than one bar diameter or one inch minimum, but not less than 1-1/3 times the maximum size of the coarse aggregate.
4. In the event that conduits, anchor bolts, piping, inserts, sleeves, embedded objects, headed studs, or other items interfere with placing reinforcement as indicated on the drawings, or as otherwise required, immediately contact the Engineer and obtain approval of a new procedure before placing concrete.

3.03 SPLICING

- A. Furnish all reinforcement in the full lengths indicated on the drawings, except that welded wire fabric may be spliced.
- B. Splicing of bars, except welded wire fabric, will not be permitted without approval of the Engineer. When approved, minimum length of lap splice shall be per the schedule of minimum lap splice lengths in the drawings unless noted otherwise on the drawings.

3.04 CLEANING REINFORCEMENT

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

3.05 INSPECTION AND REPAIRS TO REINFORCING BARS

- A. Reinforcement in any member shall be placed and inspected by qualified personnel before placement of concrete.
- B. Access for inspection by the Engineer prior to concrete placement shall be provided for all pours. Concrete placed in violation of this provision will be rejected. The Contractor shall remove the rejected concrete, place new reinforcing steel, and cast new concrete at its own expense.
- C. The Contractor shall notify the Engineer at least 48 hours in advance of any concrete pour, to allow for inspection.

END OF SECTION

This page intentionally left blank

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and General Requirements, apply to this work as if specified in this section. Work related to this section is described in:
 - 1. Section 03 10 00 – Concrete Forming and Accessories
 - 2. Section 03 20 00 – Concrete Reinforcing
 - 3. Section 03 60 00 – Grouting

1.02 DESCRIPTION OF WORK

- A. The extent and location of the “Cast-in-Place Concrete” work is indicated on the drawings. The work includes the requirements for providing all cast-in-place concrete and associated work in conformance with these specifications and as indicated on the drawings.

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-20: Specifications for Structural Concrete.
- B. American Concrete Institute ACI 305R-20: Hot Weather Concreting.
- C. American Concrete Institute ACI 306R-16: Cold Weather Concreting.
- D. American Concrete Institute ACI 308R-01(08): Guide to Curing Concrete.
- E. Modification of ACI 305R, 306R, and 308R: accomplish work in accordance with these guides except as modified herein. Consider the advisory or recommended provisions to be mandatory. Interpret reference to the "Building Official," the "Structural Engineer," and the "Architect/Engineer" to mean the Engineer.
- F. American Concrete Institute ACI 318-19: Building Code Requirements for Structural Concrete and Commentary.
- G. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- H. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10, 2025 edition, by Washington State Department of Transportation (WSDOT Standard Specifications).
- I. International Building Code (IBC) 2021, as amended and adopted by the City of Tacoma into the Tacoma Municipal Code (TMC).

1.04 QUALITY ASSURANCE

- A. All concrete work shall conform to the requirements of ACI 301, unless otherwise noted in the drawings or the specifications.
- B. Inspection and Testing: As determined by the Engineer, the Port will provide inspection and testing as required. The Contractor shall provide all necessary access and assistance in carrying out such inspections and tests at its own expense. The Contractor may obtain results of tests performed by the Port from the Engineer.
- C. Qualifications of Supplier: Ready-mixed concrete plants shall be approved and certified by the National Ready Mix Concrete Association (NRMCA) or qualified by WSDOT. Ready-mixed concrete shall be batched in accordance with the applicable portions of ASTM C 94.

D. Qualifications of Personnel:

1. Provide at least one qualified person who shall be present at all times during execution of this portion of the work, who shall be thoroughly trained and experienced in placing the types of concrete specified, and who shall direct all work performed under this section. Qualified personnel shall have at least five (5) years experience performing the work described in this section.
2. Trained and experienced journeyman concrete finishers having at least five (5) years experience shall be responsible for finishing all exposed surfaces.

- E. Building Code: All concrete shall meet the requirements of the IBC. Where provisions of pertinent codes and standards conflict with this specification, the more stringent provisions shall govern, as determined by the Engineer.

1.05 SUBMITTALS

- A. Documentation demonstrating the qualifications and experience of supervisors and directors of work, as described above.
- B. Proposed concrete design mixes, indicating all material contents per cubic yard of concrete, including certificates of specification compliance. Written evidence that the ready-mix concrete plant is approved and certified by the NRMCA and other organizations.
- C. Test certificates for compressive strength, yield, air content, and slump of the proposed concrete mix. Report strength test results in accordance with ACI 318, Section 26.4.4.
- D. Manufacturer's name, address, catalog number, and specifications for all proposed admixtures, concrete bonding agents, curing compounds, etc.
- E. Identify all aggregate supply pit names and locations. Submit certificates of specification compliance for materials to be used including aggregate alkali-silica reactivity (ASR).
- F. Proposed curing methods including manufacturer's data for curing membranes, evaporation retardants, accelerated cure methods, etc. Submit detailed plans for concreting in ambient temperatures below 40 degrees F. Describe the specific methods and procedures used for substrate preparation, concrete placement, curing, and protection. Provide specific references to ACI 306R and ACI 308R.
- G. Concrete delivery tickets for each truck delivered to the site. Submit delivery tickets to the Engineer before unloading at the site and in accordance with ASTM C 94, Section 14.

PART 2 – PRODUCTS

2.01 CONCRETE

A. General:

1. All concrete, unless otherwise specifically permitted by the Engineer, shall be batched and mixed at the approved Ready-Mix plant. Batching, mixing, and delivery of ready-mix concrete shall conform to ASTM C 94.
2. All cast-in-place concrete shall be proportioned on the basis of field experience or laboratory trial mixtures according to ACI 318, Section 26.4.3.

B. Cementitious Materials:

1. All cement shall be Portland cement conforming to ASTM C 150.

2. Portland cement for use in mixes without fly ash shall be Type I-II or Type II conforming to ASTM C 150 except that the cement shall not contain more than
 - a. 0.75 percent alkalis by weight calculated as Na₂O plus 0.658 K₂O and the content of Tricalcium aluminate (C₃A) shall not exceed 8 percent by weight..
 3. Portland cement for use in mixes with fly ash shall be Type I or Type I-II conforming to ASTM C 150.
 4. Fly ash, if used, shall meet the requirements of ASTM C 618, Type F, with the added provision that the loss on ignition shall not exceed 1 percent, and that the fly ash is stored in a separate silo from the cement. Split bins are not acceptable.
- C. Aggregates:
1. Aggregates shall conform to ASTM C 33. All coarse and fine aggregate shall consist of hard, tough, durable particles free from foreign and deleterious materials, and shall be stored in such a manner as to prevent segregation, excessive breakage, and the introduction of foreign material.
 2. Evaluate and test fine and coarse aggregates to be used in all concrete for alkali-aggregate reactivity in accordance with ASTM C 1260 or ASTM C 1293. Test both coarse aggregate size groups if from different sources. Test results of the combination shall have a measured expansion equal to or less than 0.10 percent at 16 days after casting when aggregates are tested in accordance with ASTM C 1260 or 0.04 percent for aggregates tested in accordance with ASTM C 1293.
 3. Grading shall conform to WSDOT Standard Specifications paragraph 9-03.1(5) Combined Aggregate Gradation for Portland Cement Concrete. Maximum nominal aggregate size shall be ¾ inch, unless approved by the Engineer.
 4. The maximum size of coarse aggregate shall not be larger than three fourths of the minimum clear spacing between reinforcing bars, between reinforcing bars and side forms, and between reinforcing bars and top or bottom surface of the concrete.
- D. Water used for mixing concrete shall conform to the quality requirements of paragraph 9-25.1 of the WSDOT Standard Specifications.
- E. Admixtures: All admixtures shall be supplied by one manufacturer approved by the Engineer.
1. Air-entraining admixtures shall conform to ASTM C 260. Dosage rates shall be in accordance with the manufacturer's recommendations to meet the air content specified herein.
 2. Water-reducing admixtures shall conform to the requirements of ASTM C 494. Dosage rates shall be in accordance with the manufacturer's recommendations.
 3. Water reducing admixture shall be Type A, D, F, or G. The amount shall control the desired workability and water/cement ratio of the mix and shall be within the manufacturer's recommended range.

2.02 OTHER MATERIALS

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

2.03 MIX PROPORTIONS AND STRENGTH

- A. The mix proportions shall produce a mixture that will readily work into all corners, sides, and angles of the forms, around reinforcement and embedded items, with no segregation, and prevent free water from collecting on the surface.
- B. The mix proportions shall be selected in accordance with ACI 301.
 - 1. Deviation from any reviewed design mix without approval of the Engineer will not be permitted.
- C. Unless otherwise indicated, concrete minimum 28-day compressive strengths are shown on the drawings.
- D. Concrete shall conform to the most stringent requirements for exposure classes specified in the table in the drawings and ACI 318 Table 19.3.2.1.

PART 3 – EXECUTION

3.01 PREPARATORY WORK

- A. General:
 - 1. Prior to casting, inspect the installed work of all other trades and verify it is complete to the point where this installation may commence.
 - 2. Verify that all items to be embedded in concrete are in place, properly oriented, located, and secured.
 - 3. Verify that concrete may be placed to the lines and elevations indicated on the drawings with all required clearances for reinforcement.
 - 4. All areas in which concrete is to be placed shall be thoroughly cleaned to remove wood debris, sawdust, tie wire cuttings, and all other deleterious material.
 - 5. Tie wire ends shall be bent back so they do not encroach into the specified clear cover of the concrete.
 - 6. Concrete forms which have not been treated with oils, waxes, or other bond breakers shall be thoroughly wet prior to placing concrete.
 - 7. Clean and roughen existing concrete or concrete from previous pours to provide a bondable surface.
 - 8. All transporting and handling equipment shall be cleaned of all hardened concrete and other debris.
- B. Notification: Notify the Engineer at least 48 hours in advance of any concrete pour. Notify the Engineer when inspection by the Contractor is complete. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation until all discrepancies have been fully resolved.

3.02 TRANSPORTING AND PLACING CONCRETE

- A. Placement:
 - 1. Concrete that does not reach its final position in the forms within 1-1/2 hours after the addition of cement shall not be used. During hot weather, this time limit shall be reduced in accordance with ACI 305R.

2. Place concrete as soon as possible after mixing. Concrete which has developed initial set or partially hardened shall not be re-tempered or remixed.
 3. The method and manner of placing concrete shall not allow segregation of the aggregates or displacement of reinforcement and embedded objects.
 4. When using a concrete pumps as the placing system, the pump priming slurry shall be discarded before placement into the forms. Initial acceptance testing may be delayed until the pump priming slurry has been eliminated. No pump shall be used that allows free water to flow past the piston. Aluminum conduits or tremies shall not be used for pumping or placing concrete.
 5. Place concrete in continuous horizontal layers, or lifts, not exceeding 18 inches and compact so that there will be no line of separation between layers. Carefully fill each part of the forms by depositing concrete directly in its final destination.
 6. When concrete must be dropped more than five feet into the forms, it shall be deposited through a sheet metal or other approved conduit. Approved conduit shall also be used to place concrete in sloping forms or in other locations, as directed by the Engineer, to prevent concrete from sliding around reinforcing or other embedded objects.
 7. The methods of depositing and compacting concrete shall produce compact, dense, impervious concrete with the required surface finishes and no segregation. Remove defective concrete as directed by the Engineer at no additional cost to the Port.
- B. Hot/Cold Weather Placement: Do not place concrete on frozen ground or against frosted reinforcing steel or forms. Do not mix or place concrete while the atmospheric temperature is below 40° F. If air temperature exceeds 90°F, provide water spray or other approved methods to cool contact surfaces to less than 90°F. Hot and cold-weather concrete placement shall follow the respective recommendations in ACI 305R and ACI 306R.
- C. Underwater Placement: Concrete shall not be placed in the water.
- D. Consolidation of Concrete:
1. Provide suitable internal vibrators for use in compacting all concrete. The vibrators shall be of the type designed to be placed directly in the concrete, and their frequency of vibration shall not be less than 7,000 impulses per minute when in actual operation.
 2. Vibration shall be such that the concrete becomes uniformly plastic. Insert vibrators to a depth sufficient to vibrate the bottom of each layer effectively, but do not penetrate partially hardened concrete. Do not apply the vibrators directly to steel which extends into partially hardened concrete. The intervals between points of insertion shall be not less than 2 feet, nor more than 3 feet.
 3. Do not continue vibration in any one spot such that pools of cement or cement and sand are formed. In vibrating and finishing top surfaces which are exposed to weather or wear, avoid drawing water or laitance to the surface. In relatively high lifts, the top layer shall be comparatively shallow and the concrete mix shall be as stiff as can be effectively vibrated into place and properly finished.
 4. Do not use vibrators to transport or move concrete inside the form.
 5. A sufficient number of vibrators shall be supplied to effectively vibrate all of the concrete placed. Hand-tamping or rodding shall be required wherever necessary to secure a smooth and dense concrete on the outside surfaces.

- E. Concrete trucks shall not be washed out onsite unless contained within a concrete wash-out area that complies with the requirements of the latest version of the Department of Ecology Stormwater Management Manual for Western Washington.
- F. Any delivered load of concrete that is rejected shall be completely disposed of offsite.

3.03 CONSTRUCTION JOINTS

- A. Joints and stoppages, except as specifically shown on the drawings, shall conform to ACI 318, Chapter 6. Wire mesh or similar materials shall not be used.

3.04 CURING CONCRETE

- A. Follow ACI 308R.
- B. Concrete shall be maintained above 40° F and in a moist condition for at least the first seven days (168 hours) after placement.
- C. Do not use curing compounds on surfaces to receive additional concrete.
- D. Where permitted, apply an ASTM C 309, Type 1, Class A or B curing compound to the fresh concrete immediately after finishing the concrete and as soon as the visible bleed water has evaporated or as directed by the Engineer. Apply according to the manufacturer's recommendations. The rate of coverage shall be at least one gallon per 100 square feet and be sufficient to effectively obscure the original color of the concrete.
- E. Apply the curing compound in two applications to ensure full coverage of the concrete, with the second coat applied in a direction perpendicular to that of the first application.
- F. Do not apply curing compound to construction joint surfaces, reinforcing steel, or embedments in the concrete. Curing compound on construction joints, reinforcing steel, or embedments shall be completely removed before the following concrete pour.
- G. Supply backup spray equipment and sufficient workers to properly apply the curing compound.
- H. Within 12 hours following the application of the curing compound, the top surfaces shall be covered with cotton mats, an approved vapor proof curing paper, or white polyethylene sheeting. If the covering used is cotton mats, it shall be kept continuously wet day and night for the period of time specified above, and if curing paper or plastic film is used, it shall be left in place for the same length of time.
- I. Curing paper and white polyethylene sheeting shall be kept tightly in place by taping and weighting joints, or other methods for the prescribed length of time.
- J. Membrane curing compounds which leave a waxy film on the concrete shall not be used.
- K. After the concrete has cured for the required time, the top surfaces shall be swept clean.
- L. All concrete shall be protected from damage and accelerated drying. No fire or excessive heat shall be permitted near the concrete at any time.
- M. In lieu of curing compounds the Contractor may use wet burlap or other wet cure methods as approved by the Engineer.
- N. Only wet cure methods shall be used on concrete surfaces against which additional concrete will be cast.
- O. Wet cure methods shall be continuous for the prescribed duration of the curing period.

3.05 FINISHING CONCRETE

- A. Finish: All permanently exposed surfaces, unless specifically noted otherwise, shall be free from local bulging and all ridges or lips shall be removed to leave a smooth, flat surface. Patching mortar, if used, shall be of the same color as the surrounding concrete. White Portland cement shall be added to the patching mortar for color matching. A test section, approved by the Engineer, shall be completed prior to production work.
- B. Protect finished surfaces from damage, stains and abrasion. Surfaces or edges damaged during construction shall be repaired at the Contractor's expense.
- C. Defects:
 - 1. Surface defects include honeycomb, rock pockets, spalls, chips, air bubbles, voids, pinholes, bug holes, and indentations greater than or equal to 1/4 inch in depth, or greater than or equal to 1/2 inch in width, length, or diameter. These defects shall be chipped out to reveal sound concrete and then shall be patched according to Section 03 60 00 – Grouting.
 - 2. Surface cracks greater than or equal to 0.007 inches in width. These cracks shall be patched according to Section 03 60 00 – Grouting.
 - 3. Surface irregularities include embedded objects, embedded debris, lift lines, sand lines, bleed lines, segregation, form pop-outs, fins, form leakage, texture irregularities, stains and other discolorations that cannot be removed by water blast cleaning. These defects shall be repaired as specified in this Section unless otherwise directed by the Engineer.
- D. Vertical Surfaces:
 - 1. Immediately after removal of forms or form linings, inspect the concrete surfaces for defects and irregularities.
 - 2. All defects, defective concrete, and tie rod holes shall be repaired immediately after the forms are removed unless otherwise directed by the Engineer. Exposed tie wires shall be removed (chipped out) and the resulting holes patched. The repair mortar shall be BASF EMACO N350 CI or an epoxy mortar approved by the Engineer applied according to the manufacturer's instructions by experienced personnel qualified by the manufacturer of the repair material.
 - 3. All vertical surfaces, against which concrete will be cast, are construction joints, and shall be thoroughly cleaned and roughened to an amplitude of 1/4 inch. Roughening shall be accomplished using methods in accordance with the construction permits and approved by the Engineer, to expose sound concrete without undercutting around the edges of the larger aggregate particles or cracking the concrete to remain.
- E. Horizontal Surfaces:
 - 1. All horizontal surfaces that will carry additional concrete are construction joints and shall be thoroughly cleaned and roughened to an amplitude of 1/4 inch. Roughening shall be accomplished using methods in accordance with the construction permits and approved by the Engineer, to expose sound concrete without undercutting around the edges of the larger aggregate particles or cracking the concrete to remain.
 - 2. Exposed horizontal surfaces that will not receive additional concrete shall have a smooth wood float finish except for the tops of bullrails, pile caps, sheet pile wall cap beams, and crane beams, which shall have a light broom finish. The broom stria shall be 1/16 inch to 1/8 inch.

3.06 TESTING

- A. Testing of concrete will be performed by an accredited testing agency retained by the Port. Methods of sampling, testing, evaluation, and acceptance will conform to ACI
 - 1. 301. The Contractor shall assist the Port with access to collect samples.
- B. Testing as described above will be at the Port's discretion and in no way relieves the Contractor of any obligations.
- C. The Contractor shall perform its own tests and institute a quality assurance program to assure the specified quality of materials and work are provided.
- D. Tests performed by the Port will be done at no cost to the Contractor, except as noted below.
 - 1. Additional testing and inspection required because of changes in materials, proportions, and procedures requested by the Contractor.
 - 2. Additional testing of materials or concrete when either fails to meet the specification requirements when tested in accordance with the ACI standards outlined and the appropriate ASTM standards contained therein.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and General Requirements, apply to this work as if specified in this section. Work related to this section is described in the following sections:
 - 1. Section 03 30 00 – Cast-in-Place Concrete

1.02 DESCRIPTION OF WORK

- A. The work includes the patching of demolished or damaged surfaces.

1.03 REFERENCE STANDARDS

- A. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated)

1.04 QUALITY ASSURANCE

- A. The Port will provide testing and inspection services as required. The Contractor shall provide all necessary assistance in testing of materials and provide access for testing and inspection at its own expense.

1.05 SUBMITTALS

- A. For each application, manufacturer's name, address, catalog cuts, and specifications for grout.
- B. Manufacturer's test certificates for grout compressive strength. Indicate the working time, fluid consistency, flow rate, volume change characteristics, and manufacturer's recommended installation temperatures.

PART 2 – PRODUCTS

2.01 REPAIR MORTAR

- A. Typical locations: damaged concrete at locations determined by the Engineer.
- B. Shrinkage-compensated mortar EMACO R350 CI manufactured by BASF Construction Chemicals LLC, or approved equal.

2.02 CRACK REPAIR

- A. Products shall be appropriate for the specific defect and are subject to the approval of the Engineer. Suppliers, or approved equal:
 - 1. MasterInject 1000, by BASF Construction Chemicals LLC, Shakopee, MN.
 - 2. Sikadur 35, Hi-Mod LV, by Sika Corporation, Lyndhurst, NJ.
 - 3. SCB Concrecive 1350, by BASF Construction Chemicals LLC, Shakopee, MN.
 - 4. SCB Concrecive 1360, by BASF Construction Chemicals LLC, Shakopee, MN.

PART 3 – EXECUTION

3.01 GENERAL

- A. Products shall be stored, mixed, placed, and cured in accordance with the manufacturer's published specifications. Surface shall be prepared in accordance with manufacturer's published specifications unless otherwise indicate herein. In case of a discrepancy the more strict requirements, as determined by the Engineer, shall apply.
- B. Concrete surfaces shall be thoroughly cleaned and wetted before placing grout.

END OF SECTION

PART 1 - GENERA

1.01 SECTION INCLUDES

- A. The Work under Divisions 26 and 27 includes furnishing materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of electrical work for this project, as shown on the Drawings and defined in this Division of the Specifications.

1.02 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. ASHRAE Standard 90.1 - Energy Standard for Buildings Except Low-Rise Residential Buildings.
- D. IEEE C2 (Institute of Electrical and Electronics Engineers) – National Electrical Safety Code.
- E. NECA 1000 (National Electrical Contractors Association) – National Electrical Installation Standards Specification System.
- F. NFPA 70 (National Fire Protection Association) – National Electrical Code.
- G. NFPA 70A/70E (National Fire Protection Association) – Electrical Safety in the Workplace.
- H. Manufacturer's installation and operating instructions.

1.03 QUALITY ASSURANCE

- A. Substitutions: Conform to the requirements below.
 - 1. Whenever any material or equipment is specified by patent or proprietary name or by the name of the manufacturer, such specification establishes the standard of quality in that particular field of manufacture.
 - 2. When approved substitute equipment or material necessitates revisions to the plans or involves other trades, include drawings and details showing such changes, and coordinate and assume any liability from the affected trades.
 - 3. Acceptance: The acceptance of a manufacturer's name or product by the Engineer does not relieve the Contractor of the responsibility for providing materials and equipment which comply in details with the requirements of the Contract Documents.
 - 4. The Engineer will be the sole and final judge as to quality and acceptability of substitutions.
 - 5. The Contractor shall be liable for costs incurred by the Engineer for engineering services resulting from substitutions.
- B. Tests: Demonstrate that equipment operates as indicated as specified, and in accordance with the manufacturer's recommendations. Perform tests and document results. Provide instruments, personnel, and utilities required to conduct the tests.
- C. Commissioning: Electrical subcontractor shall provide support personnel and equipment to meet the requirements of the specifications and drawings. Operation and demonstration of electrical equipment shall be in accordance with manufacturer's recommendations and shall be the responsibility of the electrical subcontractor.

- D. Commissioning is the process to verify that systems, equipment, electrical, controls, and special systems function together properly to meet performance requirements and design intent as described in the Contract Documents. Minimum functional performance tests are specified the technical Sections. The electrical contractor shall coordinate and develop a Commissioning Plan which will have final functional performance tests. The Contractor shall be responsible for the commissioning process as outlined the Commissioning Plan. The Contractor shall furnish labor and materials sufficient to meet requirements of commissioning.
- E. Commissioning: Conform to the requirements of this specification and drawings.
- F. Qualifications: Use sufficient number of qualified, competent, journeymen and supervisors in the execution of the Work to ensure complete, functioning installation compliant with the Contract Documents. In the acceptance of installed work, no allowance will be made for lack of skill on the part of the workmen.

1.04 WORK OF OTHER TRADES

- A. The Drawings do not show complete details of the light pole construction. Refer to the structural and civil Drawings for those details which may affect the execution of this work. Specific locations of electrical, civil and structural features or equipment items shall be obtained from reference drawings, field measurements or the trade providing the material or equipment. No extra payments will be allowed for failure to obtain this information.
- B. Coordination: Conform to the requirements of the specifications and drawings. Failure to coordinate work will be considered sufficient cause for work to be altered at Contractor's expense, as directed by Engineer.
 - 1. Plan and execute Work including, but not limited to, ducts, conduit, raceways, pathways, and cable trays, in cooperation with other trades and local serving utilities.
 - 2. Make every reasonable effort to provide timely notice of work affecting other trades to prevent conflicts or interference as to space requirements, dimensions, openings, block-outs, sleeves, firestopping, painting, finishing, or other matters which will cause delays or necessitate work-around methods.
 - 3. Provide electrical materials and installation work required to connect, test and operate systems, devices, or equipment shown or described in the Drawings or Specifications of other Divisions.

1.05 EXISTING CONDITIONS

- A. Demolition work required is noted on the Drawings. Specific scope of demolition work and operating conditions to be encountered shall be verified from on-site review and coordination with the Engineer. Maintain service to existing equipment and devices to be retained in area adjacent to the existing areas scheduled for renovation. Provide temporary services to meet these conditions.
- B. Special Protection: Exercise maximum precaution to provide positive protection for the existing site infrastructure and equipment from damage of any kind, and in particular prevent any damage underground utilities or above grade infrastructure and equipment. Mark and protect equipment and systems from the activities of other trades.
- C. Utilities and Services:
 - 1. Do not disturb existing utilities without Engineer's written consent. Notify the Engineer not less than 10 days prior to the scheduled work date.

2. Prior to demolition, field-verify and document existing area, conduits, ducts, manholes, and handholes shown for demolition.
3. Where the area, ducts, conduits, manholes, and handholes contain utilities not shown for permanent demolition, submit a re-routing plan to the Engineer showing the ducts, conduits, manholes, handholes, conductors, boxes, wiring, and connections required to re-route the utilities outside of the area affected by the demolition. Upon receiving written approval of the re-routing plan, re-route existing utilities and systems in accordance with the approved work plan.
4. Prior to trenching and excavation, use a utility locator to locate existing underground utilities. Excavate to avoid underground utilities.
5. Prior to core drilling or saw-cutting, use ground penetrating radar, pacometer, X-ray or other suitable means to locate existing rebar, embedded conduit, post tensioning cables and other imbedded obstructions. Locate core drill to avoid obstructions.
6. Where the Drawings show existing services to be abandoned, terminate in conformance with requirements of the utility and Authority Having Jurisdiction.
7. Install and test new services prior to demolishing existing services unless otherwise shown.
8. Failure to verify the existing conditions or submit re-routing plan will be considered sufficient cause for work to be altered at Contractor's expense, as directed by Engineer.

1.06 CODES, PERMITS, INSPECTIONS, AND FEES

- A. Conform to the requirements of the specifications and drawings.
- B. Obtain permits and inspections and pay fees required by National, State and Local authorities.
- C. Make arrangements for inspections by the Engineer and other authority. Submit 3 copies of certificates of compliance to the Engineer.
- D. Work and materials shall be in accordance with requirements of the latest adopted edition of applicable codes and amendments, regulations, ordinances, and local amendments including, but not limited to, the following.
 1. National Electric Code, NFPA 70.
 2. Electrical Safety in the Workplace, NFPA 70E.
 3. National Electrical Safety Code, IEEE C2.
 4. International Building Code.
 5. International Fire Code.
 6. Life Safety Code, NFPA 101.
- E. Nothing in Drawings and Specifications shall be construed to permit Work not in conformance with these rules and regulations.

- F. Thoroughly examine the Drawings and the Specifications prior to procuring or installing products. Notify Engineer and Engineer within 72 hours of discovery of work shown on the Drawings or in the Specifications that is not compliant with the codes, ordinances, or regulations. Notice shall describe the conflict and shall cite the specific title and paragraph of the code, ordinance, or regulation. Contractor shall be responsible for removal, re-installation, re-testing, and re-commissioning of work that is found to be non-compliant with the codes, ordinances, or regulations.
- G. Where Drawings or Specifications call for material or construction of a better quality or larger sizes than required by the above-mentioned rules and regulations, the provisions of the Drawings or Specifications shall take precedence over requirements of the rules and regulations.
- H. Changes in the work after initial installation due to requirements of code enforcing agencies shall be performed by the Contractor at no additional cost to the Engineer.
- I. Coordination: Coordinate with the appropriate "Authorities Having Jurisdiction" for this project.
 - 1. Arrange plans and shop drawing reviews.
 - 2. Schedule inspections in a timely manner.
 - 3. Notify the Engineer of non-conformance issues.
 - 4. Proceed with changes suggested by the Authorities Having Jurisdiction only with written authorization by the Engineer.
 - 5. Make necessary corrections required by the Authorities Having Jurisdiction.
- J. Utilities: Comply with rules and requirements of local utility companies; coordinate and pay for connections.

1.07 SAFETY

- A. Contractor shall be responsible for conditions of the job site, including safety of persons and property during performance of the Work.
- B. Provide safety policies, training, retraining, equipment, safeguards, restraints, permit systems, and other safety measures required by federal, state, local, and the Engineer's site rules and regulations and for the safe performance of the Work.
- C. Comply with the "Safety and Health Regulations for Construction," 29 CFR 1926, by the U.S. Department of Labor.
- D. Provide safety measures continuously during work and off work hours.
- E. Consult with the state or federal safety inspector for interpretation whenever in doubt as to whether safe conditions do or do not exist or whether the Contractor is or is not in compliance with state or federal regulations.
- F. Perform safety audits, inspections, meetings, and personnel interviews in accordance with federal, state, local, and Engineer site safety rules and regulations.
- G. Do not use the Engineer's construction observations as a substitute for Contractor's safety audits and inspection responsibilities.

1.08 EQUIPMENT AND MATERIALS APPROVALS

- A. Whenever UL standards exist for electrical equipment and materials, provide UL listed equipment and materials. Otherwise provide equipment and materials labeled by a Nationally Recognized Testing Laboratory (NRTL) in accordance with the provisions of the Revised Code of Washington and the Washington Administrative Code. NRTL shall be one that is acceptable to the Authority Having Jurisdiction (AHJ).
 - 1. Submit UL listing with Product Data submittals for UL listed equipment and materials.
 - 2. Submit proof of AHJ's approval of the NRTL's qualifications to the owner and engineer not less than 14 calendar days prior to NRTL field evaluation.
 - 3. Submit NRTL test and evaluation reports not less than 14 calendar days prior to requesting electrical inspection.

1.09 INTENT OF DRAWINGS

- A. Drawings are diagrammatic and show only approximate locations of ducts, conduits, cable trays, pathways, raceways, devices, and equipment. Take measurements from site and verify with Drawings. Because of the small scale of the Drawings, it is not possible to indicate all offsets, fittings, and accessories that may be required. Carefully investigate the plumbing, fire protection, mechanical, structural, and finish conditions that would affect the Work to be performed and arrange such work accordingly, providing required ducts, conduits, cable trays, pathways, raceways, devices, fittings, conduit bodies, and accessories to meet such conditions.
- B. It is the responsibility of the Contractor to provide equipment that fits into the space allotted and allows adequate acceptable clearances for installation, replacement, entry, servicing, and maintenance.
- C. Report any conflict to Engineer prior to proceeding with the Work. Failure to follow this instruction is considered sufficient cause to alter the Work, at no cost to the Engineer, as directed by the Engineer.
- D. Plans and sections generally do not show all conduits, conductors, conductor sizes, junction boxes, conduit bodies, grounding conductors, control devices, instruments, or
 - 1. other components; refer to diagrams or schematics to obtain a more complete description of systems.
- E. Provide work shown on the Drawings and provide work described in the Specifications.
- F. Submit questions regarding interpretation of the Contract Documents no later than 48 hours prior to the bid date to allow reasonable time for resolution of questions.

1.10 DETAIL DRAWINGS BY CONTRACTOR

- A. Wherever the Work is of sufficient complexity to warrant additional detailing, prepare additional detail drawings to scale 1/4 inch = 1 foot, prepared on tracing paper the same size as Contract Drawings; with these layouts, coordinate work with the work of other trades. All such detailing work shall be clearly identified on the drawings as to the area to which it applies.
- B. Do not submit these drawings to the Engineer for approval. At completion, however, include a set of such drawings with each set of as-built drawings for Engineer's record purposes.

1.11 SUBMITTALS

- A. Comply with requirements of the specifications and drawings.

- B. Do not use the submittal process to request substitutions. Make requests for substitution in accordance with the specifications.
- C. Acceptance: Checking is only for general conformance with the design concepts of the information given in the Contract Documents. Any action shown is subject to the requirements of the Drawings and Specifications, which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of the Contractor's work with that of all other trades; and the satisfactory performance of the Contractor's work. The acceptance of a manufacturer's name or product by the Engineer does not relieve the Contractor of the responsibility for providing materials and equipment which comply in details with the requirements of the Contract Documents.
- D. Bill of Materials: Submit, within 30 days after award of Contract, a Bill of Materials containing items to be used on this project, listing manufacturer's name and catalog numbers and referenced to the applicable Specification paragraph.
- E. Product Data: Submit manufacturer's descriptive product information including catalog cuts, performance curves, ratings, accessories, features, time-current curves, standards (i.e. ANSI, IEEE, UL, MIL, NEMA) and other information required to confirm compliance with the Drawings and Specifications. Include complete ordering numbers showing prefixes and suffixes identified for the specified product. Submittals showing generic model numbers, part numbers, product line, or other generalized information will be returned without review or rejected.
- F. Shop Drawings: Submit manufacturer's shop drawings including plans, elevations, sections, schedules, wiring diagrams, schematics, seismic installation instructions, and other information required to confirm compliance with the Drawings and Specifications. Shop drawings shall accurately represent the specified product, including specified options and accessories. Show the specified included options and accessories as included. Show connections to specified options and accessories.

Show interconnections including shipping splits, remote wiring, fuel system, exhaust systems, and other coordination items. Submittals showing generic product-line information will be returned without review or rejected.
- G. Detail and Coordination Drawings: Submit Contractor prepared drawings to show how multiple systems and interdisciplinary work will be coordinated.
- H. Calculations: Submit calculations where specified. Include input variables, constants, formulas, assumptions, temperatures, resistances, capacitances, inductances, and other information to confirm compliance with the Drawings and Specifications.
- I. Software: Submit license agreement for software provided under this Contract. Include licensor and licensee information on the agreement. Include software terms of use, privacy policy, termination, and transferability clauses. Include description of the software media (DVD, CD, USB, etc.).
- J. Samples: Submit samples complying with the requirements of the Specifications.
 - 1. Submit samples for color and material selection where the color or material selection is not specified.
 - 2. Submit samples of devices, covers, conductors, and other items where the sample is required by the Specifications.
- K. Test Reports: Submit factory test reports and field quality control acceptance test reports.
 - 1. Test reports shall include a cover sheet having the following information.

- a. Project title as shown on the Drawings.
 - b. Signature of person reviewing the test report.
 - c. Printed name and title of person reviewing the test report.
 - d. Date reviewed.
 - e. Company name and contact information for the company performing the test.
 - f. Contractor name and contact information.
2. Test report data sheets shall show the following information.
 - a. Project title, location, testing company name, date the test is performed, name of person performing the test.
 - b. Test equipment model, serial number, and actual date the test equipment was last calibrated. Do not show the date that calibration is due.
 - c. Test conditions including ambient temperature, humidity, and short description of weather during the test (example: raining). Show date of last rainfall for ground and earth resistance measurements.
 - d. Show test parameters in numeric form including but not limited to voltages, currents, times, resistance, distances, and temperatures.
 - e. Show test results in numeric form for electrical tests and mechanical measurements. Show manufacturer's minimum and maximum acceptable tolerances in numeric form for tests such as minimum pickup, time delays, contact travel, wipe, and other measurable tests.
 - f. Show function test results. Show the input action (example: "Turned breaker control switch to "Close"") and the resultant action (example: "Breaker 52-1 closed and recharged."), and the expected reaction described in the sequence of operations shown or specified. Terms such as "Pass", "Fail", "Sat", "OK" are not to be used.
- L. Certificates: Submit statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Shall be dated after award of project contract and clearly name the project.
- M. Thoroughly review vendor-assembled shop drawings, catalog cuts, etc. to ensure that these documents are complete and comply with the Drawings and Specifications. The Engineer reserves the right to reject the complete submittal without review when documents are not complete or do not comply with the Drawings and Specifications.
- N. Communicate the Engineer review comments to the supplier and manufacturer. Work found to be not in conformance with the Engineer comments will be rejected, shall be removed from the job site and replaced with conforming work at no additional cost to the Engineer.
- O. Submittal Procedures:
 1. Submit transmittal to Engineer for review by Engineer.
 2. Submit as specified under individual Sections. Submittals not required will not be recognized or processed.
 3. Submit in timely manner to complete Work of this Contract within Contract Time.

P. Submittal Format:

1. Transmittal Form: Accompany each submittal with transmittal letter. Do not address more than one topic or portion of the Work on each transmittal.
2. Submittal Numbering: Sequentially number transmittal forms in order submitted. Add alphabetic suffix to original submittal number to resubmittals.
3. Submittal Identification: Include Project, Contractor, subcontractor, supplier, Section number, manufacturer, product, and material as appropriate.
4. Contractor's Certification: Apply Contractor's stamp, signed or initialed, certifying that Contractor has performed review, verification of products required, field dimensions, coordination of information for items submitted and related systems, and that submittal is in accordance with the requirements of Contract Documents.
5. Variance from Contract Document Requirements: Bring any variation from requirements of Contract Documents by means of written explanation on submittal transmittal letter and by indication on submittal shop drawings, product data, or other types of submittals.
6. Identify exact component, device, or equipment to be used.

Q. Engineer Review:

1. Engineer is responsible for reviewing submittals as verification to the design intent and conformance to provisions of Contract Documents.
2. Engineer's review does not relieve Contractor from any responsibilities including, but not limited to the following.
 - a. Establishing necessary dimensions, tolerances, clearances, and qualities.
 - b. Taking responsibility for necessary means and methods to complete the Work.
 - c. Conforming to provisions of the Contract Documents, except where approval for deviations is approved by Engineer.
3. Engineer will provide signed comments for each submittal. Where Engineer indicates that submittal has been reviewed or no exceptions have been taken to submittal, proceed in accordance with Contract Documents. Otherwise make corrections as noted in review markings and resubmit if so indicated.

R. Processing and Turn-Around Time: Allow minimum 14 calendar days from time of receipt by Engineer for each submittal and each subsequent required resubmittal.

S. Resubmittals:

1. Revise initial submittal as directed, and resubmit. Follow procedures specified for the initial submittal. Make corrections or changes in the submittals required by Engineer.
2. Revise and make resubmittals until no exceptions are taken or resubmittal is not required by review markings. Identify changes on resubmittal made since previous submittal.

T. Product Data:

1. Submit electronic PDF copy.
2. Provide electronic PDF copy of Project Record Documents to be delivered to Engineer at Project Completion.

3. Identification: Mark each copy to identify specific products, models, options, tolerances, dimensions, and other pertinent data.

U. Design Data and Test Reports: Submit electronic PDF copy.

1.12 INSPECTIONS

- A. Observations will be conducted periodically throughout the construction by the Engineer and Engineer.
- B. On-site meetings or reviews of construction by the Engineer shall not be construed as acceptance by these parties as related to quantities, rough-in locations, and compliance with code enforcing authorities unless specific exceptions have been brought to the attention of the Engineer and have been accepted in writing.
- C. When requesting final inspection, provide 10 day notice. Submit written certification that the work has been fully completed in strict accordance with plans and Specifications.
- D. Notify the Engineer upon completion of the following tasks.
 1. Equipment labeling.
 2. Conduit marking.
 3. Wire and cable identification.
 4. Replacement of damaged equipment.
 5. Touch-up painting.
 6. Posting of completed panel schedules.
 7. Resolution of previously noted comments.
 8. Installation of previously missing equipment.
- E. Obtain a Certificate of Final Electrical Inspection from the local Authority Having Jurisdiction stating that work had been inspected, accepted, and approved as complying with existing governing ordinances and codes.
- F. Submit Certificate of Final Electrical Inspection to the Owner upon completion of the project as part of project closeout.

1.13 FINAL PUNCHLIST

- A. Conform to the requirements of the specifications.

1.14 WARRANTY

- A. Conform to the requirements of the specifications.
- B. Provide a warranty for electrical work in accordance with the provisions of the General Conditions. Submit the warranty in written form in accordance with the specifications.
- C. Furnish the originals of manufacturers' warranties for the Engineer's records.

1.15 ABBREVIATIONS, DEFINITIONS, AND REFERENCE STANDARDS

- A. Refer to Division 01 for reference standards. Refer to the specifications and drawings for definitions and abbreviations. Additional reference standards, definitions, and abbreviations are as follows.

A	Amperes
---	---------

AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASTM	American Society for Testing and Materials
as shown	as shown on the drawings
C	Degrees Celsius
DPDT	Double Pole, Double Throw
F	Degrees Fahrenheit
FRP	Fiberglass Reinforced Plastic
Hz	Hertz (frequency)
IBC	International Building Code
kVA	Kilovolt-Ampere
kVAR	Kilovolt-Ampere Reactive
kW	Kilowatt
kWH	Kilowatt-Hour
mA	Milliamperes
mV	Millivolts
MVA	Megavolt Amperes
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NETA	InterNational Electrical Testing Association
NFPA	National Fire Protection Association
provide	furnish and install
psig	pounds per square inch gage pressure
SPDT	Single Pole, Double Throw
UL	Underwriters Laboratories, Inc.
V	Volts
VAC	Volts Alternative Current
VDC	Volts Direct Current

1.16 RECORD DOCUMENTS

- A. Furnish record documents in conformance with the requirements of the specifications.
- B. Furnish record drawings. Show location of equipment and size of conduits, raceways, pathways, and ducts. Locate luminaires, lighting controls, equipment disconnect switches, and other equipment and devices. Keep record drawings continuously updated during progress of project and ready for reference. Make available to Engineer at site for review prior to each pay request. At the completion of the project, turn over record AutoCAD electronic files of updated drawings to the Engineer.
- C. Duct banks and conduits installed below grade shall be shown with both horizontal and vertical dimensions at an accuracy of plus or minus 6 inches.
- D. Show the actual dimensions of equipment installed. Dimensions on plans, elevations, and sections shall match exactly as installed.

- E. Approved modifications to equipment in the field shall be shown on the record drawings to reflect the "as-built" conditions.
- F. Record drawings shall be consistent. Changes made to plans, elevations, sections, wiring diagrams, schematics, or functional diagrams shall be made to related or otherwise affected plans, elevations, sections, wiring diagrams, schematics, or functional diagrams.

1.17 SITE CONDITIONS AND METHODS

- A. Cutting and Patching: Conform to the requirements of the specifications. Keep cutting and patching to a minimum. Patching shall conform to Specifications for the new general construction work unless otherwise indicated. Finish materials to match existing work.
- B. Measurements: Verify space availability by field measurement prior to submitting Shop Drawings for approval.
- C. Roughing-In Dimensions: Obtain roughing-in dimensions for equipment from approved Shop Drawings or actual equipment measurements.
- D. Manufacturer's Installation Instructions: Follow manufacturer's written instructions where furnished. If the details are in conflict with the Drawings, notify Engineer for resolution.
- E. Accessibility: Install products which require periodic servicing or repair so that products are readily accessible. Otherwise, obtain Engineer's approval of location.
- F. Rejected Materials: Remove damaged or rejected materials from the site.
- G. Delivery, Storage, and Handling: Conform to the requirements of the specifications .
 - 1. Handle, store, and protect equipment and materials to prevent damage before and during installation in accordance with the manufacturer's recommendations and as approved by the Engineer. Replace damaged or defective items.
 - 2. Equipment with damaged factory applied finishes shall be refinished to bring the equipment to a like-new condition in accordance with manufacturer's recommendations.
 - 3. Conduits shall be maintained clean, free of debris, and dry from fabrication through field installation. Open ends shall be sealed with plastic at the end of each workday. Maintain sealing procedure until installation is completed. Damaged, wet, and dirty conduits shall be removed from site.
 - 4. All components and equipment shall be maintained clean, free of debris, and dry from fabrication through field installation. Openings shall be sealed with plastic at all times except when the equipment is in the process of being connected to conduits and connected equipment. Maintain sealing procedure from fabrication until installation is completed with conduits connected to the equipment.

1.18 CLOSEOUT SUBMITTALS

- A. Conform to the requirements of the specifications.
- B. Submit warranties, record drawings, certificates, inspections, punch lists, test reports, and operations and maintenance manuals for electrical equipment installed on this project.
- C. Submit acceptances by the inspecting Authorities Having Jurisdictions for electrical equipment installed on this project.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

3.01 DEMOLITION EXAMINATION

- A. Verify measurements are as shown on the Drawings.
- B. Demolition Drawings are based on field observation and existing record documents. Report discrepancies to Engineer before disturbing existing installation.
- C. Contractor accepts existing conditions upon beginning the Work.
- D. Provide temporary connections to maintain existing systems in service during construction. When work must be performed on energized equipment, use personnel experienced in such operations and perform the work in accordance with laws, rules, and regulations.
- E. Where conduit is indicated on Drawings to be abandoned, remove conductors, remove debris from inside the conduit, and seal the conduit openings unless indicated otherwise.
- F. Repair adjacent construction and finishes damaged during demolition and extension work.
- G. Maintain access to existing installations which remain active. Maintain NEC required working space around and above electrical equipment.

3.02 EQUIPMENT CONNECTIONS

- A. Coordinate and provide raceway, wiring, junction boxes, switches, receptacles, overcurrent protection, anchors, supports, and connections required by equipment manufacturers to make the equipment and systems completely functional. This includes, but is not limited to, items between equipment or components of same or different manufacturers, whether or not the items are shown on Drawings, Specifications, shop drawings, or product data. It is the Contractor's responsibility to ensure that the shop drawings show the required connections and associated devices.
- B. Test continuity and insulation resistance of conductors in accordance with Section 26 05 20.
- C. Test overcurrent protective devices in accordance with the specifications and manufacturer instructions.
- D. Test interconnection functionality and demonstrate that the interconnections function in accordance with the Contract Documents.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This section applies to Divisions 26 and 27 and includes supports, anchors, fasteners, nameplates, labels, wire markers, raceway markers.

1.02 DEFINITIONS

- A. Equipment: General term including fittings, devices, appliances, apparatus, switchboards, transformers, and other items used as parts of or in connection with an electrical installation.
- B. Raceway. An enclosed channel of metal or nonmetallic materials designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this Code. Raceways include, but are not limited to, rigid metal conduit, flexible metal conduit, .

1.03 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. ASTM A153/A153M (ASTM International) – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- D. ASTM A193/A193M-12b (ASTM International) – Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.
- E. ASTM A240/A240M (ASTM International) – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
- F. ASTM A276-13 (ASTM International) – Standard Specification for Stainless Steel Bars and Shapes.
- G. ASTM B633 (ASTM International) – Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
- H. ASTM F593 – 13 (ASTM International) – Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
- I. ASTM F594 – 09e1 (ASTM International) – Standard Specification for Stainless Steel Nuts.
- J. NECA (National Electrical Contractors Association) – Standard of Installation.

1.04 DESIGN REQUIREMENTS

- A. Select materials, sizes, and types of anchors, fasteners, and supports to carry loads of equipment and raceway, including weight of wire and cable in raceway.

1.05 SUBMITTALS

- A. Product Data:

1. Submit product data and tabulated lists of nameplate, label, and marker types for equipment, devices, and wiring. Group the list by type of equipment, device, and wiring. Include material type and thickness, font type, size, vertical and horizontal spacing (tracking), number of rows, colors, and other specified features.

1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years documented experience and with service facilities within 100 miles of project.

1.07 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 – PRODUCTS

2.01 ANCHORS AND FASTENERS

- A. Stainless or Galvanized Steel.

2.02 FORMED STEEL CHANNEL

- A. Manufacturers:
 1. B-Line.
 2. Globestrut.
 3. Unistrut.
- B. Description: Strut-type support and fittings.
 1. Provide ASTM A240 Type 316 stainless steel.

2.03 NAMEPLATES

- A. Provide three-layer laminated melamine plastic nameplates for each item specified in the technical Sections and for those shown on the drawings. Items requiring nameplates include, but are not limited to the following.
 1. Panelboards.
 2. Equipment enclosures.
 3. Disconnects and Enclosed Breakers.
 4. Devices.
- B. Colors:
 1. Matte black background with white letters for normal power.
 2. Matte orange background with black letters for emergency power.
- C. Letter Size: Provide letters sized as shown on Drawings.
- D. Legend: Provide nameplates with identification and other information as shown on the Drawings.

2.04 MANUFACTURER INSTALLED EQUIPMENT NAMEPLATES

- A. Provide nameplates on the exterior of equipment enclosures in addition to any standard nameplates installed.

2.05 WARNING SIGNS

- A. Comply with NFPA 70.

2.06 LABELS

- A. Description: Embossed adhesive tape, with 3/8 inch letters on white background.
- B. Colors: Black letters for normal power circuits. Red letters for emergency power circuits.

2.07 WIRE MARKERS

- A. Description: Cloth tape, split sleeve or tubing type wire markers.
- B. Legend:
 - 1. Power and Lighting Circuits: Branch circuit or feeder number.
 - 2. Control Circuits: Control wire number as indicated on shop drawings.

2.08 PULL STRINGS

- A. 200 Pound Pull String: Nylon pull string having minimum tensile strength of 200 pounds.
- B. 500 Pound Pull String: Nylon pull string having minimum tensile strength of 500 pounds.
- C. 1500 Pound Pull String: Polypropylene pull rope having minimum tensile strength of 1500 pounds.

PART 3 – EXECUTION

3.01 EXISTING WORK

- A. Demolition drawings may not show all existing conditions. Report discrepancies to Engineer before disturbing existing installation. Protect existing systems not designated for removal or demolition from damage. Repair or replace any systems inadvertently damaged.
- B. Disconnect electrical systems scheduled for removal.
- C. Remove, relocate, and extend existing installations to accommodate new construction.
- D. Install temporary wiring and connections to maintain existing systems in service during construction.
- E. Repair adjacent construction damaged during demolition and extension work.

3.02 INSTALLATION

- A. Supports:
 - 1. Install electrical systems and equipment to poles.
 - 2. Fabricate supports from structural steel or formed steel members. Rigidly weld members or install hex-head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
 - 3. Locate and install anchors, fasteners, and supports in accordance with seismic requirements.
 - 4. Install surface mounted cabinets and panelboards with minimum of 4 anchors.
 - 5. Install stainless steel channel supports in wet and damp locations to anchor cabinets and disconnects off the poles.

B. Identification Components:

1. Degrease and clean surfaces to receive nameplates and labels.
2. Install nameplate and label parallel to equipment lines.
3. Secure nameplate to equipment front using screws or rivets.
4. Identify underground conduits in accordance with Section 26 05 45.

3.03 WARNING SIGNS

- A. Provide arc-flash hazard warning labels on electrical equipment.
- B. Provide working clearance warning signs on electrical equipment.

3.04 PULL STRINGS

- A. 200 Pound Pull String: Provide 200 pound pull string in empty conduits leaving panelboards, switchboards, and motor control centers.
- B. 500 Pound Pull String: Provide 500 pound pull string in empty conduits leaving switchgear.
- C. 1500 Pound Pull String: Provide 1500 pound pull string in empty ducts underground.

3.05 SEISMIC AND WIND

- A. Seismic Restraints: Seismically restrain electrical nonstructural components in Divisions 26 and 27 in accordance with the requirements of the International Building Code. Electrical nonstructural components in Divisions 26 and 27 shall be as defined by ASCE 7.
 1. Restrain electrical equipment in accordance with the wind requirements of the International Building Code.
 2. Wind restraints shall be hot-dip galvanized.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes wiring, splices, connectors, and testing for electrical distribution wiring rated 600 volts and less.

1.02 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. NECA (National Electrical Contractors Association) – Standard of Installation.
- D. NEMA WC 70 (National Electrical Manufacturers Association) – Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.
- E. NFPA 70 (National Fire Protection Association) – National Electrical Code.
- F. UL 44 (Underwriters Laboratories) – Thermoset-Insulated Wires and Cables.
- G. UL 83 (Underwriters Laboratories) – Thermoplastic-Insulated Wires and Cables.
- H. UL 486A-486B (Underwriters Laboratories) – Wire Connectors.
- I. UL 486C (Underwriters Laboratories) – Splicing Wire Connectors.

1.03 SYSTEM DESCRIPTION

- A. Conductors for wiring electrical power, lighting, and control circuits. Provide conductors, conduits, boxes, conduit bodies, fittings, wiring devices, terminations, splices, connections, identification, and testing.

1.04 SUBMITTALS

- A. Product Data: Submit for building wire and each cable assembly type.
 - 1. Insulation type, conductor material, conductor strands, voltage, ampacity, and UL listing.

1.05 CLOSEOUT SUBMITTALS

- A. Field Quality Control Test Reports: Submit test reports in accordance with Section 26 00 10.
- B. Project Record Documents: Record actual locations of components and circuits.

1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years documented experience.

1.07 FIELD MEASUREMENTS

- A. Verify field measurements are as indicated on Drawings.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Conductors shall be copper.

- B. Conductor For Feeders and Branch Circuits 10 AWG and Smaller shall be solid or stranded conductor. Wiring devices connected to stranded conductors shall provide containment for all strands in the termination.
- C. Conductors For Control Circuits: Stranded conductors.
- D. Power and lighting circuits shall not be smaller than 12 AWG.
- E. Furnish 12 AWG conductors for 20 A, 120 V branch circuits not exceeding 50 feet in conductor length.
- F. Furnish 10 AWG conductors for 20 A, 120 V branch circuits longer than 50 feet but not exceeding 100 feet in conductor length.
- G. Furnish 12 AWG conductors for 20 A, 277 V branch circuits not exceeding 100 feet in conductor length.
- H. Furnish 10 AWG conductors for 20 A, 277 V branch circuits longer than 100 feet but not exceeding 150 feet in conductor length.
- I. Wire coloring shall be integral to the jacket or insulation for wires 6 AWG and smaller. For wires 4 AWG and larger, furnish colored tape or colored shrink-to-fit sleeves.
- J. Wire Colors, 120/240 V Single-Phase Systems:
 - 1. L1 shall be black.
 - 2. L2 shall be red.
 - 3. Neutral shall be white.
- K. Wire Colors, 120/208 V Three-Phase Systems:
 - 1. A-Phase shall be black.
 - 2. B-Phase shall be red.
 - 3. C-Phase shall be blue.
 - 4. Neutral shall be white.
- L. Wire Colors, 277/480 V Three-Phase Systems:
 - 1. A-Phase shall be brown.
 - 2. B-Phase shall be orange.
 - 3. C-Phase shall be yellow.
 - 4. Neutral shall be grey.
- M. Neutral Conductors: When two or more neutrals are located in one conduit, individually identify each with proper circuit number using shrink-to-fit wire sleeve.
- N. Branch Circuit Conductors: Install three-wire and four-wire home runs with each phase uniquely color coded.
- O. Feeder Circuit Conductors: Uniquely color code each phase.
- P. Equipment Ground Conductors:
 - 1. For 6 AWG and smaller: Green.

2. For 4 AWG and larger: Identify with green tape or shrink-to-fit sleeves at both ends and at visible points including junction boxes.

2.02 WIRE

- A. Product Description: UL 44 thermoset insulated single conductors and UL 83 thermoplastic insulated single conductors.
- B. Insulation Types: Furnish the following insulation types unless shown otherwise on Drawings. Refer to Part 3 of this Section for installation methods and additional requirements.
 1. Feeders 2 AWG and Larger: NFPA 70; Type XHHW-2.
 2. Feeders Smaller than 2 AWG: NFPA 70; Type THHN/THWN, XHHW, or XHHW-2.
 3. Branch Circuits 2 AWG and Larger: NFPA 70; Type XHHW-2.
 4. Branch Circuits Smaller than 2 AWG, Installed Above Ground: NFPA 70; THHN/THWN, XHHW, or XHHW-2.
 5. Branch Circuits Smaller than 2 AWG, Installed Below Ground: NFPA 70; Type XHHW-2.
- C. Conductor: Copper.

2.03 FLEXIBLE, HIGH-STRAND CABLE

- A. Manufacturers:
 1. Southwire.
 2. General Cable.
 3. Substitutions: Not permitted.
- B. Product Description: NFPA 70 Type W; UL Listed for extra hard usage.
- C. Conductors: Tin-plated copper; high strand.
- D. Insulation: 2000 V rated.
- E. Temperature Rating: 90 Degrees C.

2.04 WIRE CONNECTORS, COMPRESSION TYPE

- A. Product Description: UL 486A-486B wire connectors, mechanical set-screw, split-bolt, and high-pressure type.
- B. Manufacturers:
 1. 3M.
 2. Thomas & Betts (T&B).
- C. Construction: Plated copper connector without insulation. With or without set-screws.
- D. Operating Temperature: Rated not less than the higher of the wire or equipment terminal temperature.
- E. Color: Manufacturer's standard colors, coded by wire size and quantity application.
- F. Use Restrictions:
 1. Use same manufacturer for each type and size installed.

2. Use on conductors at equipment terminal pads. Used for in-line splices when included in a UL listed splice kit.
3. Crimp type connectors shall be installed using manufacturer-approved ratcheting, hydraulic, or air-powered crimping tool and die.

2.05 SPLICING WIRE CONNECTORS, SOLDERLESS CRIMP TYPE

- A. Product Description: UL 486A-B and 486C splicing wire connectors; insulated, crimp-type connectors, splices, and terminals.
- B. Manufacturers:
 1. 3M.
 2. Stakon.
- C. Construction: Vinyl or nylon insulation covering tin or silver-plated annealed copper connector.
- D. Operating Temperature: Rated for use up to 105 degrees C.
- E. Voltage Rating: 600 V.
- F. Color: Manufacturer's standard colors, coded by wire size.
- G. Use Restrictions:
 1. Crimp type connectors shall be installed using manufacturer-approved ratcheting crimping tool and die.
 2. Use same manufacturer for each type and size installed.
 3. In-line splices shall only be used for extending existing circuits where specifically called out on drawings.
 4. End-cap solderless crimp type shall be used only for permanent, non-maintenance applications.
 5. Insulation-displacing splices and connectors shall not be used.
 6. Terminal connectors for current transformer secondary circuits, relays, meters, test blocks, and shorting blocks shall be ring type. Spade terminals shall be rejected.

2.06 SPLICING WIRE CONNECTORS, SPRING TYPE

- A. Product Description: UL 486C splicing wire connectors.
- B. Manufacturers:
 1. 3M Performance Plus.
 2. Substitutions: Approved equal.
- C. Construction: Spring steel, corrosion resistant coating with flame retardant, polypropylene and thermoplastic elastomeric insulator.
- D. Operating Temperature: Rated for use up to 105 degrees C.
- E. Voltage Rating: 600 V when used as building wire splices. 1000 V when used for signs and luminaires.
- F. Flammability: UL 94 V-2.
- G. Color: Manufacturer's standard colors, coded by wire size and quantity application.

- H. Use Restriction: Conductors 16 AWG to 8 AWG, in receptacle, switch, and rotating equipment termination boxes only.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify raceway installation is complete, supported and cleaning, prior to pulling new conductors and cables.

3.02 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.
- B. Protect exposed cable from damage and moisture. Apply shrink-to-fit sealing caps on wire and cable reels when stored outdoors.

3.03 EXISTING WORK

- A. Remove existing wire and cable where indicated.
- B. Disconnect abandoned circuits and demolish circuit wire and cable. Remove boxes when wire and cable servicing boxes are removed.
- C. Provide access to existing wiring connections remaining active and requiring access. Modify installation or install access panel.
- D. Extend existing circuits using materials and methods as specified.
- E. Clean and repair existing wire and cable remaining.

3.04 INSTALLATION

- A. Feeder Circuits:
 - 1. Provide new feeder circuit conductors in conduit where indicated.
 - 2. Provide feeder conductors in continuous lengths, without splices, from light pole to upstream and downstream connection points, unless otherwise shown on the Drawings.
- B. Branch Circuits:
 - 1. Provide new branch circuits in conduit unless otherwise shown on Drawings.
- C. Dedicated Neutral: Provide dedicated neutral conductors for 120 V and 277 V circuits.
- D. Replace damaged conductors at no additional cost to the Engineer.
- E. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- F. Identify circuits under provisions of Section 26 05 00. Identify each conductor with its circuit number or other designation indicated.
- G. Pull conductors into raceway at same time.
- H. Use wire-pulling equipment including fish-tape, rope, or cable appropriate for the size of wire, conduit, and circuit length. Use basket-weave wire/cable grips for multiple conductors over 2 AWG.
- I. Use manufacturer-approved pulling compound or lubricant where necessary. Compound used shall not deteriorate conductors or insulation.

- J. Pull wire in accordance with the wire manufacturer's recommended pulling tensions and side wall pressure values.
- K. Wiring Connections:
 - 1. Clean conductor surfaces before installing lugs and connectors.
 - 2. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
 - 3. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
 - 4. Tape uninsulated conductors and connectors with electrical tape to 150 percent of insulation rating of conductor.
 - 5. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - a. Install split bolt connectors for copper conductor splices and taps, 6 AWG and larger except where in-line splices are specified.
 - b. Install solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
 - c. Install insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
 - 6. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.
 - 7. Install solid conductors for feeders and branch circuits 10 AWG and smaller. If, however, special conditions require stranded conductors in lieu of solid, then install crimp on locking (barbed) fork terminals for device terminations. Do not place bare stranded conductors directly under screws.

3.05 FIELD QUALITY CONTROL

- A. Performance of Acceptance Checks and Tests: Perform in accordance with the manufacturer's recommendations and perform the visual and mechanical inspections and electrical tests in accordance with ANSI/NETA ATS.
- B. Perform insulation resistance (Megger) test on conductors 2 AWG and larger. Measure resistance phase to phase and phase to ground for one minute. Test voltage shall be 1000 VDC. Record results. Minimum acceptable insulation resistance shall be 100 megohms in accordance with ANSI/NETA ATS, Table 100.1.
- C. Remove and replace defective conductors, splices, and terminations until test results meet the specified requirements.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes electrodes, conductors, connections, and testing for bonding and grounding of electrical equipment and systems.

1.02 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. ASTM F2281 – 2004 (ASTM International) – Standard Specification for Stainless Steel and Nickel Alloy Bolts, Hex Cap Screws, and Studs, for Heat Resistance and High Temperature Applications.
- D. IEEE Std. 81-1983 (Institute of Electrical and Electronics Engineers) – IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System Part 1: Normal Measurements.
- E. IEEE Std. 81.2-1991 (Institute of Electrical and Electronics Engineers) – IEEE Guide for Measurement of Impedance and Safety Characteristics of Large, Extended or Interconnected Grounding Systems.
- F. IEEE Std. 142-2007 (Institute of Electrical and Electronics Engineers) – IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems.
- G. IEEE Std. 837-2002 (Institute of Electrical and Electronics Engineers) – IEEE Standard for Qualifying Permanent Connections Used in Substation Grounding.
- H. NECA (National Electrical Contractors Association) – Standard of Installation.
- I. UL 467 (Underwriters Laboratories) – Grounding and Bonding Equipment.

1.03 SYSTEM DESCRIPTION

- A. Grounding System Elements: Use the following elements as grounding electrodes in accordance with NFPA 70 National Electrical Code.
 - 1. Rod electrodes.

1.04 PERFORMANCE REQUIREMENTS

- A. The resistance between the main grounding electrode and ground shall be no greater than five ohms.

1.05 SUBMITTALS

- A. Product Data:
 - 1. Grounding electrodes.
 - 2. Grounding electrode connectors.
 - 3. Bonding connectors.

1.06 CLOSEOUT SUBMITTALS

- A. Field Quality Control Test Reports: Submit test reports in accordance with Section 26 00 10.

1. Site plan showing each installed electrode and each test electrode. Uniquely identify electrodes and include on test data sheet.
2. Test data sheet showing electrode identifications, distances, test lead resistance, measured resistance as displayed on the test instrument, and calculated resistance. Include test equipment manufacturer, model number, serial number, and date last calibrated. Include test technician name, company, and company contact information. Include the IEEE 81 test method used to perform the test and evaluate the test results.

B. Project Record Documents: Record actual locations of components and grounding electrodes.

1.07 FIELD MEASUREMENTS

A. Verify field measurements prior to installing grounding system.

PART 2 – PRODUCTS

2.01 ROD ELECTRODES

- A. Product Description: UL 467; Copper-clad steel rod electrodes.
- B. Diameter: 3/4 inch.
- C. Length: 10 feet.

2.02 COMPRESSION CONNECTORS

- A. Manufacturers:
 1. DMC Power SWAGE.
 2. Burndy HYGROUND.
 3. Thomas and Betts.
- B. Product Description: IEEE 837 Compression connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.03 MECHANICAL CONNECTORS

- A. Manufacturers:
 1. DMC Power.
 2. Burndy.
 3. Thomas and Betts.
- B. Product Description: Bronze mechanical connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.04 WIRE

- A. Material: Stranded copper unless otherwise indicated.

2.05 GROUND ELECTRODE CONDUCTORS INSTALLED OUTDOORS BELOW GRADE

- A. Product Description: Bare, stranded copper conductors listed for use as ground electrode conductors.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify final backfill and compaction has been completed before driving rod electrodes.
- B. Verify wiring and equipment that are about to be demolished are no longer required for the facility.

3.02 EXISTING WORK

- A. Disconnect power sources and test for ground current prior to disconnecting and removing bonding, equipment grounding, and ground electrode conductors.
- B. Remove and demolish pole ground conductors and ground rod.

3.03 INSTALLATION – GENERAL

- A. Provide bonding in accordance with the National Electrical Code as adopted by the Authority Having Jurisdiction.
- B. Install grounding connections in accordance with their UL listing.
- C. Where the grounding materials and methods specified and shown exceed that of the National Electrical Code and the Authority Having Jurisdiction, the materials and methods specified and shown shall be used.
- D. Mechanical connections shall be accessible.
- E. Stranded grounding or bonding conductors larger than 8 AWG shall be connected using exothermal or die-crimped compression terminals.
- F. Tighten accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or ANSI/NETA ATS. Bolt torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use ANSI/NETA ATS.

3.04 INSTALLATION – GROUND BUSSES

- A. Grounding or bonding connections 1/0 AWG and larger shall be made using die-crimped compression terminals having NEMA 2-hole patterns.

3.05 INSTALLATION – ROD ELECTRODES

- A. Install rod electrodes at each pole location and where shown on drawings. Where a resistance to ground is specified, but not achieved with rods as shown, install additional rod electrodes to achieve specified resistance to ground.

3.06 INSTALLATION - EQUIPMENT GROUNDING CONDUCTORS

- A. Equipment Grounding Conductor: Install separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- B. Identify each ground conductor by circuit number in panelboards and switchboards.

3.07 FIELD QUALITY CONTROL

- A. Performance of Acceptance Checks and Tests. Perform in accordance with the manufacturer's recommendations and include the following visual and mechanical inspections and electrical tests, performed in accordance with ANSI/NETA ATS.
 - 1. Visual and Mechanical Inspection:

- a. Verify ground system is in compliance with Drawings, Specifications, and NFPA 70 National Electrical Code Article 250.
 - b. Inspect physical and mechanical condition. Grounding system electrical and mechanical connections shall be free of corrosion.
 - c. Inspect anchorage.
2. Electrical Tests:
- a. Perform resistance measurements through bolted connections with a digital, low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values which deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - b. Perform fall of potential or alternative test in accordance with IEEE 81 and IEEE 81.2 on the main grounding electrode or system.
 - c. Perform point-to-point tests to determine the resistance between the main grounding system and all electrical equipment frames, ground busses, telecommunications ground busses, system neutral, and derived neutral points. Investigate point-to-point resistance values that exceed 5 ohm.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes the following items.
 - 1. Conduit.
 - 2. Outlet boxes.
 - 3. Pull and junction boxes.

1.02 REFERENCES

- A. ANSI C80.1 (American National Standards Institute) – Rigid Steel Conduit, Zinc Coated.
- B. ANSI/SCTE 77 (Society of Cable Telecommunications Engineers) – Underground Enclosure Integrity.
- C. NEMA FB 1 (National Electrical Manufacturers Association) – Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- D. NEMA OS 2 (National Electrical Manufacturers Association) – Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.
- E. NEMA RN 1 (National Electrical Manufacturers Association) – Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
- F. NEMA TC 2 (National Electrical Manufacturers Association) – Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
- G. NEMA TC 14.XW-2015 (National Electrical Manufacturers Association) – Extra heavy Wall Reinforced Thermosetting Resin Conduit (RTRC) and Fittings.
- H. NEMA WD 1 (National Electrical Protection Association) – General Purpose Wiring Devices.
- I. NEMA WD 6 (National Electrical Protection Association) – Wiring Devices – Dimensional Requirements.
- J. NEMA 250 (National Electrical Manufacturers Association) – Enclosures for Electrical Equipment (1000 Volts Maximum).
- K. UL 6 (Underwriters Laboratories) – Electrical Rigid Metal Conduit – Steel.
- L. UL 360 (Underwriters Laboratories) – Liquid-Tight Flexible Steel Conduit.
- M. UL 514A (Underwriters Laboratories) – Metallic Outlet Boxes.
- N. UL 514B (Underwriters Laboratories) – Conduit, Tubing and Cable Fittings.
- O. UL 651 (Underwriters Laboratories) – Schedule 40 and 80 Rigid PVC Conduit.

1.03 SYSTEM DESCRIPTION

- A. System description consists of raceway and boxes located as indicated on Drawings, and other locations required for splices, taps, wire pulling, equipment connections, and at locations required to be in compliance with regulatory requirements. Raceway and boxes are shown in approximate locations unless dimensioned. Provide raceway to complete wiring system.

1.04 SUBMITTALS

- A. Product Data:

1. Conduit.
 2. Raceway fittings.
 3. Conduit bodies.
 4. Pull and junction boxes.
- B. Manufacturer's Installation Instructions: For adhesives, wireway, and fiberglass conduit, submit instructions for storage, handling, protection, examination, preparation, and installation of the product.

1.05 CLOSEOUT SUBMITTALS

- A. Project Record Documents:
1. Record of conduits of 1-1/2 inch trade size and larger.
 2. Record actual locations and mounting heights of outlet, pull, and junction boxes.
 3. Record actual locations, sizes, and configurations of equipment connections.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- B. Protect PVC conduit from sunlight.

1.07 COORDINATION

- A. Coordinate equipment connection and locations requirements.
- B. Sequence rough-in of electrical connections to coordinate with installation of equipment.
- C. Sequence electrical boxes and conduits with pole and foundation construction.

PART 2 – PRODUCTS

2.01 RIGID METAL CONDUIT (RMC)

- A. Rigid Steel Conduit: ANSI C80.1 and UL 6.
- B. Fittings and Conduit Bodies: NEMA FB 1; threaded, material to match conduit.
- C. Bends: Sweep elbows for feeder conduits.

2.02 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Product Description: UL 360; interlocked steel construction with PVC jacket.
- B. Fittings: NEMA FB 1 and UL 514B; cadmium-or zinc-plated.

2.03 METALLIC CONDUIT BODIES

- A. Product Description: UL 514B.

2.04 NONMETALLIC CONDUIT

- A. Product Description.
1. NEMA TC 2 and UL 651; Schedule 80 PVC.
- B. Fittings and Conduit Bodies: NEMA TC 3 and TC 14 series.

2.05 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: 316 stainless steel.
- B. Minimum size:
 - 1. Power and lighting: 4 inch x 4 inch.
 - 2. Communications: 4-11/16 inch x 4-11/16 inch.
- C. Hinged Enclosures:
 - 1. Provide continuous steel hinges on boxes 24 inches tall by 24 inches wide.
 - 2. Provide continuous steel hinges on boxes having covers larger than 576 square inches in surface area.
 - 3. Provide continuous steel hinges on boxes having covers weighing more than 10 pounds.
- D. Captive Cover Hardware: Provide 316 stainless steel captive hardware for boxes which to be installed with the box opening facing downward or where dropping the hardware have the potential to present a safety or equipment hazard.

2.06 WIREWAY

- A. Manufacturers:
 - 1. Hoffman.
 - 2. Square D.
- B. Product Description: UL 870; raintight type wireway.
 - 1. NEMA 250; Type 12.
 - 2. Knockouts: Manufacturer's standard.
 - 3. Size: Contractor to determine.
 - 4. Cover: Hinged, flanged and gasketed cover.
 - 5. Connector: Flanged.
 - 6. Fittings: Lay-in type with removable top, bottom, and side; captive screws.
 - 7. Material: 316 stainless steel.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify equipment is ready for electrical connection, for wiring, and to be energized.
- B. Verify outlet locations and routing and termination locations of raceway prior to rough-in.

3.02 EXISTING WORK

- A. Disconnect abandoned conduits, boxes and cables.
- B. Maintain power and communication connectivity to upstream and downstream equipment. Extend and reroute conduit and circuits to facilitate construction.
- C. Remove and demo branch circuit raceway on light pole as indicated.
- D. Remove and demolish feeder circuit raceway on light pole and underground as indicated.

- E. Mark and protect all raceway not designated for modification or demolition.
- F. Replace any raceway not designated for modification or demolition that becomes damaged during the project.
- G. Extend existing raceway and box installations using materials and methods matching existing conditions, unless indicated otherwise.
- H. Clean existing raceway and boxes to remain or to be reinstalled.

3.03 INSTALLATION

- A. Equipment Connections:
 - 1. Make conduit connections to lights, transformers and equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in wet locations. Install flexible conduit with enough length to provide at least a ninety degree bend in the flexible conduit.
 - 2. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.
- B. Fasten raceway and box supports to poles.
- C. Identify raceway and boxes.
- D. Arrange raceway and boxes to minimize vehicular damage and present neat appearance.

3.04 INSTALLATION – RACEWAY

- A. Minimum Size: Install raceway with the following minimum sizes unless otherwise shown on the Drawings.
 - 1. Branch Circuits (Power): Minimum 1 inch trade size diameter.
 - 2. Branch Circuits (Communications): Minimum 1 inch trade size diameter.
 - 3. Feeder Circuits (Power or Communications): Minimum 2 inch trade size diameter.
- B. Raceway Selection and Location Criteria:
 - 1. Underground, Outside Foundation: For direct-buried conduit, provide rigid steel sweep conduit elbows. Provide schedule 80 PVC or rigid steel conduit to match existing conduit type underground.
 - 2. Wet and Damp Locations Above Grade: Provide rigid steel conduit. Provide 316 stainless steel outlet, junction, and pull boxes.
 - 3. Light Pole Concrete Collar: Provide rigid steel conduit wrapped with pipe-wrapping bitumastic tape applied with a 50 percent overlap.
- C. Arrange raceway supports to prevent misalignment during raceway and wiring installation.
- D. Provide seismic supports in accordance with Section 26 05 00.
- E. Group related raceway; support using conduit rack attached to structure. Construct rack using steel channel; provide space on each for 25 percent additional raceways.
- F. Route conduit underground from point-to-point. Provide RMC elbows for all bends. Provide RMC for all concrete penetrations.
- G. Cut conduit square using saw or pipecutter; de-burr cut ends.

- H. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for minimum 20 minutes.
- I. Install conduit hubs to fasten conduit to cast boxes.
- J. Install no more than equivalent of three 90 degree bends between conduit bodies and boxes. Install conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one-shot bender to fabricate or install factory elbows for bends in metal conduit 2 inch trade size and larger.
- K. Avoid moisture traps; install junction box with drain fitting at low points in conduit system.
- L. Provide pull string sized in accordance with Section 26 05 00 in each empty conduit except sleeves and nipples. Furnish informational submittals showing pull calculations used to size pull strings. Install caps to protect installed conduit against entrance of dirt and moisture.
- M. Close ends and unused openings in wireway.
- N. Provide insulated throat box connectors where raceway terminates at sheet steel in boxes, panels, switchboards, and equipment. Connector material shall match raceway.
- O. Provide screw terminal type grounding bushings for metal conduits on circuits greater than 600 VAC.

3.05 INSTALLATION – BOXES

- A. Adjust box location up to 10 feet prior to rough-in to accommodate intended purpose.
- B. Furnish, Size and Install pull boxes and junction boxes per NEC code.
- C. Support boxes independently of conduit.

3.06 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate installation of junction boxes, pullboxes and conduits with pole installation and vehicular protection shown on civil and structural drawings.

3.07 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused openings in boxes.
- C. Cooperate with utilization equipment installers and field service personnel during checkout and starting of equipment to allow testing and balancing and other startup operations. Provide personnel to operate electrical system and checkout wiring connection components and configurations.

3.08 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes the following items.
 - 1. Conduit.
 - 2. Duct.
 - 3. Warning Tape.
 - 4. Handholes.
 - 5. Accessories.

1.02 REFERENCES

- A. ANSI C80.1 (American Society for Testing and Materials) – Rigid Steel Conduit, Zinc-Coated.
- B. ASTM A48 (American Society for Testing and Materials) – Gray Iron Castings.
- C. ASTM C857 (American Society for Testing and Materials) – Minimum Structural Design Loading for Underground Precast Concrete Utility Structures.
- D. ASTM C858 (American Society for Testing and Materials) – Underground Precast Concrete Utility Structures.
- E. ASTM C891 (American Society for Testing and Materials) – Installation of Underground Precast Utility Structures.
- F. ASTM C1037 (American Society for Testing and Materials) – Inspection of Underground Precast Utility Structures.
- G. ASTM F512 (American Society for Testing and Materials) – Smooth-Wall Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation.
- H. IEEE C2 (Institute of Electrical and Electronic Engineers) – National Electrical Safety Code.
- I. NEMA FB 1 (National Electrical Manufacturers Association) – Fittings, Cast Metal Boxes and Conduit Bodies for Conduit, Electrical Metallic Tubing (EMT) and Cable.
- J. NEMA TC 2 (National Electrical Manufacturers Association) – Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
- K. NEMA TC 3 (National Electrical Manufacturers Association) – Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing.
- L. NEMA TC 6 & 8 (National Electrical Manufacturers Association) – Polyvinyl Chloride (PVC) Plastic Utilities for Underground Installations.
- M. NEMA TC 9 (National Electrical Manufacturers Association) – Fittings for Polyvinyl Chloride (PVC) Plastic Utilities Duct for Underground Installation.
- N. UL 514B (Underwriters Laboratories, Inc.) – Conduit, Tubing and Cable Fittings.
- O. UL 651 (Underwriters Laboratories, Inc.) – Schedule 40 and 80 Rigid PVC Conduit and Fittings.

1.03 SUBMITTALS

- A. Product Data:
 - 1. Warning tape data including width, legend, traceability features, colors, and strength.

2. Conduit and duct data including listing, sizes, wall thickness, and material for each type used.
 3. Innerduct data including material, size, color, and listing for each material type.
- B. Shop Drawings:
1. Handhole shop drawings including plan, elevation, sections. Show the following details on the shop drawings.
 - a. Loading calculations.
 - b. Weights.
 - c. Duct entry provision locations and sizes.
 - d. Frame and cover design.
 - e. Grounding details.
- C. Manufacturer's Installation Instructions: Furnish lifting, moving, site preparation, excavation, and bedding instructions and requirements.

1.04 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual routing and elevations of underground conduit and duct, and locations and sizes of hand-holes.
- B. Operation and Maintenance Data: Furnish approved product data and shop drawings and include them in the Operations and Maintenance Manual.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept hand-holes on site. Inspect for damage.
- B. Move and store in accordance with manufacturer's instructions.
- C. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
- D. Arrange so identification markings are visible.

1.06 COORDINATION

- A. Coordinate Work with existing and proposed underground utilities and structures.

PART 2 – PRODUCTS

2.01 RIGID STEEL CONDUIT

- A. Rigid Steel Conduit: ANSI C80.1.
- B. Fittings: NEMA FB 1, steel.

2.02 ELECTRICAL POLYVINYL CHLORIDE (PVC) TUBING AND CONDUIT PLASTIC CONDUIT

- A. Rigid Plastic Conduit: NEMA TC 2 and UL 651, Schedule 80 PVC, with fittings and conduit bodies to NEMA TC 3 and UL 514B.
- B. Marking: UL 651 mark, manufacturer's name, and descriptive marking shall appear not less than every 10 feet.

2.03 DUCT ACCESSORIES

- A. Underground Warning Tape: Three-inch wide detectable type extra strength (not less than 300 pounds in tension) plastic tape, colored red for power, yellow for telephone and data, with suitable warning legend describing buried electrical or communications lines.

2.04 DUCT ACCESSORIES

- A. Underground Warning Tape: three-inch wide detectable type plastic tape, colored red, with suitable warning legend describing buried electrical or communications lines.

2.05 PRECAST CONCRETE HANDHOLES

- A. Manufacturers:
 - 1. Christy Concrete Products.
 - 2. Oldcastle.
 - 3. Utility Concrete Products.
 - 4. Utility Vault Co.
- B. Description: Precast handhole designed in accordance with ASTM C858, comprising modular, interlocking sections complete with accessories.
- C. Loading: ASTM C857 Class as follows.
 - 1. Class A-16 for areas subject to combination truck and trailers.
- D. Shape: Rectangular.
- E. Cover: Molded concrete with tamperproof fasteners.
- F. Top Section: Include grooved opening for frame and cover.
- G. Base Section: Include 3 inch diameter round sump with cast sleeve, and two 1 inch ground rod openings.
- H. Frame and Door: Galvanized diamond plate door with locking latch.
 - 1. Mark door with either "Power" or "Comm" as applicable.
- I. Duct Entry Provisions: 12 inch by 12 inch and 18 inch by 18 inch knockouts.
- J. Size: Minimum size is 24 inches by 36 inches by 36 inches deep, unless noted otherwise on drawings.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify routing and termination locations of duct bank prior to excavation for rough-in.
- B. Verify locations of handholes prior to excavating for installation.

3.02 EXISTING WORK

- A. Maintain access to existing duct bank and other installations remaining active and requiring access.
- B. Extend existing duct bank installations using materials and methods compatible with existing electrical installations.

- C. Clean and repair existing duct bank.

3.03 INSTALLATION – DUCT BANK

- A. Conduit Selection Criteria: Unless otherwise shown on drawings, use the following selection criteria.
 - 1. Power: Provide schedule 80 PVC or rigid galvanized steel to match existing conduit, encased in sand. Provide rigid galvanized steel conduit for sweeps.
 - 2. Communications/Data: Provide schedule 80 PVC or rigid galvanized steel to match existing conduit, encased in sand. Provide rigid galvanized steel conduit for sweeps.
 - 3. Light Pole Concrete Collar: Provide rigid steel conduit wrapped with pipe-wrapping bitumastic tape applied with a 50 percent overlap.
- B. Excavate for conduit installation in accordance with civil specifications.
- C. Install conduit with listing and manufacturer's information clearly visible from above.
- D. Install power and communications conduit and duct to locate top of duct bank minimum 24 inches below finished grade.
- E. Install conduit and duct with minimum slope of 4 inches per 100 feet (0.33 percent).
- F. Cut conduit and duct square using saw or pipe cutter; de-burr cut ends.
- G. Insert conduit and duct to shoulder of fittings; fasten securely.
- H. Join nonmetallic conduit and duct using adhesive as recommended by manufacturer.
- I. Wipe nonmetallic conduit and duct dry and clean before joining. Apply full even coat of adhesive to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.
- J. Install no more than equivalent of three 90-degree bends between pull points.
- K. Install fittings to accommodate expansion and deflection.
- L. Terminate conduit and duct at handhole entries using end bell.
- M. Band conduits and ducts together before backfilling.
- N. Securely anchor conduit and duct to prevent movement during backfilling.
- O. Provide pull string sized in accordance with Section 26 05 00 in each empty conduit except sleeves and nipples. Furnish informational submittals showing pull calculations used to size pull strings.
- P. Swab duct. Use caps to protect installed duct against entrance of dirt and moisture.
- Q. Backfill trenches in accordance with Section 31 00 00.
- R. Interface installation of underground warning tape with backfilling specified in Section 31 00 00. Install tape 6 inches below finished surface.

3.04 INSTALLATION-PRE-CAST HANDHOLE

- A. Excavate for handhole installation in accordance with civil specifications.
- B. Install and seal precast sections in accordance with ASTM C891.
- C. Install handholes plumb, square and level.

- D. Dampproof exterior surfaces, joints, and interruptions of handholes after concrete has cured 28 days, in accordance civil specifications.
- E. Backfill handhole excavation in accordance civil specifications.

3.05 FIELD QUALITY CONTROL

- A. Make arrangements for inspections by the Engineer prior to encasement.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. The Work of this Section includes the following items.

1. Two-winding transformers.

1.02 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. 10 CFR 431 (Code of Federal Regulations) - Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule.
- D. IEEE C57.12.01 (Institute of Electrical and Electronics Engineers) – General Requirements for Dry-Type Distribution and Power Transformers, Including Those with Solid-Cast and/or Resin Encapsulated Windings.
- E. NEMA 250 (National Electrical Manufacturers Association) – Enclosures for Electrical Equipment (1000 V Maximum).
- F. NEMA ST 1 (National Electrical Manufacturers Association) – Specialty Transformers (Except General-Purpose Type).
- G. NEMA ST 20 (National Electrical Manufacturers Association) – Dry-Type Transformers for General Applications.
- H. NEMA TP1 (National Electrical Manufacturers Association) – Guide for Determining Energy Efficiency for Distribution Transformers.
- I. UL 506 (Underwriters Laboratories) – Specialty Transformers.
- J. UL 1561 (Underwriters Laboratories) – Dry-Type General Purpose and Power Transformers.

1.03 SUBMITTALS

A. Product Data:

1. Unit weight.
2. Voltage ratings.
3. kVA ratings.
4. Impedance ratings.
5. RMS inrush data.
6. Energy efficiency.
7. Sound level.
8. Tap configurations.
9. Insulation system type.
10. Rated temperature rise.

B. Shop Drawings: Submit the following.

1. Dimensioned outline drawings.
2. Conduit entry/exit locations.
3. Lifting and support points.
4. Schematic drawings.
5. Wiring diagrams.

1.04 CLOSEOUT SUBMITTALS

- A. Field Quality Control Test Reports: Submit test reports in accordance with Section 26 00 10.
 1. Test procedures used.
 2. Test results that comply with requirements.
 3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.
- B. Operation and Maintenance Data:
 1. Product Data and Shop Drawings per above.
 2. Spare parts listing.
 3. Source and current prices of replacement parts and supplies.
 4. Recommended maintenance procedures and intervals.
- C. Project Record Documents: Record actual locations of transformers.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store in clean, dry space. Maintain factory wrapping or provide additional canvas or plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

PART 2 – PRODUCTS

2.01 TWO-WINDING TRANSFORMERS

- A. Manufacturers:
 1. Cutler-Hammer.
 2. G.E.
 3. Siemens.
 4. Square D.
 5. Tierney.
- B. Product Description: NEMA ST 20 and UL 1561, factory-assembled, air-cooled, dry type transformers, ratings as indicated on Drawings.
- C. Primary Voltage: 480 volts, 3 phase.
- D. Secondary Voltage: 208Y/120 volts, 3 phase.

- E. Efficiency: Comply with 10 CFR 431 for the Equipment Class provided. Class 3 (single-phase low-voltage dry-type) and Class 4 (three-phase low-voltage dry-type) values from Table I.6 of the regulation are shown below. For medium voltage classes 5, 6, 7, 8, 9, and 10, see Table I.7 of the regulation for requirements.

Single-Phase Low Voltage Dry Type Three-Phase Low-Voltage Dry Type

kVA	Efficiency (percent)	kVA	Efficiency (percent)
15	97.70	15	97.70
25	98.00	25	98.00
37.5	98.20	37.5	98.20
50	98.30	50	98.30
75	98.50	75	98.50
100	98.60	100	98.60
167	98.70	167	98.70
250	98.80	250	98.80

- F. Minimum Impedance: Unless otherwise shown, transformers shall have the following minimum impedances.
1. 15 kVA: 2.1 percent.
 2. 30 kVA: 2.7 percent.
 3. 45 kVA: 1.8 percent.
 4. 75 kVA: 2.5 percent.
 5. 112.5 kVA: 2.2 percent.
- G. Maximum Impedance: Comply with NEMA TP1, Table 4-2 efficiency standard.
- H. Insulation system and average winding temperature rise for rated kVA as follows.
1. 1-15 kVA: Class 185 with 115 degrees C rise.
 2. 16-500 kVA: Class 220 insulation with 115 degrees C rise.
- I. Case temperature: Do not exceed 35 degrees C rise above ambient at warmest point at full load.
- J. Winding Taps:
1. Transformers Less than 15 kVA: Two 5 percent below rated voltage, full capacity taps on primary winding.
 2. Transformers 15 kVA and Larger: NEMA ST 20.
- K. Basic Impulse Level: Comply with IEEE C57.12.01, Table 5 unless otherwise shown.
- L. Ground core and coil assembly to enclosure by means of visible flexible copper grounding strap.
- M. Mounting:
1. 1-15 kVA: Suitable for wall mounting.
 2. 16-75 kVA: Suitable for wall, floor and trapeze mounting.
 3. Larger than 75 kVA: Suitable for floor and trapeze mounting.

- N. Coil Conductors: Continuous copper windings with terminations brazed or welded.
- O. Enclosure: NEMA 250, Type 3R ventilated, except as modified by NEMA ST 20. Furnish lifting eyes or brackets.
- P. Isolate core and coil from enclosure using vibration-absorbing mounts.
- Q. Nameplate: Furnish nameplate information in accordance with IEEE Std. C57.12.01 including, but not limited to the following information.
 - 1. Serial number
 - 2. Class
 - 3. Number of phases
 - 4. Frequency
 - 5. Power ratings
 - 6. Voltage ratings
 - 7. Tap voltages
 - 8. Temperature rise in degrees C
 - 9. Polarity (for single phase transformers)
 - 10. Phasor diagram (for polyphase transformers)
 - 11. Percent impedance
 - 12. Basic lightning impulse insulation levels
 - 13. Weight in pounds and kilograms
 - 14. Connection diagram
 - 15. Name of manufacturer
 - 16. Installation and operating instruction reference number
 - 17. The words "Dry-Type Transformer"
 - 18. Conductor material of each winding
 - 19. Step-up transformer suitability

2.02 SOURCE QUALITY CONTROL

- A. Production test each unit according to NEMA ST20.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify mounting supports are properly sized and located including concealed bracing in walls.

3.02 EXISTING WORK

- A. Coordinate, confirm all existing loads, and schedule shutdown prior to construction.
- B. Disconnect and protect existing circuit conductors.
- C. Remove and demo existing transformers as indicated.

- D. Clean and repair existing transformers to remain or to be reinstalled.

3.03 INSTALLATION

- A. Install housekeeping pads in accordance with Section 26 05 00. Verify surfaces of housekeeping pads are level within 0.3 percent (1/8 inch in 42 inches) and are suitable for transformer installation.
- B. Set transformer plumb, square and level.
- C. Use flexible conduit, in accordance with Section 26 05 30, 2 feet minimum length, for connections to transformer case. Make conduit connections to side panel of enclosure.
- D. Provide seismic restraint anchorage.
- E. Install grounding and bonding in accordance with Section 26 05 00.

3.04 FIELD QUALITY CONTROL

- A. Performance of Acceptance Checks and Tests. Perform in accordance with the manufacturer's recommendations and include the following visual and mechanical inspections and electrical tests, performed in accordance with ANSI/NETA ATS.
- B. Visual and Mechanical Inspection:
 - 1. Compare equipment nameplate information with specifications and approved shop drawings.
 - 2. Inspect physical and mechanical condition.
 - 3. Inspect all bolted electrical connections for high resistance using low-resistance ohmmeter, verifying tightness of accessible bolted electrical connections by calibrated torque-wrench method, or performing thermographic survey.
 - 4. Perform specific inspections and mechanical tests as recommended by manufacturer.
 - 5. Verify that resilient mounts are free and shipping brackets have been removed.
 - 6. Verify that winding core, frame, and enclosure groundings are correct.
 - 7. Verify that as-left tap connections are as specified.
- C. Electrical Tests:
 - 1. Perform insulation-resistance tests.
 - 2. Perform resistance measurements through all bolted connections with low-resistance ohmmeter, if applicable.
 - 3. Perform turns-ratio tests.
 - 4. Verify correct secondary voltage phase-to-phase and phase-to-neutral after energization and prior to loading.

3.05 .ADJUSTING

- A. Measure primary and secondary voltages and make appropriate tap adjustments.

END OF SECTION

This page intentionally left blank

PAT 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes panelboards and molded case circuit breakers.

1.02 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. NECA 1 (National Electrical Contractors Association) – Good Workmanship in Electrical Contracting.
- D. NECA 407 (National Electrical Contractors Association) – Installing and Maintaining Panelboards.
- E. NEMA AB 3 (National Electrical Manufacturers Association) – Molded-Case Circuit Breakers and Their Applications.
- F. NEMA PB 1 (National Electrical Manufacturers Association) – Panelboards.
- G. NEMA PB 1.1 (National Electrical Manufacturers Association) – Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
- H. NEMA 250 (National Electrical Manufacturers Association) – Enclosures for Electrical Equipment (1000 Volts Maximum).
- I. UL 67 (Underwriters Laboratories) – Panelboards.
- J. UL 489 (Underwriters Laboratories) – Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures.
- K. UL 1699 (Underwriters Laboratories) – Arc-Fault Circuit Interrupters.

1.03 SUBMITTALS

- A. Product Data:
 - 1. Features.
 - 2. Performance.
 - 3. Electrical Characteristics.
 - 4. Ratings.
- B. Shop Drawings:
 - 1. Outline and support point dimensions.
 - 2. Voltage.
 - 3. Main bus ampacity.
 - 4. Integrated short circuit ampere rating.
 - 5. Circuit breaker and fusible switch arrangement and sizes.
- C. Calculations: Submit the following items prior to or coincident with product data submittals for electrical equipment and overcurrent protective devices specified in this Section.

1. Submit Protective Device Coordination Study.
2. Submit Fault Current Analysis.
3. Submit Arc Flash Hazard Analysis.

1.04 CLOSEOUT SUBMITTALS

- A. Field Quality Control Test Reports: Submit test reports in accordance with Section 26 00 10.
 1. Procedures used.
 2. Test and inspection results that comply with Specifications.
 3. Test and inspection results that failed to comply and corrective action taken to achieve results that comply with Specifications.
- B. Project Record Documents: Record actual locations of panelboards and record actual circuiting arrangements.
- C. Operation and Maintenance Data:
 1. Spare parts listing.
 2. Source and current prices of replacement parts and supplies.
 3. Recommended maintenance procedures and intervals.

1.05 MAINTENANCE MATERIALS

- A. Furnish 2 of each panelboard key. Panelboards keyed to Engineer's current keying system.

PART 2 – PRODUCTS

2.01 PANELBOARDS

- A. Manufacturers:
 1. Eaton Cutler-Hammer.
 2. GE.
 3. Siemens.
 4. Square D.
 5. Substitutions: Not Permitted.
- B. Product Description: NEMA PB 1 and UL 67, circuit breaker type panelboard.
- C. Phase, Neutral and Ground Buses: Silver plated copper, ratings as shown. Aluminum is prohibited. Provide field convertible mains that allow top or bottom feed. Neutral and ground busses shall have the same quantity of load side termination points available as for the maximum number of circuits that the panel is capable of regardless of the circuit layout in this project.
- D. Main Terminals: Provide main circuit breaker or main lugs to match existing panelboard.
- E. Short Circuit Rating: Provide short circuit ratings to match existing panelboard rating.
- F. Enclosure: Sized to fit in the space shown, with required clearances. NEMA 250, types as follows.
 1. Outdoor or Wet Locations: Type 3R unless otherwise shown.

- G. Cabinet Front: Surface or flush mounted as shown, door-in-door type with inner and outer doors hinged. Outer door shall be fastened to enclosure using machine screws. Hinges shall be concealed type for panelboards installed in finished areas. Inner door shall be equipped with flush locking clamps and metal circuit directory frame. Locks shall be keyed alike. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Finish in manufacturer's standard gray enamel.
- H. Service Equipment Label: If the panelboard is used as service equipment, provide SE listed and labeled equipment with one or more main service disconnecting and overcurrent protective devices.

2.02 MOLDED CASE CIRCUIT BREAKERS

- A. Product Description: NEMA AB 1 and UL 489, bolt-on type circuit breakers with integral trip units in each pole and common trip handle for all poles. Note: Square D I-Line breakers are considered the equivalent of bolt-on for the purposes of this paragraph.
- B. Ratings: Circuit breakers shall be 100 percent rated. Use of 80 percent rated circuit breakers is not permitted.
- C. Trip Units: Provide trip units based on the following frame and amperage ratings.
 - 1. 0 to 100 Amperes: Fixed thermal and fixed instantaneous functions.
 - 2. 250 Amp Frame: Interchangeable trip units with adjustable inverse time overcurrent and adjustable instantaneous trip functions.
- D. Manufacturer: To match panelboard in which they are mounted.
- E. Circuit Breaker Accessories: Trip units, toggle locks, auxiliary switches, etc., as indicated on Drawings or Schedules.

PART 3 – EXECUTION

3.01 EXISTING WORK

- A. Coordinate, confirm all existing loads, and schedule shutdown prior to construction.
- B. Disconnect and protect existing circuit conductors.
- C. Remove and demolish existing panelboards as indicated.

3.02 EXAMINATION

- A. Receive, inspect, handle, and store panelboards in accordance with to NECA 407 and NEMA PB 1.1.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 INSTALLATION

- A. Install panelboards in accordance with NECA 407 and NEMA PB 1.1.
- B. Install panelboards plumb, square and level.

- C. Height: 6 feet to top of panelboard; install panelboards taller than 6 feet with bottom no more than 4 inches and no less than 2 inches above floor.
- D. Install filler plates for unused spaces in panelboards.
- E. Provide typed circuit directory for each panelboard. Revise directory to reflect circuiting changes to balance phase loads. Designate specific equipment or areas served with each circuit with sufficient detail to allow each circuit to be distinguished from all others in accordance with NEC Article 408.4.
- F. Install engraved plastic nameplates in accordance with Section 26 05 00.
- G. Ground and bond panelboard enclosure according to Section 26 05 26.

3.04 FIELD QUALITY CONTROL

- A. Performance of Acceptance Checks and Tests. Perform in accordance with the manufacturer's recommendations and include the following visual and mechanical inspections and electrical tests, performed in accordance with ANSI/NETA ATS.
- B. Panelboards:
 - 1. Compare equipment nameplate data with Contract Documents.
 - 2. Inspect physical, electrical, and mechanical condition.
 - 3. Verify anchorage, required area clearances, and correct alignment.
 - 4. Inspect all doors, panels, and sections for paint, dents, scratches, fit, and missing hardware.
 - 5. Verify that circuit breaker sizes and types are as specified.
 - 6. Inspect all bolted electrical connections for high resistance using low-resistance ohmmeter. Perform any necessary corrections.
 - 7. Inspect insulators for evidence of physical damage or contaminated surfaces.
 - 8. Verify correct barrier installation.
 - 9. Exercise all active components.
 - 10. Inspect all mechanical indicating devices for correct operation.
 - 11. Clean panelboard.
 - 12. Perform insulation-resistance tests on each bus section phase to phase and phase to ground.
- C. Molded Case Circuit Breakers:
 - 1. Compare nameplate data with the Drawings and Specifications.
 - 2. Inspect physical and mechanical condition.
 - 3. Perform contact-resistance tests on each breaker.
 - 4. Perform insulation-resistance tests phase to phase, phase to ground, and across open poles.
- D. Prepare and submit report of findings.

3.05 ADJUSTING

- A. Measure steady state load currents at each panelboard feeder; rearrange circuits in panelboard to balance phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes hinged cover enclosures and cabinets.

1.02 REFERENCES

- A. NECA (National Electrical Contractors Association) – Standard of Installation.
- B. NEMA ICS 4 (National Electrical Manufacturers Association) – Terminal Blocks for Industrial Control Equipment and Systems.
- C. NEMA 250 (National Electrical Manufacturers Association) – Enclosures for Electrical Equipment (1000 Volts Maximum).
- D. UL 50 (Underwriters Laboratories) – Enclosures for Electrical Equipment.

1.03 SUBMITTALS

- A. Product Data:
 - 1. Dimensions.
 - 2. Features.
 - 3. Accessories.
- B. Shop Drawings:
 - 1. Dimensioned outline drawings.
 - 2. Lifting and support points.
 - 3. Installation drawings showing mounting provisions.

1.04 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum five years documented experience.

1.05 EXTRA MATERIALS

- A. Furnish two of each key.

PART 2 – PRODUCTS

2.01 2.01 ENCLOSURES

- A. Manufacturers:
 - 1. Circle AW.
 - 2. Hoffman.
 - 3. Square D.
- B. Product Description: UL 50 and NEMA 250, Type 3X 316 stainless steel enclosure.
- C. Covers: Continuous hinge with handle.
- D. Furnish interior metal panel for mounting terminal blocks and electrical components; finish with white enamel.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install in accordance with NECA "Standard of Installation."
- B. Install enclosures and boxes plumb. Anchor securely to pole with galvanized steel brackets and fasteners in accordance with Section 26 05 00.
- C. Install cabinet fronts plumb, square and level.

3.02 CLEANING

- A. Clean electrical parts to remove conductive and harmful materials.
- B. Remove dirt and debris from enclosure.
- C. Clean finishes and touch up damage.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes molded-case and insulated-case circuit breakers in individual enclosures.

1.02 REFERENCES

- A. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- B. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- C. NECA (National Electrical Contractors Association) – Standard of Installation.
- D. NEMA 250 (National Electrical Manufacturers Association) – Enclosures for Electrical Equipment (1000 Volts Maximum).
- E. NEMA AB 1 (National Electrical Manufacturers Association) – Molded Case Circuit Breakers.

1.03 SUBMITTALS

- A. Product Data:
 - 1. Dimensions.
 - 2. Features.
 - 3. Performance.
 - 4. Electrical characteristics.
 - 5. Ratings.
 - 6. Accessories.
- B. Shop Drawings:
 - 1. Dimensioned outline drawings.
 - 2. Schematic drawings.
 - 3. Wiring diagrams.
 - 4. Installation drawings showing:
 - a. Weights.
 - b. Conduit entrance locations and requirements.

1.04 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations and continuous current ratings of enclosed circuit breakers.
- B. Operation and Maintenance Data:
 - 1. Product Data and Shop Drawings per above.
- C. Field Quality Control Test Reports: Submit test reports in accordance with Section 26 00 10.

1.05 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

PART 2 – PRODUCTS

2.01 MOLDED CASE CIRCUIT BREAKER

- A. Manufacturers:
 - 1. Cutler-Hammer.
 - 2. GE.
 - 3. Siemens.
 - 4. Square D.
 - 5. Substitutions: Not Permitted.
- B. Product Description: Enclosed, bolt-on molded-case circuit breaker conforming to NEMA AB 1, with ground fault interrupter, suitable for use as service entrance equipment.
- C. Enclosure: NEMA AB 1, to meet conditions. Fabricate enclosure from stainless steel finished with manufacturer's standard gray enamel or fiberglass.
 - 1. Exterior Locations: NEMA 250, Type 3R.

PART 3 – EXECUTION

3.01 EXISTING WORK

- A. Remove and demolish enclosed circuit breakers to be replaced.
- B. Clean, test and repair existing enclosed circuit breakers to be reinstalled.

3.02 INSTALLATION

- A. Install in accordance with NECA "Standard of Installation."
- B. Install enclosed circuit breakers plumb. Provide supports in accordance with Section 26 05 00.
- C. Height: Not more than 72 inches to operating handle.
- D. Locate and install engraved plastic nameplates in accordance with Section 26 05 00.
- E. Provide conduit, boxes, supports, wiring, and connections.

3.03 FIELD QUALITY CONTROL

- A. Performance of Acceptance Checks and Tests. Perform in accordance with the manufacturer's recommendations and include the following visual and mechanical inspections and electrical tests, performed in accordance with ANSI/NETA ATS.
- B. Molded Case Circuit Breakers:
 - 1. Compare nameplate data with Contract Documents.
 - 2. Inspect physical and mechanical condition.
 - 3. Perform contact-resistance tests on each breaker.
 - 4. Perform insulation-resistance tests phase to phase, phase to ground, and across open poles.

5. Reports: Submit test report.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of this Section includes the following.
 - 1. Luminaires and accessories. (Engineer Furnished Contractor Installed.)

1.02 REFERENCES

- A. ANSI C135.13 (American National Standards Institute) – Roadway and Area Lighting Equipment – Metal Brackets for Wood Poles.
- B. ANSI/IESNA LM-64 (Illuminating Engineering Society of North America) – Photometric Measurements of Parking Areas.
- C. ANSI/NETA ATS (InterNational Electrical Testing Association) – Standard for Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- D. ANSI/NETA ETT (InterNational Electrical Testing Association) – Standard for Certification of Electrical Testing Technicians.
- E. RUS Bulletin 1724E-150 (USDA Rural Utility Services) – Unguyed Distribution Poles – Strength Requirements.
- F. RUS Bulletin 1728F-700 (USDA Rural Utility Services) – Wood Poles, Stubs and Anchor Logs.
- G. UL 1598 (Underwriters Laboratories, Inc.) – Luminaires.

1.03 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Provide site drawings showing actual locations and luminaire mounting orientation and aiming.
- B. Field Quality Control Test Reports: Submit test reports in accordance with Section 26 00 10.
 - 1. Photometric test results.
- C. Operation and Maintenance Data:
 - 1. Light Pole existing conditions (i.e. existing light fixtures, light orientation, rotation, tilt) and lighting photometric measurements.
 - 2. Light Pole new conditions (i.e. new light fixtures, light orientation, rotation, tilt) and lighting photometric measurements.

1.04 COMMISSIONING

- A. Furnish commissioning duties in accordance with the drawings and specifications.

PART 2 – PRODUCTS

2.01 LUMINAIRES

- A. Existing High Mast Dome LED Lights and LED Flood Lights with Glare Shields; unless otherwise indicated. Provide secure and dry storage location.
- B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use 316 stainless steel fasteners and mounting bolts unless otherwise indicated.
- C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components. Replace all corroded fasteners with new.

1. Materials: Shall not cause galvanic action at contact points.
2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Use 316 stainless steel.
- D. Brackets and supports for Luminaires: Re-use and re-install existing support brackets, wagon wheels and support arms. Replace all corroded or damaged brackets and supports with new.
 1. Adapter clamp bracket around pole, with through pole bolts for secure support, and bolted together with 316 stainless bolts and fasteners.
- E. Bird Deterrent: Provide new stainless steel bird deterrent on all lights and on top of poles.

PART 3 – EXECUTION

3.01 EXISTING WORK

- A. Document existing pole luminaire support structures and luminaire locations with aiming, orientation, rotation and tilt.
- B. For poles that are being replaced at a new location, provide illumination test for existing light levels.
- C. Disconnect, remove and store existing luminaires, support brackets, and accessories.
- D. Clean and repair existing luminaires to remain and be reinstalled.

3.02 LUMINAIRE INSTALLATION

- A. Install existing luminaire supports and High Mast Dome LED Lights and LED Flood Lights with Glare Shields and Bird Deterrent. Provide secure and dry storage location prior to installation. Installed supports and luminaires shall match existing luminaire supports and luminaire aiming, orientation, rotation and tilt.
- B. After luminaires are installed, provide illumination test for light levels.
- C. Provide seismic and safety support cables.
- D. Provide bird deterrent for each luminaire.
- E. Bond and ground luminaries metal accessories in accordance with Section 26 05 26. Install supplementary grounding electrode at each pole.

3.03 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged luminaires and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
- C. Illumination Tests:
 1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. For the types of installations listed, comply with the associated IESNA testing guide(s).
 - a. Parking Areas: IESNA LM-64.
 2. Measure and document light levels in foot-candles for a 300 foot x 300 foot grid with measurements taken 50 foot on center.

- D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

3.04 ADJUSTING

- A. For poles that are being replaced at a new location, where light levels vary by 10% or more from existing light levels to relocated light levels, adjust luminaire aiming, orientation, rotation and tilt to obtain existing light levels.

3.05 CLEANING

- A. Remove dirt and debris from enclosures.
- B. Clean photometric control surfaces recommended by manufacturer.
- C. Clean finishes and touch up damage.

END OF SECTION

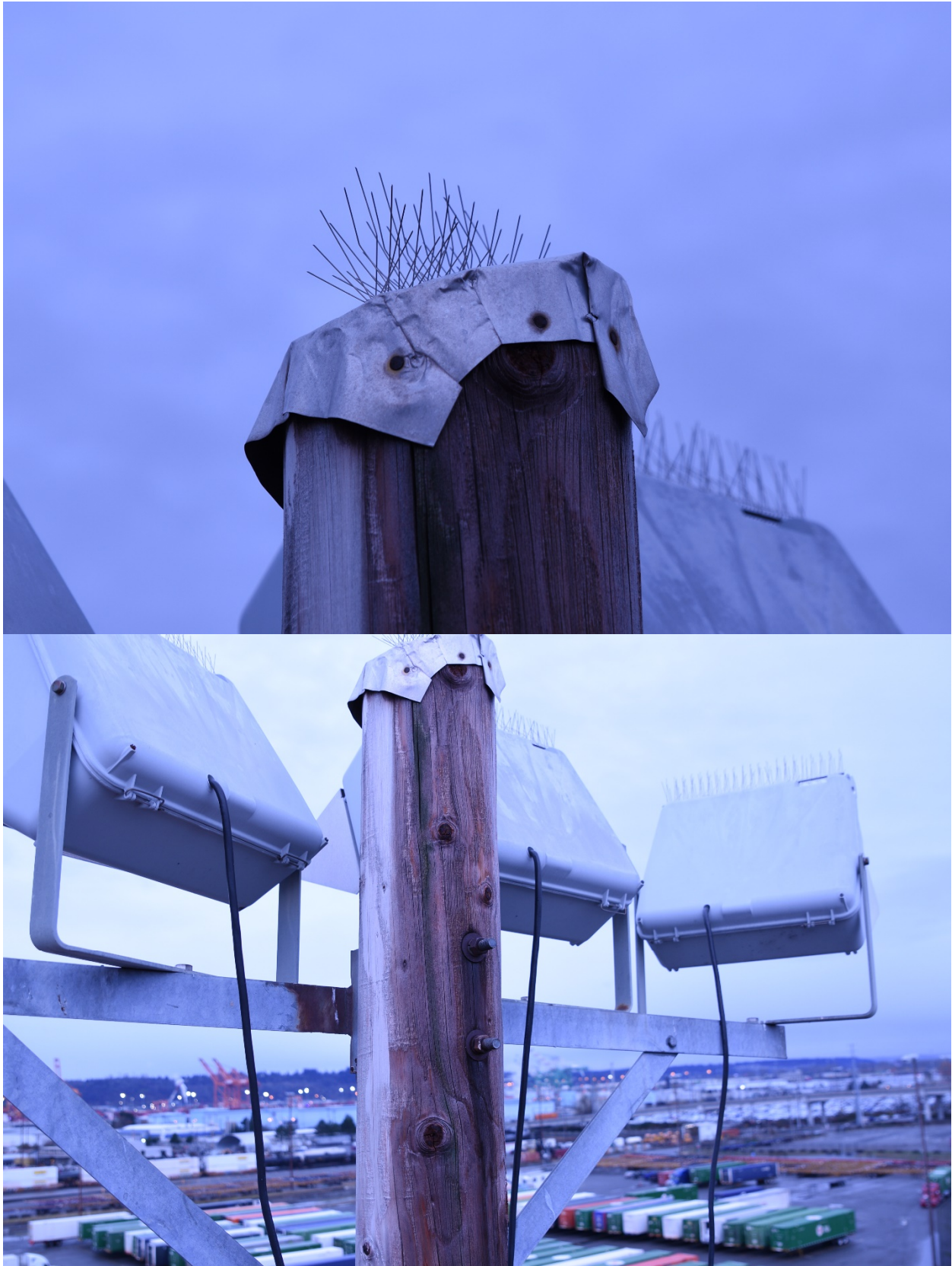
This page intentionally left blank

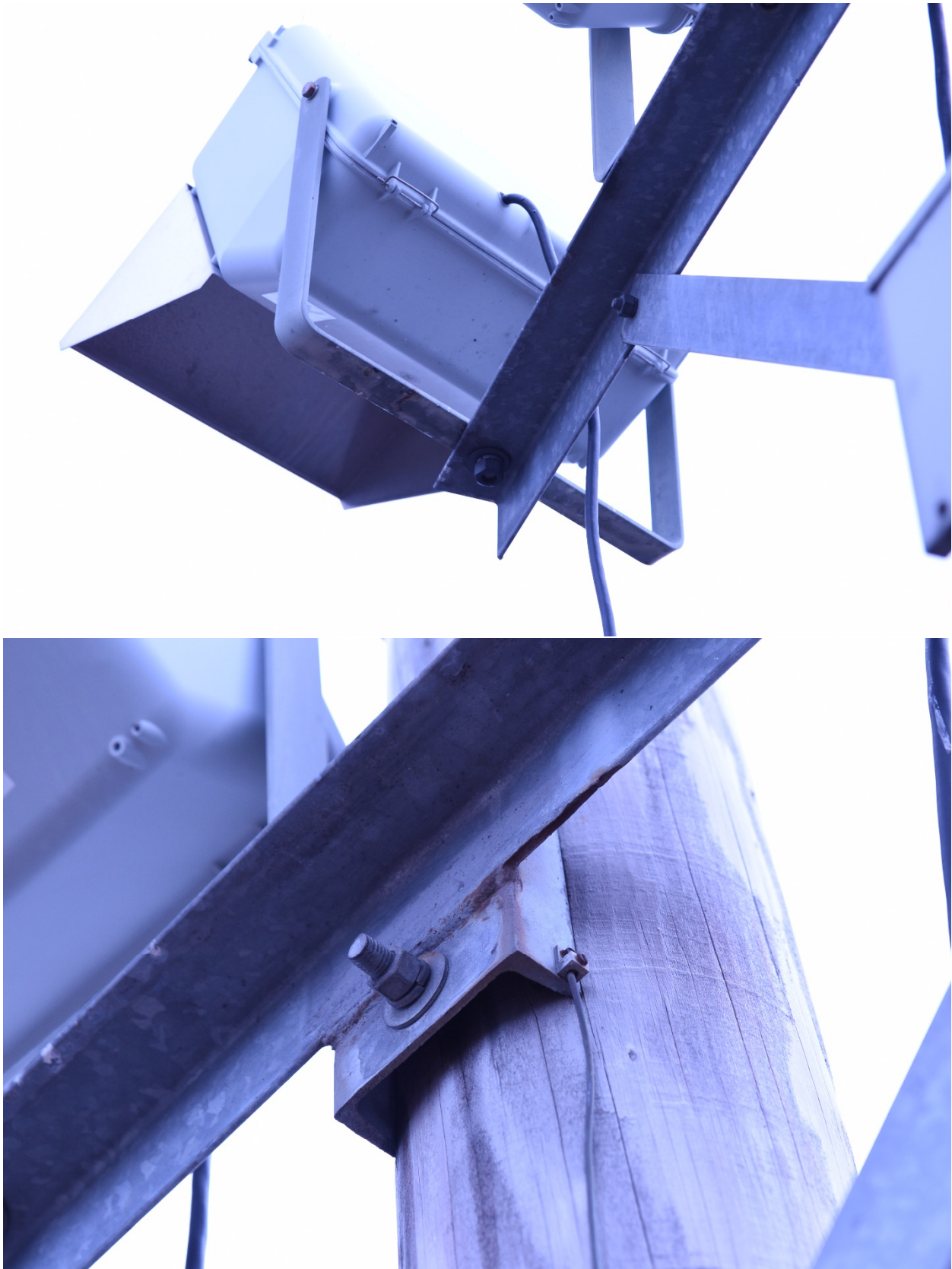
The following photos show a sampling of existing luminaires, support structures, bird spikes, SO cords, mounting hardware, etc. The photos do not show all conditions and poles. These photos are not intended to replace the required field investigation.

Cross Arms. Typical Existing Exterior Light Fixture Support Photos:



DIVISION 26 – ELECTRICAL
SECTION 26 56 00 – ATTACHMENT A – EXISTING EXTERIOR LIGHT FIXTURE SUPPORT PHOTOS





DIVISION 26 – ELECTRICAL
SECTION 26 56 00 – ATTACHMENT A – EXISTING EXTERIOR LIGHT FIXTURE SUPPORT PHOTOS



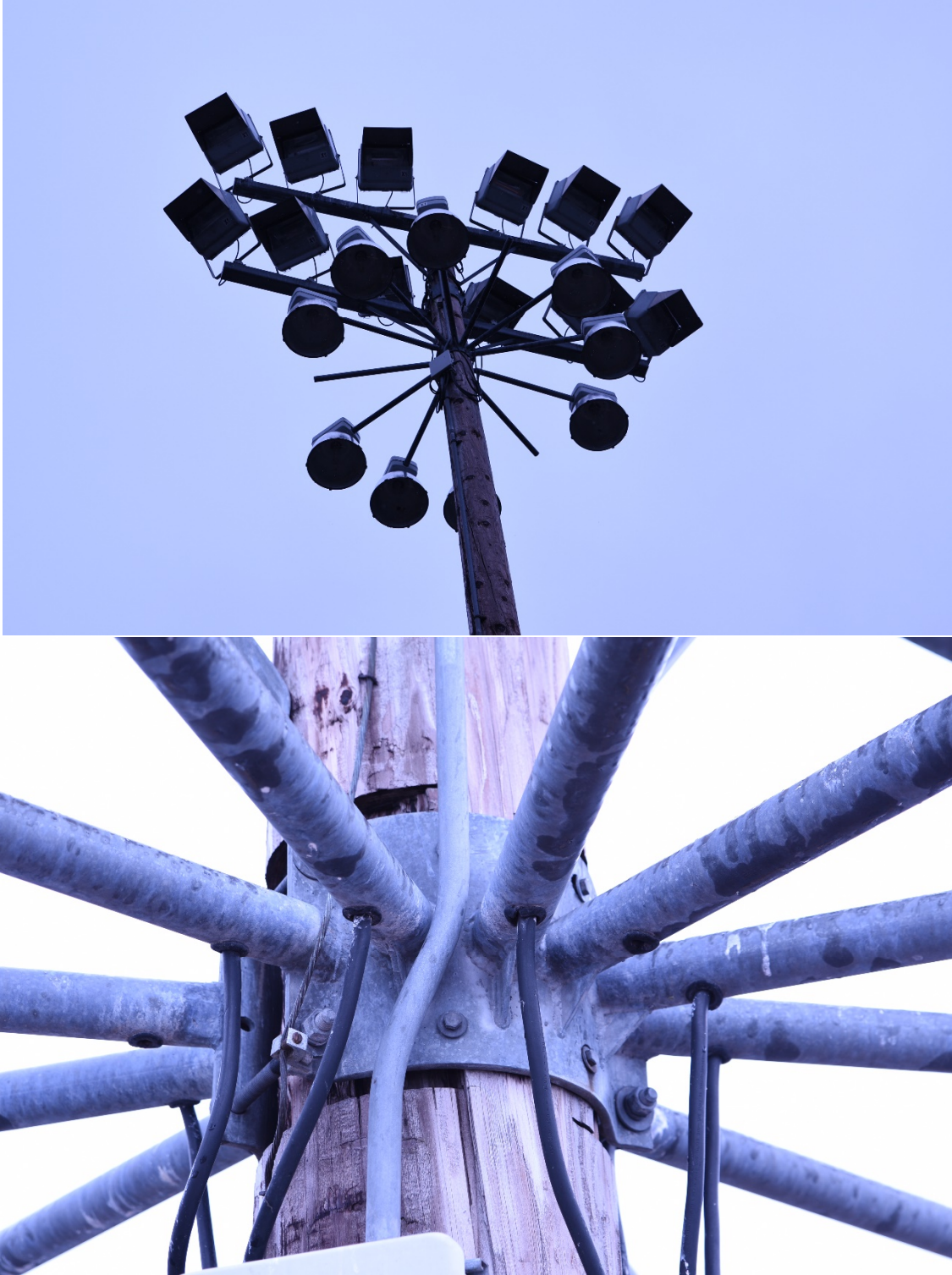




DIVISION 26 – ELECTRICAL
SECTION 26 56 00 – ATTACHMENT A – EXISTING EXTERIOR LIGHT FIXTURE SUPPORT PHOTOS



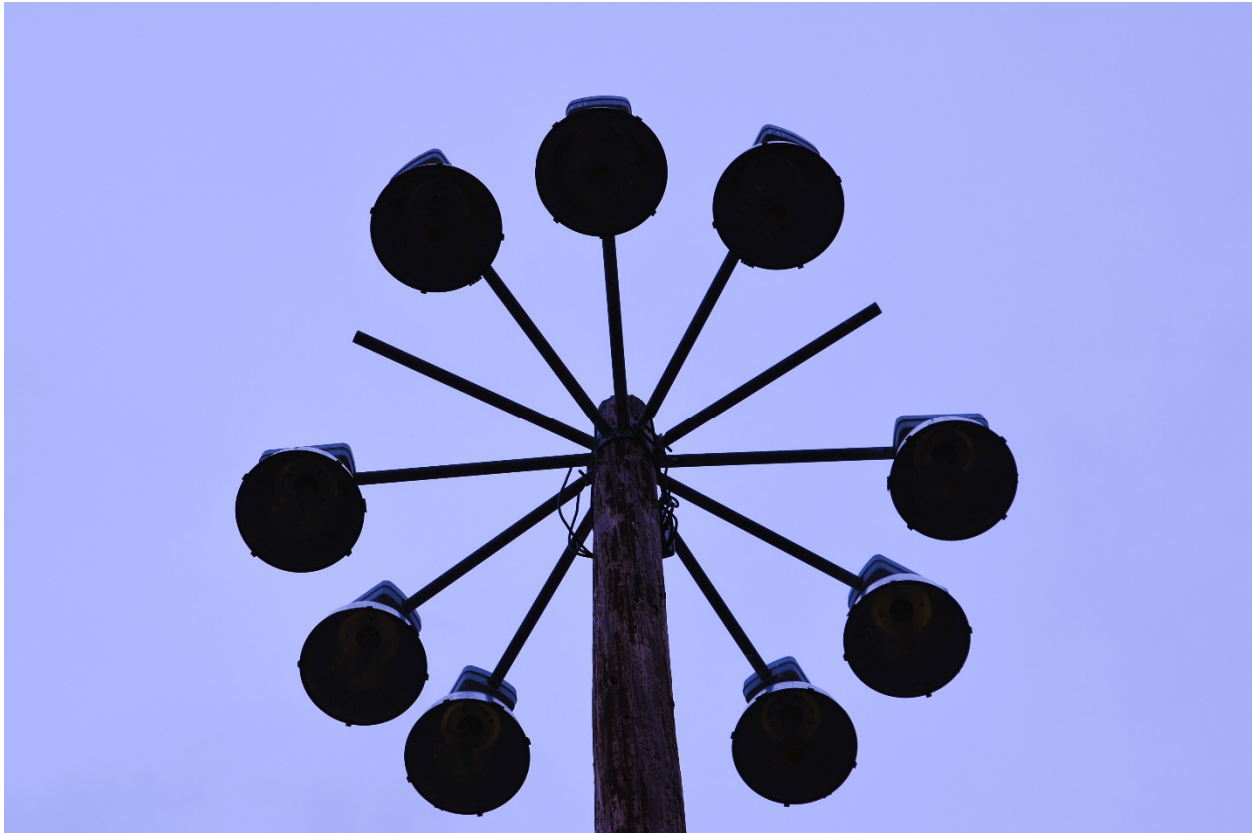
Wagon Wheels, Typical Existing Exterior Light Fixture Support Photos:



DIVISION 26 – ELECTRICAL
SECTION 26 56 00 – ATTACHMENT A – EXISTING EXTERIOR LIGHT FIXTURE SUPPORT PHOTOS









PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and General Requirements, apply to this work as if specified in this section.

1.02 DESCRIPTION OF WORK

- A. The work includes the requirements for providing all lighting poles and associated work in conformance with these specifications and as indicated on the drawings.

1.03 RELATED SECTIONS

- A. Section 31 00 00 – Earthwork
- B. Section 33 42 13 – Corrugated Metal Pipe

1.04 REFERENCE STANDARDS

- A. American Association of State and Highway and Transportation Officials (AASHTO) LRFD Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2015 with 2018 Interim Revisions.
- B. American National Standards Institute (ANSI) 05.1 2022 Wood Poles – Specifications and Dimensions.
- C. American Wood Protection Association (AWPA) P36-22: Standard for Copper Naphthenate.
- D. American Wood Protection Association (AWPA) P39-18 (Reaffirmed 2020): Standard for 4,5-Dichloro-2-N-Octyl-4-Isothiazolin-3-One (DCOI).
- E. American Wood Protection Association (AWPA) T1 2022 Use Category System: Processing and Treatment Standard.
- F. American Wood Protection Association (AWPA) U2 Use Category System: User Specification for Treated Wood.
- G. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- H. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10, 2023 edition, by Washington State Department of Transportation (WSDOT Standard Specifications).
- I. International Building Code (IBC) 2018, as amended and adopted by the City of Tacoma into the Tacoma Municipal Code (TMC).

1.05 QUALITY ASSURANCE

- A. Ensure the quality of pressure treated wood poles.
- B. Inspection and Testing: The Contractor shall provide an inspection report for wood poles of an independent inspection agency, approved by the Port, stating that offered products comply with AWPA P36 and AWPA P39.

1.06 SUBMITTALS

- A. Documentation demonstrating the qualifications and experience of the supervisor's of the work, as described above.
- B. Detailed shop drawings that are coordinated and checked for all wood poles prior to installation.

1. Do not deliver wood poles to the site prior to acceptance of the shop drawings.
2. The shop drawings shall include, but not be limited to, manufacturer's mark and date of treatment, height and class of pole, wood species, preservation code, and retention.

PART 2 – PRODUCTS

2.01 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle poles in a manner to prevent damage or deformation.
- B. Stack poles stored for more than 2 weeks on decay-resisting skids arranged to support the poles without producing noticeable distortion.
- C. Store poles to permit free circulation of air, such that the bottom poles in the stack are at least one-foot above ground level and growing vegetation.
- D. Do not permit decayed or decaying wood to remain underneath stored poles.
- E. Do not drag treated poles along the ground.
- F. Do not use pole tongs, cant hooks, and other pointed tools capable of producing indentation more than one inch in depth in handling the poles.
- G. Do not apply tools to the groundline section of any pole.

2.02 WOOD POLES

- A. All wood poles shall be Douglas Fir and conform to ANSI standard 05.1.
- B. All wood poles shall be treated full length with either Copper Naphthenate (CuN) or DCOI in accordance with AWP A T1 and AWP A U1 to the requirements of Use Category 4B (UC4B).
- C. All wood poles shall have a brand where the bottom of the brand or disc is 25-feet from the pole butt.

PART 3 – EXECUTION

3.01 GENERAL

- A. Prior to installation, inspect the installed work of all other trades and verify it is complete to the point where wood pole installation may commence.

3.02 INSTALLATION

- A. Contractor shall be responsible for controlling, collecting, and coordinating the disposal of groundwater encountered as necessary.
- B. Placing: Pole shall be placed in an excavated hole as indicated on the Drawings.
- C. Pole foundations shall be per contract drawings.

END OF SECTION

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. The Work under this Section includes providing materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of a grounding and bonding system for communications system.

1.02 REFERENCES

- A. UL 467 (Underwriters Laboratory) – Grounding and Bonding Equipment.
- B. ANSI/TIA-607 – Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises.
- C. ANSI/TIA 942 - Telecommunications Infrastructure Standard for Data Centers

1.03 SUBMITTALS

- A. Product Data:
 - 1. Materials list.
 - 2. Technical data (cut sheets) for on each component.

1.04 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual routing of backbone grounding conductors.

1.05 COORDINATION

- A. Coordinate the bonding of communication bonding busbars and conductors' bars with the Work of Section 26 05 26 Grounding and Bonding for Electrical Systems.

PART 2 – PRODUCTS

2.01 BONDING CONDUCTORS

- A. Stranded copper conductors may be insulated if listed for the application.
- B. UL listed.

2.02 BONDING ACCESSORIES

- A. Manufacturers:
 - 1. Burndy
 - 2. Chatsworth.
 - 3. Cooper B-Line.
 - 4. ERICO.
 - 5. Hubbell.
 - 6. Tyco Electronics
- B. Two Hole Ground Terminal Block
 - 1. Material: Electroplated tin aluminum extrusion.
 - 2. Attachment: Accepts conductors ranging from 14 AWG through 2/0 to allow secure attachment to the equipment racks and cabinets.

3. Irreversible.
 4. UL Listed.
- C. Two Hole Compression Lugs
1. Long Barrell
 2. Material: Electroplated tinned copper.
 3. Attachment: Two holes spaced on 5/8 inch or 1-inch centers, as stated below, to secure two bolt connections to busbars.
 4. Irreversible.
 5. Size: 6 to 4/0, as stated below.
 6. UL listed.
- D. Compression Taps
1. Material: Copper alloy.
 2. C-shaped connectors that wrap around two conductors forming an irreversible splice; installation requires a hydraulic crimping tool
 3. Size: Fit specific size conductors.
 4. Irreversible.
 5. UL Listed.
- E. Antioxidant Joint Compound

2.03 CABLE TAGS

- A. Manufacturer:
1. ACP International, Part # CT100.
- B. Construction: Plastic cable tags with "WARNING, DO NOT REMOVE THIS GROUND. SHOULD IT BECOME LOOSE OR NEED TO BE REMOVED, CONTACT FACILITIES." AND SPACE FOR CABLE INFORMATION, COMPLETE WITH CABLE TIES.
- C. Size: 1.5" x 3.0"
- D. Color: Orange with black lettering.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Bonding Conductors:
1. Provide bonding conductors as shown on the Drawings. Install bonding conductors in continuous lengths. Do not daisy-chain bonding conductors between bonding busbars with non-continuous bonding conductors.
 2. Remove paint from painted metal components where bonding/ground lugs contact metallic components.
 3. Apply antioxidant joint compound where metallic components contact bonding/ground lugs.

4. Using a crimping tool to connect the bonding conductors to the lugs. Do not use pliers or hammers. Use the proper die in the crimping tool to match the diameter of the lug/bonding conductor.
5. Visibly inspect the inspection port of the lug to ensure proper contact was made with the bonding conductor.
6. Provide a minimum 8-inch bend radius for bonding conductors connected to primary or secondary bonding busbars.
7. Provide a bending radius of a minimum 10X outside diameter of a bonding conductors along its run.

B. Labeling:

1. Affix a machine generated cable tag on backbone cables where they bond to bonding busbars. Affix a machine generated label with the following wording on all backbone cables where they bond to grounding busbars, "WARNING! TELECOMMUNICATIONS BONDING CONDUCTOR. DO NOT REMOVE OR DISCONNECT. IF CONNECTORS ARE LOOSE OR MUST BE REMOVED, CALL THE TELECOMMUNICATION MANAGER FOR APPROVAL".

3.02 FIELD QUALITY CONTROL

A. Visual and Mechanical Inspection:

1. Provide the grounding system in compliance with Drawings, Specifications, and NFPA 70 National Electrical Code Article 250.
2. Inspect physical and mechanical condition of the system to ensure absence adverse conditions including loose connections, corrosion or physical damage. Repair or replace adverse conditions.
3. Inspect anchorage.

B. Electrical Tests:

1. Perform tests after the communications cable infrastructure is installed but before but before the installation and activation of any systems electronic components.
2. Perform point-to-point tests to determine the resistance between the main grounding system and all electrical equipment frames, electrical bonding busbars,
 - a. communications bonding busbars, system neutral, and derived neutral points. Investigate point-to-point resistance values that exceed 0.5 ohm.

3.03 CLEANING

- A. Remove all waste materials daily.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work under this Section includes materials, equipment, labor, supervision, tools and items necessary for the construction, installation, labeling and testing of a communication backbone cabling system.

1.02 REFERENCES

- A. TIA 455 (Telecommunication industry Association/Electrical Industries Association) Fiber Optic Test Standards.
- B. TIA 526 (Telecommunication industry Association/Electrical Industries Association) Optical Fiber Systems Test Procedures.

1.03 SUBMITTALS

- A. Manufacturer's Instructions:
 - 1. Application conditions and limitations of use stipulated by the manufacturer.
 - 2. Manufacturer's instructions for storage, handling, protection, examination, preparation, operation and installation of product.
- B. Factory Tests: Submit supplied factory test information for fiber optic cable to the Engineer prior to installation.
- C. Qualifications:
 - 1. Submit resumes and certifications of technicians and project managers who will support the installation.
- D. Product Data:
 - 1. Materials list.
 - 2. Technical data (cut sheets) for on each component, including finishes and weights.
- E. Shop Drawings:
 - 1. Wall and equipment rack elevations for termination, splicing and patching equipment installed under this Work, provided in coordination with the similar Work identified in Section 27 15 00.
 - 2. Sample backbone cable termination schedules for of each type of cable installed under this work. Schedules to include for each cable pair or strand.
 - a. Building or Pole ID.
 - b. Pole ID (location of each end of the cable).
 - c. Cable ID.
 - d. Size of Cable.
 - e. Cable Type.
 - f. Cable Category.
 - g. Pair #.
 - h. Strand #.

- i. Rack ID.
- j. Wall.
- k. Patch panel ID.
- l. Termination Block ID.
- m. Connector Port #.
- n. Connector Type.
- o. Row #.
- p. Pair #.

F. Deferred Submittal

- 1. Performance test plan and procedures for reference test cords, and optical fiber cables and connectors including testing methodology, connector face inspection, length, polarity, cable-signal attenuation loss and connector hygiene protection and date of last tester calibration. Note that cable test with Pass * (star) results will not be accepted.
- 2. Copies of factory provided cable spool test results.
- 3. Sample cable test results for each type of cable installed.
- 4. Sample optical fiber connector face inspection check list.
- 5. Optical fiber connector cleaning procedures.
- 6. Sample cable labels.

G. Deferred Submittal

- 1. Statement of field tester apparatus is using the current software or firmware, include software or firmware date.
- 2. Statement of field tester apparatus last calibration date.

1.04 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual information of the installed work.

- 1. Cable termination schedules in Microsoft Excel format (latest version).
- 2. Backbone schematics annotated with the approved cable identification numbers.
- 3. Cable tests results. Submit cable test results one day after testing to the Engineer.
- 4. Optical fiber connector face inspection check list.
- 5. Factory provided cable spool test results.

1.05 QUALITY ASSURANCE

A. All testing procedures and field-test instruments shall comply with applicable requirements of:

- 1. ANSI Z136.2, ANS For Safe Use of Optical Fiber Communication Systems Utilizing Laser Diode and LED Sources
- 2. ANSI/TIA-526 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant
- 3. ANSI/TIA-568, Generic Telecommunications Cabling for Customer Premises

4. ANSI/TIA-568, Optical Fiber Cabling and Components Standard
 5. ANSI/TIA-606, Administration Standard for Commercial Telecommunications Infrastructure.
- B. Trained technicians who have successfully attended an appropriate training program, which includes testing with an OLTS and an OTDR and have obtained a certificate as proof thereof shall execute the tests. These certificates may have been issued by any of the following organizations or an equivalent organization:
1. Manufacturer of the fiber optic cable and/or the fiber optic connectors.
 2. Manufacturer of the test equipment used for the field certification or representative.
 3. Training organization:
 - a. BICSI.
 - b. Association of Cabling Professionals.
 - c. Cabling Business Institute.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect material from the entrance of dirt, dust, moisture and debris.
- B. Maintain attachment of ferrule protector caps on optical fiber couplers and connectors and all pre-terminated cables.
- C. Test cables upon receipt at Project site.
 1. Test optical fiber cable to determine the continuity of the strand end to end. Use optical cable power meter.
 2. Retain test data include on cable reels.

1.07 COORDINATION

- A. Coordinate the final labeling nomenclature for cables, and termination devices with the Engineer prior to installation of cable and device labels. Obtain Engineer sign off prior to commencement.
- B. Coordinate the format and schema of the cable termination schedules with the Engineer prior to preparation of the schedules. Obtain Engineer sign off prior to use on cables and termination devices.

PART 2 – PRODUCTS

2.01 OPTICAL FIBER CABLES

- A. Manufacturers:
 1. Berk-Tek.
 2. CommScope.
 3. Corning Cable Company.
 4. General Cable.
 5. Mohawk.
 6. Superior Essex.

B. Single-Mode Optical Fiber Cable:

1. Physical Specifications: 8.3 micron/125 micron, OS2 compliant.
2. Performance Characteristics: 1310nm 1550nm
 - a. Maximum Attenuation(dB/km) .34 .22
3. Cable Construction: Outdoor rated, loose tube, reinforced with a fibrous type strength member, under a common CMX rated sheath, with no metallic components. Strand count as noted on the drawings.
4. Cable Jacket Color: Yellow.

2.02 PATCH CORDS

A. Manufacturers – Match the manufacturer of the approved cable or the approved patch panel.

B. LC Duplex Patch Cords:

1. Physical Specifications: 2-strand single-mode optical fiber cable duplex LC connectors with strain relief on both ends.
2. Performance Characteristics: Superior to the individual characteristics established in TIA 568-B cable performance.
3. Cable Jacket Color: Aqua.

2.03 TERMINATION HARDWARE

A. Manufacturers:

1. Circa Telecom.
2. CommScope.
3. Corning Cable Company.
4. Hubbell.
5. Leviton.
6. Ortonics.
7. Panduit.
8. Siemon Company.
9. Systimax.

B. Optical Fiber Patch Panel Enclosure:

1. Wall/surface mount dual compartment enclosure with quick release hinged doors, designation/label strips and the following.
 - a. Slide out splice trays.
 - b. LC duplex coupler panels and LC couplers.

C. Optical Fiber Pigtail Connectors:

1. Optical fiber pigtails with LC connectors, suitable for splicing onto the approved optical fiber backbone cables. Insertion loss < 0.2db

D. Ultra-Physical Contact Optical Fiber Connectors (Epoxy/Polish connectors not acceptable):

1. LC connector with ceramic ferrule, suitable for termination on the approved optical fiber cables. Insertion loss < 0.2db, reflectance -40db.

2.04 IDENTIFICATION LABELS

- A. Manufacturers:
 1. Brady.
 2. Panduit.
- B. Comply with TIA-606-B and applicable requirements in this section.
- C. Machine printed self-adhesive, smudge resistant labels for cables and shelves. Labels shall be appropriately sized for cable diameter. Labels shall be appropriately colored for face-plate color contrast. Submit sample labels for approval.

2.05 CABLE TAGS

- A. Manufacturer:
 1. ACP International, Part # CT100
- B. Construction: Plastic cable tags with "Caution Fiber Optic Cable" and space for cable information, complete with cable ties.
- C. Size:
 1. 1.75" x 3.875"
- D. Color:
 1. Yellow with black lettering (single-mode cable)

PART 3 – EXECUTION

3.01 GENERAL

- A. Comply with manufacturers' instructions for installing components and adjusting equipment and telecommunication cables. Where no instructions are included with the equipment, follow accepted industry best practices as identified in the BICSI design and installation manual.
- B. Keep items protected before and after installation, with dust and water proof barrier materials. Maintain the integrity of the protective measures throughout the life of the project.
- C. Protect communication cables and termination devices from damage, at all times during the construction.
- D. Maintain safe ingress and egress from work areas during the movement and installation of materials.
- E. Examine the areas to receive the work and the conditions under which the Work would be performed. Remedy unsatisfactory conditions detrimental to the proper and timely completion of the Work. Where a remedy of unsatisfactory conditions is not available or possible, notify the Architect for resolution.
- F. Examine pathway elements intended for the installation and support of communication cables.
 1. Verify the proposed routes of communication cables prior to commencement.

2. Validate that hand holes, conduits, pull boxes, supports, and other elements are in place prior to commencement of any Work. Do not install cable where the cables can be subsequently damaged by other Work.
 3. Validate that the cabling can be installed without subjecting the installed cables to electromechanical interference (EMI). Do not install cable where the cables can be affected by EMI energy.
 4. Validate that the load capacity of cable support structures is adequate to support the cables. Where a cable support is not rated for the required capacity of cables, notify the General Contractor for resolution. Do not proceed until unsatisfactory conditions have been corrected.
- G. Clean up and remove all debris generated by installation activities.
- H. Deliver to Engineer two sets of specialty tools specifically needed for proper operation, adjustment and maintenance of cable termination hardware installed under this Contract.

3.02 SURVEY AND PREPARATION

- A. Survey and inspect cable trays, conduit paths and routes prior to commencement of Work and report discrepancies and issues with the use of these for cable installation to the Architect. Failure to perform this inspection and submit the report holds the Contractor at cost risk for corrective actions and schedule impacts later in the Work.

3.03 METHODS AND PROCEDURES

- A. Install components in accordance with this Specification, the approved Cable Termination Schedule, the manufacturer's recommendations and the Drawings.
- B. Ensure that communications cable supports (J-hooks, cable tray, conduits, etc.) are fully installed before proceeding with cable installation. Do not allow cables to be installed and left unsupported and or unprotected laying on the floor. Do not tie-wrap cables to any other supporting structure in lieu of specified cable supports. Do not bundle or tie-wrap the cables even within the approved cable supports. Do not allow the cable to sag more than 12 inches.
- C. When anchoring cables to cable supports, use hoop and loop straps only. Do not bundle cables with tie-wraps.
- D. When bundling cables, use hook & loop style straps only. Do not bundle cables with tie-wraps.
- E. Protect cables during installation. Provide rigid protection for cables left on the floor. Design protection to prevent pressure on cables from walking, equipment placement, or rolled/dragged construction equipment and materials.
- F. When installing cables through lateral conduits and sleeves and conduits and sleeves are stacked in more than one row, route cables through the lower row(s) before proceeding to the upper row(s).
- G. When installing cables in vertical runs, drop cables down the run in lieu of pulling them from the bottom up.
- H. Support vertical runs of cable with hook and loop straps or split mesh grips on a minimum of 12-foot intervals.
- I. When installing cables through vertical conduits and sleeves and the conduits and sleeves are stacked in more than one row, route cables through the back row before proceeding to the forward row(s).

- J. When installing cables with metallic strength/protection members, ground the metal member.
- K. When installing armored cable, cut the armor with a armor cutting tool designed for cutting armored cables.
- L. When installing armored cables, use pulling grips/eyes.
- M. When using a pulling grip/eye, use a swivel pull eye.
- N. Maintain a minimum bend radius of 20X for interbuilding cables and 15X for intrabuilding cables or manufacturer's minimum bend radius of the cables, whichever is greater.
- O. Do not stretch, stress, tightly coil, bend or crimp the cables during the installation or when leaving them out of the way of other trades during the staging of the work. Replace abused or stressed cables.
- P. When laying cables on a surface during installation, use figure-8 loops to prevent twisting the cables.
- Q. After dressing the cable to its final location, remove only enough jacketing to allow the conductors to be splayed and terminated in a neat and uniform fashion. Maintain jacketing integrity.
- R. Install cable in continuous runs without splices or mechanical couplers between the cable points of origin and termination unless identified herein or on the drawings.
- S. When pulling cables through conduits, leave in-place drag-lines for future use.

3.04 CABLING

- A. Refer to the Drawings for cable sizes and quantities.
- B. Coordinate Work with the Engineer prior to the commencement of Work.
- C. Do not cause harm to the existing operations of other poles.
- D. Do not cause harm to existing cables along the cable route.
- E. Provide copies of factory provided cable spool test results prior to commencement of cable installation.
- F. Route the cables through the inter-building and intra-building backbone pathway system as shown on the Drawings.
- G. Use pulling grips to install cables through pathways.
- H. Provide 10 foot service loops in utility vaults and hand holes.
- I. Provide 10 foot service loops in pull boxes installed at structural expansion joints.
- J. Provide pole single-mode optical fiber feeder cables as shown on the Drawings. Splice the cables onto LC pigtailed connectors. Mount the connectors in optical fiber patch panels on both ends.
- K. Mount the connectors in optical fiber patch panels. Refer to Drawings for conduit routes.
- L. Ground metallic strength members of cables.

3.05 PIGTAIL/CONNECTORS

- A. Provide LC pigtailed connectors for splicing of single-mode optical fiber cables installed under this Work.

3.06 PATCH CORDS

- A. Provide optical fiber patch cords for Engineers use.
 - 1. Single-mode LC to LC duplex patch cords.
 - 1) Visually inspect patch cords as described in 3.10 Field Quality Control prior to Engineer's installation of patch cords. Coordinate the scheduling of patch cord installation with Engineer so that the visual inspection and the installation occur at the same time.

3.07 IDENTIFICATION

- A. Provide identification labels that are in accordance with the approved cable termination schedule.
- B. Provide machine-generated labels on cables in black uppercase lettering on a permanent adhesive, white label stock, covered with a permanent water-resistant sealer. Place labels on both ends of each cable and no more than 6 inches from the point at which the cable is broken out into individual copper pairs or strands from the connector or termination block or patch panel. Install labels so that the labels are parallel with the cable. Install labels so that labels are readily visible. Do not label cables with hand lettered labels.
- C. Provide machine-generated labels on termination block with the cable ID and cable pair in uppercase lettering. Do not label devices with hand lettered labels.
- D. Provide machine-generated labels on splice panel with the equipment rack or equipment cabinet ID and the rack unit position in uppercase lettering. Do not label devices with hand lettered labels.
- E. Provide machine-generated labels on patch panel, with the cable ID and port number in uppercase lettering. Do not label devices with hand lettered labels.
- F. Replace labels if at any time during the project, the label becomes illegible or is removed.

3.08 FIELD QUALITY CONTROL

- A. Provide an updated cable test plan submitted and approved as part of the Submittals process. Refer to article 1.03.E.3.
- B. Notify the Engineer a minimum of 5 days in advance of the commencement of cable testing so that they can meet the cable tester at the site to observe the tester setup and the initial testing of cables.
- C. Follow safety precautions in accordance with ANSI Z136.2 when performing test on optical fiber cabling that use a test set with a VCSEL, laser or LED.
- D. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords and labeling of components.
- E. Use testers that have been factory recalibrated within the last 12 months.
- F. Use test instruments that meet or exceed applicable requirements in TIA-568-C.2.
- G. Use testers with current test firmware installed within.
- H. Comply with TIA 1152 Field Test Standard.
- I. Set cable testers to reject Pass* (star) results.

- J. Use connector insertion loss limits as identified by the connector manufacturer (as opposed to the TIA worst case limit) when comparing actual optical fiber cable test results with the expected optical cable test results.
- K. Use pigtail connector insertion loss limits as identified by the pigtail connector manufacturer (as opposed to the TIA worst case limit) when comparing actual optical fiber cable test results with the expected optical cable test results.
- L. Use splice insertion loss limits as identified by the splice manufacturer (as opposed to the TIA worst case limit) when comparing actual optical fiber cable test results with the expected optical cable test results.
- M. Tier 1 Optical Fiber Cable/Connector Test and Certification:
 - 1. Test all cables, all strands.
 - 2. Acceptable test value calculation:
 - a. Coordinate and establish an approved optical fiber cable loss budget with the Engineer prior commencement of cable testing.
 - b. Use connector insertion loss limits as identified by the connector manufacturer (as opposed to the TIA worst case limit) when comparing actual optical fiber cable test results with the expected optical cable test results.
 - c. Use pigtail connector insertion loss limits as identified by the pigtail connector manufacturer (as opposed to the TIA worst case limit) when comparing actual optical fiber cable test results with the expected optical cable test results.
 - d. Use splice insertion loss limits as identified by the splice manufacturer (as opposed to the TIA worst case limit) when comparing actual optical fiber cable test results with the expected optical cable test results.
 - 3. When using a connector end-face cleaning solvent, use a non-IPA solvent.
 - 4. When using a connector end face wipe or swab, use lint-free non-static wipes or swabs.
 - 5. Use a light source and power meter (LS/PM) tester that meet or exceed applicable requirements in TIA 526-14-C-2015, TIA 527-7A and TIA-568.3 requirements to test optical return loss, length and polarity (fiber mapping).
 - 6. Use referenced-grade launch cords and adapters approved by the test equipment manufacturer for channel or link tests.
 - 7. Allow tester light sources to warm up and stabilize before commencing tests.
 - 8. Utilize reference grade jumper reference cords.
 - 9. Test reference test cords and replace if the reference test cords are out of tolerance.
 - 10. Test existing fiber optic cables prior to relocation of cable.
 - 11. Single-mode cable: Conduct an end -to-end attenuation tests at 1310 nm and 1550 nm in accordance with TIA-526-7, Method B, and one reference jumper. Attenuation test results shall be less than that calculated according to equation in TIA-568B.
 - 12. After a fiber strand test is complete, immediately replace dust cap onto the connectors/ couplers.
 - 13. Save test results in tester native file format.

14. Include the tester loss limit in the tester result fields.
 15. Include the tester calibration date in the tester result fields.
 16. Include the tester firmware date in the tester result fields.
 17. Include the tester application limits in the tester result fields.
 18. After testing is complete, and just prior to hand off to the Engineer,
 - a. Remove connector and couplers ferrule protector caps and store in a dust free container and immediately commence cable tests.
 - b. Clean the end faces of the connectors.
 - c. Visually inspect connectors, cassettes and bulkheads using a powered inspection-microscope in accordance with IEC 61300-3-35.
 - d. After testing is complete, and just prior to hand off to the Engineer, visually inspect the end faces of connectors, cassettes and bulkheads at each end of the cables using a powered visual inspection probe with a field of view $425\ \mu\text{m} \times 320\ \mu\text{m}$. Record end face images and upload to a PC for review. The following test limits shall be used
 - 1) Single-mode factory polished connectors; Table 3 of IEC 61300-3-35 Edition 1.0
 - e. Clean connectors if dirt/particles were observed.
 - f. Replace connectors if scratches or defects larger or at a quantity higher than allow in IEC 61300-3-35 were observed.
- (a) a) Re-inspect connector end faces
- N. If at any time optical fiber ferrule protector caps are removed from the couplers or connectors, re-test the cable before re-installing the ferrule protector caps.
- O. Optical Fiber Patch Cords and Fan Out Cables:
1. Remove ferrule protector caps and store in a dust free container and immediately commence cable tests.
 2. Visually inspect the end faces of connectors at each end of the cables using a powered visual inspection probe with a field of view $425\ \mu\text{m} \times 320\ \mu\text{m}$.
 3. Visually inspect connectors using a powered inspection-microscope in accordance with IEC 61300-3-35.
 4. If dirt is observed in the visual inspection, clean connectors and re-inspect.
 5. Replace ferrule protector caps.
- P. Remove and replace cabling where test results do not comply with specified requirements. Retest and inspect cabling to determine compliance of replaced or additional work with specified requirements.
- Q. Test Reports:
1. Document test data for each cable test measurement.
 2. Provide a summary report that is formatted consistent with Table 10.1 in BICSI TDM.
 3. Provide a USB Flash Drive containing the cable test reports in the PDF format.

4. Provide a USB Flash Drive containing individual cable reports in the native file structure of the test instrument(s). Provide software to display and print individual and summary cable test reports from the native test files.
- R. After the installation is complete, in addition to any other required testing as described herein, and at such times as the Engineer directs, the Contractor shall be present while the Engineer conducts an operating test of network components for approval. The installation shall be demonstrated to be in accordance with the requirements of this specification. Any defects revealed shall be corrected promptly at the Contractor's expense and the tests performed again.

3.09 CLEANING

- A. Clean re-installed equipment and connectors.

END OF SECTION

This page intentionally left blank

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work under this Section includes furnishing materials, equipment, labor, supervision, tools and items necessary for the construction, installation, labeling and testing of a communication horizontal cabling system.

1.02 DEFINITIONS

- A. Bundle – A group of cables that are tied together or in contact with one another in a closely packed configuration for at least 36 inches.

1.03 SUBMITTALS

- A. Manufacturer's Instructions:
 - 1. Submit application conditions and limitations of use stipulated by the manufacturer.
 - 2. Submit manufacturer's instructions for storage, handling, protection, examination, preparation, operation and installation of product.
 - 3. A letter from the connectivity system manufacturer, stating that the product set offered will meet their requirements to ensure that a Performance Warranty shall be offered to the owner at the completion of the project.
- B. Qualifications:
 - 1. Submit resumes and certifications of technicians and project managers who will support the installation.
- C. Product Data:
 - 1. Materials list.
 - 2. Technical data (cut sheets) for on each component.
- D. Shop Drawings:
 - 1. Wall and equipment rack elevations for termination and patching equipment installed, provided in coordination with the similar work identified in Section 27 13 00.
 - 2. Floor plans showing the communication outlets and their associated cable identification number
 - 3. Sample horizontal cable termination schedules for of each type of cable installed. Schedules to include for each cable pair or strand.
 - a. Building ID.
 - b. Pole ID.
 - c. Cable Category.
 - d. Cable ID.
 - e. Outlet ID.
 - f. Outlet Port #.
 - g. Rack.ID
 - h. Patch Panel ID.

- i. Patch Panel Port #
- j. Termination Block ID.
- k. Row.
- 4. Performance test plan and procedure for category cables, identifying tester manufacturer and model, and date of the last tester calibration. Note that cable tests with Pass * (star) results will not be accepted.
- 5. Sample cable test results for each type of cable installed.
- 6. Sample cable labels.
- 7. Associated floor plan drawing.
- E. Deferred Submittal
 - 1. Statement of field tester apparatus is using the current software or firmware, include software or firmware date.
 - 2. Statement of field tester apparatus last calibration date.

1.04 CERTIFICATION & WARRANTY

- A. Provide a manufacturer's "Permanent Link" performance warranty of TIA 568-B category 6 cables for a minimum period of twenty years, from Engineer acceptance. Where a manufacturer's warranty is longer than twenty years, offer the longer warranty.
 - 1. The Permanent Link Performance Warranty shall be issued and signed by the component manufacturer and shall list the Engineer as the holder of the warranty.
 - 2. The Permanent Link Performance Warranty shall cover the testing and replacement, including labor and material for "Permanent Link" components.
 - 3. The structured cable system shall be a complete certified system as offered by a single manufacturer. The system and components shall be performance matched, approved for use with a single manufacturer and guaranteed by the manufacturer. The cable must be approved for use with the manufacturer's system.

1.05 CLOSEOUT SUBMITTALS

- A. Project Record Documents:
 - 1. Record actual information of the installed Work.
 - 2. Floor plans showing the communication outlets and their associated cable identification number
 - 3. Cable/termination device drawings identifying device, outlet and cable IDs. Identify locations where cables pass through fire rated floors, walls and fire rated sleeves.
 - 4. Cable termination schedules in Microsoft Excel format (latest version).
 - 5. Cable test results. Submit cable test to the Engineer.

1.06 QUALITY ASSURANCE

- A. All testing procedures and field-test instruments shall comply with applicable requirements of:
 - 1. ANSI/TIA-1152, Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling

2. ANSI/TIA-568, Generic Telecommunications Cabling for Customer Premises.
 3. ANSI/TIA-568, Commercial Building Telecommunications Cabling Standard
 4. ANSI/TIA-568, Balanced Twisted-Pair Telecommunications Cabling and Components Standards.
 5. ANSI/TIA-568, Balanced Twisted-Pair Telecommunications Cabling and Components Standards.
 6. ANSI/TIA-606, Administration Standard for Commercial Telecommunications Infrastructure, including the requirements specified by the customer, unless the customer specifies their own labeling requirements.
- B. Use trained technicians who have successfully attended an appropriate training program and have obtained a certificate as proof thereof to execute cable tests. These certificates may have been issued by any of the following organizations or an equivalent organization:
1. Manufacturer of the connectors or cable.
 2. Manufacturer of the test equipment used for the field certification.
 3. Training organizations
 - a. BICSI.
 - b. Association of Cabling Professionals.
 - c. Cabling Business Institute.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect material from the entrance of dirt, dust, moisture and debris.

1.08 COORDINATION

- A. Coordinate the final labeling nomenclature for cables, and termination devices with the Engineer prior to installation of cable and device labels. Obtain Engineer sign off.
- B. Coordinate the format and schema of the cable termination schedules with the Engineer prior to preparation of the schedules. Obtain Engineer sign off prior to use on cables and termination devices.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Subject to compliance with requirements, provide products by one of the manufacturers.

2.02 UNSHIELDED TWISTED-PAIR CABLES

- A. Approved Manufacturers:
1. Berk-Tek.
 2. Belden.
 3. CommScope
 4. General Cable.
 5. Mohawk.
 6. Superior Essex.

B. 4-Pair Cable Unshielded Twisted Pair:

1. Physical specifications: Outdoor rated, 4 twisted pair, 22 AWG, solid copper conductors, 100-Ohm nominal impedance and impedance tolerance plus or minus 15 percent. Comply with UL 444.
2. Electrical characteristics: Superior to the individual characteristics established in TIA 568-B.2 for category 6 cable performance.
3. Cable construction: round cable, individually insulated conductors under a common sheath.
4. UL limited-power (LP) certified for temperature rating.
5. NFPA 70 type CL3R.
6. Cable Jacket Color: Blue.

2.03 TERMINATION HARDWARE

A. Approved Manufactures:

1. CircaMax
2. CommScope.
3. Hubbell.
4. Leviton.
5. Ortonics.
6. Panduit.
7. Siemon Company.
8. Systimax.

B. 8-Pin Modular Plug (Terminated Link):

1. 100-Ohm balanced 8-pin PCB type modular plugs suitable to terminate on the approved 4-pair cables. Comply with TIA- 568 category 6 performance. Plug wired with standards compliant T568-B.

2.04 WIRE DUCT.

- A. Large finger wire duct, 3/4-inches wide, 2-inches deep with snap on cover.

2.05 CABLE MANAGEMENT STRAPS

- A. Reusable hook and loop type (Velcro style) reusable straps, 3/4 inch wide.

2.06 IDENTIFICATION LABELS

A. Approved Manufactures:

1. Panduit.
2. Brady.

- B. Comply with TIA-606 and applicable requirements in this section.

- C. Machine printed self-adhesive, smudge resistant labels for cables and face-plates. Labels shall be appropriately sized for cable diameter. Labels shall be appropriately colored for face-plate color contrast. Submit sample labels for approval.

PART 3 – EXECUTION

3.01 GENERAL

- A. Comply with manufacturers' instructions for installing components and adjusting equipment and telecommunications cables. Where no instructions are included with the equipment, follow accepted industry best practices as identified in the BICSI design and installation manual.
- B. Provide equipment and component mounting hardware.
- C. Keep items protected before and after installation, with dust and waterproof barrier materials as necessary. Maintain the integrity of the protective measures throughout the life of the project.
- D. Protect communications cable and termination devices from damage during the construction.
- E. Maintain safe ingress and egress from work areas during the movement and installation of materials.
- F. Examine the areas to receive the work and the conditions under which the Work would be performed. Remedy unsatisfactory conditions detrimental to the proper and timely completion of the Work. Where a remedy of unsatisfactory conditions is not available or possible, notify the Architect for resolution. Do not proceed until unsatisfactory conditions have been corrected.
- G. Examine pathway elements intended for the installation and support of communication cables.
 - 1. Verify the proposed routes of communication cables prior to commencement.
 - 2. Validate that hangars, conduits, sleeves, conduit/sleeves bushings, cable trays, cable supports, and other elements are in place prior to commencement of any Work. Do not install cable where the cables can be subsequently damaged by the Work of other Trades.
 - 3. Validate that the cabling can be installed without subject the cables to electromechanical interference (EMI). Do not install cable where the cables can be affected by EMI energy.
 - 4. Validate that the load capacity of cable support structures is adequate to support the cables. Where a cable support is not rated for the required capacity of cables, notify the Architect for resolution. Do not proceed until unsatisfactory conditions have been corrected.
- H. Deliver to Engineer two sets of special tools specifically needed for proper operation, adjustment and maintenance of cable and cable termination hardware installed under this Contract.

3.02 SURVEY AND PREPARATION

- A. Survey and inspect conduit paths and routes prior to commencement of Work and report discrepancies and issues with the use of these for cable installation. Failure to perform this inspection and submit the report holds the Contractor at cost risk for corrective actions and schedule impacts later in the Work.

3.03 METHODS AND PROCEDURES

- A. Install components in accordance with this Specification, the approved Cable Termination Schedule, the manufacturer's recommendations, and the Drawings.

- B. Ensure that telecommunications cable supports (conduits, etc.) are fully installed before proceeding with cable installation. Do not allow cables to be installed and left unsupported. Do not allow cables to be supported to other supporting structure in lieu of specified cable supports.
- C. When anchoring cables to cable supports, use hoop & loop straps only. Do not use tie-wraps.
- D. When bundling cables, use hook & loop style straps only. Do not bundle cables with tie-wraps or cable mesh/socks.
- E. Continuously protect cables during installation, especially when the cables are coiled on the ground. Provide rigid protection for cables left on floor at any time during construction. Design protection to prevent pressure on cables from walking, equipment placement, or rolled/dragged construction equipment and materials.
- F. When installing cables through lateral conduits and sleeves and conduits and sleeves are stacked in more than one row, route cables through the lower row(s) before proceeding to the upper row(s).
- G. Maintain manufacturer's recommended minimum bend radius of the cables. Do not stretch, stress, tightly coil, bend or crimp the workstation cables during the installation or when leaving them out of the way of other trades during the staging of the work. The Contractor, at the Contractor's expense shall replace abused or stressed cables.
- H. After dressing the cable to its final location, remove only enough jacketing to allow the conductors to be splayed and terminated in a neat and uniform fashion. Maintain jacketing integrity by removing only as much jacketing as is practical, to accomplish termination. For twisted pair cables, maintain the manufacturer's twisting of the wire pairs through to the point of termination.
- I. Install cable in continuous runs without splices or mechanical couplers between the cable points of origin and termination for the inter-building and intra-building cable.
- J. Terminate cables neatly, with enough slack (3 inches to 9 inches) to pull off, test and re-terminate each cable as needed.
- K. Provide an 18-inch service loop in the communication j-box or pullbox.
- L. When pulling cables through conduits, leave in-place drag-lines for future use.
- M. Cross communication cables cross over electrical cables/conduits at 90-degree angles.
- N. When running twisted pair cables parallel electrical cables/conduits, separated cables by a minimum of the following.
 - 1. Open cable and open power conductors less than 2 kVa: 5 inches.
 - 2. Open cable and open power conductors less than 5 kVa: 12 inches.
 - 3. Grounded cable conduits and open power conductors less than 2 kVa: 3 inches.
 - 4. Grounded cable conduits and open power conductors greater than 5 kVa: 12 inches.
 - 5. Grounded cable conduits and grounded power conduits less than 2 kVa: 0 inches.
 - 6. Grounded cable conduits and grounded power conduits less than 5 kVa: 3 inches.
 - 7. Grounded cable conduits and grounded power conduits greater than 5 kVa: 6 inches.
 - 8. Cables and electrical motors and transformers: 48 inches.

3.04 CABLING

- A. Schedule a meeting with the Engineer to identify and discuss and confirm how cables will be routed, dressed and bundled into the equipment cabinets, junction boxes and pull boxes prior to commencement of cable termination.
- B. Provide 4-pair Category 6 UTP cables as shown on the drawings. Terminate the cables onto 8-pin modular plugs at the device location.

3.05 MODULAR PLUG TERMINATED LINK

- A. Provide Category 6 8-pin modular plugs for the direct termination of 4-pair cables as identified above.

3.06 PATCH AND EQUIPMENT CORDS

- A. Provide category 6 8-pin-modular-to-8-pin-modular patch/equipment cords, to reconnect existing equipment and devices to match existing.
 - 1. Manufacturer: Match the manufacturer of the patch/equipment cords with the manufacturer of the 8-pin modular connectors.

3.07 IDENTIFICATION

- A. Provide identification labels that are in accordance with the approved cable termination schedule.
- B. Provide machine-generated labels on cables in black uppercase lettering on a permanent adhesive, white label stock, covered with a permanent water-resistant sealer. Place labels on both ends of each cable and no more than 6 inches from the point at which the cable is broken out into individual copper pairs or strands from the connector or termination block or patch panel. Install labels so that the labels are parallel with the cable. Install labels so that labels are readily visible. Do not label cables with hand lettered labels.
- C. Provide machine-generated labels on faceplates with the cable ID, in uppercase lettering. Label shall be of a contrasting color to the faceplate color. Do not label cables with hand lettered labels.
- D. Provide machine-generated labels on patch panels with the equipment rack or cabinet ID and the rack unit position in uppercase lettering. Do not label devices with hand lettered labels.
- E. Provide machine-generated label on patch panels with the cable ID and port number in uppercase lettering. Do not label devices with hand lettered labels.
- F. Replace labels if at any time during the project, the label becomes illegible or is removed.

3.08 FIELD QUALITY CONTROL

- A. Provide an updated cable test plan submitted and approved as part of the Submittals process. Refer to article 1.02.D.2.
- B. Notify the Engineer a minimum of 5 days in advance of the commencement of cable testing so that they can meet the cable tester at the site to observe the tester setup and the initial testing of cables.
- C. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch/equipment cords, and labeling of components. Do not test cables until final dressing and labeling of the cables are in place.
- D. Use testers that have been factory recalibrated within the last 12 months.

- E. Use testers with current test firmware installed within.
- F. For modular plug terminated links, use a Permanent Link Adapter on the Main Unit and a Patch Cord Adapter on the Far End or Remote Test Equipment. Do not use Channel adapters.
- G. Comply with TIA 1152 Field Test Standard.
- H. Test cables.
- I. 4-Pair Cables- Perform inspections and permanent link tests and prepare test reports for 4-pair cable.
 - 1. Use a UL level 4 field test instrument.
 - 2. Use test instruments meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in Annex I, complying with measurement accuracy specified in Annex H. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
 - 3. Set the tester to the specific cable performance parameters as identified by the cable manufacturer for the specific cable being tested. Do not use generic cable test settings.
 - 4. Set test to reject Pass* (star) results.
 - 5. Test parameters for category 6 cables:
 - a. Wire Map.
 - b. Length.
 - c. Propagation Delay.
 - d. Delay Skew.
 - e. DC Loop Resistance.
 - f. DC Resistance Unbalanced Within a Pair.
 - g. DC Resistance Unbalanced Between Pairs.
 - h. Insertion Loss.
 - i. Return Loss.
 - j. NEXT (Near-End Crosstalk).
 - k. PS NEXT (Power Sum Near-End Crosstalk).
 - l. ACR-N (Attenuation to Crosstalk Ratio Near-End).
 - m. ACR-F (Attenuation to Crosstalk Ratio Far-End).
 - n. PSACR-N (Power Sum Attenuation to Crosstalk Ratio Near-End).
 - o. PSACR-F (Power Sum Attenuation to Crosstalk Ratio Far--End).
 - p. TCL (Transverse Conversion Loss).
 - q. ELTCT. (Equal Level Transverse Conversion Loss).
 - 6. Additional test parameters for category 6 cables:
 - a. PSAACR-F (Average).
 - b. PSANEXT (Average).

7. Test category 6 cables and conductors from 1 to 500 MHz with a tester that complies with TIA 1152 performance requirements in TIA-568-C.2, Level III E. Include tests for longitudinal or transverse conversion loss.
 8. Test directly terminated cables with a patch cord adapter on the tester.
 9. Provide evidence of testing apparatus has been calibrated within the last 12 months.
 10. Provide evidence of replacement of consumable testing apparatus, including modular jacks, per the tester manufacturer's recommendations.
 11. Provide evidence that the testing apparatus software or firmware has been updated to current revision/version.
 12. Perform permanent link tests for cable length, insertion loss, near-end crosstalk loss, power sum near-end crosstalk loss, equal-level far-end crosstalk loss, power sum equal-level far-end crosstalk, return loss, propagation delay, and delay skew. Performance shall comply with minimum criteria in TIA-568-C.2.
- J. Test Reports:
1. Document test data for each measurement, including:
 - a. Test parameters identified above.
 - b. The overall Pass evaluation of the link-under-test.
 - c. The date and time the test results were saved in the memory of the tester.
 - d. The identification of the customer site as specified by the Engineer.
 - e. The name of the test limit selected to execute the stored test results.
 - f. The name of the personnel performing the test.
 - g. The version of the test firmware and the version of the test limit database held within the test instrument.
 - h. The manufacturer, model and serial number of the field-test instrument.
 - i. The adapters used.
 - j. The factory calibration date.
 2. Provide a summary report that is formatted consistent with Table 10.1 in BICSI TDMM stating that cables meet the associated category performance requirements.
 3. Provide a USB Flash Drive containing the cable test reports in the PDF format.
 4. Provide a USB Flash Drive containing the individual cable test reports in the native file format of the test instrument(s). Provide the software for the Engineer's unlimited use in inspecting and printing test summary and individual cable test results.
- K. Remove and replace cabling where test results do not comply with specified requirements. Retest and inspect cabling to determine compliance of replaced or additional work with specified requirements.
- L. Upon review of the results of the completed tests, the Engineer reserves the right to witness the retesting of up to 10 percent of the installed cables, utilizing the Contractor's tester and the Contractor's labor. Retesting of cables shall stop when retested cables match the printed results.

- M. After the installation is complete, in addition to any other required testing as described herein, and at such times as the Engineer directs, the Contractor shall be present while the Engineer conducts an operating test for approval. The installation shall be demonstrated to be in accordance with the requirements of this specification. Any defects revealed shall be corrected promptly at the Contractor's expense and the tests performed again.
- N. Provide test results to the Manufacturer for the processing of the performance warranties afforded to the Engineer.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work includes fill, compaction, and controlled density fill.

1.02 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures
- B. Section 01 45 00 – Quality Control
- C. Section 26 56 13.00 40 – Lighting Poles and Standards
- D. Section 31 11 23 – Crushed Surfacing
- E. Section 33 42 13 – Corrugated Metal Pipe

1.03 REFERENCE STANDARDS

- A. Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction M41-10, 2012 Edition.

1.04 QUALITY ASSURANCE

- A. On -site Testing and Inspection: The Port will provide and pay for on-site testing and inspection services. Sampling and testing for compliance with the contract provisions will be in accordance with Section 01 45 00 – Quality Control. The Contractor shall assist in obtaining samples and may obtain copies of test results performed by the Port at no cost. Tests conducted for the sole benefit of the Contractor shall be at the Contractor's expense.
- B. Compaction Control Tests: The Port will provide and pay for laboratory and on-site field compaction control tests in accordance with the applicable provisions of these specifications.
 - 1. The compaction control density shall be the maximum density at optimum moisture content as determined by ASTM D 1557, Standard Methods for Moisture-Density Relationships of Soil and Soil Aggregates, Methods B, C or D as applicable, but shall be no less than 95% of dry density for fill, backfill, crushed surfacing and trench backfill above the bedding zone.
 - 2. Field tests to determine in-place compliance with required densities as specified, shall be performed in accordance with ASTM D 1556, D 2167, or D 2922.

1.05 SUBMITTALS

- A. Submit in accordance with Section 01 33 00 – Submittal Procedures, the following:
 - 1. Source characterization, testing, reporting, and certification for all off-site borrow materials.
 - 2. Samples of on-site borrow material for physical and/or chemical characterization as requested by the Engineer.

1.06 SITE CONDITIONS

- A. Verify the location of existing utilities at the site, and use an independent private locate company to assist. Those utilities which are to remain shall be protected from damage and remain operational. Damage to utilities which are to remain shall be repaired by the Contractor at its own expense.

PART 2 - PRODUCTS

2.01 CRUSHED SURFACING

- A. Crushed Surfacing shall be in accordance with Section 32 12 23 – Crushed Surfacing.

2.02 CONTROLLED DENSITY FILL (CDF)

- A. CDF shall be in accordance with the WSDOT Standard Specification Section 2-09.3(1)E.

2.03 OFF-SITE BORROW SOURCE CHARACTERIZATION

- A. Of f-site borrow source characterization shall be performed by the Contractor as specified in Section 2.03 to assure that imported materials are natural, native, virgin materials, free of contaminants, including debris or recycled materials, and meet the requirements of the contract documents.
- B. Each source of off-site borrow material shall be tested once per year for physical properties.
- C. Each source of off-site borrow for sands and gravels shall be tested once per calendar year for metals.
- D. Each source of off-site borrow for soils, including materials to be used for fill and backfill, shall be tested for metals, chemical compounds and hydrocarbons once for every 500 cubic yards of material to be imported.
- E. The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. In the event of rejection, it shall be the responsibility of the contractor to remove all stockpiles of rejected material from the site.

1. General

Materials shall be of the quality, size, shape, gradation, or equal to that manufacture as specified herein. The Contractor shall submit a characterization of any and all imported material prior to any on-site placement. The characterization will include source identification, analyses of a material source sample, and a source inspection report. The material shall not be imported to the site until approved by the Engineer. Once approved and imported to the site, the Contractor shall perform an on-site inspection of the material to verify that it is the material sampled for characterization and approval.

2. Source Identification

The Contractor shall provide documentation of the origin of imported materials and maps identifying specific location(s) of material source(s). Physical and chemical characterization reports available from the material supplier shall be provided to the Engineer.

3. Inspection of Source

The Contractor shall inspect all material sources. During such inspection, the Contractor shall assure that materials to be delivered to the jobsite are likely to meet the appropriate specifications. The Contractor shall provide the Engineer two weeks notice of such inspections. The Engineer or a designated representative may accompany the Contractor to witness such inspections. This witnessing shall in no way release the Contractor from complying with the specifications and in no way shall be construed as approval of any particular source of material.

4. Testing, Reporting, and Certification

Off-site borrow materials shall be in accordance with the requirements of Section 2.03 unless waived by the Engineer.

5. Inspection of Materials at the Jobsite

The Contractor shall visually inspect import material upon delivery. Materials shall be inspected for presence of foreign, recycled, or reprocessed material. The Engineer may at any and all times perform an independent inspection. Material may be rejected due to the presence of deleterious substances or as a result of substandard test results.

2.04 CHARACTERIZATION TESTING, REPORTING, AND CERTIFICATION OF OFF-SITE MATERIAL

- A. The Contractor shall provide characterization and testing as described below for off-site borrow materials. Testing results shall meet the Port of Tacoma Import Material Screening Criteria to be considered acceptable.
- B. The Contractor shall provide test sample(s) of excess materials to be exported. The sample data shall be provided at 21 days before proposed export of the materials.
- C. The Contractor is responsible for all testing costs associated with characterization of off-site borrow materials. The Port is responsible for testing costs associated with on-site borrow materials and excess materials to be exported.
- D. The Contractor shall provide the following information with each sample submitted:
 1. Material Source
 2. Proposed On-site Use
 3. Sampling dates
 4. Chain of custody
 5. Sampling locations
 6. Contractor's certification that the samples submitted are representative of the materials that shall be used at the site.
- E. Characterization Testing shall include:
 1. Physical Properties:
 - a. Grain Size Distribution (ASTM D 422-63)
 - b. Maximum Dry Density (ASTM D1557)
 2. Metals and Chemicals:
 - a. Import Material Screening Criteria as indicated in Table 31 00 00 - 1 – Import Material Screening Criteria
 - b. Petroleum Hydrocarbons (NWTPH-Gx (Gasoline) and -Dx (Diesel/Oil))

Table 31 00 00 - 1 – Import Material Screening Criteria

Chemical / Metal Name	Gravel/Rock Criteria	Soil Criteria (mg/kg)
	(mg/kg)	
Volatile Organic Compounds (EPA Method 8260)		
Benzene	-	0.004
Ethylbenzene	-	6.0

Toluene	-	7.0
Xylenes	-	9.0
Tetrachloroethylene (PCE)	-	0.05
Semi-Volatile Organic Compounds (EPA Method 8270)		
acenaphthene		97.9
anthracene		2,275
benzo[a]anthracene		0.130
benzo[a]pyrene		0.1
benzo[b]fluoranthene		0.440
benzo[k]fluoranthene		13.7
benzoic acid	-	257
benzyl alcohol	-	8,000
bis(2-ethylhexyl) phthalate	-	13.9
chrysene	-	95.5
benzyl butyl phthalate	-	12.8
cresol;o-	-	2.3
cresol;p-	-	8,000
dibenzo[a,h]anthracene	-	0.1
dibenzofuran	-	80
di-butyl phthalate	-	56.5
dichlorobenzene;1,2-	-	8.4
dichlorobenzene;1,4-	-	0.2
diethyl phthalate	-	72.2
dimethylphenol;2,4-	-	1.3
di-n-octyl phthalate	-	800
fluoranthene	-	631
fluorene	-	101
hexachlorobenzene	-	0.09
hexachlorobutadiene	-	0.6
indeno[1,2,3-cd]pyrene	-	1.2
methyl naphthalene;2-	-	320
naphthalene	-	0.006
nitrosodiphenylamine;N-	-	0.0009
pentachlorophenol	-	0.003
phenol	-	11
pyrene	-	655
trichlorobenzene;1,2,4-	-	0.06
Pesticides / PCBs (EPA Method 8081/8082)		
ddd	-	0.3
dde	-	0.4
ddt	-	2.9
Polychlorinated biphenyls (PCBs)	-	0.5

Metals (EPA Method 6010/6020/7041)		
Arsenic	13.8	13.8
Cadmium	2.0	2.0
Chromium (total)	113	113
Chromium (VI)	-	0
Copper	136	136
Lead	250	250
Mercury	0.14	0.14
Nickel	61	61
Zinc	100	100

PART 3 - EXECUTION

3.01 GENERAL

- A. Filling and grading shall be completed within the tolerances established or within reasonably close conformity with the alignment grade and cross sections indicated on the Drawings or as established within these specifications.

3.02 COMPACTION

- A. Compaction shall be performed with approved compaction equipment suited to the soil and the area being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used. Each lift of material placed shall be uniformly compacted to the density indicated for the specific material and use set forth in these Specifications. The percent of density required is in relation to the maximum density obtainable at optimum moisture content (Compaction Control Density) as determined in paragraph 3.03 "Compaction Control Tests."
- B. CDF may be used to backfill excavations outside the CMP. If the area to backfill is too small or if there are any voids that compaction equipment cannot access, CDF shall be used.

3.03 COMPACTION CONTROL TESTS

- A. Laboratory and field tests shall be performed in accordance with the applicable provisions of these Specifications.
 1. Compaction control density shall be the maximum density at optimum moisture content as determined by ASTM D 1557, Standard Methods for Moisture Density Relationships of Soil and Soil Aggregates, Methods B, C or D as applicable but shall be no less than 95% of dry density for Select Fill and Backfill and no less than 98% of dry density for Base Course Material.
 2. Field tests to determine in place compliance with required densities as specified, shall be performed in accordance with ASTM D1556, D2167, or D2922.

3.04 PREPARATION FOR CRUSHED SURFACING:

- A. Preparation of Subgrade
 1. Immediately prior to placement of surfacing materials, clean the entire width of the area of all debris and dispose of as directed by the Engineer. All depressions or ruts which contain storm water shall be drained.

2. Shape the entire subgrade to a smooth uniform surface, true to line, grade, and cross section as staked by the Engineer. Compact the subgrade material to 95% of the maximum density as determined by compaction tests ASTM Designation D1557. If soft or spongy material underlying the upper eight inches of the area being prepared precludes satisfactory compaction of the upper eight inches, loosen, aerate, or excavate, replace and compact to the required density as directed by the Engineer.
3. Remove and dispose of excess material which cannot be disposed of by normal drifting to low spots during blading and shaping operations or by placing in subgrade areas deficient in materials or by wasting, all as directed by the Engineer. Subgrade areas deficient in materials shall be brought to grade by importing suitable materials from other subgrade areas or other sources as directed by the Engineer. Materials added to subgrade areas deficient in materials shall be watered and compacted as necessary to yield a true finished subgrade as described above.
4. Once it is prepared, maintain the subgrade for surfacing in the finished condition until the first course of surfacing has been placed.

B. Finishing Subgrades

1. Before any paving or base material is placed, the subgrade shall be brought to the proper line, grade and cross section and shall be so maintained until the crushed surfacing and paving is placed.
2. Compact the subgrade for pavement to 95% of maximum density as defined for Compaction Control Density, Article "Compaction Control Tests" these Specifications, to a minimum depth of six inches.

C. Subgrade Protection

1. Take all precautions necessary to protect the subgrade from damage; hauling over the finished subgrade shall be limited to that which is essential for construction purposes.
2. Equipment used for hauling over the prepared subgrade which, in the opinion of the Engineer, is causing undue damage to the prepared subgrade or to the underlying materials, shall be removed from the work at the request of the Engineer.
3. Repair at the Contractor's expense all cuts, ruts and breaks in the surface of the subgrade prior to placing surfacing, treated base, or paving materials.
4. Protect the prepared subgrade from both the Contractor's traffic and public traffic and maintain the subgrade by blading and rolling as frequently as may be necessary to preserve the subgrade in a completely satisfactory condition.

3.05 BACKFILL AND COMPACTION OF ABANDONED POLE LOCATIONS

- A. Existing pole locations being abandoned for pole relocation shall be backfilled with crushed surfacing.
- B. Backfill shall not be placed in lifts greater than 12 inches.
- C. The contractor shall use an approximately 20 foot portion of a demolished pole or other available material to compact each lift. Compact to the extent feasible by pushing on the pole with an excavator, or lifting the pole up to 12 inches above the backfill and dropping it.
- D. The top 2 feet of backfill shall be compacted in accordance with section 3.02.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies requirements for all dewatering and management of water during the Work (i.e., Construction Water). Management of Construction Water includes storage, onsite treatment, water sampling and analysis, and discharge/disposal of treated water. Three discharge options include the following as described further herein:
1. Collection, storage, sampling, analysis, treatment and discharge to the Port Owned Storm Water System
 2. Infiltration within immediate vicinity of excavation
 3. Storage, sampling, analysis, treatment, and hauling of water to an alternative off-site disposal facility that meets all local, state, and federal regulations, with review and approval of the Port.
- These options can be selected at the Contractors option utilizing the criteria described herein, subject to Port testing of Construction water, and it is anticipated that the Contractor may use more than one of these options.
- B. Port will conduct testing and determine if the dewatering water can be discharged to storm, infiltrated, or disposed of offsite.
- C. The Contractor shall bear all costs and obtain all permits associated with dewatering at no additional cost to the Engineer and with no delay to the work. Contractor is responsible for all costs associated with generating, managing, treating, conveying, hauling, and disposing of Construction Water necessary to execute the requirements of the Work.
- D. Dewatering shall be managed based on environmental characteristics observed in the field during the project. Dewatering Water shall not be discharged to the adjacent waterbody.
- E. Dewatering of excavation area will be necessary to facilitate excavation, observation and evaluation of the excavation limits, utilities installation, foundation construction, and backfilling. The extent of dewatering needed shall be determined by the Contractor.
- F. Sources of contaminated or potentially contaminated Construction Water includes, but is not limited to, excavation dewatering, drainage from stockpiled material, decontamination water, and stormwater runoff that comes in contact with potentially contaminated materials at the Site.
- G. Discharge and disposal alternatives to be selected by the Contractor are described further below:
1. Storm Water Discharge: For water discharged to the Port Storm Water System, the Construction Water shall be collected, stored, and treated as required to demonstrate the water meets the discharge requirements of the Port of Tacoma Phase I Municipal Stormwater Permit. Contractor shall provide a Dewatering Plan including proposed means for handling the dewatering discharge; the types of equipment, materials and manufactured items to be incorporated into the dewatering system and any additional permits needed. Work affected by the plan shall not be performed until the Plan, is approved by the Engineer.
 2. Infiltration: If contractor chooses to discharge by infiltration, the Construction Water shall be tested prior to discharge to demonstrate the water meets permit requirements. If testing indicates infiltration is not permitted, Contractor is responsible for discharging Construction Water using other permitted methods.

3. Off-site disposal facility: Other offsite water treatment and disposal facilities can be selected for disposal of collected Construction Water, subject to approval of the Engineer. Contractor shall provide pretreatment of Construction Water and required sampling and analysis, if necessary, to meet the disposal requirement of the off-site water treatment and disposal facility. Contractor is responsible for coordination with off-site water treatment and disposal facility for disposal authorization, and storage, pre-treatment (if necessary), trucking and offsite disposal.
- H. Contractor is responsible for providing sufficient storage capacity for construction water during implementation of the Work. Contractor shall be solely responsible for delays in field activities due to lack of onsite water storage capacity, or any operation deficiencies of the Construction Water storage or treatment system.

1.02 DESCRIPTION OF WORK

- A. This covers work necessary to control and observe groundwater for excavations below the groundwater level as required for performance of the work. This section specifies the definition, responsibilities, design requirements, and execution of groundwater control related to below grade excavations.
- B. Groundwater control shall also include detailing, furnishing, installing, operating, maintaining, and eventually abandoning and removing all groundwater control and observation systems and related systems and equipment that may be needed to observe and control groundwater, seepage, and other incidental water in the trench or excavation during construction.
- C. The Contractor is solely responsible for the design of the groundwater control system components: pumps, header pipes, discharge piping, valving, and other equipment and appurtenances for the groundwater control systems. The Contractor is also solely responsible for installation, operation, maintenance, equipment performance, equipment failure, or damage resulting from installation or operation of any component of the groundwater control systems.
- D. The Contractor is responsible for clearance of buried facilities/utilities at all groundwater control systems.

1.03 REFERENCED STANDARD

- A. This Section incorporates by reference the latest revision of the following documents. These references are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and that of the listed document, the requirements of this Section shall prevail, provided that all regulatory requirements are met.
 1. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
 2. ASTM D 5092 Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers.
 3. ASTM D 422 Standard Method for Particle Size Analysis of Soils.
 4. ASTM D4044 Standard Test Method for (Field Procedure) for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers.
 5. Washington Administrative Code (WAC) Chapter 173-160 - Minimum Standards for Construction and Maintenance of Wells.

6. Washington Administrative Code (WAC) Chapter 173-218 - Underground Injection Control Program.
7. Washington Administrative Code (WAC) Chapter 173-200 - Water Quality Standards for Ground Waters of the State of Washington.
8. Washington Administrative Code (WAC) Chapter 173-201A - Water Quality Standards for Surface Waters of the State of Washington.
9. Washington Administrative Code (WAC) Chapter 173-154 - Protection of Upper Aquifer Zones.
10. United States Environmental Protection Agency (EPA) Method 180.1 – Determination of Turbidity by Nephelometry.

1.04 QUALITY ASSURANCE

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

1.05 SUBMITTALS

- A. Shall be as described in Section 01 33 00 Submittal Procedures and as outlined below:
 1. A Dewatering Plan including the proposed means and methods for handling the dewatering discharge and the permits required. Include the types of equipment, materials, and manufactured items to be incorporated in the dewatering system. Work affected by the plan shall not be performed until the original plan, or a revised plan, is approved by the Engineer.
 2. At least 15 working days prior to beginning work at a site, the Contractor is required to submit site specific mechanical and surface collection plans and details for groundwater control at the site. The plan shall show the pump types and sizes selected, header surface piping layout, primary and backup power systems, details of discharge piping if crossing roads or drive aisles including methods of protecting the pipe and traffic and other related information.
 3. The Contractor shall adjust site specific plans in the field as necessary to meet the conditions encountered and to ensure excavations are dewatered as specified.
 4. The plans shall show the proposed route of the discharge pipeline compatible with the Contractor's work plan, and the discharge point. The proposed route of discharge piping and holding tank placement shall be approved by the Port.
 5. The plans shall also contain a narrative description of the installation sequence and methods as well as operation and maintenance procedures and observation of groundwater levels.

6. The Contractor's groundwater control submittals shall meet all requirements listed above. The Engineer's review of the submittals shall not relieve the Contractor of the responsibility to provide a safe and adequate groundwater control system.
- B. Groundwater Control Plans: Submit a groundwater control plan for each work site that includes:
1. Drawings and description of location, method and equipment used for dewatering in excavation. Provide detailed breakdown of material and equipment (extraction wells, fittings, intake equipment, hoses and piping, sumps, pumps, valves, electrical power, meters, and other significant equipment).
 2. Methods and equipment for collection and storage of construction water. The plan shall include the proposed number of storage tanks, sizes, and locations.
 3. Construction water treatment system design, installation, operation, and maintenance for collected water. The plan shall include the details of the water treatment train and system components.
 4. List of proposed off-site water treatment and disposal facilities for review and approval by the Port.
 5. Discharge criteria of the Port's stormwater conveyance system or off-site water treatment and disposal facility.
 6. Infiltration Plan describing proposed means and methods.
 7. Identify Ecology-accredited laboratory that the Contractor plans to use for sampling and analysis of construction water for Port approval.
- C. Provide a copy of the discharge authorization permit that the Contractor obtains from the City or provide disposal approval obtained by the Contractor from the off-site treatment and disposal facility (as applicable).
- D. All handling and discharge records or receipts for the project duration.
- E. Prior to disposing waste materials off-site, provide the waste acceptance documentation from the disposal companies. The Engineer may require the Contractor to provide additional information concerning the waste hauling and disposal companies. Hauling waste to an off-site licensed disposal company is only allowed if approved by the Engineer based on the type of waste being disposed of and the qualifications and appropriate licensing of the hauling and disposal companies.

PART 2 - MATERIALS

2.01 GENERAL

- A. Products required to accomplish, or to be incorporated into, the work of this section shall be selected by the Contractor, subject to review by the Engineer.
- B. Provide sufficient pumping equipment and other machinery to assure that the operation of the dewatering systems can be maintained.
- C. If necessary, water treatment storage tanks for construction dewatering shall be weir type tanks with internal baffles designed to aid in the retention of settleable solids. Tanks with oil/water separators or other treatment equipment may be necessary if LNAPL petroleum or heavy sheen is observed in Construction Water. Each storage tank shall be properly sized and suitable for its intended use.

1. Provide suitable water storage tanks and water treatment equipment, and all ancillary materials and equipment needed to remove settleable solids from construction water and to treat extracted water to meet the discharge criteria.
2. Select pumps, discharge hose/pipe, and storage tanks that are adequately sized to prevent overflow and will not allow untreated water to leave the treatment area.
3. Provide spare pumps, power supplies, and parts required to ensure continuous operation of system.
4. Provide a system to continuously meter and monitor the volume of all discharge flow to the Port of Tacoma stormwater conveyance system; the monitoring system shall have the capability to shut off the flow, or inhibit motor starter operations and divert to the emergency storage tank based on current conditions within the Port of Tacoma stormwater conveyance system (e.g., water level in the discharge manhole). Additionally, provide a flow totalizing meter to measure the volume of water associated with dewatering activities.

PART 3 - EXECUTION

3.01 DEWATERING

- A. Contractor shall furnish, at a minimum, all labor, materials, and equipment, and perform all operations required to maintain the dewatering equipment and water storage systems as required to collect and store Construction Water from the areas where it has collected and prevent discharge of any Construction Water out of the Project Site. Contractor shall demobilize and decontaminate all dewatering equipment and materials upon completion of the Work.
- B. Contractor shall install, operate, and remove the dewatering systems in accordance with applicable federal, state, county, and local Laws and regulations, and accepted industry practices.
- C. Safety of personnel and protection of designated onsite facilities during dewatering Work, shall solely be the Contractor's responsibility.
- D. Contractor is responsible for preventing contaminated stormwater from leaving the site. The discharge water from dewatering operations shall not be allowed to discharge to a storm drain or otherwise discharge to surface water.
- E. Contractor shall divert surface water away from the excavation and stockpiles.
- F. Excavations shall be dewatered to maintain a dry work area when the excavation remains open.
- G. Coordinate design and installation of excavation dewatering systems with temporary excavation shoring systems (if applicable).
- H. Modify excavation dewatering and water storage methods and equipment at no additional cost to the Port if the Port determines that Contractor's methods and equipment are not adequate for site conditions encountered during the work. Do not cease excavation dewatering activities until the excavation is satisfactorily backfilled, unless otherwise approved by the Port.

3.02 INFILTRATION REQUIREMENTS

- A. Any water that is infiltrated must infiltrate upgradient of where it was removed, and a minimum distance of 200 feet from the shoreline.
- B. Construction Water shall not be disposed of by infiltration if pH exceeds 8.5 or is less than 6.5, or if a petroleum sheen or odor is present.

- C. If water does not meet infiltration requirements discussed above, all water from the dewatering activities shall be pumped to on-site storage tanks for treatment and disposal as described in paragraph 3.03 below.

3.03 WATER TREATMENT, TRANSPORT AND DISPOSAL

- A. Contractor shall provide water treatment for the collected Construction Water and discharge at the nearest Port owned storm drain. Alternatively, Contractor can haul the Construction Water to an offsite water treatment and disposal facility approved by the Port for disposal. Pre-treatment may or may not be necessary based on requirement of offsite water treatment and disposal facility.
- B. Store collected Construction Water in storage tanks on site until the water is treated and meets the discharge requirements of the City's stormwater management manual or is acceptable to offsite water treatment facility.
- C. If Contractor chooses to discharge Construction Water into City of Tacoma Sewer under a Special Authorized Discharge Permit:
 - 1. Contractor shall submit application to the City of Tacoma Source Control and obtain the temporary sanitary sewer discharge authorization permit for the treated Construction Water prior to commencement of the Work.
 - 2. Contractor shall treat the stored water, as required by the City of Tacoma
 - 3. Coordinate with the Port for the location of discharge.
 - 4. Install pumps, hoses, piping, and fittings necessary for the discharge.
 - 5. Contractor shall use a totalizing flow meter to measure and record the volume of treated water discharged to the storm drain. The discharge flow records shall be documented in the Contractor's Daily Construction Report.
- D. If Contractor chooses to haul the un-treated Construction Water (or any LNAPL or sheen separated during the Construction Water treatment process) to an offsite water treatment facility for treatment and disposal, Contractor shall perform sampling and analysis of the Construction Water and pre-treatment (if necessary) to ensure the water meets the disposal requirements at the water treatment and disposal facility. The Contractor shall coordinate with the off-site water treatment and disposal facility for disposal authorization and provide disposal authorization to the Port. If pre-treatment of the construction water is required to meet the discharge requirements, Contractor shall provide water treatment as necessary to meet the requirements. Contractor shall provide analytical results to Port prior to hauling the Construction Water to the off-site treatment and disposal facility.
- E. The Construction Water treatment system shall be operated by Contractor's designated operator with required certification to operate the system as required by applicable regulations, if necessary.

3.04 INSPECTION

- A. Contractor shall perform visual inspections daily during dewatering, collection, water treatment and discharge activities. At a minimum, examine piping and hoses for leaks or excessive wear, inspect storage tanks for accumulated sheen or oil, check water treatment system components for proper functioning, and replace filters or cartridges (if applicable) as necessary.
- B. Contractor shall inspect and repair or replace damaged components of dewatering system, and water collection, storage, and treatment system, as necessary.

- C. On a daily basis, record flow totalizer readings to document the volume of water conveyed to the onsite treatment system and to the Port's storm drain system; provide such readings to the Port and prepare discharge monitoring reports. Contractor shall also examine the quantity of solids accumulated in the weir tank(s) on at least a weekly basis.

3.05 DISCHARGE OF PUMPED GROUNDWATER

- A. Discharge piping shall be routed, constructed, and terminated in a manner and at a location approved by the Port.
- B. When groundwater control is performed in conjunction with the state Construction Stormwater General Permit (CSGP), it shall be done in compliance with that permit, including use of its approved best management practices (including treatment), turbidity monitoring, and response requirements.
- C. When groundwater control is performed where the CSGP is not applicable, then discharges (including uncontaminated ground water) must not cause or contribute to a violation of surface water quality standards, including Chapter 173-201A WAC, which states that the discharge shall increase the receiving waters by no more than 5 NTU over background turbidity, if background is less than 50 NTU, or by no more than 10% over background turbidity, if background is 50 NTU or greater. At any time benchmarks or water quality limits are exceeded, and the Engineer allows the groundwater well to continue pumping, the Contractor shall immediately begin use of applicable BMPs approved in the latest version of the Stormwater Management Manual for Western Washington, or equivalent as approved by the Engineer.
- D. The Contractor shall provide booster pumps along the discharge line if required to deliver the flow to the discharge point.
- E. Install sampling valves at each well location for purposes of collecting discharge samples.

3.06 HEALTH AND SAFETY

- A. Contractor shall include within its site-specific health and safety plan a description of the hazards associated with the contaminants expected in the collected construction water. The plan shall include site-specific conditions of potential exposure associated with confined spaces (e.g., accessing or opening hatches on the top of the weir tank and ascending or opening lids of sewer manholes).
- B. Prevent stormwater and groundwater from leaving all contaminated soil stockpiles and from entering storm sewer systems and surface water.
- C. Contractor shall bear the cost of managing construction water originating from areas occupied or disturbed by Contractor during performance of the work and shall employ such additional measures as may be required to prevent environmental harm or physical damage to the work, the work area, or adjacent property.

END OF SECTION

This page intentionally left blank

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The work includes the requirements for furnishing, transporting, and delivering crushed surfacing. Work includes producing, transporting, and delivering top and base courses in conformance with these Specifications.

1.02 RELATED SECTIONS

- A. 31 00 00 – Earthwork
- B. Section 26 56 13.00 40 – Lighting Poles and Standards
- C. Section 33 42 13 – Corrugated Metal Pipe

1.03 CHARACTERIZATION TESTING, REPORTING, AND CERTIFICATION OF FURNISHED MATERIAL

- A. Off-site borrow source characterization and testing shall be performed in accordance with Section 31 00 00 Part 2.03 and 2.04.

1.04 SUBMITTALS

- A. Contractor shall submit certification that crushed surfacing meets the requirements of off-site borrow characterization in accordance with Section 31 00 00 Part 2.03 and 2.04.
- B. Contractor shall submit certification that crushed surfacing in in accordance with Part 2.01.

PART 2 – PRODUCTS

2.01 CRUSHED SURFACING

- A. Crushed surfacing base course and top course shall comply with Section 9-03.9(3) of the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction, 2022 edition.

PART 3 – EXECUTION

3.01 EQUIPMENT

- A. All equipment necessary for the satisfactory installation of crushed surfacing shall meet the requirements of section 4-04.3(1) of the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction, 2022 Edition.

3.02 PLACEMENT OF CRUSHED SURFACING AGGREGATES

- A. Prior to placement, the Contractor shall blend the various source materials to create a homogeneous, well graded mixture.
- B. Equipment necessary for this construction's satisfactory performance shall be on the project and approved by the Engineer before beginning work. If central-mix-plant methods are used, the central mixing plant shall comply with the applicable portions of Section 4-04.3(3) of the WSDOT Standard Specifications, 2022 Edition.
- C. Prepare subgrades as specified in Section 31 00 00.

- D. Shaping and Compacting: Immediately following spreading and shaping, compact each layer to at least ninety-five percent (95%) of the maximum dry density determined in accordance with ASTM D-1557 before the next succeeding layer is placed thereon. When the thickness of the base course is less than 0.15 feet, density testing may not be required, and the Engineer will determine the number of coverage's required for the particular compaction equipment available.

END OF SECTION

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The work covered in this section includes the furnishing of all labor, materials, equipment, and necessary service to construct asphalt pavements to the sections and at the locations as specified in this section and as indicated on the Contract Drawings.
- B. The materials specified herein are intended primarily for use in repairing small areas and performing emergency repairs under inclement weather conditions.

1.02 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures
- B. Section 04 45 00 – Quality Control
- C. Section 31 00 00 – Earthwork

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. Unless otherwise indicated, the most recent edition of the publication, including any revisions, shall be used.
- C. American Association of State Highway and Transportation Officials (AASHTO)
 - 1. AASHTO M 17 – (2011) Mineral Filler for Bituminous Paving Mixtures
 - 2. AASHTO M 320 – (2010) Performance-Graded Asphalt Binder
 - 3. AASHTO T 11 - (2005; R2009) Materials Finer Than 75 μ m (No. 200) Sieve in Mineral Aggregates by Washing
 - 4. AASHTO T 27 - (2011) Sieve Analysis of Fine and Coarse Aggregates
 - 5. AASHTO T 89 - (2013) Determining the Liquid Limit of Soils
 - 6. AASHTO T 90 - (2000; R2008) Determining the Plastic Limit and Plasticity Index of Soils
 - 7. AASHTO T 96 - (2002; R2010) Resistance to Degradation of Small-Size Coarse Aggregate and Impact in the Los Angeles Machine
 - 8. AASHTO T 104 - (1999; R2011) Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
 - 9. AASHTO T 112 - (2000; R2012) Clay Lumps and Friable Particles in Aggregate
 - 10. AASHTO T 164 - (2011) Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)
 - 11. AASHTO T 176 - (2008) Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
 - 12. AASHTO T 283 - (2007; R2011) Resistance of Compacted Hot-Mix Asphalt (HMA) Mixtures to Moisture-Induced Damage
 - 13. AASHTO T 304 - (2011) Uncompacted Void Content of Fine Aggregate

14. AASHTO T308 - (2010) Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
15. AASHTO T 335 - (2009) Determining the Percentage of Fracture in Coarse Aggregate
- D. American Society for Testing and Materials (ASTM)
 1. ASTM D75 – (2009) Sampling Aggregates
 2. ASTM D242 – (2009) Mineral Filler for Bituminous Paving Mixtures
 3. ASTM D4791 – (2010) Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
- E. Washington State Department of Transportation (WSDOT)
 1. Construction Manual, M 41-01; Current Edition
 2. Standard Specifications for Road, Bridge and Municipal Construction, M 41-10; Current Edition
 3. Materials Manual, M 46-01; Current Edition.

1.04 SUBMITTALS

- A. A separate job mix formula for each proposed mix design shall be submitted in writing by the Contractor upon execution of the task order. Submittals shall represent all submittal elements specified herein and shall include as a minimum:
 1. Mix designation/identification number.
 2. Plant where mix will be produced.
 3. Performance Graded Binder Certified Test Reports
 - a. Source location and type of binder.
 - b. Certificate of Compliance, including date and signature of the supplier, regarding conformance with AASHTO M320, Table 1.
 - c. Temperature-viscosity relationship of the asphalt cement.
 - d. Minimum mixing temperature (degrees F).
 - e. Minimum compaction temperature (degrees F).
 4. Coarse Aggregate Certified Test Reports:
 - a. Source location and type of aggregate.
 - b. Angularity.
 - c. Bulk specific gravity.
 - d. Flat and elongated particles.
 - e. Soundness.
 - f. LA abrasion.
 5. Fine Aggregate Certified Test Reports:
 - a. Source location and type of aggregate.
 - b. Bulk specific gravity

- c. Liquid limit.
 - d. Plastic index.
 - e. Percent natural sand (if used).
 - f. Sand equivalent.
 - g. Uncompacted void content.
 6. Anti-strip agent:
 - a. Certification.
 - b. Amount used.
 7. Recycled Asphalt Pavement Test Reports (if used)
 8. Percentage and grade of performance graded asphalt binder.
 9. Proportions and percentage of each aggregate stockpile.
 10. Temperature of mix when discharged from the mixer.
 11. Plot of the blended aggregate gradation and gradation control points on the Federal Highway Administration (FHWA) 0.45 power gradation curve.
 12. Maximum specific gravity at the target binder content.
 13. Air void content at the target binder content.
 14. Graphical plots of air voids, voids in the mineral aggregate, voids filled with asphalt, fines to effective binder content ratio, and unit weight verses asphalt content. Plots shall indicate values at -0.5 percent design asphalt content, design asphalt content, and +0.5 percent design asphalt content.
 15. Tensile strength ratio (TSR), strength of conditioned samples, and worksheets.
- B. The certification(s) shall show the appropriate AASHTO/ASTM test(s) for each material, test results, and a statement that the material meets the specification requirement.

1.05 CONTRACTOR QUALITY CONTROL

- A. The Contractor shall be responsible for developing the asphalt mix designs specified herein. The mix designs shall be developed and/or certified by a laboratory accredited by AASHTO under the AASHTO Materials Reference Laboratory (AMRL) program.
- B. Quality Control Testing: The Contractor shall conduct any and all quality control (QC) testing that he deems necessary to properly control the quality, consistency, and uniformity of the asphalt concrete mix being produced. No minimum number of quality control tests is required for this Contract.
- C. If the Contractor chooses to conduct quality control tests, the information and data determined through that testing shall be made available for inspection by the Engineer. In no case, however, shall the Contractor's quality control test data be used by the Engineer for acceptance or payment purposes.
- D. Surface Grades: Grades shall conform to the tolerance requirements specified herein, except where closer tolerance is required for the proper functioning of appurtenant structures and drainage as determined by the Engineer.

1.06 QUALITY ASSURANCE

- A. The Port will provide inspection services to the satisfaction of the Engineer. Sampling and testing for compliance shall be in accordance with the applicable reference standards using certified technicians and accredited independent testing laboratories.
- B. Sampling and testing for compliance with the Contract provisions shall be in accordance with Section 01 33 00 - Submittal Procedures and Section 01 45 00 - Quality Control.
- C. The Contractor may obtain copies of results of tests performed by the Port from the office of the Port, at no cost. Tests conducted for the sole benefit of the Contractor, shall be at the Contractor's expense.
- D. Unless otherwise referenced or modified herein, quality control and quality standards for this section shall be as specified in the WSDOT Standard Specifications.

1.07 JOB CONDITIONS

- A. Environmental Requirements:
 - 1. Weather limitations shall be in accordance WSDOT Standard Specifications Section 5-04.3(16), as modified herein.
 - 2. In case of sudden rain, the Engineer may permit placing of mixture then in transport from the plant provided that the surface upon which the mix is being placed is free from pools of water. In addition, the laydown temperatures must conform to the above requirements. Such permission, however, shall not be interpreted as a waiver of any of the quality requirements.
- B. New and existing manholes, catch basins, and utility vault covers shall be adjusted to conform to the new pavement grades. Paving shall be finished ¼-inch to ½-inch higher than adjacent structures, unless otherwise shown or specified.
- C. Existing Underground Utilities: The Contractor shall locate existing underground utilities in the area of the work. Those utilities which are to remain shall be adequately protected from damage.
- D. All permanent utilities shall be installed prior to final paving. All utility trenches shall be patched with asphalt pavement as shown on the Contract Drawings.
- E. Dust Control: The Contractor shall be responsible for dust control at the site. As a minimum, a water truck and vacuum truck shall be used on site for dust control when required by the Engineer.

PART 2 - PRODUCTS

2.01 PERFORMANCE GRADED ASPHALT BINDER (PGAB)

- A. Asphalt shall conform to the requirements of AASTHO M 320 and the elastic recovery requirements of WSDOT Standard Specification Section 9-02.1(4) for the Performance Grade specified herein.

2.02 AGGREGATE

- A. Coarse Aggregate – Coarse aggregate shall conform to WSDOT Standard Specification Section 9-03.8, as modified below:

Test	Specification
------	---------------

Flat and Elongated Particles (ASTM D 4791, using a ratio of 5:1, maximum to minimum dimension)	8%, maximum
Coarse Aggregate Angularity (AASHTO T 335)	90% with 2 or more fractured faces
LA Abrasion Wear (AASHTO T 96, 500 revolutions)	30%, maximum
Sodium Sulfate Soundness Loss (AASHTO T 104, 5 cycles)	13%, maximum

- B. Fine Aggregate - Fine aggregate shall consist of clean, sound, durable, angular shaped particles produced by crushing stone or gravel that meets the requirements for wear and soundness specified for coarse aggregate. Natural (non-manufactured) siliceous sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. The amount of sand to be added will be adjusted to produce mixtures conforming to requirements of this Specification. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter and shall contain no clay balls. Fine aggregate shall conform to WSDOT Standard Specification Section 9-03.8, as modified below:

Test	Specification
Sand Equivalent (AASHTO T 176)	45%, minimum
Uncompacted Void Content (AASHTO T 304, Method A)	44%, minimum
Plasticity Index (AASHTO T 90)	Non-plastic
Liquid Limit (AASHTO T 89)	25, maximum
Deleterious Materials (AASHTO T 112)	2%, maximum

- C. Mineral filler, when used, shall conform to the requirements of AASHTO M 17.
- D. Recycled Asphalt Pavement (RAP)
1. RAP, if used, shall conform to the requirements of WSDOT Standard Specification Section 9-03.8(3)B, 9-03.21(1) and 9-03.21(1)A, as modified herein.
 2. The maximum proportion of RAP permitted within each mix shall not exceed 20 percent.
 3. RAP shall have 100 percent passing the 2-inch sieve, 95 percent passing the 1 inch sieve, and shall be a mixture of only coarse aggregate, fine aggregate, and asphalt cement, free of solvents and other contaminating materials.
 4. When RAP is used in a mixture, the RAP aggregate shall be extracted from the RAP using a solvent extraction (AASHTO T164) or ignition oven (AASHTO T308). The RAP aggregate shall be included in determinations of gradation, coarse aggregate angularity, fine aggregate angularity, and flat-and-elongated requirements. The sand equivalent requirements shall be waived for the RAP aggregates but shall apply to the remainder of the aggregate blend.
 5. Documentation of RAP stockpile quality and traceability shall be submitted to the Engineer for approval prior to use.

E. Aggregate Gradation

1. Each gradation contains maximum and minimum control points. Job mix formula gradations must fall within control points for the specified nominal aggregate size. The combined aggregate shall conform to the gradation requirements shown below when tested in accordance with AASHTO T 11 and T 27. Design gradation requirements are as follows:

Design Aggregate Gradation Control Points	
Sieve	Class B (1/2-inch)
Size	(Percent Passing)
1-1/2"	-
1"	-
3/4"	100
1/2"	90-100
3/8"	75-90
No. 4	46-66
No. 8	-
No. 10	30-42
No. 40	11-24
No. 200	3.0-7.0

2. Aggregates shall be provided in sufficient sizes to produce a uniform mixture. The Contractor shall indicate on the proposed job-mix formula the separate size designations of aggregate to be used.
3. It is recommended that the Bailey Method of gradation evaluation be used to evaluate the packing of aggregate particles and constructability of the blended aggregate mix. If segregation or non-uniformity is evident in the finished pavement, the Engineer reserves the right to require the Contractor to discontinue the use of crusher run or aggregate blends and to furnish separate sizes of open graded aggregate material.

2.03 HOT MIX ASPHALT (HMA) MIX DESIGN

- A. Mix design shall be prepared using the Hveem mix design method in accordance with the WSDOT Materials Manual Standard Operating Procedure 702, WSDOT Materials Manual Standard Operating Procedure 703, and the 2002 WSDOT Standard Specifications, as modified herein. The 2002 WSDOT Standard Specifications are referenced for mix design purposes only and the current edition of the WSDOT Standard Specifications is applicable to all other references.
- B. Asphalt Binder: PG 64-22.
- C. Aggregate Gradation: Class B (1/2").
- D. Stabilometer Value: 35, minimum.
- E. Cohesimeter Value: 100, minimum.
- F. Air Voids: 2% – 4.5%.
- G. The dust to binder ratio of the blended mix shall be between 0.6 and 1.6.

- H. Compacted mix design shall have a tensile strength ratio (TSR) greater than or equal to 85 percent when tested in accordance with WSDOT Test Method T718, including the freeze-thaw cycle. In addition, the mixture shall have a minimum wet tensile strength of 80 pounds per square inch (psi). In the event the mix design does not meet the tensile strength requirements the Contractor shall increase the approved anti-stripping agent dosage or take other corrective action to satisfy the specification.

2.04 HEAT-STABLE ANTI-STRIPPING ADDITIVE

- A. Mix designs shall include a minimum of 0.1 percent by weight binder, anti-stripping additive conforming to the requirements of WSDOT Standard Specification Section 9-02.4.

2.05 TACK COAT

- A. Unless otherwise approved by the Engineer, the tack coat shall be CSS-1, CSS-1h, or STE-1 emulsified asphalt conforming to WSDOT Standard Specification Section 9-02.1(6). The CSS-1 and CSS-1h emulsified asphalt may be diluted with water at a rate not to exceed one part water to one part emulsified asphalt. The tack coat shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer.

2.06 JOINT AND CRACK SEALANT

- A. Sealant shall conform to the requirements of WSDOT Standard Specification Section 9-04.10.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Asphalt Mixing Plant – Asphalt shall be produced at a plant approved by the WSDOT. Plants shall conform to WSDOT Standard Specifications Section 5-04.3(1).
- B. Hauling Equipment:
 - 1. Hauling equipment shall conform to WSDOT Standard Specifications Section 5-04.3(2), as modified herein.
 - 2. Trucks shall be equipped with tarps, in good condition without holes, which can be tied down over the sides and ends of the truck beds during periods of inclement weather to prevent rain from entering the truck bed and coming in contact with the asphalt concrete mix.
 - 3. Trucks shall be loaded using a multiple-drop method (front then back the middle) to minimize truck to truck segregation.
- C. Paving Equipment – Asphalt pavers shall conform to WSDOT Standard Specifications Section 5-04.3(3).
- D. Compaction Equipment – Rollers shall conform to WSDOT Standard Specifications Section 5-04.3(4).
- E. Preparation of the Asphalt Binder Material (asphalt cement):
 - 1. The binder shall be stored within the temperature range specified by the supplier of the binder for the grade of asphalt cement being used. Different grades of asphalt binder shall be stored separately and not mixed together at any time.
 - 2. The binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the bituminous material to the mixer at a uniform temperature.

3. The temperature of the binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 350 degrees F unless otherwise required by the asphalt binder manufacturer.
- F. Preparation of the Aggregates:
1. The aggregate for the mixture shall be heated and dried prior to introduction into the mixer. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates.
 2. The aggregate temperature shall not be lower than is required to obtain complete coating and uniform distribution of the aggregate particles and to provide a mixture of satisfactory workability.
- G. Preparation of Bituminous Mixture:
1. Mixing shall conform to WSDOT Standard Specifications Section 5-04.3(8), as modified herein.
 2. The aggregates and the bituminous material shall be properly proportioned and introduced into the mixer in the amount specified by the job mix formula.
 3. Job mix formula production tolerances shall conform to WSDOT Standard Specifications Section 9-03.8(7), except the tolerance limits for aggregate shall not exceed the limits of the control points specified herein.
 4. The moisture content of all bituminous mix upon discharge shall not exceed one (1) percent.
- H. Preparation of the Underlying Surface:
1. Preparation shall conform to WSDOT Standard Specifications Sections 5-04.3(5), 5-04.3(5)A, 5-04.3(5)B, 5-04.3(5)C, 5-04.3(5)D, and 5-04.3(5)E, as modified herein.
 2. Asphalt materials shall not be placed until the underlying course has been tested by the Port's Representative and accepted by the Engineer.
 3. Immediately before placing asphalt materials, clean all underlying pavement surfaces and previous courses of all loose and foreign material by sweeping with hand brooms, power sweepers or blowers as directed by the Port's Representative or Engineer.
 4. Tack Coat:
 - a. Tack coat shall be applied in accordance with WSDOT Standard Specifications Section 5-04.3(5)A, as modified herein. The Port inspector shall verify that the tack coat has been properly placed prior to constructing subsequent pavement lifts. Refer to the applicable sections in Chapter 5 of the WSDOT Construction Manual for guidance on tack coat application and inspection.
 - b. Apply tack coat only when the underlying surface is dry, and the ambient temperature meets the requirements for the pavement course being placed.
 - c. Residual asphalt coating shall be 0.03 to 0.05 gallons per square yard on newly placed asphalt surfaces
 - d. Residual asphalt coating shall be 0.06 to 0.08 gallons per square yard on existing or milled asphalt surfaces.

5. Manholes, valve boxes, inlets, and other appurtenances within the area to be paved shall be adjusted to grade as shown on the Contract Drawings. Permanent curbs, gutters, and other supports shall be constructed and backfilled prior to placing asphalt. All contact surfaces shall be coated with tack coat.

I. Transporting, Placing, and Finishing:

1. The asphalt concrete mixture shall be transported from the mixing plant to the site in vehicles conforming to the requirements specified herein.
2. Hauling over freshly placed material shall be not permitted until the material has been compacted, as specified, and allowed to cool to atmospheric temperature.
3. Placing and finishing of the asphalt mixture shall be in accordance with WSDOT Standard Specifications Section 5-04.3(9), as modified herein.
4. The nominal compacted depth of any layer of any course shall not exceed five (5) times the nominal maximum aggregate size of the asphalt mix.
5. The hot mix asphalt mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than that specified below. The temperature requirements may be waived by the Engineer, if requested; however, all other requirements including compaction shall be met.

Lift Thickness, T (inches)	Minimum Base Temperature (degrees F)
T > 3	35
2 < T < 3	35
T < 2	45

6. The initial placement of the asphalt concrete mixture shall occur at a temperature suitable for obtaining density, surface smoothness, and other specified requirements but not less than 250 degrees F, unless approved by the Engineer.
7. Upon arrival, the mixture shall be placed to the full width of the paving lane. It shall be struck off in a uniform layer of such depth that, when the mix is properly compacted, shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the bituminous mat. Unless otherwise permitted, placement of the mixtures shall begin along the centerline of a crowned section or on the high side or areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of 10-feet except where edge lanes require less width to complete the area.
8. Compaction of the asphalt mixture shall be in accordance with WSDOT Standard Specifications Section 5-04.3(10), as modified herein.
 - a. Each day's production will be treated as a lot. A minimum of five sublots will be tested. Sublot sizes will not exceed 20 tons. Random test locations will be determined according to WSDOT Test Method T 716.
 - b. In-place density shall be a minimum of 93% of the reference theoretical maximum density as determined by WSDOT FOP for WAQTC TM 8. Evidence of gauge calibration to cores, required in the test method, shall be provided for the approved job-mix being placed at a similar thickness or the gauge will be calibrated as described in the test method.

- c. Determine reference theoretical maximum density as the moving average of the most recent five determinations for the lot of asphalt concrete being placed according to WSDOT Materials Manual Standard Operating Procedure 729.
 - d. Engineer may evaluate cyclic density as described in WSDOT Standard Specifications Section 5-04.3(10)B2 to assess segregation.
- 9. Joints:
 - a. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 6-inches; however, the joint in the surface course shall be at the centerline of the pavement if that pavement is to be used by normal car or truck traffic.
 - b. Longitudinal joint density shall be assessed once per subplot in accordance with WSDOT SOP 735. Low density is defined as less than 91 percent of reference maximum density. When placing a single paver width patch, consecutive density tests will be taken on alternating sides of the patch.
 - c. Transverse joints in one course shall be offset by at least 10-feet longitudinally from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10-feet.
- 10. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and raked by hand tools.

3.02 JOINT SEALANT

- A. Apply joint sealant to the edges of new paving joints, catch basins, manholes, at the meet lines to concrete structures and as directed by the Engineer.

3.03 SURFACE SMOOTHNESS

- A. The completed surface of the wearing course shall conform to the smoothness tolerance requirements of WSDOT Standard Specifications Section 5-04.3(13).

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The location and the extent of the Corrugated Metal Pipe (CMP) work is indicated in the Drawings. The work includes the requirements for installment as foundation support.

1.02 QUALITY ASSURANCE

- A. Qualification of Workmen: Employ at least one person who shall be present at all times during execution of this portion of work, shall have all portions of Drawings and Specifications applicable to that portion of the contract, shall be thoroughly familiar with the type of materials being installed and the best methods for their installation, and shall direct all work performed under this Section.
- B. Codes and Standards: The Contractor shall comply with the applicable provisions of all pertinent codes and regulations. References made herein for manufactured materials refer to designations for the latest edition of materials published by the American Association of State Highway and Transportation Officials (AASHTO), the American Society for Testing Materials (ASTM), the American Public Works Association (APWA) Standard Specifications for Municipal Public Works Construction, and the WSDOT/APWA 2025 Standard Specification for Road, Bridge and Municipal Construction.

1.03 SUBMITTALS

- A. Manufacturer's certificates of compliance for corrugated metal pipe materials.

PART 2 - PRODUCTS

2.01 CORRUGATED METAL PIPE (CMP)

- A. Corrugated metal pipe shall be zinc coated (galvanized) or aluminum coated (aluminized Type 2) corrugated iron or steel drainpipe shall meet the requirements of AASHTO M36. The steel sheet thickness shall be a minimum of 0.064 inch for CMP. Zinc coated steel shall meet the material requirements of AASHTO M218 (ASTM A929). Aluminum coated steel shall meet the material requirements of AASHTO M274 (ASTM A929).
- B. Corrugated metal pipe shall be of diameter and length specified in the Drawings.

PART 3 - EXECUTION

3.01 GENERAL

- A. It shall be the Contractors responsibility to identify existing and newly constructed utilities for exit and entrance of foundation.

3.02 INSTALLATION

- A. Remove any existing foundation materials that might be left over from excavation.
- B. Perform all work necessary to keep the excavation clear of soil and old foundation materials.
- C. Maintain hole and excavation stability:
 - 1. Contractor shall be responsible for controlling, collecting, and coordinating the disposal of groundwater encountered as necessary.
 - 2. Contractor shall use temporary casing, shoring, and/or drilling fluid as necessary.

- D. Placing: Place the CMP vertical in excavated hole to conform as indicated on the Drawings and prepare as specified. Ensure that the CMP has a full, solid bearing along its entire length. Fill the annulus

END OF SECTION

APPENDIX A

PORT OF TACOMA

CONSTRUCTION SWPPP

SHORT FORM

CONSTRUCTION SWPPP SHORT FORM

The threshold for using the Port of Tacoma's (Port) short form is a project that proposes to clear or disturb less than one acre of land. Projects falling within this threshold may use this short form instead of preparing a professionally designed Construction Stormwater Pollution Prevention Plan (SWPPP). If project disturbance quantities exceed this threshold, you must prepare of formal Construction SWPPP as part of your submittal package. If your project is within the threshold and includes—or may affect—a critical area, please contact the Port to determine if the SWPPP short form may be used.

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN SHORT FORM

Project Name:

Address:

Contact/Owner:

Phone:

Erosion Control Supervisor:

Phone:

Cell:

Pager:

Emergency (After hours) Contact:

Phone:

Permit No.:

Parcel No.:

Required Submittals

A Construction SWPPP consists of both a project narrative and a site plan. The project narrative describes existing conditions on the site, the proposed conditions, and how construction site runoff will be managed until final site stabilization is achieved. Any additional relevant information should be included in the project narrative. All Best Management Practices (BMPs) that will be utilized onsite must be included as part of the project narrative and provided (electronically or hard copy) as part of the submittal package. If additional BMPs beyond those included in the Washington Department of Ecology's (Ecology) Western Washington Stormwater Management Manual (Ecology SWMM) or the City of Tacoma's (City) Stormwater Management Manual (City SWMM) are proposed to be used, a narrative and appropriate details describing the BMP (its function, installation method, and maintenance activities) will be required.

The site plan is a drawing which shows the location of the proposed BMPs to control erosion and sedimentation during and after construction activities.

The City's govMe site (<http://www.govme.org>) may be used to find much of the information needed to complete this form, such as adjacent areas, topography, critical areas, the downstream drainage path, and information concerning onsite features.

PROJECT NARRATIVE

The Construction SWPPP Short Form narrative must be completed at part of the submittal package. Any information described, as part of the narrative, should also be shown on the site plan.

Note: From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted by special authorization from the Port.

A. Project Description (Check all that apply)

- | | | |
|--|--|---|
| ☐ New Structure | ☐ Building Addition | ☐ Grading/Excavation |
| ☐ Paving | ☐ Utilities | ☐ Other: |

1. Total project area _____ (square feet)
2. Total proposed impervious area _____ (square feet)
3. Total existing impervious area _____ (square feet)
4. Total proposed area to be disturbed _____ (square feet)
5. Total volume of cut/fill _____ (cubic yards)

Additional Project Information:

B. Existing Site Conditions (Check all that apply)

1. Describe the existing vegetation on the site. (Check all that apply)
☐ Forest ☐ Pasture/field grass ☐ Pavement ☐ Landscaping ☐ Brush
☐ Trees ☐ Other:
2. Describe how surface water (stormwater) drainage flows across/from the site. (Check all that apply)
☐ Sheet Flow ☐ Gutter ☐ Catch Basin ☐ Ditch/Swale ☐ Storm Sewer
☐ Stream ☐ Other:
3. Describe any unusual site condition(s) or other features of note.
☐ Steep Grades ☐ Large depression ☐ Underground tanks ☐ Springs
☐ Easements ☐ Existing structures ☐ Existing utilities ☐ Other:

C. Adjacent Areas (Check all that apply)

1. Check any/all adjacent areas that may be affected by site disturbance and fully describe below in item 2:
☐ Streams* ☐ Lakes* ☐ Wetlands* ☐ Steep slopes*
☐ Residential Areas ☐ Roads ☐ Ditches, pipes, culverts ☐ Other:

** If the site is on or adjacent to a critical area (e.g., waterbody), the Port may require additional information, engineering, and other permits to be submitted with this short form.*

2. Describe how and where surface water enters the site from properties located upstream:

3. Describe the downstream drainage path from the site to the receiving body of water (minimum distance of 0.25 mile [1320 feet]). (E.g., water flows from the site into a curb-line, then to a catch basin at the intersection of X and Y streets. A 10-inch pipe system conveys water another 1000 feet to a wetland.) Include information on the condition of the drainage structures.

D. Soils (Check all that apply)

The intent of this section is to identify when additional soils information may be required for applicants using this short form. There are other site-specific issues that may necessitate a soils investigation or more extensive erosion control practices. The Port will determine these situations on a case-by-case basis as part of their review.

1. Does the project propose infiltration? Infiltration systems require prior Port approval.

☐ Yes ☐ No

2. Does the project propose construction on or near steep slopes (15% or greater)?

☐ Yes ☐ No

If infiltration is proposed for the site or steep slopes (15% or greater) have been identified, the Port will require soils information as part of project design. The applicant must contact a soil professional or civil engineer that specializes in soil analysis and perform an in-depth soils investigation. If the Yes box is checked for either question, the Port may not permit the use of this short form.

E. Construction Sequencing/Phasing

1. Construction sequence: the standard construction sequence is as follows:
 - Mark clearing/grading limits.
 - Install initial erosion control Best Management Practices (BMPs) (e.g., construction entrance, silt fence, catch basin inserts, etc.).
 - Clear, grade, and fill project site as outlined in the site plan while implementing and maintaining proper temporary erosion and sediment control BMPs simultaneously.
 - Install permanent erosion protection as described in the specifications (e.g., impervious surfaces, landscaping, etc.).
 - Remove temporary erosion control methods as permitted. Do not remove temporary erosion control until permanent erosion protection is fully established.

List any changes from the standard construction sequence outlined above:

2. Construction phasing: if construction is going to occur in separate phases, please describe:

F. Construction Schedule

1. Provide a proposed construction schedule (dates construction starts and ends, and dates for any construction phasing.)

Start Date:

End Date:

Interim Phasing Dates:

Wet Season Construction Activities: Wet season occurs from October 1 to April 30. Please describe construction activities that will occur during this time period.

Note: Additional erosion control methods may be required during periods of increased surface water runoff.

2. Site plan

A site plan, to scale, must be included with this checklist that shows the following items:

- ☐ a. Address, Parcel Number, Permit Number, and Street Names
- ☐ b. North Arrow
- ☐ c. Indicate boundaries of existing vegetation (e.g., tree lines, grassy areas, pasture areas, fields, etc.)
- ☐ d. Identify any onsite or adjacent critical areas and associated buffers (e.g., wetlands, steep slopes, streams, etc.).
- ☐ e. Identify any FEMA base flood boundaries and Shoreline Management boundaries.
- ☐ f. Show existing and proposed contours.
- ☐ g. Delineate areas that are to be cleared and/or graded.
- ☐ h. Show all cut and fill slopes, indicating top and bottom of slope catch lines.
- ☐ i. Show locations where upstream run-on enters the site and locations where runoff leaves the site.
- ☐ j. Indicate existing surface water flow direction(s).
- ☐ k. Label final grade contour and indicate proposed surface water flow direction and surface water conveyance systems (e.g., pipes, catch basins, ditches, etc.).
- ☐ l. Show grades, dimensions, and direction of flow in all (existing and proposed) ditches, swales, culverts, and pipes.
- ☐ m. Indicate locations and outlets of any dewatering systems (usually to sediment trap).
- ☐ n. Identify and locate all erosion control methods to be used during and after construction.

ONSITE FIELD VERIFICATION OF ACTUAL CONDITIONS IS REQUIRED.

Figure 1. (see page 5 for Site Plan requirements)

GUIDELINES FOR EROSION CONTROL ELEMENTS

This SWPPP must contain the 12 required elements, as required by Ecology. Check off each element as it is addressed in the SWPPP short form and/or on your site plan.

- ☐ 1. Mark Clearing Limits
- ☐ 2. Establish Construction Access
- ☐ 3. Control Flow Rates
- ☐ 4. Install Sediment Controls
- ☐ 5. Stabilize Soils
- ☐ 6. Protect Slopes
- ☐ 7. Protect Drain Inlets
- ☐ 8. Stabilize Channels and Outlets
- ☐ 9. Control Pollutants
- ☐ 10. Control Dewatering
- ☐ 11. Maintain BMPs
- ☐ 12. Manage the Project

The following is a brief description of each of the 12 required elements of a SWPPP. If an element does not apply to the proposed project site, please describe why the element does not apply. Applicable BMPs are listed with each element and in Table 1. Please note that this list is not a comprehensive list of BMPs available for small construction projects, but erosion and sediment control techniques most pertinent to small construction sites are included here. More detailed information on construction BMPs can be found in Ecology's SWMM Volume II and the City's SWMM Volume II (Ecology 2019; City of Tacoma 2016). Please provide hard copies of the BMPs that will be used for the project and include as part of this Construction SWPPP. BMPs that may be used if needed can be noted as being contingent in the event additional erosion control is needed. Describe any additional BMPs that will be utilized onsite and add them to the SWPPP short form.

For phased construction projects, clearly indicate erosion control methods to be used for each phase of construction.

Element #1 – Mark Clearing Limits

All construction projects must clearly mark any clearing limits, sensitive areas and their buffers prior to beginning any land disturbing activities, including clearing and grading. Clearly mark the limits both in the field and on the site plans. Limits shall be marked in such a way that any trees or vegetation that is to remain will not be harmed.

Applicable BMPs include:

- BMP C101: Preserving Natural Vegetation
- BMP C102: Buffer Zones
- BMP C103: High Visibility Plastic or Metal Fence
- BMP C104: Stake and Wire Fence

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #2 – Establish Construction Access

All construction projects subject to vehicular traffic shall provide a means of preventing vehicle “tracking” soil from the site onto streets or neighboring properties. Limit vehicle traffic on- and off-site to one route if possible. All access points shall be stabilized with a rock pad construction entrance or other Port-approved BMP. The applicant should consider placing the entrance in the area for future driveway(s), as it may be possible to use the rock as a driveway base material. The entrance(s) must be inspected weekly, at a minimum, to ensure no excess sediment buildup or missing rock.

Applicable BMPs include:

- BMP C105: Stabilized Construction Entrance
- BMP C106: Wheel Wash
- BMP C107: Construction Road/Parking Area Stabilization

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #3 – Control Flow Rates

Protect properties and waterways downstream of the project site from erosion due to increases in volume, velocity, and peak flow of stormwater runoff from the project site.

Permanent infiltration facilities shall not be used for flow control during construction unless specifically approved by the Environmental Department. Sediment traps can provide flow control for small sites by allowing water to pool and allowing sediment to settle out of the water.

Applicable BMPs include:

- BMP C207: Check Dams
- BMP C240: Sediment Trap

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element 4 – Install Sediment Controls

Surface water runoff from disturbed areas must pass through an appropriate sediment removal device prior to leaving a construction site or discharging into a waterbody. Sediment barriers are typically used to slow stormwater sheet flow and allow the sediment to settle out behind the barrier.

Sediment controls must be installed/constructed prior to site grading.

Applicable BMPs include:

- BMP C208: Triangular Silt Dike
- BMP C232: Gravel Filter Berm
- BMP C233: Silt Fence
- BMP C235: Straw Wattles

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #5 – Stabilize Soils

Stabilize exposed and unworked soils by applying BMPs that protect the soils from raindrop impact, flowing water, and wind.

From October 1 through April 30, no soils shall remain exposed or unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed or unworked for more than 7 days. This applies to all soils whether at final grade or not.

Applicable BMPs include:

- BMP C120: Temporary and Permanent Seeding
- BMP C121: Mulching
- BMP C122: Nets and Blankets
- BMP C123: Plastic Covering
- BMP C140: Dust Control

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #6 – Protect Slopes

Protect slopes by diverting water at the top of the slope. Reduce slope velocities by minimizing the continuous length of the slope.

Applicable BMPs include:

- BMP C200: Interceptor Dike and Swale
- BMP C204: Pipe Slope Drains
- BMP C207: Check Dams

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #7 – Protect Drain Inlets

All operable storm drain inlets must be protected during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment. Install catch basin protection on all catch basins within 500 feet downstream of the project.

Applicable BMPs include:

- BMP C220: Storm Drain Inlet Protection

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #8 – Stabilize Channels and Outlets

Stabilize all temporary onsite conveyance channels. Provide stabilization to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the conveyance system outlets.

Applicable BMPs include:

- BMP C202: Channel Lining
- BMP C209: Outlet Protection

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #9 – Control Pollutants

Handle and dispose of all pollutants, including demolition debris and other solid wastes in a manner that does not cause stormwater contamination. Provide cover and containment for all chemicals, liquid products (including paint), petroleum products, and other materials. Handle all concrete and concrete waste appropriately.

Applicable BMPs include:

- BMP C150: Materials on Hand
- BMP C151: Concrete Handling
- BMP C152: Sawcutting and Surface Pollution Prevention
- BMP C153: Material Delivery, Storage and Containment

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #10 – Control Dewatering

Clean, non-turbid dewatering water, such as groundwater, can be discharged to the stormwater system provided the dewatering flow does not cause erosion or flooding of receiving waters. All other dewatering water shall be pumped to a settling container and taken offsite or discharged to the City sewer system. All discharges to the City sewer system require City approval, which may include a Special Approved Discharge (SAD) permit.

Applicable BMPs include:

- BMP C150: Materials on Hand

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #11 – Maintain BMPs

Maintain and repair temporary erosion and sediment control BMPs as needed. Inspect all BMPs at least weekly and after every storm event.

Remove all temporary erosion and sediment control BMPs within 30 days after final site stabilization or if the BMP is no longer needed. Any sediment trapped during construction activities should be removed or stabilized onsite. No sediment shall be discharged into the stormwater drainage system or any natural conveyance system (e.g., streams).

Applicable BMPs include:

- BMP C160: Certified Erosion and Sediment Control Lead

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #12 – Manage the Project

Phase development projects to prevent soil erosion and the transport of sediment from the project site during construction. Coordinate all work prior initial construction with subcontractors and other utilities to ensure no areas are worked prematurely.\

A designated erosion and sediment control person is required for all construction projects. This person is responsible for ensuring that the project's erosion and sediment control BMPs are appropriate for the site and are functioning properly. They are also responsible for updating the

SWPPP as necessary as site conditions warrant. They must be available 24 hours a day to ensure compliance.

Applicable BMPs include:

- BMP C160: Certified Erosion and Sediment Control Lead
- BMP C162: Scheduling
- BMP C180: Small Project Construction Stormwater Pollution Prevention

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Table 1. Applicable BMPs for the 12 Elements of a SWPPP

Element #1 – Mark Clearing Limits		
BMP C101	Preserving Natural Vegetation	
BMP C102	Buffer Zones	
BMP C103	High Visibility Plastic and Wire Fence	
BMP C104	Stake and Wire Fence	
Element #2 – Establish Construction Entrance		
BMP C105	Stabilized Construction Entrance	
BMP C106	Wheel Wash	
BMP C107	Construction Road/Parking Area Stabilization	
Element #3 – Control Flow Rates		
BMP C207	Check Dams	
BMP C240	Sediment Trap	
Element #4 – Install Sediment Controls		
BMP C208	Triangular Silt Trap	
BMP C232	Gravel Filter Berm	
BMP C233	Silt Fence	
BMP C235	Straw Wattles	
Element #5 – Stabilize Soils		
BMP C120	Temporary and Permanent Seeding	
BMP C121	Mulching	
BMP C122	Nets and Blankets	
BMP C123	Plastic Covering	
BMP C140	Dust Control	
Element #6 – Protect Slopes		
BMP C200	Interceptor Dike and Swale	
BMP C204	Pipe Slope Drains	
BMP C207	Check Dams	
Element #7 – Protect Drain Inlets		
BMP C220	Storm Drain Inlet Protection	
Element #8 – Stabilize Channels and Outlets		
BMP C202	Channel Lining	
BMP C209	Outlet Protection	
Element #9 – Control Pollutants		
BMP C150	Materials on Hand	

Element #9 – Control Pollutants, cont.		
BMP C151	Concrete Handling	
BMP C152	Sawcutting and Surfacing Pollution Prevention	
BMP C153	Materials, Delivery, Storage and Containment	
Element #10 – Control Dewatering		
BMP C150	Materials on Hand	
Element #11 – Maintain BMPs		
BMP C160	Certified Erosion and Sediment Control Lead	
Element #12 – Manage the Project		
BMP C160	Certified Erosion and Sediment Control Lead	
BMP C162	Scheduling	
BMP C180	Small Project Construction Stormwater Pollution Prevention	

REFERENCES

City of Tacoma. 2016. Stormwater Management Manual 2016 Edition. Public Works/ Environmental Services, Maintenance Division, Tacoma, Washington.

Washington State Department of Ecology (Ecology). 2019. Stormwater Management Manual for Western Washington. Water Quality Program, Lacey, Washington.

APPENDIX B

TACOMA RAIL – RIGHT OF

ENTRY AGREEMENT

APPLICATION

RIGHT OF ENTRY AGREEMENT APPLICATION

Date: _____

The following specifications for Construction within the Right of Way are hereby submitted to the City of Tacoma for their approval to cross the City of Tacoma's Railroad Rights of Way, as shown on the enclosed sketch.

Legal name of company or municipality applying: _____

Name(s) & email(s) of person(s) with authority execute Permit: _____

Applicant's Tax ID/SSN: _____

State in which incorporated: _____

If not incorporated, correct name of owners and all partners: _____

Mailing address: _____

Contact person and telephone number: _____

After-hours emergency contact name/telephone number: _____

Location: _____ 1/4, Sec: _____ T: _____ R: _____ MP: _____ to _____

Station: _____

Name of nearest town: _____

Name of nearest road crossing the Railroad: _____

Is it within the limits of a public road/street? _____

If yes, distance from center line of street: _____

Width of road or street: _____

Start and End date of Use: _____

Type of Use: _____

Length of Right of Way Use: _____

Width of Right of Way use: _____

List any Equipment on ROW: _____

**SUBMIT A DRAWING PINPOINTING THE LOCATION AND DIMENSIONS
OF CONSTRUCTION WITHIN THE RIGHT OF WAY INCLUDING
PROPOSED CONSTRUCTION DRAWINGS AND
\$1,500.00 ADMINISTRATIVE FEE.**

Signature: _____

Printed Name & Title: _____

Telephone number and email address: _____

Return to:

Tacoma Public Utilities Real Property Services

3628 South 35th St.

Tacoma, WA 98409

How to Submit Your Application

Right of Entry Agreement: Allows the owner's contractor to perform work activity in the right of way. Cost to process the request is **\$1,500** and is good for 1 year.

SITE DRAWINGS

Applications must include drawings, which include plan, profile, photo of the work area, and an area map depicting the location of the installation. Vegetation maintenance requires an aerial depiction of the work area and vicinity map.

CONFIDENTIALITY STATEMENT

All submittals are subject to public disclosure. Proprietary or private information is not protected.

INSURANCE

Contractor (Permittee) must, at its sole cost and expense, procure and maintain during the life of the Right of Entry (Agreement) provide the following insurance coverages:

*****NOTE** – *Most commonly missed items are the Railroad Protective Liability – see Section (d) below (highlighted) and including CG2417 which removes any exclusion or other limitation for any work being done within 50 feet of railroad (see highlighted ♦ in (a) below. It is highly recommended to submit your insurance coverage policy immediately with your application as it may take 4-6 weeks to review and work with you to meet the coverage requirements. Work may not start until ROE and insurance are approved.*

(a) **Commercial General Liability Insurance.** This insurance must contain broad form contractual liability with a combined single limit of a minimum of \$1,000,000 each occurrence and an aggregate limit of at least \$2,000,000. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limited to, the following:

- ♦ Bodily Injury and Property Damage
- ♦ Personal Injury and Advertising Injury
- ♦ Fire legal liability
- ♦ Products and completed operations

This policy must also contain the following endorsements, which must be indicated on the certificate of insurance:

- ♦ The employee and workers compensation related exclusions in the above policy shall not apply with respect to claims related to railroad employees.
- ♦ The removal of any exclusions related to the obligation of the insured under Workers' Compensation, disability benefits, or unemployment compensation law or similar law.
- ♦ **The definition of insured contract must be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.**
- ♦ The removal of any exclusions related to the explosion, collapse and underground hazards.

No other endorsements limiting coverage may be included on the policy with regard to the work being

performed under this Agreement or otherwise with respect to any obligations under this Agreement.

- (b) **Business Automobile Insurance.** This insurance must contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:
- ◆ Bodily injury and property damage
 - ◆ Any and all vehicles owned, used or hired

- (c) **Workers Compensation and Employers Liability** insurance including coverage for, but not limited to:

- ◆ Permittee's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- ◆ Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.

- (d) **Railroad Protective Liability insurance naming Permittee and Railway** as the Insured with coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate. The policy must be issued on a standard ISO form CG 00 35 10 93 and include the following: (Required for construction (ROE) and/or driveway crossings (Permit))

- ◆ Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- ◆ Endorsed to include the Limited Seepage and Pollution Endorsement
- ◆ Endorsed to include Evacuation Expense Coverage Endorsement
- ◆ No other endorsements restricting coverage may be added
- ◆ The original policy must be provided to the Railway prior to performing any work or services under this Agreement

Other Requirements:

Where allowable by law, all policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

Permittee agrees to waive its right of recovery against Railway for all claims and suits against Railway. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railway for all claims and suits. The certificate of insurance must reflect the waiver of subrogation endorsement. Permittee further waives its right of recovery, and its insurers also waive their right of subrogation against Railway, for loss of its owned or leased property or property under its care, custody or control.

Permittee's insurance policies, through policy endorsement, must include wording which states that the policy will be primary and non-contributing with respect to any insurance carried by Railway. The certificate of insurance must reflect that the above wording is included in evidenced policies.

All policy(ies) required above (excluding Workers Compensation and if applicable, Railroad Protective) must include a severability of interest endorsement and must name Railway as additional insureds with respect to work performed under this agreement. Severability of interest and naming Railway as additional insureds must be indicated on the certificate of insurance.

Permittee is not allowed to self-insure without the prior written consent of Railway. If granted by Railway, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by Permittee in lieu of insurance. Any and all Railway liabilities that would

otherwise, in accordance with the provisions of this Agreement, be covered by Permittee's insurance will be covered as if Permittee elected not to include a deductible, self-insured retention or other financial responsibility for claims. Such direct coverage by Permittee shall be in an amount equal to the amount of Permittee's actual deductible amount.

Prior to commencing the Work, Permittee must furnish to Railway an acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments and referencing the contract audit/folder number if available. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify Railway in writing at least thirty (30) calendar days' prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. In the event of a claim or lawsuit involving Railway arising out of this Agreement, Permittee will make available any required policy covering such claim or lawsuit.

Any insurance policy must be written by a reputable insurance company acceptable to Railway or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

Permittee represents that this Agreement has been thoroughly reviewed by Permittee's insurance agent(s)/broker(s), who have been instructed by Permittee to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above.

Not more frequently than once every five years, Railway may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Permittee, Permittee must require that the subcontractor provide and maintain the insurance coverages set forth herein, naming Railway as an additional insured, and requiring that the subcontractor release, defend and indemnify Railway to the same extent and under the same terms and conditions as Permittee is required to release, defend and indemnify Railway herein.

Failure to provide evidence as required by this section will entitle, but not require, Railway to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section will not operate as a waiver of Permittee's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Permittee will not be deemed to release or diminish the liability of Permittee including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railway will not be limited by the amount of the required insurance coverage.

APPENDIX C
ESTIMATED TOTE
CONTAMINATION
PLUMES



LEGEND:

Yard Lease Lines

Alexander Ave Groundwater Benzene

Plume Testing Locations

Monitoring Well – Occidental Site

Interpolated Plume Type

Estimated Extent of Alexander Site Benzene Plume

Estimated Extent of Occidental Chemical Site pH Plume

Estimated Extent of Vinyl Chloride in B-123 25' Groundwater

Estimated Extent of Occidental Chemical Chlorinated Solvent Plume

Tank Location and Group

Group 1 Tanks

Group 2 Tanks

Group 3 Tanks

Group 4 Tanks

Tanks Addressed Separately

Estimated Extent of Groundwater Impacts

NOTES:

1. Aerial Imagery from Google Earth Pro, May, 2018.

2. Occidental Chemical Site chlorinated solvent plume extent represents maximum extent of detected PCE, TCE, DCE or vinyl chloride in Occidental Chemical Site groundwater monitoring wells at any depth. Final Draft Site Characterization Report, September, 2015, CRA.

3. Occidental Chemical Site pH plume represents the maximum interpolated extent of the > pH 8.5 plume at any depth. Final Draft Site Characterization Report, September, 2015, CRA.

4. Vinyl chloride was detected at boring B-123 installed as part of the Alexander Avenue Tank Farms Site testing program. This area is associated with the Occidental Chemical chlorinated solvent plume.

5. The Alexander Avenue Tank Farms Site benzene plume represents the estimated extent of groundwater exceeding 5 ug/L benzene in the 25-foot water bearing zone. Final Agency Review Draft RI Report, Alexander Avenue Petroleum Tank Facility Site, December 2016, Aspect Consulting.

ANCHOR

QEA

2022/04/25 5:27 PM | User: twelody

\\orcas\GIS\Jobs\Port_of_Tacoma_0092\TOTE_USTs_Cleanup_Plan\Maps\Reports\DataGapsWorkPlan\AQ_TOTEUST_DGWP_Fig03_InterpretedExtentGWContamination.mxd

Figure 3

Interpolated Extent of Groundwater Contamination Associated with Other Sites

Data Gaps Work Plan

Port of Tacoma TOTE USTs

APPENDIX D
CITY OF TACOMA SITE
DEVELOPMENT PERMIT
(SDEV24-0428)

REFERENCE PERMIT DRAWINGS ARE
DIGITALLY STAMPED – SEE ATTACHMENT:
SDEV 24-0428 FOR BID PURPOSES ONLY –
CIVIL SET.PDF

Ozolin, Brett

To: PDS Permit Plan Desk
Subject: RE: [Accela] Your application SDEV24-0428 has been ready to issue for 120 days

From: PDS Permit Plan Desk <permits@tacoma.gov>
Sent: Friday, August 28, 2026 1:48 PM
To: Yacker, Noah <nyacker@tacoma.gov>; Ozolin, Brett <bozolin@portoftacoma.com>
Cc: Roubinet, Sarah <SRoubinet@tacoma.gov>
Subject: RE: [Accela] Your application SDEV24-0428 has been ready to issue for 120 days

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. Report suspicious email using the Report Phish button in Outlook.

Hello,

SDEV24-0428 has been extended 180 days to 02/27/27,

Thank you,



**Permit Plan Desk –
Bri Breeden**
Permit Specialist
Planning & Development Services
747 Market St, Rm 345
Tacoma, WA 98402
253-591-5030 | Permits@cityoftacoma.org
[Take our Survey!](#)

From: Yacker, Noah <nyacker@tacoma.gov>
Sent: Friday, August 28, 2026 1:13 PM
To: Ozolin, Brett <bozolin@portoftacoma.com>; PDS Permit Plan Desk <permits@tacoma.gov>
Cc: Roubinet, Sarah <SRoubinet@tacoma.gov>
Subject: RE: [Accela] Your application SDEV24-0428 has been ready to issue for 120 days

Brett,

We will grant another extension for this permit.

@PDS Permit Plan Desk, I confirmed with Sarah and added a note in the record that we are ok with a 180 day extension,

Thanks,

Noah Yacker

Application Services Supervisor | 253-591-5613 | 253-651-5309 cell

Planning and Development Services Department

TacomaPermits.org [Tacoma Permits \(ACA\)](#)

[Please Take our Survey!](#)

We work with the community to plan and permit a safe, sustainable, livable city.

From: noreply@cityoftacoma.org <noreply@cityoftacoma.org>

Sent: Wednesday, August 6, 2025 5:02 PM

To: Ozolin, Brett <bozolin@portoftacoma.com>; Ozolin, Brett <bozolin@portoftacoma.com>

Subject: [Accela] Your application SDEV24-0428 has been ready to issue for 120 days

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. Report suspicious email using the Report Phish button in Outlook.

Hello,

Application Number: SDEV24-0428

Site Address: 3115 E 11TH ST, Tacoma, WA 98421

Project Description: Remove existing High-Intensity Discharge (HID) lighting infrastructure and dispose of outdated fixtures while preserving existing attachment hardware (wagon wheels, arms, etc.) Pavement demolition and excavation per pole to remove power and fiber.

***NOTE:** If this permit is associated with an additional permit that is still active, you can disregard this email.

The above application with City of Tacoma, Planning & Development Services, has been Ready to Issue since **04/08/2025**. It has been **120** days since the application was placed in this status. If the application reaches 180 days (**10/05/2025**) without further activity, it will be closed. Once closed, you will need to reapply for a new permit if you wish to proceed with this scope of work.

To access your account and confirm the amount due and to pay, please log into your Tacoma Permits account by following the directions below:

- Go to <https://aca-prod.accela.com/tacoma/Default.aspx>
- Log into your account
- Click on "My Records"
- Select SDEV24-0428
- Go to the "Payments" drop down menu and select fees. Click on the blue words "Pay Fees" and follow the prompts

Once payment is confirmed your permit and documents will be released and you can download for your use.

Thank you,

City of Tacoma
Planning and Development Services
747 Market Street, 3rd Floor
Tacoma, WA 98402
Phone: 253-591-5030
Website: <https://TacomaPermits.org>
Online Permits: <https://aca-prod.accela.com/tacoma/Default.aspx>
Contact Us: <https://www.tacomapermits.org/contact-us>
Have any comments? Take our [survey](#)



All e-mail communications with the Port of Tacoma are subject to disclosure under the Public Records Act and should be presumed to be public.