

**PORT OF TACOMA  
TACOMA, WASHINGTON  
THORNE RD OFF DOCK CONTAINER YARD**

**PROJECT NO. 101241.01  
CONTRACT NO. 071908**

There are three grants funded in part by the Washington State Department of Ecology along with U.S. Department of Transportation, and Washington Department of Commerce.

**Thais Howard, PE  
Director, Engineering**

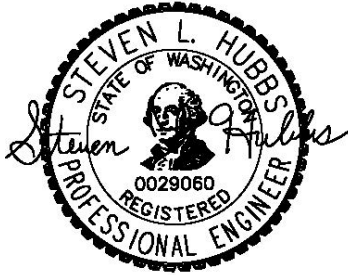
**Norman Gilbert, PE  
Project Manager**

**END OF SECTION**

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The undersigned Engineer of Record hereby certifies that the Technical Specifications for the following portions of this project were written by me, or under my direct supervision, and that I am duly registered under the laws of the State of Washington, and hereby affix my Professional Seal and signature.

Those Sections prepared under my direct supervision and being certified by my seal and signature below are as follows:

| <u>SEAL &amp; SIGNATURE</u>                                                         | <u>SECTION(S)</u>                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | 02 41 10<br>03 20 00<br>03 30 00<br>05 50 00<br>09 90 00<br>13 34 19<br>31 00 00<br>31 05 19<br>32 12 16<br>32 17 23<br>32 31 13<br>33 10 00<br>31 11 00<br>33 31 00 |
|  | 26 series<br>33 79 19<br>33 79 00                                                                                                                                    |
|  | 33 41 00<br>33 44 19<br>33 49 20                                                                                                                                     |

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## **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 00 - Supplementary Conditions - WA Ecology Grant
- 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

|                                                               |
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| 01 35 43.13 - Hazardous Materials Handling Procedure          |
| 01 35 47 - Air and Noise Control Procedures                   |
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| 01 41 00 - Regulatory Requirements                            |
| 01 42 19 - Reference Standards                                |
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| 01 55 00 - Vehicular Access and Parking                       |
| 01 57 13 - TESC and Project SWPPP                             |
| 01 57 23 - Water Management                                   |
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| 01 71 00 - Examination and Preparation                        |
| 01 71 23 - Field Engineering                                  |
| 01 74 13 - Construction Cleaning                              |
| 01 74 16 - Soil Characteristics and Waste Management          |
| 01 77 00 - Closeout Procedures                                |
| 01 78 23 - Operation and Maintenance Manuals                  |
| DIVISION 02 -- EXISTING CONDITIONS                            |
| 02 41 00 - Site Demolition                                    |
| DIVISION 03 -- CONCRETE                                       |
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| 03 30 00 - Cast-in-Place Concrete                             |
| DIVISION 05 -- METALS                                         |
| 05 50 00 - Metal Fabrication                                  |
| DIVISION 09 -- FINISHES                                       |
| 09 90 00 - Painting and Coating                               |
| DIVISION 13 -- SPECIAL CONSTRUCTION                           |
| 13 34 19 - Building Systems                                   |
| DIVISION 26 -- ELECTRICAL                                     |
| 26 01 26 - Acceptance Testing of Electrical Systems           |
| 26 05 00 - Common Work Results for Electrical                 |
| 26 05 19 - Low Voltage Electrical Power Conductors and Cables |
| 26 05 33 - Raceways and Boxes for Electrical Systems          |
| 26 05 53 - Identification for Electrical Systems              |
| 26 05 73 - Overcurrent Protective Device Coordination Study   |

- 26 14 10 - Interlocked Reefer Power Outlet (Pedestal Mounted)
- 26 14 20 - Interlocked Reefer Power Outlet (Bunker Mounted)
- 26 22 13 - Dry Type Transformers
- 26 24 13 - Electrical Switchboards
- 26 24 16 - Panelboards
- 26 27 26 - Wiring Devices
- 26 35 33 - Automatic Power Factor Correction Equipment 480 Volts
- 26 56 36 - Flood Lighting Fixtures

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- 31 00 00 - Earthwork
- 31 05 19 - HDPE Liner

DIVISION 32 -- EXTERIOR IMPROVEMENTS

- 32 12 16 - Asphalt Paving
- 32 17 23 - Pavement Markings
- 32 31 13 - Chain Link Fences and Gates

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- 33 10 00 - Water Distribution Systems
- 33 11 00 - Water Filtration Systems
- 33 31 00 - Sanitary Sewer Utility Systems
- 33 41 00 - Storm Conveyance and Accessories
- 33 44 19 - Biofiltration Media Trenches
- 33 49 20 - Precast Concrete Drainage Structures
- 33 71 19 - Electrical Underground Ducts and Manholes
- 33 79 00 - Site Grounding

APPENDICES

- Appendix A - Port of Tacoma Provided Construction SWPPP
- Appendix B - Port of Tacoma Construction SWPPP Short Form
- Appendix C - State Environmental Policy Act (SEPA) Determination of Non-significance (DNS)
- Appendix D - National Environmental Policy Act (NEPA) Finding of No Significant Impact (FONSI)
- Appendix E - United States Army Corps of Engineers NWS-2020-557-WRD
- Appendix F - Washington State Department of Ecology Construction Stormwater General Permit WAR312684
- Appendix G - City of Tacoma Land Use Permit LU22-0140
- Appendix H - Inadvertent Discovery Plan
- Appendix I - City of Tacoma Site Development Permit SDEV23-0193

Appendix J - City of Tacoma Work Order Permit WO23-0096

Appendix K - City of Tacoma/Tacoma Rail Right-of-Entry Permit Requirements

Appendix L - Short Term Lease Exhibit for Parcel 85 (1451 Thorne Rd)

**END OF SECTION**

## PART 1 - GENERAL

### 1.01 SUMMARY

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

#### Site Drawings

| Sheet No. | Drawing Title                                        |
|-----------|------------------------------------------------------|
| G1.01     | COVER SHEET                                          |
| G1.02     | SHEET INDEX                                          |
| G1.03     | GENERAL NOTES                                        |
| G1.04     | LEGEND & ABBREVIATIONS                               |
| G2.00     | SITE ACCESS AND PHASING                              |
| V01.01    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 1 OF 13)  |
| V01.02    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 2 OF 13)  |
| V01.03    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 3 OF 13)  |
| V01.04    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 4 OF 13)  |
| V01.05    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 5 OF 13)  |
| V01.06    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 6 OF 13)  |
| V01.07    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 7 OF 13)  |
| V01.08    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 8 OF 13)  |
| V01.09    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 9 OF 13)  |
| V01.10    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 10 OF 13) |
| V01.11    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 11 OF 13) |
| V01.12    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 12 OF 13) |
| V01.13    | THORNE ROAD - TOPOGRAPHIC SURVEY<br>(SHEET 13 OF 13) |
| C1.00     | DEMOLITION                                           |
| C1.01     | DEMOLITION - AREA 1                                  |
| C1.02     | DEMOLITION - AREA 2                                  |
| C1.03     | DEMOLITION - AREA 3                                  |
| C2.00     | SITE LAYOUT                                          |

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|       |                                                  |
|-------|--------------------------------------------------|
| C2.01 | SITE LAYOUT - AREA 1                             |
| C2.02 | SITE LAYOUT - AREA 2                             |
| C2.03 | SITE LAYOUT - AREA 3                             |
| C2.04 | POINT CONTROL - AREA 1                           |
| C2.05 | POINT CONTROL - AREA 2                           |
| C2.06 | POINT CONTROL - AREA 3                           |
| C2.07 | POINT COORDINATE TABLE                           |
| C2.08 | ENLARGED PLAN - RR CROSSING                      |
| C2.09 | REEFER PRE-TRIP                                  |
| C2.10 | ROADABILITY                                      |
| C2.11 | MAIN GATE                                        |
| C2.12 | DETAILS - PAVEMENT MARKINGS & SIGNS              |
| C2.13 | DETAILS - BARRIERS                               |
| C2.14 | DETAILS - CONTAINER AND CHASSIS STRIPING         |
| C2.15 | DETAILS - STALL STRIPING                         |
| C2.16 | DETAILS - FENCING & SLIDING GATE                 |
| C2.17 | DETAILS - REEFER PRE-TRIP                        |
| C3.00 | PAVING AND GRADING                               |
| C3.01 | PAVING AND GRADING - AREA 1                      |
| C3.02 | PAVING AND GRADING - AREA 2                      |
| C3.03 | PAVING AND GRADING - AREA 3                      |
| C3.10 | CROSSING DETAILS                                 |
| C3.11 | GRADING & PAVING SECTION DETAILS                 |
| C4.00 | UTILITIES                                        |
| C4.01 | UTILITIES - AREA 1                               |
| C4.02 | UTILITIES - AREA 2                               |
| C4.03 | UTILITIES - AREA 3                               |
| C4.04 | ENLARGED PLAN                                    |
| C4.05 | DETAILS - MISCELLANEOUS                          |
| C4.06 | DETAILS - REEFER WASH DOWN                       |
| C5.01 | TESC SITE PLAN & KEY MAP                         |
| C5.02 | TESC ENLARGED PLAN 01                            |
| C5.03 | TESC ENLARGED PLAN 02                            |
| C5.04 | TESC ENLARGED PLAN 03                            |
| C5.05 | TESC NOTES                                       |
| C5.06 | TESC DETAILS                                     |
| C5.07 | STORMWATER PROCESS FLOW DIAGRAMS & GENERAL NOTES |
| C5.08 | STORMWATER SITE PLAN & KEY MAP                   |
| C5.09 | STORMWATER ENLARGED PLAN 01                      |
| C5.10 | STORMWATER ENLARGED PLAN 02                      |

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|       |                                              |
|-------|----------------------------------------------|
| C5.11 | STORMWATER ENLARGED PLAN 03                  |
| C5.12 | STORMWATER PIPELINE PROFILES 01              |
| C5.13 | STORMWATER PIPELINE PROFILES 02              |
| C5.14 | STORMWATER PIPELINE PROFILES 03              |
| C5.15 | STORMWATER TREATMENT PLANS 01                |
| C5.16 | STORMWATER TREATMENT PLANS 02                |
| C5.17 | STORMWATER TREATMENT SECTIONS 01             |
| C5.18 | STORMWATER TREATMENT SECTIONS 02             |
| C5.19 | STORMWATER TREATMENT SECTIONS 03             |
| C5.20 | STORMWATER TREATMENT SECTIONS 04             |
| C5.21 | STORMWATER TREATMENT DETAILS                 |
| C5.22 | BMT DETAILS                                  |
| C5.23 | GENERAL STORMWATER DETAILS 01                |
| C5.24 | GENERAL STORMWATER DETAILS 02                |
| E01   | ELECTRICAL SYMBOLS LEGEND &<br>GENERAL NOTES |
| E10   | OVERALL ELECTRICAL SITE PLAN                 |
| E20   | PARTIAL ELECTRICAL SITE PLAN                 |
| E21   | PARTIAL ELECTRICAL SITE PLAN                 |
| E22   | PARTIAL ELECTRICAL SITE PLAN                 |
| E23   | PARTIAL ELECTRICAL SITE PLAN                 |
| E24   | PARTIAL ELECTRICAL SITE PLAN                 |
| E25   | PARTIAL ELECTRICAL SITE PLAN                 |
| E30   | ELECTRICAL SUBSTATION LAYOUT                 |
| E40   | SUBSTATION POWER RISER DIAGRAM               |
| E41   | SUBSTATION POWER RISER DIAGRAM               |
| E42   | SUBSTATION PANEL SCHEDULES                   |
| E50   | 4-GANG REEFER BUNKER DETAILS                 |
| E51   | 11-GANG REEFER PEDESTAL                      |
| E52   | 11-GANG REEFER WIRING DIAGRAMS               |
| E53   | 22-GANG REEFER PEDESTAL DETAILS              |
| E54   | 22-GANG REEFER WIRING DIAGRAMS               |
| E60   | LIGHTING CONTROL DETAILS                     |
| E61   | LIGHTING CONTROL DETAILS                     |
| E62   | POLE LIGHT/POWER/COMM/SECURITY<br>DETAILS    |
| E63   | POLE VAULT DETAILS                           |
| E64   | STEEL LIGHTING POLE DETAILS                  |
| E70   | SITE POWER/COMM VAULT DETAILS                |
| E71   | ELECTRICAL DUCT BANK DETAILS                 |
| E80   | CONDUIT AND CONDUCTOR SCHEDULE               |
| E81   | CONDUIT AND CONDUCTOR SCHEDULE               |

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|                     |                                                                |
|---------------------|----------------------------------------------------------------|
| S1.01               | POLE FOUNDATIONS                                               |
| S1.02               | STRUCTURAL DETAILS                                             |
| Work Order Drawings |                                                                |
| Sheet No.           | Drawing Title                                                  |
| WO-01               | COVER SHEET AND SHEET INDEX                                    |
| WO-02               | DEMOLITION PLAN - SHEET 1                                      |
| WO-03               | DEMOLITION PLAN - SHEET 2                                      |
| WO-04               | DEMOLITION PLAN - SHEET 3                                      |
| WO-05               | SITE PLAN & GUTTER PROFILE - SHEET 1                           |
| WO-06               | SITE PLAN & GUTTER PROFILE - SHEET 2                           |
| WO-07               | SITE PLAN & GUTTER PROFILE - SHEET 3                           |
| WO-08               | SITE PLAN & GUTTER PROFILE - SHEET 4                           |
| WO-09               | SITE PLAN & GUTTER PROFILE - SHEET 5                           |
| WO-10               | SITE PLAN & GUTTER PROFILE - SHEET 6                           |
| WO-11               | DETAILS 1 of 5                                                 |
| WO-12               | DETAILS 2 of 5                                                 |
| WO-13               | DETAILS 3 of 5                                                 |
| WO-14               | DETAILS 4 of 5                                                 |
| WO-15               | DETAILS 5 of 5                                                 |
| WO-16               | ALIGNMENT AND BENCHMARK DATA                                   |
| WO-17               | SITE SURVEY DATA                                               |
| WO-18               | TRUCK TURNING PATHS                                            |
| WO-19               | ROAD FRONTAGE TESC PLAN                                        |
| WO-20               | ROAD FRONTAGE TESC NOTES AND DETAILS                           |
| WO-21               | ROAD FRONTAGE STORMWATER SITE PLAN, KEY MAP, AND GENERAL NOTES |
| WO-22               | ROAD FRONTAGE STORMWATER ENLARGED PLAN 01                      |
| WO-23               | ROAD FRONTAGE STORMWATER ENLARGED PLAN 02                      |
| WO-24               | ROAD FRONTAGE STORM DRAIN LATERAL TYPICAL SECTION              |
| WO-25               | ROAD FRONTAGE STORMWATER DETAILS 01                            |
| WO-26               | ROAD FRONTAGE STORMWATER DETAILS 02                            |
| WO-27               | ROAD FRONTAGE STORMWATER DETAILS 03                            |
| WO-28               | STORMWATER LATERAL PROFILE 01                                  |
| WO-29               | STORMWATER LATERAL PROFILE 02                                  |



|         |                                          |
|---------|------------------------------------------|
| WO-E1   | PARTIAL ELECTRICAL STREET LIGHTING PLAN  |
| WO-E2   | PARTIAL ELECTRICAL STREET LIGHTING PLAN  |
| WO-E3   | PARTIAL STREET LIGHTING PHOTOMETRIC PLAN |
| WO-E4   | PARTIAL STREET LIGHTING PHOTOMETRIC PLAN |
| WO-E5   | STREET LIGHTING POWER RISER DIAGRAM      |
| WO-E6   | STREET LIGHTING DETAILS                  |
| WO-E7   | STREET LIGHTING DETAILS                  |
| WO-L1   | LANDSCAPE PLAN-SHEET 1                   |
| WO-L2   | LANDSCAPE PLAN-SHEET 2                   |
| WO-L3   | LANDSCAPE PLAN-SHEET 3                   |
| WO-L4   | LANDSCAPE NOTES AND DETAILS              |
| WO-L5   | LANDSCAPE NOTES AND DETAILS              |
| WO-D1   | TACOMA DETAILS                           |
| WO-D2   | TACOMA DETAILS                           |
| WO-D3   | TACOMA DETAILS                           |
| WO-D4   | TACOMA DETAILS                           |
| WO-GN02 | GENERAL NOTES                            |

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

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**THORNE RD OFF DOCK CONTAINER YARD**

**PROJECT NO. 101241.01 | CONTRACT NO. 071908**

- Scope of Work: The Work required for this Project includes but is not limited to:  
Selective site demolition; clearing and grubbing; removal of asphalt pavement;  
installation of domestic water, fire water, sewer, natural gas, power and  
stormwater utilities; grading; asphalt paving; pavement markings; concrete  
placement; installation of curb, gutter and sidewalk; landscaping, installation of  
an at grade railroad crossing including track work; chain link fencing;  
installation of a self contained pressure washing facility; installation of pre-  
fabricated guard shelter; installation of a tent style maintenance shelter; street  
lighting. Work will be conducted on Port owned property, City of Tacoma  
Right-of-Way and Tacoma Rail track.
- Bid Estimate: Estimated cost range is \$29,300,000 to \$30,850,000,  
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](mailto:Apprentice@lni.wa.gov), to obtain information on available  
apprenticeship programs.
- In accordance with new legislation HB 1050 all port districts are required to  
add the requirement that apprentices must perform 15%
- Sealed Bid Date/  
Time/Location: Bids will be received at the Front Reception Desk, Port  
Administration Office, One Sitcum Plaza, Tacoma, Washington  
98421 until **2:00 P.M. on October 16, 2025**, at which time they will be publicly  
opened and read aloud and the apparent low bid will be determined.
- Pre-Bid  
Conference and  
Site Tour: A pre-Bid conference and site visit have been set for October 1, 2025  
at 10:00 A.M. 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.

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional Information: | There are three grants associated with this project: U.S. Department of Transportation, State of Washington Department of Ecology and Washington State Department of Commerce.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Speacial Conditions:    | <p>It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to any contract or any subcontract resulting from this solicitation for bids.</p> <p>2 C.F.R. 200-321, as appropriate and to the greatest extent practicable under this project, contracting with small and minority businesses, women's business enterprises and labor surplus area firms.</p> <p>2 C.F.R. 200-322, as appropriate and to the extent consistent with law, to the greatest extent practicable under this project provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States, is applicable to this project.</p>                                                                                                                                                      |
| Contact Information:    | <p>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: <a href="#">Procurement and Question Portal Link</a>. No oral responses will be binding by the Port.</p> <p>Instructions for utilizing the portal can be found here: <a href="#">Procurement and Question Submission Portal Instructions</a>.</p> <p>Questions will not be accepted after seven (7) days prior to the Bid Date.</p>                                                                                                                                                                                                                                                                                                                                                           |
| Bidding Documents:      | <p>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 071908. 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.</p> <p>Written questions about the meaning or intent of the Solicitation Documents shall only 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: <a href="#">Procurement and Question Portal Link</a>.</p> <p>Instructions for utilizing the portal can be found here: <a href="#">Procurement and Question Submission Portal Instructions</a>.</p> |

When viewing the details page for this procurement on the Port's Website firms have the option of subscribing to 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  
Training  
Requirements:

Effective July 1, 2019, all businesses are required to have training before bidding on public works projects and prevailing wage under 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.asp?utm\\_medium=email&utm\\_source=govdelivery](https://www.lni.wa.gov/TradesLicensing/PrevWage/Contractors/Training.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**

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## **PART 1 - SUMMARY**

### **1.01 DEFINITIONS**

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

- A. "Addenda" are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections. The contents of an Addendum are issued in no particular order and therefore should be carefully and completely reviewed.
- B. An "Additive Bid" (or "Additive") is an amount stated in the Bid to add specified features of the Work.
- C. 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).
- D. "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.

It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract.

- E. The "Award Requirements" include the statutory requirements as a condition precedent to Award.
- F. 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.
- G. 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.
- H. 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.
- I. 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.
- J. A "Bidder" is a person or entity who submits a Bid.
- K. 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.
- L. 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.
- 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](http://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. No Conditions. The Bidder shall make no conditions or stipulations on the Bid Form, nor qualify its Bid in any manner.

7. 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
8. 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](mailto: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**

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## **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," "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:** Thorne Rd Off Dock Container Yard **PROJECT NO.:** 101241.01

SUBMITTED BY: \_\_\_\_\_ CONTRACT NO.: 071908

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](http://www.portoftacoma.com), but will not be part of the Contract Documents, as follows:
  - 1. Geotechnical Report: Entitled Thorne Road Container Yard, dated February 25, 2022.
    - 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.
  - 2. Summary of historical environmental investigations and cleanup activities on the site: Entitled Summary of Potential Areas of Soil and Groundwater Contamination, dated February 25, 2020.

### **1.02 AVAILABILITY**

- A. Reference Documents are available online through the Port of Tacoma's Website [www.portoftacoma.com](http://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**

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## **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. The Port has conducted a review of historical environmental investigations and cleanup activities that have occurred on the project site. See Section 00 31 00 - Available Project Information for instructions to access the summary memo.

## **PART 2 - PRODUCTS - NOT USED**

## **PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

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**BIDDER'S NAME:** \_\_\_\_\_

**PROJECT TITLE: THORNE RD OFF DOCK CONTAINER YARD** \_\_\_\_\_

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        | MOBILIZATION/ DEMOBILIZATION               | 1      | LS   |            |                                    |
| 2        | PROJECT ADMINISTRATION                     | 1      | LS   |            |                                    |
| 3        | DEMOLITION AND REMOVAL                     | 1      | LS   |            |                                    |
| 4        | FIELD ENGINEERING                          | 1      | LS   |            |                                    |
| 5        | CLEARING & GRUBBING                        | 2      | ACRE |            |                                    |
| 6        | EARTHWORK                                  | 11,500 | CY   |            |                                    |
| 7        | REEFER AREA                                | 1      | LS   |            |                                    |
| 8        | CHASSIS REPAIR HUT                         | 1      | EA   |            |                                    |
| 9        | GUARD SHELTER                              | 1      | EA   |            |                                    |
| 10       | ELEC – AREAS 1 AND 2                       | 1      | LS   |            |                                    |
| 11       | ELEC – RR CROSSING                         | 1      | LS   |            |                                    |
| 12       | ELEC – AREA 3                              | 1      | LS   |            |                                    |
| 13       | COARSE AGGREGATE BASE                      | 69,700 | TON  |            |                                    |
| 14       | ASPHALT PAVING                             | 64,450 | TON  |            |                                    |
| 15       | PAVEMENT MARKINGS                          | 1      | LS   |            |                                    |
| 16       | CHAIN LINK FENCES                          | 6,297  | LF   |            |                                    |
| 17       | GATES 30'                                  | 3      | EA   |            |                                    |
| 18       | SLIDING GATE 30'                           | 2      | EA   |            |                                    |
| 19       | GATE 24'                                   | 1      | EA   |            |                                    |
| 20       | MISC SITE CONCRETE, BARRIERS AND BOLLARDS  | 1      | LS   |            |                                    |
| 21       | FIRE PROTECTION SYSTEM                     | 1      | LS   |            |                                    |
| 22       | WATER SYSTEM                               | 1      | LS   |            |                                    |
| 23       | REEFER RECIRCULATION EQUIPMENT & ENCLOSURE | 1      | LS   |            |                                    |
| 24       | SANITARY SEWER SYSTEM                      | 1      | LS   |            |                                    |

| ITEM NO. | DESCRIPTION OF ITEM                                        | QTY   | UOM | UNIT PRICE | EXTENDED PRICE (QTY. x UNIT PRICE) |
|----------|------------------------------------------------------------|-------|-----|------------|------------------------------------|
| 25       | ONSITE STORMWATER GRAVITY CONVEYANCE                       | 1     | LS  |            |                                    |
| 26       | ONSITE STORMWATER TREATMENT SYSTEM                         | 1     | LS  |            |                                    |
| 27       | RAIL CROSSING                                              | 1     | LS  |            |                                    |
| 28       | TRAFFIC CONTROL MEASURES                                   | 1     | LS  |            |                                    |
| 29       | SAWCUT AND REMOVAL OF EXISTING PAVEMENT, CURB AND SIDEWALK | 1     | LS  |            |                                    |
| 30       | CONCRETE SIDEWALK                                          | 1,681 | SY  |            |                                    |
| 31       | CONCRETE CURB AND GUTTER                                   | 2,252 | LF  |            |                                    |
| 32       | STREET LIGHTING SYSTEM                                     | 1     | LS  |            |                                    |
| 33       | LANDSCAPE                                                  | 1     | LS  |            |                                    |
| 34       | OFFSITE STORMWATER GRAVITY CONVEYANCE AND TREATMENT        | 1     | LS  |            |                                    |
| 35       | COARSE AGGREGATE BASE                                      | 640   | TON |            |                                    |
| 36       | ASPHALT CONCRETE PAVEMENT - STREET                         | 525   | TON |            |                                    |
| 37       | CEMENT CONCRETE PAVEMENT - STREET                          | 70    | SY  |            |                                    |
| 38       | CEMENT CONCRETE DRIVEWAY                                   | 395   | SY  |            |                                    |
| 39       | SIDEWALK RAMPS                                             | 6     | EA  |            |                                    |
| 40       | PAVEMENT MARKINGS                                          | 1     | LS  |            |                                    |
| 41       | RAIL CROSSING - PEDESTRIAN                                 | 1     | LS  |            |                                    |
| 42       | UNFORESEEN CONDITIONS ALLOWANCE                            | 1     | LS  | \$100,000  | \$100,000                          |

|                                                              |  |
|--------------------------------------------------------------|--|
| 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.

**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                                  | License Number | 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.

**2 C.F.R. 200-321,** as appropriate and to the greatest extent practicable under this project, contracting with small and minority businesses, women's business enterprises and labor surplus area firms.

\_\_\_\_\_  
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**

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**

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**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 5 is "No" or any answer to questions 6 through 8 is "Yes."

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

☐ Yes ☐ No

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

☐ Yes ☐ No

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

☐ Yes ☐ No

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

***\*Attach letter dated within 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](mailto:publicworks@esd.wa.gov).***

☐ Yes ☐ No

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

☐ Yes ☐ No

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

☐ Yes ☐ No

7. Has the Bidder violated RCW 39.04.370 more than one (1) time as determined by the Washington State Department of Labor and Industries?

☐ Yes ☐ No

8. Has the Bidder ever been found to be out of compliance with Apprenticeship Utilization requirements of RCW 39.04.320?
- ☐ Yes ☐ No
9. 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
10. 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

If any answer to questions 1 through 5 is "No" or any answer to questions 6 through 8 is "Yes" - **STOP HERE** and contact the Contract Administrator. The Bidder is not responsible for this Work. Otherwise proceed to 1.02. **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

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### 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: Thorne Rd Off Dock Container Yard**

**PROJECT NO.: 101241.01**

**CONTRACT NO.: 071908**

**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

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

**PROJECT TITLE:** Thorne Rd Off Dock Container Yard

**BIDDER:** \_\_\_\_\_

**CONTRACT AND PROJECT NUMBER:** 071908/ 101241.01 \_\_\_\_\_

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 L&I site <a href="https://fortress.wa.gov/lni/bbip/">https://fortress.wa.gov/lni/bbip/</a> .<br><br>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 <b>Employer Liability Certificate</b> to verify workers' comp (industrial insurance) premium status – current account.<br><br>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)<br><a href="http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/">http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/</a> .                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |
| 4.       | Not disqualified from bidding on any public works contract under <a href="#">RCW 39.06.010</a> or <a href="#">RCW 39.12.065(3)</a> .<br><br>Check the Department of Labor and Industries<br><a href="http://www.lni.wa.gov/TradesLicensing/PrevWage/AwardingAgencies/DebarredContractors/">http://www.lni.wa.gov/TradesLicensing/PrevWage/AwardingAgencies/DebarredContractors/</a> .                                                                                                                                                                                                                                                                                                                                         |                    |
| 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<br><a href="https://fortress.wa.gov/esd/twt/pwcinternet/">https://fortress.wa.gov/esd/twt/pwcinternet/</a> or by emailing a request to <a href="mailto:publicworks@esd.wa.gov">publicworks@esd.wa.gov</a> . Include ESD#, UBI#, and business name in the email. Certificate of Coverage letter issued/dated within the last six (6) months.<br><br>Document if subcontractor confirms in writing, under penalty of perjury, that it has no employees and this requirement does not apply. |                    |

**END OF SECTION**

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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: Thorne Rd Off Dock Container Yard (Title)

101241.01 | 071908 (Project/Contract No.)

1702 Port of Tacoma Road (Project Address)

Tacoma, WA 98421 (Project Address 2)

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

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 THIRD-PARTY BENEFICIARY**

All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such.

**3.0 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.

**4.0 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 310 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 30 calendar days of the date on which Substantial Completion is achieved.

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

The liquidated damages for failure to achieve Substantial Completion by the required date shall be \$250 per calendar day. After the required Final Completion date, the liquidated damages for failure to achieve Final Completion shall be \$100 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.

**5.0 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 day and year first written above:

CONTRACTOR

PORT OF TACOMA

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Execution \_\_\_\_\_  
Date: \_\_\_\_\_

**END OF SECTION**

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**PERFORMANCE BOND # \_\_\_\_\_**

**CONTRACTOR (NAME AND ADDRESS)**

**SURETY (NAME AND PRINCIPLE PLACE OF BUSINESS)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OWNER (NAME AND ADDRESS)**

**AGENT OR BROKER (FOR INFORMATION ONLY)**

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS:**

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

**WHEREAS:**

Contractor shall execute an agreement with the Port for Thorne Rd Off Dock Container Yard, Project No. 101241.01/Contract No. 071908, 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**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
Printed Name and Title

Power of Attorney attached.

**END OF SECTION**

**LABOR AND MATERIAL PAYMENT BOND # \_\_\_\_\_**

**CONTRACTOR (NAME AND ADDRESS)**

**SURETY (NAME AND PRINCIPLE PLACE OF BUSINESS)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OWNER (NAME AND ADDRESS)**

**AGENT OR BROKER (FOR INFORMATION ONLY)**

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS:**

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

**WHEREAS:**

Contractor shall execute an agreement with the Port for Thorne Rd Off Dock Container Yard, Project No. 101241.01/Contract No. 071908, 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**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
Printed Name and Title

Power of Attorney attached.

**END OF SECTION**

BOND NO.: \_\_\_\_\_

PROJECT TITLE: Thorne Rd Off Dock Container Yard

PROJECT NO.: 101241.01 \_\_\_\_\_

CONTRACT NO.: 071908 \_\_\_\_\_

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. 071908 with the Port for Thorne Rd Off Dock Container Yard, Project No. 101241.01.

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**

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## **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. Nondiscrimination 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](mailto: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.
- F. Labor hours used in the 15% labor hour calculation will include all employees working on the project who are subject to prevailing wage laws. The definition of Labor Hours is further clarified to include working supervisor and foreman hours if they are covered under prevailing wage laws based on the time spent performing laborious activities. Simply adding supervisor or foreman to the employee's title does not exempt their hours from the calculation.
- G. During the life of the project, Apprentice Utilization is actively monitored through LNIs Prevailing Wage Intents and Affidavits (PWIA) system using the certified payroll calculated percentage. In addition, the affidavit calculated percentage shown in PWIA must be at least 15.0% to be compliant. All affidavits must be filed before determining if the Apprentice Utilization Requirement was met. Failure to achieve at least 15.0% apprentice Utilization as shown in PWIA for certified payrolls and affidavits will cause a penalty of \$500.00.

## **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](http://www.equipmentwatch.com), as modified by the AGC/WSDOT agreement, or the actual rate paid to an unrelated third party. If more than one rate is applicable, the lowest available rate will be utilized. Rates and quantities of equipment rented that exceed the local fair market rental costs shall be subject to the Port's prior written approval. Total rental charges for equipment or tools shall not exceed 75% of the fair market purchase value of the equipment or the tool. Actual, reasonable mobilization costs are permitted if the equipment is brought to the site solely for the change in the Work. Mobilization and standby costs shall not be charged for equipment already present on the site.

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

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



**WASHINGTON STATE DEPARTMENT OF ECOLOGY**  
**STORMWATER FACILITY SPECIFICATIONS**  
**INSERT**

**General**

Partial funding of this project is being provided by the Washington State Department of Ecology's (Ecology) Stormwater Grant Program.

**Compliance with State and Local Laws**

The construction of the project, including all subcontracted work, shall conform to the applicable requirements of state and local laws and ordinances.

**State Interest Exclusion**

It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract.

**Third Party Beneficiary**

Partial funding of this project is being provided through the Washington State Department of Ecology Stormwater Grant Program. All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such.

**Access to the construction site and to records**

The contractor shall provide for the safe access to the construction site and to the contractor's records by Washington State Department of Ecology personnel.

The Contractor shall maintain accurate records and accounts to facilitate the Owner's audit requirements and shall ensure that all subcontractors maintain auditable records.

These Project records shall be separate and distinct from the Contractor's other records and accounts.

All such records shall be available to the Owner and to Washington State Department of Ecology personnel for examination. All records pertinent to this project shall be retained by the Contractor for a period of three (3) years after the final audit.

### **Protection of the Environment**

No construction related activity shall contribute to the degradation of the environment, allow material to enter surface or ground waters, or allow particulate emissions to the atmosphere, which exceed state or federal standards. Any actions that potentially allow a discharge to state waters must have prior approval of the Washington State Department of Ecology.

### **Inadvertent Discovery of Archeological Resources**

The contractor shall obtain a copy of the Inadvertent Discovery Plan from the Project Owner. The contractor shall keep a copy of the inadvertent discovery plan for the project on the work site at all times. The contractor shall immediately stop all work if human remains, cultural, or archeological resources are discovered in the course of construction. The contractor shall follow the inadvertent discovery plan in dealing with the human remains, cultural, or archeological resources.

### **Project Signs**

The Contractor shall display Ecology's logo in a manner that informs the public that the project received financial assistance from the Washington State Stormwater Grant Program. This sign is provided by the Port.

### **Utilization of Minority and Women Business Enterprises**

All bidders are encouraged to utilize certified minority-owned and women-owned businesses to the extent possible in the performance of this contract. All prospective bidders or persons submitting qualifications should take the following steps, when possible.

1. Include qualified minority and women's businesses on solicitation lists.
2. Assure that qualified minority and women's businesses are solicited whenever they are potential sources of services or supplies.
3. Divide the total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by qualified minority and women's businesses.
4. Establish delivery schedules, where work requirements permit, which will encourage participation of qualified minority and women's businesses.
5. Use the services and assistance of the State Office of Minority and Women's Business Enterprises (OMWBE) and the Office of Minority Business Enterprises of the U.S. Department of Commerce, as appropriate.

All prospective bidders must provide a list of the MBE/WBE subcontractors they intend to use during the project. This list must be provided with the bid package.

Revised 3/25/15

## 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) 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 as additional insureds shall not create premium liability for the Port.

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

- 1. An express waiver of subrogation in favor of the Port;
  - 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 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 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 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 \$5,000,000, 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" (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 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 October 16, 2025.
- 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](mailto: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.

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

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## **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 Thorne Rd Off Dock Container Yard consists of but is not limited to:  
Selective site demolition; clearing and grubbing; removal of asphalt pavement; installation of domestic water, fire water, sewer, natural gas, power and stormwater utilities; grading; asphalt paving; pavement markings; concrete placement; installation of curb, gutter and sidewalk; landscaping, installation of an at grade railroad crossing including track work; chain link fencing; installation of a self contained pressure washing facility; installation of pre-fabricated guard shelter; installation of a tent style maintenance shelter; street lighting. Work will be conducted on Port owned property, City of Tacoma Right-of-Way and Tacoma Rail track.

### **1.02 LOCATION**

- A. The work is located at:  
1702 Port of Tacoma Road  
Tacoma, WA 98421

## **PART 2 - PRODUCTS - NOT USED**

## **PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SUMMARY**

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

### **1.02 CONTRACTOR ACCESS AND USE OF PREMISES**

- A. Activity Regulations
  - 1. Ensure Contractor personnel deployed to the project become familiar with and follow all regulations or restrictions established by the Engineer.
- B. Short Term Lease of a portion of Parcel 85 (1451 Thorne Rd)
  - 1. The Contractor will be working in a Port parcel that has a Tenant with a short term lease of approximately 0.35 acres. The Tenant will vacate the property on or before March 1, 2026, at that time Contractor will have full access to the property. During the time of the lease, the Contractor shall have access to the the non-leased area of the property through the common driveway. Work outside of the leased area and common driveway may occur at any time. The property shall remain fenced and gates locked when no active work is occurring during the period that the lease is in place.
  - 2. The leased area is shown on Exhibit A which is included in Appendix L.
- C. Work Site Regulations
  - 1. Keep within the limits of work and assigned avenues of ingress and egress. Do not enter any areas outside the designated work location unless previously approved by the Engineer. The Contractor must comply with the following conditions:
    - a. Restore all common areas to a clean and useable condition that permits the resumption of Tenant operations after the Contractor ceases daily work.
    - b. Be responsible for control and security of Contractor-owned equipment and materials at the work site. Report to Port Security (phone (253) 383-9472) any missing/lost/stolen property.
    - c. Ensure all materials, tools and equipment will be removed from the site or secured within the designated laydown area at the end of each shift.

### **1.03 CONSTRAINTS - GENERAL**

- A. Constraints for Work at Site
  - 1. There are no work hour restrictions associated with the project location, although the Contractor shall comply with local ordinances with regard to noise and work hour restrictions. In the event that the Contractor is planning to work outside of the typical work hours (Monday - Friday 0700-1700) the Contractor is to notify the Engineer at least 3 working days in advance to arrange for the necessary inspection and testing as may be required.

**PART 2 - PRODUCTS**

**PART 3 - EXECUTION**

**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 or as established by the Engineer.
  - 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 Microsoft Dynamics 365, or as directed by Engineer.

### **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: 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 facilities and controls; for the establishment and removal of its offices, buildings and other facilities necessary for work on the project; for other work and operations which it must perform or costs it must incur before beginning production work on the various items on the project site, and for removal of personnel, equipment, supplies, offices, building facilities, sheds, fencing, and other incidentals from the site.
2. Mobilization and Demobilization shall be paid at the lump sum price listed in the Contractor's submitted bid. Incremental payment shall be made for each location as follows:
  - a. 40% after completion of 5% of the total contract amount of other bid items have been earned.
  - b. 40% after completion of 20% of the total contract amount of other bid items have been earned.
  - c. 20% after completion of all work on the project has been completed, including cleanup and acceptance of the project by the Port.

### B. Item #2: Project Administration

1. 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, permit acquisitions, for premiums on bonds and insurance for the project, and project overhead.
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.

### C. Item #3: Demolition and Removal.

1. Item Description: Work includes the removal, wholly or in part, and satisfactory disposal of all utilities, fences, pavements, curbs, structures, or other features identified within these specifications and on the plans. This item is for demolition and removal on Port property only.
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 proposal, in accordance with the approved Schedule of Values.

### D. Item #4: Field Engineering.

1. Item Description: The Work of this item includes all work necessary for Field Engineering, verifying survey reference points, completion of pre and post-construction surveys, and installation and removal of temporary control as described in these 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 proposal, in accordance with the approved Schedule of Values.
- E. Item #5: Clearing and Grubbing.
1. Item Description: Work of this item includes all labor, equipment, materials, and incidentals associated with clearing and grubbing the site. The work includes removal of vegetative materials, removal of roots, grubbing existing grade as indicated on the plans and in the 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 price and Percent complete as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- F. Item #6: Earthwork.
1. Item Description: Work of this item includes all labor, equipment, materials, and incidentals associated with earthwork at the site. The work includes furnish and placement of imported fill material; site rough and final grading; compaction other work required to provide the subgrade area as indicated on the plans and in the specifications.
  2. Measurement: This item will be measured by TON based on imported fill tonnage brought to the site and placed per plans and specifications.
  3. Payment: This item will be paid for at the contract price per TON shown in the contractor's submitted proposal.
- G. Item #7: Reefer Area.
1. Item Description: Work of this item includes all labor, equipment, materials, and incidentals associated with site features at the reefer wash and valet area. The work includes placing the concrete curbs in the reefer valet and washdown area, wheel stops, ACP containment and reefer area improvements as shown in the specifications and plans.
  2. Measurement: This item will be measured based on a percentage complete for the area constructed.
  3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- H. Item #8: Chassis Repair Hut.
1. Item Description: This Work shall consist of constructing a chassis repair Quonset hut in accordance with the specifications and plans. The work includes utility connections as shown.
  2. Measurement: This item will be measured based on the lump sum amount.
  3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- I. Item #9: Guard Shelter.
1. This Work shall consist of furnishing and installing a guard shelter in accordance with the specifications and plans. The work includes utility connections as shown.
  2. Measurement: This item will be measured based on the lump sum amount.
  3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

J. Item #10: Electrical – Area 1 and Area 2.

1. Item Description: This work shall include the construction of the complete electrical and communications systems in the Areas 1 and 2 shown in plans and herein specified, including excavation, backfilling, concrete foundations, conduit, wiring, ducts, lights and supports and all other features required for the completed electrical systems.
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 proposal, in accordance with the approved Schedule of Values.

K. Item #11: Electrical – RR Crossing.

1. Item Description: This work shall include the construction of the complete electrical system at the proposed railroad crossing shown in plans and herein specified, including excavation, backfilling, concrete foundations, conduit, wiring, ducts, lights and supports and all other features required for the completed electrical systems.
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 proposal, in accordance with the approved Schedule of Values.

L. Item #12: Electrical – Area 3.

1. Item Description: This work shall include the construction of the complete electrical and communications systems in the Area 3 shown in plans and herein specified, including excavation, backfilling, concrete foundations, conduit, wiring, ducts, lights and supports and all other features required for the completed electrical systems.
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 proposal, in accordance with the approved Schedule of Values.

M. Item #13: Coarse Aggregate Base .

1. Item Description: Work of this item includes all labor, equipment, materials, and incidentals associated with import, placement and compaction of crushed aggregate base as indicated on the plans and in the specifications.
2. Measurement: This item will be measured by ton based on imported fill tonnage brought to the site and placed per plans and specifications.
3. Payment: This item will be paid for at the contract price per ton shown in the contractor's submitted proposal.

N. Item #14: Asphalt Paving.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the preparation, hauling, placing, spreading, and compacting of asphalt course(s) as specified or shown.
2. Measurement: This item will be measured on a TON basis for pavement completed, tested, and accepted.
3. Payment: This item will be paid per TON.

O. Item #15: Pavement Markings.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the preparation, layout, and application of pavement markings including striping, lettering, and numbering as specified or shown.
  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 proposal, in accordance with the approved Schedule of Values.
- P. Item #16: Chain Link Fences.
1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the layout of site fence as specified or shown.
  2. Measurement: This item will be measured based on lineal feet installed in place.
  3. Payment: This item will be paid for at the Contract price per lineal foot price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- Q. Item #17: Gates 30'.
1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of 30' gates as specified or shown.
  2. Measurement: This item will be measured based on the number of gates installed and approved.
  3. Payment: This item will be paid for at the Contract price per gate as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- R. Item #18: Sliding Gate 30'.
1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of 30' sliding gate as specified or shown.
  2. Measurement: This item will be measured for gate installed and approved.
  3. Payment: This item will be paid for at the Contract price per gate as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- S. Item #19: Gate 24'.
1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of 24' gate as specified or shown.
  2. Measurement: This item will be measured for gate installed and approved.
  3. Payment: This item will be paid for at the Contract price per gate as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.
- T. Item #20: Misc Site Concrete, Barriers and Bollards.
1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the preparation, layout, and construction of all site features as specified or shown. This item includes but is not limited to items such as; bollards, protective cages, concrete barriers, concrete slabs and other items not specifically called out in other Work items.
  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 proposal, in accordance with the approved Schedule of Values.

U. Item #21: Fire Protection System.

1. Item Description: This item shall be full pay for all Work to complete the installation of the water main and hydrants, including but not limited to, bedding, laying, and jointing of pipe and fittings, backfilling, concrete thrust blocking, testing, disinfecting of the pipeline, flushing, de- chlorination of water used for flushing, and cleanup; fire hydrants; and other related items as shown or specified. This item also includes the Knox boxes and signage required for Fire Department access at the main and emergency gates.
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 proposal, in accordance with the approved Schedule of Values.

V. Item #22: Water System.

1. Item Description: This item shall be full pay for all Work including but not limited to the installation and testing of the water main, meters, backflow valves, and valves, bedding, laying, and jointing of pipe and fittings, backfilling, concrete thrust blocking, testing, disinfecting of the pipeline, flushing, de- chlorination of water used for flushing, and cleanup; and other related items as shown or specified.
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 proposal, in accordance with the approved Schedule of Values.

W. Item #23: Reefer Recirculation Equipment and Enclosure.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction, placement and activation of reefer wash recirculation equipment and enclosure including all pipe, shipping container enclosure, footings, storage tank, wash hose connections and all related components for the completed system and commissioning as specified or shown.
2. Measurement: This item will be measured for system installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

X. Item #24: Sanitary Sewer System.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction, placement and testing of all pipe, cleanouts, structures, sump pumps, and building connections and all related components for the completed system as specified or shown.
2. Measurement: This item will be measured for system installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

Y. Item #25: Onsite Stormwater Gravity Conveyance .

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction, and testing of all pipe, structures, connections and other components for the completed system as specified or shown. This work does not include construction of BMT stormwater treatment system.
2. Measurement: This item will be measured for system installed and approved.



3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

Z. Item #26: Onsite Stormwater Treatment System .

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of all pipe, structures, connections, liner, concrete structures, filtration media, and other components for the completed system as specified or shown.
2. Measurement: This item will be measured for system installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

AA. Item #27: Rail Crossing.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of the railroad crossing including but not limited to removal of existing track and OTM, excavation for crossing, installation of empty casings, fill and compaction of subgrade, reconstruction of track to standards, and paving for the complete crossing as specified or shown.
2. Measurement: This item will be measured for crossing installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

BB. Item #28: Traffic Control Measures.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the Contractor provided traffic control plan required for work in the City of Tacoma right-of-way.
2. Measurement: This item will be measured completed measures.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

CC. Item #29: Sawcut and Removal of Existing Pavement, Curb and Sidewalk.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the sawcut, removal, and cleanup from demolition of existing features as specified or shown.
2. Measurement: This item will be measured completed demolition.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

DD. Item #30: Concrete Sidewalk.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the placement of concrete sidewalk as specified or shown.
2. Measurement: This item will be measured in square yards (SY) based on the area of sidewalk constructed.
3. Payment: This item will be paid for at the Contract price per square yard as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

EE. Item #31: Concrete Curb and Gutter.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the placement of concrete curb and gutter as specified or shown.
2. Measurement: This item will be measured in lineal feet based on length of curb constructed.
3. Payment: This item will be paid for at the Contract price per lineal foot as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

FF. Item #32: Street Lighting System.

1. Item Description: This Work includes all labor, equipment, materials, trenching, backfilling, structures, ducts and wiring, and incidentals associated with the construction of the street lighting system, and other components for the completed system as specified or shown.
2. Measurement: This item will be measured for system installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

GG. Item #33: Landscape.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of the right of way landscaping, and other components for the completed system as specified or shown.
2. Measurement: This item will be measured for landscaping installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

HH. Item #34: Offsite Stormwater Gravity Conveyance and Treatment.

1. Item Description: This Work includes all labor, equipment, materials, trenching, backfilling, and incidentals associated with the construction, and testing of all pipe, structures, connections and other components for the completed system as specified or shown. This item includes temporary patching of trenches or street plating in the roadway.
2. Measurement: This item will be measured for system installed and approved.
3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

II. Item #35: Coarse Aggregate Base .

1. Item Description: Work of this item includes all labor, equipment, materials, and incidentals associated with import, placement and compaction of crushed aggregate base as indicated on the plans and in the specifications.
2. Measurement: This item will be measured by ton based on imported fill tonnage brought to the site and placed per plans and specifications.
3. Payment: This item will be paid for at the contract price per ton shown in the contractor's submitted proposal.

JJ. Item #36: Asphalt Concrete Pavement - Street.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the preparation, hauling, placing, spreading, and compacting of asphalt course(s) as specified or shown.
2. Measurement: This item will be measured on a TON basis for pavement completed, tested, and accepted.

3. Payment: This item will be paid per TON.

KK. Item #37: Cement Concrete Pavement - Street.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the placement of cement concrete pavement as specified or shown.
2. Measurement: This item will be measured in square yards (SY) based on the area of sidewalk constructed.
3. Payment: This item will be paid for at the Contract price per square yard as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

LL. Item #38: Cement Concrete Driveway.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the placement of cement concrete driveway as specified or shown.
2. Measurement: This item will be measured in square yards (SY) based on the area of sidewalk constructed.
3. Payment: This item will be paid for at the Contract price per square yard as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

MM. Item #39: Sidewalk Ramps.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the construction of sidewalk ramps as specified or shown.
2. Measurement: This item will be measured based on the number of sidewalk ramps constructed and approved.
3. Payment: This item will be paid for at the Contract price per ramp as specified in the Contractor's submitted proposal, in accordance with the approved Schedule of Values.

NN. Item #40: Pavement Markings.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the preparation, layout, and application of pavement markings including striping, lettering, and numbering as specified or shown.
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 proposal, in accordance with the approved Schedule of Values.

OO. Item #41: Rail Crossing - Pedestrian.

1. Item Description: This Work includes all labor, equipment, materials, and incidentals associated with the preparation, layout, and installation of concrete sidewalk, asphalt crossing, detectable surfaces and other as specified or shown.
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 proposal, in accordance with the approved Schedule of Values.

PP. Item #42: Unforeseen Conditions Allowance.

1. Item Description: This allowance will be for Unforeseen Conditions for work unidentified at the time of bid and will be paid as negotiated unit price(s) or lump sum(s). If unit prices or lump sums cannot be established, work will be paid on a time and materials basis per Section 00 72 00 General Conditions Article 8.0. Work under this bid item shall be accomplished upon written direction from the Engineer as a Minor Change in Work. The entire bid item may or may not be used.
2. Measurement: This item will be measured based upon the method agreed upon for each Minor Change issued.
3. Payment: This item will be paid for at the price agreed upon for each Change in Work issued by the Engineer in accordance with procedures noted in Section 01 26 00 – Change Management Procedures.

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

## **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**

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## **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 10 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
  - 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 located at One Sitcum Plaza.
- B. Weekly Progress Meetings – Progress meetings include the Contractor, Engineer, consultants and others affected by decisions made.
  - 1. The Engineer will arrange meetings, prepare standard agenda with copies for participants, preside at meetings, record minutes and distribute copies within ten working days to the Contractor, meeting participants, and others affected by decisions made.
    - a. The Engineer will approve submitted meeting minutes in writing within 10 working days.
  - 2. Attendance is required for the Contractor's job superintendent, major subcontractors and suppliers, Engineer, and representatives of the Port as appropriate to the agenda topics for each meeting.
  - 3. Standard Agenda
    - a. Review minutes of previous meeting

- b. Review of work progress
- c. Field observations, problems, and decisions
- d. Identification of problems that impede planned progress
- e. Maintenance of Progress Schedule (3 weeks ahead; 1 week back)
- f. Corrective measures to regain projected schedules
- g. Planned progress during succeeding work period
- h. Coordination of projected progress
- i. Maintenance of quality and work standards
- j. Effect of proposed changes on progress schedule and coordination
- k. Demonstration that the project record drawings are up-to-date
- l. Other business relating to the work

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. The Port and Contractor shall use the Port contract management applications for electronic information exchange throughout the duration of the Contract, as later described. The use of these systems is to facilitate and coordinate the electronic exchange of Requests for Information, Submittals, Change Order Proposals, Pay Applications, and project specific correspondence.

### **1.02 USER ACCESS LIMITATIONS**

- A. Contractor's access to Port applications is granted and controlled by the Engineer.
  - 1. The users assigned by the Contractor to use web-based applications 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.

### **1.03 CONTRACTOR TECHNOLOGY REQUIREMENTS**

- A. The Contractor is responsible for providing and maintaining web enabled devices capable of running eBuilder, Dynamics 365, and/or any other required application 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 the Port required applications as described in the Contract documents.

### **1.06 PORT RESPONSIBILITY**

- A. Provide the Contractor with the following:
  - 1. All forms necessary for application to obtain permissions to access to any Port required information management applications as described above.
  - 2. Information, basic user guides and requirements on methods for using the required applications.
  - 3. Instruction for the Contractor's staff utilizing Port required applications.

**PART 2 - PRODUCTS - NOT USED PART 3 - EXECUTION**

**2.01 UTILIZATION OF WEB-BASED APPLICATIONS**

- 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 the required applications.
- C. The Port will not be liable for any delays associated from the usage of required applications including, but not limited to: slow response time, Port maintenance and off-line periods, connectivity problems or loss of information. Under no circumstances shall the usage of the required applications' 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



## **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 Trimble Unity Construct (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 Trimble Unity Construct 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 Trimble Unity Construct 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**

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## **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 potential nature and extent of 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. Location of hazardous material inventory and safety data sheets (SDSs) for all chemicals which will be brought on site;
  - 4. Signage appropriate to warn site personnel and visitors of anticipated site hazards;
  - 5. Documentation that the necessary workers have completed the required Hazardous Waste Operations and Emergency Response (HAZWOPER) training;
  - 6. Engineering controls/equipment to be used to protect against anticipated hazards;
  - 7. Personal protective equipment and clothing including head, foot, skin, eye, and respiratory protection;
  - 8. Procedures which will be used for:
    - a. Lockout/Tagout,
    - b. Fall protection,
    - c. Trenching and shoring,
    - d. Hot work,
    - e. Oxygen deficient conditions,
    - f. Suspicious materials and/or unidentified materials,
    - g. Confined-space entry (could include dewatering storage tanks, manholes, or other items),

- h. Confined-space rescue, and
    - i. Odorous conditions and toxic gases;
  - 9. Site housekeeping procedures and personal hygiene practices;
  - 10. Personnel and equipment decontamination plan;
  - 11. Railroad safety procedures;
  - 12. Administrative controls;
  - 13. Emergency plan including locations of and route to nearest hospital;
  - 14. Recordkeeping including:
    - a. Documentation of appropriate employee training (e.g., Hazardous Waste Operations and Emergency Response [HAZWOPER] 40-hour training for staff involved with excavation and handling of soil),
  - 15. Name and qualification of person preparing the HASP and person designated to implement and enforce the HASP;
  - 16. Excavation, stockpiling, and truck loading procedures;
  - 17. Lighting and sanitation; and
  - 18. Signatory page for site personnel to acknowledge receipt, understanding, and agreement to comply with the HASP.
- B. Prior to the start of any Work, the Contractor shall provide a site specific Spill Prevention, Control and Countermeasures (SPCC) Plan, which meets all the requirements of local, state and federal laws, rules and regulations.
- C. Contractor may submit the HASP and SPCC Plan as one comprehensive document or may submit the plans as separate documents.

### 1.03 POTENTIAL CHEMICAL HAZARDS

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

- A. The Contractor shall provide signage at strategic locations within the project site to alert jobsite workers and visitors of the remediation work, associated hazards, and required precautions.

### 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 lockout/tagout procedures;

8. Fall protection equipment;
9. Personal protective equipment (hard hats, foot gear, skin, eye, and respiratory protection);
10. Demolition equipment and supplies;
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.
- 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 CSP to include special work practices warranted by jobsite conditions actually encountered. Special practices could include provisions for the use of special equipment not covered in the initial plan.
- E. Contractor shall perform whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees of the Engineer, Engineer's Representative, and Contractor) and property during the Contract period. This requirement applies continuously and is not limited to normal working hours.
- F. The Engineer's review of the Contractor's performance does not include an opinion regarding the adequacy of, or approval of, the Contractor's safety supervisor, the site-specific HASP, safety program or safety measures taken in, on, or near the job site.
- G. Accidents causing death, injury, or damage must be reported immediately to the Engineer and the Port Security Department in person or by telephone or messenger. In addition, promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- H. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing within 24 hours after occurrence, to the Engineer, giving full details of the claim.



### 3.02 SITE SAFETY AND HEALTH OFFICER

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

### 3.03 GENERAL SAFETY GUIDELINES FOR HAZARDOUS GASES

- A. The generally accepted procedure to protect the worker from the effects of the dangers from hazardous gases is through the use of four safeguard measures:
  - 1. Test the atmosphere: Before entering a trench, underground vault, or any other excavation, the atmosphere shall be tested to detect any adverse environmental conditions with a gas detector instrument. Test instruments shall be properly maintained and calibrated. The test shall be conducted from top to bottom of the excavation or every four (4) feet.
  - 2. Ventilate all confined spaces: Before entry and during the entire time workers are in the confined space. Forced ventilation is the generally accepted procedure.
  - 3. Use appropriate safety equipment: All personnel shall be trained to operate the appropriate safety equipment that are to be utilized during the course of their work. It is the responsibility of the Contractor's Site Safety and Health Officer to ascertain that all safety equipment is being used when appropriate.
  - 4. Provide backup safety personnel: Prior to any personnel entering an excavation or confined space, a separate individual shall be positioned outside the space.
- B. Safety Monitoring Instrumentation: The Safety and Health Officer shall have appropriate instruments (detector[s]) to test for oxygen deficiency and for the presence of methane gas, hydrogen sulfide, and/or other known or suspected vapors and gases. The Site Safety and Health Officer shall periodically calibrate the instruments, regularly test the excavation or space areas and other work areas for safe working conditions, and ensure that appropriate safety equipment is available.

### 3.04 SPILL PREVENTION AND CONTROL

- A. The Contractor shall be responsible for prevention, containment and cleanup of spilling petroleum and other chemicals/hazardous materials used in the Contractor's operations. All such prevention, containment and cleanup costs shall be borne by the Contractor.
- B. The Contractor is advised that discharge of oil, fuel, other petroleum, or any chemicals/hazardous materials from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.
- C. In the event of a discharge of oil, fuel or chemicals/hazardous materials into waters, or onto land with a potential for entry into waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of all spilled material and used cleanup materials.

- D. The Contractor shall, at a minimum, take the following measures regarding spill prevention, containment and cleanup:
1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums and other equipment and facilities shall be inspected regularly for drips, leaks or signs of damage, and shall be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.
  2. All land-based chemical, oil and products' storage tanks shall be diked, contained and/or located so as to prevent spills from escaping into the water. Dikes and containment area surfaces shall be lined with impervious material to prevent chemicals or oil from seeping through the ground and dikes.
  3. All visible floating sheen shall be immediately contained with booms, dikes or other appropriate means and removed from the water prior to discharge into state waters. All visible spills on land shall be immediately contained using dikes, straw bales or other appropriate means and removed using sand, sawdust or other absorbent material, which shall be properly disposed of by the Contractor. Waste materials shall be temporarily stored in drums or other leak-proof containers after cleanup and during transport to disposal. Waste materials shall be disposed offsite in accordance with applicable local, state and federal regulations.
  4. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the Contractor shall immediately notify the Port Security at their listed 24-hour response number:
    - a. Port Security: 253-383-9472
- E. The Contractor shall maintain the following materials (as a minimum) at each of the project sites:
1. Oil-absorbent booms: 100 feet;
  2. Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area;
  3. Oil-skimming system; 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**

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## **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  $\geq 25$ 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**

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## **PART 1 – GENERAL**

### **1.01 SUMMARY**

- A. The Work shall consist of the procedures to be followed in the event that cultural and/or historical resources are inadvertently discovered during the projects activities.
- B. The project is located in an area previously inventoried for cultural and historical resources; however it is possible that additional, previously unidentified archaeological resources and/or skeletal remains could be inadvertently discovered during project activities. In the event that prehistoric, historic-era archaeological materials or skeletal remains are discovered, the appropriate protection measures and protocols described in this section must be followed.

### **1.02 REFERENCES**

- A. The rules, requirements, and regulations that apply to this Work include, but are not necessarily limited to the following:
  - 1. Inadvertent Discovery Plan, located in Appendix H

## **PART 2 – PRODUCTS – NOT USED.**

## **PART 3 – EXECUTION**

### **3.01 PROTOCOLS FOR DISCOVERY OF ARCHAEOLOGICAL RESOURCES**

- A. In the event that archaeological resources are encountered within the project, the following actions will be taken:
  - 1. All ground disturbing and construction activity at the specific location will stop and the area will be protected via temporary fencing or other appropriate measures.
  - 2. The Contractor's work supervisor will be notified immediately.
  - 3. Contact the Port's Engineer and Environmental Project Manager immediately.
  - 4. A work stoppage zone, as determined by the Port, will be established.
  - 5. The Port's Environmental Project Manager will contact the appropriate agencies where the discovery is located as well as the Washington State Department of Archaeology and Historic Preservation (DAHP) the Puyallup Tribe (TRIBE) and the U.S. Army Corps of Engineers (Corp).
  - 6. The Work Stoppage Zone will remain protected until further decisions can be made regarding the area.
  - 7. The Contractor will be allowed to continue ground disturbing and other construction activities outside of the established work stoppage zone.

### **3.02 PROTOCOLS FOR DISCOVERY OF HUMAN REMAINS**

- A. In the event that human remains are encountered within the project, the following actions, consistent with RCWs 68.50.645, 27.44.055 and 68.60.055 will be taken:
  - 1. All ground disturbing and construction activity at the specific location will stop and the area will be protected via temporary fencing or other appropriate measures. The remains will not be touched, moved or further disturbed.
  - 2. The Contractor's work supervisor will be notified immediately.
  - 3. Contact the Port's Engineer and Environmental Project Manager immediately.
  - 4. The Environmental Project Manager will notify the county medical examiner / coroner and local law enforcement.

5. A Work Stoppage Zone will be determined and remain protected until further decisions can be made regarding the area.
6. The Contractor will be allowed to continue ground disturbing and other construction activities outside of the established work stoppage zone.

### 3.03 PROTOCOLS FOR CONFIDENTIALITY

- A. In the event of that human remains or cultural resources are discovered within the project area, the Port and the Contractor shall keep and maintain all information regarding any discovery confidential.
  1. At no time shall the Contractor contact the media, any third party or otherwise share information regarding the discovery with any member of the public.
  2. If the Contractor is contacted by the media or the public regarding any discovery, they shall refrain from comment, and contact the Port's Environmental Project Manager immediately.

**END OF SECTION**



## **PART 1 - GENERAL**

### **1.01 PERMITS, CODES, AND REGULATIONS**

- A. The following permits/approvals have been applied for (or are on file) and incorporated into the Contract:
  - 1. State Environmental Policy Act (SEPA) Compliance, located in Appendix C
  - 2. National Environmental Policy Act (NEPA) Finding of No Significant Impact, located in Appendix D
  - 3. United States Army Corps of Engineers NWS-2020-557-WRD, located in Appendix E
  - 4. Washington State Department of Ecology Construction Stormwater General Permit WAR312684, located in Appendix F
  - 5. City of Tacoma Land Use Permit LU22-0140, located in Appendix G
  - 6. City of Tacoma Site Development Permit SDEV23-0193 is ready to issue pending a pre-construction meeting between the City of Tacoma, Contractor and Port of Tacoma.
  - 7. City of Tacoma Work Order Permit WO23-0096 is ready to issue pending the approval of Contractor's traffic control plan and pre-construction meeting between the City of Tacoma, Contractor and Port of Tacoma.
- 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. Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.
- C. 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**

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## **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. Existing facilities may not be used.
- C. New permanent facilities may not be used.
- D. Use trigger-operated nozzles for water hoses, to avoid waste of water.

### **1.03 TELECOMMUNICATIONS SERVICES**

- A. Provide, maintain, and pay for telecommunications services for field personnel at time of project mobilization. It is the Contractor's responsibility to be able to receive phone calls and emails at the job site.

### **1.04 TEMPORARY SANITARY FACILITIES**

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

### **1.05 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.

### **1.06 FENCING**

- A. Provide 6 ft. (1.8 m) high fence around construction site; equip with vehicular gates with locks.

### **1.07 FIELD OFFICES (IF PROVIDED)**

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

### **1.08 TREE AND VEGETATION PROTECTION**

- A. The Contractor shall carefully protect existing trees and vegetation noted to remain from damage by construction activities.

- B. If a tree or vegetation designated for protection is damaged or destroyed in the course of the Work, the Contractor shall replace it with new comparable in species and size as required by the Engineer. Where it is necessary to replace trees or vegetation damaged by construction, the Contractor shall bear all expenses associated with replacement and establishment of the replacement vegetation.
- C. The contractor shall provide any necessary irrigation and other care necessary to warrant the replacement vegetation for two growing seasons (April through September) following replacement.

#### 1.09 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to final inspection.
- B. Clean and repair damage caused by installation or use of temporary work.

#### **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. Access roads
  - 2. Parking
  - 3. Construction parking controls
  - 4. Traffic Control
  - 5. Haul routes
  - 6. Maintenance
  - 7. Removal, repair
  - 8. Mud from site vehicles

## **PART 2 - PRODUCTS**

### **2.01 SIGNS, SIGNALS, AND DEVICES**

- A. Post Mounted and Wall Mounted Traffic Control and Informational Signs, as specified.
- B. Traffic Cones and Drums: As approved by local jurisdictions.
- C. Flag Person Equipment: As required by local jurisdictions.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

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

### **3.02 ACCESS TO SITE**

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

### **3.03 PARKING**

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

### **3.04 CONSTRUCTION PARKING CONTROL**

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

### **3.05 TRAFFIC CONTROL**

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

- B. The Contractor shall erect and maintain all construction signs, warning signs, detour signs, flaggers and other traffic control devices necessary for the safe ingress and egress of the Project Site. Traffic control shall include but is not limited to:
  - 1. Flaggers to direct traffic as required by Tacoma Rail to accommodate the Contractor's work.
  - 2. The Contractor shall be liable for injuries and damages to persons and property suffered by reason of the Contractor's operations or any negligence in connection therewith.
  - 3. 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 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.

### 3.07 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.

### 3.08 REMOVAL, REPAIR

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

### 3.09 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 as needed to comply with State and Local standards.
- 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**

## **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. Construction Stormwater Pollution Prevention Plan (SWPPP) has been prepared by the Port as part of the National Pollution Discharge Elimination System (NPDES) stormwater permit requirements for the project site. The SWPPP is included in the Project Manual Appendix. The Contractor shall use a project-specific 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 on-call at all times.
  - 1. The SWPPP consists of planning, installing, inspecting, maintaining, and removing TESC BMPs per 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 may submit an alternative SWPPP than the one provided by the Port; however, the alternative SWPPP shall address all elements required in the applicable stormwater permit. 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. Discharge points within or adjacent to the work areas that are impacted by stormwater runoff from the site.
- D. Acceptance of TESC plans does not constitute an approval of permanent Work or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).
- E. Contractor shall read and conform to all requirements set forth in 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, a Construction Stormwater Pollution Prevention Plan (SWPPP), as required by the CSGP or acceptance of Port provided SWPPP. The Port's short form can be found in the Appendix.
  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, as determined by analysis of project 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/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 exceeds the regulated pollutant levels in Ecology's NPDES permit associated with the Project.

- 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 on-site 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 terminate the CSGP upon final stabilization of the site.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 DESCRIPTION OF WORK**

- A. Section Includes: Perform all dewatering of groundwater and surface runoff within trenches and excavations and rerouting of stormwater discharge around construction activities as required for the construction of the Work and as covered by these Specifications and indicated on the Drawings.

### **1.02 REFERENCES**

- A. R.C.W. Chapter 49.17 WISHA.
- B. WAC 296-155 Safety Standards for Construction Work.
- C. Geotechnical report and recommendations for the project are included as a reference. While the records of data obtained may be considered by the Contractor to be correct, any conclusions or recommendations made in the reports are for information to the Engineer and are not part of the Contract Documents.

### **1.03 SUBMITTALS**

- A. Submit a Dewatering Work Plan, meeting the requirements defined herein, prior to excavating materials at the site. The Dewatering Work Plan shall include drawings and complete design data showing methods and equipment for dewatering necessary to keep excavations and pipe trenches dry during construction. The Contractor shall review the geotechnical report for dewatering and soils recommendations. At a minimum, the Dewatering Work Plan shall include the following:
  - 1. Detailed description of the proposed plan for executing the following:
    - a. Dewatering.
    - b. Scheduling dewatering, as necessary, to limit the volume of groundwater discharged for dewatering purposes.
    - c. Discharging groundwater collected for dewatering purposes in accordance with all applicable local, state, and federal laws, and regulations, and all permits required for construction.
  - 2. Detailed descriptions of the proposed equipment and method(s) to:
    - a. Limit the volume of groundwater discharged for dewatering purposes.
    - b. Prevent excessive fines in dewatering discharges.
    - c. Monitor and mitigate settlement.
  - 3. Drawings indicating the location and size of berms, dikes, ditches, tanks, sumps, and vacuum and discharge lines.
  - 4. Capacities and quantities of pumps, tanks, and standby equipment, and associated design calculations demonstrating adequacy of the dewatering system and selected equipment, including estimated water volumes.
  - 5. Detailed description of the dewatering system operation, maintenance, and removal procedures.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 GENERAL WATER MANAGEMENT**

- A. Contractor alone shall be responsible for design, installation, monitoring, and maintenance of water management systems.
- B. Contractor shall provide, construct, and operate all water management facilities as necessary to keep excavations and trenches dry during construction, prevent settlement of existing and proposed improvements at the site, and ensure Port operations are not impacted. Water management facilities may include, but are not limited to, temporary pumping, vacuums, plugs, water-tight sheet piles, seals, piping, berms, ditches, sumps, etc.
- C. Contractor shall monitor settlement at the site and shall be responsible for restoring and repairing to existing conditions any damage caused by the Contractor's water management facilities.
- D. After water management facilities are no longer required for construction, all associated equipment shall be removed by the Contractor.
- E. If pumping is required on a 24-hour basis, requiring engine drives, then engines shall be equipped in a manner to keep noise to a minimum. Refer to Section 01 35 47 for noise control requirements.
- F. Dewatering operations shall be accessible to the Port as required to inspect and verify depths of lowered groundwater elevations in relation to the bottom of excavations and backfilling and compaction efforts.
- G. Contractor shall collect, convey, and discharge dewatering water and rerouted stormwater in accordance with the Construction Stormwater General Permit and all local, state, and federal laws and in such a manner as to cause no injury or nuisance to public or private property, or be a menace to the public health.
- H. The Port has obtained the Construction Stormwater General Permit from the Department of Ecology, this permit will be transferred to the Contractor. Contractor is responsible for dewatering and compliance with all permit requirements.

### **3.02 EXCAVATIONS BELOW GROUNDWATER TABLE**

- A. The Contractor shall arrange, schedule, coordinate, design, and operate the dewatering systems to limit the volume of groundwater discharged for dewatering purposes.
- B. Prior to excavating below the groundwater table, Contractor shall have onsite all necessary equipment and materials required for the work and in sufficient quantity, including but not limited to the dewatering system, cranes and all necessary lifting equipment, trench safety systems, precast concrete structures, structure subgrade materials, and backfill.
- C. For precast concrete structures to be placed in excavations below the groundwater table, the Contractor shall perform the following activities prior to beginning dewatering.
  - 1. Excavate to the depth required to install precast concrete structure subgrade materials and install appropriate trench safety systems.
  - 2. Coordinate with the precast concrete structure vendor to determine the total weight of the preassembled unit consisting of base slab and riser walls.
  - 3. Coordinate the total weight of the preassembled precast concrete structure with the crane operations required for lifting and placing the preassembled unit in the excavation.



4. Provide a lifting apparatus appropriate for the shape, size, and weight of the preassembled precast concrete structure to be installed.
  5. Ensure measures are in place to immediately make all internal precast concrete section joints watertight and meet leakage test requirements defined in Section 33 49 20.
- D. After dewatering has begun, the precast unit is placed in the excavation, utility connections are complete, and structure and piping elevations are verified to match those shown on the Drawings, Contractor shall immediately backfill, as described in Section 31 00 00, up to an elevation equal to static groundwater level. No down-time between these activities is permitted.

### 3.03 CONTROL OF WATER

- A. Contractor shall presume that the presence of groundwater or surface runoff in trenches or excavations will require dewatering operations. Furnish, install, maintain, and operate all necessary pumping and other equipment for dewatering all excavations. At all times have onsite sufficient pumping equipment for immediate use, including standby pumps for use in case other pumps become inoperable.
- B. Provide sufficient number of pumps to hold groundwater level at an elevation of not less than 2 feet (60.96 cm) below the bottom of the excavation.
- C. Begin pumping for dewatering in advance of excavation to ensure that water drains out of the soil column and that soil pore pressure is relieved.
- D. The dewatering operation shall be continuous, so that the excavated areas shall be kept free from water during construction, and until backfill has been placed to a sufficient height to anchor the work against possible flotation.
- E. Continue dewatering during backfilling operations such that the groundwater is at least 2 feet (60.96 cm) below the level of the compaction effort at all times. No compaction of saturated materials will be allowed.
- F. Dewatering devices must be adequately filtered to prevent the removal of fines from the soil. Contractor shall monitor discharges for excessive amounts of fines
- G. Prevent disposal of sediments from the soils to adjacent lands or waterways by employing whatever methods are necessary.

### 3.04 STORMWATER AND SEWER DISCHARGE REROUTING

- A. The Contractor shall reroute all stormwater flows and sewer flows around existing conveyance drainage infrastructure designated for abandonment, demolition, and/or replacement.
- B. The existing stormwater and sewer drainage system must be kept in operation using existing and temporary systems until the new facilities are accepted by the Port and capable of collecting and conveying stormwater. The Contractor shall maintain existing stormwater and sewer drainage system capacity during storm events.
- C. The Contractor shall execute work in such a way that normal maintenance and operation of the stormwater and sewer drainage system can be performed by the Port.
- D. Access to existing stormwater and sewer drainage system facilities to be protected in place shall be provided at all times.
- E. Switch-over to new stormwater and sewer collection and conveyance facilities shall be fully coordinated with the Port.
- F. Redundancy: Contractor shall provide onsite, and ready for operation, a redundant pump equal to or larger than the largest pump in the system used to provide maximum pumping capacity.

- G. Backup Power: If the maximum pumping capacity is being provided by electric motor drive pumps, an engine-driven generator or standby pump shall be provided and ready for operation.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This section includes the requirements to provide product data under the applicable specification section.

### **1.02 SUBMITTALS**

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

## **PART 2 - PRODUCTS**

### **2.01 NEW PRODUCTS**

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

### **2.02 PRODUCT OPTIONS**

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

## **PART 3 - EXECUTION**

### **3.01 TRANSPORTATION AND HANDLING**

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

### 3.02 STORAGE AND PROTECTION

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

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This section includes the requirements to provide product data under the applicable specification section.

### **1.02 SUBMITTALS**

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

## **PART 2 - PRODUCTS**

### **2.01 NEW PRODUCTS**

- A. All materials shall be new and meet Buy America requirements outlined in the Special Conditions included in Section 00 11 13 - Advertisement for Bids.

### **2.02 PRODUCT OPTIONS**

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

## **PART 3 - EXECUTION**

### **3.01 TRANSPORTATION AND HANDLING**

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

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

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This section includes requirements relating to the following:
  - 1. Examination, preparation, and general installation procedures
  - 2. Cutting and patching

### **1.02 SUBMITTALS**

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

## **PART 2 - PRODUCTS**

### **2.01 PATCHING MATERIALS**

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

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

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

### **3.02 PREPARATION**

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

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

### 3.03 GENERAL INSTALLATION REQUIREMENTS

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

### 3.04 CUTTING AND PATCHING

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

### 3.05 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.



- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### 3.06 ADJUSTING

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

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This section includes field engineering and land surveying services by Contractor.

### **1.02 DESCRIPTION OF SERVICES**

- A. Specific services listed in this section are in addition to, and do not supersede, general Execution and Closeout Requirements.
- B. Sole responsibility for establishing all locations, dimensions and levels of items of work.
- C. Sole responsibility for provision of all materials required to establish and maintain benchmarks and control points, including batter boards, grade stakes, structure, and pipeline elevation stakes, and other items.
- D. Having a skilled instrument person(s) available on short notice when necessary for laying out the work.
- E. Having a transit, theodolite, or TST (total station theodolite with electronic distance measurement device); leveling instrument; and related implements such as survey rods and other measurement devices, available on short notice at the project site.
- F. Provision of facilities and assistance necessary for Engineer to check lines and grade points placed by Contractor.
1. Performance of excavation or embankment work until after all cross-sectioning necessary for determining payment quantities for Unit Price work have been completed and accepted by Engineer.
- G. Preparation and maintenance of daily reports of activity on the work. Submission of reports containing key progress indicators and job conditions to Engineer upon request.
1. Number of employees at the Site.
  2. Number employees at the Site for each of Contractor's subcontractors.
  3. Breakdown of employees by trades.
  4. Major equipment and materials installed as part of the work.
  5. Major construction equipment utilized.
  6. Location of areas in which construction was performed.
  7. Materials and equipment received.
  8. Work performed, including field quality control measures and testing.
  9. Weather conditions.
  10. Safety.
  11. Delays encountered, amount of delay incurred, and the reasons for the delay.
  12. Instructions received from Engineer, if any.
- H. Preparation and maintenance of professional-quality, accurate, well organized, legible notes of all measurements and calculations made while surveying and laying out the work.
- I. Prior to backfilling operations, surveying - locating, and recording on a copy of the Contract Documents - an accurate representation of buried work and Underground Facilities encountered.

### 1.03 REFERENCE STANDARDS

- A. FGDC-STD-007.1 - Geospatial Positioning Accuracy Standards - Part 1: Reporting Methodology; 1998.
- B. FGDC-STD-007.2 - Geospatial Positioning Accuracy Standards - Part 2: Standards for Geodetic Networks; 1998.
- C. FGDC-STD-007.4 - Geospatial Positioning Accuracy Standards - Part 4: Architecture, Engineering, Construction, and Facilities Measurement; 2002.
- D. State Plane Coordinate System for Washington State.

### 1.04 QUALITY ASSURANCE

- A. Use adequate number of skilled and thoroughly-trained workers to perform the work of this section in a timely and comprehensive manner.
- B. Minimum accuracy for required work is as follows:
  - 1. Grade: Horizontal Tolerance: Plus or minus 0.5 feet (152 mm), Vertical Tolerance: Plus or minus 0.05 feet (15 mm).
  - 2. Culverts and ditches: Horizontal Tolerance: Plus or minus 0.5 feet (152 mm), Vertical Tolerance: Plus or minus 0.05 feet (15 mm).
  - 3. Structures: Horizontal Tolerance: Plus or minus 0.5 feet (152 mm) (location), Vertical Tolerance: Plus or minus 0.05 feet (15 mm).

## **PART 2 - PRODUCTS - NOT USED**

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks. Notify Port's Representative and Engineer of any discrepancies immediately in writing before proceeding to lay out the work. Locate and protect existing benchmarks and base line. Preserve permanent reference points during construction.
- B. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify existing conditions.

### 3.02 FIELD ENGINEERING

- A. Maintain field office files, drawings, specifications, and record documents.
- B. Coordinate field engineering services with Contractor's subcontractors, installers, and suppliers as appropriate.
- C. Prepare layout and coordination drawings for construction operations.
- D. Check and coordinate the work for conflicts and interferences, and immediately advise Engineer and Port of all discrepancies of which Contractor is aware.
- E. Cooperate as required with Engineer in observing the work and performing field inspections.
- F. Review and coordinate work on a regular basis with shop drawings and Contractor's other submittals.

- G. Check the location, line and grade of every major element as the work progresses. Notify the Engineer when deviations from required lines or grades exceed allowable tolerances. Include in such notifications a thorough explanation of the problem, and a proposed plan and schedule for remedying the deviation. Do not proceed with remedial work without Port's concurrence of the remediation plan.
- H. Check all formwork, reinforcing, inserts, structural steel, bolts, sleeves, piping, other materials and equipment for conformance to shop drawings and Contract Documents requirements.
- I. Check all bracing and shoring for structural integrity and conformance to designs prepared by the Contractor.

### 3.03 LAND SURVEYING

- A. General: Follow standards for geospatial positioning accuracy.
  - 1. FGDC-STD-007.1as amended by Authority Having Jurisdiction.
  - 2. FGDC-STD-007.2as amended by Authority Having Jurisdiction.
  - 3. FGDC-STD-007.4as amended by Authority Having Jurisdiction.
- B. Coordinate survey data with the State Plane Coordinate System of Washington State.
- C. Contractor is responsible for the restoration of all property corners and control monuments damaged or destroyed by construction-related activities. Any disturbed monuments must be replaced at Contractor's expense by a surveyor licensed in Washington State, and approved by the Engineer.
  - 1. Temporarily suspend work at such points and for such reasonable times as the Port may require for resetting monuments. The Contractor will not be entitled to any additional compensation or extension of time.

### 3.04 CONSTRUCTION SURVEYING

- A. General: Perform surveying as applicable to specific items necessary for proper execution of work.
  - 1. Alignment Staking: Provide alignment stakes at 50 foot (15.24 m) intervals on tangent, and at 25 foot (7.62 m) intervals on curves.
  - 2. Slope Staking: Provide slope staking at 50 foot (15.24 m) intervals on tangent, and at 25 foot (7.62 m) intervals on curves. Re-stake at every ten-foot difference in elevation.
  - 3. Structure: Stake out structures, including elevations, and check prior to and during construction.
  - 4. Site Utilities: Stake out utility lines including elevations, and check prior to and during construction.
  - 5. Cross-sections: Provide original, intermediate, and final staking as required, for site work and other locations as necessary for quantity surveys.
  - 6. Record Staking: Provide permanent stake at each blind flange and each utility cap is provided for future connections. Use stakes for record staking of material(s) acceptable to Engineer.
- B. Record Log: Maintain a log of layout control work. Record any deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used.

### 3.05 RECORDS

- A. Maintain at the Site a complete and accurate log of control and survey work as it progresses.
  - 1. Organize and record survey data in accordance with recognized professional surveying standards, Laws and Regulations, and prevailing standards of practice in Washington State. Record Contractor's surveyor's original field notes, computations, and other surveying data in Contractor-furnished hard-bound field books. Contractor is solely responsible for completeness and accuracy of survey work, and completeness and accuracy of survey records, including field books. Survey records,(including field books) may be rejected by Port due to failure to organize and maintain survey records in a manner that allows reasonable and independent verification of calculations, and/or allows identification of elevations, dimensions, and grades of the work.
  - 2. Illegible notes or data, and erasures on any page of field books, are unacceptable. Do not submit copied notes or data. Corrections by ruling or lining out errors will be unacceptable unless initialed by the surveyor. Violation of these requirements may require re-surveying the data questioned by Engineer.

**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. 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.
- 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 on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 74 16 Soil Characteristics and Waste Management.
- 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 industry standard condition. 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.
    - 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



## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This section includes construction waste management requirements.

### **1.02 DESCRIPTION OF WORK**

- A. The work includes demolition and removal within the project areas as shown on the drawings. The work also includes waste generated by construction activities, materials, packaging, scraps, and garbage.
- B. Soils excavated within the projects areas, as shown on the drawings, are anticipated to be free of contamination, however, should the Contractor, using visual and olfactory methods, identify potentially contaminated soil, the Contractor shall notify the Engineer to determine if the soil requires special handling. This material shall be segregated from other excavated material. It shall be stockpiled on plastic and covered with plastic until such time as appropriate testing and analysis can be completed by the Engineer. Upon completion of the testing and analysis the Engineer will direct the Contractor concerning the disposition of the material. 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 be contaminated will be hauled and disposed of at a locations designated in the following paragraphs.

### **1.03 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.
- C. Hazardous/Dangerous Waste: As defined by Chapter 70.105.010 Revised Code of Washington and 40 Code of Federal Register 261 and by Washington Administrative Code 173-303.
- D. Proper Disposal: As defined by the jurisdiction receiving the waste.
- E. Recyclable Materials: Products and materials that can be recovered and remanufactured into new products.
- F. Recycling: The process of sorting, cleaning, treating and reconstituting materials for the purpose of using the material in the manufacture of a new product. Can be conducted on-site (as in the grinding of concrete).
- G. Recycling Facility: An operation that is permitted to accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
- H. Salvage for Reuse: Existing usable product or material that can be saved and reused in some manner on the project site or other projects off-site.
- I. Salvage for Resale: Existing usable product or material that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.
- J. Source-Separated Materials: Materials that are sorted at the site into separate containers for the purpose of reuse or recycling.
- K. Sources Separation: Sorting the recovered materials into specific material types with no, or a minimum amount of, contamination on site.

- L. Time-Based Separation: Collecting waste during each phase of construction or deconstruction that results in primarily one major type of recovered material. The material is removed before it becomes mixed with the material from the next phase of construction.
- M. Garbage: Product or material typically considered to be trash or debris that is unable to be salvaged for resale, salvaged and reused, returned, or recycled.
- N. Olfactory Indications (methods): Of or relating to the sense of smell. Soils contaminated with petroleum and other volatile constituents typically exhibit characteristic odors that can be detected (and sometimes identified) by smell.
- O. PID: Photo Ionization Detector. A field instrument that is used to detect the presence of and give a relative indication of the concentration of vapors emitted from volatile constituents (contamination) in environmental media (soil and water).
- P. Soil (waste) Profile: A characterization of the chemical and physical properties of a waste material including the types of contaminants and their concentrations as measured by approved laboratory analytical methods. A profile is required by the receiving permitted disposal or recycling facility.
- Q. Special Handling: Refers to hauling and disposal of soils that, because they are contaminated, cannot be reused in place as backfill or as general fill at another location. Such soils must be hauled to and managed at a permitted disposal or recycling facility.
- R. Type A Contaminated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain petroleum hydrocarbons in concentrations exceeding state or federal cleanup standards or special Port determined criteria. Type A soil requires disposal at an approved facility.
- S. Type B Contaminated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain petroleum hydrocarbons or other contaminants in concentrations that will require disposal or recycling at one of the approved facility.
- T. Type C Contaminated Soil: Soil determined by Engineer to contain unknown constituent(s) and requires further testing and classification. Type C soil requires disposal at one of the approved facility.
- U. Type D Material: Material including soil, determined by the Engineer not to require special handling with regard to this Contract. Classification of material as Type D material 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.
- V. Unanticipated Contamination: Contamination 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 contamination.
- W. Visual Indications (methods): A preliminary evaluation of the potential presence of contamination based on visual observation. For example, fuel contaminated soils are frequently discolored or stained relative to non-petroleum impacted native soils or clean fill.

#### 1.04 SUBMITTALS

- A. Waste Management Plan
- B. Waste Management Final Report
- C. Soils Management Plan
- D. Soils Hauling Receipts

#### 1.05 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.

#### 1.06 WASTE MANAGEMENT PLAN

- A. Submit a Waste Management Plan within 10 days after the notice to proceed and not less than 5 days before any demolition activities 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 Waste Management Coordinator.
  - 2. A list of waste materials, including estimated types and quantities, of the waste that will be generated. Indicate salvaged for resale, salvaged for reuse, recycled, or disposed for each item.
  - 3. Identify waste handling methods to be used, including one or more of the following:
    - a. Method 1 - Contractor or subcontractor(s) hauls recyclable materials to an approved recycling facility.
    - b. Method 2 - Contracting with diversion/recycling hauler to haul recyclable material to an approved recycling or material recovery facility.
    - c. Method 3 - Recyclable material reuse on-site.
    - d. Method 4 - Recyclable material salvage for resale.
    - e. Method 5 - Contractor or subcontractor hauls waste to an approved disposal facility.
  - 4. Identification of each recycling, disposal, or material recovery facility to be utilized, including name, address and types of materials being recycled at each facility.
  - 5. Description of the method to be employed in collecting, and handling, waste materials.
  - 6. Description of methods to communicate Waste Management Plan to personnel and subcontractors.

7. Actions that will be taken to reduce solid waste generation.
- C. Revise and resubmit Waste Management plan as required by the Engineer. Approval of the Contractor's Plan does not relieve the Contractor of responsibility for compliance with all applicable laws and regulations. Distribute copies of the Waste Management Plan to each subcontractor.

#### 1.07 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.

#### 1.08 SOILS MANAGEMENT PLAN

- A. A minimum of 10 days prior to excavation of any subsurface materials, 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. Include the following in the Soils Management Plan:
  1. Identification of all soil disposal/recycling facilities to be used on the project for Type A and B Contaminated Soil.
  2. Identification of all fill sites, disposal facilities and/or end uses of material determined to be Type D Material.
  3. Contingency for delivery and placement of Type C Contaminated Soil at an onsite Soil Stockpile area.
  4. Contingency for managing debris encountered during excavation that may disqualify soil for disposal or recycle at the approve facilities.
  5. General description of how equipment operators, safety personnel and other applicable Contractor shall coordinate with the Engineer to facilitate handling of contaminated soil in accordance with this specification.
  6. Description of all haul routes to be used on the project.
- B. Include in the Two Week Look Ahead Schedule specific time frames for excavation. Each excavation activity shall be given an individual line item description, time frame and duration.
- C. Notify the Engineer prior to hauling contaminated soil to the soil disposal facility. The notification shall include:
  1. An estimate of the number of truck-trips, the haul destination, and the period in which these trips will be made (e.g., 20 truck-trips to the Waste Management Facility over the two-week period beginning on March 1, 2012).

### 1.09 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.

### 1.10 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 Procedures.

## **PART 2 - PRODUCTS - NOT USED**

## **PART 3 - EXECUTION**

### 3.01 WASTE DISPOSAL

- A. Source-Separated CDL Recycling: Provide individual containers for separate types of CDL waste to be recycled, clearly labeled with a list of acceptable and unacceptable materials.
- B. Co-Mingled CDL Recycling: Provide containers for co-mingled CDL waste to be recycled, clearly labeled with a list of acceptable and unacceptable materials.
- C. Landfill: Provide containers for CDL waste that is to be disposed of in a landfill clearly labeled as such.
- D. Removal of CDL Waste from Project Site: Transport CDL waste off Port's property and provide legal disposal.

### 3.02 SOIL DISPOSAL

- A. Excavation/Testing: The field-testing for contaminated soil will be performed by the Port and will result in the following classification of material as defined in paragraph DEFINITIONS of this section:
  - 1. Type A Contaminated Soil.
  - 2. Type B Contaminated Soil.
  - 3. Type C Contaminated Soil.
  - 4. Type D Material.
- B. Disposition of Material
  - 1. Type A and B Contaminated Soil: Material determined to be Type A or B Contaminated Soil shall be hauled by the Contractor to an approved facility for disposal.
  - 2. Type C Material: Material determined to be Type C is of unknown origin or special circumstances. Material determined to be Type C contaminated soils shall be hauled to an onsite Soil Stockpile Site area. The Contractor shall protect the material once stockpiled. The Port will direct the Contractor on the disposition of the material following the analysis of the suspect material.
  - 3. Type D Material: Material determined not to require special handling (Type D) shall be hauled by the Contractor to a site determined by the Contractor. If testing or certification of this material is required by the receiving site, the Contractor shall complete these requirements. The Port will not certify or declare the material suitable for unrestricted use.
- C. Other Requirements

1. Cover all soil stockpiles and maintain stockpile areas in accordance with SECTION 01 57 13 - Temporary Erosion and Sediment Control and Construction Stormwater Pollution Prevention.
2. Material determined to be Type A, Type B or Type C contaminated material may be, upon approval of the Engineer, temporarily stockpiled within the construction area. Provide an impervious liner beneath this soil and securely cover with a waterproof covering. Remove the material prior to completion of work in the work area.
3. Submit all hauling receipts (or copies of receipts) from the receiving facility for all Type A, Type B or Type C Contaminated soil at least weekly.
4. The Engineer may require shut down of excavation should unforeseen condition warrant.

**END OF SECTION**

## **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 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.

### **1.03 SUBSTANTIAL COMPLETION PROCEDURES**

- A. 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.
- B. 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. Terminate and remove temporary facilities from Project site
6. Complete final cleaning requirements
- C. Submit a written request for inspection to determine Substantial Completion a minimum of 10 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.

#### 1.04 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.

#### 1.05 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.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 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.

#### 1.06 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 15 days of completion of designated portions of the Work that are completed and occupied or used by Port or Port tenants during construction.
  - 3. Submit Warranties to the Engineer as a submittal, as described in 01 33 00 – Submittal Procedures.
  - 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 SUMMARY**

- A. Operation and Maintenance Manual Submittal

### **1.02 SUBMITTALS**

- A. Operation and Maintenance Data:

1. For equipment, or component parts of equipment put into service during construction and operated by the Port, submit completed documents within ten days after acceptance.
2. Submit 1 electronic copy of completed documents 10 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
3. Submit 2 hard copy and 1 electronic sets of revised final documents in final form by Final Completion.

## **PART 2 - PRODUCTS**

### **2.01 OPERATION AND MAINTENANCE MANUALS**

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

1. Equipment Maintenance Summary:
  - a. Provide the following information (as applicable, indicate 'N/A' where an item does not apply) in Excel spreadsheet format:
    - 1) Description
    - 2) Plan Sheet Number
    - 3) Vendor
    - 4) Manufacturer
    - 5) Model Year
    - 6) Serial Number
    - 7) Warranty – Start Date; Finish Date
    - 8) Required Preventative Maintenance
    - 9) Purchase Price
    - 10) Make
    - 11) Model
    - 12) Fuel Used

### 13) Capacity

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

19. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated. It shall be the responsibility of the Contractor to ensure that all operation and maintenance materials are obtained. Material submitted must meet the approval of the Engineer prior to project final acceptance.
- B. For small equipment and products (such as furnishings or equipment not requiring routine maintenance), the following information (minimum of 2 printed copies, plus one electronic copy) shall be furnished for all items on the Project requiring operational and/or maintenance procedures and for any additional items indicated by the Engineer. Printed information shall be organized by the Contractor into appropriately sized 3-ring binders (no larger than 3"). The binders shall be sized for material approximately 8-1/2 by 11 inches, and the material in the binders shall not protrude beyond the covers. The binder(s) shall be divided with coversheets for each major item of equipment. The cover sheets shall be typewritten to indicate the name, type of equipment, and location(s) within the Project where installed. A neatly typewritten index shall be provided. Electronic information shall be in PDF format (additional formats where specified) and shall be organized with folders and appropriate file names so as to make the information easily accessible:
  1. Product Summary:
    - a. Provide the following information (as applicable, indicate 'N/A' where an item does not apply) in Excel spreadsheet format:
      - 1) Description
      - 2) Plan Sheet Number
      - 3) Vendor
      - 4) Manufacturer
      - 5) Model Year
      - 6) Serial Number
      - 7) Warranty – Start Date; Finish Date
      - 8) Purchase Price
      - 9) Make
      - 10) Model
  2. Operating Procedures: These instructions consist of the manufacturer's recommended step-by-step procedures for use of the product.
  3. Maintenance Procedures: These instructions consist of the equipment manufacturer's recommended steps and schedules for maintaining the product.
  4. Specific Information: Where items of information not included in the above list are required, they will be provided as described in the specifications for the equipment.
  5. Complete identification, including model and serial numbers.
  6. Submittal information, as specified in Section 01 33 00 Submittal Procedures.
  7. Warranty Information: This information consists of the name, address, and telephone number of the manufacturer's representative to be contacted for warranty, parts, or service information.
  8. Provide DVDs, and audio-visual training materials utilized in the manufacturer's instruction program for the Port.

9. All operation and maintenance information shall be comprehensive and detailed and shall contain information adequately covering all normal operation and maintenance procedures.
10. All information shall be specific for the items of equipment installed on the project. Material not directly applicable shall be removed, omitted, or clearly marked as inapplicable.
11. If manufacturer's standard brochures and manuals are used to describe operating and maintenance procedures, such brochures and manuals shall be modified to reflect only the model or series of equipment used on this project.
12. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated. It shall be the responsibility of the Contractor to ensure that all operation and maintenance materials are obtained. Material submitted must meet the approval of the Engineer prior to project final acceptance.

**PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The scope of the "Site Demolition" Work is indicated on the drawings. The Work includes the requirements for the removal, wholly or in part and satisfactory disposal of fences, pavements, pavement markings, curbs, clearing and grubbing, sidewalks, utilities or other features identified within these specifications and on the drawings. This work shall include demolition of stormwater components or plugging elements to remain. The drawings should be used for guidance only and to indicate typical general construction features of the various types of structures and is not to be construed as definitive or adequate to supplant the actual on-site inspection by the Contractor.

### **1.02 RELATED SECTIONS**

- A. Section 01 74 16 – Soil Characteristics and Waste Management
- B. Section 31 00 00 – Earthwork
- C. Section 32 17 23 – Pavement Markings
- D. Section 32 31 13 – Chain Link Fences and Gates

### **1.03 SUBMITTALS**

- A. Submittals shall include the following:
  - 1. Demolition Management Plan (DMP) with documentation that includes and addresses the following:
    - a. Work sequence and schedule. Include phased demolition requirements consistent with the overall project schedule.
    - b. Activity-based schedule.
    - c. List of equipment to be used for demolition operations.
    - d. Means and methods to protect existing infrastructure, stockpile materials, and deliver salvaged material.
    - e. Puget Sound Clean Air Agency (PSCAA), Notice of Intent to Demolish.

### **1.04 SITE CONDITIONS**

- A. Coordinate and schedule, with the Engineer, access to the site in advance.
- B. All demolition items not identified for salvage shall become the property of the Contractor. Disposal of all demolition items shall be in accordance with the specifications, local, state, and federal requirements.
- C. Existing Utilities
  - 1. The Contractor shall verify the location of existing utilities. Contact the Washington Utilities Underground Location Center at 1-800-424-5555 (or 811) for utilities within the public right of way and on Port property. The Contractor shall provide private utility locating services for non-public utility locating on Port property.
  - 2. The Contractor shall protect from damage those utilities which are to remain. Utilities damaged by the Contractor shall be repaired at no cost to the Owner.

### **1.05 SUMMARY**

- A. Items and material categories for demolition include, but are not limited to, the following

1. Pavement and pavement markings
  2. Chain link fence and foundations
  3. Curb and sidewalk
  4. Clearing and grubbing
  5. Utilities
- B. Items or equipment to be salvaged shall be handled and stored without damage. Items designated for salvage are listed below. Items indicated for relocation/reuse are not indicated herein.
1. Traffic barriers not used in the final site configuration
- C. Any damage by the Contractor's operations to materials identified to be salvaged shall be repaired or replaced, as determined by the Engineer, by the Contractor and at the Contractor's expense.

## **PART 2 PRODUCTS – NOT USED**

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. The Contractor represents that it has visited the site to become familiar with the quantity and character of all materials to be demolished. The Contractor agrees that the premises were made available prior to deadline for submission of bids for whatever inspection and tests the Contractor deemed appropriate in preparation of bids.

### **3.02 PREPARATION**

- A. Utility locates shall be performed prior to the start of demolition. Coordinate and resolve with the Engineer and terminal operators to turn off or de-energize affected services before starting demolition.
- B. Verify all items for demolition, disposal, and salvage as early as practical prior to the start of demolition. Notify the Engineer immediately if observed conditions differ from anticipated.
- C. Notify the Engineer a minimum of one (1) week prior to beginning work.

### **3.03 DEMOLITION OF STRUCTURES**

- A. Completely remove and dispose legally off-site: designated foundations, structures, fences and other obstructions. All pavements, sidewalks, and curbs designated for removal shall be broken up, loaded and disposed by the Contractor. Adjacent materials designated to remain that are damaged by the Contractor due to his operations shall be replaced at no additional cost to the Owner.
- B. Blasting shall not be used.

### **3.04 DEMOLITION OF UTILITIES**

- A. Well in advance of the demolition of any utilities, the Contractor shall advise the appropriate agency of the impending action and arrange with each utility for all Work required by that utility under this contract. Special conditions required by the utility shall be the sole responsibility of the Contractor. Contact the utilities for bond requirements, if any, prior to bid.

### **3.05 SAWCUTTING**

- A. Perform full depth or partial depth sawcutting of asphalt and concrete pavement as indicated on the Drawings or otherwise specified.



- B. Neatly cut and remove materials, and prepare openings to receive new work.
- C. Remove concrete and pavement in small sections.
- D. Use care in removing the pavement and concrete to protect existing pavement or concrete which is to remain in place adjacent to the work area. Ensure that all removals are accomplished by making a neat vertical saw cut at the boundaries of the area to be removed.
- E. Provide vacuum equipment to control dust and debris generated by sawcutting operations. Control silt-laden runoff generated by sawcutting operations from entering the storm drainage system or waters of the state.
- F. Replace any adjacent damaged materials not designated for removal at no additional cost to the Owner.
- G. Provide bracing, or screening as needed to prevent damage to adjacent facilities that are to remain in place.

### 3.06 GRINDING ASPHALT PAVEMENT

- A. Provide a cold-milling/ grinding machine which is self-propelled, capable of milling the pavement to a specified depth and smoothness and capable of establishing grade control; with means of controlling transverse slope and dust produced during the pavement milling operation. The machine shall have the ability to grind material to 1-1/2 inch (38 mm) minus in size and remove the millings or cuttings from the pavement and load them into a truck. The milling machine shall not cause damage to any part of the pavement structure that is to remain in place and material shall be loaded directly into a truck.
- B. Where indicated on the plans, mill asphalt concrete pavement by pavement grinder to the depth indicated on the plans or as directed by the Engineer.
- C. Make sufficient passes so that the designated area is milled to the grades and cross sections indicated. The milling shall proceed with care and in depth increments that will not damage the pavement below the designated finished grade. Repair and replace, as directed, items damaged during milling such as manholes, valve boxes, utility lines, and underlying or adjacent pavement that is torn, cracked, gouged, broken or undercut.
- D. Conform the finished milled surfaces to the lines, grades, and cross sections indicated. The finished milled-pavement surfaces shall vary not more than 1/4 inch (6.35 mm) from the established plan grade line and elevation. Finished surfaces at a juncture with other pavements shall coincide with the finished surfaces of the abutting pavements. The deviations from the plan grade line and elevation will not be permitted in areas of pavements where closer conformance with planned grade and elevation is required for the proper functioning of appurtenant structures involved. Milling shall not be performed when there is a measurable accumulation of snow or ice on the pavement surface.

### 3.07 PAVEMENT MARKING REMOVAL

- A. Refer to Section 32 17 23 Pavement Markings for obliterating existing pavement markings.

### 3.08 DISPOSAL

- A. General: All materials, except those indicated to be salvaged, and except those materials containing substances classified as hazardous or potentially hazardous by local, state, or Federal regulating agencies, shall upon their demolition become the property of the Contractor. All such material, including those containing hazardous or potentially hazardous substances shall be removed and promptly disposed legally away from the site, except as otherwise provided in these specifications. No material shall be disposed of in adjoining waterways or in the fill. Burning of materials in these areas falls under the jurisdiction of the Pierce County regulations and is generally forbidden under all circumstances.

- B. Cleanup: After removal of demolished items, clean and grade the area. There shall be no debris, rubble, or litter left at the site from any of the demolition operations and the site shall be clean.
- C. The Owner encourages the salvage and recycling of materials from demolished structures. The Contractor shall salvage or recycle, in an acceptable manner to environmental agencies and the Engineer, at his option any of the materials designated for disposal.
- D. Non-salvageable or non-recyclable demolition and contaminated soils shall be managed per Section 01 74 16 Soil Characteristics and Waste Management.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The extent and location of "Concrete Reinforcement" Work is shown in the Contract Documents.

### **1.02 RELATED SECTIONS**

- A. Section 03 30 00 – Cast-in-Place Concrete

### **1.03 REFERENCES**

#### **1.04 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.**

- A. Unless otherwise indicated, the most recent edition of the publication, including any revisions, shall be used.
- B. American Concrete Institute (ACI)
  - 1. ACI 315 – Manual of Standard Practice for Detailing Reinforced Concrete Structures
  - 2. ACI 318 – Building Code Requirements for Structural Concrete
  - 3. ACI SP-66 – ACI Detailing Manual
- C. American Society for Testing and Materials (ASTM)
  - 1. ASTM A370 – Standard Test Methods and Definitions for Mechanical Testing of Steel Products
  - 2. ASTM A615 – Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
  - 3. ASTM A706 – Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
  - 4. ASTM A1064/A1064M – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
- D. American Welding Society (AWS)
  - 1. AWS D1.1 Structural Welding Code – Steel
  - 2. AWS D1.4 Structural Welding Code – Reinforcing Steel
- E. Concrete Reinforcing Steel Institute (CRSI)
  - 1. Manual of Standard Practice
- F. International Code Council (ICC)
  - 1. International Building Code (IBC)

### **1.05 SUBMITTALS**

- A. Manufacturers' technical literature, standard details, product specifications, and installation instructions for all products.
- B. Reinforcement Shop Drawing:
  - 1. Reinforcement shop drawings shall be produced in accordance with ACI 315 and ACI SP-66.

2. Layout of all reinforcement, including:
  - a. Reinforcement types
  - b. Reinforcement sizes and lengths
  - c. Clear distances as necessary
  - d. Reinforcement bend diagrams
3. Mill certifications for each type of reinforcement
- C. Do not deliver concrete reinforcement to the job site until receipt of shop drawing approval from the Engineer.

## 1.06 QUALITY ASSURANCE

### A. General

1. The Contractor shall perform material tests, specified and required by applicable standards, by an approved laboratory and certified to demonstrate that the materials are in conformance with the specifications.
2. Tests, inspections, and verifications shall be performed and certified at the Contractor's expense.
3. The Contractor shall make the work areas available for inspection by the Engineer. The Contractor shall be responsible for verifying concrete forms, reinforcing steel, embedded items, and similar appurtenances are properly placed prior to any inspection.

### B. Reinforcement Steel Tests

1. Mechanical testing of steel shall be in accordance with ASTM A370 except as otherwise specified or required by the material specifications.
2. Tension tests shall be performed on full cross-section specimens using a gage length that spans the extremities of specimens with welds or sleeves included.
3. Chemical analyses of steel heats shall show the percentages of carbon, phosphorous, manganese, sulfur and silicon present in the steel.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. All concrete reinforcement materials shall be new and free from rust.

### 2.02 REINFORCEMENT

#### A. Deformed bars

1. Bars for reinforcement shall comply with the requirements of ASTM A615, Grade 60 deformed, except as noted in paragraph 2 below.
2. Reinforcement indicated to be welded shall be ASTM A706, Grade 60.
3. Detailing and fabrication of reinforcing shall conform to ACI 315 and ACI 318.

#### B. Welded wire fabric shall be per ASTM A1064/A1064M.

#### C. Wire ties

1. Wire ties shall be 16 gauge or heavier black annealed steel wire.

## 2.03 OTHER MATERIALS

- A. All other materials not specifically described but required for a complete and proper installation of reinforcement, shall be selected by the Contractor, subject to the approval of the Engineer.
- B. Supports
  - 1. Bar supports for formed surfaces shall be designed and fabricated in accordance with CRSI Manual of Standard Practice and shall be steel or precast concrete blocks.
  - 2. Precast concrete blocks shall have minimum compressive strength equal to that of the surrounding concrete.
  - 3. Where concrete formed surfaces will be exposed to weather or where surfaces are to be painted, steel supports within 1/2 inch (12.7 mm) of concrete surface shall be galvanized, plastic protected, or of stainless steel.
  - 4. Concrete supports used in concrete exposed to view shall have the same color and texture as the finish surface.
  - 5. For slabs on grade, supports shall be precast concrete blocks, plastic coated steel fabricated with bearing plates, or specifically designed wire-fabric supports fabricated of plastic.
  - 6. Precast concrete supports shall be wedged-shaped, not larger than 3-1/2 by 3-1/2 inches (89 mm), of thickness equal to that indicated for concrete cover and have an embedded hooked tie-wire for anchorage.
  - 7. Supports for bars in concrete with formed surfaces exposed to view or to be painted shall be plastic-coated wire, stainless steel, or precast concrete supports.
  - 8. Bar supports shall comply with the requirements of ACI SP-66.

## 2.04 MATERIAL HANDLING, DELIVERY, & STORAGE

- A. Protection:
  - 1. Protect reinforcement before, during, and after installation and protect the installed Work and materials of other trades. Handle and protect all reinforcement per the applicable ASTM material standard.
  - 2. Store in a manner to prevent fouling with dirt, grease, and other bond-breaking coatings.
  - 3. Use all necessary precautions to maintain identification after the bundles are broken.
- B. Replacements:
  - 1. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer at no additional cost to the Owner.

## PART 3 - EXECUTION

### 3.01 PREPARATION FOR EXECUTION OF WORK

- A. Inspection:
  - 1. Prior to installation of this section, carefully inspect the installed Work of other trades and verify that such Work is complete to the point where this installation may properly commence.
- B. Order Lists:

1. Before ordering material, furnish all submittals for approval by the Engineer. 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.

### 3.02 EXECUTION OF WORK

#### A. Reinforcing Steel Bars

1. Fabrication:
  - a. Bend all bars cold to the shapes indicated on the drawings unless otherwise approved by the Engineer.
  - b. Do not field-bend bars partially embedded in concrete except as indicated on the drawings or as approved by the Engineer.
  - c. Make bends and hooks in accordance with the applicable portions of the IBC and the CRSI Manual of Standard Practice.
2. Placing and Fastening:
3. Place all steel reinforcement accurately and hold firmly in the position indicated on the drawing during the placing and setting of concrete.
  - a. Tie bars at all intersections, except where spacing is less than one foot in each direction, and then tie alternate intersections.
  - b. Wire tie ends shall face away from the forms.
  - c. Provide the following minimum concrete covering of reinforcement:
    - 1) Concrete below ground deposited against forms: 2 inches (50.8 mm)
    - 2) Concrete deposited against earth: 3 inches (76.2 mm)
    - 3) Concrete elsewhere: As indicated on the drawings, or as required by ACI 318 where specific information is not provided.
  - d. Maintain the minimum distance from the forms by means of stays, blocks, ties, hangers, or other approved supports.
  - e. Separate layers of bars by plastic chairs, by precast mortar blocks as described in article 2 or by other equally suitable devices. The use of pebbles, pieces of broken stone, brick, metal pipe, and wooden blocks will not be permitted.
  - f. The minimum spacing between bars shall be one bar diameter or one inch minimum, but not less than 1-1/3 times the maximum size of coarse aggregate.
  - g. Place reinforcement, inspect, and obtain approval of the Engineer before placing concrete. Concrete placed in violation of this provision may be rejected and removal required, to be followed by placing of new reinforcing steel and concrete by the Contractor at no additional cost to the Owner.
  - h. In the event that conduits, piping, inserts, sleeves, or other items interfere with placing reinforcement as indicated on the drawings or as otherwise required, immediately consult the Engineer and obtain approval of new procedure before placing concrete.
4. Splicing:
  - a. Furnish all reinforcement in the full lengths indicated on the drawings. Splicing of bars, except when indicated on the drawings, will not be permitted without written approval of the Engineer. When approved, stagger splices as far as possible.

- b. Unless shown otherwise, lap splice for with lengths as dictated by ACI 318, but no less than 18 inches (457.2 mm).
  - 1) Lapped bars shall be placed in contact and securely tied or spaced transversely apart to permit the embedment of the entire surface of each bar in concrete.
  - 2) Lapped bars shall not be spaced farther apart than one-fifth the required length of lap or 6 inches (152.4 mm).
- c. Weld reinforcing steel only as indicated on the drawings unless authorized otherwise in writing by the Engineer.
  - 1) When welding reinforcing bar splices, use low-hydrogen electrodes with preheat and interpass temperatures of not less than 200°F. Clean welds of all slag.
  - 2) Welding shall be performed in accordance with AWS D1.1 and AWS D1.4
- 5. 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 that will destroy or reduce the bond between steel and concrete.

### 3.03 FIELD QUALITY CONTROL

- A. The Contractor shall notify the Engineer at least 48 hours in advance of concrete placement when reinforcing is completely fixed and ready for inspection.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. Work includes furnishing of all labor, material, and equipment for providing cast-in-place concrete and associated work.
- B. Cast-in-place concrete formwork

### **1.02 RELATED SECTIONS**

- A. Section 03 20 00 – Concrete Reinforcement
- B. Section 32 31 13 – Chain Link Fences and Gates

### **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. Association of State Highway and Transportation Officials (AASHTO)
  - 1. AASHTO M 182 - Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats
- D. American Concrete Institute (ACI)
  - 1. ACI 301 - Specifications for Structural Concrete for Buildings
  - 2. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete
  - 3. ACI 305 - Hot Weather Concreting
  - 4. ACI 306 - Cold Weather Concreting
  - 5. ACI 308 - Standard Practice of Curing Concrete
  - 6. ACI 318 - Building Code Requirements for Structural Concrete
  - 7. ACI 347 - Guide to Formwork for Concrete
- E. American Society for Testing and Materials (ASTM)
  - 1. ASTM C 31 – Making and Curing Concrete Test Specimens in the Field
  - 2. ASTM C33 - Standard Specification for Concrete Aggregates.
  - 3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
  - 4. ASTM C94 - Standard Specification for Ready-Mix Concrete.
  - 5. ASTM C 143 Slump of Portland Cement Concrete
  - 6. ASTM C150 - Standard Specification for Portland Cement.
  - 7. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
  - 8. ASTM C 172 Sampling Fresh Concrete
  - 9. ASTM C 231 Air Content of Freshly Mixed Concrete by the Pressure Method
  - 10. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
  - 11. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

12. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
13. ASTM C595 - Standard Specification for Blended Hydraulic Cements
14. ASTM C618 - Standard Specification for Coal Fly Ash and Raw Calcined Natural Pozzolan for Use in Concrete.

#### 1.04 SUBMITTALS

- A. Certificates of Specification compliance for materials to be used.
- B. Proposed concrete mix design, indicating constituent material contents per cubic yard of concrete.
- C. Mix design test certificates for compressive strength, yield, air content, and slump of the proposed concrete mix. As a minimum, compressive strength test results at 7, 14, and 28-days shall be provided in accordance with ACI 318 5.3.
- D. Manufacturer's name and certificates of compliance with applicable standards shall be provided for all admixtures, concrete bonding agents, curing compounds, etc., proposed for use on the job.

#### 1.05 QUALITY ASSURANCE

- A. General
  1. The Contractor shall perform material tests, specified and required by applicable standards, by an approved laboratory and certified to demonstrate that the materials are in conformance with the specifications.
  2. The Owner will perform inspection and testing of concrete strength as required. The Contractor shall provide all necessary assistance and access in carrying out such inspections and tests, including sufficient mixed concrete and constituent materials required for testing and inspection, at its own expense.
  3. Concrete shall be sampled in accordance with ASTM C 172. Sample frequency shall be per ACI 318. Slump and air content will be determined in accordance with ASTM C 143 and ASTM C 231 respectively. Compressive test specimens shall be made and cured in accordance with ASTM C 31 and shall be tested in accordance with ASTM C 39. Samples for strength tests shall be taken not less than once a day. Three specimens shall be made from each set, two shall be tested at 28 days, and one shall be tested at 7 days. The Contractor may take additional test specimens in order to determine when forms can be removed.
  4. Contractor shall be responsible for verifying concrete forms, reinforcing steel, embedded items, and similar appurtenances are properly placed prior to any inspection.
  5. Formwork shall be in accordance with ACI 347R-Guide to Formwork for Concrete.
- B. Qualification of Workmen as follows:
  1. Provide at least one person who shall be present at all times during execution of this portion of the work. They shall be thoroughly trained and experienced in concrete work, and shall direct all work performed under this section.
  2. Trained and experienced journeyman concrete finishers shall be responsible for finishing of exposed surfaces.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL**

- A. All concrete, unless specifically permitted by the Engineer, shall be normal-weight concrete and ready-mix. Batching, mixing, transportation, and delivery of ready-mix concrete shall conform to ASTM C94.
- B. Obtain cementitious materials from same source throughout.

### **2.02 MATERIALS**

- A. Portland cement: For mixes without fly ash, Type I-II or Type II conforming to ASTM C150 and ASTM C595.
  - 1. Upon written authorization of the Engineer, Type III cement may be used for mixes without fly ash.
  - 2. Tricalcium aluminate (C3A) content of the cement: Not less than 4% nor more than 10%.
- B. Portland cement: For mixes with fly ash, Type I or Type I-II conforming to ASTM C150.
  - 1. Fly ash: Meets the requirements of ASTM C618, Type F, with the added provisions that the loss on ignition shall not exceed 6 percent.
  - 2. Ensure fly ash is stored in a separate silo from that of cement.
  - 3. Split bins are not acceptable.
- C. Aggregate: Conform to ASTM C33.
  - 1. All coarse and fine aggregate shall consist of hard, tough, durable, particles free from foreign materials, and shall be stored in such a manner as to prevent segregation, excessive breakage, and the introduction of foreign material.
  - 2. Maximum size of coarse aggregate shall not be larger than three fourths of the minimum clear spacing between reinforcing steel bars and/or between bars and side forms and/or between bars and top or bottom surface of the concrete.
  - 3. Aggregate larger than 1-1/2 inch (38 mm) shall not be used without written permission from the Engineer.
- D. Water-reducing admixtures: Conform to the requirements of ASTM C494. Dosage rates in accordance with the manufacturer's recommendations.
- E. Air-entraining admixtures: Conform to ASTM C260. Dosage rates in accordance with the manufacturer's recommendations to meet the air content specified herein. The air-entraining admixture shall be added directly to the concrete materials either before or during mixing.

### **2.03 CONCRETE MIX DESIGN**

- A. Concrete for foundations may contain fly ash as a mineral admixture.
- B. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms, around reinforcement and embedded items, with the least possible segregation of the material and preventing excess free water to collect on the surface.
- C. Submit to the Engineer, for review and approval, details of proposed concrete mixes including certificates of Specification compliance as described in paragraph 1.04 of this section.
- D. Select mix proportions in accordance with ACI 318:

1. Submit test data representing 30 recent consecutive tests for each mix to establish the standard deviation.
  2. The criteria for acceptance of submitted tests shall be in accordance with ACI 318.
  3. Where 30 recent consecutive tests are not available, the standard deviation may be determined by records based on no less than 15 tests.
  4. Where no previous data are available, the mix or mixes shall exceed design strength as called for in ACI 318.
  5. When consecutive test data, representing compliance under these Specifications, has been established during this project, the overdesign may be relaxed in accordance with ACI 318 at the discretion of the Engineer.
  6. Deviation from any reviewed design mix without written authorization of the Engineer will not be permitted.
- E. With the exception of items itemized in paragraph F below, all concrete for cast-in-place concrete, shall develop a minimum compressive strength of 4,500 psi (31026.42 kPa) in 28-days and shall meet the following requirements:
1. Minimum Cementitious Material
    - a. Concrete without fly ash 611 lbs/cy
    - b. Concrete with fly ash 540 lbs/cy and fly ash 10% to 25% of cementitious material
  2. Maximum Water/Cement Ratio
    - a. 0.45\* (by weight, including free moisture on aggregate)  
\*If fly ash is used, the water/cement ratio shall be calculated as the weight of water divided by the weight of cement plus the weight of the fly ash.
  3. Air Content 5%  $\pm$  1-1/2%.
  4. Water-reducer admixture shall be Type A, D, F, or G. The amount shall be such to control the desired workability and water/cement ratio of the mix.
  5. Slump: 3 to 5 inches (127 mm) with Type A or D admixtures, 4 to 8 inches (203.2 mm) with Type F or G admixtures. The slump shall be chosen to enhance workability without violating the specified maximum water/cement ratio.
- F. Concrete for fence post foundations and concrete curbs shall develop a minimum compressive strength of 2,500 psi (17236.90 kPa) in 28-days.

## 2.04 CONCRETE FORMS

- A. Provide wood, plywood, steel, or fiber based concrete tubular forms.
1. Use plywood or steel forms where a smooth form finish is required.
  2. Lumber shall be square edged or tongue-and-groove boards, free of raised grain, knotholes, or other surface defects.
  3. Plywood: PS 1, B-B concrete form panels or better.
  4. Steel form surfaces shall not contain irregularities, dents, or sags.
- B. Form Ties and Form-Facing Material: Provide a form tie system that does not leave mild steel after break-off or removal any closer than 2 inches (50.8 mm) from the exposed surface.
1. Form ties and accessories shall not reduce the effective cover of the reinforcement.

2. Form-facing material shall be structural plywood or other material that can absorb air trapped in pockets between the form and the concrete and some of the high water-cementitious materials ratio surface paste. Maximum use is three times.
3. Provide forms with a form treatment to prevent bond of the concrete to the form.
4. As an alternate to using an absorptive wood form contact face as a form liner, use a Controlled Permeability Formliner in strict accordance with the manufacturer's recommendations.

## 2.05 REINFORCEMENT

- A. Refer to Section 03 20 00 – Concrete Reinforcement

## 2.06 MATERIALS FOR CURING CONCRETE

- A. Impervious Sheeting: ASTM C171; waterproof paper, clear or white polyethylene sheeting, or polyethylene-coated burlap.
- B. Pervious Sheeting: AASHTO M 182.
- C. Liquid Membrane-Forming Compound: ASTM C309, white-pigmented, Type 2, Class B.

## 2.07 OTHER MATERIALS

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

# **PART 3 - EXECUTION**

## 3.01 EXAMINATION

- A. Verify compacted base course is acceptable and ready for concrete.
- B. Verify gradients and elevations of base are correct.

## 3.02 PREPARATION

- A. Inspection:
  1. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
  2. Verify that all items to be embedded in concrete are in place, properly oriented, located, and secured.
  3. Verify that concrete may be placed to the lines and elevations indicated on the Drawings, with all required clearance for reinforcement.
- B. Cleaning:
  1. Thoroughly clean all areas in which concrete is to be placed to remove all wood debris, sawdust, tie wire cuttings, and all deleterious materials.
  2. Clean and roughen existing concrete or concrete from a previous pour to provide a bondable surface.
  3. Thoroughly wet concrete forms which have not been treated with oils, waxes, or other bond breakers prior to placing concrete.
  4. Clean all transporting and handling equipment of all hardened concrete.
- C. Notification:

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

### 3.03 TRANSPORTING AND PLACING CONCRETE

- A. Place concrete as soon as possible after mixing in conformance with ACI 304. Concrete shall be plastic and readily workable when placed in the forms. Partially set concrete shall not be retempered for use.
- B. Use a method and manner of placing concrete that avoids segregation of the aggregate, or displacement of reinforcement.
- C. Limit conveyor belts, when used, to approximately 300-feet in length to prevent segregation. Cover conveyor belts to protect the concrete from sun or rain.
- D. Do not use aluminum conduits or tremies for pumping or placing concrete.
- E. Place concrete in continuous horizontal layers not exceeding 18-inches, and compact so that there will be no lines of separation between layers.
- F. Take care to fill each part of the form by depositing concrete directly to or as near the final position as possible.
- G. When concrete must be dropped more than 4-feet into the forms, it shall be deposited through an approved conduit (tremie) or concrete pump.
- H. Use the tremie conduit to place concrete in sloping forms or in other locations, as directed, to prevent concrete segregation caused by sliding around reinforcing or other embedments.
- I. In general, conduct the method of depositing and compacting concrete so as to form a compact, dense, impervious concrete with the required surface finish without rock-pockets, and a minimum of segregation.
- J. Remove defective concrete at the Contractor's expense.
- K. Do not place concrete where other work in the area, such as driving piling or sheets, or other vibratory action will occur within the first three days after placement of the concrete. Do not place cast-in-place concrete within 100 feet (3048 cm) of pile driving activity.
- L. Do not use mechanical vibrators for transporting concrete.
- M. Do not add water to concrete on-site without approval of the Engineer.
- N. Establish a contained truck wash-out area for use by all trucks delivering concrete to the project. Washout area will be removed upon completion of work.

### 3.04 FORMING

- A. Forms: Formwork shall be provided for all cast-in-place concrete, unless otherwise approved by the Engineer. Forming shall be in accordance with ACI 301. Set forms mortar-tight and true to line and grade.
  1. Chamfer above grade exposed joints, edges, and external corners of concrete 3/4- inch unless otherwise indicated.
  2. Forms submerged in water shall be watertight.
  3. Provide formwork with clean-out openings to permit inspection and removal of debris.
  4. Gasket formwork or otherwise render sufficiently tight to prevent leakage of paste or grout under heavy, high-frequency vibration.
  5. Use a release agent that does not cause surface dusting.
  6. Limit reuse of plywood to no more than three times.

7. Patch form tie holes with a non-shrink patching material in accordance with the manufacturer's recommendations and subject to approval.
- B. Coating: Before concrete placement, coat the contact surfaces of forms with a non-staining mineral oil, non-staining form coating compound, or two coats of nitrocellulose lacquer. Do not use mineral oil on forms for surfaces to which adhesive, paint, or other finish material is to be applied.
- C. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- D. Removal of Forms and Supports: After placing concrete, forms shall remain in place for the time periods specified in ACI 347.
  1. Prevent concrete damage during form removal.
  2. Forms may be removed earlier than specified if ASTM C39 test results of field-cured samples from a representative portion of the structure or other approved and calibrated non-destructive testing techniques show that the concrete has reached a minimum of 80 percent of the design strength.

### 3.05 CONSTRUCTION JOINTS

- A. Joints and stoppages, except as specifically shown on the Drawings, shall generally conform to ACI 318.
- B. Locate joints so as not to significantly impair the strength of the structure and only as approved by the Engineer. Thoroughly clean all joints to remove all loose concrete and laitance. Roughen joint surface to a 1/4" amplitude. Unless otherwise noted, wet and coat all cleaned joints with neat cement bond grout immediately before placing fresh concrete.
- C. Submit all pre-fabricated construction jointing systems and products for review and approval by the Engineer prior to use.

### 3.06 COLD AND HOT WEATHER CONCRETING

- A. Do not place concrete when the atmospheric temperature drops below 40°F or rises above 90°F, unless special procedures are followed.
- B. Follow procedures for production, delivery, placing, curing, inspection, and testing of concrete under hot or cold weather conditions in accordance with the recommendations of ACI 305, "Hot Weather Concreting" or ACI 306, "Cold Weather Concreting".
- C. If concrete is placed during cold or hot weather conditions, submit documentation to the Engineer demonstrating how the procedures described in the above referenced ACI documents will be followed. The Contractor's documentation shall be received by the Engineer no later than 72 hours prior to concrete placement.
- D. The Engineer's review of this documentation does not relieve the Contractor's responsibility to provide concrete per the Contract Documents.

### 3.07 CONSOLIDATING CONCRETE

- A. Provide suitable internal vibrators for use in compacting all concrete.
- B. Use vibrators of the type designed to be placed directly in the concrete and their frequency of vibration is not less than 7000 impulses per minute when in actual operation.
- C. Vibration shall be such that the concrete becomes uniformly plastic.
- D. Insert vibrators to a depth sufficient to vibrate the bottom of each layer effectively, but not to a depth that penetrates partially hardened concrete.

- E. Do not apply vibrators directly to steel which extends into partially hardened concrete. The intervals between points of insertion shall not be less than 2-feet nor more than 3-feet.
- F. Do not continue vibration in any one spot to the extent that pools of grout are formed.
- G. In vibrating and finishing top surfaces which are exposed to weather or wear, use extreme care to avoid drawing water or laitance to the surface. In relatively high lifts, the top layer shall be comparatively shallow and the concrete mix shall be as stiff as can be effectively vibrated into place and properly finished.
- H. Do not use vibrators to transport or move concrete inside the form.
- I. Supply a sufficient number of vibrators to effectively vibrate all of the concrete placed. Hand tamping shall be required wherever necessary to secure a smooth and dense concrete on the outside surfaces.

### 3.08 CURING CONCRETE

- A. Refer to ACI 308 for recommended practices for curing concrete.
- B. Maintain concrete (other than high-early strength) above 50°F and in a moist condition for at least the first seven days after placement.
- C. Protect all concrete from mechanical injury and accelerated drying. No fire or excessive heat shall be permitted near the concrete at any time.
- D. Formed Surfaces: Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
  - 1. Normal concrete: Not less than 7 days.
- E. Surfaces Not in Contact with Forms:
  - 1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
  - 2. Begin final curing after initial curing but before surface is dry.
    - a. Moisture-retaining cover: ASTM C171. Seal in place with waterproof tape or adhesive.
    - b. Curing compound: ASTM C309. Apply in two coats at right angles, using application rate recommended by manufacturer.

### 3.09 FINISHING CONCRETE

- A. General:
  - 1. All permanently exposed surfaces, unless specifically noted otherwise, shall be free from local bulging and all unsightly ridges or lips shall be removed to leave a smooth, flat surface. Excessive rubbing will not be permitted.
  - 2. Patching mortar, if used, shall be of the same color as the surrounding concrete. Add white Portland cement to patching mortar for color matching purposes.
  - 3. Provide 3/4-inch chamfer on all exposed corners.
- B. Walls and Vertical Surfaces:
  - 1. Immediately after removal of form or absorptive form lining, inspect concrete surfaces for defects.
  - 2. Repair all defects, voids, defective concrete, and tie rod holes immediately after the forms are removed unless otherwise directed by the Engineer.



3. Form Finish: Provide smooth-form finish per ACI 301. Rub down or chip off fins or other raised areas 1/8 inch (3.18 mm) or more in height.
4. Remove (chip out) and patch all exposed tie wire.
5. The concrete used for repairing shall be of such quality that it can be thoroughly bonded to the adjacent concrete. Use an approved epoxy-type mortar for all repair work, applied per manufacturer's instructions and by experienced and qualified workmen.
6. Repair all defects no later than 48-hours after form removal.

C. Horizontal Surfaces:

1. Thoroughly roughen all horizontal surfaces that will carry additional concrete to an amplitude of 1/4-inch and clean of all laitance and unsatisfactory concrete.
2. Exterior concrete surfaces exposed to foot or vehicle traffic except as noted shall be given a broom finish per ACI 301 perpendicular to the direction of traffic.
3. Related unformed surfaces: Tops of walls and similar unformed surfaces occurring adjacent to formed surfaces shall be struck smooth after concrete is placed and shall be floated to a texture reasonably consistent with that of the adjacent formed surfaces. Final treatment of formed surfaces shall continue uniformly across the unformed surfaces.

D. Protection of Finish:

1. Take every precaution to protect finished surfaces from stains or abrasions.
2. Properly protect all surfaces or edges likely to be damaged during the construction period.

### 3.10 FIELD QUALITY CONTROL

- A. Testing of concrete material may be done by the Owner. Methods of sampling, testing, evaluation, and acceptance will conform to ACI 301. All fresh concrete samples intended for testing will be taken at the point of deposit into the formwork.
- B. Testing, as described above, will be at Engineer's discretion and in no way relieves the Contractor of any obligations.
- C. Tests will be performed at no cost to the Contractor, except as noted. The following services shall be performed, when necessary, at Contractor's cost:
  1. Additional testing and inspection required because of changes in materials, proportions, and procedures requested by the Contractor.
  2. Additional testing of materials or concrete occasioned by their failure by test or inspection to meet Specification requirements.
- D. If any delivered load of concrete is rejected, dispose of completely off-site.

### 3.11 TOLERANCES

- A. Maximum Variation of Surface Flatness: 1/4 inch (6.35 mm) in 10 feet (304.8 cm)
- B. Maximum Variation from True Position: 1/4 inch (6.35 mm).

### 3.12 PROTECTING CONCRETE

- A. Immediately after placement, protect concrete from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian traffic over concrete for 7 days minimum after finishing.

- C. Do not permit vehicular traffic over concrete until 80 percent design strength of concrete has been achieved.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. All metal fabrications are to be steel, unless noted otherwise on the Drawings.
- B. Furnish all materials, labor, and equipment for fabricating and/or repairing, galvanizing, and erecting metal fabrications, in accordance with the Drawings.

### **1.02 RELATED SECTIONS**

- A. Section 01 33 00 – Submittal Procedures
- B. Section 03 30 00 – Cast-In-Place Concrete
- C. Section 09 90 00 – Painting and Coating
- D. Section 32 31 13 – Chain Link Fences and Gates

### **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 Institute of Steel Construction (AISC)
  - 1. AISC 360-10 - Specifications for Structural Steel Buildings; American Institute for Steel Construction
  - 2. AISC 303-10 - Code of Standard Practice for Steel Buildings and Bridges; American Institute for Steel Construction
- D. American National Standards Institute (ANSI)
  - 1. ANSI Z49.1 - Safety in Welding, Cutting, and Allied Processes; American National Standards Institute
- E. American Society for Testing and Materials (ASTM)
  - 1. ASTM A36 - Standard Specification for Carbon Structural Steel; American Society for Testing and Materials
  - 2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; American Society for Testing and Materials (International)
  - 3. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished; American Society for Testing and Materials
  - 4. ASTM A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications; American Society for Testing and Materials
  - 5. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs; Standard Practice for; American Society for Testing and Materials
  - 6. ASTM A563 - Standard Specification for Carbons and Alloy Steel Nuts; American Society for Testing and Materials
  - 7. ASTM A572 - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; American Society for Testing and Materials

8. ASTM E164 - Standard Practice for Contact Ultrasonic Testing of Weldments; American Society for Testing and Materials
  9. ASTM E709 - Standard Guide for Magnetic Particle Testing; American Society for Testing and Materials
  10. ASTM F436 - Standard Specification for Hardened Steel Washers; Standard Practice for; American Society for Testing and Materials
  11. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; American Society for Testing and Materials
  12. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions
- F. American Welding Society (AWS)
1. AWS D1.1 - Structural Welding Code - Steel; American Welding Society
  2. AWS WZC - Welding Zinc-Coated Steel; American Welding Society
- G. Washington Association of Building Officials (WABO)
1. WABO Standard No. 27-13 - Welder and Welding Operator Performance Qualification Standard for Structural Steel, Sheet Steel, Reinforcing Steel, and Seismic Restricted Access; Washington Association of Buildings Officials

#### 1.04 SUBMITTALS

- A. Prior to commencement of work in this section, submit the following items to the Engineer, in accordance with Section 01 33 00, Submittal Procedures:
1. Welder qualifications and certifications.
  2. Welding Procedure Specifications and Procedure Qualification Records. For Welding Procedure Specifications that are not prequalified per AWS D1.1, submit the supporting Procedure Qualification Record with the Welding Procedure Specifications.
  3. Electrode manufacturer's certifications and data sheets: For the Contractor supplying welding filler metal and shielding gas products, submit copies of all Manufacturers' certifications for all electrodes, fluxes, and shielding gases to be used and that satisfy the applicable AWS A5 requirements. Submit the manufacturer's product data sheets for all welding material to be used. The data sheets shall describe the product, limitations of use, recommended welding parameters, and storage and exposure requirements, including baking and rebaking, if applicable.
  4. Certificates of Compliance: The certificate of compliance shall be a letter stating that the Contractor has reviewed the submitted manufacturer's certifications and test reports, and that the materials, including welding electrodes, being furnished for the project are in conformance with the applicable standards, specifications, and project documents.
  5. Mill certificates for each steel indicating specification compliance regarding strength and chemistry of steel provided.
- B. Submit complete shop drawings indicating all shop and installation details, including cuts, copes, connections, holes, fasteners, and welds.
- C. Do not start fabrication until the relevant shop drawings have been reviewed by the Engineer.

### 1.05 QUALITY ASSURANCE

- A. Conform to manufacturers' specifications, directions, and recommendations for best results in the use of each of their products for each condition. If results are at variance with these specifications, report the discrepancy to the Engineer for decision.
- B. Test the finished product for thickness, uniformity of the coating, and adhesion in accordance with the applicable ASTM standard.
- C. Qualification of Fabricator: The fabricator shall be experienced in the fabrication and working of metals, including cutting, bending, forming, and finishing.
- D. Welder Qualifications: All welders are required to be currently certified by AWS and WABO for structural welding. Use only welders qualified in accordance with AWS D1.1 and WABO Standard 27-13 for the processes and positions to be performed for structural steel.
- E. Testing and Inspection: NDT (non-destructive testing) and inspection of welds will be performed by the Owner in accordance with this section. Verification Inspection will include the following:
  - 1. The Owner will engage an independent testing agency to perform verification inspection and testing on all field and shop welding. Field and shop welding will be considered all welding not performed at the manufacturing plant.
  - 2. The independent testing agency will perform testing and inspection of 100 percent of all (field and shop) CP (complete penetration weld) welds and butt splice welds and 10 percent of all (field and shop) PJP (partial joint penetration) welds.
  - 3. The inspection procedures, techniques, and methods will be in accordance with AWS D1.1, Section 6.
  - 4. All (field and shop) butt splice welds will be 100 percent tested by the following methods:
    - a. Full-time visual inspection.
    - b. Ultrasonic Inspection: ASTM E164.
  - 5. All (field and shop) PJP welds will have a minimum of 10 percent of the total length tested by the following methods:
    - a. Full-time visual inspection.
    - b. Magnetic Particle Inspection: ASTM E709.
  - 6. All (field and shop) fillet welds will be visually inspected.
  - 7. All (field and shop) butt splice and PJP welds shall meet the acceptance criteria set forth in AWS D1.1, Section 6.
  - 8. The Owner will have the authority to determine compliance with the above acceptance criteria and order repairs or replacements of unacceptable welds at no additional cost to the Owner. All welds whether made at the manufacturing plant, or in the shop or field will be subject to the acceptance of the Owner.

### 1.06 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect materials before, during, and after fabrication and installation and protect the materials and installed work of other trades.
- B. Storage: Store in a manner to prevent fouling with dirt, grease, and other bond breaking coatings.
- C. Replacements: Repair or replace damaged work, if any, as necessary to the approval of the Engineer and at no additional cost to the Owner.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. Unless otherwise noted or specified, all products shall be new, free from oxidation or corrosion, and the "best" quality for the intended use.

### **2.02 STEEL SHAPES AND PLATES**

- A. Steel shapes and plates: ASTM A36, unless noted as ASTM A572 Grade 50.

### **2.03 PIPE**

- A. Pipes and sleeves: ASTM A53/A53M, Grade B.

### **2.04 BOLTS AND NUTS**

- A. Bolts and nuts: ASTM A307 and ASTM A563, except as specifically indicated on the Drawings.
- B. Anchor bolts: ASTM F1554, Grades 36, 55, and 105 as indicated on the Drawings.

### **2.05 WELDED HEADED STUDS**

- A. Welded headed studs for anchoring embedments in concrete: Provide to the diameter and length as shown on the plans. Weld to the embedment or to other studs as shown on the plans.
- B. Welded headed studs for carbon steel embedments: ASTM A108, Grades C-1010 through C-1020, and welded to the embedment prior to galvanizing. Welded headed studs for stainless steel embedments shall conform to ASTM A193.
- C. Welding, inspection, and testing of welded headed studs to metal fabrications in accordance with the ANSI/AWS D1.1 Section 7.

### **2.06 COATINGS AND FINISHES**

- A. Refer to Section 09 90 00, Painting and Coating.

### **2.07 OTHER MATERIALS**

- A. All other materials not specifically described but required for a complete and proper installation, shall be new, free from rust, best quality of their respective kinds, and subject to the approval of the Engineer.

## **PART 3 EXECUTION**

### **3.01 PREPARATORY EXAMINATION**

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

### **3.02 PREPARATION**

- A. Fabrication and joint preparation: In accordance with AWS D1.1, Section 5.
- B. Hold back or remove all galvanizing a sufficient distance from the joint to prevent inclusion of the material into the weld. Remove galvanizing from the joint in accordance with AWS WZC.
- C. Protection
  - 1. Work shall comply with all municipal, state, and federal regulations regarding safety, including all applicable portions of OSHA and State safety standards for construction work.
  - 2. Conform to ANSI Z49.1, "Safety in Welding, Cutting, and Allied Processes," published by the AWS.

3. Follow "Safe Practices" recommended in Annex J of AWS D1.1

3.03 FABRICATION

- A. Fabricate all metal fabrications in accordance with the approved Shop Drawings and reference standards.
- B. Insofar as practicable, shop prefabricate all items complete and ready for installation.
- C. Unless otherwise indicated on the Drawings, weld all shop connections. All joints shall be tightly fitting, securely fastened, square, plumb, straight, and true.
- D. Drill or punch all holes required for the attachment of work of other trades and for bolted connections. Burned holes are not acceptable.

3.04 WELDING PROCEDURES

- A. Perform all work in accordance with procedures written and qualified in accordance with AWS D1.1 requirements.
- B. Use a prequalified welding process in accordance with AWS D1.1, whenever possible.
- C. Use prequalified partial and complete joint penetration details in accordance with AWS D1.1, wherever possible.
- D. Qualify non-prequalified welds in accordance with AWS. Prepare Procedure Qualification Records and Welding Procedure Specifications and complete all welding in conformance with the Welding Procedure Specifications.
- E. Qualify Welding Procedure Specifications in accordance with AWS D1.1, Section 4.
- F. Use a maximum preheat and maximum interpass temperature of 550 degrees F, measured at a distance of 1 inch from the point of arc initiation. This maximum temperature may not be increased by the WPS, regardless of qualification testing.

3.05 FIELD QUALITY CONTROL

- A. Field and shop welding shall meet the requirements of AWS D1.1, Section 5.
- B. Verification Inspection will be performed by the Owner.
- C. The Contractor shall provide access to the Engineer at all times while the work is being performed.

3.06 SCHEDULING

- A. Coordinate the work with the Owner's Welding Inspector. Provide the Owner with a proposed work schedule and coordinate the work to meet the contract delivery schedule.

3.07 CLEANING

- A. Clean in accordance with AWS D1.1 requirements.

3.08 REPAIR

- A. Make weld repairs or replacements at no additional cost to the Owner.
- B. Perform weld repairs or replacements on PJP welds in accordance with AWS D1.1, Section 6.
- C. Repair all galvanizing removed or damaged during welding in accordance with Section 09 90 00, Painting and Coating, and as directed by the Engineer, or replace damaged items at no additional cost to Owner.

### 3.09 INSTALLATION

- A. Erect and install all metal fabrications in strict accordance with the design drawings, shop drawings, and AISC reference standards. Coordinate installation of fabricated items with Sections 03 30 00 - Cast-In-Place Concrete and 32 31 13 - Chain Link Fences and Gates.
- B. Repair or replace damaged or defective factory-applied finishes as directed by the Engineer.

**END OF SECTION**



## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. All metal fabrications are to be steel, unless noted otherwise on the Drawings.
- B. Furnish all materials, labor, and equipment for fabricating and/or repairing, galvanizing, and erecting metal fabrications, in accordance with the Drawings.

### **1.02 RELATED SECTIONS**

- A. Section 03 30 00 – Cast-In-Place Concrete
- B. Section 09 90 00 – Painting and Coating
- C. Section 32 31 13 – Chain Link Fences and Gates

### **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.
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  - 1. AISC 360-10 - Specifications for Structural Steel Buildings; American Institute for Steel Construction
  - 2. AISC 303-10 - Code of Standard Practice for Steel Buildings and Bridges; American Institute for Steel Construction
- D. American National Standards Institute (ANSI)
  - 1. ANSI Z49.1 - Safety in Welding, Cutting, and Allied Processes; American National Standards Institute
- E. American Society for Testing and Materials (ASTM)
  - 1. ASTM A36 - Standard Specification for Carbon Structural Steel; American Society for Testing and Materials
  - 2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; American Society for Testing and Materials (International)
  - 3. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished; American Society for Testing and Materials
  - 4. ASTM A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications; American Society for Testing and Materials
  - 5. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs; Standard Practice for; American Society for Testing and Materials
  - 6. ASTM A563 - Standard Specification for Carbons and Alloy Steel Nuts; American Society for Testing and Materials
  - 7. ASTM A572 - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; American Society for Testing and Materials
  - 8. ASTM E164 - Standard Practice for Contact Ultrasonic Testing of Weldments; American Society for Testing and Materials

9. ASTM E709 - Standard Guide for Magnetic Particle Testing; American Society for Testing and Materials
  10. ASTM F436 - Standard Specification for Hardened Steel Washers; Standard Practice for; American Society for Testing and Materials
  11. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; American Society for Testing and Materials
  12. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi 120464 psi (830 MPa) and 150 ksi (150943 psi (1040 MPa)) Minimum Tensile Strength, Inch and Metric Dimensions
- F. American Welding Society (AWS)
1. AWS D1.1 - Structural Welding Code - Steel; American Welding Society
  2. AWS WZC - Welding Zinc-Coated Steel; American Welding Society
- G. Washington Association of Building Officials (WABO)
1. WABO Standard No. 27-13 - Welder and Welding Operator Performance Qualification Standard for Structural Steel, Sheet Steel, Reinforcing Steel, and Seismic Restricted Access; Washington Association of Buildings Officials

#### 1.04 SUBMITTALS

- A. Welder qualifications and certifications.
- B. Welding Procedure Specifications and Procedure Qualification Records. For Welding Procedure Specifications that are not prequalified per AWS D1.1, submit the supporting Procedure Qualification Record with the Welding Procedure Specifications.
- C. Electrode manufacturer's certifications and data sheets: For the Contractor supplying welding filler metal and shielding gas products, submit copies of all Manufacturers' certifications for all electrodes, fluxes, and shielding gases to be used and that satisfy the applicable AWS A5 requirements. Submit the manufacturer's product data sheets for all welding material to be used. The data sheets shall describe the product, limitations of use, recommended welding parameters, and storage and exposure requirements, including baking and rebaking, if applicable.
- D. Certificates of Compliance: The certificate of compliance shall be a letter stating that the Contractor has reviewed the submitted manufacturer's certifications and test reports, and that the materials, including welding electrodes, being furnished for the project are in conformance with the applicable standards, specifications, and project documents.
- E. Mill certificates for each steel indicating specification compliance regarding strength and chemistry of steel provided.
- F. Submit complete shop drawings indicating all shop and installation details, including cuts, copes, connections, holes, fasteners, and welds.
1. Do not start fabrication until the relevant shop drawings have been reviewed by the Engineer.

#### 1.05 QUALITY ASSURANCE

- A. Conform to manufacturers' specifications, directions, and recommendations for best results in the use of each of their products for each condition. If results are at variance with these specifications, report the discrepancy to the Engineer for decision.

- B. Test the finished product for thickness, uniformity of the coating, and adhesion in accordance with the applicable ASTM standard.
- C. Qualification of Fabricator: The fabricator shall be experienced in the fabrication and working of metals, including cutting, bending, forming, and finishing.
- D. Welder Qualifications: All welders are required to be currently certified by AWS and WABO for structural welding. Use only welders qualified in accordance with AWS D1.1 and WABO Standard 27-13 for the processes and positions to be performed for structural steel.
- E. Testing and Inspection: NDT (non-destructive testing) and inspection of welds will be performed by the Owner in accordance with this section. Verification Inspection will include the following:
  - 1. The Owner will engage an independent testing agency to perform verification inspection and testing on all field and shop welding. Field and shop welding will be considered all welding not performed at the manufacturing plant.
  - 2. The independent testing agency will perform testing and inspection of 100 percent of all (field and shop) CP (complete penetration weld) welds and butt splice welds and 10 percent of all (field and shop) PJP (partial joint penetration) welds.
  - 3. The inspection procedures, techniques, and methods will be in accordance with AWS D1.1, Section 6.
  - 4. All (field and shop) butt splice welds will be 100 percent tested by the following methods:
    - a. Full-time visual inspection.
    - b. Ultrasonic Inspection: ASTM E164.
  - 5. All (field and shop) PJP welds will have a minimum of 10 percent of the total length tested by the following methods:
    - a. Full-time visual inspection.
    - b. Magnetic Particle Inspection: ASTM E709.
  - 6. All (field and shop) fillet welds will be visually inspected.
  - 7. All (field and shop) butt splice and PJP welds shall meet the acceptance criteria set forth in AWS D1.1, Section 6.
  - 8. The Owner will have the authority to determine compliance with the above acceptance criteria and order repairs or replacements of unacceptable welds at no additional cost to the Owner. All welds whether made at the manufacturing plant, or in the shop or field will be subject to the acceptance of the Owner.

#### 1.06 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect materials before, during, and after fabrication and installation and protect the materials and installed work of other trades.
- B. Storage: Store in a manner to prevent fouling with dirt, grease, and other bond breaking coatings.
- C. Replacements: Repair or replace damaged work, if any, as necessary to the approval of the Engineer and at no additional cost to the Owner.

### PART 2 - PRODUCTS

#### 2.01 GENERAL

- A. Unless otherwise noted or specified, all products shall be new, free from oxidation or corrosion, and the "best" quality for the intended use.

## 2.02 STEEL SHAPES AND PLATES

- A. Steel shapes and plates: ASTM A36, unless noted as ASTM A572 Grade 50.

## 2.03 PIPE

- A. Pipes and sleeves: ASTM A53/A53M, Grade B.

## 2.04 BOLTS AND NUTS

- A. Bolts and nuts: ASTM A307 and ASTM A563, except as specifically indicated on the Drawings.
- B. Anchor bolts: ASTM F1554, Grades 36, 55, and 105 as indicated on the Drawings.

## 2.05 WELDED HEADED STUDS

- A. Welded headed studs for anchoring embedments in concrete: Provide to the diameter and length as shown on the plans. Weld to the embedment or to other studs as shown on the plans.
- B. Welded headed studs for carbon steel embedments: ASTM A108, Grades C-1010 through C-1020, and welded to the embedment prior to galvanizing. Welded headed studs for stainless steel embedments shall conform to ASTM A193.
- C. Welding, inspection, and testing of welded headed studs to metal fabrications in accordance with the ANSI/AWS D1.1 Section 7.

## 2.06 COATINGS AND FINISHES

- A. Refer to Section 09 90 00, Painting and Coating.

## 2.07 OTHER MATERIALS

- A. All other materials not specifically described but required for a complete and proper installation, shall be new, free from rust, best quality of their respective kinds, and subject to the approval of the Engineer.

# PART 3 - EXECUTION

## 3.01 PREPARATORY EXAMINATION

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

## 3.02 PREPARATION

- A. Fabrication and joint preparation: In accordance with AWS D1.1, Section 5.
- B. Hold back or remove all galvanizing a sufficient distance from the joint to prevent inclusion of the material into the weld. Remove galvanizing from the joint in accordance with AWS WZC.
- C. Protection
  - 1. Work shall comply with all municipal, state, and federal regulations regarding safety, including all applicable portions of OSHA and State safety standards for construction work.
  - 2. Conform to ANSI Z49.1, "Safety in Welding, Cutting, and Allied Processes," published by the AWS.
  - 3. Follow "Safe Practices" recommended in Annex J of AWS D1.1

## 3.03 FABRICATION

- A. Fabricate all metal fabrications in accordance with the approved Shop Drawings and reference standards.

- B. Insofar as practicable, shop prefabricate all items complete and ready for installation.
- C. Unless otherwise indicated on the Drawings, weld all shop connections. All joints shall be tightly fitting, securely fastened, square, plumb, straight, and true.
- D. Drill or punch all holes required for the attachment of work of other trades and for bolted connections. Burned holes are not acceptable.

#### 3.04 WELDING PROCEDURES

- A. Perform all work in accordance with procedures written and qualified in accordance with AWS D1.1 requirements.
- B. Use a prequalified welding process in accordance with AWS D1.1, whenever possible.
- C. Use prequalified partial and complete joint penetration details in accordance with AWS D1.1, wherever possible.
- D. Qualify non-prequalified welds in accordance with AWS. Prepare Procedure Qualification Records and Welding Procedure Specifications and complete all welding in conformance with the Welding Procedure Specifications.
- E. Qualify Welding Procedure Specifications in accordance with AWS D1.1, Section 4.
- F. Use a maximum preheat and maximum interpass temperature of 550 degrees Fahrenheit (287.78 degrees Celsius), measured at a distance of 1 inch (25.4 mm) from the point of arc initiation. This maximum temperature may not be increased by the WPS, regardless of qualification testing.

#### 3.05 FIELD QUALITY CONTROL

- A. Field and shop welding shall meet the requirements of AWS D1.1, Section 5.
- B. Verification Inspection will be performed by the Owner.
- C. The Contractor shall provide access to the Engineer at all times while the work is being performed.

#### 3.06 SCHEDULING

- A. Coordinate the work with the Owner's Welding Inspector. Provide the Owner with a proposed work schedule and coordinate the work to meet the contract delivery schedule.

#### 3.07 CLEANING

- A. Clean in accordance with AWS D1.1 requirements.

#### 3.08 REPAIR

- A. Make weld repairs or replacements at no additional cost to the Owner.
- B. Perform weld repairs or replacements on PJP welds in accordance with AWS D1.1, Section 6.
- C. Repair all galvanizing removed or damaged during welding in accordance with Section 09 90 00, Painting and Coating, and as directed by the Engineer, or replace damaged items at no additional cost to Owner.

#### 3.09 INSTALLATION

- A. Erect and install all metal fabrications in strict accordance with the design drawings, shop drawings, and AISC reference standards. Coordinate installation of fabricated items with Sections 03 30 00 - Cast-In-Place Concrete and 32 31 13 - Chain Link Fences and Gates.
- B. Repair or replace damaged or defective factory-applied finishes as directed by the Engineer.

#### **END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. Provide coatings as specified with all handling, pre-finishing, cleaning, inspection, and other processes or materials required.
- B. Provide coatings for exterior surfaces of traffic barriers, fence posts and accessories, miscellaneous fabricated steel items and concrete features identified on the Drawings. The fence-mounted traffic barriers do not need to be painted.

### **1.02 RELATED SECTION**

- A. Section 05 50 00 – Metal Fabrications
- B. Section 32 31 13 – Chain Link Fences and Gates

### **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 Society for Testing and Materials (ASTM)
  - 1. ASTM A123 - Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products
  - 2. ASTM A143 - Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedures for Detecting Embrittlement
  - 3. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
  - 4. ASTM A384 - Standard Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies
  - 5. ASTM A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
  - 6. ASTM D7091 - Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
  - 7. ASTM E376 - Measuring Coating Thickness by Magnetic-Field or Eddy-Current (Electromagnetic) Test Methods
  - 8. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-coated Steel Chain Link Fence Fabric
- D. The Society for Protective Coatings (SSPC)
  - 1. SSPC-PA 1 – Shop, Field, and Maintenance Painting of Steel
- E. NACE International
  - 1. SP0188 - Discontinuity (Holiday) Testing of new Protective Coatings on Conductive Substrates

### **1.04 SUBMITTALS**

- A. Galvanizing:

1. Sample of galvanizing repair rod to be used.
2. Rod manufacturer's product data sheets.

B. Coating:

1. Coating manufacturer's technical data sheets for each paint type.
2. Coating manufacturer's Material Safety Data Sheets (MSDS) Sheet for each paint type.
3. Coating manufacturer's application instructions, including detailed mixing instruction, minimum and maximum application temperature and humidity, potlife, and curing and drying times between coats.
4. Operation and maintenance data, including preprinted cleaning and maintenance instructions for all coating systems used.
5. Qualifications for Testing Agency for Holiday Testing.
6. Submit the following within one week of testing:
  - a. Holiday Testing results.

1.05 QUALITY ASSURANCE

- A. The Contractor shall be required to test the finished product for thickness, uniformity of the coating, and adhesion in accordance with the applicable ASTM standard.
- B. Conform to manufacturers' specifications, directions, and recommendations for best results in the use of each of their products for each condition. If results are at variance with these specifications, report the discrepancy to the Engineer for decision.

1.06 PRODUCT HANDLING

- A. Replacements: Repair or replace damaged work, if any, as necessary to the approval of the Engineer and at no additional cost to the Owner.
- B. Paints: Delivered to site in sealed containers that legibly show the contract number, designation name, formula or specification number, batch number, color, quantity, date of manufacture, manufacturer's formulation number, manufacturer's directions including any warnings and special precautions, and name and address of manufacturer.
- C. Paint color: as indicated on the Drawings or as selected by the Engineer.

1.07 ABBREVIATIONS AND DEFINITIONS

- A. DFT: Dry film thickness, the film thickness of the fully cured, dry paint.
- B. mil: the English measurement for 0.001 inch or one/one-thousandth of an inch.
- C. MPI: Master Painters Institute.

**PART 2 - PRODUCTS**

2.01 GALVANIZING

- A. Hot-dip galvanize all miscellaneous carbon steel elements noted to be galvanized on the drawings in conformance with ASTM A123, A143, and A384. Galvanize all fasteners, in conformance with ASTM A153.
- B. Repair all galvanizing removed or damaged during construction in accordance with ASTM A780 Annex A1.

2.02 PAINT

- A. Paint steel and concrete items indicated on the drawings.



- B. Surfaces shall be prepared in accordance with manufacturer recommendations.
- C. Concrete Painted Surfaces:
  - 1. Paint in accordance with MPI 40
  - 2. Color: Safety yellow
- D. Metal Painted Surfaces:
  - 1. Painted surfaces shall receive a minimum of one primer coat and one top coat to achieve the minimum specified total system DFT.
  - 2. Primer coat and top coat shall be supplied from one manufacturer and shall comply with the following:
    - a. Primer Coat shall be in accordance with MPI 20
    - b. Top Coat shall be in accordance with MPI 108
    - c. Total System DFT: 4.5 mils (0.1143 mm), minimum
    - d. Color: Safety yellow or gray where specified on the Drawings

### 2.03 PVC COATINGS FOR FENCES

- A. Galvanized fence components indicated in Section 32 31 13 – Chain Link Fences and Gates shall be coated as follows:
  - 1. PVC Coating: Coat in accordance with ASTM F668, color black.

## **PART 3 - EXECUTION**

### 3.01 FABRICATION

- A. Any drain or vent holes required to produce a high quality galvanized coating with minimal warpage and distortion not indicated on the contract plans shall be identified by the coating manufacturer or galvanizer, clearly shown on the shop drawings, and shall be subject to approval by the Engineer. Fabrication shall be in accordance with ASTM A384.

### 3.02 REPAIR OF GALVANIZED COATING

- A. Repair all galvanized surfaces removed or damaged during welding, shipping, or erection in accordance with ASTM A780, Annex A.1. The zinc-based solder repair rod shall be "Zaclon Repair Alloy" or approved equal. The minimum thickness of the coating shall be 4 mils (0.1016 mm).
- B. Galvanized coating damaged or removed during welding on items that will have the galvanizing embedded in concrete shall be repaired by the application of a cold galvanizing compound in accordance with ASTM A780, Annex A.2. The cold galvanizing compound shall be "ZRC Cold Galvanizing Compound" or approved equal. The final thickness of the coating shall be 3 mils (0.0762 mm).

### 3.03 PROTECTION OF AREAS NOT TO BE PAINTED

- A. Prior to surface preparation and painting, remove, mask, or otherwise protect hardware, hardware accessories, machined surfaces, plates, lighting fixtures, public and private property, and other such items not to be painted.
- B. Following completion of the painting, reinstall removed items, restore surfaces contaminated by paint to original condition, and repair damaged items.

### 3.04 PAINTING

- A. Remove surface contamination and oils and wash with solvent.

- B. Concrete Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry. Do not paint anchor bolt threads.
- C. Apply paint in accordance with SSPC-PA 1.
- D. Unless otherwise specified or recommended by the paint manufacturer, paint may be applied by brush, roller, or spray.
  - 1. Rollers for applying paints shall be of a type designed for the paint to be applied and the surface to be coated.
  - 2. Wear protective clothing and respirators when using spray equipment with any paints.
- E. Apply paints only to surfaces that are completely free of moisture as determined by sight or touch.
- F. Thoroughly work coating materials into joints, crevices, and open spaces. Give special attention to ensure that all edges, corners, crevices, welds, and rivets receive a film thickness equal to that of adjacent painted surfaces.
- G. Apply each coat of paint so dry film is of uniform thickness and free from runs, drops, ridges, waves, pinholes or other voids, laps, brush marks, and variations in color, texture, and finish.
- H. Touch up damaged coatings before applying subsequent coats.
- I. Repair damaged coating according to paint system manufacturer's instructions.

### 3.05 FIELD TESTS

- A. Contractor shall be responsible for all testing.
- B. Holiday Testing: Test for holidays in total coating system in accordance with NACE SP0188. Use a low-voltage holiday detector of less than 90 volts in accordance with manufacturer's instructions. After repair of holidays by surface treatment and application of additional coating or by manufacturer's recommendation, retest with a low-voltage holiday detector.
- C. Dry Film Thickness: After repair of holidays, measure dry film thickness using a magnetic dry film thickness gage in accordance with ASTM D7091 and ASTM E376. Re-measure after an additional coat is applied to meet minimum thickness requirements.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The work under this section consists of furnishing labor, materials, appliances, tools, equipment and incidentals and doing all work required for furnishing and installing the prefabricated attendant booth and the Quonset hut buildings as specified herein.

### **1.02 REFERENCES**

- A. American Institute for Steel Construction (AISC)  
AISC 360 - Specification for Structural Steel for Buildings.
- B. American Society of Civil Engineers (ASCE)  
ASCE 7 - Minimum Design Loads for Buildings and Other Structures
- C. American Society for Testing and Materials (ASTM)  
ASTM A36 - Structural Steel  
ASTM A123 - Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products  
ASTM A153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware  
ASTM A513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing  
ASTM A653/A - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process  
ASTM A1008/A - Standard Specification for Steel Bars, Carbon and Alloy, Cold- Finished  
ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate  
ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes  
ASTM B632/B632M - Standard Specification for Aluminum- Alloy Rolled Tread Plate  
ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation  
ASTM C1048 - Standard Specification for Heat-Treated Flat Glass - Kind Hs, Kind Ft Coated and Uncoated Glass  
ASTM A446 - Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Structural (Physical) Quality  
ASTM A500 - Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- D. American Welding Society (AWS)  
AWS A2.0 - Standard Welding Symbols.  
AWS D1.1 - Structural Welding Code Steel.
- E. MBMA (Metal Building Manufacturers Association) - Metal Building Systems Manual.
- F. National Fire Protection Association (NFPA): NFPA 70 - National Electric Code.
- G. SDI-100 - Standard Steel Doors and Frames.

### **1.03 DESIGN REQUIREMENTS**

- A. General:

1. It is the responsibility of the Contractor to provide all information to the City of Tacoma necessary to obtain building permit and certificate of occupancy.
  2. Design Criteria: Provide factory built, prefabricated structure capable of withstanding the effects of gravity loads and the design loads and stresses within limits and under conditions indicated below.
  3. For structural steel members, comply with AISC 360 "Specification for Structural Steel Buildings".
  4. For welded connections, comply with AWS Structural Welding Code D1.1.
- B. Design Loads:
1. Design to local governing Building Code criteria for risk category II and loads shown on the drawings. Seismic design not required.
- C. Design each member to withstand stresses resulting from combinations of loads that produce maximum percentage of actual to allowable stress in that member, as prescribed in MBMA "Metal Building Systems Manual".
- D. Fabrication Criteria: Provide prefabricated metal buildings as produced by a manufacturer who is regularly engaged in fabrication and erection of pre-engineered metal structures of type and quality indicated.
- E. Roof of pre-fabricated buildings must support a human load for access and maintenance of roof top equipment. Excludes Quonset Hut structure.
- F. Clearly and legibly mark each piece and part of assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
- G. Supports for mechanical, electrical, and equipment items.
1. Provide engineering, design, materials, and labor for the installation of structural members required to support mechanical, electrical, and equipment items.
- H. Energy Code: Provide factory built, prefabricated structures that meet energy code requirements for the state the structure will reside in.
- I. Thermal Movements: Provide factory built, prefabricated structures and shelters that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 degrees Fahrenheit (48.89 degrees Celsius), ambient; 180 degrees Fahrenheit (82.22 degrees Celsius), material surfaces.
- J. Electrical Devices: Devices UL listed with wiring bearing UL classification and conforming to the current NEC.

#### 1.04 SUBMITTALS

- A. Product Data:
1. Submit manufacturer's product information and specifications for building components and accessories.
- B. Shop Drawings:

1. Submit complete erection drawings showing anchor bolts settings, sidewall, endwall, and roof framing, transverse cross-sections, flashing details, covering and trim details, equipment supports, and accessory installation details to clearly indicate proper assembly of building components. Furnish stamp by a registered Professional Engineer, licensed in the State of Washington.
- C. Furnish calculations, stamped by a Registered Professional Engineer, licensed in the State of Washington, showing that the building design meets the requirements of the specifications and is in accordance with accepted engineering practices and as per local governing building code.
- D. Samples:
  1. Submit samples of the following: Port's review will be for color and texture only. Compliance with other requirements is the responsibility of the Contractor.
    - a. 12 inch (304.8 mm). long by actual width of roofing and siding panels with required finishes.
    - b. Fasteners for application of roofing and siding panels.
    - c. Sealants and closures.
  2. Submit color samples for selection by Port. Allow one (1) color.

#### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing prefabricated structures and shelters with a minimum documented experience of twenty years. The metal building systems manufacturer shall be accredited under the International Accreditation Service, Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems (AC472).
- B. Prefabricated Components: Comply with manufacturer's published literature for products meeting indicated design loads in accordance with state and local requirements as applicable.
- C. Design structural components and develop shop drawings under direct supervision of a Professional Engineer experienced in design of this work and licensed in the State of Washington.

#### 1.06 REGULATORY REQUIREMENTS

- A. Conform to local building codes and criteria for submission of design calculations, reviewed shop and erection drawings, as required for acquiring permits.
- B. Cooperate with regulatory agency or authority and provide data as requested.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store prefabricated components, sheets, panels and other manufactured items so they will not be damaged or deformed. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal sheets or panels so that water accumulations will drain freely. Do not store sheets or panels in contact with other materials that might cause staining.

#### 1.08 WARRANTY

- A. Manufacturer's Warranties:
  1. Provide manufacturer's 1-year limited warranty on products of its manufacture to be free of leaks and defects in materials and workmanship from date of shipment.
  2. Provide the manufacturer's 5-year limited warranty on anodized aluminum surfaces against oxidation.

3. Provide the manufacturer's 20-year limited warranty against peeling, flaking and chipping of prefinished deck and fascia when properly maintained.
- B. Provide manufacturer's warranties on all accessory items provided such as, but not limited to, air conditioning, lights, and heating units.

#### 1.09 COLORS

- A. Owner will select color from manufacturer's standard colors.

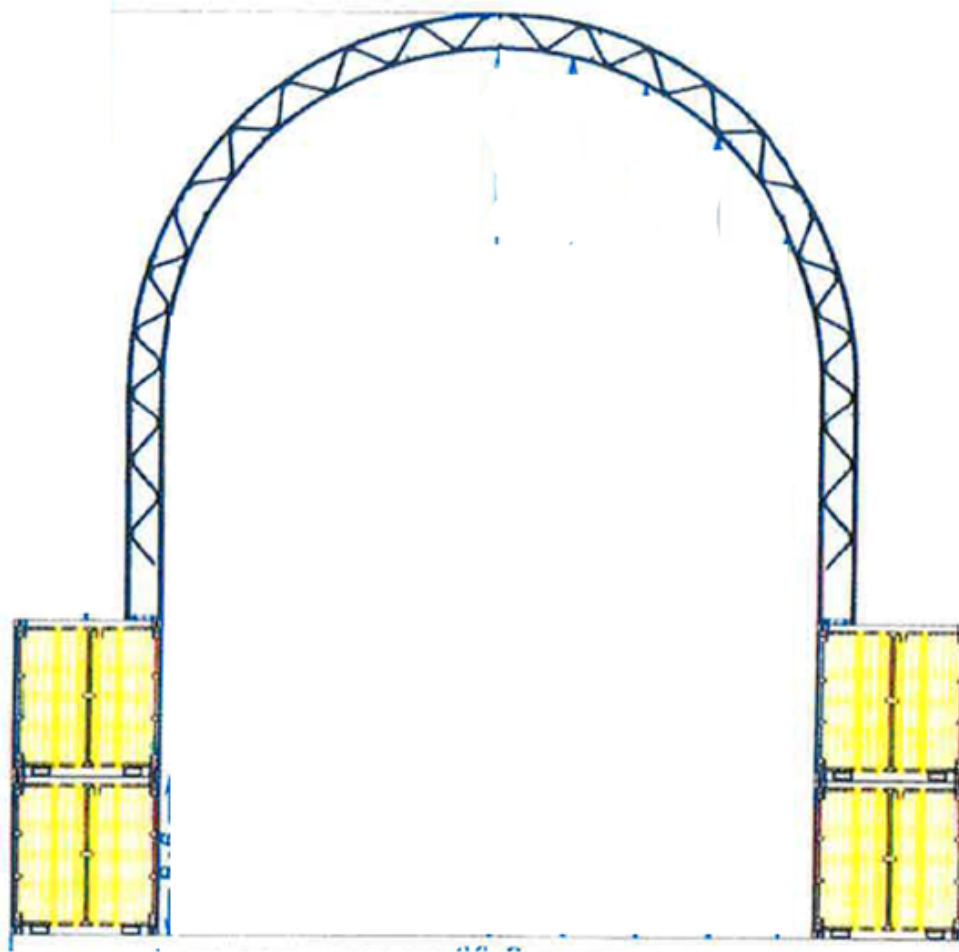
### **PART 2 - PRODUCTS**

#### 2.01 MANUFACTURERS BUILDING SYSTEM

- A. Acceptable manufacturers offering equivalent systems:
  1. B.I.G. Enterprises, Inc.
  2. Austin Mohawk and Company, Inc.
  3. Shelters Direct.
  4. Panel Built Incorporated.
  5. National Partitions.
  6. Or approved equal.

#### 2.02 QUONSET HUT

- A. Quonset Hut shall be manufactured by BigTop or approved equal. Contractor shall provide and install nominal 41' x 48' x 48' (L x W x H) Quonset hut and empty containers to support the hut. The containers shall be two high and along the entire length of the hut.
- B. Quonset hut: 48' nominal height to inside top structure\
- C. Hut to be mounted to rows of containers stacked 2 high and along the entire length of the Quonset hut supports.
- D. Hut shall be secured to the containers as specified by the manufacturer.



## 2.01 MATERIALS

- A. Cold-rolled Steel Sheet: ASTM A 1008/A, Commercial Steel (CS), type B.
- B. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A, commercial quality, G60 (Z180)
- C. Steel Mechanical Tubing: ASTM A 513. Welded steel mechanical tubing
- D. Expanded Polystyrene (EPS) Cores: Minimum of .95 pcf complying with ASTM C578 Type 1.
- E. Clear Tempered Float Glass: ASTM C1048, Kind FT, Condition A, type 1, Class 1, Quality q3.
- F. Anchorages: Anchor bolts or adhesive anchors per structural notes, in Concrete float.

## 2.02 PREFABRICATED STEEL BUILDINGS

- A. Prefabricated Steel Buildings:
- B. Guard Shelter 20' x 8'
- C. Building Height: Nominal outside height 100 inches (2540 mm). Interior floor to ceiling height 90 inches (2286 mm).
- D. Prefabricated with 2" x 2" x .083" A500 mechanical tube, welded framing system. Exterior smooth and flat with no exposed fasteners on building exterior.
  - 1. Building design as shown on drawings.
- E. Doors: Slide door as indicated on drawings.

- F. Windows: As indicated on drawings
  - 1. Glazing:  $\frac{3}{4}$  inch 0.75 inch (19 mm) thick, insulated, low E., clear tempered safety glass.
- G. Roof Type: Flat Deck Roof
- H. Roof Overhang: 4" overhang with 4" fascia.
- I. Frame Construction: Framing shall be minimum 2" x 2" x .083" A500 mechanical tube. All joints shall be MIG welded:
  - 1. Finishes: Exterior shall have a manufacturer's epoxy primer with a urethane finish.
  - 2. Finish Color: Color as selected from manufacturers standard colors.
- J. Wall Panel: Exterior face of manufacturers standard 16-gauge galvanized steel, an E.P.S. insulation core and a 16 gauge galvanized steel interior face. Panels shall be MIG welded into place.
  - 1. Finishes: Interior and exterior panel faces shall have a manufacturer's epoxy primer with a urethane finish.
  - 2. Finish Color: Color as selected from manufacturers standard colors.
- K. Roof/Ceiling Assembly:
  - 1. Shall be constructed using 16 ga Galvanized steel Roof Panels R- 19 insulation, drip angles and drain scuppers. Roof to be fully weather sealed with a three-step elastomeric membrane as follows:
    - a. All seams are sealed with a gun applied one-part polyurethane sealant.
    - b. The entire roof deck is then coated with a liquid applied one- part polyurethane coating forming a tough waterproof, weather-resistant elastomeric coating.
    - c. The entire deck surface finished with a white heat reflective polyurethane coating. The coating meets Energy Star reflectance and emissivity performance requirements and is approved by the Cool Roof Rating Council (CRRC).
  - 2. Interior ceiling shall be 16-gauge. Galvanized Steel panel system providing smooth flat interior.

## 2.03 BUILDING ACCESSORIES

- A. Sliding Doors: 1-3/4 inches (44 mm) thick, tubular-frame design.
  - 1. Commercial Grade Steel Sliding Door: steel single lever handle lockset with keyed entry and interior thumb latch, and weather stripping.
- B. Windows:
  - 1. Window Type: Sliding Windows; clear tempered safety glass glazed within wall system extrusions and not fastened to the exterior wall. Glass sealed with concealed gasket system (standard).
    - a. End wall window panels.
  - 2. Window Type: Horizontal Sliding Windows shall have a steel frame with clear tempered safety glass glazed. Windows to be equipped with locking device (standard), sill and weather stripping.
  - 3. Glazing: Dual pane 1/4 inch (6.35 mm) thick, insulated, clear tempered safety glass.
- C. Electrical Power Service: Provide in accordance with NEC Standards.



1. See electrical drawings and specifications.
- D. Indoor Lighting Fixtures:
  1. See electrical drawings and specifications.
- E. Wall Heater/AC Unit
  1. Fan forced in-wall electrical heater/AC.

#### 2.04 FABRICATION

- A. Fabricate factory built, prefabricated structures completely in factory.
- B. Preglaze window and slide doors at factory.
- C. Prewire factory built, prefabricated structures and shelters at factory, ready for connection to service at Project Site.
- D. Separate dissimilar materials using nonconductive tape, paint, or other material not visible in finished work.
- E. Fabricate factory built, prefabricated structures for crane unloading or forklift pockets under base or welded in place concealed lifting lugs at roof that are suitable for placement of the structure on prepared foundations.

#### 2.05 FINISHES

- A. Comply with National Association of Architectural Metal Manufacturers (NAAMM) "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Examine supporting foundations for compliance with manufacturer's requirements, including installation tolerances and other conditions affecting performance of supporting members.
- B. Check installed anchor bolts for accuracy. Verify that bearing surfaces are ready to receive the work.
- C. Verify the rough-in of required mechanical and electrical services prior to placement of the structure.

#### 3.02 PREPARATION

- A. If preparation is the responsibility of another installer, notify the Port in writing of deviations from manufacturer's recommended installation tolerances and conditions.
- B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. Clean surfaces thoroughly prior to installation.
- C. Commencement of installation constitutes acceptance of conditions.

#### 3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Separate dissimilar materials using nonconductive tape, paint, or other material not visible in finished work.
- C. Anchor securely in place, allowing for required movement, including expansion and contraction.

### 3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair, or replace damaged products before Substantial Completion.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This Section includes requirements for acceptance testing by the contractor and testing required to be completed by a contractor retained independent testing agency.

### **1.02 APPLICABLE PUBLICATIONS**

- A. All inspections and tests shall be in accordance with the following applicable standards and codes. These publications form a part of this specification to the extent referenced.
  - 1. American Society for Testing and Materials (ASTM):  
D877 - Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes.
  - 2. Insulated Cable Engineers Association (ICEA):  
S-68-516 - Ethylene-Propylene-Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
  - 3. National Electrical Manufacturers Association (NEMA):  
WC8 - Ethylene-Propylene-Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. (ICEA S-68-516)  
AB3, AB4 - Evaluation and field testing of circuit breakers.
  - 4. Institute of Electrical and Electronic Engineers (IEEE):  
81- Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.  
400 - Guide for Making High-Direct-Voltage Tests on Power Cable Systems in the Field.
  - 5. National Electrical Code – NEC
  - 6. American National Standards Institute - ANSI
  - 7. National Fire Protection Association - NFPA
  - 8. Occupational Safety and Health - OSHA 29CFR Part 1910.269
  - 9. International Electrical Testing Association – NETA
  - 10. Nationally Recognized Testing Laboratory Approved - NRTL
  - 11. State of Washington Administrative Code – WAC
  - 12. Tacoma Public Utilities NEC Amendments
  - 13. Tacoma Public Utilities Standards and Regulations

### **1.03 WORK INCLUDED:**

- A. The Contractor shall perform tests of the electrical system to assure code compliance and proper system operation according to the intent of the contract documents.
- B. Applicable Codes, Standards and References for Tests:  
All inspections and tests shall be in accordance with the following applicable codes and standards.
  - 1. National Electrical Code - NEC
  - 2. National Electrical Manufacturer's Association - NEMA

3. American Society for Testing and Materials - ASTM
4. Institute of Electrical and Electronic Plans - IEEE
5. National Electrical Testing Association - NETA
6. American National Standards Institute - ANSI
7. Washington Administrative Code - WAC
8. Insulated Cable Plans Associate - ICEA
9. Association of Edison Illuminating Companies – AEIC
10. National Institute of Standards and Technology - NIST

#### 1.04 CIRCUIT TESTS:

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

#### 1.05 GROUNDING TEST:

- A. Measure the ohmic value of the Electrical Service Entrance "System Ground" with reference to "Earth Ground" using multiple terminal, fall of potential methods and suitable test instruments.
- B. Maximum resistance to ground shall be less than 10 ohms. Notify the Engineer if this resistance value is not obtained for the initially installed system. Contractor shall recommend and provide corrective measures required to reduce ground resistance to less than 10 ohms.

#### 1.06 MOTOR AND EQUIPMENT TESTS:

- A. Verify proper rotation of all motors before placing into service.
- B. Measure and record electrical data for each motor installed under this contract. Data shall include these items:
  1. Motor description
  2. Controller description
  3. Motor nameplate amperes
  4. Actual measured motor running amperes
  5. Overload heater manufacturer and catalog numbers
  6. Overload heater ampere range
  7. Voltage (measured) and phase
- C. Motor controller overload heaters shall be sized to the actual motor nameplate full load current. Do not oversize overload heaters.

#### 1.07 PHASE BALANCE TESTS:

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

## **PART 2 - PRODUCTS**

### **2.01 TEST EQUIPMENT**

- A. Utilize test equipment in good mechanical and electrical condition with shape and frequency output waveforms appropriate for the test and the tested equipment.
  - 1. Accuracy shall be appropriate for the test being performed, but not in excess of 2% of the scale being used.
- B. Field test meters used to check installed power system instrument calibration must have an accuracy higher than the instrument being checked.

### **2.02 TEST INSTRUMENTS AND CALIBRATION**

- A. The Testing Firm shall have a calibration program which assures all applicable test instruments are maintained within rated accuracy as dictated by the National Institute of Standards and Technology (NIST).
  - 1. Instruments calibration schedule:
    - a. Field instruments: Analog, 6 months maximum; Digital, 12 months maximum
    - b. Laboratory instruments - 12 months.
    - c. Leased specialty equipment - 12 months (where lessor guarantees accuracy).
  - 2. Provide visible dated calibration labels on all test equipment.
  - 3. Maintain up-to-date instrument calibration instructions and procedures for each test instrument.
- B. Provide all testing equipment required including, but not limited to, the following:
  - 1. Wet and dry-bulb thermometer.
  - 2. 500V, 1000V, 5kV and 15kV meggers.
  - 3. Battery-powered portable telephone sets
  - 4. DC high-potential adjustable test set for EPR medium-voltage cables.
  - 5. Multimeter (Volts-Ohms-Millimeter) rated 20k ohms per volt or higher.
  - 6. Three-phase rotation meter, 60-Hz.
  - 7. Commercial model three-point earth ground test set reading directly in ohms.
  - 8. Miscellaneous cable, test leads, jumpers, test lights, buzzers, bells, switches, plugs, receptacles, and other test equipment as required.
  - 9. Insulation Tester (Megger): 2,000 Megohms.
  - 10. Dranetz, BMI Model 355, Fluke 41 or equivalent recording type harmonic analyzer to display individual and total harmonic currents and voltages.
  - 11. Clamp-on Ammeter.
  - 12. Circuit Breaker Current Injections Test Set.

### **2.03 TEST REPORT**

- A. Submit one (1) electronic PDF and one (1) original and bound copy of test reports, as specified herein, for inclusion into the project operation and maintenance manuals. Each test report shall include the following:
  - 1. Summary of Project.

2. Name, address and telephone number of the testing agency.
3. Name(s) of personnel conducting the tests
4. Type of test
5. Description of test procedure
6. List of items tested
7. List of actual test equipment including make, model(s), serial number(s) and calibration date(s) as applicable.
8. Test results
9. Conclusion and recommendations
10. Appendix, including appropriate test forms and list of test equipment used and calibration date.

#### 2.04 MATERIALS AND INSTRUMENTATION:

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

### **PART 3 - EXECUTION**

#### 3.01 TESTING

- A. General requirements: Test all wire, cable, and electrical equipment installed and connected by the Contractor to assure proper installation, setting, connection, and function as indicated or to conform to Contract Documents and manufacturer's instructions. As an exception to requirements stated elsewhere in the Contract, give the Engineer at least 7 calendar days' notice of the dates and times scheduled for tests (except megger tests) so Engineer may witness the tests. After the installation has been completed, the Contractor shall conduct an operating test demonstrating all equipment and devices operate in accordance with the requirements of the plans and specifications.
  1. Perform tests recommended by the equipment manufacturer.
  2. Perform additional tests issued by the Engineer which are required due to field conditions.
  3. Be responsible for all damage to equipment or material due to improper test procedures or test apparatus handling.

#### 3.02 IDENTIFICATION

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

#### 3.03 TESTING PROCEDURE:

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

#### 3.04 SCHEDULING:

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

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 DEFINITIONS:**

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

### **1.02 WORK INCLUDED:**

- A. The Electrical work consists of furnishing, installing, testing and placing in satisfactory operation all equipment, materials, devices and appurtenances, necessary to provide a complete electrical system according to the intent of the Drawings and Specifications. In general this includes all labor, materials, equipment, tools, etc. to complete the electrical work.
- B. General requirements for materials and installation methods.
- C. As part of this project Contractor is required to perform civil work as related to Tacoma Power vaults, conduits and trench requirements as indicated on the approved drawings. Prior to bid Contractor shall become familiar with Tacoma Public Utility Electrical Construction Standards. These can be reviewed at [www.mytpu/tacomapower/electrical-permitting/electrical-construction-standards.htm](http://www.mytpu/tacomapower/electrical-permitting/electrical-construction-standards.htm). This work will be inspected by a Tacoma Power Utility Construction Inspector. This is a Tacoma Public Utilities electrical inspector and inspection is separate from the Tacoma Public Utilities, NEC inspector and inspections required inspections by the electrical permit.

### **1.03 INTENT OF DRAWINGS:**

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

### **1.04 MANUFACTURERS' RECOMMENDATIONS:**

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

### **1.05 SUBMITTALS:**

- A. Submittal items: Submittals shall include, but not be limited to the following items:
  - 1. Raceways
  - 2. Wires (600V)
  - 3. Grounding Equipment
  - 4. Wiring Devices
  - 5. Nameplates, labels
  - 6. Pre-cast Concrete Vaults/Covers with Calculations
  - 7. Pre-cast Concrete Handholes/Covers with Calculations
  - 8. Pre-cast Concrete Enclosures for Bunker Style Reefer Outlets

9. Light Fixtures
10. Steel Light Poles
11. Switchgear
12. Panelboards
13. Dry-Type Transformers
14. Communications Boxes, Equipment and Wiring
15. Wood Poles
16. Bunker Style Reefer Outlets
17. Pedestal Style Reefer Outlets

1.06 RELATED WORK:

A. TEMPORARY CONSTRUCTION POWER & LIGHTING: (IF USED)

1. Arrange with the serving Utility Tacoma Public Utilities 253-502-8292, Dan Reed for 120/240 Volt or 208Y/120 Volt service adjacent to construction site.
2. Contractor is responsible for all costs associated with setup and removal of the temporary construction service meter.
3. Provide, maintain and remove, when no longer required, temporary electrical construction wiring from the construction service meter to the number of lights and receptacles required. Wiring to construction sheds, outdoor construction machinery, and temporary exterior work areas shall be the responsibility of individual contractors.
4. Provide and maintain construction lighting with portable wiring and temporary energization of the permanent site wiring, complete with lamps. Suitable construction lighting shall be provided. See NEC ARTICLE 305. Temporary Wiring.
5. Provide adequate feeders, circuit breakers and duplex 15-ampere 120-volt receptacles. Provide 120 volt construction receptacles with Ground Fault circuit protection in accordance with applicable WISHA safety standards.
6. Portable power cords from the outlets specified herein shall be the responsibility of individual contractors using the cords.
7. The Contractor shall assume all responsibility for safety, Electrical and Safety Code compliance, performance and adequacy of the construction power and lighting installation. The Engineer assumes no responsibility for the performance or safety and will not inspect nor design this temporary installation, as it is not part of the completed project.

B. EQUIPMENT FURNISHED BY OTHERS:

1. All equipment furnished for this project shall be coordinated with the Drawings to ensure correctness of Voltage, Phase and Ampacity. Equipment served by single circuit or feeder shall be provided with appropriate internal wiring including fusing of multiple circuits as required by code.
2. Control Voltages shall not exceed 120 volts. Provide control transformers for higher line voltages. Control transformers shall be connected from phase to neutral.



1.07 SUPERVISION AND COORDINATION:

- A. Coordinate work with Tacoma Public Utilities to ensure compliance with their specific requirements. Before starting work, contact Tacoma Public Utilities, 253-502-8292, Dan Reed and make arrangement for their services to this project. Obtain Tacoma Public utilities approved construction drawings and keep on site. Schedule pre-construction site review with Tacoma Public Utilities prior to starting work.
- B. Contact Electrical Inspection, Tacoma Public Utilities (253-502-8541), obtain and pay for electrical permit before starting work. Pick up reviewed and approved electrical drawings at Tacoma Public Utilities and keep on site at all times for inspectors review.
- C. Contractor shall have a responsible and qualified person in charge at the site any time work is in progress or when necessary for coordination with other trades.

1.08 CODES AND REGULATIONS:

- A. All work shall conform to current applicable National, State and local Codes; these shall be regarded as the minimum standard of quality for material and workmanship. Contractor shall provide all Labor and Material required for compliance with Code Requirements or Code Interpretations, although not specifically detailed on the Drawings or in the Specifications. Contractor shall become familiar with all the following codes prior to bidding.

ASTM American Society for Testing and Materials

NBFU National Board of Fire Underwriters

NEC National Electrical Code

WAC Washington State Administrative Code

WSNREC Washington State Non-Residential Energy Code

NESC National Electrical Safety Code

NEMA National Electric Manufacturers Association

NETA National Electrical Testing Association

NFPA National Fire Protection Association

UL Underwriters Laboratories, Inc.

ICEA Insulated Cable ENGINEERs Associations

IFC International Fire Code

IBC International Building Code

ETL Electrical Testing Laboratories

--- Tacoma Public Utilities Standards and Requirements

- B. Nothing in these Drawings and Specifications shall be construed as permitting work not conforming with governing codes.
- C. The Contractor shall not be relieved from complying with any requirements of these contract documents which may exceed, but not conflict with requirements of the governing codes.
- D. Contractor shall include in bid all costs to have a Department of Labor & Industries approved firm to evaluate the installation safety, and compliance with code as required per WAC 296-40-100 for any equipment specified or furnished that is not UL labeled.

- E. For equipment furnished by others not UL labeled the contractor shall not connect the equipment to the electrical system until receiving written approval by the electrical authority having jurisdiction.

#### 1.09 PERMITS AND FEES:

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

#### 1.10 WORKMANSHIP:

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

#### 1.11 OPERATING INSTRUCTIONS:

- A. Fully instruct the Owner's designated representatives in the operation and maintenance of all components of the electrical system upon completion of the work and after all tests and final inspection(s) by the Authority(s) Having Jurisdiction.

### **PART 2 - PRODUCTS**

#### 2.01 GENERAL

- A. All materials shall be new, free from defects, of the quality specified herein and on the Drawings. Materials shall be designed to ensure satisfactory operation and manufacturer's rated life in the prevailing environmental conditions where installed. Materials and equipment shall be listed by Underwriter's Laboratories or a Washington Administration Code (WAC) recognized testing laboratory for use under these conditions.
- B. Each type of material shall be of the same make and quality throughout the job. The materials furnished shall be the latest standard design products of manufacturers regularly engaged in their production.

#### 2.02 TECHNICAL DATA

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

#### 2.03 AS SPECIFIED EQUIPMENT:

- A. This specification generally lists only one make and model number for each item of equipment or material required for the project. This is not intended to be restrictive but is intended to indicate the standard of quality, design and features required.
- B. In addition, the listed product is the basis of the design regarding physical size, electrical power requirements and performance. The product so identified is designated "as specified."

#### 2.04 COMPLETE SYSTEMS:

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

### **PART 3 - EXECUTION**

#### **3.01 PROTECTION OF WORK:**

- A. Protect all work, wire, materials and equipment installed under this Division against damage by other trades, weather conditions or any other causes. Equipment found damaged or in other than new condition will be rejected as defective.
- B. Equipment shall be kept covered or enclosed to exclude moisture, dust, dirt, cement, or paint and shall be free of all such contamination before acceptance. Enclosures and trims shall be in new condition, free of rust, scratches or other finish defects. Properly refinish in a manner acceptable to the Engineer if damaged.
- C. Keep conduit and raceways closed with suitable plugs or caps during construction to prevent entrance of dirt, moisture, concrete or foreign objects. Pull a properly sized mandrel through each conduit prior to installation of wire or pull string for empty conduits and within 24 hours of concrete placement (duct tape not acceptable). Raceways shall be clean and dry before installation of wire and at the time of acceptance.
- D. Make up and insulate wiring promptly after installation of conductors. Wire shall not be pulled-in until raceways are complete, all bushings are installed and raceway terminations are completed nor pulled into conduit embedded in concrete until after the concrete is placed and forms are removed.
- E. Empty conduits shall be provided with distance labeled pull tapes, labels at source, pull through locations and destination location matching plans. All openings shall be filled with removable foam.

#### **3.02 CUTTING AND PATCHING:**

- A. Obtain permission from the Engineer prior to cutting. Locate cuttings to not weaken structural components. Cut carefully and only the minimum amount necessary. Cut concrete with diamond core drills or saws except where space limitations prevent the use of such equipment.
- B. All construction materials damaged or cut into during installation must be repaired or replaced with materials of like kind and quality as original materials by skilled labor experienced in that particular building trade.

#### **3.03 PAINTING:**

- A. Equipment scratched or marred in shipment or installation shall be refinished to manufacturer's standards and to the satisfaction of the Engineer.

#### **3.04 LABELING:**

- A. Clearly and properly label the complete conduit only and electrical system, as specified herein, to indicate the loads served or the function of each item of equipment connected under this contract. All labels shall be stamped Brass/Aluminum type. Seton or equal.
- B. Stamped Brass/Aluminum tags shall have source end point, circuit breaker, fused switch, equipment name or equipment ID. Labels shall be provided in all power and signal manholes for all wires, cables and pull ropes provided under this contract.
- C. All vaults (covers and frames) shall be field stamped the same as labeled on record drawings.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED:**

- A. Provide all 600V and below wire and terminations for a complete installation

## **PART 2 - PRODUCTS**

### **2.01 PACKAGING:**

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

### **2.02 CONDUCTORS - 600 VOLTS:**

- A. Stranded Copper, insulated for 90 degree centigrade and 600 volts.
- B. Insulation type XHHW-2. Insulation requirements may vary per the NEC where necessary to suit more stringent installation conditions.
- C. Aluminum wiring is not acceptable.

### **2.03 CONNECTORS - 600 VOLTS:**

- A. Branch circuit conductor splices:  
Pre-insulated "twist-on" type or "crimped-on" type as approved (Scotch-lok, Ideal or equal).
- B. Terminator lugs of No. 12 wire and smaller:  
Spade, insulated type to be tool applied.
- C. Terminator lugs for No. 10 wire or larger:  
Two bolt (or approved positive restraint), tool applied compression type (Burndy or equal).
- D. Where conductor sizes have been increased to compensate for voltage drop, Contractor shall install finger splice crimp connections at lug terminations.

### **2.04 INSULATING MATERIALS:**

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

### **2.05 PLASTIC CABLE TIES:**

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

## **PART 3 - EXECUTION**

### **3.01 GENERAL:**

- A. Install all wiring in raceway.

### **3.02 CONDUCTOR TYPES, REFERENCED ON PLAN:**

- A. Conductors shall be stranded copper.

### **3.03 CONDUCTOR COLORING CODE:**

CONDUCTOR COLOR CODING SHALL BE AS FOLLOWS:

- A. 208/120 volt system  
A Phase - Black

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

#### 3.04 CONDUCTOR INSTALLATION:

- A. Raceways shall be complete, clean and free of burrs before pulling conductors.
- B. U.L. approved pulling compounds may be used with the residue cleaned from the conductors and raceway entrances after the pull is made.
- C. Contractor shall obtain the manufacturer's published recommendations for the handling, pulling and terminating of the cable. Contractor shall perform work in accord with manufacturer's recommendations.
- D. Pulleys or blocks shall be used for alignment of the conductors when pulling. Pulling shall be in accordance with manufacturer's specifications regarding pulling tensions, bending radius of the cable and compounds. No mechanical pulling means shall be used for wires No. 8 AWG and smaller. Cables shall be pulled by the conductor, not by the insulation or shielding.

#### 3.05 MOISTURE PROTECTION:

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

#### 3.06 TERMINATIONS - COPPER CONDUCTORS 600 VOLTS:

- A. Control and special systems wires shall be terminated with a crimped on lug when terminating at a screw connection.
- B. All screw and bolt type connectors shall be made up tight and retightened after an eight-hour period. Tighten all bolted connections with a ratcheting type torque wrench per manufacturer's standards.
- C. All tool applied crimped connectors shall be applied per manufacturer's recommendations and physically checked for tightness.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED:**

- A. Provide all raceways for a complete electrical system. Include all fittings, hangers and appurtenances required for a complete installation. Exposed galvanized materials are not allowed. Provide two (2) coats grey or safety yellow (where appropriate) over all bare metal or galvanized materials.

## **PART 2 - PRODUCTS**

### **2.01 CONDUITS:**

- A. Polyvinyl Chloride (PV) Coated Rigid Steel Conduit, Thick Wall (PVRSC).
- B. Non-metallic, polyvinyl chloride (PVC), schedule 80.
- C. Flexible Metal Conduit with polyvinyl chloride jacket.

### **2.02 FITTINGS:**

- A. PVRSC fittings shall have threaded connections.
- B. PVC Coated Flexible Metal Conduit: Thomas & Betts "Super Liquid-Tight" with external ground lug or equal.
- C. PVC Schedule 80 fittings shall be solvent welded type.
- D. All conduit elbows 30 degrees or greater shall be factory made. All 90 degree elbows shall be a minimum radius of 24" or greater. Provide PVRSC for all steel elbows extending above grade.

### **2.03 EXPOSED RACEWAY IDENTIFICATION:**

- A. Provide sign or stencil on all raceway(s) containing conductors above 208 volts. The stencil or sign by "Seton" shall have minimum 1/2" high red letters indicating voltage.
- B. All exposed raceway shall be PVRSC.

## **PART 3 - EXECUTION**

### **3.01 GENERAL:**

- A. Install raceways concealed in construction or below grade.
- B. Cut conduit ends square, ream smooth and extend maximum distance into all couplings and connectors.
- C. Provide and install manufactured end caps on all conduit ends during construction to prevent the entrance of water or dirt. Tape, as a cover, is unacceptable.
- D. Pull a properly sized mandrel through each conduit prior to installation of conductors or pull-lines to remove any materials trapped within the conduit run. Conduits embedded in concrete shall have a mandrel pulled within 24 hours of concrete pour.
- E. All elbows 45 degrees or greater shall be PVRSC conduit and shall be factory made.
- F. Field made elbows are less than 45 degrees are acceptable for Schedule 80 PVC conduits.
- G. Conduits shall maintain a minimum 12" clearance from any high temperature surface.
- H. The conduit layout shall be carefully planned by the contractor to ensure neat and workmanlike installation. All below grade conduit runs with two or more conduits shall be provided with manufactured conduit saddles. All communications and power conduits shall have a minimum 12" separation.

- I. Provide bell ends for all conduits entering and leaving existing or new precast concrete manholes, vaults and pull boxes.
- J. Any work showing inadequate planning may be ordered removed by the Engineer and shall be replaced in a neat and proper manner at no additional cost to the Port of Tacoma.

### 3.02 CONDUIT SIZING:

- A. Conduits shall be sized per code for conductors with type XHHW-2 insulation, although thinner insulation types are permitted in some cases. Conduit size shall not be reduced if large size is specified on the drawing. Minimum conduit size shall be 3/4" trade diameter for above grade and 1" trade diameter for below grade.

### 3.03 PVRSC:

- A. Install PVRSC for all conduits where conduit is exposed above grade.

### 3.04 FLEXIBLE CONDUIT:

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

### 3.05 PVC CONDUIT SCHEDULE 80:

- A. PVC conduit Schedule 80 may be used underground. Offsets and bends shall not exceed 22 degrees without engineers field review and approval. All bends greater than 30 degrees and less than 45 degrees shall be galvanized rigid steel, 1/2 lap wrapped with corrosion resistant tape. Contractor shall field stake bends for engineers review.

### 3.06 CONTINUITY OF CONDUIT SYSTEM:

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

### 3.07 PULL-LINES:

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

### 3.08 CONCRETE ENCASEMENT:

- A. All conduits installed for 5KV and 13.8KV systems (TPU or Port of Tacoma) shall be encased in controlled density fill (CDF) concrete the length of conduit trench: The CDF shall have a red dye added to the mix (five pound bag per yard) by the concrete manufacturer. Adding dye or other coloring after pour is not acceptable.

### 3.09 ELECTRICAL TRENCHES

- A. All electrical trenching shall comply with Division 31 and Specifications 31 00 00 Earthwork.

**END OF SECTION**



## PART 1 - GENERAL

### 1.01 SUMMARY

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

### 1.02 REFERENCES

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

### 1.03 QUALITY ASSURANCE

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

### 1.04 SUBMITTALS

- A. Product Data for each type of product specified.  
B. Provide sample label with identification nomenclature for one of each label type to be used for identification and equipment labels.  
C. Contractor shall field stamp one (lid and frame) for Engineer review and approval prior to field stamping all vaults and handholes.

## PART 2 - PRODUCTS

### 2.01 LABEL TYPES

- A. Manufacturer's standard products with colors prescribed by ANSI A13.1, NFPA 70, and these Specifications. Refer to drawings for label schedule and types:

| Section  | Title                                     | Label Types |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----------|-------------------------------------------|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|          |                                           | B           | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
| 26 05 19 | 600-Volt or Less Wire and Cable           |             | X | X |   |   | X | X |   |   |   |   |   |   |   |   |   |
| 26 71 19 | Electrical Underground Ducts and Manholes |             |   |   |   |   |   |   | X | X | X | X | X |   |   |   |   |

- B. Black felt-tip permanent marker on backside of plate in all locations.  
C. Flexible, preprinted pre-tensioned wraparound plastic sleeves sized to suit the diameter of the wire it identifies and arranged to stay in place by pre-tensioned gripping action when placed in position.  
D. Preprinted self-adhesive vinyl labels with clear chemical-resistant coating.  
E. Engraved melamine plastic laminate flat stock, 1/16-inch minimum thickness for sizes up to 15 square inches. Use 1/8-inch minimum for sizes larger than 20 square inches. Black with white letters for normal power systems and red with white letters for emergency power systems, with height as shown in table above unless specified otherwise. UV-inhibited when used outdoors. Secure with stainless steel drive screws, stainless steel self-tapping screws or stainless steel oval-head 6-32 screws tapped into enclosure, or with stainless steel bolts with elastic stopnut. Do not attach labels with screws or bolts if it voids manufacturer warranty UL listing of equipment. Provide alternate adhesive type label.  
F. Exterior use adhesive-backed plastic machine-printed labels, white with black letters.  
G. Plain-colored vinyl adhesive tape, 3-mil minimum by 1-inch wide minimum. Apply 1/2-inch minimum over-wrap through 2-inch minimum length.

- H. Stainless-steel machine or hand-stamped wire marker plates, 0.010-inch minimum thickness, with 2 holes at each end for attachment with nylon Ty-wraps. (Reference Panduit MMP350-C series.) Wire tags shall have source point, circuit breaker, fused switch, equipment name or equipment ID. Labels shall be provided in all power signal manholes for all wires, cables and pull ropes provided under this contract.
- I. Provide field stamped label on exposed metal frame and lid. Label shall match vault ID on electrical site plans.
- J. Underground line warning tape with pre-printed warning message identifying type of system. Material shall be compounded for unlimited life when direct buried. 6-inch minimum width by 4-mils thick. (Reference Seton Style 210.)
- K. Underground metallic line-warning tape with pre-printed warning message identifying type of system. Material shall be compounded for unlimited life when direct buried. Use when metal-detection of line is required on Medium Voltage Systems. 6-inch minimum width by 4-mils thick. (Reference Seton style 6ELE.)
- L. Warning signs: Baked Enamel on aluminum plate, 0.040-inch minimum thickness. OSHA standard wording where approved. Custom wording if required. Secure with non-corrosive fasteners.
- M. Warning labels: Flexible pressure-sensitive vinyl conforming to OSHA "Danger" and "Caution" standards. 2½ x 1¾" minimum with black letters on yellow background. Label shall read: "WARNING! DO NOT USE AS WALKWAY, LADDER, OR SUPPORT FOR LADDERS OR PERSONNEL – CABLES ADDED AFTER INITIAL INSTALLATION REQUIRE PORT OF TACOMA APPROVAL." (Reference Seton "On-the-Spot.")
- N. Stencils: Machine-punched patterns, paint with color and formulation appropriate for material and location.
- O. Adhesive-backed metal labels manufactured with testing agency logo. Punched or engraved with actual settings and date.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. Install identification labels according to manufacturer's written instructions.
- B. Install labels where indicated and as required by the Authority Having Jurisdiction. Locate for optimum viewing and without interference with the operation and maintenance of equipment.
- C. Coordinate names, abbreviations, colors, graphics and other designations used for electrical identification with corresponding designations used in the Contract Documents or as required by codes and standards.

Use consistent designations throughout the Project. Labeling abbreviations are not allowed.
- D. Sequence of Work: Where identification is to be applied to surfaces that require finish, install identification after completion of finish work.
  - 1. Coordinate installing electrical identifying labels prior to installing finishes that conceal such items.
- E. Clean surfaces of dust, loose material, and oily films before applying painted or self-adhesive identification products.
- F. Painted Identification Products:
  - 1. Prime surfaces according to manufacturer's instructions prior to applying painted labels:

- a. For galvanized metal, use single-component, acrylic vehicle coating formulated for galvanized surfaces.
    - b. For concrete masonry units, use heavy-duty, acrylic-resin block filler.
    - c. For concrete surfaces, use clear, alkali-resistant, alkyd binder-type sealer.
  2. Apply one intermediate and one finish coat of paint.
- G. Conductor Identification:
1. Conductors to be Extended in the Future: Indicate source and circuit numbers.
  2. Multiple Power or Lighting Circuits in the Same Enclosure: Identify each conductor with source, voltage, circuit number, and phase. Use color coding for voltage and phase indication of secondary circuit.
  3. Multiple Control and Communications Circuits in the Same Enclosure: Identify each conductor by its system and circuit designation. Use a consistent system of tags, color coding, or cable marking tape.
- H. Warning, Caution, and Instruction Signs:
1. Install warning, caution, and instruction signs where indicated or required to ensure safe operation and maintenance of electrical systems and of items to which they connect.
  2. Emergency-Operating Signs: Install engraved laminate signs with white legend on red background with minimum 3/8-inch high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.
- I. Apply equipment identification labels of engraved plastic laminate on each major unit of equipment, including central or master unit of each system. This includes communication, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Except as otherwise indicated, provide a single line of text with 1/4-inch high lettering on 1-inch high label. Use white lettering on black field. Apply labels parallel to equipment lines.
- J. Apply instrument labels on all field-mounted instruments, transmitters, pressure gauges and control valves.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SUMMARY**

- A. This section includes computer-based, fault current and overcurrent protective device coordination studies for all devices. Protective devices shall be set by the independent testing agency based on results of the protective device coordination study.
- B. This study also includes:
  - 1. An arc flash hazard analysis.
  - 2. Providing self-adhesive arc flash hazard labels.
  - 3. Providing self-adhesive Personnel Protective Equipment (PPE) labels.
- C. Provide an initial study (riser/data in PDF) and submit with the electrical gear submittals.
- D. Provide a final study (electronic with riser/data/labels and settings) prior to substantial completion. The final study shall include all installed cable lengths and changes made during construction.

### **1.02 SUBMITTALS**

- A. Product data: Identify computer software program to be used for studies.
- B. Product Certificates: Identify coordination-study, fault-current-study and Personnel Protective Equipment computer software programs to certify compliance with IEEE 399.
- C. Other Action Submittals: The following submittals shall be made after the approval process of system protective devices has been completed.
  - 1. Coordination-study input data, protective device settings including completed computer program input data sheets.
  - 2. Study and Equipment Evaluation Reports.
  - 3. Coordination-study report.
  - 4. Submit protective equipment shop drawings simultaneously with the protective device study.
  - 5. Certification: Two weeks prior to final inspection, deliver to the Engineer four copies of the following certifications:
    - a. Certification by the contractor that the protective devices have been adjusted and set in accordance with the approved protective device study.
  - 6. The Contractor will be fully responsible for all changes required to remove and replace portions of the distribution system required by the study if the study is not performed prior to ordering the gear.

### **1.03 QUALITY ASSURANCE**

- A. Studies shall use computer programs distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this section. Manual calculations are not acceptable.

- B. Coordination-study Specialist Qualifications: an entity experienced in the application of computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices. Professional engineer, licensed in the state where project is located, or the equipment manufacturer shall be responsible for the study. All elements of the study shall be performed under the direct supervision and control of engineer.
- C. Comply with IEEE 242 for short-circuit currents and coordination time intervals.
- D. Comply with IEEE 399 for general study procedures.

## **PART 2 - PRODUCTS**

### **2.01 COMPUTER SOFTWARE DEVELOPERS**

- A. Available Computer Software Developers: Subject to compliance with requirement. Companies offering the following computer software programs may be used in the Work include, but are not limited to, the following:
  - 1. CGI CYME
  - 2. EDSA Micro Corporation
  - 3. ESA Inc.
  - 4. Operation Technology, Inc.
  - 5. SKM Systems Analysis

### **2.02 COMPUTER SOFTWARE PROGRAM REQUIREMENTS**

- A. Comply with IEEE 399.
- B. Analytical features of fault-current-study computer software program shall include "mandatory", "very desirable", and "desirable" features as listed in IEEE399
- C. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output. Computer software program shall report device settings and rating of all Overcurrent protective devices and shall demonstrate selective coordination by computer-generated, time-current coordination plots.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Examine project Overcurrent protective device submittals for compliance with electrical distribution system coordination requirements and other conditions affecting performance.

### **3.02 POWER SYSTEM DATA**

- A. Gather and tabulate the following input data to support coordination study:
  - 1. Product data for Overcurrent protective devices specified in other Division 26 and 33 sections and involved in Overcurrent protective device coordination studies. Use equipment designation tags consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
  - 2. Impedance of utility service entrance.
  - 3. Electrical Distribution System Diagram: In hard-copy and electronic-copy formats, showing the following
    - a. Circuit breaker and fuse-current ratings and types.

- b. Relays and associated power and current transformer ratings and ratios.
- c. Transformer kilovolt amperes, primary and secondary voltages, connection type, impedance, and X/R ratios.
- d. Cables: indicate conduit material, sizes of conductors, conductor material, insulation, and length.
- e. Busway ampacity and impedance.
- f. Motor horsepower and code letter designation according to NEMA MG1.
- 4. Data sheets to supplement electrical distribution system diagram, cross-referenced with tag numbers on diagram, showing the following:
  - a. Special load considerations, including stating inrush currents and frequent starting and stopping.
  - b. Transformer characteristics, including primary protective device, magnetic inrush current, and overload capacity.
  - c. Motor full-load current, locked rotor current, service factor, starting time, type of start, and thermal-damage curve.
  - d. Ratings, types, and settings of utility company's Overcurrent protective devices.
  - e. Special Overcurrent protective device settings or types stipulated by utility company.
  - f. Time-current-characteristic curves of device indicated to be coordinated.
  - g. Manufacturer, frame size, interrupting rating in amperes rms symmetrical, ampere or current sensor rating, long time adjustment range, short-time adjustment range, and instantaneous attachment adjustment range and current transformer ratio for Overcurrent relays.
  - h. Manufacturer and type, ampere-tap adjustment range, time-delay adjustment range, instantaneous attachment range, and current transformer ratio for Overcurrent relays.
  - i. Panelboards, switchgear ampacity and short circuit current interrupting rating in amperes rms symmetrical.

### 3.03 FAULT CURRENT STUDY

- A. Calculate the maximum available short-circuit current in amperes rms symmetrical at circuit breaker positions of the electrical power distribution system. The calculation shall be for a current immediately after initiation and for a three-phase bolted short circuit at each of the following:
  - 1. Distribution Switchgear/Panelboards
  - 2. Branch Circuit Panelboards
- B. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for project. Include studies of system-switching configurations and alternate operations that could result in maximum fault conditions.
- C. Calculate momentary and interrupting duties on the basis of maximum available fault current. Show interrupting (five-cycle) and time-delayed currents (six cycles and above) on medium-voltage breakers as needed to set relays and assess the sensitivity of Overcurrent relays.
- D. Equipment Evaluation Report:
  - 1. Overcurrent Protective Devices: Ensure interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

2. Devices and Equipment Rated for Asymmetrical Fault Current: Apply multiplication factors listed in the standards to 1/2 –cycle symmetrical fault current.
3. Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

### 3.04 COORDINATION STUDY

- A. Perform coordination study using approved computer software program. Prepare written report using results of fault-current study. Comply with IEEE 399.
  1. Calculate the maximum and minimum 1/2-cycle short circuit currents.
  2. Calculate maximum and minimum interrupting duty (five cycles to two seconds) short-circuit currents.
  3. Calculate the maximum and minimum ground-fault currents.
- B. Transformer Primary Overcurrent Protective Devices:
  1. Device shall not operate in response to the following:
    - a. Inrush current when first energized.
    - b. Self-cooled, full load current or forced-air-cooled, full-load current, whichever is specified for that transformer.
    - c. Permissible transformer overloads according to IEEE C57.96 if required by unusual loading or emergency conditions.
  2. Device settings shall protect transformers according to IEEE C57.12.00 for fault currents.
- C. Motors served by voltages more than 600 volt shall be protected according to IEEE 620.
- D. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-32-382, ICEA P-45-482, and conductor melting curves in IEEE-242. Demonstrate that equipment withstands the maximum short circuit current for a time equivalent to the tripping time of the primary relay protection or total clearing time of the fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short-circuit current.
- E. Coordination-study Report: Prepare a written report indicating the following recommended settings and results of coordination study:
  1. Tabular Format of Settings Selected for Overcurrent Protective Devices:
    - a. Device tag
    - b. Relay-current transformer ratios;
    - c. Circuit-breaker sensor rating; long-time, short-time, and instantaneous settings.
    - d. Fuse-current rating and type
    - e. Ground-fault relay-pickup and time-delay settings
  2. Coordination Curves: Determine settings of Overcurrent protective devices to achieve selective coordination. Graphically illustrate adequate time separation exists between devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for the switching schemes and for emergency periods where the power source is local generation. Show the following information:



- a. Device tag
- b. Voltage and current ratio for curves.
- c. Three-phase and single phase damage points for each transformer.
- d. No damage, melting, and clearing curves for fuses.
- e. Cable damage curves.
- f. Transformer inrush points
- g. Maximum fault-current cutoff point.

F. Completed data sheets for setting of Overcurrent Protective Devices.

### 3.05 ARC FLASH HAZARD ANALYSIS

- A. Calculate the arc flash hazard category, the incident energy level and the flash hazard boundary for all electrical equipment.
- B. Provide self-adhesive labels complying with ANSI Standards Z535.4-1998

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED:**

- A. This document covers pin and sleeve, marine, circuit interrupting rated, reefer power outlet assemblies. Suitable for use in dry, damp, wet, and outdoor marine locations for the electrical powering of refrigerated containers. Assemblies shall be U.L. listed with enclosures incorporating interlocked reefer power outlets in a modular multi-gang arrangement. Devices are factory wired to a U.L. listed/recognized power distribution block and rated 32 amps at 480 VAC, 50-60 Hz. Devices are also rated for continuous use in temperatures from -20 F degrees to +140 F degrees. Devices must provide internal environmental seals for marine and extreme wet applications and are to be mechanically interlocked.
- B. All metal fabrications (pedestals) are to be 316 stainless steel. The work shall consist of furnishing all materials, labor, and equipment for fabricating and/or repairing, galvanizing, and erecting metal fabrications, all in accordance with the Drawings, notes, and this specification.

## **PART 2 – PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS:**

- A. All reefer outlet assemblies (ROA's) and pedestals shall be manufactured by ESL Power Systems, Inc. or approved equal as complete assemblies and shall be marked as stated.
- B. ROA's shall include 480V to 120V transformers with primary and secondary fuses to serve 120V, 20Amp, GFI receptacles furnished as part of the pedestal assembly.
- C. ROA's shall be UL Listed as an assembly. The individual Modular Interlocked Reefer Outlets within each ROA shall also be UL Listed.

### **2.02 SHOP DRAWINGS:**

- A. Contractor shall submit shop drawings for Engineer's approval prior to start of Reefer Power Outlet Assembly and fabrication

### **2.03 REEFER OUTLET ASSEMBLIES (ROA'S):**

- A. Contractor shall provide and install 11-Gang and 22-Gang Pedestal Mount ROA's. Quantities and dimensions as shown on Drawings.
- B. ROA's shall be UL Listed as an assembly and labeled as such. The individual Modular Interlocked Reefer Outlets within each ROA shall also be UL Listed. ROA Enclosures shall be NEMA 4X, constructed of continuous seam-welded, 316 Stainless Steel. Pedestal-Mounted ROA's shall be of saw-tooth construction with the face of the receptacle facing downward at a 45-degree angle to provide positive water drainage from the contacts and protection from impact damage. Access covers shall be fully gasketed and protected by drip shields. Enclosures shall be powder coated gray after fabrication. Modular Interlocked Reefer Outlets within the enclosure shall be factory-prewired to a single UL recognized power distribution block (PDB) rated equal to or greater than feeder breaker trip rating as specified on the Drawings. The PDB is fed from a protected branch circuit. All equipment grounds shall be bonded to a ground lug.
- C. Size and location of opening for conduit fitting and the feeder size, phase and ground, shall be as specified on the Drawings.
- D. Each ROA must include a provision for moisture control within the installed enclosure.

## 2.04 INDIVIDUAL INTERLOCKED REEFER OUTLETS:

- A. Modular Interlocked Reefer Outlets (Modules) shall be UL Listed, 32-ampere 480VAC (IEC 309-2, CEE-17 3h), ESL Cat. No. R32-480-30-22SSD-SP with stainless steel flap cover. Each 32A/480V Module shall include a UL 489 Listed circuit breaker with 30-ampere trip rating and 22,000 ampere interrupting capacity at 480VAC. The Module frames shall be constructed of stainless steel and shall include a spring loaded, self-aligning and self-closing stainless steel snap cover and a ½" minimum outside diameter stainless steel on/off control rod.
- B. The module interlocking mechanism shall be mechanical in design. The mechanism shall prevent the outlet from being energized unless a mating plug is fully inserted and the on/off control rod engaged. The mechanism will allow manual de-energizing but will also automatically de-energize the outlet if the plug is partially or fully withdrawn under load. The mechanism must be fully operational if the plug nose key is damaged or missing. The mechanism must not operate if the ground pin is missing from the mating plug.

## 2.05 CIRCUIT BREAKERS:

- A. Circuit Protection – All receptacles must be protected by a molded case, thermal-magnetic type, U.L. 489 listed circuit breaker with a minimum of 35,000 amp interrupting capacity. The circuit breaker must also comply with NEC Articles 240 and 430 for branch circuit protection.
- B. Trip Free Operating Mechanism – all interlocked receptacles must provide automatic de-energizing of the circuit before mated contacts are disengaged while plug is withdrawn; even while actuating rod is depressed.
- C. Trip Indication– All devices shall have a visual "point of site indication" signaling an interrupted circuit.

## PART 3 – EXECUTION

### 3.01 DESIGN AND WIRING REQUIREMENTS:

- A. Testing - Assemblies must be design tested for a minimum of 25,000 operating cycles.
- B. Wiring – All assemblies must be factory wired to conform to guidelines stated in the NEC for wire sizing, Table 310-16 and wire bending space, Article 373-6. Wiring of individual interlocked reefer outlets must allow for their removal/replacement without opening the enclosure access panel.
- C. Conduit Entry - All assemblies shall include a conduit entrance with aluminum conduit hub(s).

### 3.02 APPLICABLE COMPLIANCES:

- A. Underwriters Laboratories (UL) – The enclosure assemblies specified herein shall be listed in applicable sections of U.L. Standards 489, 1682 and 1686.
- B. Canadian Standard Association (CSA) – The devices shall be listed in the applicable sections of CSA C22.2-182.1.
- C. Federal Department of Transportation – shall comply with Federal Register volume 47, number 68, subpart 11.79 and the United States Coast Guard (USCG).
- D. International Electro-Technical Commission (IEC) – The 32 ampere devices specified shall conform to IEC 309-1 and 309-2.
- E. International Standards Organization (ISO) – ISO 1496/2, Annex 1.

### 3.03 INSTALLATION:

- A. Prior to installation of ROA's, Contractor shall examine the areas and conditions under which the ROA'S are to be installed and notify the Engineer in writing if unsatisfactory conditions exist.

- B. ROA's shall be installed as shown on the Drawings and per the manufacturer's written instructions. In addition, the installation shall meet the requirements of local codes, the NEC and National Electrical Contractors Association's "Standard of Installation".
- C. All installation hardware shall be 316 stainless steel.
- D. Conduit Hubs shall be used for all conduit entries into the ROA's. Hubs shall be properly installed and tightened to maintain NEMA 4 integrity of the ROA enclosure.
- E. All ROA field wiring connections shall be to the ROA's Power Distribution Block. A corrosion inhibitor/anti-oxidant shall be used on all field wired terminations in the ROA's including all phase and ground connections.
- F. After all wiring terminations are complete, the conduit shall be sealed to prevent moisture intrusion. The sealing shall be done at the entry point of the conduit into the enclosure so the seal can be verified and inspected by removal of the access cover.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED:**

- A. This document covers pin and sleeve, marine, circuit interrupting rated, reefer power outlet assemblies. Suitable for use in dry, damp, wet, and outdoor marine locations for the electrical powering of refrigerated containers. Assemblies shall be U.L. listed with enclosures incorporating interlocked reefer power outlets in a modular multi-gang arrangement. Devices are factory wired to a U.L. listed/recognized power distribution block and rated 32 amps at 480 VAC, 50-60 Hz. Devices are also rated for continuous use in temperatures from -20 F degrees to +140 F degrees. Devices must provide internal environmental seals for marine and extreme wet applications and are to be mechanically interlocked.
- B. All metal fabrications (bunkers) are to be 316 stainless steel. The work shall consist of furnishing all materials, labor, and equipment for fabricating and/or repairing, galvanizing, and erecting metal fabrications, all in accordance with the Drawings, notes, and this specification.
- C. All bunker style reefer receptacles shall be coordinated for mounting in/on a pre-cast concrete protective enclosure with steel lid. See detail on drawings.

## **PART 2 – PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS:**

- A. All reefer outlet assemblies (ROA's) and pedestals shall be manufactured by ESL Power Systems, Inc. or approved equal as complete assemblies and shall be marked as stated.
- B. ROA's shall be UL Listed as an assembly. The individual Modular Interlocked Reefer Outlets within each ROA shall also be UL Listed.

### **2.02 SHOP DRAWINGS:**

- A. Contractor shall submit shop drawings for Engineer's approval prior to start of Reefer Power Outlet Assembly and fabrication

### **2.03 REEFER OUTLET ASSEMBLIES (ROA'S):**

- A. Contractor shall provide and install 4-Gang Concrete Bunker Mount ROA's. Quantities and dimensions as shown on Drawings.
- B. ROA's shall be UL Listed as an assembly and labeled as such. The individual Modular Interlocked Reefer Outlets within each ROA shall also be UL Listed. ROA Enclosures shall be NEMA 4X, constructed of continuous seam-welded, 316 Stainless Steel. Access covers shall be fully gasketed and protected by drip shields. Enclosures shall be powder coated gray after fabrication. Modular Interlocked Reefer Outlets within the enclosure shall be factory-prewired to a single UL recognized power distribution block (PDB) rated equal to or greater than feeder breaker trip rating as specified on the Drawings. The PDB is fed from a protected branch circuit. All equipment grounds shall be bonded to a ground lug.
- C. Size and location of opening for conduit fitting and the feeder size, phase and ground, shall be as specified on the Drawings.
- D. Each ROA must include a provision for moisture control within the installed enclosure.

#### 2.04 INDIVIDUAL INTERLOCKED REEFER OUTLETS:

- A. Modular Interlocked Reefer Outlets (Modules) shall be UL Listed, 32-ampere 480VAC (IEC 309-2, CEE-17 3h), ESL Cat. No. R32-480-30-22SSD-SP with stainless steel flap cover. Each 32A/480V Module shall include a UL 489 Listed circuit breaker with 30-ampere trip rating and 22,000 ampere interrupting capacity at 480VAC. The Module frames shall be constructed of stainless steel and shall include a spring loaded, self-aligning and self-closing stainless steel snap cover and a ½" minimum outside diameter stainless steel on/off control rod.
- B. The module interlocking mechanism shall be mechanical in design. The mechanism shall prevent the outlet from being energized unless a mating plug is fully inserted and the on/off control rod engaged. The mechanism will allow manual de-energizing but will also automatically de-energize the outlet if the plug is partially or fully withdrawn under load. The mechanism must be fully operational if the plug nose key is damaged or missing. The mechanism must not operate if the ground pin is missing from the mating plug.

#### 2.05 CIRCUIT BREAKERS:

- A. Circuit Protection – All receptacles must be protected by a molded case, thermal-magnetic type, U.L. 489 listed circuit breaker with a minimum of 35,000 amp interrupting capacity. The circuit breaker must also comply with NEC Articles 240 and 430 for branch circuit protection.
- B. Trip Free Operating Mechanism – all interlocked receptacles must provide automatic de-energizing of the circuit before mated contacts are disengaged while plug is withdrawn; even while actuating rod is depressed.
- C. Trip Indication– All devices shall have a visual "point of site indication" signaling an interrupted circuit.

### **PART 3 – EXECUTION**

#### 3.01 DESIGN AND WIRING REQUIREMENTS:

- A. Testing - Assemblies must be design tested for a minimum of 25,000 operating cycles.
- B. Wiring – All assemblies must be factory wired to conform to guidelines stated in the NEC for wire sizing, Table 310-16 and wire bending space, Article 373-6. Wiring of individual interlocked reefer outlets must allow for their removal/replacement without opening the enclosure access panel.
- C. Conduit Entry - All assemblies shall include an entry and exit conduit location with aluminum conduit hub(s).

#### 3.02 APPLICABLE COMPLIANCES:

- A. Underwriters Laboratories (UL) – The enclosure assemblies specified herein shall be listed in applicable sections of U.L. Standards 489, 1682 and 1686.
- B. Canadian Standard Association (CSA) – The devices shall be listed in the applicable sections of CSA C22.2-182.1.
- C. Federal Department of Transportation – shall comply with Federal Register volume 47, number 68, subpart 11.79 and the United States Coast Guard (USCG).
- D. International Electro-Technical Commission (IEC) – The 32 ampere devices specified shall conform to IEC 309-1 and 309-2.
- E. International Standards Organization (ISO) – ISO 1496/2, Annex 1.



**3.03 INSTALLATION:**

- A. Prior to installation of ROA's, Contractor shall examine the areas and conditions under which the ROA'S are to be installed and notify the Engineer in writing if unsatisfactory conditions exist.
- B. ROA's shall be installed as shown on the Drawings and per the manufacturer's written instructions. In addition, the installation shall meet the requirements of local codes, the NEC and National Electrical Contractors Association's "Standard of Installation".
- C. All installation hardware shall be 316 stainless steel.
- D. Conduit Hubs shall be used for all conduit entries into the ROA's. Hubs shall be properly installed and tightened to maintain NEMA 4 integrity of the ROA enclosure.
- E. All ROA field wiring connections shall be to the ROA's Power Distribution Block. A corrosion inhibitor/anti-oxidant shall be used on all field wired terminations in the ROA's including all phase and ground connections.
- F. After all wiring terminations are complete, the conduit shall be sealed to prevent moisture intrusion. The sealing shall be done at the entry point of the conduit into the enclosure so the seal can be verified and inspected by removal of the access cover.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED**

- A. Provide dry transformers, concrete padmounted and c-channel mounted of the types and characteristics specified herein and shown on the drawings.
- B. All dry-type transformers and unit substations shall be 304 stainless, painted, Nema 3R.

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Dry Type Distribution Transformers:
  - 1. Eaton
  - 2. Sorgel Quiet Quality
  - 3. Tierney
  - 4. Federal Pacific
  - 5. Olsun
  - 6. Or Equal

### **2.02 SHOP DRAWINGS**

- A. Prepare and submit for review, prior to manufacture; include dimensioned elevations, base plans, section views, wiring and connection diagrams and bolting templates. Contractor shall review shop drawings and indicate mounting methods and connection lugs required.

### **2.03 DRY TYPE DISTRIBUTION TRANSFORMERS**

- A. Dry type transformers and unit substations (main breaker, transformer, secondary circuit breakers shall be provided to satisfy 208Y/120 volt or 120/240 volt requirements from the 480 volt system. Transformers shall comply with NEMA Standard ST-20, Energy Star and shall bear the UL label. Unit substation shall have bolt on circuit breakers.
- B. Enclosure Construction
  - 1. Steel 304 stainless panel enclosure painted over core, coil and terminal chamber with louvered openings for convection cooling.
  - 2. Provide Nema 3R for installation environment.
- C. Windings: - Separate primary and secondary windings shall have Class H insulation rated for continuous operation at 115 degrees C above a 40 degree C ambient, with a maximum hot spot temperature of 220 degrees C. Windings, core and coil assembly shall be treated and built to resist the effects of dirt and moisture.
- D. Connections: All dry type distribution transformers shall have a 480 volt delta connected primary and 208Y/120 volt, three phase, four wire connected secondary or 480 volt primary to 240/120 volt single phase, secondary. Provisions for external connections shall be made by means of a terminal board employing lugs compatible for the external conductors installed.
- E. Primary Taps: Provide four full capacity taps, minimum of two 2-1/2% above and two 2-1/2% below normal (rated) primary voltage. Single phase transformers, 15 KVA and smaller, shall have at least two taps below normal.
- F. Capacity: Transformers furnished shall have a continuous overload capability not less than 115% of the nominal size shown on the plans.

- G. Efficiency: Transformers shall be designed for substantially lower losses than NEMA standard transformers.
- H. Core Steel: Thin lamination for efficiency, not thicker than 9 mils.
- I. Sound Level: Transformers shall have a guaranteed sound rating. Sound level shall not exceed 36dB per IEEE C57.12.91 testing for all sizes through 300 KVA (similar to Tierney Quietran). All transformers shall be factory certified to have sound levels not exceeding those specified.
- J. Certification: Submittals shall include appropriate test and manufacturing data to show transformers comply with all requirements of this specification.

#### 2.04 VIBRATION ISOLATORS

- A. General: Isolators shall be selected according to manufacturer's recommendations.
- B. Mounting Pads: Shall be ribbed elastomeric pads for direct mounting under equipment.
- C. Spring Vibration Isolators: Shall be seismically restrained type, incorporating integral ribbed noise isolation pad.

### **PART 3 - EXECUTION**

#### 3.01 MOUNTING

- A. General
  - 1. Transformers shall be ground mounted on a concrete pad, sized 6" larger than transformer footprint required for the particular installation. Unit substations mounted on wood poles shall be c-channeled on wood poles with main circuit breaker mounted no higher than 6' – 0" AFG
  - 2. All units shall be seismically restrained/braced to comply with the requirements of the International Building Code (IBC) and manufacturers seismic testing. Concrete mix, size, depth of pad and anchor bolts shall be based on transformer manufacturer's recommendation for compliance with seismic zone testing.
  - 3. Remove all shipping blocks and packing materials prior to installation.
  - 4. Provide shop drawings for approval of any special mounting brackets or hangers.

#### 3.02 VIBRATION ISOLATION

- A. General
  - 1. All transformers shall be provided with vibration isolation as recommended by the manufacturer and sized for the specific application.
- B. Mounting Pads
  - 1. General elastomeric type mounting pads shall be used for vibration isolation. Provide pads directly under the transformer base channels or mounting brackets. Pads shall be punched to accept hold-down/anchor bolts.

#### 3.03 RACEWAY CONNECTIONS

- A. Transformer raceway connections shall be PVC coated, flexible metal conduit for equipment subject to vibration.

#### 3.04 GROUNDING CONNECTIONS

- A. Dry transformers shall be considered "grounded neutral, separately derived systems;" the neutral shall be grounded per code accordingly.

### 3.05 VOLTAGE TAP CONNECTIONS

- A. Connect all transformers at "normal" voltage tap. Measure and record secondary voltages of all transformers and selected switchgear after the facility is completely energized. Forward a list to the Engineer for evaluation; reconnect taps as subsequently directed. All costs associated with this work shall be included in the basic bid.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED**

- A. Provide all service entrance and main distribution non-walk in, Nema 3R, 316 stainless, switchboard equipment complete with accessories and continuous full load ampacities as indicated.

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Siemens
- B. Square D
- C. Cutler Hammer
- D. ABB

### **2.02 ENCLOSURES**

- A. General Description
  - 1. Switchgear shall be freestanding and utilize sectionalized construction to allow localized access without disturbing adjacent sections. Equipment shall be dead front type.
- B. Enclosure Construction
  - 1. Enclosure shall be fabricated of code gauge 316 stainless steel; minimum 12 gauge, except front panels and doors may be 14-gauge minimum.
  - 2. Steel angle and/or channel framework shall be designed to provide strength and rigidity required for the particular installation and shall be suitable for lifting support.
  - 3. A removable lifting angle shall be provided at the top and bottom of each shipping section.
  - 4. Enclosure shall be front access only.
  - 5. Enclosure types shall generally be:
    - a. Nema 3R for exterior applications with hinged and locking doors.
  - 6. Finish: The paint finish shall be factory applied, standard gray color for all exterior and interior painted surfaces. Other colors may be considered.

### **2.03 SWITCHBOARD DIMENSIONS**

- A. Overall height of switchboards shall not exceed 90 inches (not including base channels). Length and depth shall not exceed dimensions as scaled or noted in contract documents. Manufacturers whose equipment dimensions exceed those indicated shall notify the Engineer in writing at least 10 days prior to bid date. These manufacturers may not bid the project unless they properly notify the Engineer and qualify their bid as "Not Conforming to Contract Documents". Contractor's bid shall be based only on equipment, which fully complies with the contract documents. Cost of building modifications, switchboard relocations (if permitted) and other additional work required to accommodate larger switchboard(s) than shown on the drawings shall be borne totally by the Contractor.

### **2.04 SWITCHBOARD BUSBARS**

- A. Aluminum or copper at manufacturer's option, factory fabricated, carried to terminals for connection to service cables or busway. Brace switchboard components for symmetrical fault current shown plus asymmetrical offset (100,000 amp bracing minimum). Aluminum bus shall be tin plated over its full length.

B. Busbar Joints and Connections:

1. Busbar-to-busbar connections shall be lapped, bolted and silver or tin plates, to produce low contact resistance and low temperature rise joints. Aluminum bus joints shall utilize Grade 5 bolts with belleville washers.
2. Overcurrent devices shall be bolted to busbars using Grade 5 bolts and belleville washers.
3. Conductor connectors shall be bolted to busbars using Grade 5 bolts and belleville washers.

C. System of Bussing shall be three phase, 4 wire, with full size neutral.

D. Ground Bus shall be full-length ground bus bonded to frame. Minimum size shall conform to UL 891 for grounding neutral conductor.

## 2.05 SWITCHBOARD COMPONENTS

A. General All Switchboards: Switchboard components shall include (but not be limited to) the following:

1. Circuit breakers, size and quantity as shown.
2. Space provisions for future breakers as shown, including complete bussing and hardware for mounting devices.
3. Provisions for utility company metering, and Owner instrumentation components specified.
4. Cleats for securing all conductors within the switchboard.
5. Integral mounted transient Voltage Surge Suppression (TVSS) equipment. Equipment provided by the switchgear manufacturer shall have equal or better characteristics.
6. Miscellaneous appurtenances as required for a complete installation.

B. Service Entrance Switchboards: These switchboards shall include standard components (listed above in paragraph A) as well as the following:

1. Shall conform to UL 869 and have a Service Entrance Type UL label.
2. Shall be full fault current rated and properly coordinated with service overcurrent device.
3. Shall contain current transformers and instrumentation described below.
4. Shall have Transient Voltage Surge Suppressor (TVSS) equipment mounted integral to the switchboard.

## 2.06 POWER MONITOR EQUIPMENT

- A. In each switchboard, provide a digital line Power Monitor (PM) device Siemens PAC 4200 or equal having the features and functions specified below. The PM shall consist of a single microprocessor-based unit capable of monitoring and displaying the functions listed below with the accuracy indicated; the PM shall auto range between Units, Kilo-units and Mega-units. The PM shall provide the capability to communicate data via twisted pair network. The PM shall be UL listed, CUL and CE certified and also meet ANSI Standard C37.90.1 for surge withstand.

### METER VALUES

(Accuracy % Full Scale)

AC Phase Amperes +/- (0.3%)

AC Phase Voltage +/- (0.3%)

Watts +/- (0.6%)



VA +/- (0.6%)  
VARS +/- (0.6%)  
Power Factor (+/- 1 digit)  
Frequency +/- (0.1 HZ)  
Watt-hours +/- (0.6%)  
VAR-hours +/- (0.6%)  
VA-hours +/- (0.6%)  
Watt Demand with 10 minute interval  
% THD (through 31st harmonic)  
Voltage – min./max.  
Current – min./max.  
Power –min./max.  
Power Factor – min./max.  
Frequency – min./max.  
Peak % THD

- B. Input ranges of the PM shall accommodate external current transformers with ranges from 5/5 through 12,800/5 amperes. Provide external current transformers with rating as indicated on the drawing or sized for incoming service. Potential transformers shall be self included and fused for 480-Volt system.
- C. Control shall be capable of being supplied from the monitored incoming AC line without the need for a separate AC supply control circuit or separate remote power source.
- D. Provide an addressable communication card capable of transmitting all data over a compatible single mode fiber to an existing central computer for storage and/or printout.
- E. Power Monitor Installation
  - 1. Provide (ampere rating of switchboard) to 5 Amp current transformers (3) and (3) fused voltage circuits to each power monitor.
  - 2. Install power monitors flush in the instrument space behind weather tight doors of switchboards.
  - 3. Provide raceway access for communication wires to access the power monitors.

## 2.07 NAMEPLATES

- A. Provide engraved phenolic nameplates per Section 26 05 53, Identification for Electrical Systems, for each switchboard, instrument, protective device and disconnect device for the entire switchboard lineup. Nameplates for each switchboard shall include project name, voltage, phase and UL short circuit rating.
- B. Each protective device and disconnect nameplate shall include load designation (and fuse size and type when applicable). Furnish complete list with submittal.
  - 1. Provide one job nameplate on the main switchboard with the following information:
    - a. Project Name
    - b. Electrical Consultant (Cross Engineers)

- c. Electrical Contractor
- d. Year of Manufacture

## 2.08 RISER DIAGRAM

- A. Provide a complete electrical system riser diagram (as-built) that shows service entrance equipment, panelboards, transformers, raceway/feeder sizes and the like. Diagram shall utilize non-fading ink and paper and be mounted to the exterior of the main switchboard in a clear plastic front frame. Submit preliminary draft to project engineer for approval prior to final fabrication.

## 2.09 SHOP DRAWINGS

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

# PART 3 - EXECUTION

## 3.01 MOUNTING

- A. All switchboards shall be provided with concrete housekeeping pads that are 3-1/2 " high and 4" larger (length and width) than the "footprint" of the equipment.
- B. Secure switchboards, to prevent overturning from earthquakes, with 1/2" x 8" minimum black mild steel foundation anchor J-bolts. Bolts shall be set in the sub-base decking and extend through the housekeeping pad with sufficient threads to attach the equipment.

## 3.02 WIRING

- A. Shall conform to applicable sections of these specifications.
- B. Shall be secured to switchboard enclosure with cleats. Maximum spacing shall not exceed 24 inches.

## 3.03 SPACE

- A. Verify space available with equipment sizes and code required working clearances prior to submittal of shop drawings.

## 3.04 GROUNDING

- A. Provide per Section 33 79 00 - Site Grounding.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 WORK INCLUDED**

- A. Provide all panelboard equipment complete. All equipment shall be Nema 4X, gasketed, 316 stainless steel, dead front type construction, with padlock hasp and shall bear the U.L. label. Load centers will not be acceptable.
- B. All panels provided for service entrance locations as defined by the NEC shall be provided with a UL label as Suitable for Use as Service Entrance Equipment (SUSE).

### **1.02 SHOP DRAWINGS**

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

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Siemens
- B. General Electric
- C. Square D
- D. Cutler Hammer
- E. Approved Equal

### **2.02 PANELBOARD DESCRIPTION**

- A. Voltage, arrangement, and capacity of bus and overcurrent protective devices shall be as shown on the drawings. Bus shall extend behind all spaces ready for future overcurrent protective devices.
- B. Buss bars shall be plated aluminum or copper with ampere density not-to-exceed 1200/1000 amperes per square inch. Bussing will generally be 3 phase, 4 wire, 100 percent neutral, 200 percent for lighting and computer equipment panels, braced to match the interrupting rating of the breakers.
- C. Provide multiple lugs where parallel or "feed-through" connections are shown on drawings.
- D. Provide separate neutral and ground buses at the bottom of each panelboard.

### **2.03 OVERCURRENT PROTECTIVE DEVICES**

- A. Provide circuit breakers in all panelboards.
- B. The AIC rating of the panel shall be as specified on the drawings.
- C. Mount breakers in all panelboards so breaker handle operates in a horizontal plane. Provide common trip on all multiple pole breakers.
- D. All circuit breakers rated 100 amps and above shall be solid state bolt-in type. Circuit breakers rated less than 100 amps may be molded case bolt in type.
- E. Circuit Breakers rated 15A through 30A shall be U.L. rated for 60/75 degree centigrade wire. Circuit breakers 35A and larger shall be rated for 75 degree centigrade.
- F. Circuit breakers intended for switching 120 volt loads shall be switching duty rated (SWD).
- G. Provide "Spare" overcurrent devices, where noted on the drawings, complete and ready for future circuit connections.

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

#### 2.04 ENCLOSURE GENERAL CONSTRUCTION

- A. Provide cabinets of sufficient dimensions to allow future expansion and addition of overcurrent devices within the panelboards. All panelboards shall be provided with door-in-door construction. Provide increased enclosure width required for installation of conduits.
- B. Provide all panelboards Nema 4x, gasketed, 316 stainless steel, with padlock hasp and for use in a salt spray environment.
- C. All electrical distribution equipment locks shall be keyed identically.
- D. Fasten panelboard front with machine screws with oval counter-sunk heads, finish hardware quality, with escutcheons or approved trim clamps. Clamps accessible only when dead front door is open are acceptable.
- E. Surface mounted panelboards with fronts greater than 48 inches vertical dimension shall be hinged at right side in addition to hinged door over dead front. Provide three point latching mechanism with one T-handle operator.
- F. Provide matching trim of same height for adjacent panels or control devices in finished areas.
- G. Transient Voltage Surge Suppression (TVSS) equipment shall be provided by the panelboard manufacturer.

### PART 3 - EXECUTION

#### 3.01 GENERAL INSTALLATION

- A. Secure panelboards in place with top of cabinet at 6'-0", above finished grade unless otherwise noted. Top of cabinet and trim shall be level; trim and door shall fit neatly without gaps, openings or distortion.
- B. Top edges of adjacent panels shall be even.
- C. Securely anchor panelboards to structural framing with stainless approved fasteners and concealed bracing as required. Provide paint over galvanize or 316 stainless steel channel support framing with concrete pad or anchor base where panelboard(s) are free standing. Submit support rack shop drawings for approval prior to fabrication.

#### 3.02 CIRCUIT INDEX

- A. Each panelboard shall be provided with a typewritten index listing each circuit in the panel by number, with its proper designation. Listing shall match circuit breaker arrangements, typically with odd numbers on the left and even numbers on the right. Mount index with a transparent protective cover inside the cabinet door.
- B. Contractor shall provide a typed duplicate index for each panel in the O & M manuals.

#### 3.03 PANELBOARD NAMEPLATE

- A. Provide phenolic engraved nameplate for each panelboard. See Section 26 05 53 - Identification for Electrical Systems.

**END OF SECTION**

## **PART 1- GENERAL**

### **1.01 WORK INCLUDED:**

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

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS:**

- A. Hubbell
- B. G.E. Wiring Devices
- C. Leviton
- D. Pass & Seymour
- E. Approved Equal

### **2.02 MATERIALS:**

- A. Wiring devices shall be specification grade, and the product of a nationally recognized manufacturer regularly engaged in their production.
- B. All wiring devices specified in this section shall be the product of one manufacturer. Each type shall have identical appearance and characteristics.

### **2.03 SWITCHES AND RECEPTACLES:**

- A. White, toggle type, 20A, 277V.
- B. White duplex 20A, 125V, specification grade with GFCI with trip indicator light.
- C. All exterior switch and receptacle covers shall be Nema 3R "In Use".

## **PART 3 - EXECUTION**

### **3.01 MOUNTING:**

- A. Rigidly fasten each device to auxiliary pole, non-metallic strut or painted galvanized steel strut.

### **3.02 RECEPTACLE GROUNDING:**

- A. Provide bare bonding wire between receptacle grounding terminal and box.

**END OF SECTION**

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## **PART 1 -GENERAL**

### **1.01 WORK INCLUDED:**

- A. This specification contains the minimum requirements for the design, manufacture and testing of automatic, polyphase power factor correction capacitors rated 480 volts.
- B. Provide one (1) 400 KVAR unit, with harmonic filters.
- C. The equipment covered by these specifications shall be designed and tested in accordance with NEMA, NEC, IEEE and ANSI standards.

## **PART 2 - PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS:**

- A. Common Wealth Sprague Capacitor, Inc.
- B. General Electric
- C. Or equal

### **2.02 SHOP DRAWINGS:**

- A. Contractor shall submit shop drawings for Engineers approval prior to start of equipment assembly.

### **2.03 EQUIPMENT RATINGS:**

- A. Voltage rating of the power factor correction equipment shall be 480 volts. The nominal voltage rating of the capacitor cell shall be 1.08 times the voltage rating of the equipment.
- B. The total capacity of each unit shall be 400 KVAR. The total KVAR shall be automatically switched in steps of 50 KVAR.

### **2.04 CAPACITOR CELLS:**

- A. Individual capacitors shall be self-healing utilizing polypropylene as a dielectric with vacuum deposited conductors on the polypropylene as electrodes.
- B. Each three phase capacitor shall be furnished with a U.L. listed pressure sensitive interrupter. The interrupter shall disconnect all three phases at the same time to maintain a balanced circuit.
- C. Capacitors shall be contained in hermetically sealed metal cans to prevent atmospheric contaminants from shortening the useful life.
- D. Dielectric material shall be low loss, less than 0.5 watts per KVAR.
- E. Dielectric fluid shall be non-PCB biodegradable with a flash point in excess of 415° F.
- F. Terminal bushings shall withstand 10KV AC to ground and be rated 30 KV BIL or greater.
- G. Normal design life of individual capacitor cells shall be 20 years.
- H. Individual capacitor cells shall be covered by a five(5) year warranty.
- I. All capacitor cells shall have threaded terminals for wire connection.
- J. To reduce line transients on system no stage shall switch more than 50 KVAR and no capacitor cell shall exceed 25.0 KVAR.
- K. Capacitor cells shall be designed to handle the increase in voltage from the reactor.
- L. All three phase capacitors shall be U.L. listed.

#### 2.05 CONTROLS:

- A. All controls shall be mounted on enclosure door for easy inspection and service.
- B. A door interlock shall be provided to disconnect control power when enclosure door is opened.
- C. A personnel ground fault breaker shall be provided to disconnect control power upon accidental contact with control power and ground.

#### 2.06 REACTIVE POWER CONTROLLER/POWER FACTOR METER:

- A. Controller shall measure the reactive current on every passage of the voltage through zero.
- B. A LED display shall be provided to indicate the stages that are on.
- C. To prevent leading power factor the controller shall be provided with programmable target cosine selector.
- D. The time delay between switching of filtered steps must be field programmable and have range of 10 seconds to 10 minutes to reduce hunting and allow voltage decay as required by NEC.
- E. All output contacts shall be disabled within 15 milliseconds of the main power interruption. The controller shall retain it's programming after the restoration of supply voltage. The controller shall bring the capacitor bank on line in step, phased, normal sequence.
- F. Controller shall be able to select 1:1:1, 1:1:2, and 1:2:2 switching sequence of filter steps.
- G. Controller shall be able to display power with indication for an inductive power factor.

#### 2.07 ON - OFF SWITCH

- A. On/Off switch shall control power to all door mounted controls and contain pilot light to indicate "on" mode.

#### 2.08 BLOWN FUSE LIGHTS:

- A. Provide three (3) "Push-to-Test" blown fuse pilot lights, one per phase door mounted, to indicate a blown fuse condition.
- B. Each fused phase, of each 50 KVAR step, shall have it's own blown fuse indicating light mounted in close proximity to the fuse for easy identification.

#### 2.09 ENCLOSURE:

- A. The enclosure shall be fabricated from 12 gauge cold rolled steel, Nema 4X, gasketed and painted to withstand salt environment.
- B. An internal grounding lug shall be provided.
- C. Capacitor cells shall be accessible for visual inspection and replacement from the front of the cabinet.
- D. Removable lifting eyes shall be provided.
- E. The enclosure door shall have a three point latch with key locking handle.

#### 2.10 EQUIPMENT PAINTING:

- A. All hardware and non-painted surfaces shall be 316 stainless steel to prevent corrosion.
- B. All items shall be hot dip galvanized after fabrication to meet G90 requirements.
- C. Sweep blast or chemically pickle surfaces to receive finishes.
- D. Prime all surfaces with Devron 201 universal epoxy primer to between 3 and 4 mils. Strip coat edges as recommended by manufacturer.



- E. Finish all surfaces with Devron 379 epoxy urethane (gloss) to between 3 and 4 mils. Strip coat edges as recommended by manufacturer.
- F. Final product shall be ANSI gray, 6 mils (dry film thickness) and pass 600 hour salt spray test.
- G. Finish method shall be included in shop drawings submittal. Exclusion will result in rejection of equipment.

#### 2.11 GENERAL CONSTRUCTION:

- A. All power wiring shall have a thermoplastic insulation rated 105°C at 600 volts.
- B. System wiring connections shall be made to copper bus bars braced for 100,000 amps.
- C. Connectors shall be rated for switching of reactive current.
- D. The automatic power factor correction equipment shall be warranted by the manufacturer of the capacitor cells.
- E. Air core transient suppression coils shall be provided in series between the contactors and capacitor cells.
- F. All wiring connections shall be mechanically fixed with nut or screw.
- G. The automatic power factor correction equipment shall be an expandable modular design.

#### 2.12 DISCHARGE RESISTORS:

- A. Capacitor "cells" shall be provided with discharge resistors to reduce residual voltage to less than 50 volts within one minute of de-energization. (NATIONAL ELECTRICAL CODE ARTICLE 460-6).
- B. Resistors provided shall insure a 20 year minimum life.

#### 2.13 FUSES:

- A. To provide for major fault protection, line fuses shall be provided on all three phases of each switched stage and fixed bank.
- B. Line fuses shall be current limiting, U.L. recognized Class T-type. Minimum interrupting ratings shall be 200,000 amps for fuses 30 amps and above.
- C. Fuses shall be designed for filter applications and shall be rated not less than 150% filter current rating.

#### 2.14 PERFORMANCE FEATURES:

- A. The capacitor shall be rated for continuous duty at 40°C ambient at 500 feet and below.
- B. Total Harmonic Distortion (THD) is 5% on either the voltage and current waveforms shall not effect the life of capacitors, contactors or controllers.

### **PART 3 - EXECUTION**

#### 3.01 SYSTEM COMPATIBILITY:

- A. A system compatibility analysis shall be under taken by the automatic capacitor bank manufacturer. It will be the responsibility of the contractor to provide the manufacturer the data covered by A.1 through A.11. This analysis shall be done to identify any potential harmonic current sources. The data shall be used by the manufacturer to determine the capacitor bank requirements for chokes or filters.
  - 1. Total KVAR to be added: 400 KVAR
  - 2. KVAR currently on system: 0 KVAR

3. Automatic capacitor bank will be located approximately 50 feet from main transformer.
4. Main transformer: Impedance: 5.75%; (1000)(2000) KVA
5. Primary transformer voltage: 13.800 Volts
6. Secondary Transformer voltage: 480 VOLTS
7. A cable/bus/cable (contractor will provide sizes and distances) will be used between the automatic capacitor bank and transformer.
8. Nominal load information: \_\_\_\_\_ KW  
\_\_\_\_\_ KVA  
\_\_\_\_\_ POWER FACTOR
9. Peak Load information: \_\_\_\_\_ KW  
\_\_\_\_\_ KVA  
\_\_\_\_\_ POWER FACTOR
10. Desired power factor: 98%. System shall be set for 100%.
11. There are no D.C. drives on the electrical system.

### 3.02 TESTING

- A. All capacitor cells shall be traceable through construction and testing.
- B. The automatic capacitor bank shall be tested for proper operation prior to leaving the factory. The following checks, measurements, operations must be confirmed and recorded for each stage.
  - 1. Wire Connections
  - 2. Torque Connections
  - 3. Phase to Phase, Resistance Checks
  - 4. Phase to Phase, Capacitance Checks
  - 5. Controller Operation, Manual Operation
  - 6. Controller Operation, Automatic Operation
- C. The certified record of the tests (3.02 B) shall become part of the permanent documentation package that travels with the automatic capacitor bank.
- D. Contractor shall have an independent, NETA certified, testing agency perform a NETA acceptance test in the field on each unit.

### 3.03 MAINTENANCE:

- A. All maintenance and inspection on the capacitor assembly shall be done with the system disconnect device in the open position.
- B. Maintenance and inspection should be limited to 15 minutes or less so not to affect utility billing.
- C. At the one year mark the contractor shall provide inspection of the capacitor cells to identify failing capacitor cells. A bulged capacitor cover is the symptom to watch for and the capacitor cell replaced.

**END OF SECTION**

## PART 1 - GENERAL

### 1.01 WORK INCLUDED:

- A. See Civil drawings for locations, backfill and concrete base requirements.
- B. Wood poles shall be 95' – 0", Class 2, Douglas Fir, penta treated with metal cap and bird spikes.
- C. Metal poles shall be 4" square, powder coat painted to match light fixture. Height varies as indicated on drawings. Provide with handhole, ground stud and anchor bolts. Provide #2 bare Cu from ground stud to anchor bolts and concrete rebar, See Civil for concrete base requirements.
- D. Contractor shall paint (2 coats grey) all exposed galvanized steel on pole(s) utilized for equipment or light fixture mounting brackets. All mounting hardware shall be 316 stainless steel.
- E. Contractor shall aim all lights per manufacturer's coordinates and measure light levels 3' above grade, on a 20' x 20' grid, for comparison with manufacturer's computer generated photometric initial light level simulation for the site. Provide scaled site plan of field measured test values versus computer simulation for Engineer's review. Contractor shall re-aim light fixtures or provide additional light fixtures if test values do not match or exceed manufacturers computer simulation values.

### 1.02 LIGHTING PERFORMANCE:

- A. The lighting fixture manufacturer shall supply lighting equipment and computer generated point by point analysis(s) to meet the following:

#### 1. Performance Criteria

- a. The performance criteria requires lighting equipment which will provide initial minimum light levels of 3 footcandles.
- b. Uniformity ratio. The footcandle level shall have a uniformity ratio of average to minimum of not greater than 4.5:1 or better.

#### 2. Spill/Glare Light - Designated Areas

- a. Maximum spill light values - light levels shall not exceed the designated maximum footcandles or average footcandles shown below. These levels shall be shown as initial footcandles and shall be measured at a distance of 30 feet from the property fence line.

| From Defined Boundary | Horizontal<br>Footcandles | Footcandles with<br>meter aimed toward<br>brightest light bank |
|-----------------------|---------------------------|----------------------------------------------------------------|
| Maximum Footcandles   | .19                       | .72                                                            |
| Average Footcandles   | .08                       | .34                                                            |

- B. Point By Point Analysis

#### 1. Computer Models - Test Stations

- a. Field test stations for the horizontal field measurements shall consist of points on an equally spaced 20' by 20' grid.
- b. Spill/glare test stations shall consist of horizontal footcandles and maximum footcandles on a line as defined in 1.03 A, at 3' – 0" at the boundaries noted. Horizontal maximum footcandle readings shall be shown every 30 feet on the line.

- c. Light fixture manufacturer shall provide a written guarantee of the light levels submitted.
- d. All photometric calculations shall include light loss factors for all light fixtures to have internal louvers and glare shields.

## **PART 2 - PRODUCTS**

### **2.01 SUBSTITUTES:**

- A. The following LED light fixtures have been pre-approved. The manufacturer is required to comply with 1.02 above prior to bid.
  - 1. Spec Grade
  - 2. Aquity (Lithonia)
  - 3. Holophane
  - 4. Or equal
- B. Substitute light fixtures must be equal or better than the specified light fixtures regarding, photometrics operating temperatures, durability of finish and general quality. All substitutes must be approved in writing by the Engineer prior to bid.
- C. All light fixture manufacturers listed in 2.01, A 1-3 and other light fixture manufacturers requesting prior approval shall provide to the Engineer at the Engineers office a complete and fully assembled light fixture with internal louvers and glare shield for review and approval prior to bid. Sample light fixture shall be made available to the Engineer for a minimum of ten days for review.

### **2.02 LIGHTING PERFORMANCE AND MEASUREMENTS:**

- A. If the manufacturer requires additional light fixtures above the minimum light fixture quantity specified to meet the minimum footcandles levels specified, these fixtures may be added on poles where space and wiring capacity permit. Fixtures may only be added with prior written approval of the Engineer. Contractor shall include all additional equipment, labor and costs for these light fixtures in the bid.
- B. Test and Measurement Procedures
  - 1. All testing will be done with entire facility illuminated.
  - 2. Horizontal footcandle readings shall be taken with the meter positioned horizontal 36 inches above grade. Maximum footcandles shall be taken with the test cell positioned 36 inches above grade and aimed at the brightest light source.
  - 3. Ambient light levels shall be measured at the specified test stations. Maximum ambient footcandle level explored in all planes for each test station shall be recorded. Once the maximum spill light readings as defined have been recorded, subtract the ambient light readings from the respective footcandle readings at each test station.
  - 4. Testing equipment for measurement of footcandle levels shall be a calibrated Gossen Panalux Electronic 2 light meter or an approved equal. For final approval of the project the manufacturer shall provide a final report from the test results that shall provide the following items:
    - a. Identification of number and location of the test stations.
    - b. Actual horizontal footcandle readings taken at each test station.
    - c. Actual spill/glare footcandle readings taken at each test station.

- d. Total of hours of operation for the lighting system at the time of test readings.
- C. In event the measured values do not meet specified levels adjusted up from maintained to initial levels, then Contractor after reviewing the uniformity ratio as calculated and the measured results, shall generate a new aiming diagram, and a computer plot to the satisfaction of the Engineer before re-aiming the fixtures. Contractor shall then re-aim and retest the fixtures at no additional cost to the Owner.

## 2.03 MATERIALS:

- A. Exterior Fixtures
  - 1. Housings and appurtenances shall be corrosion resistant materials, such as non-ferrous metal, stainless steel, lexan or ferrous metal with approved special finish. All exterior fixtures shall be suitable for outdoor service without tarnishing or other damage due to exposure.
  - 2. Zinc or cadmium plate all metal parts concealed by canopies, including screws, plates, brackets and back boxes.
  - 3. Mounting hardware shall be galvanized steel, steel with powder coat finish, stainless steel or anodized aluminum. All screws shall be stainless steel.
  - 4. Provide manufacturer's standard colors.

## PART 3 - EXECUTION

### 3.01 SETTING POLES:

- A. All wood poles and steel pole concrete bases shall be carefully set to within 2 feet of designated spot. Refer to civil site plans and specifications for exact locations and backfill compaction requirements. All steel light pole handholes shall be located to face project North.
- B. Anchor bolts shall be installed using approved pole manufacturer supplied templates.
- C. Luminaire poles shall be installed plumb; utilize approved leveling nuts and/or baseplates.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The work includes excavation, trenching, backfill, and shoring of upland areas associated with utility demolition, utility installation, and paving as indicated on the Drawings and in the Specifications.

### **1.02 RELATED SECTIONS**

- A. Section 01 57 23 – Water Management
- B. Section 02 41 00 – Site Demolition
- C. Section 32 12 16 – Asphalt Paving
- D. Section 26 05 33 – Raceways and Boxes for Electrical Systems
- E. Section 33 10 00 – Water Distribution Systems
- F. Section 33 31 00 – Sanitary Sewer Utility Systems
- G. Section 33 41 00 – Storm Conveyance and Accessories
- H. Section 33 44 19 – Biofiltration Media Trenches
- I. Section 33 49 20 – Precast Concrete Drainage Structures

### **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 Society for Testing and Materials (ASTM)
  - 1. ASTM C 29 - Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate; American Society for Testing and Materials; Current edition.
  - 2. ASTM D 422 - Standard Test Method for Particle-Size Analysis of Soils; American Society for Testing and Materials; Current edition.
  - 3. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; American Society for Testing and Materials; Current edition.
  - 4. ASTM D1557 - Standard Test Method Laboratory Compaction Characteristics of Soil Using Modified Effort (58,000 ft-lbf/ft<sup>3</sup>(2,700 kN-m/m<sup>3</sup>)); American Society for Testing and Materials; Current edition.
  - 5. ASTM D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; American Society for Testing and Materials; Current edition.
  - 6. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); American Society for Testing and Materials; Current edition.
- D. Environmental Protection Agency (EPA)
  - 1. EPA SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods; United States Environmental Protection Agency, SW-846; Current edition.
- E. Revised Code of Washington (RCW)

1. RCW 39.04.180 – Trench Excavations – Safety Systems Required
- F. Washington Administrative Code (WAC)
  1. WAC Ch. 173-340 - Model Toxics Control Act
  2. WAC Ch. 173-303 - Dangerous Waste Regulations
- G. Washington State Department of Transportation (WSDOT)
  1. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10.

#### 1.04 SUBMITTALS

- A. Test reports for the following:
  1. Sieve analysis and proctor data of materials used for backfill and select fill.
  2. Degree of Compaction: Degree of compaction shall be expressed as a percentage of maximum density obtained by test procedures presented in ASTM D1557, ASTM D 2167, or ASTM D 2922.
  3. Sources of all imported material and certification that materials are clean and free of contamination.

#### 1.05 QUALITY ASSURANCE

- A. Unless otherwise specified, the Port will provide testing and inspection service to the satisfaction of the Engineer. The Contractor may obtain test results from Engineer at no cost. Tests conducted for the sole benefit of the Contractor, or before a product is approved, shall be at the Contractor's expense.
- B. Contractor shall perform and pay for all test reports on imported material
- C. Sampling and testing for compliance with the Contract provisions will be in accordance with Section 01 45 00.

#### 1.06 SITE CONDITIONS

- A. Subsurface investigations have been made at the project site. The geotechnical report developed as part of this project entitled "Thorne Road Container Yard", dated February 25, 2022 is available per Section 00 31 00 – Available Project Information.
- B. Existing Utilities
  1. The Contractor shall verify the location of existing utilities. Contact the Washington Utilities Underground Location Center at 1-800-424-5555 (or 811) for utilities within the public right of way and on Port property. The Contractor shall provide private utility locating services for non-public utility locating on Port property.
  2. The Contractor shall protect from damage those utilities which are to remain. Utilities damaged by the Contractor shall be repaired at no cost to the Port.
- C. Groundwater
  1. Anticipate encountering groundwater at any location within the project site. The groundwater elevation may vary depending upon proximity to the shoreline, soil conditions, tidal conditions, and weather. See section 01 57 23 – Water Management.
- D. Soils Containing Regulated Material
  1. Soil sampling has been performed at the project site. A memorandum entitled "Summary of Potential Areas of Soil and Groundwater Contamination", dated February 25, 2020 is available per Section 00 31 00 – Available Project Information.



## **PART 2 - PRODUCTS**

### **2.01 CHARACTERIZATION TESTING, REPORTING, AND CERTIFICATION**

- A. Materials shall be of the quality, size, shape, gradation, or equal to that manufacture as specified herein.
- B. Provide and pay for source characterization, testing, reporting, and certification for all off-site borrow materials as described below. Provide documentation for the Engineer's approval demonstrating that all imported materials from a borrow pit meet the contract requirements and certify that the materials are free of regulated materials.
- C. Regulated Materials are defined as materials or combinations of materials containing hazardous or dangerous wastes as defined under state laws, federal laws, or under the Model Toxics Control Act listed in WAC 173-340-900, Table 740-1, which exceed the Method A cleanup levels for unrestricted land use.
- D. Provide the following information with each sample submitted:
  - 1. Material Source
  - 2. Proposed On-site Use
  - 3. Sampling dates
  - 4. Chain of custody
  - 5. Sampling locations
  - 6. Contractor's certification that the samples submitted are representative of the materials that shall be reused at the site.
- E. Characterization Testing shall be conducted at a laboratory accredited under WAC Chapter 173-50, and shall include:
  - 1. Grain Size Distribution (ASTM D 422)
  - 2. Maximum Dry Density (((ASTM D1557)))
  - 3. Weight per unit volume of uncompacted material (ASTM C 29)
  - 4. Priority Pollutant Metals (((EPA SW-846)) 6010/6020/ 7041)
  - 5. Volatile Organic Compounds (((EPA SW-846)) 8260)
  - 6. Semi-volatile Organic Compounds (((EPA SW-846)) 8270)
  - 7. PCBs and Pesticides (((EPA SW-846)) 8080)
  - 8. Petroleum Hydrocarbons (NWTPH-HCID)

### **2.02 ON-SITE BACKFILL**

- A. Excavated in-situ soils generated during site construction activities are to be used as backfill material, unless determined to be unsuitable by the Engineer. It is to be assumed that all excavated in-situ material will be found acceptable for reuse.
  - 1. Provide samples of the material for physical characterization as requested by the Engineer. The material shall not be reused at the site until approved by the Engineer.
  - 2. Characterization and characterization testing of excavated materials proposed for reuse may be performed by the Port, as determined by the Engineer, to assure that backfill material meets the requirements of the contract documents.

- B. The Engineer may reject any materials that have been determined to be substandard or suspect to contain regulated materials. One or more of the tests listed in these specifications may be required prior to acceptance.

#### 2.03 GRAVEL BACKFILL

- A. If the Engineer determines the site conditions require backfill quantities greater than the quantity available from suitable excavated in-situ material, such as in the case where there is an excess amount of unsuitable material is encountered, Contractor shall import Gravel Backfill after obtaining approval from the Engineer.
- B. Gravel Backfill shall meet the requirements of WSDOT Standard Specifications Section 9-03.12(2) – Gravel Backfill for Walls, with the following exceptions:
  - 1. The amount of material passing the 4-inch screen shall be 100 percent.

#### 2.04 CRUSHED ROCK BASE

- A. Crushed rock base material shall be clean, well graded granular material meeting the requirements of WSDOT Standard Specifications Section 9-03.9(3) – Crushed Surfacing - Base Course, with the following exception:
  - 1. The amount of material passing the No. 200 sieve shall not exceed 5 percent.

#### 2.05 STRUCTURAL FILL

- A. Structural fill material shall be a clean, well-graded sand or sand and gravel with less than 5 percent by weight passing the No. 200 mesh sieve (based on the minus  $\frac{3}{4}$ -inch fraction).

#### 2.06 CRUSHED ROCK – TOP COURSE

- A. Crushed rock – top course material shall be clean, well graded granular material meeting the requirements of WSDOT Standard Specifications Section 9-03.9(3) – Crushed Surfacing - Top Course , with the following exception:
  - 1. The amount of material passing the No. 200 sieve shall not exceed 5 percent.

#### 2.07 GRAVEL BACKFILL FOR PIPE ZONE BEDDING

- A. Pipe zone bedding material shall be clean, well graded granular material meeting the requirements of WSDOT Standard Specifications Section WSDOT Section 9-03.12(3) , with the following exception:
  - 1. The amount of material passing the No. 200 sieve shall not exceed 5 percent.

#### 2.08 SAND

- A. Sand shall be clean granular material meeting the requirements of WSDOT Standard Specifications Section 9-03.1(2)B for Class 1 or Class 2 fine aggregate.

#### 2.09 FLOWABLE FILL BASE COURSE

- A. Flowable fill base course shall contain a minimum of 94 lb Type 1 cement per cubic yard. The flowable fill shall be uniform, excavatable, flowable, cohesive, non bleeding, low strength concrete mix, containing a stable air generator and maximum aggregate size of  $\frac{3}{8}$ ". Proportion flowable fill mix design so in-place strength does not exceed 200 psi (1378.95 kPa) during the life of fill and mix sets within six hours of placement.

#### 2.10 UNDERGROUND MARKING TAPE

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

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Excavating 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 Specifications.
- B. Excavation: Homogeneous or mixtures of naturally occurring earth, fill, sand, gravel, stones, clays, or loam, moved to facilitate the construction of structures, utilities, trenches, and associated work.
  - 1. Excavation material shall be moved with the use of mechanical equipment, such as shovels, clamshells, loaders, bulldozers, graders, rippers, etc., but shall not require drilling and blasting or drilling and line breaking.
  - 2. Excavation by sluicing method will not be permitted.
- C. Protect excavated material, stockpiled for reuse as backfill, from contamination by other materials and from weather damage by covering with waterproof sheeting and other effective means. Any material not properly protected which becomes unsuitable or contaminated shall be replaced at no additional cost to the Port.
- D. Separate stockpiles shall be employed for material to be reused as backfill, unsuitable material, and suspect material. At the end of the project, any material remaining in temporary "material acceptable for reuse" stockpiles shall be considered surplus / excess material, and following testing of material by the Port, Contractor shall haul excess material off-site to a Port approved disposal facility that is appropriate for the material being disposed. Disposal of material off-site prior to end of project, when there is still potential the material may be needed for backfill, shall first be approved by the Engineer.

### **3.02 SUSPECT MATERIALS, SAMPLING, TESTING, AND DISPOSAL**

- A. All excavated materials will be inspected and categorized as suspect or non-suspect by the Engineer or another Port representative. Soil will be considered suspect if it has an odor, sheen, or color typical of soil containing regulated materials.
- B. All suspect materials shall be stockpiled and segregated by the Contractor from other stockpiles or materials by the Contractor. The Port will provide and pay for sampling and characterization testing for all suspect materials prior to reuse or removal from the site. Allow 10 calendar days for Port testing and direction to the Contractor.
  - 1. Suspect soils characterized to be free of regulated materials, and meeting the requirements of the contract documents, may be reused on-site provided it is suitable for its intended use, as determined by the Engineer.
  - 2. Suspect soils characterized to contain regulated materials shall be loaded by the Contractor into trucks and disposed of at a Port approved disposal facility capable of receiving regulated material, as described in Section 01 74 16 – Soil Characteristics and Waste Management. Work and costs related to transporting and disposing of said material will be considered Changed Work.
  - 3. Surplus suspect soils characterized to be free of regulated materials, and meeting the requirements of the Contract Documents, shall be considered the same as non-hazardous excess material and may be re-used on site. Surplus / excess soils shall be loaded, transported, hauled, and disposed of off-site in accordance with applicable laws and regulations.

- C. All non-suspect soils shall be stockpiled by the Contractor, but segregated from suspect soils, and may be reused on-site provided they are suitable for the intended use, as determined by the Engineer.

### 3.03 EXCAVATION FOR STRUCTURES AND UTILITIES

- A. All foundations and utility structures shall be founded on compacted subgrade. Excavated material may be reused if it meets the requirements for fill, or as approved by the Engineer. Compact fill material as specified.
- B. Brace and shore or layback sides of excavations. Comply with all federal, state, and local regulations regarding shoring, bracing, and other protection requirements.
- C. Keep water out of excavated pits and trenches by pumping or other means of dewatering. Water level shall be kept below the bottom of concrete pours before, during, and for a minimum of three days thereafter.
- D. Protect excavated material, stockpiled for use as backfill, from contamination by other materials and from damage by weather by covering with waterproof sheeting or other suitable means, as approved by the Engineer.
- E. Take appropriate steps to prevent damaging adjacent structures during excavation.
- F. Unsuitable Structural and Trench Excavation: Unsuitable materials (if encountered) shall be excavated to the depth designated by the Engineer. Unsuitable material shall be replaced with gravel base material, or other materials approved by the Engineer.

### 3.04 CONTAMINATED/HAZARDOUS SOILS AND GROUNDWATER

- A. Contractor shall monitor soils and groundwater by instructing workers in observing and reporting questionable materials, odors, oily sheen or color on soils and water, and oily or chemical odors. If unexpected hazardous or contaminated materials are encountered, Contractor shall stop work in that area immediately and notify the Engineer.

### 3.05 EXPORT MATERIAL

- A. Material to be exported from the site must be stockpiled and characterized prior to offsite disposal. The Contractor will stockpile material at a location onsite as directed by the Engineer. Stockpiled material shall be placed, covered with plastic sheeting and anchored to prevent rain water from contacting material. Refer to Paragraph 3.02 for characterization and disposal requirements. Contractor shall base their bid on the assumption that excavated material is not regulated.

### 3.06 FILL, BACKFILL, AND COMPACTION FOR STRUCTURES AND UTILITIES

- A. Place fill to lines and grades indicated on the Drawings.
- B. Remove water from excavated areas, by pumping or other means, before placing any fill material.
- C. Compact subgrade before placing any fill material.
- D. Do not place any fill against concrete walls/structures until the concrete has attained its specified design strength and/or certain other construction sequence criteria, if noted on the Drawings, are met, or as specifically approved by the Engineer.
- E. Place fill in layers not exceeding 6 inches (152.4 mm) and compact to at least 95% of dry density (((ASTM D1557))). Select backfill shall be used for materials placed beyond the limits defined for structural excavation.

### 3.07 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. The moisture content of fill material shall be within 2 percent of the optimum moisture content at the time of compaction.
- B. 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 Section 3.08 "Compaction Control Tests."

### 3.08 COMPACTION CONTROL TESTS

- A. Laboratory and field tests shall be performed by the Port:
- B. Compaction control density shall be the maximum density at optimum moisture content as determined by ASTM D1557, Standard Methods for Moisture-Density Relationships of Soil and Soil Aggregates, Methods A, B, C or D as applicable.
- C. Field tests to determine in-place compliance with required densities as specified, shall be performed in accordance with ASTM D1556, D2167, or D2922.

### 3.09 PREPARATION OF SUBGRADE

- 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. Thoroughly compact the material for a depth of twelve inches below the subgrade to 95% of the maximum density as determined by compaction tests ASTM Designation D1557. If soft or spongy material underlying the upper twelve inches of the area being prepared precludes satisfactory compaction of the upper twelve inches, loosen, aerate, or excavate, replace and compact to the required density as directed by the Engineer.
  - 3. Remove and dispose of excess. Subgrade areas deficient in materials shall be brought to grade by importing suitable materials. 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 material is placed, bring the subgrade to the proper line, grade and cross section and maintain until the base course and paving is placed, except that extra depth of subgrade for increased thickness of the pavement, for pavement anchors, for pavement headers, and for increased thickness at the edges of the pavement may be removed just before the pavement is placed.
- C. Subgrade Protection
  - 1. Take all precautions necessary to protect the subgrade (including utility backfills and exposed excavation surfaces) from damage.

2. Protect the exposed excavation areas from excessive wetness due to rainfall. Protection measures may include covering with plastic or other means.
3. Where approved compacted subgrades are disturbed by subsequent operations or adverse weather, scarify the subgrades and compact to the required density prior to further construction thereon.

### 3.10 TRENCH EXCAVATION

- A. The Contractor shall maintain, at all times during the execution of this work, safe and stable excavations. All trench excavation and preparation for trenching shall comply with applicable requirements of Section 7-08.3(1) of the WSDOT Standard Specifications.
- B. Where excavations exceed a depth of 4 feet (121.92 cm), the Contractor shall provide and maintain trench excavation safety systems in accordance with RCW 39.04.180.

### 3.11 TEMPORARY TRENCH COVERS

- A. If necessary provide temporary steel plate trench covers of sufficient thickness to support the typical traffic loads present at the site based on span dimension across trenches.
- B. Temporary trench covers are to be removed as soon as underground utility work is completed in accordance with the requirements of Section 7-08.3(1) of the WSDOT Standard Specifications to allow backfill and compaction work.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 DESCRIPTION OF WORK**

- A. General: All labor, materials, and equipment for installation of single 60-mil high-density polyethylene (HDPE) liner system and protective geotextile as shown on the Drawings.
- B. Installation: Lining system and protective geotextile shall be installed by a contractor licensed and trained by the lining system supplier and regularly engaged in the installation of HDPE lining systems.

### **1.02 SUBMITTALS**

- A. Shop Drawings: Submit the following information in a single package under the Product Review category, acco.
  - 1. Reports of test results by an independent laboratory demonstrating material conformance to requirements of Part 2.
  - 2. Qualifications of lining systems installer and factory-trained field supervising technician.
  - 3. Details of liner penetrations.
  - 4. Field erection drawings indicating liner panel layout and the location of all field joints.
  - 5. Complete information on field testing procedures and equipment, including vacuum box and field tensiometer. Submit qualifications of test equipment operators.
  - 6. Description of repair procedures.
  - 7. Samples of all materials to be used, 8-inch by 10-inch minimum. Liner sample shall have no smooth seam weld area showing.
- B. Affidavits: Furnish an affidavit signed by officers of the lining systems supplier, the Contractor, and the installing contractor stating that the lining system has been properly installed, is free of defects, and is ready for full-time operation.
- C. Warranty: The lining system supplier and installer shall provide a written warranty, signed by an officer of each of the parties, guaranteeing installation, workmanship, materials, and weathering resistance of new materials for not less than five (5) years, beginning as of substantial completion of the entire project work under this Contract.
- D. Qualification: Installer must have completed five projects within the last 5 years similar to that specified for this Project including similar material and design, and record of successful completion.

### **1.03 QUALITY ASSURANCE**

- A. Materials: All materials furnished under this Section shall be by manufacturers regularly engaged in the design and manufacture of these types of materials. Demonstrate to the satisfaction of the Port that the quality of any proposed substitute products is equal to material made by those manufacturers specifically named herein.
- B. Installation: Comply with Port approved manufacturer's and supplier's published recommendations for installation of materials furnished.
- C. Installer

1. The Installer shall be the manufacturer or approved manufacturer's installer. The Installer shall be responsible for field handling, transporting, sorting, deploying, seaming, and testing liner. The Installer shall have at least five (5) years of experience in the installation of the specified liner or similar and have installed at least ten (10) projects involving a total of 5,000,000 square feet of HDPE geomembrane or similar.
2. Installation shall be performed under the direction of a Field Installation Supervisor who shall be responsible throughout the liner installation, for liner panel layout, seaming, patching, testing, repairs, and all other activities of the Installer. The Field Installation Supervisor shall have installed or supervised the installation and seaming of a minimum of ten (10) projects involving a total of 5,000,000 square feet of HDPE liner or similar product.
3. Seaming shall be performed under the direction of a Master Seamer (who may also be the Field Installation Supervisor or Crew Foreman) who has seamed a minimum of 3,000,000 square feet of HDPE liner or similar product, using the same type of seaming apparatus to be used for this Project. The Field Installation Supervisor and/or Master Seamer shall be present whenever seaming is performed.
4. All seaming, patching, other welding operations, and testing shall be performed by qualified technicians employed by the Installer.

## **PART 2 PRODUCTS**

### **2.01 LINER**

- A. General: Provide new, first-quality, HDPE liner material with co-extruded double-sided textured surfaces designed and manufactured for liquid containment in hydraulic structures. Liners shall be free of holes, blisters, undispersed raw materials, contamination by foreign matter, and other defects.
- B. Thickness: Liner sheet thickness shall be 60 mils.
- C. Form Supplied: Furnish liner as rolled seamless sheets. Provide as large a sheet width as practicable to reduce the length of field joints. Provide labels on all rolls clearly identifying thickness, length, width, date of manufacture, catalog number, net weight, manufacturer's mark or lot number, and factory inspector's initials.
- D. Chemical Resistance: The HDPE liner, and all other parts of the lining system in contact with liquid, shall be resistant to stormwater with concentrations of floating hydrocarbons such as hydraulic oil, diesel fuel, and gasoline.
- E. Temperature Resistance: Liner and installed lining systems shall withstand the range of temperature encountered by open exposure at the site without degradation or deterioration of the lining system.
- F. Liner Properties: Provide HDPE liner sheets having the following properties:

| Property                                 | Test Method                      | Value                          |
|------------------------------------------|----------------------------------|--------------------------------|
| Density                                  | ASTM D1505                       | 0.94 g/cm <sup>3</sup> minimum |
| Melt Flow Index                          | ASTM D1238, Condition E          | 0.3 g/10 minutes               |
| Tensile Strength at Yield, any Direction | ASTM D638, Type IV Sample, 2 ipm | 126 lbs/inch width minimum     |
| Tensile Strength at Break, any Direction | ASTM D638, Type IV Sample, 2 ipm | 35 lb/inch width minimum       |
| Elongation at Yield                      | ASTM D638, Type IV Sample, 2 ipm | 13 percent minimum             |
| Elongation at Break                      | ASTM D638, Type V Sample, 2 ipm  | 100 percent minimum            |



|                                          |                                                                          |                                              |
|------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------|
| Ozone Resistance                         | ASTM D 1149, 7 days<br>100 pphm, 104 degrees F,<br>7 lines magnification | No cracks                                    |
| Environmental Stress Crack<br>Resistance | ASTM D1693, 750 hours<br>minimum                                         | No failure or initiation of stress<br>cracks |
| Puncture Resistance                      | FTMS 101B                                                                | 70                                           |
| Tear Resistance                          | ASTM C1004 Die C                                                         | 45                                           |
| Low Temperature Resistance               | ASTM D746, Procedure B                                                   | 94 degrees F maximum                         |

- G. Resins: Manufacture HDPE liner from high quality resins only; Chevron 8644, Phillips TR-400 GF, or equal.
- H. Additives: Provide HDPE liner having additives providing resistance to ultraviolet radiation and other factors causing degradation when exposed to the environmental conditions of the local area. Manufacture liner with approximately 2 to 3 percent carbon black as defined by ASTM D1248, Section 3.1.2.3, Class C. Additionally, the liner manufacturer may elect to add antioxidants and heat stabilizers. Add no additives or fillers which could lead to lining system degradation.
- I. Supplier: All lining system products shall be supplied by a single supplier. Approved suppliers are listed below:
1. GSE Lining Technology, Inc. (GSE)  
19103 Grundle Road  
Houston, Texas 77073  
Phone: (800) 435-2008  
Fax: (281) 875-6010  
Website: [www.gseworld.com](http://www.gseworld.com)
  2. Layfield Poly Films, Ltd. (Layfield)  
2500 Sweetwater Springs Blvd  
Suite 110  
Spring Valley, California 91978  
Phone: (619) 273-5006  
Website: [www.layfieldgroup.com](http://www.layfieldgroup.com)
  3. Agru America, Inc. (Agru)  
500 Garrison Road  
Georgetown, South Carolina 29440  
Phone: (800) 373-2478  
Fax: (843) 527-2738  
Website: [www.agruamerica.com](http://www.agruamerica.com)

## 2.02 LINER TYPES

- A. Primary Liner: Provide smooth 60-mil HDPE liner (textured 60-mil HDPE material may also be acceptable to the Engineer) as the primary liner material for the containment structure. The liner and native fill subsurface shall allow for locating leaks in the primary liner geomembrane panels using ASTM electrical / spark testing methods.

- B. Cover Sheet Liner: The cover sheet liner material shall be the same material as the primary liner material. Provide cover sheet material where shown on the Drawings, typically when in contact directly with controlled density fill (CDF), concrete structures, or other areas where additional protection of the primary liner is desired. The cover sheet liner shall be secured to the primary liner by fillet extrusion weld unless otherwise shown on the Drawings.

## 2.03 SEALS

- A. General: Provide tight seals where HDPE liner sheets terminate at pipe penetrations. Seal systems shall be capable of withstanding all forces due to expansion, contraction, and installation of the filtration media appurtenances without damage to the lining system.
- B. Where pipe penetrates the liner at the inlet and outlet structure, weld a boot to the liner and pipe (if pipe is HDPE) and clamp with 316 stainless steel band clamps with neoprene closed cell foam gaskets. Size boots to fit the pipes with no folding of the boot.

## 2.04 SEALANT

- A. Provide Sikaflex Primer 429/202 and Sikaflex-1a Elastomeric Sealant/Adhesive or equal. Comply with manufacturer's and supplier's published recommendations for installation.

## 2.05 EXPANSION MATERIAL

- A. Provide ½-inch preformed expansion material per ASTM D1751.

## 2.06 NONWOVEN GEOTEXTILE

- A. Nonwoven geotextile shall be placed underneath and on top of HDPE liner.
- B. The geotextile shall be nonwoven needle punched, made from staple fiber.
- C. The geotextile shall be manufactured from prime quality virgin polymer. All rolls of the geotextile shall be identified with permanent marking on the roll or packaging, with the manufacturers name, product identification, roll number and roll dimensions.
- D. During shipment, the geotextile shall be protected from ultraviolet light exposure, precipitation, mud, dirt, dust, puncture, or other damaging or deleterious conditions.
- E. The geotextile shall be able to withstand direct exposure to ultraviolet radiation from sunlight for up to 30 days without any noticeable effect on index or performance properties.
- F. Upon delivery to the Site, the Contractor shall ensure that the geotextile rolls are handled and stored in accordance with the manufacturer's instructions as to prevent damage.
- G. Geotextile shall meet or exceed all material properties listed in the table below.

| Geotextile Properties                    |             |                         |                        |
|------------------------------------------|-------------|-------------------------|------------------------|
| Tested Property, Note (a)                | Test Method | Frequency               | Minimum Average Values |
| AASHTO M288 Class                        |             |                         | >>1                    |
| Mass per Unit Area, oz/yd <sup>2</sup>   | ASTM D 5261 | 90,000 ft <sup>2</sup>  | 16                     |
| Grab Tensile Strength, lb                | ASTM D 4632 | 90,000 ft <sup>2</sup>  | 320                    |
| Grab Elongation, %                       | ASTM D 4632 | 90,000 ft <sup>2</sup>  | 50                     |
| CBR Puncture Strength, lb                | ASTM D 6241 | 540,000 ft <sup>2</sup> | 925                    |
| Trapezoidal Tear Strength, lb            | ASTM D 4533 | 90,000 ft <sup>2</sup>  | 125                    |
| Apparent Opening Size, Sieve No. (mm)    | ASTM D 4751 | 540,000 ft <sup>2</sup> | 100 (0.150)            |
| Permittivity, sec-1                      | ASTM D 4491 | 540,000 ft <sup>2</sup> | 0.80                   |
| Water Flow Rate, gpm/ft <sup>2</sup>     | ASTM D 4491 | 540,000 ft <sup>2</sup> | 60                     |
| UV Resistance % retained after 500 hours | ASTM D 4355 | per formulation         | 70                     |

Note:

(a) The property values listed are in weaker principal direction. All values listed are Minimum Average Roll Values except apparent opening size in mm and UV resistance. Apparent opening size (mm) is a Maximum Average Roll Value. UV is a typical value.

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. Install all liner sheets and lining system accessories in strict accordance with the manufacturer's and system supplier's instructions.

#### **3.02 SURFACE PREPARATION**

- A. Remove all large or sharp-edged rocks, stones, sticks, roots, other sharp objects, or debris of any kind from the slope and bottom surfaces. Smooth the resulting surface to obtain a smooth and planar surface having no projections exceeding  $\frac{1}{4}$  inch. Smoothing shall be accomplished by passage of a smooth steel double-drum roller providing 200 pounds per lineal inch of drum width. Two passes of the roller will normally be required, although additional passes may be required, if necessary, in the Port's opinion. Winching the roller up and down the slopes may be necessary. Smooth any depressions left by roller edges.
- B. Maintenance: Maintain the areas to be lined in good condition until the lining systems have been successfully installed.

#### **3.03 LINING SYSTEM INSTALLATION**

- A. General: All work shall be performed by an approved lining system installer. Strictly follow all Port-approved manufacturer's instructions and recommendations. Perform all work in accordance with approved Shop Drawings and as shown on the Drawings. Take care to prevent wind damage during installation. Conform to supplier's recommendations regarding proper temperature, sunlight, and weather conditions for installation. Continuously monitor ambient temperature at the actual work locations. Field seams on slopes shall run vertically up the slope.
- B. Joints:
  - 1. General: Provide fusion, extrusion, or fusion/extrusion welding of field seams. Provide a specific type of welding if specifically shown on the Drawings. Perform using only qualified and trained personnel operating welding machines.
  - 2. Preparation: Take care in preparation of all areas to be welded. Overlap liner sheets prior to welding by the distance required by the supplier's and installer's instructions. Clean and prepare areas to be welded according to the instructions. If necessary to prevent binding of the welding equipment, provide geotextile or "skid sheets" under areas to be field welded.
  - 3. Welding equipment: Operate equipment capable of continuously monitoring and controlling temperature in the welding contact zone to ensure uniformly satisfactory welds under varying environmental conditions.
  - 4. Liner shall be overlapped during seaming to not create a waterstop.
  - 5. Panel seams shall be fusion-welded if practical. Extrusion welding of any seams must be approved by the Engineer.

#### **3.04 GEOTEXTILE INSTALLATION**

- A. During shipment, protect the geotextile from UV light exposure, precipitation, mud, dirt, dust, puncture, and other damaging or deleterious conditions.

- B. Upon delivery to the Site, notify the Engineer who will observe the delivered materials. Damaged and defective material shall be rejected and replaced at no extra cost to the Owner.
- C. The geotextile shall be handled in such a manner as to ensure that it is not damaged. Should the Contractor damage the geotextile, the Contractor shall replace the geofabric at the Contractor's own cost.
- D. The geotextile shall be installed to the lines and grades shown on the Drawings and as described herein after obtaining the Engineer's approval of the prepared subgrade.
- E. The geotextile shall be rolled down the slope in such a manner as to continuously keep the geotextile in tension by self-weight. The geotextile shall be securely anchored.
- F. In the presence of wind, all geotextile shall be weighted by sandbags or approved equivalent. Such weights shall be installed during placement and shall remain in place until the liner material is installed over the geotextile.
- G. The Contractor shall take necessary precautions to prevent damage to adjacent or underlying materials during placement of the geotextile. Should damage to such material occur due to the fault of the Contractor, the Contractor shall repair the damaged materials at the Contractor's own cost and to the satisfaction of the Engineer.
- H. Do not allow heavy equipment or traffic on the geotextile. Minimize foot traffic on the geotextile and have all workers perform boot checks to remove objects lodged in boot treads each time a worker enters the geotextile work area.
- I. During placement of the geotextile, care shall be taken not to entrap soil, stones, or excessive moisture that could hamper subsequent seaming.
- J. The geotextile shall not be exposed to precipitation prior to being installed and shall not be exposed to direct sunlight for more than 15 days after installation.
- K. The geotextile shall be seamed using heat seaming or stitching methods as recommended by the manufacturer. Sewn seams shall be made using polymeric thread with chemical resistance equal to or exceeding that of the geotextile. All sewn seams shall be continuous. Seams shall be oriented down slopes perpendicular to grading contours unless otherwise shown on the Drawings. For heat seaming, fusion welding techniques recommended by the manufacturer shall be used. Repair defects identified and cover the geotextile immediately. Under no circumstances shall installed geotextile be left exposed for more than 15 days. Do not allow geotextile to be exposed to precipitation prior, during or after installation. Do not allow geotextile to be exposed to direct sunlight for more than 15 days during the entire duration of the Project.
- L. Material installed over the geotextile shall be carefully placed to prevent wrinkling or damage to the geotextile.

### 3.05 BATTEN BAR TERMINATIONS

- A. All liner terminations shall be leak free, particularly terminations that are intended for submerged conditions. Installer of liner materials shall be experienced and skillful at creating watertight terminations.
- B. Substrate shall be smooth and non-wavy. Rough substrate can be partially compensated with thick moldable sealant. Wavy substrate may require more frequent anchor bolts as well as thick moldable sealant.
- C. Any area of concrete that will not be lined adjacent to the batten bar termination shall be free of hairline fractures and joints. The Contractor shall allow the Engineer to observe the conditions at each batten bar termination and Contractor shall fix all hairline fractures and joints in the area of concrete that will not be lined so that leakage will not occur past the batten bar termination.

- D. Revise the required batten bolt spacing based on the batten bar stiffness and the substrate smoothness. Bolt spacing may be as close as three (3) inches.
- E. Batten bars shall be closely butted together but shall not overlap. Anchor bolts shall be located within two (2) inches of the end of the batten bar.
- F. To prevent leakage at bolt holes:
  - 1. Drill gasket holes slightly smaller than bolts.
  - 2. Use moldable sealant that deforms around the bolts as it is compressed.
  - 3. Vacuum out all dust, particularly dust created by drilling bolt holes.
  - 4. Place caulk in all bolt holes around the bolts before installing the nuts.
- G. To prevent leakage at gaskets:
  - 1. Tightly overlap gasket and then cut through both layers of gasket at an angle to obtain a precisely matching slanted butt-joint.
  - 2. Tightly fit liner against gasket to avoid wrinkles. Bevel the inside edge of the weld overlaps.
  - 3. Seal the overlap on the liner lap joints between the two laps.
  - 4. If there is a thick extrusion weld shown under the location of where the batten will be installed, ground down and bevel smooth the weld so that the batten provides a uniform pressure all along its length.
  - 5. When tightening the nuts, do not under- or over-clamp.
- H. Do not use rivets or powder-driven nails for battens. Battens shall be secured with nuts and bolts.
- I. Apply anti-seize lubricant on threads before installing nuts.
- J. Exercise special attention at corners. The batten bars shall meet precisely at corners. Bolts shall be installed at 2.5 inches from the corner without weakening the corner.

### 3.06 PIPE BOOT TERMINATIONS

- A. All pipe boot liner terminations shall be leak free, particularly terminations that are intended for submerged conditions. Installer of liner materials shall be experienced and skillful at creating watertight terminations.
- B. Minimize stress on base of pipe boots. Place weights (e.g. continuous sandbags) around all penetrations to take wind and other stresses off exposed penetrations.
- C. Spark test all welds associated with the boot by embedding copper wires during construction of the boots.
- D. To prevent a leaking gasket:
  - 1. Tightly overlap gasket and then cut through both layers of gasket at an angle to obtain a precisely matching slanted butt-joint.
  - 2. Tightly wrap and clamp the geomembrane sleeve around gasket to avoid wrinkles. Bevel the inside edge of the overlap. Heat tack and weld the sleeve with the clamps in place. After the weld has cooled or cured, remove the clamps, and weld the remainder of the sleeve seam.
  - 3. Seal the overlap on the geomembrane at the end of the lap joint between the two laps.

4. If there is a thick extrusion weld under the location of where the clamp will be installed, ground down and bevel smooth the weld so that the clamp provides a uniform pressure all the way around.
  5. Use double clamp or an exact premanufactured multi-piece steel clamp that will clamp over a wide area.
- E. Provide tight-fitting boot with no voids.
- F. Leave enough space between multiple boots, and all around each boot, to allow for reasonable installation access for welding and clamping, especially in tight corners and underneath the pipe. Leave enough space and slack material to allow for temperature contraction between boots so that cold conditions do not cause bridging at these stiff locations.

### 3.07 FIELD SEAMING

- A. Seams shall meet the following requirements:
1. To the maximum extent possible, orient seams parallel to line of slope, i.e., down and not across slope.
  2. No cross seams are allowed on slopes.
  3. Minimize number of field seams in corners, odd-shaped geometric locations and outside corners.
  4. Use a sequential seam numbering system compatible with panel numbering system that is agreeable to the Engineer and Installer.
  5. Align seam overlaps consistent with the requirements of the welding equipment being used. A 4-inch to 6-inch overlap is commonly suggested.
- B. During Welding Operations: Provide at least one Master Seamer who shall provide direct supervision over other welders during all welding operations.
- C. Extrusion Welding:
1. Hot-air tack adjacent pieces together using procedures that do not damage the liner.
  2. Clean liner surfaces by disc grinder or equivalent.
  3. Purge welding apparatus of heat-degraded extrudate before welding.
- D. Hot Wedge Welding:
1. Welding apparatus shall be a self-propelled device equipped with an electronic controller that displays applicable temperatures.
  2. Clean seam area of dust, mud, moisture and debris immediately ahead of hot wedge welder.
  3. Protect against moisture build-up between sheets.
- E. Trial Welds:
1. Perform trial welds on liner samples to verify welding equipment is operating properly.
  2. Make trial welds under the same surface and environmental conditions as the production welds, i.e., in contact with subgrade and similar ambient temperature.
  3. Minimum of two trial welds per day, per welding apparatus, one made prior to the start of work and one completed at mid shift.
  4. Cut four, 1-inch-wide by 6-inch-long test strips from the trial weld.

5. Quantitatively test specimens for peel adhesion, and then for shear strength.
6. Trial weld specimens shall pass when the results shown in the following table are achieved in both peel and shear test.
  - a. The break, when peel testing, occurs in the liner material itself, not through peel separation.
  - b. The break is ductile.
  - c. Minimum weld values for HDPE Geomembranes:

| Property                                          | Test Method | Value      |
|---------------------------------------------------|-------------|------------|
| Peel Strength (fusion), ppi (kN/m)                | ASTM D 6392 | 98 (17.2)  |
| Peel Strength (extrusion), ppi (kN/m)             | ASTM D 6392 | 78 (13.7)  |
| Shear Strength (fusion and extrusion), ppi (kN/m) | ASTM D 6392 | 121 (21.2) |

7. Repeat the trial weld, in its entirety, when any of the trial weld samples fail in either peel or shear.
  8. No welding equipment or welder shall be allowed to perform production welds until equipment and welders have successfully completed trial weld.
- F. Seaming shall not proceed when ambient air temperature or adverse weather conditions jeopardize the integrity of the liner installation. Installer shall demonstrate that acceptable seaming can be performed by completing acceptable trial welds.
- G. Defects and Repairs:
1. Examine all seams and non-seam areas of the geomembrane for defects, holes, blisters, undispersed raw materials, and any sign of contamination by foreign matter.
  2. Repair and non-destructively test each suspect location in both seam and non-seam areas. Do not cover liner at locations that have been repaired until test results with passing values are available.

### 3.08 FIELD TESTING AND INSPECTION OF HDPE FIELD JOINTS

- A. Visual Inspection: Visually inspect all field welds. Welds shall be smooth and shall have a neat, even appearance. Allow no "fish mouths" within the seamed area. If fish mouths occur, clearly mark and repair.
- B. Pressure Testing: All fusion welds shall be tested by pressure testing. Pockets must hold 30 psi for 15 minutes. Once the test is complete, the pocket must relieve pressure from the opposite end and show that the pocket was inflated.
- C. Vacuum Testing: Perform field testing for 100 percent of all extrusion welds using approved vacuum box seam tester operated by a qualified technician or other approved method. Ultrasonic testing will not be acceptable. Perform all vacuum testing in the Engineer's presence. Show no leakage for 10 seconds minimum at 10 inches of mercury vacuum minimum. Clearly mark all unsatisfactory areas, and repair. Before beginning each day's seaming, each welding machine operator shall produce a 3-foot-long sample weld under identical working conditions. Do not begin actual field seaming until each sample weld has passed the weld strength tests.
- D. Spark Test: Perform in accordance with ASTM D 6365.
- E. Repairs: Repair all unsatisfactory areas and seams in strict accordance with the liner manufacturer's instructions and as satisfactory to the Engineer. Reweld or overlap and cover all unsatisfactory areas as required to attain maximum integrity of the lining system.
- F. Installer shall maintain and provide the following quality control logs to the Port:

1. Installer is required to cooperate fully with the Port when performing extra trial welds or destructive sampling as requested.
2. Shop Drawings: Submit test data on welded seams identical to those proposed for work on this Project. Submit samples to an approved independent testing laboratory to perform shear strength tests and peel tests as described in subparagraph 4 below.
3. Daily startup trial-weld logs conducted every 5 hours onsite, or whenever weather conditions change substantially.
4. Daily deployment logs describing panel size, roll #, and location. Log shall totalize area of geomembrane installed from day to day.

### 3.09 REPAIR PROCEDURES

- A. Remove damaged liner and replace with acceptable liner materials if damage cannot be satisfactorily repaired.
- B. Repair any portion of unsatisfactory liner or seam area failing a destructive or non-destructive test.
- C. Installer shall be responsible for repair of defective areas.
- D. Agreement upon the appropriate repair method shall be decided between Engineer and Installer by using one of the following repair methods:
  1. Patching: Used to repair large holes, tears, undispersed raw materials and contamination by foreign matter.
  2. Abrading and Re-welding: Used to repair short section of a seam.
  3. Spot Welding: Used to repair pinholes or other minor, localized flaws of 1/4 inch dimension or less, or where geomembrane thickness has been reduced.
  4. Capping: Used to repair long lengths of failed seams.
  5. Flap Welding: Used to extrusion weld the flap (excess outer portion) of a fusion weld in lieu of a full cap.
  6. Remove the unacceptable seam and replace with new material.
- E. The following procedures shall be observed when a repair method is used:
  1. All liner surfaces shall be clean and dry at the time of repair.
  2. Surfaces of the polyethylene that are to be repaired by extrusion welds shall be lightly abraded to assure cleanliness.
  3. Extend patches or caps at least six (6) inches for extrusion welds and four (4) inches for wedge welds beyond the edge of the defect, and around all corners of patch material.
- F. Repair Verification:
  1. Non-destructively test each repair using methods specified in this Specification.

### 3.10 SEALANT

- A. Prepare substrates and apply primer and sealants in accordance with manufacturer's recommendations.

### 3.11 CLEANUP

- A. Remove all equipment and debris. The Contractor shall thoroughly hand sweep the entire lined area and remove sweepings.

### **END OF SECTION**



## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. Designing, furnishing, installing, operating, maintaining, and removing a dewatering system and all additional machinery, appliances and equipment to keep excavations free from water during construction.

### **1.02 RELATED SECTIONS**

- A. Section 01 33 00 – Submittal Procedures
- B. Section 01 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. Washington State Department of Transportation (WSDOT)
  - 1. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10.

### **1.04 SUBMITTALS**

- A. Within 14 days of Notice to Proceed, submit a Dewatering Work Plan with drawings and complete design data showing methods and equipment for dewatering necessary to keep excavations and pipe trenches dry during construction. As a minimum, include the following:
  - 1. Drawings indicating the location and size of berms, dikes, ditches, sumps, and vacuum and discharge lines.
  - 2. Capacities of pumps, prime movers, and standby equipment.
  - 3. Design calculations providing adequacy of the system and selected equipment.
  - 4. Detailed description of the dewatering schedule, operation, maintenance, and removal procedures.
  - 5. Filter grain size.
  - 6. Polymer supplier and procedure for using polymer for the treatment of dewatering water. Actual polymer and dosage to be used for treatment may be submitted separately after testing of dewatering water by polymer supplier.
  - 7. List all permits required for dewatering and disposing of the dewatering discharge.

### **1.05 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.

## 1.06 SITE CONDITIONS

- A. Subsurface investigations have been made at the project site. Groundwater conditions anticipated at the project site are described in the geotechnical report developed as part of this project entitled "Thorne Road Container Yard", dated April 24, 2020 and is provided in Appendix A.
- B. Anticipate encountering groundwater at any location within the project site. The groundwater elevation varies depending upon proximity to the shoreline, soil conditions, tidal conditions, and weather.
- C. The Contractor shall investigate and determine to its own satisfaction the extent and methods in which dewatering will be required to meet all required safety codes based on the nature of the existing soils and groundwater conditions.

## PART 2 PRODUCTS – NOT USED

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Maintain excavations and pipe trenches free from water to facilitate fine grading, construction of structures, the proper laying and joining of pipe and appurtenances, and placement of backfill material.
- B. Dewater trenches during pipe laying and installation of ductbanks. Do not allow trench water to flow through the pipe while construction work is in progress. Provide an adequate screen to prevent the entrance of objectionable material into the pipelines.
- C. Provide and maintain at all times during construction, ample means and devices with which to promptly remove and properly dispose of all water entering trenches and excavations and other parts of the work, whether the water be surface water or underground water.
- D. Do not lay pipelines or foundations in water, nor allow water to rise over them until the concrete has set at least 24 hours or until the foundations or pipelines has been adequately backfilled to prevent buoyancy.
- E. The electrical service used for dewatering shall be supplied separately from all other Contractor electrical requirements and dedicated solely to the operation of the dewatering systems. Adequate backup generator(s) shall be on site at all times in case of failure of primary electrical service.

### 3.02 DEWATERING PERMITS

- A. Obtain all necessary permits for disposing of the dewatering discharge.

### 3.03 DEWATERING WORK PLAN

- A. Allow at least five (5) working days for the Engineer's review of any original or revised Dewatering Work Plan.
  - 1. Failure to accept all or part of any such plan shall not make the Client liable to the Contractor for any work delays.
  - 2. Approval of the Dewatering Work Plan submitted by the Contractor shall not in any way be considered to relieve the Contractor from full responsibility of errors therein.
  - 3. Any testing or pumping the Contractor may wish to perform in order to assure a properly functioning dewatering system shall be at the Contractor's own cost.

4. Have and maintain on hand sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, including power outage and flooding, and have available, at all times, competent workers for the continuous and successful operation of the dewatering systems.
5. The Contractor shall not be shut down between shifts, on holidays, or weekends, or during work stoppage without written permission from the Engineer.
6. Control groundwater so that softening of the bottom of excavations, or formation of "quick" conditions or "boils" during excavation is prevented.
7. Operate dewatering systems so as to prevent removal of the natural soils.
8. Maintain water levels a minimum of 2 feet below the bottom of all excavations at all times and under all conditions.
9. Keep excavations free of water during excavation, construction of structures, installation of pipelines, placement of gravel base, bedding and backfill, and placement and setting of concrete, prior to the acceptance of the work or any portion of the work.
10. Control surface runoff so as to prevent entry or collection of water in excavations or in other isolated areas of the site.

#### 3.04 EQUIPMENT

- A. Provide adequate pumping equipment to handle and dispose of the water without damage to adjacent property.
- B. Maintain on site sufficient equipment and materials to insure continuous and successful operation of the dewatering systems.
- C. If submersible/turbine pumps are used, provide one hundred percent standby electrical generating capacity.
- D. Manifold each diesel or electrically-powered centrifugal pump to a diesel pump of equal or greater performance capability. Standby pumps shall be fueled and operational at all times. All standby centrifugal pumps and generators shall be tested daily to insure their immediate availability.
- E. Maintain on site a minimum of 60 feet of each size and type of header or discharge pipe used in the system. A sufficient number of valves, tees, elbows, connections, tools, recorder charts and parts or other system hardware shall be maintained on site to insure immediate repair or modification of any part of the system as necessary.

#### 3.05 DISCHARGE WATER

- A. Meet requirements of all regulating agencies for quantity, frequency, quality, clarity and location of dewatering water discharge.
- B. Dispose of discharge water in such a manner as not to be a nuisance or menace to the public health.
- C. Groundwater may be discharged to the existing sewer system provided that the volume does not exceed the Contractor obtained permit quantities, that all permits are secured prior to any discharge, and that all other permit conditions and regulatory agency conditions are met. Discharge to the sewer system is limited.
- D. Contractor may discharge groundwater to surface waters provided that all permits are secured by the Contractor prior to any discharge, and that all permit conditions are met. Contractor shall obtain all permits and meet all local, state, and federal requirements for surface water discharge.

### 3.06 PROTECTION OF STRUCTURES, UTILITIES AND SURFACES

- A. Control dewatering of excavations to prevent damage from settlement due to possible lowering of the adjacent groundwater table.
- B. The cost for repairs or cleanup resulting from overflow caused by Contractor's dewatering practices shall be incurred by the Contractor and shall be considered incidental to the work.
- C. Operate the dewatering system such that foundation soils, natural or engineered, will not be subject to fines removal upon pumping.
- D. Repair any damage to work in place, contractors' equipment, and the excavation, including damage to the bottom due to heave and removal of material and pumping out of the excavated area, that may result from negligence, inadequate or improper installation, maintenance and operation of the dewatering system, and any mechanical or electrical failure of the dewatering system.

### 3.07 TREATMENT OF DISCHARGE WATER

- A. If treatment of dewatering water prior to discharge is required, obtain the services of a polymer subcontractor/vendor to determine the appropriate polymer and dose for treating dewatering water. Polymer subcontractor/vendor shall visit site at the onset of the dewatering process to determine appropriate polymer and dose.

### 3.08 COMPLETION OF WORK

- A. Subsequent to completion of all work in the excavated area, maintain the dewatering systems in operation. System maintenance shall include but not be limited to 24-hour supervision by personnel skilled in the operation, maintenance, and replacement of system components; standby and spare equipment of the same capacity and quantity in use; and any other work required to maintain the systems. Dewatering shall be a continuous operation and interruptions due to power outages or any other reason shall not be permitted.
- B. When no longer required, remove all dewatering system elements. Contractor shall assume ownership and responsibility for the disposal of all dewatering pumps, pipes and other assorted system hardware.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The work covered by this Section includes the furnishing of all labor, materials, equipment and necessary services to construct asphalt pavements to the sections and at the locations as specified in this Section and as indicated on the Contract Drawings.

### **1.02 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 – Mineral Filler for Bituminous Paving Mixtures
  - 2. AASHTO M 332 – Performance-Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test
  - 3. AASHTO T 11 – Materials Finer Than 75  $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
  - 4. AASHTO T 27 – Sieve Analysis of Fine and Coarse Aggregates
  - 5. AASHTO T 30 – Mechanical Analysis of Extracted Aggregate
  - 6. AASHTO T 96 – Resistance to Degradation of Small-Size Coarse Aggregate and Impact in the Los Angeles Machine
  - 7. AASHTO T 112 – Clay Lumps and Friable Particles in Aggregate
  - 8. AASHTO T164 – Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)
  - 9. AASHTO T 176 – Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
  - 10. AASHTO T 283 – Resistance of Compacted Hot-Mix Asphalt (HMA) Mixtures to Moisture-Induced Damage
  - 11. AASHTO T 304 – Uncompacted Void Content of Fine Aggregate
  - 12. AASHTO T308 – Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
  - 13. AASHTO T 335 – Determining the Percentage of Fracture in Coarse Aggregate
- D. American Society for Testing and Materials (ASTM)
  - 1. ASTM D75 – Sampling Aggregates
  - 2. ASTM D242 – Mineral Filler for Bituminous Paving Mixtures
- E. Washington State Department of Transportation (WSDOT)
  - 1. Construction Manual, M 41-01
  - 2. Standard Specifications for Road, Bridge and Municipal Construction, M 41-10
  - 3. Materials Manual, M 46-01
- F. City of Tacoma (for WO work within City Right-of-Way)

1. Standard Plan SU-15
2. City of Tacoma Right-of-Way Design Manual

#### 1.03 SUBMITTALS

- A. A separate job mix formula for each proposed mix design shall be submitted. 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 M 332, Table 1.
    - c. Compliance with WSDOT elastic recovery requirements in Section 9-02.1(4)
    - d. Temperature-viscosity relationship of the asphalt cement.
    - e. Minimum mixing temperature (degrees F).
    - f. Minimum compaction temperature (degrees F).
  4. Coarse Aggregate Certified Test Reports:
    - a. Source location and type of aggregate.
    - b. Fractured Faces.
    - c. Bulk specific gravity.
    - d. LA Abrasion.
  5. Fine Aggregate Certified Test Reports:
    - a. Source location and type of aggregate.
    - b. Bulk specific gravity.
    - c. Percent natural sand (if used).
    - d. Sand equivalent.
    - e. 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 range 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 (Hveem).
- 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.
- C. If requested by the Engineer, submit samples for each type aggregate to be used and from each source with proper identification as to source, type of aggregate and contract number. Take all samples in accordance with requirements of ASTM D75 and D242. Submit in clean, sturdy bags and in the following amounts for each sample when requested:

| MATERIAL                   | SAMPLE SIZE |
|----------------------------|-------------|
| Coarse Aggregate           | 25 lbs.     |
| Fine Aggregate             | 25 lbs.     |
| Reclaimed Asphalt Pavement | 25 lbs.     |
| Mineral Filler             | 5 lbs.      |

- D. The job mix formula for each mixture shall be in effect until modified in writing by the Engineer. Should a change in mix or sources of materials be made, a new job mix formula must be tested and resubmitted for approved by the Engineer before the new mix is used.
- E. Working Drawings: For each paving area, provide working drawings to show the following information:
1. Direction of paving.
  2. Lane widths.
  3. Thickness of each lift.
- F. Submit smoothness measurements and surface grade survey results to the Engineer prior to application for payment.

#### 1.04 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 resource 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.

### 1.05 QUALITY ASSURANCE

- A. The Engineer will provide inspection services. Sampling and testing for compliance shall be in accordance with the applicable reference standards using certified technicians and accredited independent testing laboratories.
- B. The Contractor may obtain copies of results of tests performed by the Owner, at no cost. Tests conducted for the sole benefit of the Contractor, shall be at the Contractor's expense.
- C. Unless otherwise referenced or modified herein, quality control and quality standards for this section shall be as specified in the WSDOT Standard Specifications.

### 1.06 JOB CONDITIONS

- A. Environmental Requirements:
  - 1. Weather limitations shall be in accordance WSDOT Standard Specifications Section 5-04.3(3), 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 1/4-inch to 1/2-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 for the yard and driveways shall conform to the requirements of AASHTO M 332, Table 1 and the elastic recovery requirements of WSDOT Standard Specification Section 9-02.1(4) for the Performance Grade specified herein.
- B. All work within the City right of way (Work Order Plans) shall conform to City of Tacoma Standard Plan SU-15A.

### 2.02 AGGREGATE

- A. Coarse Aggregate – Coarse aggregate shall conform to WSDOT Standard Specification Section 9-03.8, as modified below:

| Test                                          | Specification                      |
|-----------------------------------------------|------------------------------------|
| Coarse Aggregate Angularity<br>(AASHTO T 335) | 90% with 2 or more fractured faces |



- 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 |
|------------------------------------------------------------------|---------------|
| Uncompacted Void Content<br>(AASHTO T 304, Method A)             | 44%, minimum  |
| Deleterious Materials<br>(AASHTO T 112)                          | 2%, maximum   |
| Wood Waste Retained on a No. 4 Sieve<br>(Specific Gravity < 1.0) | 0.1%, maximum |

- C. Mineral filler, when used, shall conform to the requirements of AASHTO M 17.
- D. Recycled Asphalt Pavement (RAP)
- 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.
  - The maximum proportion of RAP permitted within each mix shall not exceed 20 percent.
  - 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.
  - 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, and fine aggregate angularity. The sand equivalent requirements shall be waived for the RAP aggregates but shall apply to the remainder of the aggregate blend.
  - Documentation of RAP stockpile quality and traceability shall be submitted to the Engineer for approval prior to use.

E. Aggregate Gradation

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 from WSDOT Table 9-03.1(5)B:

| Nominal<br>Maximum<br>Aggregate<br>Size | 1      | 3/4 | 1/2 |
|-----------------------------------------|--------|-----|-----|
| 3-1/2"                                  |        |     |     |
| 3"                                      |        |     |     |
| 2-1/2"                                  |        |     |     |
| 2"                                      |        |     |     |
| 1-1/2"                                  | 99-100 |     |     |

|         |         |         |         |
|---------|---------|---------|---------|
| 1"      | 82-100* | 99-100  |         |
| 3/4"    |         | 87-100* | 99-100  |
| 1/2"    | 57-83   |         | 81-100* |
| 3/8"    |         | 60-88   |         |
| No. 4   | 34-54   | 41-64   | 48-73   |
| No. 8   | 22-39   | 27-47   | 31-54   |
| No. 16  | 14-29   | 17-34   | 20-39   |
| No. 30  | 8-21    | 9-25    | 11-29   |
| No. 50  | 3-15    | 4-18    | 5-21    |
| No. 100 | 0-11    | 0-14    | 0-15    |
| No. 200 | 0-2.0   | 0-2.0   | 0-2.0   |

1. 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.
2. 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 HVEEM HOT MIX ASPHALT (HMA) MIX DESIGN

- A. Mix design shall be prepared using the Hveem mix design method in accordance with the 2011 WSDOT Materials Manual Test Method T 702, 2011 WSDOT Materials Manual Test Method T 703, and the 2002 WSDOT Standard Specifications, as modified herein. The 2011 WSDOT Materials Manual and 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 58V-22.
- C. Surface Course Class 3/4", PG70-22.
- D. Base Course Class 1", PG64-22.
- E. Stabilometer Value: 35, minimum.
- F. Cohesimeter Value: 100, minimum.
- G. Air Voids: 2% – 4.5%.
- H. The dust to binder ratio of the blended mix shall be between 0.6 and 1.6.
- I. 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 HMA ADDITIVE

- A. An approved HMA Additive, to assist field compaction, meeting Section 9-02.5 of WSDOT Specifications, may be accepted by the Engineer.

## 2.06 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.

## 2.07 JOINT AND CRACK SEALANT

- A. Sealant shall conform to the requirements of WSDOT Standard Specification Section 9-04.2(1).

# 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(3)A.
- B. Hauling Equipment:
  - 1. Hauling equipment shall conform to WSDOT Standard Specifications Section 5-04.3(3)B, 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 then middle) to minimize truck to truck segregation.
- C. Paving Equipment – Asphalt pavers shall conform to WSDOT Standard Specifications Section 5-04.3(3)C.
- D. Compaction Equipment – Rollers shall conform to WSDOT Standard Specifications Section 5-04.3(3)E.
- 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(6), 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) (Statistical Evaluation), 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(4), 5-04.3(4)A, and 5-04.3(5)C as modified herein.
2. Asphalt materials shall not be placed until the underlying course has been tested 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 Engineer.
4. Tack Coat:
  - a. Tack coat shall be applied in accordance with WSDOT Standard Specifications Section 5-04.3(4)A, as modified herein. The Owner's 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(7), as modified herein.
4. The nominal compacted depth of any layer of any course shall not exceed 4.0 inches.
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 | Minimum Base Temperature |
|-------------------|--------------------------|
| (inches)          | (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 AASHTO T 209. 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. Calibration cores may be omitted at the Engineer's discretion. At the Owner's discretion, cores can be used as the sole means of density acceptance with a testing frequency meeting the requirements of Section 8a.
  - 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)B 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 SCOPE**

- A. The work includes application of pavement markings as indicated on the Drawings and specified herein.

### **1.02 RELATED SECTIONS**

- A. Section 02 41 00 – Site Demolition

### **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. Federal Highway Administration (FHWA)
  - 1. FHWA Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways; U.S. Department of Transportation, Federal Highway Administration; <http://mutcd.fhwa.dot.gov>.
- D. Federal Specification (FS)
  - 1. FS TT-P-1952 - Paint, Traffic, and Airfield Marking, Waterborne; U.S. General Services Administration, Rev. E, 2007.
- E. Washington State Department of Transportation (WSDOT)
  - 1. Standard Specifications for Road, Bridge and Municipal Construction M 41-10.

### **1.04 SUBMITTALS**

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- B. Certificates: Submit for each batch of paint stating compliance with specified requirements.
- C. Submit manufacturer's certification of the actual volatile organic compound (VOC) content for all pavement paints proposed for use on this project. Submit certification of the actual VOC content for coatings manufactured after 1 September 1987. For coatings manufactured before 1 September 1987, submit VOC content and date of manufacture. VOC content shall be measured in grams per liter by weight of coating as applied excluding water and color added to the tint base.
- D. Submit verification to local air pollution authorities and the State Department of Ecology that paint products furnished meet applicable regulations as to allowable VOC content for the time and place of application and use intended.

### **1.05 QUALITY ASSURANCE**

- A. Unless otherwise specified, the Engineer will provide testing and inspection services. The Contractor may obtain test results from the Engineer at no cost. Tests conducted for the sole benefit of the Contractor, or before a product is approved, shall be at the Contractor's expense.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Paint: Materials shall conform to WSDOT Standard Specification Section 9-34.2 for low VOC paint.
- B. Paint for Obliterating Existing Markings: FS TT-P-1952; black for bituminous pavements, gray for portland cement pavements.
- C. Temporary Marking Tape: Preformed, reflective, pressure sensitive adhesive tape in color(s) required; Contractor is responsible for selection of material of sufficient durability as to perform satisfactorily during period for which its use is required.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until pavement surfaces have been properly prepared.

### **3.02 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver paint in containers of at least 5 gallons accompanied by batch certificate.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

### **3.03 PREPARATION**

- A. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Allow new pavement surfaces to cure for a period of not less than 14 days before application of marking materials.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- D. Obliteration of existing markings using paint is acceptable in lieu of removal; apply the black paint in as many coats as necessary to completely obliterate the existing markings.
- E. Clean surfaces thoroughly prior to installation.
  - 1. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods.
  - 2. Completely remove rubber deposits, existing paint markings, and other coatings adhering to the pavement, by scraping, wire brushing, sandblasting, mechanical abrasion, or approved chemicals.
  - 3. All surfaces shall be dry prior to striping.
- F. Where oil or grease are present, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application; after cleaning, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint.
- G. Establish survey control points to determine locations and dimensions of markings; provide templates to control paint application by type and color at necessary intervals.
- H. Temporary Pavement Markings: When required or directed by Engineer, apply temporary markings of the color(s), width(s) and length(s) as indicated or directed.



1. After temporary marking has served its purpose, remove temporary marking by carefully controlled sandblasting, approved grinding equipment, or other approved method so that surface to which the marking was applied will not be damaged.
2. At Contractor's option, temporary marking tape may be used in lieu of temporary painted marking; remove unsatisfactory tape and replace with painted markings at no additional cost to the Owner.

### 3.04 INSTALLATION

- A. Begin pavement marking as soon as practicable after surface has been cleaned and dried.
- B. At the time of application all pavement surfaces shall be free of moisture, oil, dirt, dust, grease, and similar foreign materials.
- C. Do not apply paint if temperature of surface to be painted or the atmosphere exceeds the temperature limits recommended by the manufacturer.
- D. Apply in accordance with manufacturer's instructions using an experienced technician that is thoroughly familiar with equipment, materials, and marking layouts.
- E. Comply with FHWA MUTCD manual (<http://mutcd.fhwa.dot.gov>) for details not shown.
- F. Apply markings in locations determined by measurement from survey control points; preserve control points until after markings have been accepted.
- G. Apply uniformly painted markings of color(s), lengths, and widths as indicated on the drawings; true, sharp edges and ends; and in conformance with WSDOT Standard Specification Section 8-22.3(3) for marking application for paint.
  1. Length Tolerance: Plus or minus 3 inches.
  2. Width Tolerance: Plus or minus 1/4 inch.
  3. Letter/Number Height Tolerance: Plus or minus 1 inch.
- H. Use suitable mechanical equipment that provides constant agitation of paint and travels at controlled speeds.
  1. Conduct operations in such a manner that necessary traffic can move without hindrance.
  2. Place warning signs as necessary for alerting traffic.
  3. If paint does not dry within expected time, discontinue paint operations until cause of slow drying is determined and corrected.
  4. Use hand application by pneumatic spray for application of paint in areas where a mobile paint applicator cannot be used.
- I. Symbols: Use a suitable template that will provide a pavement marking with true, sharp edges and ends, of the design and size indicated.

### 3.05 DRYING, PROTECTION, AND REPLACEMENT

- A. Protect newly painted markings so that paint is not picked up by tires, smeared, or tracked.
- B. Provide barricades, warning signs, and flags as necessary to prevent traffic crossing newly painted markings.
- C. Allow paint to dry at least the minimum time specified by the applicable paint standard and not less than that recommended by the manufacturer.

- D. Remove and replace markings that are applied at less than minimum material rates; deviate from true alignment; exceed length and width tolerances; or show light spots, smears, or other deficiencies or irregularities. Removal and replacement of markings shall be performed at no additional cost to the Owner.
- E. Remove markings in manner to avoid damage to the surface to which the marking was applied, using carefully controlled sand blasting, approved grinding equipment, or other approved method.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The work includes the requirements for furnishing and installing all items and components of a complete chain link fence system, swing gates, and sliding gate in conformance with these specifications and the dimensions and sections indicated on the drawings.

### **1.02 RELATED SECTIONS**

- A. Section 02 41 10 – Site Demolition
- B. Section 03 30 00 – Cast-in-Place Concrete
- C. Section 09 90 00 – Painting and Coating
- D. 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 Society for Testing and Materials (ASTM)
  - 1. ASTM A53 - Standard Specification for Pipe Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless; American Society for Testing and Materials.
  - 2. ASTM A121 - Standard Specification for Metallic-coated Carbon Steel Barbed Wire; American Society for Testing and Materials.
  - 3. ASTM A392 - Standard Specification for Zinc-coated Steel Chain Link Fence Fabric; American Society for Testing and Materials.
  - 4. ASTM F626 - Standard Specification for Fence Fittings; American Society for Testing and Materials.
  - 5. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-coated Steel Chain Link Fence Fabric; American Society for Testing and Materials.
  - 6. ASTM F900 - Standard Specification for Industrial and Commercial Swing Gates; American Society for Testing and Materials.
  - 7. ASTM F2200 - Standard Specification for Automated Vehicular Gate Construction; American Society for Testing and Materials.
- D. American Welding Society (AWS)
  - 1. AWS D1.2 – Structural Welding Code; American Welding Society; current edition.
- E. Washington State Department of Transportation (WSDOT)
  - 1. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10.

### **1.04 SUBMITTALS**

- A. Submit supplier's certificate certifying that products meet or exceed specified requirements.
- B. Submit shop drawings of chain link fencing systems including swing gates.
- C. Submit shop drawings of cantilever sliding gate.

- D. Shop drawings must be approved by the Engineer prior to fabrication or installation.
- E. Provide plan, section, and elevation drawings for all elements.

#### 1.05 QUALITY ASSURANCE

- A. Unless otherwise specified, the Engineer will provide testing and inspection services. The Contractor may obtain test results from Engineer at no cost. Tests conducted for the sole benefit of the Contractor, or before a product is approved, shall be at the Contractor's expense.

### **PART 2 - PRODUCTS**

#### 2.01 CHAIN LINK FENCE

- A. Fence: Chain link fabric supported on a steel frame, with posts embedded in concrete foundations. Fence shall be PVC coated, color black.
- B. Barbed Wire: Install barbed wire above the fabric portion and supported on brackets as indicated on the drawings. Barbed wire shall be PVC coated, color black.
- C. Materials: Heavy industrial chain link fencing in accordance with ASTM F668, with the additional requirements as follows:
  - 1. Fabric: Manufacture fabric in accordance with ASTM A392, Class 1 coating, except wire shall be No. 9 gage and the fabric shall be twisted and barbed on both selvages.
  - 2. Framework:
    - a. Posts, rails, and braces in accordance with ASTM A53 and ASTM F668.
    - b. Sizes and openings shall be as shown on plans
  - 3. Fittings: All fittings, accessories and hardware for galvanized chain link fence shall conform to the requirements of ASTM F626 and other ASTM Designations listed therein, then vinyl coated to match fence fabric.
  - 4. Gates:
    - a. Chain link gates: Constructed with chain link fabric fastened to the end bars of the gate frame by tension bars and fabric bands, and to the top and bottom bars of the gate frames by tie wires in the same manner as specified for the chain link fence fabric.
      - 1) Gate frames: Constructed in accordance with ASTM F900. Weld and coat gate frame corners with two coats of GALVACON or approved equal, or use manufacturer's standard galvanized cast corner connections, paint to match fence fabric. Cross-trussing: 3/8-inch galvanized steel adjustable rods.
      - 2) Provide each gate complete with necessary hinges, gate keeper for each swing leaf, latch and drop bar locking device designed for the type of gate, posts and lock used.
      - 3) Provide all gates with positive-type latching devices with provisions for padlocking. Padlocks will be furnished by the Owner.
      - 4) Access Control Boxes: Provide Knox Lock Boxes for Tacoma Fire Department (TFD) where shown on the Drawings. Installation shall be per TFD requirements. Knox Box shall be model 3200, color black.
  - 5. Other Materials:
    - a. Barbed wire: Three strands of 9-gage galvanized wire, twisted with 4-point, 14-gage barbs with the barbs spaced an average of five inches apart, conforming to the requirements of ASTM A121.

- b. Concrete used in anchorage of posts: See Section 03 30 00.
- c. Ties: No. 9 gauge galvanized and coated steel meeting the requirements of ASTM F626, color to match fence fabric.
- d. Post Toppers: Upright barb wire arms.

## 2.02 CANTILEVER SLIDE GATE

- A. Contractor shall design-build a cantilever sliding gate system meeting the dimensional criteria noted on the Drawings and the criteria specified below: Manufacturers: Contract documents are based on products specified below to establish a standard of quality. Other available manufacturers with products having equivalent characteristics may be considered, provided deviations are minor and design concept expressed in the Contract Documents is not changed, as judged by the Engineer. Representative manufacturers include:
  - 1. TyMetal - Fortress Heavy Duty Cantilever Slide Gate
  - 2. Wallace International - Alpha Cantilever Sliding Gate
- B. Operation: Gate shall open and close under a horizontal force not to exceed 70 pounds.
- C. Protect dissimilar metals from galvanic action using coatings, tapes, or isolators.
- D. Gate Frame: Chain link fabric supported on an aluminum alloy frame.
- E. Gate Posts: Support posts embedded in concrete foundations.
- F. Barbed Wire: Install barbed wire above the fabric portion and supported on upright barb arms as indicated on the drawings.
- G. Materials:
  - 1. Fabric: Chain Link: 2" x 2" x 9-gauge aluminized steel chain link fabric shall extend the entire length of the gate. Fabric shall be PVC coated in accordance with ASTM F668.
  - 2. Framework: The gate frame shall be fabricated from 6063-T6 aluminum alloy extrusions.
  - 3. Barbed wire: Three strands of 9-gage galvanized wire, twisted with 4-point, 14-gage barbs with the barbs spaced an average of five inches apart, conforming to the requirements of ASTM A121.
  - 4. Gate Track: The gate frame shall have separate semi-enclosed "keyed" tracks, extruded from 6005A-T61 or 6105-T5 aluminum alloy. Track members are to be located on each side of the top member. When interlocked and welded to the "keyed" top member, it forms a composite structure with the top of the gate frame.
  - 5. Gate Posts: Double sets of support posts shall be minimum 4" O.D. round Schedule 40 or 4" x 4" x 3/16" wall square steel tubing, grade 500. Gate posts shall be galvanized and PVC coated and supported in concrete footings. Gate post embedment shall be designed by the Contractor for the specific gate model installed for the site conditions per the IBC.
  - 6. Concrete used in anchorage of posts: See Section 03 30 00.
  - 7. Diagonal "X" Bracing: Bracing shall be installed throughout the entire gate frame.
  - 8. Gate Mounting Materials:
    - a. The gate frame is to be supported from the track by four (4) swivel type, self-aligning, 4-wheeled, sealed lubricant, ball-bearing truck assemblies.

- b. The bottom of each support post shall have a bracket equipped with a pair of 3-inch diameter UHMW guide wheels. Wheel cover protectors shall be included with bottom guides to comply with UL 325.
- c. Gap protectors shall be provided and installed, compliant with ASTM F2200.

9. Provide all gates with provisions for padlocking. Padlocks will be furnished by the Owner.

## 2.03 FINISHES

- A. Galvanizing and Painting: All carbon steel items including fence fabric, posts, rails, and barbed wire, shall be hot dip galvanized and coated in accordance with Section 09 90 00.
- B. All aluminum members used in gate construction shall be PVC coated.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. The location and alignment of the fence corners and gates is indicated on the Drawings.
- B. Locate and evenly space all intermediate line posts between corners and gates.
- C. Bottom of fence fabric shall not exceed beyond 2 inches (50.8 mm) vertical from top of finished grade unless otherwise noted on the drawings.
- D. The locations and alignment of the cantilever slide gate and swing gates are indicated on the Drawings.
- E. Installation of cantilever slide gate shall not begin until all unsatisfactory conditions are corrected.
- F. Where new fence joins an existing fence, the two shall be attached in a manner satisfactory to the Engineer, end or corner posts being set as necessary.

### 3.02 CHAIN LINK FENCES AND GATES INSTALLATION

- A. Demolition of existing fencing shall be in accordance with Section 02 41 00. Provide seven (7) days' notice to the Engineer prior to demolition activities to any security fencing facility.
- B. Erect and install fencing, gates, and appurtenances using an organization regularly engaged in this business, employing labor skilled in this type of work to provide a complete security fencing system.
- C. Fabricate swing gates to withstand wind and swing loads.
  - 1. Install locking bars to seat into keepers that are set in concrete in ground locations which will hold the gate rigidly in position when closed.
  - 2. Provide stops which will hold the gate open. Set in concrete at the location designated by the Engineer.
  - 3. Provide hinges which will allow the gate to swing the entire arc indicated on the drawings.
- D. Fasten fabric to posts, the top rail and the bottom wire, with wire ties spaced as indicated on the drawings.
- E. Top rails shall be continuous. Provide for expansion or contraction of the continuous rail. Install expansion and contraction spring couplings at intervals of 100 feet (3048 cm) maximum.

- F. Install fence posts vertically in concrete with minimum depth of embedment indicated on the drawings and at the spacing specified for the type of posts approved for the Project. In unpaved areas, strike concrete off two inches above the surrounding grade. In paved areas, strike concrete off flush with the paving. Trowel top of the concrete smooth, with a slight slope away from the posts.
- G. Repair minor damage to galvanizing of fabric and fence appurtenances per Section 09 90 00.
- H. Upon completion of the fence, clean the fence of all soiled places and repair marred or abraded areas.

### 3.03 CANTILEVER SLIDE GATE INSTALLATION

- 1. The cantilever slide gate and installation shall conform to ASTM F1184 standards for aluminum cantilever slide gates, Type II, Class 2.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The work includes the requirements for providing potable water service and fire water service systems in place complete, including excavation, laying, bedding, backfill, compacting, and paving, all in conformance with these specifications and the dimensions and sections indicated on the Drawings.

### **1.02 RELATED SECTIONS**

- A. Section 02 41 00 – Site Demolition
- B. Section 03 30 00 – Cast-in-Place Concrete
- C. Section 05 50 00 – Metal Fabrications
- D. 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 Society for Testing and Materials (ASTM)
  - 1. ASTM A 48 – Standard Specifications for Gray Iron Castings
  - 2. ASTM D2683 – Standard Specification for Socket-Type Polyethylene Fittings
  - 3. ASTM D3261 – Standard Specification for Butt Heat Fusion Polyethylene Fittings
  - 4. ASTM D3350 – Standard Specification for Polyethylene Plastic Pipe and Fittings
- D. American Water Works Association (AWWA)
  - 1. AWWA C 104 – Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
  - 2. AWWA C 105 – Polyethylene encasement for Ductile Iron Pipe Systems
  - 3. AWWA C 110 – Ductile-Iron and Gray-Iron Fittings for Water
  - 4. AWWA C 111 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
  - 5. AWWA C 115 – Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
  - 6. AWWA C 151 – Ductile-Iron Pipe, Centrifugally Cast, for Water
  - 7. AWWA C 153 – Ductile-Iron Compact Fittings for Water Service
  - 8. AWWA C502 – Dry-Barrel Fire Hydrants
  - 9. AWWA C600 – Installation of Ductile-Iron Water Mains and Their Appurtenances
  - 10. AWWA C901/906 – Polyethylene Pressure Pipe and Fittings for Water Service
- E. Washington State Department of Transportation (WSDOT)
  - 1. Standard Specifications for Road, Bridge and Municipal Construction, M 41 10.

### **1.04 SUBMITTALS**

- A. Submit the following products:
  - 1. Piping

- a. Submit Manufacturer's catalog cuts, shop drawings and detailed installation drawings to demonstrate that specified items, including the following, conform to the specifications:
  - 1) Pipe, fittings and accessories
  - 2) Valves
  - 3) Water meters
  - 4) Fire hydrants
2. Concrete Vaults and Boxes
  - a. The Contractor shall design and provide underground water vaults, and valve boxes including frames, and covers to accommodate the loads indicated on the plans.
  - b. Submit design calculations, shop drawings, and product information for each wheel loading condition and all items related to the various structure fabrications and installations. Calculations and construction shall include compensation to prevent buoyancy assuming groundwater at 6 feet (182.88 cm) below ground.
  - c. Shop Drawings and calculations shall be stamped by a professional engineer registered in the State of Washington.
- B. The Contractor shall furnish manufacturer's installation and operations manuals, bulletins and spare parts lists for all items.
- C. Submit testing and inspection procedures, including inspection requirements and testing requirements to be performed for City of Tacoma and Tacoma Fire Department approval. Procedures shall include pressure testing, chlorination and dechlorination, and demonstrations of compliance with City of Tacoma.

#### 1.05 QUALITY ASSURANCE

- A. The Contractor shall provide all testing of water distribution systems as required by the City of Tacoma and Tacoma Fire Department.
- B. Unless otherwise specified, the Port will provide inspection service to the satisfaction of the Engineer.
- C. Qualification of Workers: Employ the services of a qualified utility contractor who will be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this section.
- D. Codes and Standards: The Contractor shall comply with the applicable provisions of all pertinent codes and regulations. References made herein for manufactured materials, such as pipe, fittings, valves, hydrants and specialties; refer to designations for American Water Works Association (AWWA) or to American National Standards Institute (ANSI).
- E. City of Tacoma: The Contractor shall comply with the applicable provisions of all pertinent codes and regulations from the City of Tacoma and the Tacoma Fire Department (TFD) concerning testing, installation, inspection and materials used.
- F. Contractor to be an approved underground fire pipe installer per City of Tacoma Fire Department requirements.

### PART 2 - PRODUCTS

#### 2.01 PIPE FITTINGS AND ACCESSORIES

- A. DUCTILE IRON PIPE

1. Ductile Iron Pipe (DIP) shall be special thickness Class 52 per AWWA C151
2. Pipe and fittings shall have an asphaltic outside coating for full immersion conditions and a cement mortar lining in accordance with AWWA C104. All plain ends, including short lengths, shall be beveled and all bell ends shall have appropriate rubber gaskets. Short length pipe shall be plain end on both ends.
3. Pipe joints shall be rubber gasketed, push-on, or mechanical joints per AWWA C111, unless otherwise specified.
4. Pipe and fittings shall be encased with Polyethylene encasement AWWA C105, Method A.
5. All fittings shall be compact gray iron or ductile iron, shall meet the applicable requirements of AWWA C110.
6. Manufactured joint restraints shall be Ford, EBAA Iron, Romac Industries, Field Lock 350 by US Pipe, Flex-Ring by American Pipe or approved equal and shall be rated for 225 test pressure or better.

**B. HDPE PIPE AND FITTINGS**

1. High Density Polyethylene (HDPE) Pipe shall be grade PE 3408, DR 11, unless otherwise noted, and conform to the requirements of the latest AWWA C901-02.
2. Couplings and Fittings shall be molded and in conformance with the requirements of ASTM D3350, ASTM 3261 for Butt Fusion and ASTM 2683 for Socket Fusion. PE Grade and manufacturer of all fittings shall be same as the pipe. PE Grade and manufacturer for flange adapter and stub end shall be same as for pipe. Provide epoxy coated ductile iron backing rings for flange fittings and 316 stainless steel bolts and nuts.

**C. SERVICE SADDLE AND CORPORATION STOP**

1. Water service saddle shall consist of a nylon coated ductile iron saddle with stainless steel strap. Saddle shall be Romac Industries, or approved equal.
2. Corporation stop shall be brass body conforming to AWWA C800, 300 psi (2068.43 kPa) working pressure.

**D. ADAPTERS**

1. Coupling adapters shall be Romac, Smith Blair, Dresser Industries or approved equal. Provide adapters at connections to existing pipes and as shown on the drawings

**2.02 VALVES**

**A. GATE VALVES (2, 4, 6, 8-INCH)**

1. Type:
  - a. Resilient seat valves,
  - b. ANSI/AWWA C509
2. Rating: 200 psi (1378.95 kPa)
3. Opening: Counter clockwise
4. Body: Ductile iron epoxy coated
5. Ends: Flanged, mechanical joint
6. Stem: Non-rising high strength bronze
7. Stem seals: O-ring

8. Body-bonnet connections: Bolted with corrosion-resistant material.
9. Manual Operator: Hand wheel for valves in structures, 2-inch square operating nut for buried valve box installation.
10. Manufacturer: M&H Valve Model C509/C515, Clow Valve Model 2639/2640, American Flow Control Series 2500.

**B. BALL VALVES**

1. Size: Two (2) inches and smaller
2. Material: Bronze
3. Rating: 600 psi (4136.86 kPa) W.O.G.
4. Ball and Stem: 316 Stainless steel
5. Seats: reinforced Teflon
6. Connection: Threaded
7. Manufacturer: Watts, Series FBV-3

**2.03 FIRE HYDRANTS**

- A. Type: Dry Barrel Fire Hydrants, AWWA Standard C502.
- B. Manufacturer: Medallion by CLOW valve company, or approved equal.
- C. Rating: Minimum working pressure of 250 psi (1723.69 kPa)
- D. The dimensions and details of hydrant and nozzles shall be as follows:
  1. Hydrant connection pipe size, inside diameter 6 inches (152.4 mm)
  2. Standpipe, minimum inside diameter 7 inches (177.8 mm)
  3. Valve opening, minimum diameter 5-1/4 inches (133 mm)
  4. Auxiliary gate valve 6 inches (152.4 mm)
  5. Hose nozzle. 2 @ 2 1/2" NST
  6. Nozzle threads 7 1/2 per inch
  7. Outside diameter finished nozzle 3.0625 inches (77.79 mm)
  8. Diameter at root of thread 2.8715 inches (72.94 mm)
  9. Thread pattern 60° V thread
  10. Threaded length of male nipple 1 inch (25.4 mm)
  11. "Steamer" nozzle Pacific Coast Pumper Thread. 1@4inches
  12. "Steamer" nozzle threads. 6 per inch
  13. Outside diameter finished nozzle 4.828 inches (122.63 mm)
  14. Diameter at root of thread. 4.580 inches (116.33 mm)
  15. Thread pattern P.C.P. std.
  16. Threaded length of male nipple P.C.P. std.
  17. Storz 5" Steamer Port Hydrant Adaptors with blind cap and cable.

- E. Painting: Below the ground use Coal Tar Epoxy in accordance with SSPC PS 11.01 82, with a minimum dry film thickness of 70 mils (1.778 mm). Above ground paint in accordance with AWWA C502 80 and Tacoma Fire Department Requirements.

#### 2.04 VALVE BOX AND COVERS

- A. Valve Box shall be Grey Cast Iron ASTM A48, Class 30 and shall be suitable to accommodate load conditions noted on the drawings. Frame and Lid shall be tested for accuracy of fit. Castings and extensions shall be hot-dipped in asphaltic varnish Royston Roskote #612XM.

#### 2.05 CONCRETE FOR THRUST BLOCK

- A. See Section 03 30 00 – Cast-in-Place Concrete.

### **PART 3 - EXECUTION**

#### 3.01 GENERAL

- A. It shall be the Contractor's responsibility to verify the actual locations (horizontal and vertical) of all utilities prior to beginning trench excavation. If utilities are to remain in place, provide protection from damage during construction operations.
- B. All water system components unless noted otherwise shall be rated for a working pressure of 125 psi (861.84 kPa) and a testing pressure of 225 psi (1551.32 kPa).

#### 3.02 PRODUCT HANDLING:

- A. Handle pipe to prevent damage to the pipe, pipe lining, or coating. Damage to the pipe, pipe lining, or coating, if any, shall be repaired to the satisfaction of the Engineer or replaced at no additional cost to the Port.
- B. Protect threaded pipe ends by couplings or other means until the pipe is placed in its final position.
- C. At times when pipe laying is not in progress, close the open ends of the pipe with a watertight plug or by other means approved by the Engineer to ensure absolute cleanliness inside the pipe.
- D. Pipe which has become damaged or contaminated shall be removed from the trench, cleaned, repaired as required and relaid.
- E. Prior to starting work coordinate shut downs, demolition, and reopening water supply with the Engineer.

#### 3.03 TRENCHING, BEDDING AND BACKFILL

- A. All earthwork shall conform to the requirements of Section 31 00 00 – Earthwork and Section 01 57 23 - Water Management. Provide shoring as necessary to support existing items noted to remain in place.
- B. In the event that water is encountered or accumulates in the trench, it shall be removed during the pipe laying operation and be maintained in a water free condition until the ends of the pipe are sealed and provisions are made to prevent floating of the pipe. At no time allow trench water to enter the pipe.

#### 3.04 LAYING PIPE

- A. Rubber Gasket Joint Pipe:

1. Cleaning and Assembling Joint: Clean the inside of the bell to remove oil, grit, tar (other than standard coating) and other foreign material from the joint. Flex the circular rubber gasket inward and insert in the gasket seat provided in the socket, then release with the gasket fitting over the bead in the gasket seat. Apply a thin film of gasket lubricant to the inside surface of the gasket. Gasket lubricant shall be as supplied by the pipe manufacturer and approved by the Engineer.
2. Clean the spigot end of the pipe and enter into the rubber gasket in the socket, using care to keep the joint from contacting the ground. Complete the joint by forcing the plain end to the bottom of the socket using a device approved by the Engineer. Pipe which is not furnished with a depth mark shall be marked before assembly to ensure that the spigot end is inserted to the full depth of the joint.
3. Field cut Pipe Lengths: Shall be filed or ground to resemble the spigot end of manufactured pipe.

### 3.05 VALVE INSTALLATION

- A. Gate Valves: Inspect all gate valves upon delivery in the field to ensure proper working order before installation. Set and joint to the pipe in the manner set forth in the AWWA Standards for the type of connection ends furnished. Inspect the valves carefully for damage to the outer protective coatings. Where the coating has been ruptured or scraped off, clean the damaged area thoroughly to expose the iron base installation, and recoat the cleaned area with two or more field coats of Quigley Triple A 10, Triple A 20, or equal.
- B. Install valves in a vertical position and provide with a standard valve chamber or cast iron gate box so arranged that no shock will be transmitted to the valve. Center the box over the operating nut, and set the cast iron box cover flush with the roadbed or finished paved surface.
- C. After installation, all valves shall be subjected to the field test for piping. If defects in design, materials, or workmanship appear during these tests, correct such defects with the least possible delay and to the satisfaction of the Engineer.
- D. Valve boxes shall be positioned during backfill to be in a vertical and plumb alignment. Support the lower on a plastic foam collar not less than 2" thick. Casting shall not rest directly on the body of the valve, operating nut extension, or the water main. Set the upper casting flush with finish pavement and align to match grade.

### 3.06 FIRE HYDRANTS

- A. General: Install hydrants where designated by the Engineer or at locations noted and in accordance with the details on the drawings.
- B. Inspect all hydrants in the field upon arrival to ensure proper working order. After installation, they shall be subjected to a hydrostatic test not to exceed the factory test pressure.
- C. Connections: Hydrant laterals shall consist of a section of four inch or six inch pipe from the main to the hydrant and shall include an auxiliary gate valve provided with lugs for rodding, or clearance for shackles, as indicated on the drawings. Set the gate valve within an appropriate cast iron valve box as noted on the drawings.
- D. Harness hydrants to the auxiliary gate valve and the valve to the tee at the main with steel rods of size, shape and arrangement as indicated in the detail drawing for hydrant settings.
- E. Thoroughly clean all hydrant shackle rods, after installation and paint with two coats of asphalt varnish, or with other bituminous paint authorized by the Engineer.

### 3.07 FIELD TESTS

- A. Test all underground pipe and appurtenances in accordance with the requirements of WSDOT Standard Specification Section 7 09.3 (23).

### 3.08 DISINFECTION AND FLUSHING OF WATER MAINS

- A. Before being placed in service, disinfect and flush all new, repaired portions, or extensions of potable water lines in accordance with the requirements of Section 7 09.3 (24), Washington State Department of Transportation Standard Specifications. Dispose of test water in accordance with applicable regulations.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. This section describes requirements for providing the equipment, labor and materials necessary to furnish and install a complete manual wash with water treatment system. All Wash Equipment shall be Furnished by Contractor, Installed by Contractor (FCIC).

### **1.02 REFERENCES**

- A. National Bureau of Standards: Handbook H28 - Screw-Thread Standards for Federal Services. (Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.)
- B. United States of America Standard Institute, Inc.:
  - 1. B36.10: Standard Weights and Dimensions of Welded and Seamless Wrought Steel Pipe.
  - 2. C1: National Electric Code (Copies of the National Electrical Code may be obtained from the National Board of Fire Underwriters, 85 John Street, New York, New York 10038.
  - 3. National Electrical Manufacturers Association:
    - a. CI - Circuit Breakers, Low - Voltage Power.
    - b. MGI - Motors and Generators.
    - c. Application for copies should be addressed to the National Electrical Manufacturers Association, 155 East 44th Street, New York, New York 10016.

### **1.03 QUALITY ASSURANCE**

- A. Perform Work in accordance with manufacturer's instructions.

### **1.04 QUALIFICATIONS**

- A. Experience: Equipment shall be produced by a manufacturer of established reputation with a minimum of five years' experience supplying specified.
- B. Manufacturer's Representative:
  - 1. Installation: Provide a qualified manufacturer's representative at site to supervise work related to equipment installation, check out and start up.
  - 2. Training: Provide qualified manufacturer's technical representative to provide training to Owner's personnel in operation and maintenance of specified equipment.

### **1.05 SUBMITTALS**

- A. Product Data:
  - 1. All Product Data submittals shall identify proposed project specific items marked by arrow, circle, underline, reproducible highlight, or other markings clearly discernable by the reviewer, to show which specific items, parts and accessories are being submitted for the project product data review. Non-marked or generic product data submittals with no marks indicating specific items, parts and accessories will be a cause for rejection.
- B. Operation and Maintenance Manual:
  - 1. Provide a Complete parts list, operating instructions, and maintenance manual covering equipment at time of installation including, but not limited to:
    - a. Description of system and components.
    - b. Schematic diagrams of electrical, plumbing and compressed air systems.

- c. Manufacturer's printed operating instructions.
    - d. Printed listing of periodic preventive maintenance items and recommended frequency required to validate warranties. Failure to provide maintenance information will indicate that preventive maintenance is not a condition for validation of warranties.
    - e. List of original manufacturer's parts, including suppliers' part numbers and cuts, recommended spare parts stockage quantity and local parts and service source.
  - 2. Assemble and provide copies of manual in electronic and hard copy 8-1/2 by 11-inch format. Foldout diagrams and illustrations are acceptable.
- C. Shop Drawings:
- 1. Submitted shop drawings shall be project specific and shall include a minimum 1/8-inch to 1 foot (30.48 cm) scaled (or larger standard architectural imperial scale), dimensioned, graphical representation of the size, orientation, and location for the submitted equipment. The drawings shall further include dimensions from structural elements or architectural grid lines, operational clearances, locations of any utility service connection points, mounting requirements, and structural supports required for the submitted equipment.

## **PART 2 - PRODUCTS**

### **2.01 REQUIREMENTS INCLUDE FURNISHING AND INSTALLING ALL EQUIPMENT AND ACCESSORIES NECESSARY TO MAKE COMPLETE WATER TREATMENT SYSTEMS AND HOT WATER PRESSURE WASHER FOR THE FACILITY. SUMMARY OF ITEMS INCLUDES:**

- A. Shipping container, Qty. One (1)
- B. Water Management and Pumping System with Ozone Generator Kit Qty. One (1)
- C. Automatic Filtration System-Filtration rate <20GPM Qty. One (1)
- D. 500-Gal Recycled water Holding Tank Qty. One (1)
- E. All Electric Hot Water Pressure Washer, Qty. Two (2)
- F. 150-Gal Cone Bottom Purge and In-Feed Tank, Qty. One (1) Each
- G. Universal Clarifier with Coag, Qty. One (1)
- H. 65-Gal Intermediary Transfer Tank, Qty. One (1)
- I. High Boy Filtration System 120V 1PH 3A, Qty. One (1)
- J. Other Accessories
  - 1. 75' R-2 HP Hose, Qty. Two (2)
  - 2. Pressure Washer Remote with ON/OFF, Burner ON/OFF and Detergent, Qty. Two (2)
  - 3. High Pressure Wand with wall mounted Wand Holder, Qty. Two (2)
- K. Roughing-in, installation of equipment, and final connection of utilities, with labor, services, and incidentals necessary for complete and operational equipment installation.
- L. Provide all piping, wiring, and switching between equipment and utilities necessary for complete and operational equipment installation.

### **2.02 WATER MANAGEMENT AND PUMPING SYSTEM WITH OZONE GENERATOR KIT, QTY. ONE (1)**

- A. General Description:

1. The kit shall be a versatile water management module that pumps water from upstream pre-treatment tanks or pit system to downstream reuse storage tanks. When combined with the ZCF filtration module, it shall pump influent water through the filters to remove particulate, as well as provide pressurized water for backwashing and for recycling purposes. It provides makeup water, as well as discharges any excess water volume.
2. Stainless steel skid with skeletal steel frame leaves no place for standing water to cause rusting.
3. The kit shall fit through 36" doorways to allow fitting into challenging installation spaces.

B. Features-Technical Data:

1. Designed to interface with pretreatment & post treatment modules
2. Stainless steel skid with painted carbon steel enclosure with lockable front door
3. 1.5 HP self-priming pump – transfer rate up to 30 GPM and up to 40 PSI
4. Steel components are protected with powder coated finish
5. Easy access to components (pump, piping, and electrical)
6. Certifications – UL 73
7. 230V 1Ph 20A

C. Ozone Generator shall also be provided to safely, naturally and economically rid wastewater of odor and bacteria. It disinfects the waste water in the 500 Gal holding tank.

1. Sanitizes 3000 times faster than chlorine
2. Output from 24 to 27 grams per day
3. Mixing procedure with 99% efficiency

## 2.03 AUTOMATIC FILTRATION SYSTEM-FILTRATION RATE <20GPM, QTY. ONE (1)

A. General Description:

1. System shall be a single unit, pre-piped and wired, ready for connection to tanks and wash process filtration system which delivers recycled water with a fully automatic operation.

B. Features-Technical Data:

1. Two Media housing, filtration rate up to 20 GPM
2. Programmable and Self Cleaning Backwash Cycles
3. Dimension: 46"x34"x81" 1,450 lbs
4. Electric power requirement 120Volt, single phase and 5 Amp current.

## 2.04 HIGH BOY PAPER FILTRATION SYSTEM <20 GPM

A. General Description:

1. System shall be a plug-and-play unit, pre-piped and wired, ready for connection to other equipment. High capacity paper filter designed to work with system.
  - a. 120Volt, Single Phase 3 Amp Current.

## 2.05 RECYCLED WATER HOLDING TANK, QTY. ONE (1)

A. General Description:

1. 5500-Gal Tank shall be a flat bottom tank. Tank shall provide cushion in holding recycled water and shall be made of polyethylene material. Material must be UV and corrosion resistant. The tank shall be installed south of the enclosure as shown on plans. The tank shall connect to the filtration system as well as deliver excess process water to the Sanitary Sewer pump #2 manhole

#### 2.06 ALL ELECTRIC PRESSURE WASHER, QTY. ONE (1)

##### A. General Description:

1. Electric Hot Pressure washer shall have cleaning power up to 3000 PSI and 3.5 GPM. The unit also includes optional wireless remote control.
2. OSHA requirements: The system shall meet or exceed all applicable OSHA standards.
3. Heater Type: Stationary hot water system, All Electric powered
4. ETL certified

##### B. Capacities:

1. Pump motor: 460V, 3ph, 59Amps, 6.2 HP motor, belt driven 845 RPM
2. Maximum discharge capacity: 3.5 GPM.
3. Operating pressure: 3,000 PSI.
4. Quantity: 2.
5. Power: 40.5 KW
6. Pump shall have wireless remote control working a minimum 300 feet (9144 cm) away from pressure washer.

##### C. Accessories:

1. Variable pressure wand with trigger gun and wand assembly
2. High Pressure and temperature relief
3. 75' R2 High pressure Hose
4. Wired Remote
5. Finish: Epoxy powder coating in manufacturer's standard color.

#### 2.07 150-GAL CONE BOTTOM PURGE AND IN-FEED TANK, QTY. ONE (1) EACH

##### A. General Description:

1. A 150-gallon cone-bottom infeed tank with stand which will supply flooded suction in the CoAg system.

#### 2.08 UNIVERSAL CLARIFIER WITH COAG, QTY. ONE (1)

##### A. General Description:

1. Universal clarifier tank shall be an above-ground clarifier that incorporates skimming of free-floating oils at flow rates at up to 30 GPM (6.8 cubic meters/hour). CLT-600 utilize cross-linked polyethylene cone-bottom tanks with a steep slope (up to 55 degrees) for maximum solids separation.

##### B. Features-Technical Data:

1. Flow rate up to 30 GPM
2. Coag Mixing Chamber

3. Cone Bottom Above Ground Tank, cradle with Lid.
4. Integrated Compact Coag System.
5. Control Panel Mounting Bracket and Shield
6. 5 Gal Compact Coag Flocculant
7. 5 Gal pH Adjustment Chemical
8. AMC1000D Auto Tank Purge
9. UV Ozone System
10. pH Controller Assembly with Inlet Manifold
11. Sludge Tub with Lid
12. SS Grundfos ½ HP Sump Pump
13. Utility Requirement: 120V, 15A

#### 2.09 65-GAL INTERMEDIARY TRANSFER TANK, QTY. ONE (1)

- A. Intermediary transfer tank shall be made of Polyethylene material
- B. All tanks shall also be UV- and corrosion-resistant.

#### 2.10 OTHER ACCESSORIES

- A. Pressure Washer Remote with ON/OFF, Burner ON/OFF and Detergent, Qty. Two (2)
- B. High Pressure Wand with Wand Holder mounted on the Wall, Qty. Two (2)

### **PART 3 - EXECUTION**

#### 3.01 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver equipment in manufacturer's containers, appropriately packaged and/or crated for protection during domestic shipment and storage in humid, dusty conditions.
- B. Clearly label all containers, including those contained in others, on outside with item description(s) per title of this specification.
- C. Provide equipment and materials specified complete in one shipment for each equipment item. Split or partial shipments are not permissible.

#### 3.02 LABELING

- A. Manufacturer shall securely attach in a prominent location on each major item of equipment a non-corrosive nameplate showing manufacturer's name, address, model number, serial number, and pertinent utility or operating data.
- B. Label all piping in wash and water reclaim systems as to its function and flow direction.
- C. All electrical equipment and materials shall be new and shall be listed by Underwriter's Laboratories, Inc. (U.L.), or other National Recognized Testing Laboratory (NRTL), in categories for which standards have been set by that agency and labeled as such in the manufacturer's plant.

#### 3.03 INSPECTION

- A. Coordinate location of rough-in work and utility stub-outs to assure match with equipment to be installed.
- B. Inspect delivered equipment for damage from shipping and exposure to weather. Compare delivered equipment with packing lists and specifications to assure receipt of all items.

- C. Report in writing to the Engineer any damaged, missing or incomplete scheduled equipment and improper rough-in work or utility stub-outs.

#### 3.04 INSTALLATION

- A. Equipment shall be installed inside contractor provided shipping container. The 5500 gal tank shall be located outside the container.
- B. Manufacturer shall be responsible for complete operational equipment installation.
- C. Perform work under direct supervision of Foreman or Construction Superintendent with authority to coordinate installation of scheduled equipment with the Engineer.
- D. Install equipment in accordance with plans, shop drawings and manufacturer's instructions:
  - 1. Positioning: Place equipment in accordance with any noted special positioning requirements generally level (or slight slope as required by instructions), plumb and at right angles to adjacent work.
  - 2. Fitting: Where field cutting or trimming is necessary, perform in a neat, accurate, professional manner without damaging equipment or adjacent work.
  - 3. Anchorage: Use fastenings as specified herein. Attach equipment securely to prevent damage resulting from inadequate fastenings. Installation fasteners shall be installed to avoid scratching or damaging adjacent surfaces.
  - 4. Upon completion of work, finish surfaces shall be free of tool marks, scratches, blemishes, and stains.

#### 3.05 TESTING

- A. Specification Compliance: After final connections are made and prior to authorizing payment, specified equipment shall be tested for compliance with all specified features.
- B. Performance Testing: Each washer shall consecutively wash five containers of Owner's choosing.
- C. Malfunctions during testing shall be corrected within five days and re-tested. Malfunctions during second testing shall be corrected within five days and retested.

#### 3.06 CLEANUP

- A. Touch-up damage to painted finishes.
- B. Wipe and clean equipment of any oil, grease, and solvents, and make ready for use.
- C. Clean area around equipment installation and remove packing or installation debris from job site.
- D. Notify the Engineer for acceptance inspection.

#### 3.07 TRAINING

- A. Direct the technical representative to provide specified hours of training to designated Owner's maintenance personnel in operation and maintenance of the following equipment. Coordinate, with Owner, training schedule and list of personnel to be trained.
  - 1. WASHER, HI-PRESSURE/HOT WATER
    - a. Hours Required: 1 Total
  - 2. WATER RECLAMATION SYSTEM
    - a. Hours Required: 2

- B. Obtain, from technical representative, a list of Owner's personnel trained in equipment operations and maintenance.
- C. Provide a Windows compatible movie file format recording on DVD disk of the training session'
- D. The DVD training movie can be of a live session or a produced training video.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. The location and extent of "Sanitary Sewage Utilities" work is indicated on the drawings. The work includes the requirements for furnishing and installing sanitary sewer structures, clean outs, pipe and sanitary sewer structures.

### **1.02 RELATED SECTIONS**

- A. Section 02 41 00 – Site Demolition
- B. Section 03 30 00 – Cast-in-Place Concrete
- C. Section 03 40 00 – Precast Concrete
- D. 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 Society for Testing and Materials (ASTM)
  - 1. ASTM D1785 – Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe
  - 2. ASTM D2466 – Standard
  - 3. ASTM D2467 – Standard Specification for Poly(Vinyl Chloride) PVC) Plastic Pipe Fittings
- D. American Water Works Association (AWWA)
  - 1. AWWA C104 – Cement Mortar Lining for Ductile-Iron Pipe and Fittings
  - 2. AWWA C110 – Ductile Iron and Gray-Iron Fittings
  - 3. AWWA C 111 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
  - 4. AWWA C 151 – Ductile-Iron Pipe, Centrifugally Cast, for Water
  - 5. AWWA C153 – Ductile Iron Compact Fittings
  - 6. AWWA C600 – Installation of Ductile-Iron Mains and Their Appurtenances
  - 7. AWWA C900 – PVC Pressure Pipe and Fabricated Fittings
- E. Washington State Department of Transportation (WSDOT)
  - 1. Standard Specifications for Road, Bridge and Municipal Construction, M 41 10.

### **1.04 SUBMITTALS**

- A. Submit the following:
  - 1. Manufacturer's literature and data sheets for pipes, fittings, and accessories including couplings and gaskets.

### **1.05 QUALITY ASSURANCE**

- A. Unless otherwise specified, the Port will provide testing and inspection service to the satisfaction of the Engineer. The Contractor may obtain test results from Engineer at no cost. Tests conducted for the sole benefit of the Contractor, or before a product is approved, shall be at the Contractor's expense.

- B. Qualification of Workers: Employ the services of a qualified utility contractor, who will be thoroughly familiar with the type of materials being installed and the best methods for their installation, and who shall direct all work performed under this section.

## **PART 2 - PRODUCTS**

### **2.01 PIPE AND FITTINGS**

- A. PVC Pipe and Fittings
  - 1. PVC Pipe conform to the requirements of AWWA C900, Class 165. Furnish pipe with socket ends, gaskets, and accessories as recommended by the manufacturer.
  - 2. Couplings and fittings shall conform to the applicable requirements of ASTM D2466 and D2467. Joints shall be push-on rubber gaskets.
- B. Ductile Iron Pipe and Fittings:
  - 1. Ductile Iron Pipe (DIP) shall be special thickness Class 52 and conform to the requirements of AWWA C151
  - 2. Pipe and fittings shall have an asphaltic outside coating for full immersion conditions and a cement mortar lining in accordance with AWWA C104.
  - 3. Pipe joints shall be rubber gasketed, push-on, or mechanical joints per AWWA C111, unless otherwise specified.
  - 4. Fittings shall be compact gray iron or ductile iron and shall meet the applicable requirements of AWWA C110 or C153.
  - 5. Pipe and fittings shall be encased with Polyethylene encasement AWWA C105, Method A.

### **2.02 ADAPTERS AND COUPLINGS**

- A. Adapters and Couplings: Coupling adapters at tie-ins to existing pipes, if required, shall be Smith Blair or approved equal.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. It shall be the Contractor's responsibility to verify the actual locations (horizontal and vertical) of all utilities prior to beginning trench excavation. If utilities are to remain in place, provide protection from damage during construction operations.

### **3.02 TRENCHING, BEDDING, AND BACKFILL**

- A. All earthwork related to sanitary sewer piping shall conform to the requirements of Section 31 00 00 – Earthwork and Section 01 57 23 - Water Management and the details and notes on the Drawings. Provide shoring as necessary to support existing items that are to remain in place.
- B. In the event that water is encountered or accumulates in the trench, it shall be removed during the pipe-laying operation and be maintained in a water-free condition until the ends of the pipe are sealed and provisions are made to prevent floating of the pipe. At no time allow trench water to enter the pipe.

### **3.03 COORDINATION WITH OTHERS**

- A. Prior to starting work, coordinate shut downs, demolition, potholing and other activities with the Engineer.

### 3.04 HANDLING PIPE

- A. Pipe shall be handled in conformance with section 7-09.3 (13) of the WSDOT Standard Specifications. Handle pipe to prevent damage to the pipe, pipe lining, or coating. Damage to the pipe, pipe lining, or coating, if any, shall be repaired as directed by the Engineer or replaced at the Contractor's expense.
- B. At times when pipe laying is not in progress, close the open ends of the pipe with a watertight plug or by other means approved by the Engineer to ensure cleanliness inside the pipe.
- C. Pipe that has become damaged shall be removed from the trench, cleaned, and repaired as required and re-laid at the Contractor's expense.

### 3.05 LAYING PIPE

- A. Furnish all necessary machinery for the Work and pump, bail or otherwise remove water which accumulates in the trench. Perform all Work necessary to keep the trench clear of water while the foundation and masonry are being constructed or the pipe is being laid.
  - 1. Placing: Place the pipe on appropriate bedding graded to conform with the grades and alignment indicated on the drawings and prepared as specified. Exercise care that the pipe has a full, solid bearing along its entire length. Make small depressions for pipe bells when utilized. Make minor adjustments to line and grade by scraping away, or filling in bedding material. Do not support pipes on blocks or mounds of any nature.
  - 2. Ductile Pipe: Join and install ductile-iron pipe with ductile-iron or cast-iron push-on joint fittings and rubber gaskets in accordance with AWWA C600, except that anchorages are not required.

### 3.06 ACCEPTANCE TESTING

- A. After completion of the following, authorization from the Engineer shall be required before the Contractor can perform initial camera work:
  - 1. Acceptable placement of applicable pipe, bedding and backfill material.
  - 2. Acceptable completion of all applicable manhole channels and grout work.
  - 3. Acceptable debris removal, cleaning and flushing of all applicable pipes and structures.
- B. Testing shall be as in WSDOT section 7-17.3(2) Cleaning and Testing. Infiltration testing will be required for pipe installed below the ground water elevation.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 DESCRIPTION OF WORK**

- A. Section includes: Provide all piping, including pipe fittings, supports, and accessories as shown on the Drawings, described in the Specifications, and as required to completely interconnect all equipment with piping for complete and operable systems.

### **1.02 REFERENCES**

- A. ASTM International (ASTM)
- B. American National Standards Institute (ANSI)
- C. American Water Works Association (AWWA)
- D. Manufacturers Standardization Society of the Valve and Fittings Industry (MSS)
- E. Washington State Department of Transportation (WSDOT)

### **1.03 SUBMITTALS**

- A. Submit data to show that the following items conform to the Specification requirements:
  - 1. Pipe, fittings, and accessories shall include:
    - a. Manufacturing method and material standards
    - b. Grade of material
    - c. Wall thickness and tolerances
    - d. Pressure rating
    - e. Fitting fabrication details
  - 2. Pipe couplings and flexible pipe pieces (Product Review).
  - 3. Valves and Accessories (Product Review).
  - 4. Submit certified test reports as required herein and by the referenced standard specifications (Product Information).
- B. Field test reports as required in Part 3.

### **1.04 QUALITY ASSURANCE**

- A. Materials and equipment furnished under this Section shall be of manufacturers who have been regularly engaged in the design and manufacture of the materials and equipment for a period of at least 5 years. Demonstrate to the satisfaction of the Engineer that the quality is equal to the materials and equipment made by the manufacturers specifically named herein, if an alternate manufacturer is proposed.
- B. Factory Quality Control: The Contractor shall test all products as noted herein and by the reference specifications.
- C. Field Quality Control:
  - 1. The Engineer will:
    - a. Observe leakage testing.
    - b. Inspect cleaning work.
  - 2. The Contractor shall:
    - a. Perform leakage tests as noted herein.

- b. Perform cleaning work as noted herein.
- c. Be responsible for the costs of additional inspection, testing, and cleaning resulting from noncompliance.

#### 1.05 FIELD VERIFICATION

- A. When connecting to existing utilities, Contractor shall confirm existing utility size, material, and elevation at connection locations as soon as the existing utility has been exposed. If discrepancies or interferences are found between said existing utility and proposed pipeline alignment, Contractor shall request clarification from the Engineer before proceeding.

#### 1.06 CONSTRUCTION SCHEDULING/SEQUENCING

- A. Construction under this Contract involves modification of an existing storm drain system and installation of new storm drain infrastructure. See Section 01 57 23 - Water Management for temporary stormwater discharge rerouting requirements specification. Significant utility shutdowns are not anticipated to be necessary to complete the project.

#### 1.07 APPURTENANCES

- A. Furnish and install all necessary guides, inserts, anchors and assembly bolts, washers and nuts, hangers, supports, gaskets, couplings and flanges; all other appurtenant items shown on the Drawings, specified or required for the proper installation and operation of the piping; devices included in or on the piping equipment; and piping accessories.

### PART 2 - PRODUCTS

#### 2.01 GENERAL

- A. Pipe and valve sizes are nominal inside diameter unless otherwise noted.
- B. All materials delivered to the job site shall be new, free from defects, and marked to identify the material, class, and other appropriate data such as thickness for piping.
- C. Acceptance of materials shall be subject to strength and quality testing in addition to inspection of the completed product. Acceptance of installed piping systems shall be based on inspection and leakage tests as specified hereinafter.

#### 2.02 GENERAL MATERIAL REQUIREMENTS

- A. Gaskets: Except where specified otherwise, gaskets shall be NBR (Nitrile or Buna-N).
- B. Flexible Sealant: Flexible sealant for pipe joints, where shown on the Drawings, shall be a two-component polysulfide, non-sag; Sikaflex 2C, Dualthane, or equal.

#### 2.03 PIPING MATERIALS

- A. Pipe and Fitting Designation: Piping materials are identified by a "Type" designation in these Specifications. The "Type" designation identifies not only the pipe itself, but the associated fittings and appurtenances and the installation and test procedures described for that "Type." The designation of a particular type shall indicate a complete installation including fittings, joints, cleaning and testing. The pipe and fitting materials for each type designation shall be as specified herein and summarized in the Pipe Type Schedule.
- B. Piping Schedule: Piping systems and their corresponding piping and valve systems are listed on the Drawings.
- C. Pipe Type Schedule: Pipe material, joints and fittings shall be as summarized below. A detailed specification of each pipe type follows. (The detailed specification supersedes the schedule in case of any conflicts.)

| Pipe Type | Pipe Description | Field Joints | Fittings |
|-----------|------------------|--------------|----------|
|-----------|------------------|--------------|----------|

|         |                                                                                     |                          |              |
|---------|-------------------------------------------------------------------------------------|--------------------------|--------------|
| HDPE SD | Corrugated Dual-Wall Polyethylene, gravity pipe, AASHTO M 252, Type S or ASTM F2648 | Integral Bell and Spigot | Polyethylene |
| PVC     | PVC, SDR 35, Gravity Sewer                                                          | Bell & Spigot            | PVC          |

D. HDPE SD:

1. Pipe shall conform to AASHTO M 252, Type S or ASTM F2648, minimum 2% carbon black. Pipe shall have smooth interior and annular exterior corrugations, and joints shall be watertight in accordance with ASTM D3212.
  - a. Manufacturer: Advanced Drainage Systems (ADS) N-12 WT (IB) or approved equal.
2. Gaskets shall conform to ASTM F477. NBR (Nitril or Buna N).
3. Fittings shall conform to ASTM F2306.
4. Adapters: provide pre-fabricated HDPE manhole adapter or PVC manhole adapter when connecting to concrete catch basins or manholes.
5. See Drawings for perforation requirements for collection piping within the biofiltration media trenches.

E. PVC SD:

1. Pipe and fittings shall conform to ASTM D3034, SDR 35
2. Joints: Elastomeric gasket joints, ASTM D3212.
  - a. Gaskets: NBR (Nitrile or Buna-N).
3. Adapters: provide pre-fabricated PVC manhole adapter when connecting to concrete catch basins or manholes.

2.04 PIPE COUPLINGS AND FLEXIBLE PIPE PIECES

A. General: For typical pipe joints refer to pipe material specifications.

B. Flexible Repair Clamp:

1. Sleeve: 304 Stainless Steel.
2. Gasket: Ethylene Propylene Diene Monomer (EPDM).
3. Bolts and Nuts: 304 stainless steel, metric socket head cap screws.
4. Pressure Rating: Test pressure of the applicable service.
5. Manufacturer: Romac Armor Seal; or equal.

C. Flexible Couplings:

1. Sleeve: Cast iron or fabricated steel.
2. Followers: Cast iron, ductile iron, or steel.
3. Sleeve Bolts: ASTM A325, Type 3; malleable iron; or equivalent, except for buried and submerged, which shall be Type 304 stainless steel and Type 316 stainless steel, respectively.
4. Coating: Fusion epoxy OR High-build epoxy line and coat sleeve and followers.
5. Pressure Rating: The test pressure of the applicable service.

6. Performance: Longitudinal movement and angular deflection capabilities shall meet AWWA C219.
  7. Buried Flexible Coupling Sleeve: Long barrel; Smith-Blair 442, Dresser Style 40; or equal.
  8. Manufacturers:
    - a. Flexible Couplings:
      - 1) Connecting Pipe with Identical Outside Diameters: Smith-Blair 411 or 441; Dresser Style 38 or 138; or equal.
      - 2) Connecting Pipe with Slightly Different Outside Diameters: Smith-Blair 413 or R441; Dresser Style 62; or equal.
  9. Gaskets: SBR rubber or NBR (Nitrile or Buna-N).
  10. Protection for Buried Couplings and Adaptors:
    - a. Double-wrap with polyethylene encasement, AWWA C105 and tape the edges of the encasement with PVC tape
    - b. The entire flexible coupling shall be protected. The pipe and coupling or adapter shall be cleaned and primed in accordance with the manufacturer's instructions. Apply a filler to form a smooth, continuous surface and spiral wrap with tape, overlapping by at least 50%. Filler shall be dense Mastic or equal. Tape shall be Dense Tape or equal.
- D. Transition Couplings:
1. Provide transition couplings for PVC pipe to HDPE pipe connections.
  2. Transition Coupling shall consist of a sealing gasket and stainless-steel ring conforming to ASTM C1173.
  3. Manufacturer: Fernco corrugated pipe flexible coupling or equal.

## 2.05 VALVES AND ACCESSORIES

- A. General Requirements for Valves:
1. All valves of each type shall be the product of one manufacturer.
  2. All exposed valves shall be furnished with operators, hand-wheels, levers, or other suitable type wrench including handles as specified herein or as shown on the Drawings.
  3. All threaded stem valves shall open by turning the valve stem counter-clockwise.
  4. All exposed valves and valve operators shall have a non-bleeding shop coat, unless otherwise specified.
- B. In-Line Check Valves
1. Valve shall provide 100% continuous backflow prevention in accordance with CE 13564 1 under DN200.
  2. Valve fasteners and pipe shall be marine grade AISI 316 stainless steel.
  3. Valves shall produce pulsating flow to remove debris from between valve membrane and valve seat.
  4. Manufacturer shall provide published head loss curves for each valve demonstrating the valve's hydraulic characteristics.
  5. Manufacturer: WaStop Inline Check Valve by Wapro, or equal.



## 2.06 PIPE-TO-STRUCTURE CONNECTIONS.

- A. See Section 33 49 20.

## 2.07 APPURTENANCES

- A. Provide all necessary assembly bolts, washers and nuts, thrust blocks, supports, gaskets, flanges, and all other appurtenant items shown on the Drawings, specified or required for the proper installation and operation of the piping, and devices included in or on the piping, equipment, and piping accessories.

## PART 3 - EXECUTION

### 3.01 PIPING INSTALLATION

A. Handling and Placing:

1. Exercise great care to prevent injury to or scoring of the pipe lining and coating, as applicable, during handling, transportation, or storage. Do not store pipe on rough ground, and do not roll the pipe on the coating. Any damaged pipe sections, specials, or fittings shall be repaired or replaced at the expense of the Contractor as satisfactory to the Engineer.
2. Pipe and fittings shall not be dropped. All pipe and fittings shall be examined before laying and no piece shall be installed which is found to be defective. Any damage to the pipe shall be repaired as directed by the manufacturer and approved by the Engineer. If any defective pipe is discovered after it has been laid, it shall be removed and replaced with a sound pipe in a satisfactory manner at the Contractor's expense. Any pipe with gouges exceeding 5% of the nominal wall thickness will be rejected.
3. The Contractor shall not drag the pipe. Rollers or other such devices shall be used to reduce dragging of the pipe. Damage to pipe caused by dragging is the responsibility of the Contractor and cause for replacement of damaged portion as determined by the Engineer. If, in the opinion of the Engineer, the pipe may have been dragged to an extent where damage may have occurred to the pipe wall, the Contractor will rotate the pipe in a manner which will facilitate inspection.
4. Carefully inspect each pipe, fitting, and accessory before installation to ensure there is no defective workmanship or obstructions. Inspect the interior and exterior protective coatings and patch all damaged areas in the field or replace to the satisfaction of the Engineer.
5. Place or erect all piping to accurate line and grade and backfill, support, hang, or brace against movement as specified or shown on the Drawings, or as required for proper installation. Remove all dirt and foreign matter from the pipe interior prior to installation and thoroughly clean all joints before joining.
6. Use reducing fittings where any change in pipe size occurs. Do not use bushings unless specifically noted on the Drawings. Use eccentric reducing fittings wherever necessary to provide free drainage of lines.
7. The Contractor is advised that precautions taken to keep the pipeline clean during construction will facilitate achieving the cleaning requirements of this project with a minimum of effort and expense. Compliance with these suggested minimum procedures will not relieve the Contractor of the cleaning requirements.
8. Steel plates shall be provided over trenches or shore zones if no work is being performed within.

B. Installation:

1. Trenching, bedding, and backfill for buried piping shall be as shown on the Drawings and as specified in Section 31 00 00.
2. Install buried pipe in accordance with ASTM D2321 and manufacturer recommended installation guidelines.
3. Install exposed piping without springing or forcing the pipe in a manner that would set up stresses in the pipe, valves, or connected equipment.
4. Set all pipe flanges level, plumb, and aligned. All flanged fittings shall be true and perpendicular to the axis of the pipe. All bolt holes in flanges shall straddle vertical centerline of pipes.
5. Once Work is started on a connection, it shall proceed continuously without interruption and as rapidly as possible until completed.
6. Whenever pipe laying is discontinued for short periods, or whenever work is stopped at the end of the day, close the open ends of the pipe with watertight plugs or bulkheads.
7. Where pipe grade elevations are shown on the Drawings, install the pipe with straight grades between the indicated elevations.
8. Where no pipe grade elevations are shown on the Drawings, install buried piping with at least 3 feet (91.44 cm) of cover to finished grade.
9. Where piping crosses under existing or proposed buried utilities, provide 12 inches minimum separation between piping and utility.
10. For dissimilar pipe connections, support, and brace encased pipe to support the pipe and to prevent movement during testing and placement of the concrete encasement. The braces and supports shall be erected of materials and by methods that will prevent any future contact of the pipe with the environment surrounding the encasement.
11. Prior to installing a pipe section, the bedding material shall be brought to grade along the entire length of the section to be installed.
12. Provide each pipe with a firm, uniform bearing for its full length in the trench except at field joints. Do not lay pipe in water or when trench conditions or weather are unsuitable for such work.
13. All pipe and fittings shall be thoroughly cleaned before laying and shall be kept clean until they are used in the work.
14. As much as practicable, the print line on the pipe shall be installed facing upward to facilitate identification of the pipe when initially installed.
15. Chains or cable type chokers will not be allowed when lifting sections of pipe. Nylon or other wide fabric slings or other similar lifting apparatus with spreader bars shall be used where necessary.
16. All exposed free pipe ends shall be securely braced. Cap or plug pipe ends that are left for future connections as shown on the Drawings and in a manner approved by the Engineer.
17. Where piping leaves a structure or concrete encasement, provide a joint capable of angular deflection within 12 inches (304.8 mm) of the structure for pipes 12-inch and smaller, or 1-1/2 times the nominal diameter for larger pipe sizes. Conform to details on the Drawings where such details are shown.
18. Do not pull bell and spigot, gasketed joints more than 75% of the maximum deflection permitted by the pipe manufacturer.

19. Install push-on joints in accordance with manufacturer's instructions. Pull the slack out of restrained joints after they are made up.
20. Existing storm drains shall be cut by the Contractor unless otherwise specified. The Contractor shall remove the portions of pipe to provide for the installation of the required fittings at the points of connection. Damage caused by the Contractor's operations to existing joints in piping to remain in service shall be repaired by the Contractor at no additional expense to the Port. The Contractor shall determine the exact length of the existing storm drain that must be removed. The pipe ends shall be beveled to prevent damage to the transition coupling gasket during installation of the coupling.
21. When making the connection between a new storm drain and an existing storm drain, or when repairing a damaged pipe, take the following extra precautions:
  - a. Clean the exterior of the existing storm drain of all dirt and debris and provide a sound, smooth finish before installation of the coupling.
  - b. Clean equipment and materials, including new pipe and fittings, to be used in making these connections, of all dirt and debris.
22. Underground warning tape shall be installed in accordance with Section 31 00 00.
23. Pipe must be at the temperature of the surrounding soil at the time of backfilling and compaction.

### 3.02 INSTALLATION OF PIPE-TO-STRUCTURE CONNECTIONS

- A. Connect pipe-to-structure connections to both the pipe and structure in accordance with the manufacturer's recommendations.
- B. Coordinate connection with pipe material to ensure a watertight seal.
- C. Make connection watertight with non-shrink grout.

### 3.03 FIELD TESTING

- A. General: Perform leakage tests on all pipe installed in this project. Furnish all equipment, material, personnel, and supplies to perform the tests and make all taps and other necessary temporary connections. The test pressure, allowable leakage and test medium shall be as specified and as described below. Test pressure shall be measured at the highest point on the line, except that pressure at lowest point shall not exceed pipe manufacturer's rated test pressure, unless specifically noted otherwise. Leakage tests shall be performed on all piping at a time agreed upon and in the presence of the Engineer. All visible leaks shall be repaired, regardless of the test results at no additional cost to the Port.
- B. The leakage test shall be made after all pipes are installed and backfilled. However, the Contractor may conduct preliminary tests prior to backfill. If the Contractor elects to conduct preliminary tests, provide any necessary temporary thrust restraint.
- C. Accessories: It shall be the responsibility of the Contractor to block off or remove equipment, valves, etc., which are not designed to withstand the full test pressure.
- D. Testing Apparatus: Provide pipe taps, nozzles, and connections as necessary in piping to permit testing including valves to isolate the new system, addition of test media, and draining lines and disposal of water, as is necessary. These openings shall be plugged in a manner approved by the Engineer after use. Provide all required temporary bulkheads.
- E. Precautions for Pneumatic Testing: Where air or another gas is called for as the test medium, the Contractor shall take special precautions to protect personnel. During the initial pressurization of a pipeline to the specified test pressure, personnel shall be protected by suitable barricades.

- F. Correction of Defects: If leakage exceeds the allowable amount, the installation shall be repaired or replaced, and leakage tests shall be repeated as necessary until conformance to the leakage test requirements specified herein have been fulfilled.
- G. Reports: The Contractor shall keep records of each piping test, including:
  - 1. Description and identification of piping tested.
  - 2. Test pressure.
  - 3. Date of test.
  - 4. Witnessing by Contractor and Engineer.
  - 5. Description of test evaluation.
  - 6. Remarks, to include such items as:
    - a. Leaks (type, location).
    - b. Repairs made on leaks.
  - 7. Test reports shall be submitted to the Engineer.
- H. Testing Specifics: Piping shall be tested as indicated in the following Schedule.
  - 1. Gravity Piping: Storm drainage exfiltration test or air pressure test in accordance with Section 7-04 of WSDOT Standard Specifications.
  - 2. Force Main Piping: Hydrostatic pressure test in accordance with Section 7-09 of WSDOT Standard Specifications.

#### 3.04 CLEANING

- A. After leak testing is complete, thoroughly clean the inside of each completed piping system of all dirt, loose scale, sand, and other foreign material. Cleaning shall be by sweeping, flushing with water, or blowing with compressed air or oil-free nitrogen gas, as appropriate for the size and type of pipe. Flushing shall achieve a velocity of at least 3 feet (91.44 cm) per second. The Contractor shall install temporary strainers, temporarily disconnect equipment, or take other appropriate measures to protect equipment while cleaning piping. Cleaning shall be completed after any pipeline repairs.
- B. Furnish, collect, and dispose all water used for cleaning. Cleaning work shall comply with all applicable laws and regulations.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 DESCRIPTION OF WORK**

- A. This Section describes work consisting of the sourcing and installation of filtration media to be used within the biofiltration media trenches (BMT).

### **1.02 REFERENCES**

- A. ASTM International (ASTM).
- B. Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction, and Amendments (current edition).

### **1.03 SUBMITTALS**

- A. Reports of results of required tests by an Engineer-approved independent, accredited laboratory demonstrating material conformance to requirements of Part 2.
- B. Samples for Owner Testing Purposes:
  - 1. Provide, without additional cost to the Owner, 1-gallon samples of each of the products listed in Part 2.
  - 2. Provide, without additional cost to the Owner, up to 1 cubic yard of mixed media and up to 1 cubic yard of pea gravel to the Owner for quality control testing purposes. No material, aside from sample materials, shall be delivered to the site until the Owner has completed its quality control tests and the Engineer has approved the material.
- C. A written plan describing the equipment and methods used to mix, handle, test, transport, and place mixed media.
- D. For compost, the following shall be submitted to the Engineer for approval:
  - 1. A copy of the Solid Waste Handling permit issued to the Supplier by the Jurisdictional Health Department, as per WAC 173-350 (Minimum Functional Standards for Solid Waste Handling).
  - 2. A copy of the producer's current Seal of Testing Assurance (STA) certification, as issued by the U.S. Composting Council.
  - 3. A written statement from the producer and laboratory analytical reports from an independent STA Program certified laboratory, demonstrating that the compost complies with the requirements specified herein, and with the processes, testing, and standards specified in WAC 173-350.
- E. The following information about the testing laboratory(ies):
  - 1. Name of laboratory(ies) including contact person(s),
  - 2. Address(es),
  - 3. Phone contact(s),
  - 4. E-mail address(es);
  - 5. Qualifications of laboratory and personnel including date of current certification by STA, ASTM, AASHTO, or equal.
- F. The name and address of all suppliers of filtration media.

#### 1.04 QUALITY ASSURANCE

- A. Source Quality Control: Test import materials proposed for use to demonstrate that the materials conform to the specified requirements. Tests shall be performed by an independent accredited testing laboratory.
- B. Field Quality Control:
  - 1. The Engineer will:
    - a. Review materials proposed for use.
    - b. Review results of independent testing laboratory tests.
    - c. Conduct quality control testing of the samples provided by the Contractor if determined to be necessary.
    - d. Inspect the empty filtration basins prior to placement of filtration media.
    - e. Inspect delivered filtration media prior to placement within the filtration basins.
    - f. Stop media delivery or placement if it is determined that the delivered media does not appear to match the submittals. Contractor shall be required to demonstrate that the media in question meets the specifications of Part 2.
- C. All mixed media shall be thoroughly mixed to a homogenous consistency before transportation and placement. Contractor shall utilize a firm with at least five (5) years of experience in the procurement, handling, mixing, transporting, and placing of mixed media.
- D. The BMT media mixture shall be tested prior to shipment to the project site for infiltration rate compliance.
  - 1. For every 250 cubic yards of media to be installed, a filtration rate test shall be performed on a representative media sample. The final media installed shall be from the same batch as the representative sample tested. Tests shall be observed by the Engineer.
    - a. A 4-foot long by 24-inch diameter section of single or dual wall corrugated HDPE pipe, 4-foot long 48-inch manhole section, or equivalent watertight container shall be used. The minimum surface area for the open end of the test container is 450 square inches.
    - b. The container shall be placed with one open end on hardware cloth or equivalent screen with a screen opening of approximately 1/4-inch, supported at the sides of the container to maintain a minimum of 2 inches open space below the hardware cloth to allow free water flow out the bottom of the test media.
    - c. The container shall be filled with 8 to 12 inches (304.8 mm) of gravel or crushed stone, followed by an 18-inch thick layer of filtration media. Installation of media shall be performed similar to the method defined in Paragraph 3.01.
    - d. The test media shall be saturated prior to testing by adding water at a flow rate sufficient to maintain a minimum 3-inch ponding depth above the media surface for at least 20 minutes. Flow should be introduced to the container such that disturbance of the media surface is minimized.
    - e. The flow rate will be adjusted to a flow rate corresponding to an infiltration rate of 30 inches per hour. This flow rate will be maintained for minimum of 40 minutes, or until the container overflows. If the container overflows the media will have failed. If no ponding occurs after 40 minutes, continue the next step of the test.

- f. After 40 minutes, the flow rate will be adjusted to maintain steady state head conditions for an additional 20 minutes. Ponding depth shall not exceed 12 inches. If the media does not yield the required infiltration rate at a ponding depth of 12 inches or less the material will have failed. The saturated media shall be removed, and additional media shall be added and retested.
- 2. The constant head infiltration rate shall be a minimum of 30 inches (762 mm) per hour, field measured.
- E. Sieves for gradation testing shall be made of either: woven wire cloth conforming to ASTM E11, or square-hole, perforated plates conforming to ASTM E323.
- F. Field test procedures may be either a WSDOT Standard Operating Procedure (SOP) or a Field Operating Procedure (FOP) for an AASHTO, ASTM, or WAQTC test procedure for use in field conditions.
- G. Contractor shall provide, at no additional cost to the Owner, maintenance of the filtration system until final completion by the Engineer.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect all materials from damage during delivery and cover UV sensitive materials if materials will be stored for more than 1 week. Storage surfaces shall be free from dirt, mud, and debris.
- B. Media shall be stored separately from each other and all other materials.
- C. All media shall be protected from all sources of additional moisture, in covered conveyance at the site until incorporated into the work.

### PART 2 - PRODUCTS

#### 2.01 BMT MATERIAL REQUIREMENTS

- A. In general, filtration media shall be free of wood, waste, coating, or any other deleterious material, and all aggregate passing the No. 200 sieve size shall be non-plastic.
- B. BMT Media
  - 1. BMT Mix shall meet the requirements defined in Table 5-7 of the WSDOT Highway Runoff Manual M 31-16.04
  - 2. Ballast (Permeable Ballast): WSDOT Standard Specification 9-03.9(2).
  - 3. Pea Gravel: Shall be river run, washed pea gravel graded from ¼ inch to 3/8 inch (9.52 mm). The material shall have a durability index of 40 or higher.
  - 4. Medium Compost Blanket: WSDOT Standard Specification 9-14.4(8)
  - 5. Grass: Contractor shall select grass type that can withstand relatively high velocity flows as well as wet and dry periods. Contractor shall consult with a Regional Landscape Architect or the HQ Roadside and Site Development Unit for assistance in selecting vegetation suitable for the Media Filter Drains. Seed shall be provided in accordance with WSDOT Standard Specification 9-14.2. Seed blends and native seeds shall be used where practicable.
- C. Controlled Density Fill (CDF): WSDOT Standard Specification 2-09.3(1)E.

#### 2.02 IMPORT MATERIALS CHARACTERIZATION

- A. All import material shall be free of all organic and inorganic contaminants and shall meet all applicable regulatory standards.

- B. Contractor shall collect representative samples of all import materials prior to use and coordinate with the Engineer to perform select testing analyses at an approved laboratory. The Engineer will provide a list of the required analytical testing to the Contractor and the analytical testing costs will be billed directly to the Owner by the laboratory. Contractor shall also provide extra sample jars of media mix to Engineer.
- C. For construction scheduling purposes, Contractor shall anticipate a 1-week turnaround time for the laboratory to perform the analytical tests.
- D. Analytical results for samples shall be submitted to Engineer for approval prior to import of materials. Contractor shall be responsible for removal and replacement of all import material delivered to the site that is found to be unsuitable by the Engineer.

### **PART 3 - EXECUTION**

#### **3.01 MATERIAL REQUIREMENTS**

- A. Grass: Contractor shall plant grass in accordance with supplier's recommendations.
- B. Compost Blanket: Shall be placed in accordance with WSDOT Standard Specification 8-01.3(4).
- C. Impermeable HDPE Liner: See Specification Section 31 05 19.
- D. BMT Mix, Ballast, and Pea Gravel shall be loosely placed by hand, conveyor belt, or other method approved by the Engineer. Compaction of these materials is prohibited.
- E. BMT Mix shall be thoroughly mixed to a homogenous consistency before placement.
- F. All BMT materials shall be approved by Engineer.

#### **3.02 MEDIA INSTALLATION**

- A. Grading or placement of aggregates or filtration media within the filtration basins shall not begin until authorization is given by the Engineer.
- B. Runoff shall not be allowed to enter the filtration basins until authorization is given by the Engineer.
- C. Placement shall not occur if any of the media are wet. The Engineer will have final authority to determine whether wet conditions exist.
- D. Mixing or placing filtration media shall not be allowed if the area receiving filtration media is wet or saturated or has been subjected to more than ½-inch of precipitation within 48 hours prior to mixing or placement. The Engineer will have final authority to determine whether wet or saturated conditions exist.
- E. All filtration media shall be thoroughly mixed to a homogenous consistency before placement.
- F. Work areas shall be roped off and flagged around perimeters using high-visibility construction fencing placed as a temporary protection measure.
- G. No heavy equipment shall operate within the filtration basin perimeters once excavation has begun, including during placement of filtration media, planting, or mulching of the facility.
- H. No materials or substances shall be mixed or dumped within filtration basin areas that may be harmful to plant growth or prove a hindrance to the planting or maintenance operations.
- I. At the locations shown on the Drawings, filtration basins shall be constructed to accommodate the placement of filtration media and drainage aggregate (BMT mix and pea gravel).
- J. The grades shall be constructed in accordance with the lines, grades, depth, and typical cross-sections shown on the Drawings.



- K. If any sediment laden runoff has entered the filtration basins prior to Owner authorization, the sediment deposition shall be removed at no cost to the Owner.
- L. Upon completion of finish grading work, all excess material shall be removed from the site and disposed of accordingly.
- M. The Contractor shall place all filtration media loosely with a conveyor belt, unless otherwise approved by the Engineer.
- N. The finished surface of the filtration media shall be inspected and approved by Engineer prior to planting.
- O. A licensed surveyor shall verify elevations to demonstrate that the final grades of the media vary no more than 1-inch from elevations specified in the Drawings, prior to planting.
- P. Prior to placement of compost in each cell, the Engineer shall be notified to inspect the filtration basins. If any sediment laden runoff has entered the cell, the Contractor shall remove the top 3 inches (76.2 mm) of filtration media and replace per design, at no expense to the Owner.

### 3.03 COMPOST BLANKET

- A. Shall be placed in accordance with WSDOT Standard Specification 8-01.3(4).

### 3.04 GRASS

- A. Contractor shall plant grass in accordance with WSDOT Standard Specification 8-01.3(2) Seeding, Fertilizing, and Mulching and the supplier's recommendations.

### 3.05 UNDERDRAIN PIPING

- A. Refer to the Drawings and Specification Section 33 41 00.

**END OF SECTION**

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## **PART 1 - GENERAL**

### **1.01 DESCRIPTION OF WORK**

#### **A. Section Includes:**

1. Requirements for stormwater drainage precast concrete structures (manholes and catch basin).
2. Requirements for precast reinforced concrete structure bases, tops, walls, sections, and adjustment risers.
3. Requirements for handling, installation, and testing specific to precast concrete manholes and vaults and associated appurtenances, including, but not limited to, grade rings, inserts, hardware, sealant gaskets, frames and covers, ladder rungs (where specifically called for).

### **1.02 RELATED SECTIONS:**

- A. Section 01 57 23: Water Management
- B. Section 31 00 00: Earthwork

### **1.03 REFERENCES**

#### **A. ASTM International (ASTM) Standard Specifications:**

1. ASTM A36: Carbon Structural Steel
2. ASTM A48: Gray Iron Castings
3. ASTM C150: Portland Cement
4. ASTM C478: Circular Precast Reinforced Concrete Manhole Sections
5. ASTM C857: Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
6. ASTM C858: Underground Precast Concrete Utility Structures
7. ASTM C891: Standard Practice for Installation of Underground Precast Concrete Utility Structures
8. ASTM C1107: Packaged Dry, Hydraulic-Cement Grout (Non-shrink)

#### **B. Washington State Department of Transportation (WSDOT)**

1. WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, and Amendments (current edition).

#### **C. Federal Specification: SS-S-210: Sealing Compound, Preformed Plastic, for Expansion Joints and Pipe Joints.**

#### **D. Geotechnical report and recommendations for this project are provided for reference. While the geotechnical records of data obtained may be considered by the Contractor to be correct, any conclusions or recommendations made in the geotechnical report are for information to the Engineer and are not a part of the Contract Documents.**

### **1.04 SUBMITTALS**

#### **A. Product Data:**

1. Contractor shall submit shop drawings prepared by the precast concrete structure manufacturer. Shop drawings shall be submitted and approved by the Engineer prior to fabrication, and include the following information:

- a. Plan and section drawings including the location, size, dimensions, orientation, quantities, material types, and other information necessary to sufficiently describe the required internal components.
- b. Parts list including item descriptions, quantities, and sizes of the required internal components.
- c. Design criteria listing the criteria in these specifications and applicable criteria from the reference documents stated above.
- d. Signed and sealed design calculations performed by a Structural Engineer registered in the State of Washington in accordance with the reference documents and additional requirements stated in these specifications.
  - 1) The Contractor shall provide underground structures, hatches, covers, and frames capable of supporting the loading criteria specified on the Drawings.
  - 2) Buoyancy calculations shall be provided using groundwater data established in the Geotechnical Report provided for reference in Section 00 31 00 – Available Project Information.
- e. Structural Components, including but not limited to:
  - 1) Precast walls and sections.
  - 2) Precast top slab.
  - 3) Precast base slab.
  - 4) Steps, ladder rungs and other hardware.
  - 5) Minimum concrete 28-day compressive strength.
  - 6) Cement certification.
  - 7) Grade rings, hatches, access riser covers and frames.
  - 8) Reinforcing steel location and concrete cover.
  - 9) Precast structure section weights.
  - 10) Layout of all inserts, attachments, and openings.
  - 11) Location and type of joints.
- B. Submit a description of the equipment and methods used to offload and install precast concrete structures. Crane pads shall be required for all outrigger equipped equipment that may be necessary for offloading purposes. See Drawings and conduct site visit to determine crane zone clearances. Determining and verifying crane zone clearances is the responsibility of the Contractor.
- C. Submit detailed recommended precast concrete structure installation instructions prepared by the precast concrete structure manufacturer.
- D. Submit leakage test reports as required in Part 3.

#### 1.05 QUALITY ASSURANCE

- A. Provide products of a manufacturer who has been regularly engaged in the design and manufacture of the product.
- B. Demonstrate to the satisfaction of the Engineer that the quality is equal to the product made by those manufacturers specifically named herein, if an alternate product manufacturer is proposed.

C. Field Quality Control

1. The Engineer will:
  - a. Observe leakage test.
  - b. Inspect cleaning work.
2. The Contractor shall:
  - a. Verify all precast sections are continuously sealed with gaskets.
  - b. Verify all covers fit quietly in the frames.
  - c. Provide seven (7) days' notice to the Engineer prior to leakage testing.
  - d. Perform leakage tests as noted herein.
  - e. Perform cleaning work as noted herein.
  - f. Be responsible for the costs of additional inspection, testing, and cleaning resulting from non-compliance.
  - g. Be responsible for arranging a licensed surveyor to verify the precast concrete structures and associated appurtenances are level to within tolerance and all elevations and final grades vary no more than 1-inch from the elevations specified in the Drawings.

1.06 FIELD VERIFICATION

- A. When connecting precast concrete structures to existing utilities, Contractor shall confirm existing utility size, material, and elevation at connection locations prior to developing precast shop drawings. If discrepancies are found, Contractor shall request clarification from the Engineer before proceeding.

**PART 2 - PRODUCTS**

2.01 MATERIAL REQUIREMENTS

- A. Design Criteria
  1. General: ASTM C478, C857, C858, and also:
    - a. Backfill material: See Section 31 00 00, Earthwork.
    - b. Buoyancy: Design precast concrete structure for groundwater up to ground surface.
  2. Structure live load:
    - a. Live load scenarios shall be per the design criteria standards specified on the Drawings.
  3. General:
    - a. Concrete: Provide Class 4000 meeting WSDOT Standard Specifications.
    - b. Cement: ASTM C150, Type II, low alkali.
    - c. Top slab openings: Size to support the riser frame and cover.
    - d. Manholes shall be delivered to the site with cast pipe penetrations and flexible pipe-to-structure connectors installed where shown on the Drawings.
    - e. Lifting eyes: Provide for each section.
  4. Precast Concrete Structure Manufacturer: Oldcastle Precast, Auburn, WA; H2 Precast, East Wenatchee, WA; Wilbert Precast, Spokane, WA; or equal.

B. Sealant Gaskets

1. Type: Preformed, continuous rope form plastic material, protected by removable two-piece wrapper.
2. Sealing Compound: Reinforced hydrocarbon resins blended with plasticizing compounds and reinforced with inert mineral filler. No solvents, irritating fumes or obnoxious odors.
3. Adhesive and Cohesive Strength: Not dependent on oxidizing, evaporating, or chemical action.
4. Conform to Federal Specification SS-S-210.
5. Provide: RAM-NEK as manufactured by K. T. Snyder Company, Inc., Houston, TX; QUIKSEAL as supplied by Associated Concrete Products, Santa Ana, CA; JP Specialties, Lake Elsinore, CA; or equal.

C. Frames and Covers:

1. Material: Cast iron or ductile iron; ASTM A48, Class 30B (Heavy Duty / Airport rated to meet live loads defined above).
2. Solid Cover Marking: In raised letters, as specified, on access riser cover and manhole cover. Covers shall be marked "STORM."
3. Manhole Cover Style: Manhole cover style shall be as specified on the Drawings.
4. Manhole Cover Size: 24-inch-diameter.
5. Beehive Grates: See Drawings for size and material requirements.
6. Coating: Bituminous paint, black.
7. Size: Varies, see Drawings.
8. Solid Cover Lock Type: APT bolting, bolt shall pass fully through a countersunk drilled or cast hole into receiving threads.
9. Seal: Provide continuous 1/4-inch-diameter neoprene "o" ring between frame and cover.
10. Manufacturer: D&L Foundry, Moses Lake, WA; Olympic Foundry, Seattle, WA; EJCO, Marysville, WA; or equal.

D. Ladder Rungs

1. General: ASTM C478.
2. Material: Copolymer polypropylene plastic molded on galvanized steel reinforcing bar per ASTM A36.
3. Conform to Washington Department of Labor and Industries Division of Occupational Safety and Health (DOSH) requirements.

E. Pipe-To-Structure Connections

1. Provide water-tight flexible pipe-to-structure connector where pipe is shown to penetrate structures on the Drawings. Product shall be compatible with the pipe material and size specified. Product shall meet the requirements of ASTM C923. Product material of construction shall be resistant to hydrocarbons. Provide all appurtenances and accessories including band clamps, fasteners, and wedge connectors. All appurtenances and accessories shall be 316 stainless steel.
  - a. The pipe material and external diameter must be measured and reported to the manufacturer prior to procurement.

- b. The structure opening diameter must be measured and reported to the manufacturer prior to procurement.
- c. Water-tight flexible pipe-to-structure connectors shall meet the following performance requirements.

| Test                          | ASTM Method                          | Product Test Performance                          |
|-------------------------------|--------------------------------------|---------------------------------------------------|
| Head Pressure                 | C923 - 7.1                           | for 10 minutes                                    |
| Deflection Test               | C923 - 7.2.2                         | +7°                                               |
| Load Test                     | C923 - 7.2.3                         | Over 150 lbs/in. pipe diameter                    |
| Tensile Strength              | D412                                 | 1580 psi (10893.72 kPa)                           |
| Hardness                      | D2240<br>(shore A durometer)         | 48 ± 5                                            |
| Accelerated Oven-Aging        | D573 70± 1°C for 7 days              | 10.1% tensile decrease<br>14% elongation decrease |
| Compression Set               | D395, method B, at 70°C for 22 hours | 13% increase                                      |
| Water Absorption              | D471                                 | 0.8% increase                                     |
| Ozone Resistance              | D1171                                | Rating 0                                          |
| Low-temperature Brittle Point | D746                                 | No fracture at -40°C                              |
| Tear Resistance               | D624, method B                       | No tear at 210 lbf/in                             |

## 2.02 SOURCE QUALITY CONTROL

### A. Precast Sections:

1. Verify per the requirements of the reference documents that the concrete compressive strength test results are satisfactory for the sections supplied.
2. State the curing method. Identify the start and end dates for the sections supplied and provide documentation verifying the precast concrete components are not cracked, chipped, or otherwise broken.

### B. Hatches, Frames and Covers:

1. Verify cast test bar tensile strengths are satisfactory.

## PART 3 - EXECUTION

### 3.01 OFFLOADING AND CRANE TRANSPORT

- A. The Contractor shall notify the Engineer immediately of any equipment which is damaged during offloading. The damaged equipment shall be repaired or replaced at the Contractor's expense.
- B. Offloading and handling of precast concrete structures and associated appurtenances shall be performed in accordance with the manufacturer's recommendations.
- C. Coordinate all crane movements and clearances with the Engineer. Crane pad shall be provided for all crane operations.
- D. Contractor shall ensure that sequencing of transport and offloading work shall not compromise or damage the precast concrete structures and associated appurtenances.

### 3.02 PROTECTION

- A. Protect precast concrete structures and associated appurtenances from damage during transport and storage, and cover UV sensitive materials. Storage surfaces shall be free from dirt, mud, and debris.
- B. Store and protect precast concrete structures and associated appurtenances in accordance with the manufacturer's recommendations.
- C. Use of chains or cable type chokers is not allowed when lifting precast concrete structures. Nylon or other wide fabric slings or other similar lifting apparatus with spreader bars shall be used where necessary.
- D. The Contractor is advised that precautions taken to keep precast concrete structures clean during construction will facilitate achieving the cleaning requirements of this project with a minimum of effort and expense. Compliance with these suggested minimum procedures will not relieve the Contractor of the cleaning requirements.

### 3.03 INSTALLATION

- A. General: ASTM C478, ASTM C858, and ASTM C891 as applicable.
- B. See Section 01 57 23 for requirements specific to work below the groundwater table. Contractor shall pre-assemble portions of the precast concrete structures above ground with the intent of limiting the volume of groundwater discharged for dewatering purposes.
- C. Subgrade shall be prepared and compacted as shown on the Drawings and in accordance with Section 31 00 00.
- D. Set precast concrete sections in a concrete base joint groove, formed in the precast concrete base slab.
- E. Install internal appurtenances in accordance with the manufacturer's recommendations.
- F. Apply primer to joint surfaces in accordance with manufacturer's instructions. Make all joints watertight with sealant gaskets.
- G. Make all internal precast concrete section joints watertight with non-shrink grout.
- H. Backfill and compaction around the structures shall comply with Section 31 00 00.
- I. Precast concrete structures shall be set level to within 0.5%.
- J. Frames and Covers:
  - 1. Accurately locate and place the frames to within 1/8-inch vertical elevation in accordance with the Drawings. Coordinate the activities of all trades so that this tolerance is achieved.
  - 2. Install covers in the frames. Machine covers if necessary to obtain a solid fit, without rattling under load.
  - 3. Verify all beehive cages, lids, grates, etc. fit quietly in the frames.
- K. After manhole frames and covers are installed, Contractor shall fill all pick holes with non-shrink grout.
- L. Manhole rings shall be stamped with structure identification number after installation. Identification numbers to be provided by the Engineer.

### 3.04 CORING

- A. Contractor shall coordinate with the precast concrete structure manufacturer to have all utility openings pre-cored and fixed with flexible pipe-to-structure connectors in the factory.



### 3.05 REPAIR

- A. Precast concrete structures and associated appurtenances shall not be dropped or mishandled. All materials and equipment shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to precast concrete structures or associated appurtenances shall be repaired in accordance with manufacturer's recommendations and approved by the Engineer. If any defect is discovered after it has been installed, it shall be removed and replaced in a satisfactory manner at the Contractor's expense.

### 3.06 LEAKAGE TEST FOR PRECAST CONCRETE STRUCTURES

- A. Furnish, collect, and dispose of all water used for testing. Leakage test work shall comply with all applicable laws and regulations.
- B. If the Contractor elects to conduct an alternate method of leakage testing, the proposed method shall be submitted to the Engineer for review and approval.
- C. After all pipe has been laid, backfilling has been completed, and after the testing of the pipes, plug the end of the pipe stubs in the structures with flexible-joint caps, or acceptable alternate, securely fastened.
- D. Fill the precast concrete structure with water and wait thirty (30) minutes for initial concrete absorption to take place. After the thirty (30)-minute wait period is over, Contractor shall measure leakage over a period of not less than one hour.
- E. Allowable Leakage: Less than one (1) inch drop in water surface elevation over the duration of the test.
- F. If leakage from precast concrete structures exceeds the above amount, determine the source or sources of the leakage, and repair or replace defective materials and workmanship at no additional cost to the Port.
- G. The completed precast concrete structure installation shall pass this test before the project can be accepted.
- H. Reports: The Contractor shall keep records of each precast concrete structure leakage test, including:
  - 1. Description and identification of precast concrete structure tested.
  - 2. Date of test.
  - 3. Duration of test.
  - 4. Witnessing by Contractor and Engineer.
  - 5. Test evaluation description including water surface elevation measurements.
  - 6. Remarks, to include such items as:
    - a. Leaks (type, location).
    - b. Repairs made on leaks.
  - 7. Test reports shall be submitted to the Engineer.

### 3.07 CLEANING

- A. After leak testing is complete, thoroughly clean the inside of precast concrete structures of all dirt, loose scale, sand, and other foreign material. Cleaning shall be by sweeping, vacuum, flushing with water or blowing with compressed air or oil-free nitrogen gas, as appropriate for the size of the structure and the various internal components. The Contractor shall take appropriate measures to protect all internal components while cleaning the structure. Cleaning shall be completed after any repairs.
- B. Furnish, collect, and dispose all water used for cleaning. Cleaning work shall comply with all applicable laws and regulations.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. This work shall consist of Electrical Underground improvements

### **1.02 REFERENCES**

- A. ASTM (American Society for Testing and Materials).
- B. NFPA 70 (National Fire Protection Association) – National Electrical Code.
- C. WSDOT/APWA Specifications, Section 6-02.3.

### **1.03 QUALITY ASSURANCE**

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

### **1.04 SUBMITTALS**

- A. Product data for metal accessories for manholes and handholes, conduit and duct, duct bank materials, and miscellaneous components.
- B. Shop drawings showing lids, covers, risers details/design calculations for precast vaults, manholes and handholes, including reinforcing steel. All loading shall be Type 1 container equipment loading unless otherwise indicated. Provide stamped drawings and calculations with State of Washington seal of registered professional structural engineer.
- C. Certificate for concrete and steel used in underground precast concrete utility structures, according to ASTM C858.
- D. Inspection report for factory inspections, according to ASTM C1037.
- E. Record Documents: Show dimensioned locations of underground ducts, handholes, manholes and vaults from nearest building or permanent structure.

### **1.05 DEFINITIONS**

- A. Duct: Electrical conduit and other raceway, either metallic or nonmetallic, used underground, embedded in earth or concrete.
- B. Ductbank: Two (2) or more conduits or other raceway installed underground in the same trench.
- C. Handhole: An underground junction or pullbox in a duct or duct bank.
- D. Manhole: An underground utility structure, large enough for pulling cables, splicing, installing load break junctions, with facilities for installing and maintaining cables.
- E. Vault: An underground utility structure, large enough for a person to enter, with facilities for installing, operating, and maintaining equipment and wiring.
- F. Cable Rack: Heavy Duty Non-metallic wall mounted cable support racks, with stanchions, arms and cable ties to support cables.

## 1.06 COORDINATION

- A. Coordinate layout and installation of ducts, vaults, manholes, and handholes with final arrangement of other utilities as determined by field verification. Revise locations and elevations from those indicated when required to suit field conditions and ensure duct runs drain to vaults, manholes and handholes.

## 1.07 SAFETY REQUIREMENTS

- A. Perform work in accordance with the safety requirements of the Department of Labor Occupational Safety and Health Administration, Volume 36, Number 75, Part II, Subpart P, "Excavations, Trenching, and Shoring," and with Section 7 of the Manual of Accident Prevention in Construction as published by the Association General Contractors of America, Inc.
- B. Educate supervisors and employees on safety requirements and practices to be followed during the course of the work.

## 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store precast concrete units at site as recommended by manufacturer to prevent physical damage. Arrange so identification markings are visible.
- B. Lift and support precast concrete units only at designated lifting or supporting points.

# **PART 2 - PRODUCTS**

## 2.01 MANUFACTURERS

- A. Manholes, Handholes and Vaults: Subject to compliance with requirements, provide custom products by one of the following:
  - 1. Utility Vault Company - Custom
  - 2. H2 Precast - Custom
  - 3. Approved Equal

## 2.02 CONDUIT AND DUCTS

- A. Metallic Conduit: PVC Coated Rigid Steel Conduit (PVRSC): Nema 1 – RN 1 – 2008.
  - 1. Use for below grade transition of PVC Schedule 80 to above grade exposed conduit.
- B. Nonmetallic conduit:
  - 1. Rigid Plastic Conduit: NEMA TC 2, UL 651A, Schedule 80 PVC, rated for use with 90°C conductors under all installation conditions and labeled for underground use.

## 2.03 CONDUIT FITTINGS

- A. Steel Fittings: PVC-coated, cast malleable, ferrous metal, threaded fittings, with neoprene cover gasket on each fitting installed outdoors.
- B. PVC Conduit and Tubing Fittings: NEMA TC 3.
- C. "Mogul Fittings": Provide "Mogul" size fittings for all conduit.
- D. Seal Bushings: O.Z. compound bushing on each conduit entering a building from outside underground and on each conduit passing from one space into another, which is normally at a lower temperature.
- E. Hubs: Appleton "Hub" or "Hub-U" series or Thomas & Betts "370" series hub on each conduit terminating in a metal box.

- F. Unions: Appleton Type "EC" or Thomas & Betts "Erickson Coupling" conduit unions where necessary.

#### 2.04 DUCT SUPPORTS

- A. Rigid PVC spacers selected to provide minimum NEC duct spacings. All horizontal spacers shall be staggered a minimum of 12 inches (304.8 mm).

#### 2.05 HANDHOLES

- A. General: Precast concrete or structural plastic, as indicated on Drawings, with the following standard features:
  - 1. Cover with insert or other device to facilitate lifting.
  - 2. Cover with locking devices similar to REA or FARGO.
  - 3. Drain hole in base, 2-inch minimum diameter.
- B. Handhole Covers: Cast iron, capable of supporting traffic loads. Cast iron cover with cast-in legend "ELECTRIC" or "COMMUNICATION" as appropriate. Machine cover-to-frame bearing surfaces.

#### 2.06 MANHOLES AND VAULTS

- A. Precast Concrete Units: Rated minimum 125 KIP, Interlocking, mating sections, complete with accessory items, hardware, and features as indicated on Drawings. Include term-a-ducts for conduit entrances and sleeves for ground rods.
- B. Design structure according to ASTM C858.
- C. Joint Sealant: Continuous extrusion of asphaltic butyl material with adhesion, cohesion, flexibility, and durability properties necessary to withstand the maximum hydrostatic pressures at the installation location with the ground water level at grade.
- D. Source Quality Control: Inspect structures according to ASTM C1037. Units shall be capable of supporting designed loads.
- E. Manhole Covers: Cast iron, capable of supporting minimum 125 KIP designed loads. Cast iron cover with cast-in legend "ELECTRIC" or "COMMUNICATION" as appropriate. Machine cover-to-frame bearing surfaces.
- F. Vault Covers: Diamond plate, capable of supporting minimum 125 KIP designed loads. Diamond plate cover with field welded bead label "ELECTRIC" or "COMMUNICATION" as appropriate minimum 1" high lettering. Machine cover-to-frame bearing surfaces.
- G. All vaults shall be set level on 12 inches (304.8 mm) of pea gravel except where otherwise specifically directed by the Engineer. Tops of vaults shall be 1 inch (25.4 mm) above adjacent final asphalt grade and paving shall be sloped up evenly to vault with the slope beginning a minimum of 10 feet (304.8 cm) from the vault. Contractor shall be responsible for measuring and calculating elevations which will result in top of vault flush with final asphalt paving grade. In the event the vault installation does not conform to the foregoing criteria, the contractor shall remove and re-install the vault. The surrounding area shall be repaved in accordance with the foregoing criteria and the paving specifications, all at no additional cost to the Port of Tacoma. Raising the vaults top section and blocking with brick and/or grout will not be accepted. The contractor shall perform the above at no additional cost to the owner. See Civil/Structural drawings and specifications for all wheel load requirements for electrical and communications vaults.
- H. All manholes and vault lids over frames shall be field stamped with drawing ID.

## 2.07 ACCESSORIES

- A. Duct Supports: Rigid PVC stackable manufactured spacers selected to provide 3 1/2" minimum duct spacings.
- B. Manhole and Vault Lifting Means
  - 1. Pulling Eyes in Walls: Eyebolt with reinforcing bar fastening insert. 2-inch diameter eye, 1-inch by 4-inch bolt. Working load with 6 inch (152.4 mm) embedment in 4000 psi (27579.04 kPa) concrete: 13,000 pounds minimum tension.
  - 2. Pulling and Lifting Irons in Floor: 7/8-inch-diameter, hot-dipped galvanized, bent steel rod, stress relieved after forming, and fastened to reinforced rod. Exposed triangular opening. Ultimate yield strength: 40,000 pounds shear and 60,000 pounds tension.
- C. Sump Frame and Grate: Comply with FS RR-F-621, Type VII for frame and Type I for cover. Provide ground stud on frame and cover.
- D. Bolting Inserts for Cable Racks: Flared, threaded inserts of noncorrosive, chemical resistant, nonconductive thermoplastic material 3'-0" on center; 1/2-inch internal diameter by 2-3/4 inches (70 mm) deep, flared to 1-1/4 inch (32 mm) minimum at base. Tested ultimate pull-out strength: 12,000 pounds minimum.
- E. Expansion Anchors for Installation After Concrete is Cast: Zinc-plated carbon steel wedge type with stainless-steel expander clip, 1/2-inch bolt size, 5300-pound rated pull-out strength, and 6800-pound rated shear strength minimum.
- F. Manhole, Vault Hardware: Cables shall be well supported on walls by imbedded cable racks. The cable racks shall consist of a stanchion that attaches to the manhole/vault wall in accordance with the manufacturer's recommendations and adjustable arms that lock into the stanchion.
  - 1. At least three (3) stanchions shall be installed on each eight foot manhole/vault wall and two (2) stanchions on each six foot manhole/vault wall.
  - 2. Minimum cable arm length shall be eleven inches. Cable rack arm lengths shall be appropriate for the manhole/vault size and amount of cable being installed.
  - 3. At least two spare arms shall be installed at each stanchion position.
- G. Cable Rack: Stanchions and arms shall be painted steel. The Stanchion shall be 36 inches (914.4 mm) long, shall incorporate multiple arm mounting holes that are 4 inches (101.6 mm) apart and recessed bolt mounting holes. Slots shall be provided in the arms for cable wire ties. The cable racks shall meet or exceed the 350 lb working load rating and shall be marked with the manufacturer's name, plant location and date manufactured. Cable rack components and accessories shall be Underground Devices Incorporated or equal.
- H. Ground Rods: Solid copper clad steel, 3/4-inch diameter by 10-foot length.
- I. Ground Wire: Stranded bare copper, #2 AWG minimum.
- J. Duct Sealing Compound: Nonhardening, safe for human skin contact, not deleterious to cable insulation, workable at temperatures as low as 35°F withstands temperature of 300°F without slump, and adheres to clean surfaces of plastic ducts, metallic conduits, conduit coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and the common metals.

## 2.08 BACKFILL MATERIAL

- A. Direct-Burial Conduit 600V and Communications
  - 1. Initial Bedding: 3" of sand below conduits.

2. Secondary Bedding: Unsaturated excavated earth free of rocks, broken concrete and debris 2" and larger, and compacted to 6" minimum above conduits.
  3. Upper Trench:
    - a. Areas Under Pavement:
      - 1) See Civil requirements.
      - 2) Provide plastic warning tape, 4-mil thickness reading "Caution – Buried Electrical Line Below" in trench at 12" below base course ACP.
    - b. Areas Not Under Pavement: Select Native Fill.
      - 1) Unsaturated excavated earth free of rocks, broken concrete and debris 2" and larger, and compacted in 12" lifts to prevent settlement.
    - c. Warning Tape: Provide plastic warning tape, 4-mil thickness reading "Caution – Buried Electrical Line Below" in trench at 12" below base course ACP.
- B. Direct-Burial Conduit Above 600V
1. Initial bedding: 3" of sand below conduit supports.
  2. Secondary bedding: Controlled Density Fill (CDF) concrete with red dye at five pounds per cubic yard for 3" below , above and sides of all conduits.
  3. Upper Trench:
    - a. Areas Under Pavement:
      - 1) See Civil requirements.
      - 2) Provide plastic warning tape, 4-mil thickness reading "Caution – Buried Electrical Line Below" in trench at 12" below base course ACP.
    - b. Areas Not Under Pavement: Select Native Fill.
      - 1) Unsaturated excavated earth free of rocks, broken concrete and debris 2" and larger, and compacted in 12" lifts to prevent settlement.
    - c. Areas for Tacoma Power Conduits.
      - 1) Follow TPU approved construction drawings and have inspected by TPU utility inspector not NEC electrical permit inspector.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. A. Examine site to receive ducts, vaults and manholes for compliance with installation tolerances and other conditions affecting performance of the underground ducts, vaults and manholes. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Existing Utilities: Locate all existing utilities in the area prior to performing any excavation.

### **3.02 EARTHWORK**

- A. Comply with Section 31 00 00 - Earthwork.
- B. Trenching:
  1. Comply with OSHA/WISHA safety standards for trenching, including stable slope and shoring requirements.

2. Depth: Correct points of over excavation using mechanically-compacted backfill to form a smooth trench bottom.
  3. Width: Excavate to minimum width consistent with stability of sides.
  4. Slope: Slope trenches so that conduit and ducts drain toward manholes and handholes and away from buildings and equipment.
  5. Muck Excavation: Where muck or unstable material is encountered, overexcavate and backfill to attain proper grade with coarse sand, gravel, or Controlled Density Fill.
  6. Pile backfill material in an orderly manner; a sufficient distance from the trench to avoid overloading trench banks.
  7. Bedding: The entire bottom of the excavation is to be firm, stable, and at uniform density.
  8. Contractor shall not trench more than can be backfilled same day.
- C. Excavating for Handholes, Manholes and Vaults: Provide 12" minimum clearance between outer surfaces of unit and embankment or timber used for shoring or width of equipment used for compacting during backfilling operation.

### 3.03 RACEWAY APPLICATIONS

- A. Refer to Specifications and Drawings for raceway materials. Where not specified otherwise, use PVC coated rigid steel conduit above and underground.
- B. Nonmetallic conduit: PVC Schedule 80, use underground only.
  1. Underground Direct Burial: For medium-voltage and low-voltage applications. Use Schedule 80 Rigid Plastic Conduit as standard. Use PVC coated rigid steel conduit on turns 40° or greater.
- C. Use PVC fittings for PVC conduit and suitable water-tight connections where PVC conduit connects to galvanized steel conduit.

### 3.04 CONDUIT AND DUCT INSTALLATION

- A. Install conduit and ducts as indicated on Drawings and according to manufacturer's written instructions.
- B. Slope: Pitch ducts minimum of two inches per 100 feet (3048 cm) to drain toward manholes, vaults and handholes and away from buildings and equipment. Slope ducts from a high point in runs between manholes/vaults to drain in both directions.
- C. Curves and Bends: Use manufactured PVC coated rigid steel elbows for stub-ups at equipment and at building entrances with a minimum radius of 36 inches (914.4 mm) for communications and 24 inches (609.6 mm) for electrical conduits. Do not exceed 22 degrees for field bends with out field review and approval by engineer. Contractor shall field stake bend radius for field review prior to conduit installation for bends greater than 22 degrees.
- D. Make joints in ducts and fittings watertight according to manufacturer's instructions. Stagger couplings so those of adjacent ducts do not lie in the same plane.
- E. Duct Entrances to Vaults and Manholes: Space end bells approximately 10 inches (254 mm) on center for 5-inch ducts and varied proportionately for other duct sizes. Change from regular spacing to end-bell spacing 10 feet (304.8 cm) from the end bell without reducing duct line slope and without forming a trap in the line.
- F. Separation Between Direct-Buried, Non-Encased Ducts: Provide 3 inches (76.2 mm) minimum separation for like services, and 12 inches (304.8 mm) minimum between power and signal ducts.



- G. Stub-Ups: Use PVC coated rigid steel conduit for stub-ups through concrete to equipment. Install insulated grounding bushings at the conduit terminations.
- H. Use PVC coated rigid steel for all exposed conduit for equipment mounted on outdoor concrete pads.
- I. Pulling Cord: Install 150-pound- test nylon cord with distance markings in installed conduits, including spares and conduits that have conductors installed

### 3.05 BACKFILLING

- A. Backfill trenches only after all necessary inspections and tests have been performed.
- B. Remove all debris, rocks, broken concrete, and formwork before backfilling trenches.
- C. Use Controlled Density Fill (CDF) with red dye for all 5KV and 13.8kV conduits. CDF shall extend beyond conduits a minimum of 3" below, sides and above conduits in trenches. Provide utility red dye at five pounds per cubic yard of CDF..
- D. Follow Division 31 requirements and deposit backfill in layers. Uniformly spread and compact backfill with suitable power tampers to the density of the adjacent soil and in such a manner so as not to disturb the alignment of the conduit. If settlement occurs, refill, compact and smooth off to conform to the surface of the ground. See Division 31 for trench compaction requirements.
- E. Restore surface features at areas disturbed by excavation, and reestablish original grades.
- F. Restore all areas disturbed by trenching, storing of dirt, cable laying, and other work.

### 3.06 VAULT, MANHOLE AND HANDHOLE INSTALLATION

- A. Install as indicated on Drawings, according to manufacturer's written instructions and ASTM C891.
  - 1. Install units plumb and level and with orientation and depth coordinated with arrangement of connecting ducts to minimize bends and deflections required for proper entrances.
  - 2. Support units on a level bed of pea gravel, graded from the 1-inch sieve to the No. 4 sieve and compacted to the same density as the adjacent undisturbed earth.
  - 3. Drainage: Where manholes/vaults have drain holes in the bottom, provide sixteen inches minimum of pea gravel below the manhole/vault.
- B. Grounding:
  - 1. Provide two ground rods through floor in vaults and manholes with the top of ground rods protruding 6 inches (152.4 mm) above the floor. Provide four ground rods in manholes and vaults with larger than 8-feet by 10-feet clear interiors.
  - 2. Ground all exposed metal components and metal hardware within the manhole or vault with #2 AWG bare copper ground conductor. This requirement includes the cover and frame.
- C. Hardware: Install removable hardware, including pulling eyes, cable racks stanchions, cable arms, and insulators, as required for installation and support of cable and conductors and as indicated on Drawings.
  - 1. Field-Installed Bolting Anchors: Do not drill deeper than 3-7/8 inches (98 mm) for field-installed anchor bolts. Use a minimum of 4 anchors for each cable stanchion.
- D. Train cables neatly around corners and secure to cable racks using nylon wire ties.

### 3.07 IDENTIFICATION

- A. Identify raceways, cables and equipment as specified in Division 26, Section 26 05 53 "Identification for Electrical Systems."
- B. Provide warning and caution signs as required by the Authority Having Jurisdiction and these specifications.
- C. Label raceways entering concealed locations from exposed locations as to the destination via the concealed area.
- D. Manhole, vault cast iron lids and frames provide field stamped identification corresponding to Drawing ID as indicated on final field and clean As-Built Drawings.

### 3.08 TESTING AND CLEANING

- A. Pull brush through full length of ducts. Use round bristle brush with a diameter 1/2-inch greater than internal diameter of duct. Clean internal surfaces of vaults, manholes and handholes, including sump.
- B. Duct Integrity: Swab out ducts with a mandrel 1/4 inch (6.35 mm) smaller in diameter than internal diameter of ducts.
- C. Grounding: Test manhole grounding to ensure electrical continuity of bonding and grounding connections. Measure ground resistance at each ground rod and document results. Use an instrument specifically designed for ground-resistance measurements.

**END OF SECTION**

## **PART 1 - GENERAL**

### **1.01 SCOPE**

- A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

### **1.02 REFERENCES**

- A. ASTM B8.
- B. NFPA 70 (National Fire Protection Association) – National Electrical Code.
- C. ANSI/UL 467 - (Underwriter's Laboratory) - Grounding and Bonding Equipment.

### **1.03 QUALITY ASSURANCE**

- A. Listing and Labeling: Provide electrical components, devices, and accessories that are Listed and Labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to the Authority Having Jurisdiction, and marked for specific types, sizes, and combinations of conductors and connected items.
- B. Comply with IEEE 837 and UL 467.
- C. Comply with IEEE Std. 142 (Green Book).
- D. Comply with NFPA 70.
- E. Comply with IEEE C2 for overhead-line construction and medium-voltage underground construction.

### **1.04 SUBMITTALS**

- A. Submit product data for the following:
  - 1. Grounding conductors and cables.
  - 2. Grounding connectors.
  - 3. Grounding electrodes.
  - 4. Ground bus.
- B. Field Test Reports: Submit written test reports to include the following:
  - 1. Test procedures used.
  - 2. Test results that comply with requirements.
  - 3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Grounding Conductor Fittings:
    - a. Erico Inc.
    - b. Chance/Hubbell.
    - c. Copperweld Corp.

- d. Erico Inc.; Electrical Products Group.
  - e. Framatome Connectors/Burndy Electrical.
  - f. Ideal Industries, Inc.
  - g. ILSCO.
  - h. Kearney/Cooper Power Systems.
  - i. Lyncole XIT Grounding.
  - j. O-Z/Gedney Co.
  - k. Racor, Inc.; Division of Hubbell.
  - l. Thomas & Betts, Electrical.
  - m. Approved Equal
2. Grounding Connectors and Rods:
- a. Erico.
  - b. ILSCO.
  - c. Lyncole XIT Grounding.
  - d. O-Z/Gedney.
  - e. Racor, Inc.; Division of Hubbell.
  - f. Thomas & Betts
  - g. Approved Equal

## 2.02 GROUNDING CONDUCTORS

- A. For insulated conductors, comply with Division 26, Section 26 05 19-Low Voltage Electrical Power Conductors and Cables.
- B. Material: Copper.
- C. Equipment Grounding Conductors: Insulated with green-colored insulation.
- D. Grounding Electrode Conductors: Stranded cable.
- E. Underground Conductors: Bare, tinned, stranded.
- F. Bare Copper Conductors: Assembly of stranded conductors, ASTM B8.
- G. Copper Bonding Conductors:
  - 1. Bonding Conductor: #4 or #6 AWG, stranded copper conductor.
  - 2. Bonding Jumper: Bare copper tape, braided bare copper conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.59 mm) thick.
- H. Bonding Straps: Soft copper.
- I. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators.

## 2.03 CONNECTORS

- A. Pressure Connectors: High-conductivity-plated units.
- B. Bolted Connectors: Heavy-duty, bolted-pressure-type.

- C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.

## 2.04 GROUNDING ELECTRODES

- A. Ground Rods: Solid copper clad steel, 3/4-inch diameter by 10-feet length.

## 2.05 GROUND BUS

- A. Ground bus: 1/4 inch (6.35 mm) x 2 inch (50.8 mm) copper mounted on stand-off insulators. Size and location as shown on drawings.

# **PART 3 - EXECUTION**

## 3.01 APPLICATION

- A. Copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.
- B. In raceways, use insulated equipment grounding conductors.
- C. Exothermic-Welded Connections: Use for connections to structural steel, rail, rebar and for underground connections.
- D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.
- E. Ground Rod Clamps at Manholes: Use bolted pressure clamps with at least two bolts.
- F. Grounding Bus: Install in electrical and communications equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
  - 1. Use insulated spacer; space 1 inch (25.4 mm) from wall and support from wall 18 inches (457.2 mm) above finished floor, unless otherwise indicated.

## 3.02 EQUIPMENT GROUNDING CONDUCTORS

- A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.
- B. Install equipment grounding conductors in all feeders and branch circuits unless otherwise noted.
- C. Busway Supply Circuits: Install insulated equipment grounding conductor from the grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.
- D. Nonmetallic Raceways: Install an equipment grounding conductor in all nonmetallic raceways unless they are designated for telephone or data cables.
- E. Heat-Tracing, and Antifrost Heating Cables: Install a separate equipment grounding conductor to each electric heat-tracing, and antifrost heating cable. Bond conductor to heater units, piping, connected equipment, and components.

## 3.03 INSTALLATION

- A. Ground Rods: Install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes. Install ground grids were shown on drawings.
  - 1. Drive ground rods until tops are 2 inches (50.8 mm) below finished floor or final grade.
  - 2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds. Make connections without exposing steel or damaging copper coating.

- B. Grounding Conductors: Route along shortest and straightest paths possible. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment.
  - 1. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp.
  - 2. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts.
  - 3. Install straps only in locations accessible for maintenance.
- D. Metal Water Service Pipe: Provide insulated copper grounding conductors, in conduit, from main service equipment, or grounding bus, to all metal water service locations.
  - 1. Connect grounding conductors to main metal water service pipes by grounding clamp connectors.
  - 2. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting.
  - 3. Bond metal grounding conductor conduit or sleeve to conductor at each end.
- E. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with grounding clamp connectors.
- F. Gas Piping: Bond each aboveground portion of gas piping system upstream from equipment shutoff valve.
- G. Install one ground test well for each service at the ground rod electrically closest to the service entrance. Set top of well flush with finished grade or floor.

#### 3.04 CONNECTIONS

- A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
  - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
  - 2. Make connections with clean, bare metal at points of contact.
  - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
  - 4. Make aluminum-to-galvanized steel connections with tin-plated copper jumpers and mechanical clamps.
  - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- B. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.
- C. Equipment Grounding Conductor Terminations: For #8 AWG and larger, use pressure-type grounding lugs. #10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.
- D. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing.

1. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing.
  2. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.
- E. Connections at Test Wells: Use compression-type connectors on conductors and make bolted- and clamped-type connections between conductors and ground rods.
- F. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values.
- G. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the grounding conductor.
- H. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

### 3.05 UNDERGROUND DISTRIBUTION SYSTEM GROUNDING

- A. Vaults, Manholes and Handholes: Install 2 driven ground rods at corners of each manhole. Set rod depth so 6 inches (152.4 mm) will extend above finished floor. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive tape or heat-shrunk insulating sleeve from 2 inches (50.8 mm) above to 6 inches below concrete. Seal floor opening with waterproof, non-shrink grout. Provide continuous #2 AWG bare copper ground loop conductor all around vault, manhole and attached to all ground rods. Locate loop at plus 6 inches above manhole floor.
- B. Connections to Vault/Manhole/Handhole Components: Connect all exposed-metal parts, such as inserts, cable racks, pulling irons, cover frame, cover, sump ladders, and cable shields within each manhole to ground loop conductor.
1. Make connections with #2 AWG minimum, stranded, hard-drawn copper conductor.
  2. Train conductors level or plumb around corners and fasten to walls.
  3. Make connection to cable shield as recommended by manufacturer of splicing and termination kits.
  4. Connect equipment grounding conductor in each conduit to ground loop.

### 3.06 IDENTIFICATION

- A. Identify grounding system components as required by the Authority Having Jurisdiction and as specified in Division 26, Section 26 05 53 - Identification for Electrical Systems.

### 3.07 FIELD QUALITY CONTROL

- A. Testing: Perform the following field quality-control testing:
1. After installing grounding system but before permanent electrical circuitry has been energized, test for compliance with requirements.
    - a. Measure ground resistance without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    - b. Test by one of the following methods for resistance measurement:

- 1) Perform fall of potential test per IEEE Standard No. 81, Section 9.04 on the main grounding electrode or system for each substation and building.
  - 2) Perform the two-point method test per IEEE No.81 Section 9.03 to determine the ground resistance between the main grounding system and all major electrical equipment frames, system neutral and/or derived neutral points.
  - 3) Alternate Method: Perform ground continuity test between main ground system and equipment frame, system neutral and/or derived neutral point. Conduct test by passing a minimum of ten amperes dc current between ground reference system and the ground point to be tested. Measure voltage drop and calculate resistance by voltage drop method.
- c. Test Requirements:
- 1) Equipment Rated and manhole/handhole grounds: 10 ohms.
- d. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.
2. Record test results on a Ground Resistance Test Report form for inclusion with O & M Manuals.
- B. Provide drawings locating each ground rod and ground rod assembly and other grounding electrodes.
1. Identify each ground rod by letter in alphabetical order, and key to the record of tests and observations.
  2. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results.

**END OF SECTION**



**APPENDIX A**

**PORT OF TACOMA**

**CONSTRUCTION SWPPP**

# Construction Stormwater Pollution Prevention Plan (SWPPP) Report

## Port of Tacoma Thorne Road Off Dock Container Yard

**Prepared For**  
Permit # TBD

**Project Location**  
1702 Port of Tacoma Road; 1451 Thorne Road; 1721 Thorne Road Parcels 72, 85, and 87

### SWPPP Prepared By

| Name            | Organization                    | Contact Telephone Number | Email Address               |
|-----------------|---------------------------------|--------------------------|-----------------------------|
| Ben Fuentes, PE | Kennedy/Jenks Consultants, Inc. | 253-835-6477             | BenFuentes@kennedyjenks.com |

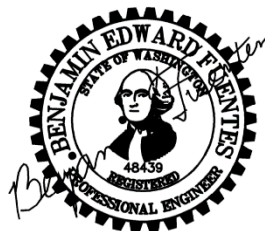
### Erosion and Sediment Control Lead

| Name                  | Organization | Contact Telephone Number | Email Address | CESCL/CPESC Number (if applicable) |
|-----------------------|--------------|--------------------------|---------------|------------------------------------|
| Contractor to provide |              |                          |               |                                    |

### Proposed Construction Schedule

| Proposed Start Date                                                          | Proposed End Date | Described proposed phasing or sequencing (if any) |
|------------------------------------------------------------------------------|-------------------|---------------------------------------------------|
| TBD<br>A construction schedule will be provided upon selection of contractor | TBD               |                                                   |

**Date Prepared**  
17 February 2023



2/17/2023

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## 1. Project Information

### A. Project Contents

This Construction Stormwater Pollution Prevention Plan (CSWPPP) has been developed by the Port of Tacoma as a baseline SWPPP and will be transferred to the contractor prior to construction. The contractor is responsible for conforming to this SWPPP and revising it as needed to confirm to applicable local and state requirements. This project will require a Washington State Department of Ecology (Ecology) Construction Stormwater General Permit (CSWGP).

See Title Page for Construction Stormwater Pollution Prevention Plan Development Team and Erosion and Sediment Control Lead.

### B. Property Owner

| Name         | Organization   | Mailing Address                      | Contact Telephone Number | Email Address             |
|--------------|----------------|--------------------------------------|--------------------------|---------------------------|
| Norm Gilbert | Port of Tacoma | One Sitcum Plaza<br>Tacoma, WA 98421 | 253-383-9406             | ngilbert@portoftacoma.com |

### C. Applicant (if different than Property Owner)

See Property Owner above.

### D. Associated Permits

i) Associated City of Tacoma Permit Number(s)

City of Tacoma Permit Number(s) to be determined.

ii) Other Federal, State, or Local Associated Permit Types and Numbers

The Washington Ecology CSWGP will be applied for and obtained prior to construction. Stormwater discharges associated with off dock container yard operations will likely require coverage under the Ecology Industrial Stormwater General Permit (ISGP). The Port will apply for the ISGP when appropriate, and the design for onsite stormwater treatment described herein is intended to treat the pollutants of concern in accordance with City of Tacoma (City) Stormwater Management Manual July 2021 Edition (Manual) requirements for redevelopment and those listed in the ISGP.

### E. Vesting

i) City of Tacoma Stormwater Management Manual Edition Used

This SWPPP addresses the requirements set forth in the City of Tacoma Stormwater Management Manual July 2021 Edition (SWMM).

## 2. Project Overview

### A. Provide a brief description of the proposed project.

This Construction Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the Port of Tacoma (Port) Thorne Road Off Dock Container Yard project (Project). The Project entails redeveloping three Port owned properties located at 1451 Thorne Road, 1721 Thorne Road, and 1702 Port of Tacoma Road (Site). The Site will be redeveloped to accommodate off-dock container yard operations anticipated to include storage of chassis and empty containers. The Project entails approximately 24 acres of land-disturbing activities. An Ecology CSWGP will be obtained for this project.

This SWPPP has been developed for the overall project, as illustrated in the Design Drawings included in Appendix B of the Stormwater Site Plan Report (SSP). In general, work includes the following elements:

- Installing and maintaining appropriate temporary erosion and sediment controls (TESC)

- Site regrading and resurfacing

- Installing bioretention media trenches (BMTs)

- Removal and disposal of existing utilities

- Installation of new utilities

- Associated demolition.

### **3. Existing Project Site Conditions**

#### **A. Describe in words and/or provide a figure(s) or drawing(s) that describe the existing site conditions.**

The Site is in the Tacoma Tideflats Watershed adjacent to Thorne Road, Port of Tacoma Road, and Maxwell Way. Site topography is generally flat with ground surface elevations ranging primarily between 10 to 14 feet above the current City datum, National Geodetic Vertical Datum 1929 (NGVD 29). The site is currently used for storing miscellaneous equipment and parking automobiles or heavy machinery. The ground cover is a mixture of pavement, gravel, vegetation, and wetlands and totals approximately 24 acres. Drainage patterns are man-made conveying stormwater to the onsite wetlands or to City-owned storm drains draining to Commencement Bay.

## 4. 13 Elements of Construction Stormwater Pollution Prevention

Below the 13 Elements of Construction Stormwater Pollution Prevention are provided. The contractor may propose alternative equivalent BMPs in accordance with section S9.C.4 of the CSWGP.

See Sheet EC1 in the Design Drawings for further detail and requirements for implementing and maintaining temporary erosion and sediment controls throughout construction to address these thirteen BMP elements. The contractor will update these drawings to show sampling and discharge locations and revise drawings to reflect changes to the site.

### 4.1 Element #1: Preserve Vegetation and Mark Clearing Limits

- Before beginning any land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area to prevent damage and offsite impacts. Mark clearing limits both in the field and on the plans.
- Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable. If it is not practicable to retain the duff layer in place, stockpile it onsite, cover it to prevent erosion, and replace it immediately upon completion of the ground-disturbing activities.
- Plastic, metal, fabric fence, or other physical barriers may be used to mark the clearing limits.

The BMP(s) proposed to meet this element are:

- ☐ BMP C101: Preserving Natural Vegetation
- ☐ BMP C102: Buffer Zone
- ☒ BMP C103: High Visibility Fence
- ☐ Other:
- ☐ This Element is not required for this project because:

### 4.2 Element #2: Establish Construction Access

- Limit construction vehicle ingress and egress to one route, if possible.
- Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs to minimize tracking of sediment.
- Locate wheel wash or tire baths onsite if other measures fail to control sediment from leaving the site.
- No tracking of sediment offsite is allowed. If sediment is tracked offsite, offsite areas (including roadways) shall be thoroughly and immediately cleaned by shoveling or pickup sweeping. Transport sediment to a controlled sediment disposal area.
- Keep streets clean at ALL times. Clean tracked sediment immediately.
- Washing of sediment to the stormwater system is not allowed.

The BMP(s) proposed to meet this element are:

- ☒ BMP C105: Stabilized Construction Entrance

- ☐ BMP C106: Wheel Wash
- ☒ BMP C107: Construction Road/Parking Area Stabilization
- ☒ Other: BMP C103: High Visibility Plastic or Metal Fence
- ☐ This Element is not required for this project because:

High visibility fencing is intended to restrict clearing to approved limits; prevent disturbance of areas required to be left undisturbed; limit construction traffic to designated construction entrances, exits, or internal roads; and protect areas where marking with survey tape may not provide adequate protection.

### 4.3 Element #3: Control Flow Rates

- Protect downstream properties, receiving waters, and conveyance systems from erosion and other damage due to increases in the velocity and peak volumetric flowrate of stormwater from the project site. A quantitative downstream analysis may be required to ensure no damage to the downstream conveyance system during construction. See Additional Protective Measure - Infrastructure Protection.
- Where necessary, construct flow control facilities as one of the first steps in grading.
- Flow control facilities shall be functional prior to construction of site improvements (e.g., impervious surfaces). It may be necessary to install temporary flow control facilities to meet flow control requirements during construction.
- Control structures designed for permanent flow control BMPs are not appropriate for use during construction without modification. If used during construction, modify the control structure to allow for long-term storage of runoff and enable sediments to settle. Verify that the BMP is sized appropriately for this purpose. Restore BMPs to their original design dimensions, remove sediment, and install a final control structure at completion of the project.
- Velocity of water leaving the site shall not exceed 3 feet/second if the discharge is to a stream or ditch.
- Permanent infiltration facilities shall not be used for flow control during construction unless lined. The bottom of the facility shall be scarified to ensure any compaction that occurred during construction is mitigated.

The BMP(s) proposed to meet this element are:

- ☐ BMP C203: Water Bars
- ☒ BMP C207: Check Dams
- ☐ BMP C209: Outlet Protection
- ☒ BMP C235: Wattles
- ☐ BMP C240: Sediment Trap
- ☐ BMP C241: Temporary Sediment Pond
- ☐ Other:
- ☐ This Element is not required for this project because:



#### 4.4 Element #4: Install Sediment Controls

- Design, install, and maintain effective erosion controls and sediment control to minimize the discharge of pollutants.
- Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- Prior to leaving a construction site or prior to discharge to an infiltration facility, stormwater from disturbed areas shall pass through a sediment removal BMP.
- Construct sediment control BMPs as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.
- Locate BMPs in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or conveyance channels.
- Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize infiltration, where feasible.
- Seed and mulch earthen structures such as dams, dikes, and diversions according to the timing indicated in Element #5.
- Design outlet structures to withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column. If installing a floating pump structure, include a stopper to prevent the pump basket from hitting the bottom of the pond.
- Full stabilization includes concrete or asphalt paving; quarry spalls used as ditch lining; or the use of rolled erosion products, a bonded fiber matrix product, or vegetative cover in a manner that will fully prevent soil erosion.

The BMP(s) proposed to meet this element are:

- ☐ BMP C231: Brush Barrier
- ☐ BMP C232: Gravel Filter
- ☒ BMP C233: Silt Fence
- ☐ BMP C234: Vegetated Filter Strip
- ☒ BMP C235: Wattles
- ☐ BMP C240: Sediment Trap
- ☐ BMP C241: Temporary Sediment Pond
- ☐ BMP C250: Construction Stormwater Chemical Treatment
- ☒ Other: BMP C140: Dust Control and BMP C220: Storm Drain Inlet Protection

Dust control prevents wind transport of dust from disturbed soil surfaces onto roadways, drainage ways, and surface waters. This BMP will be implemented throughout the construction process and project site, when and where appropriate.

Storm drain inlet protection is used to prevent coarse sediment from entering drainage systems prior to permanent stabilization of the disturbed area. This BMP will be applied at storm drain catch basins located in the vicinity of the project site, as appropriate, prior to their demolition.

☐ This Element is not required for this project because:

#### 4.5 Element #5: Stabilize Soils

- Stabilize exposed and unworked soils by application of effective BMPs that prevent erosion.
- From October 1 through April 30, no soils shall remain exposed and unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days. This stabilization requirement applies to all soils onsite, whether at final grade or not.
- Stabilize soils at the end of the shift, before a holiday or weekend, if needed, based on the weather forecast.
- Select appropriate soil stabilization measures for the time of year, site conditions, estimated duration of use, and the potential water quality impacts that stabilization agents may have on downstream waters or groundwater.
- Stabilize soil stockpiles from erosion, protect stockpiles with sediment trapping measures, and where possible, locate piles away from stormwater system inlets, waterways, and conveyance channels.
- Control stormwater volume and velocity within the site to minimize soil erosion.
- Control stormwater discharges, including peak volumetric flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
- Minimize the amount of soil exposed during construction activity.
- Minimize the disturbance of steep slopes.
- Minimize soil compaction and, unless infeasible, preserve topsoil.
- Ensure the gravel base used for stabilization is clean and does not contain fines or sediment.

The BMP(s) proposed to meet this element are:

- ☐ BMP C120: Temporary and Permanent Seeding
- ☐ BMP C121: Mulching
- ☐ BMP C122: Nets and Blankets
- ☒ BMP C123: Plastic Covering
- ☐ BMP C124: Sodding
- ☐ BMP C125: Compost
- ☐ BMP C126: Topsoiling
- ☐ BMP C127: Polyacrylamide for Soil Erosion Protection
- ☐ BMP C130: Surface Roughening
- ☐ BMP C131: Gradient Terraces
- ☒ BMP C140: Dust Control
- ☐ Other:
- ☐ This Element is not required for this project because:

#### 4.6 Element #6: Protect Slopes

- Design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
- Divert offsite stormwater (sometimes called run-on) or groundwater away from slopes and disturbed areas with interceptor dikes and/or swales. Manage offsite stormwater separately from stormwater generated on the site.
- At the top of the slopes, collect stormwater in pipe slope drains or protected channels to prevent erosion. Size temporary pipe slope drains to convey either:
  - o The peak volumetric flowrate calculated using a 10-minute time step from a Type 1A, 10-year, 24-hour frequency storm using a single event model, or
  - o The 10-year return period flowrate, indicated by an Ecology-approved continuous simulation model, using a 15-minute time step.
- Use the existing land cover condition for predicting flowrates from tributary areas outside the project limits. For tributary areas on the project site, use the temporary or permanent project land cover condition, whichever will produce the highest flowrate. If using a continuous simulation model, model bare soils as landscaped areas.
- Provide temporary or permanent conveyance to remove groundwater seepage from the slope surface of exposed soil areas.
- Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
- Place check dams at regular intervals within channels that are cut down a slope.
- Stabilize soils on slopes, as specified in Element #5.

The BMP(s) proposed to meet this element are:

- ☐ BMP C120: Temporary and Permanent Seeding
- ☐ BMP C121: Mulching
- ☐ BMP C122: Nets and Blankets
- ☐ BMP C123: Plastic Covering
- ☐ BMP C124: Sodding
- ☐ BMP C130: Surface Roughening
- ☐ BMP C131: Gradient Terraces
- ☐ BMP C200: Interceptor Dike and Swale
- ☐ BMP C201: Grass-Lined Channels
- ☐ BMP C203: Water Bars
- ☐ BMP C204: Pipe Slope Drains
- ☐ BMP C205: Subsurface Drains
- ☐ BMP C206: Level Spreader
- ☐ BMP C207: Check Dams
- ☐ BMP C208: Triangular Silt Dike (Geotextile-Encased Check Dam)
- ☐ Other:

☒ BMP This Element is not required for this project because: The project site is generally flat. There are no steep slopes as part of this construction project requiring protection. Cut and fill during the grading process will be completed in a manner that will minimize erosion.

#### **4.7 Element #7: Protect Stormwater System Inlets**

- Protect all stormwater system inlets that are operable during construction so that stormwater does not enter the conveyance system without first being filtered or treated to remove sediment.
- Clean or remove and replace inlet protection devices when sediment has filled 1/3 of the available storage (unless a different standard is specified by the product manufacturer).
- Keep all approach roads clean. Do not allow sediment to enter the stormwater system.
- Inspect inlets weekly at a minimum and daily during storm events.

The BMP(s) proposed to meet this element are:

- ☒ BMP C220: Stormwater System Inlet Protection
- ☐ Other:
- ☐ This Element is not required for this project because:

#### **4.8 Element #8: Stabilize Channels and Outlets**

- Design, construct, and stabilize all temporary onsite conveyance channels to prevent erosion from either:
  - o The peak volumetric flowrate calculated using a 10-minute time step from a Type 1A, 10-year, 24-hour frequency storm using a single event model, or
  - o The 10-year return period flowrate, indicated by an Ecology-approved continuous simulation model, using a 15-minute time step.
- Use the existing land cover condition for predicting flowrates from tributary areas outside the project limits. For tributary areas on the project site, use the temporary or permanent project land cover condition, whichever will produce the highest flowrate. If using a continuous simulation model, model bare soils as landscaped areas.
- Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

The BMP(s) proposed to meet this element are:

- ☐ BMP C122: Nets and Blankets
- ☐ BMP C202: Rip Rap Channel Lining
- ☐ BMP C207: Check Dams
- ☐ Other:
- ☒ This Element is not required for this project because: Existing stormwater structures, including catch basins, manholes, and outfalls, no longer required for site drainage will be properly demolished and removed. Open ends of pipes to be abandoned will be plugged. There will be no temporary onsite conveyance channels as part of this project.

#### 4.9 Element #9: Control Pollutants

- Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants.
- All discharges to the City of Tacoma wastewater system require City approval. Some discharges to the City of Tacoma stormwater system require City approval. The approval may include a separate Special Approved Discharge (SAD) permit. Visit [https://www.cityoftacoma.org/government/city\\_departments/environmentalservices/wastewater/wastewater\\_permits\\_and\\_manuals](https://www.cityoftacoma.org/government/city_departments/environmentalservices/wastewater/wastewater_permits_and_manuals) for additional information about SAD Permits.
- Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
- Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health and the environment. Provide secondary containment for tanks holding pollutants including onsite fueling tanks. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.
- Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
- Conduct oil changes, hydraulic system drain down, solvent and degreasing cleaning operations, fuel tank drain down and removal, and other activities, which may result in discharge or spillage of pollutants to the ground or into stormwater using spill prevention measures, such as drip pans.
- Discharge wheel wash or tire bath wastewater to a separate onsite treatment system that prevents discharge to surface water. Alternatively, discharge wheel wash or tire bath wastewater to the wastewater system (only allowed with SAD Permit approval).
- Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemicals to stormwater. Follow manufacturers' recommendations for application rates and procedures.
- Use BMPs to prevent or treat contamination of stormwater by pH modifying sources. These sources include, but are not limited to, recycled concrete stockpiles, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, and concrete pumping and mixer washout waters.
- Adjust the pH of stormwater if necessary to prevent violations of water quality standards.
- Manage concrete washout appropriately.
  - o Washout concrete truck drums or concrete handling equipment in onsite or offsite designated concrete washout areas only.
    - Do not washout concrete truck drums or concrete handling equipment to streets, the stormwater system, receiving waterbodies, or the ground.
  - o Washout of small concrete handling equipment may be disposed of in a formed areas awaiting concrete where it will not contaminate stormwater and surface water or groundwater.

- o Do not use upland land applications for discharging wastewater from concrete washout areas.
- o Do not dump excess concrete onsite, except in designated concrete washout areas.
- o Do not washout anything contaminated with concrete into formed areas awaiting infiltration BMPs.
- o Concrete spillage or concrete discharge directly to groundwater or surface waters of the State is prohibited.
- Written approval from the Department of Ecology is required prior to using chemical treatment other than CO<sub>2</sub>, dry ice, or food grade vinegar to adjust pH.
- Clean contaminated surfaces immediately following any discharge or spill incident.
- Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5.

The BMP(s) proposed to meet this element are:

- ☒ BMP C151: Concrete Handling
- ☒ BMP C152: Sawcutting and Surface Pollution Prevention
- ☒ BMP C153: Material Delivery, Storage and Containment
- ☐ BMP C154: Concrete Washout Area
- ☐ BMP C250: Construction Stormwater Chemical Treatment
- ☒ Other: BMP C140: Dust Control

Dust control prevents wind transport of dust from disturbed soil surfaces onto roadways, drainage ways, and surface waters. This BMP will be implemented throughout the construction process and project site, when and where appropriate.

☐ This Element is not required for this project because:

#### **4.10 Element #10: Dewatering**

- Dewatering discharges to the City of Tacoma stormwater conveyance system or the City of Tacoma wastewater system may require City approval through a Special Approved Discharge (SAD) Permit. See [https://www.cityoftacoma.org/government/city\\_departments/environmentalservices/wastewater/wastewater\\_permits\\_and\\_manuals](https://www.cityoftacoma.org/government/city_departments/environmentalservices/wastewater/wastewater_permits_and_manuals) for more information on the SAD Permit Process.
- Discharge foundation, vault, and trench dewatering water that has similar characteristics to site stormwater into a controlled conveyance system prior to discharge to a sediment trap or sediment pond. Stabilize channels as specified in Element #8.
- Clean, non-turbid dewatering water, such as well-point groundwater, can be discharged to systems tributary to state surface waters, as specified in Element #8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through TESC BMPs.

- Handle highly turbid or contaminated dewatering water separately from stormwater at the site.
- Other disposal options, depending on site constraints, may include:
  - o Infiltration
  - o Transport offsite in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters
  - o Ecology approved onsite chemical treatment or other suitable treatment technologies
  - o Use of a sedimentation bag that discharges to a ditch or swale for small volumes of localized dewatering

The BMP(s) proposed to meet this element are:

- ☐ BMP C203: Water Bars
- ☐ BMP C206: Level Spreader
- ☐ BMP C236: Vegetative Filtration
- ☒ Other: Small volumes of localized dewatering may occur. Temporary collection and conveyance infrastructure will be installed to collect clean dewatering water and convey it to existing catch basins connected to the conveyance system discharging to the aeration sedimentation basin located northeast of the Project, across Sitcum and Blair Waterways. Discharge for foundation, vault, and trench dewatering water that has similar characteristics to site stormwater into a controlled conveyance system prior to discharge to a sediment trap will be performed in accordance with the Manual. A City Special Approved Discharge Permit will be obtained by contractor if applicable.
- ☐ This Element is not required for this project because:

#### **4.11 Element #11: Maintain BMPs**

- Maintain and repair as needed all temporary and permanent erosion and sediment control BMPs to assure continued performance of their intended function. Conduct maintenance and repairs in accordance with BMP specifications.
- Remove temporary erosion and sediment control BMPs within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized onsite. Permanently stabilize disturbed soil resulting from removal of BMPs or vegetation.

The BMP(s) proposed to meet this element are:

- ☒ BMP C150: Materials on Hand
- ☒ BMP C160: Erosion and Sediment Control Lead
- ☐ BMP C236: Vegetative Filtration
- ☐ Other:
- ☐ This Element is not required for this project because:

#### **4.12 Element #12: Manage the Project**

- *Phasing of Construction* – Phase development projects in order to prevent soil erosion and the transport of sediment from the project site during construction, unless the Erosion and



Sediment Control Lead can demonstrate that construction phasing is infeasible.

Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities for any phase.

- *Seasonal Work Limitations* – From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the City that silt-laden stormwater will be prevented from leaving the site through a combination of the following:
  - o Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters;
  - o Limitations on activities and the extent of disturbed areas; and
  - o Proposed erosion and sediment control measures.

Based on the information provided and local weather conditions, the City may expand or restrict the seasonal limitation onsite disturbance. The following activities are exempt from the seasonal clearing and grading limitations:

- o Routine maintenance and necessary repair of erosion and sediment control BMPs
- o Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil
- o Activities where there is one hundred percent infiltration of stormwater within the site in approved and installed erosion and sediment control facilities
- *Inspection and Monitoring*
  - a. Inspect, maintain, and repair all BMPs as needed to assure continued performance of their intended function. Projects regulated under the Construction Stormwater General Permit (CSWGP) must conduct site inspections and monitoring in accordance with Special Condition S4 of the CSWGP.
  - b. Projects that disturb one or more acres must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL) or Certified Professional in Erosion and Sediment Control (CPESC).
  - c. Projects disturbing less than one acre must have an Erosion Sediment Control Lead (ESC) conduct inspections. The ESC Lead does not have to have CESCL or CPESC certification.
  - d. The CESCL, CPESC, or ESC Lead shall be identified in the SWPPP and shall be onsite or on-call at all times.
  - e. The CESCL, CPESC, or ESC Lead must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen and evaluate the effectiveness of BMPs to determine if it is necessary to install, maintain, or repair BMPs.
  - f. The CESCL, CPESC, or ESC Lead must inspect all areas disturbed by construction activities, all BMPs, and all locations where stormwater leaves the site at least once every calendar week and within 24 hours of any discharge from the site. (Individual discharge events that last more than one day do not require daily inspections). The CESCL, CPESC, or ESC Lead may reduce the inspection frequency for temporary stabilized, inactive sites to once every calendar month.
  - g. Construction site operators must correct any problems identified by the CESCL, CPESC, or ESC Lead by:
    - Reviewing the SWPPP for compliance with the 13 construction SWPPP elements and making appropriate revisions within 7 days of the inspection.
    - Fully implementing and maintaining appropriate source control and/or treatment BMPs as soon as possible but correcting the problem within 10 days.



- Documenting BMP implementation and maintenance in the site log book. (Required for sites larger than 1 acre but recommended for all sites).  
Sampling and analysis of the stormwater discharges from a construction site may be necessary on a case-by-case basis to ensure compliance with standards. Ecology or the City will establish these monitoring and associated reporting requirements.
- *Responsible Party* – For all projects, a 24-hour responsible party shall be listed in the SWPPP, along with that person's telephone number and email address.
- *Maintenance of the Construction SWPPP* – Keep the Construction SWPPP onsite or within reasonable access to the site. Modify the SWPPP whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state. Modify the SWPPP if, during inspections or investigations conducted by the owner/operator, City staff, or by local or state officials, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. Modify the SWPPP as necessary to include additional or modified BMPs designed to correct problems identified. Complete revisions to the SWPPP within seven (7) days following the inspection. City of Tacoma Environment Services (review staff or inspector) may require that a modification to the SWPPP go through additional City review.

The BMP(s) proposed to meet this element are:

- ☒ BMP C150: Materials on Hand
- ☒ BMP C160: Erosion and Sediment Control Lead
- ☒ BMP C162: Scheduling
- ☐ Other:
- ☐ This Element is not required for this project because:

#### **4.13 Element #13: Protect Permanent Stormwater BMPs**

- Protect all permanent stormwater BMPs from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the BMPs. Restore all BMPs to their fully functioning condition if they accumulate sediment during construction. Sediment impacting Best Management Practices shall be removed before system start-up. Restoring the BMP shall include removal of all sediment and full replacement of treatment media.
- Prevent compacting infiltration facilities by excluding construction equipment and foot traffic.
- Keep all heavy equipment off native soils under infiltration BMPs that have been excavated to final grade to retain the infiltration rate of the soils.
- Protect lawn and landscaped areas from compaction due to construction equipment and material stockpiles.
- Do not allow muddy construction equipment on the base material of permeable pavement or on the permeable pavement section.
- Do not allow sediment laden runoff onto permeable pavements or base materials of permeable pavements.

- Permeable pavements fouled with sediment or that can no longer pass an initial infiltration test must be cleaned prior to final acceptance.

The BMP(s) proposed to meet this element are:

- ☐ BMP C102: Buffer Zone
- ☐ BMP C103: High Visibility Fence
- ☐ BMP C200: Interceptor Dike and Swale
- ☐ BMP C201: Grass-Lined Channels
- ☐ BMP C207: Check Dams
- ☐ BMP C208: Triangular Silt Dike (Geotextile-Encased Check Dam)
- ☐ BMP C231: Brush Barrier
- ☒ BMP C233: Silt Fence
- ☐ BMP C234: Vegetated Filter Strip
- ☒ Other: BMP C235: Wattles

Wattles reduce the velocity and can spread the flow of rill and sheet runoff and can capture and retain sediment. Wattles may be used in combination with silt fencing in areas that require additional sediment controls.

☐ This Element is not required for this project because:

## **5. Permit Requirements**

The Contractor will comply with the full requirements of the Ecology CSWGP. Requirements may include sampling, site inspections, monitoring, record keeping, and other items not discussed in this report.

## **6. Modeling Report**

Modeling is not applicable for Element # 6 – Stabilizing Slopes or Element #8 – Stabilizing Channels. Modeling has been performed to address Infrastructure Protection in the 2021 City of Tacoma Stormwater Manual and has been included as Appendix G in the SSP.

## **7. Soils Report**

A geotechnical report is included as Appendix C in the SSP.

## **8. Relevant Historical Reports**

No relevant historical reports are known to be associated with this project.

## **9. Emerging Technology Use Level Designations**

If contractor elects to use emerging technologies, they will address these technologies in this section.

# Attachments

## **A. Temporary Erosion and Sediment Control BMPs**

Temporary Erosion and Sediment Control BMPs are provided in Attachment A.

## Attachment A

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### Temporary Erosion and Sediment Control BMPs

## **1.3 BMP C103: High Visibility Fence**

### **1.3.1 Purpose**

Fencing is intended to:

- Restrict clearing to approved limits.
- Prevent disturbance of sensitive areas, their buffers, and other areas required to be left undisturbed.
- Limit construction traffic to designated construction entrances or roads.
- Protect areas where marking with survey tape or flagging may not provide adequate protection.

### **1.3.2 Conditions of Use**

To establish clearing limits, plastic, fabric, or metal fence may be used:

- At the boundary of sensitive areas, their buffers, and other areas required to be left uncleared.
- As necessary to control vehicle access to and on the site.

### **1.3.3 Design and Installation Specifications**

- High visibility plastic fence shall be composed of a high-density polyethylene material and shall be at least four feet in height. Posts for the fencing shall be steel or wood and placed every 6 feet on center (maximum) or as needed to ensure rigidity. The fencing shall be fastened to the post every six inches with a polyethylene tie. On long continuous lengths of fencing, a tension wire or rope shall be used as a top stringer to prevent sagging between posts. The fence color shall be high visibility orange. The fence tensile strength shall be 360 lbs./ft. using the ASTM D4595 testing method.
- If appropriate, install fabric silt fence in accordance with BMP C233: Silt Fence to act as high visibility fence. Silt fence shall be at least 3 feet high and must be highly visible to meet the requirement of this BMP.
- Design and install metal fences according to the manufacturer's specifications.
- Metal fences shall be at least 3 feet high and must be highly visible.
- Do not wire or staple fences to trees.

### **1.3.4 Maintenance Standards**

- If the fence has been damaged or its visibility reduced, it shall be repaired or replaced immediately and visibility restored.

## **1.4 BMP C105: Stabilized Construction Entrance/Exit**

### **1.4.1 Purpose**

Construction entrances are stabilized to reduce the amount of sediment transported onto paved roads by vehicles or equipment by constructing a stabilized pad of quarry spalls at entrances and exits to construction sites.

### **1.4.2 Conditions of Use**

Construction entrances shall be stabilized wherever traffic will be leaving a construction site and traveling on paved roads or other paved areas within 1,000 feet of the site.

Construction vehicle ingress and egress shall be limited to one route. Additional routes may be allowed for very large projects or linear projects.

For residential construction provide stabilized construction entrances/exits for each residence. Stabilized surfaces shall be of sufficient length/width to provide vehicle access/parking based upon lot size and configuration. See Figure 3 - 1: Stabilized Construction Entrance.

### **1.4.3 Design and Installation Specifications**

- The stabilized construction entrance shall be:
  - A minimum of 15' wide; and a minimum of 100' feet long.

The length of the entrance may be reduced to the maximum practicable size when the size or configuration of the site does not allow the full lengths.
- Construct stabilized construction entrance with a pad that is:
  - A minimum 12" thick pad of 4" to 8" quarry spalls, or
  - A minimum 4" course of asphalt treated base, or
  - Existing pavement, or
  - A minimum 12" thick pad of permeable ballast meeting the requirements of WSDOT's Standard Specifications for Road, Bridge, and Municipal Construction Section 9-03.9(2).
  - For single-family residence construction, the concrete pad may be clean 1 ½" minimum aggregate placed at least 8" thick.
  - Manufactured alternatives to construction entrance may be used provided they ensure no track-out.
- Do not use crushed concrete, cement or asphalt rubble for the stabilized construction entrance.
- Place a separation geotextile under the spalls to prevent fine sediment from pumping up into the rock pad. The geotextile shall meet WSDOT Standard Specification 9-33.2(1) Table 3 - Geotextile for Separation or Soil Stabilization or the following standards:
  - Grab Tensile Strength (ASTM D4751) – 200 psi min.
  - Grab Tensile Elongation (ASTM D4632) – 30% max.
  - Mullen Burst Strength (ASTM D3786-80a) – 400 psi min.

- AOS (ASTM D4751) – 20 to 45 (U.S. standard sieve size)
- Consider early installation of the first lift of asphalt or extra concrete in areas that will be paved; this can be used as a stabilized entrance.
- Install fencing (see BMP C103: High Visibility Fence) as necessary to restrict traffic to the construction entrance.
- Whenever possible, construct the entrance on a firm, compacted subgrade. This can substantially increase the effectiveness of the pad and reduce the need for maintenance
- If possible, install the stabilized construction entrance on the uphill side of the site so that stormwater will not pond near the stabilized construction entrance.
- Construction entrance should avoid crossing existing sidewalks if possible. If a construction entrance must cross a sidewalk, the sidewalk must be covered and protected from sediment leaving the site.

#### **1.4.4 Maintenance Standards**

- Add quarry spalls or additional permeable ballast if the pad is no longer in accordance with the specifications.
- If the entrance is not preventing sediment from being tracked onto pavement, alternative measures to keep the streets free of sediment shall be used. This may include replacement of the stabilized construction entrance, street sweeping, an increase in the dimensions of the entrance, or the installation of a wheel wash.
- No tracking of sediment onto the roadway is allowed. If sediment is tracked onto the road, immediately clean the road thoroughly by shoveling or pickup sweeping. Transport sediment to a controlled sediment disposal area.
- Perform street sweeping by hand or with a high efficiency sweeper. Do not use a non-high efficiency mechanical sweeper because this creates dust and throws soils into storm systems or conveyance ditches.
- Keep streets clean at ALL times. Clean tracked sediment immediately.
- Street washing of sediment to the stormwater system is not allowed.
- If sediment is discharged to the stormwater system it is the responsibility of the applicant to clean the downstream system.
- Immediately remove any materials that are loosened from the pad and end up on the roadway.
- Install fencing if vehicles are entering or exiting the site at points other than the construction entrance(s).
- Upon project completion and site stabilization, permanently stabilize all construction accesses intended as permanent access for maintenance.



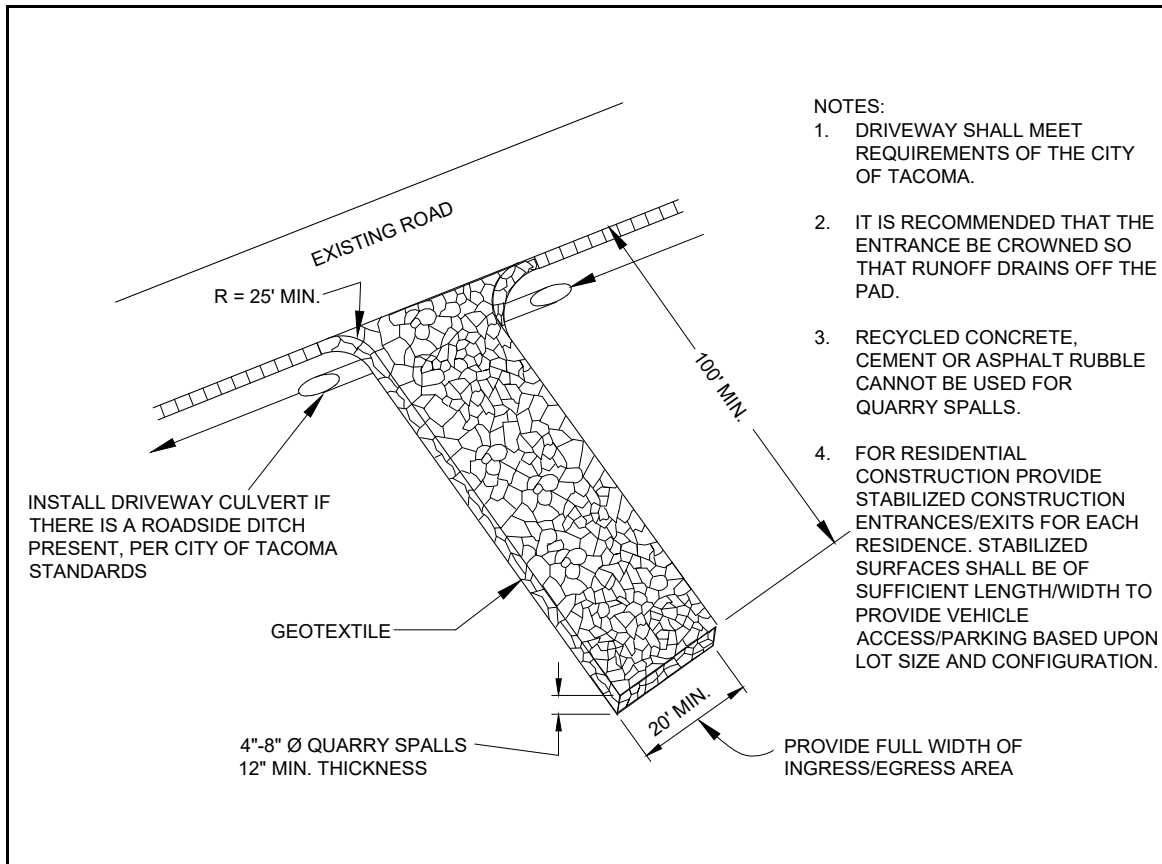


**Figure 3 - 1: Stabilized Construction Entrance**

## **1.6 BMP C107: Construction Road/Parking Area Stabilization**

### **1.6.1 Purpose**

Stabilizing subdivision roads, parking areas and other onsite vehicle transportation routes immediately after grading reduces erosion caused by construction traffic or runoff.

### **1.6.2 Conditions of Use**

- Stabilize roads or parking areas wherever they are constructed, whether permanent or temporary, for use by construction traffic.
- Install fencing (see BMP C103: High Visibility Fence), if necessary, to limit the access of vehicles to only those roads and parking areas that are stabilized.

### **1.6.3 Design and Installation Specifications**

- On areas that will receive asphalt as part of the project, install the first lift as soon as possible.
- Use one of the following methods to stabilize the area immediately after grading or utility installation.
  - Pave the road/parking area.
  - Apply 6-inch depth of 2- to 4-inch crushed rock, gravel base, or crushed surfacing base course.
  - Apply a 4-inch course of asphalt treated base (ATB).
  - Apply cement or calcium chloride<sup>1</sup>.
  - Apply a 6-inch depth of hog fuel (only if the area will not be used for permanent roads, parking areas or structures).
- Whenever possible, place construction roads and parking areas on a firm, compacted subgrade.
- Temporary road gradients shall not exceed 15 percent. Carefully grade roadways to ensure no water will pond on the roadway surface. Provide conveyance ditches on each side of the roadway in the case of a crowned section, or on one side in the case of a super-elevated section. Direct conveyance ditches to a sediment control BMP.
- Rather than relying on conveyance ditches, it may also be possible to grade the road so that runoff sheet flows into a heavily vegetated area with a well-developed topsoil. Landscaped areas are not adequate. If this area has at least 50 feet of vegetation, then it is generally preferable to use the vegetation to treat runoff, rather than a sediment pond or trap. The 50 feet shall not include wetlands. If runoff is allowed to sheetflow through adjacent vegetated areas, it is vital to design the roadways and parking areas so that no concentrated runoff is created.
- Protect stormwater system inlets to prevent sediment-laden water entering the stormwater system (see BMP C220: Stormwater System Inlet Protection).

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1. If cement or cement kiln dust is used for roadbase stabilization, pH monitoring and BMPs are necessary to evaluate and minimize the effects on stormwater.

### **1.6.4 Maintenance Standards**

- Inspect stabilized areas regularly, especially after large storm events.
- Add crushed rock, gravel base, hog fuel, etc. as required to maintain a stable driving surface and to stabilize any eroded areas.
- Following construction, restore all areas to preconstruction condition or better to prevent future erosion.
- No tracking of sediment onto the roadway is allowed. If sediment is tracked onto road, clean the road thoroughly by shoveling or pickup sweeping.

## **1.10 BMP C123: Plastic Covering**

### **1.10.1 Purpose**

Plastic covering provides immediate, short-term erosion protection to slopes and disturbed areas.

### **1.10.2 Conditions of Use**

- Plastic covering may be used on disturbed areas that require cover measures for less than 30 days, except as stated below.
- Plastic is particularly useful for protecting cut and fill slopes and stockpiles.
- The relatively rapid breakdown of most polyethylene sheeting makes it unsuitable for long-term (greater than six months) applications.
- Due to rapid runoff caused by plastic covering, this method shall not be used upslope of areas that might be adversely impacted by concentrated runoff. Such areas include steep and/or unstable slopes.
- Whenever plastic is used to protect slopes, water collection measures must be installed at the base of the slope. These measures include plastic-covered berms, channels, and pipes used to convey clean rainwater away from bare soil and disturbed areas. At no time is clean runoff from a plastic covered slope to be mixed with dirty runoff from a project.
- Other uses for plastic include:
  - Temporary ditch liner;
  - Pond liner in temporary sediment pond;
  - Liner for bermed temporary fuel storage area if plastic is not reactive to the type of fuel being stored;
  - Emergency slope protection during heavy rains; and
  - Temporary conveyance used to direct stormwater and surface water.

### **1.10.3 Design and Installation Specifications**

Plastic slope cover must be installed as follows:

- Run plastic up and down slope, not across slope.
- Plastic may be installed perpendicular to a slope if the slope length is less than 10 feet.
- Minimum of 8-inch overlap at seams.
- On long or wide slopes, or slopes subject to wind, all seams should be taped.
- Place plastic into a small (12-inch wide by 6-inch deep) slot trench at the top of the slope and backfill with soil to keep water from flowing underneath.
- Place sand filled burlap or geotextile bags every 3 to 6 feet along seams and pound a wooden stake through each to hold them in place. Alternative options for holding plastic in place exist and may be considered with COT approval.
- Inspect plastic for rips, tears, and open seams regularly and repair immediately. This prevents high velocity runoff from contacting bare soil, which causes extreme erosion;
- Plastic sheeting shall have a minimum thickness of 6 mil.

- If erosion at the toe of a slope is likely, a gravel berm, riprap, or other suitable protection shall be installed at the toe of the slope in order to reduce the velocity of runoff.

#### **1.10.4 Maintenance Standards**

- Torn sheets must be replaced and open seams repaired.
- If the plastic begins to deteriorate due to ultraviolet radiation, it must be completely removed and replaced.
- When the plastic is no longer needed, it shall be completely removed.
- Properly dispose of products used to weigh down covering.

## **1.17 BMP C140: Dust Control**

### **1.17.1 Purpose**

Dust control prevents wind transport of dust from disturbed soil surfaces.

### **1.17.2 Conditions of Use**

Use dust control practices in areas (including roadways) subject to surface and air movement of dust where onsite and offsite impacts to streets, the stormwater system, or receiving waterbodies are likely.

### **1.17.3 Design and Installation Specifications**

- Vegetate or mulch areas that will not receive vehicle traffic. In areas where planting, mulching, or paving is impractical, apply gravel or landscaping rock.
- Limit dust generation by clearing only to those areas where immediate activity will take place, leaving the remaining area(s) in the original condition, if stable. Maintain the original ground cover as long as practical.
- Construct natural or artificial windbreaks or windscreens. These may be designed as enclosures for small dust sources.
- Sprinkle the site with water until surface is wet. Repeat as needed. To prevent carryout of mud onto street, refer to Stabilized Construction Entrance (BMP C105: Stabilized Construction Entrance/Exit).
- Irrigation water can be used for dust control. Install irrigation systems as a first step on sites where dust control is a concern.
- Spray exposed soil areas with a dust palliative, following the manufacturer's instructions and cautions regarding handling and application. Used oil is prohibited from use as a dust suppressant.
- PAM (BMP C127: Polyacrylamide for Soil Erosion Protection) added to water at a rate of 2/3 pounds per 1,000 gallons of water per acre and applied from a water truck is more effective than water alone. This is due to the increased infiltration of water into the soil and reduced evaporation. In addition, small soil particles are bonded together and are not as easily transported by wind. Adding PAM may actually reduce the quantity of water needed for dust control. There are concerns with the proper use of PAM, refer to BMP C127: Polyacrylamide for Soil Erosion Protection for more information on PAM application. PAM use requires COT approval.
- Lower speed limits. High vehicle speed increases the amount of dust stirred up from unpaved roads and lots.
- Upgrade the road surface strength by improving particle size, shape, and mineral types that make up the surface and base materials.
- Add surface gravel to reduce the source of dust emission. Limit the amount of fine particles to 10 to 20 percent.
- Use geotextile fabrics to increase the strength of new roads or roads undergoing reconstruction.
- Encourage the use of alternate, paved routes, if available.
- Restrict use of paved roadways by tracked vehicles and heavy trucks to prevent damage to road surfaces and bases.

- Apply chemical dust suppressants using the admix method, blending the product with the top few inches of surface material. Suppressants may also be applied as surface treatments.
- Pave unpaved permanent roads and other trafficked areas.
- Use vacuum street sweepers.
- Remove mud and other dirt promptly so it does not dry and then turn into dust.
- Limit dust-causing work on windy days.
- Contact the Puget Sound Clean Air Agency for guidance and training on other dust control measures. Compliance with the Puget Sound Clean Air Agency's recommendations/requirements constitutes compliance with this BMP.

#### **1.17.4 Maintenance Standards**

Evaluate the potential for dust generation frequently during dry periods. Complete the actions outlined above as needed to limit the dust.

Any dust which leaves the site must be cleaned immediately.

## 1.18 BMP C150: Materials On Hand

### 1.18.1 Purpose

Quantities of erosion prevention and sediment control materials should be kept on the project site at all times to be used for regular maintenance and emergency situations such as unexpected heavy summer rains. Having these materials onsite reduces the time needed to implement BMPs when inspections indicate that existing BMPs are not meeting the Construction SWPPP requirements.

### 1.18.2 Conditions of Use

Construction projects of any size or type can benefit from having materials on hand. A small commercial development project could have a roll of plastic and some gravel available for immediate protection of bare soil and temporary berm construction. A large earthwork project, such as highway construction, might have several tons of straw, several rolls of plastic, flexible pipe, sandbags, geotextile fabric, and steel “T” posts.

- Materials are stockpiled and readily available before any site clearing, grubbing, or earthwork begins. A large contractor or developer could keep a stockpile of materials that are available to be used on several projects.
- If storage space at the project site is at a premium, the contractor could maintain the materials at a location less than one hour from the project site.

### 1.18.3 Design and Installation Specifications

Depending on project type, size, complexity, and length, materials and quantities will vary. Table 3 - 10: Materials on Hand, provides a good minimum that will cover numerous situations.

**Table 3 - 10: Materials on Hand**

| Material                         | Measure         | Quantity |
|----------------------------------|-----------------|----------|
| Clear Plastic, 6 mil             | 100 foot roll   | 1-2      |
| Drain Pipe, 6 or 8 inch diameter | 25 foot section | 4-6      |
| Sandbags, filled                 | each            | 25-50    |
| Quarry Spalls                    | ton             | 2-4      |
| Washed Gravel                    | cubic yard      | 2-4      |
| Geotextile Fabric                | 100 foot roll   | 1-2      |
| Catch Basin Inserts              | each            | 2-4      |
| Steel “T” Posts                  | each            | 12-24    |

### 1.18.4 Maintenance Standards

- All materials with the exception of the quarry spalls, steel “T” posts, and gravel should be kept covered and out of both sun and rain.
- Re-stock materials used as needed.



## **1.19 BMP C151: Concrete Handling**

### **1.19.1 Purpose**

Concrete work can generate process water and slurry that contain fine particles and high pH, both of which can violate water quality standards in the receiving water. Concrete spillage or concrete discharge to waters of the State is prohibited. Use this BMP to minimize and eliminate concrete, concrete process water, and concrete slurry from entering waters of the State.

### **1.19.2 Conditions of Use**

Utilize these management practices any time concrete is used.

Concrete construction projects include, but are not limited to, the following:

- Curbs
- Sidewalks
- Roads
- Bridges
- Foundations
- Floors
- Runways

Disposal options for concrete, in order of preference are:

1. Offsite disposal
2. Concrete washout areas
3. De minimus washout to formed areas awaiting concrete

### **1.19.3 Design and Installation Specifications**

- Wash concrete truck drums at an approved offsite location or in designated concrete washout areas only.
  - Return unused concrete remaining in the truck and pump to the originating batch plant for recycling. Do not dump excess concrete onsite, except in designated concrete washout areas as allowed in BMP C154: Concrete Washout Area.
- Do not wash out concrete trucks onto the ground (including formed areas awaiting concrete), or into the stormwater conveyance system, open ditches, streets, or streams.
- Wash small concrete handling equipment (e.g. hand tools, screeds, shovels, rakes, floats, trowels, and wheelbarrows) into designated concrete washout areas or into formed areas awaiting concrete pour.
- At no time shall concrete be washed off into the footprint of an area where an infiltration feature will be installed.
- Wash equipment difficult to move, such as concrete paving machines, in areas that do not directly drain to natural or constructed stormwater conveyance or potential infiltration areas.

- Do not allow washwater from areas, such as concrete aggregate driveways, to discharge directly (without detention or treatment) to natural or constructed stormwater conveyances.
- Contain washwater and leftover product in a lined container when no designated concrete washout areas (or formed areas, allowed as described above) are available. Dispose of contained concrete and concrete washwater (process water) properly. Always use forms or solid barriers for concrete pours within 15-feet of surface waters.
- Refer to BMP C252: Treating and Disposing of High pH Water and BMP C253: Portable Sediment Tank for pH adjustment requirements.
- Refer to the Construction Stormwater General Permit for pH monitoring requirements if the project involves one of the following activities:
  - Significant concrete work (as defined in the Construction Stormwater General Permit).
  - The use of engineered soils amended with (but not limited to) Portland cement-treated base, cement kiln dust or fly ash.
  - Discharging stormwater to segments of water bodies on the 303(d) list (Category 5) for high pH.

#### **1.19.4 Maintenance Standards**

Containers shall be checked for holes in the liner daily during concrete pours and repaired the same day.

## **1.20 BMP C152: Sawcutting and Surfacing Pollution Prevention**

### **1.20.1 Purpose**

Sawcutting and surfacing operations generate slurry and process water that contains fine particles and high pH (concrete cutting), both of which can violate water quality standards in the receiving water. This BMP is intended to minimize and eliminate process water and slurry from entering waters of the State

### **1.20.2 Conditions of Use**

Anytime sawcutting or surfacing operations take place, use these management practices. Sawcutting and surfacing operations include, but are not limited to, the following:

- Sawing
- Coring
- Grinding
- Roughening
- Hydro-demolition
- Bridge and road surfacing

### **1.20.3 Design and Installation Specifications**

- Vacuum slurry and cuttings during cutting and surfacing operations.
- Do not leave slurry and cuttings on permanent concrete or asphalt pavement overnight.
- Do not allow slurry and cuttings to enter any natural or constructed conveyance system.
- Dispose of collected slurry and cuttings in a manner that does not violate groundwater or surface water quality standards.
- Do not allow process water that is generated during hydro-demolition, surface roughening, or similar operations to enter any natural or constructed conveyance system. Dispose of process water in a manner that does not violate groundwater or surface water quality standards.
- Handle and dispose of cleaning waste material and demolition debris in a manner that does not cause contamination of water. If the area is swept with a pick-up sweeper, haul the material out of the area to an appropriate disposal site.

### **1.20.4 Maintenance Standards**

Continually monitor operations to determine whether slurry, cuttings, or process water could enter waters of the state. If inspections show that a violation of water quality standards could occur, stop operations and immediately implement preventive measures such as berms, barriers, secondary containment, and vacuum trucks.

## **1.21 BMP C153: Material Delivery, Storage and Containment**

### **1.21.1 Purpose**

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in a designated area, and installing secondary containment.

### **1.21.2 Conditions of Use**

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Petroleum products such as fuel, oil, and grease
- Soil stabilizers and binders (e.g. Polyacrylamide)
- Fertilizers, pesticides, and herbicides
- Detergents
- Asphalt and concrete compounds
- Hazardous chemicals such as acids, lime, adhesives, paints, solvents, and curing compounds
- Any other material that may be detrimental if released to the environment

### **1.21.3 Design and Installation Specifications**

The following steps should be taken to minimize risk:

- Locate temporary storage area away from vehicular traffic, near the construction entrance(s), and away from conveyance systems and receiving waterbodies.
- Supply Material Safety Data Sheets (MSDS) for all materials stored. Keep chemicals in their original labeled containers.
- Surrounding materials with earth berms is an option for temporary secondary containment.
- Minimize hazardous material storage onsite.
- Handle hazardous materials as infrequently as possible.
- During the wet weather season (October 1 through April 30), consider storing materials in a covered area.
- Store materials in secondary containment, such as an earthen dike, a horse trough, or a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. "Bus boy" trays or concrete mixing trays may be used as secondary containment for small amounts of material.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, in secondary containment.
- If drums cannot be stored under a roof, domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.

#### **1.21.4 Material Storage Areas and Secondary Containment Practices:**

- Store liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 in approved containers and drums and do not overfill the containers or drums. Store containers and drums in temporary secondary containment facilities.
- Temporary secondary containment facilities shall provide for a spill containment volume able to contain precipitation from a 25 year, 24 hour storm event plus 10% of the total enclosed container volume of all containers, or 110% of the capacity of the largest container within its boundary, whichever is greater.
- Secondary containment facilities shall be impervious to the materials stored therein for a minimum contact time of 72 hours.
- Secondary containment facilities shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks, collect accumulated rainwater and spills and place into drums. Handle these liquids as hazardous waste unless testing determines them to be non-hazardous. Dispose of all wastes properly.
- Provide sufficient separation between stored containers to allow for spill cleanup and emergency response access.
- During the wet weather season (October 1 through April 30), cover each secondary containment facility during non-working days, prior to and during rain events.
- Keep material storage areas clean, organized, and equipped with an ample supply of appropriate spill clean-up material.
- The spill kit should include, at a minimum:
  - 1 water resistant nylon bag
  - 3 oil absorbent socks (3-inches by 4-feet)
  - 2 oil absorbent socks (3-inches by 10-feet)
  - 12 oil absorbent pads (17-inches by 19-inches)
  - 1 pair splash resistant goggles
  - 3 pairs nitrile gloves
  - 10 disposable bags with ties
- Instructions

#### **1.21.5 Maintenance Standards**

Any stormwater within the material storage area shall be pumped or otherwise discharged after each rain event. Before pumping, the stormwater must be evaluated to determine if it must go to treatment or can be discharged without treatment. If stormwater is contaminated, direct the discharge to appropriate treatment.

Restock spill kit materials as needed.

## **1.23 BMP C160: Erosion and Sediment Control Lead**

### **1.23.1 Purpose**

The project proponent must designate at least one person as the responsible representative in charge of erosion and sediment control (ESC) and water quality protection. The designated person shall be the erosion and sediment control (ESC) lead, who is responsible for ensuring compliance with all local, state, and federal erosion and sediment control and water quality requirements.

### **1.23.2 Conditions of Use**

- An erosion and sediment control contact is required for all project sites.
- A certified erosion and sediment control lead (CESCL) or certified professional in erosion and sediment control (CPESC) is required on projects that include, but are not limited to:
  - Construction activity that disturbs one acre of land or more.
- Projects disturbing less than one acre must have an Erosion Sediment Control Lead (ESC) conduct inspections. The ESC Lead does not have to have CESCL or CPESC certification.
- The CESCL, CPESC, or ESC Lead shall be identified in the SWPPP and shall be onsite or on-call at all times.
- The CESCL, CPESC, or ESC Lead must be knowledgeable in the principles and practices of erosion and sediment control and have the skills to assess:
  - Site conditions and construction activities that could impact the quality of stormwater.
  - Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

### **1.23.3 Specifications**

- The CESCL lead shall:
  - Have a current certified erosion and sediment control lead (CESCL) certificate proving attendance in an erosion and sediment control training course that meets the minimum ESC training and certification requirements established by Ecology.
- For additional information concerning the Certified Professional in Erosion and Sediment Control program please go to <https://envirocertintl.org/cpesc/>.
- The ESC lead shall have authority to act on behalf of the contractor or developer and shall be available, on call, 24 hours per day throughout the period of construction.
- The Construction SWPPP shall include the name, telephone number, email, and address of the designated ESC lead.
- An ESC lead may provide inspection and compliance services for multiple construction projects in the same geographic region.
- Duties and responsibilities of the ESC lead shall include, but are not limited to, the following:
  - Inspecting all areas disturbed by construction activities, all BMPs and all locations where runoff leaves the site at least once every calendar week and within 24 hours of

- any discharge from the site. The ESC lead may reduce the inspection frequency for temporary stabilized, inactive sites to monthly.
- Examining stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen.
  - Evaluating the effectiveness of BMPs.
  - Maintaining a permit file onsite at all times which includes the SWPPP and any associated permits and plans.
  - Directing BMP installation, inspection, maintenance, modification, and removal.
  - Updating all project drawings and the Construction SWPPP with changes made.
  - Keeping daily logs and inspection reports. Inspection reports should include:
    - Inspection date/time.
    - Weather information, general conditions during inspection, and approximate amount of precipitation since the last inspection.
    - A summary or list of all BMPs implemented, including observations of all erosion/sediment control structures or practices. The following shall be noted:
      - Locations of BMPs inspected,
      - Locations of BMPs that need maintenance,
      - Locations of BMPs that failed to operate as designed or intended, and
      - Locations where additional or different BMPs are required.
    - Visual monitoring results, including a description of discharged stormwater. The presence of suspended sediment, turbid water, discoloration, and oil sheen shall be noted, as applicable.
    - Any water quality monitoring performed during inspection.
    - General comments and notes, including a brief description of any BMP repairs, maintenance, or installations made as a result of the inspection.
  - Facilitate, participate in, and take corrective actions resulting from inspections performed by outside agencies or the owner.
  - Keep an inventory of equipment onsite.

## **1.24 BMP C162: Scheduling**

### **1.24.1 Purpose**

Sequencing a construction project reduces the amount and duration of soil exposed to erosion.

### **1.24.2 Conditions of Use**

The construction sequence schedule is an orderly listing of all major land-disturbing activities together with the necessary erosion and sediment control measures planned for the project. This type of schedule guides the contractor on work to be done before other work is started so serious erosion and sedimentation problems can be avoided.

Following a specified work schedule that coordinates the timing of land-disturbing activities and the installation of control measures is perhaps the most cost-effective way of controlling erosion during construction. The removal of surface ground cover leaves a site vulnerable to accelerated erosion. Construction procedures that limit land clearing, provide timely installation of erosion and sedimentation controls, and restore protective cover quickly can significantly reduce the erosion potential of a site.

### **1.24.3 Design Considerations**

- Minimize construction during rainy periods.
- Schedule projects to disturb only small portions of the site at any one time. Complete grading as soon as possible. Immediately stabilize the disturbed portion before grading the next portion. Practice staged seeding in order to revegetate cut and fill slopes as the work progresses.



## **1.32 BMP C207: Check Dams**

### **1.32.1 Purpose**

Construction of small dams across a swale or ditch reduces the velocity of concentrated flow and dissipates energy at the check dam.

### **1.32.2 Conditions of Use**

- Use check dams where temporary channels or permanent channels are not yet vegetated, channel lining is infeasible, and velocity checks are required.
- Do not place check dams in streams unless approved by the State Department of Fish and Wildlife. Do not place check dams in wetlands without approval from the City of Tacoma Planning and Development Services and other appropriate state agencies.
- Do not place check dams below the expected backwater from any salmonid bearing water between September 15 and June 15 to ensure that there is no loss of high flow refuge habitat for overwintering juvenile salmonids and emergent salmonid fry.

### **1.32.3 Design and Installation Specifications**

- Construct rock check dams from appropriately sized rock; rock or pea-gravel filled bags; or other products intended for this purpose. The rock used must be large enough to stay in place given the expected design flow through the channel. The rock must be placed by hand or by mechanical means (no dumping of rock to form dam) to achieve complete coverage of the ditch or swale and to ensure that the center of the dam is lower than the edges.
- Before installing check dams bypass upstream flow away from the work area.
- Whatever material is used, the dam should form a triangle when viewed from the side. This prevents undercutting as water flows over the face of the dam rather than falling directly onto the ditch bottom.
- Check dams in association with sumps work more effectively at slowing flow and retaining sediment than just a check dam alone. A deep sump should be provided immediately upstream of the check dam.
- In some cases, if carefully located and designed, check dams can remain as permanent installations with very minor regrading. They may be left as either spillways, in which case accumulated sediment would be graded and seeded, or as check dams to prevent further sediment from leaving the site.
- Check dams can be constructed of either rock or pea-gravel filled bags. Numerous new products are also available for this purpose. They tend to be re-usable, quick and easy to install, effective, and cost efficient.
- Check dams should be placed perpendicular to the flow of water.
- The maximum spacing between the dams shall be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.
- Keep a maximum height of 2 feet at the center of the dam.
- Keep the center of the check dam at least 12 inches lower than the outer edges at natural ground elevation.
- Keep the side slopes of the check dam at 2H:1V or flatter.

- Key the stone into the ditch banks and extend it beyond the abutments a minimum of 18 inches to avoid washouts from overflow around the dam.
- Use filter fabric foundation under a rock or sand bag check dam. If a blanket ditch liner is used, this is not necessary. A piece of organic or synthetic blanket cut to fit will also work for this purpose.
- In the case of grass-lined ditches and swales, remove all check dams and accumulated sediment when the grass has matured sufficiently to protect the ditch or swale - unless the slope of the swale is greater than 4 percent. Seed and mulch the area beneath the check dams immediately after dam removal.
- Ensure that channel appurtenances, such as culvert entrances below check dams, are not subject to damage or blockage from displaced stones. Figure 3 - 15: Check Dams, depicts a typical rock check dam.

#### **1.32.4 Maintenance Standards**

- Monitor check dams for performance and sediment accumulation during and after each runoff producing rainfall. Remove sediment when it reaches one half the sump depth.
- Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam.
- If significant erosion occurs between dams, install a protective riprap liner in that portion of the channel.

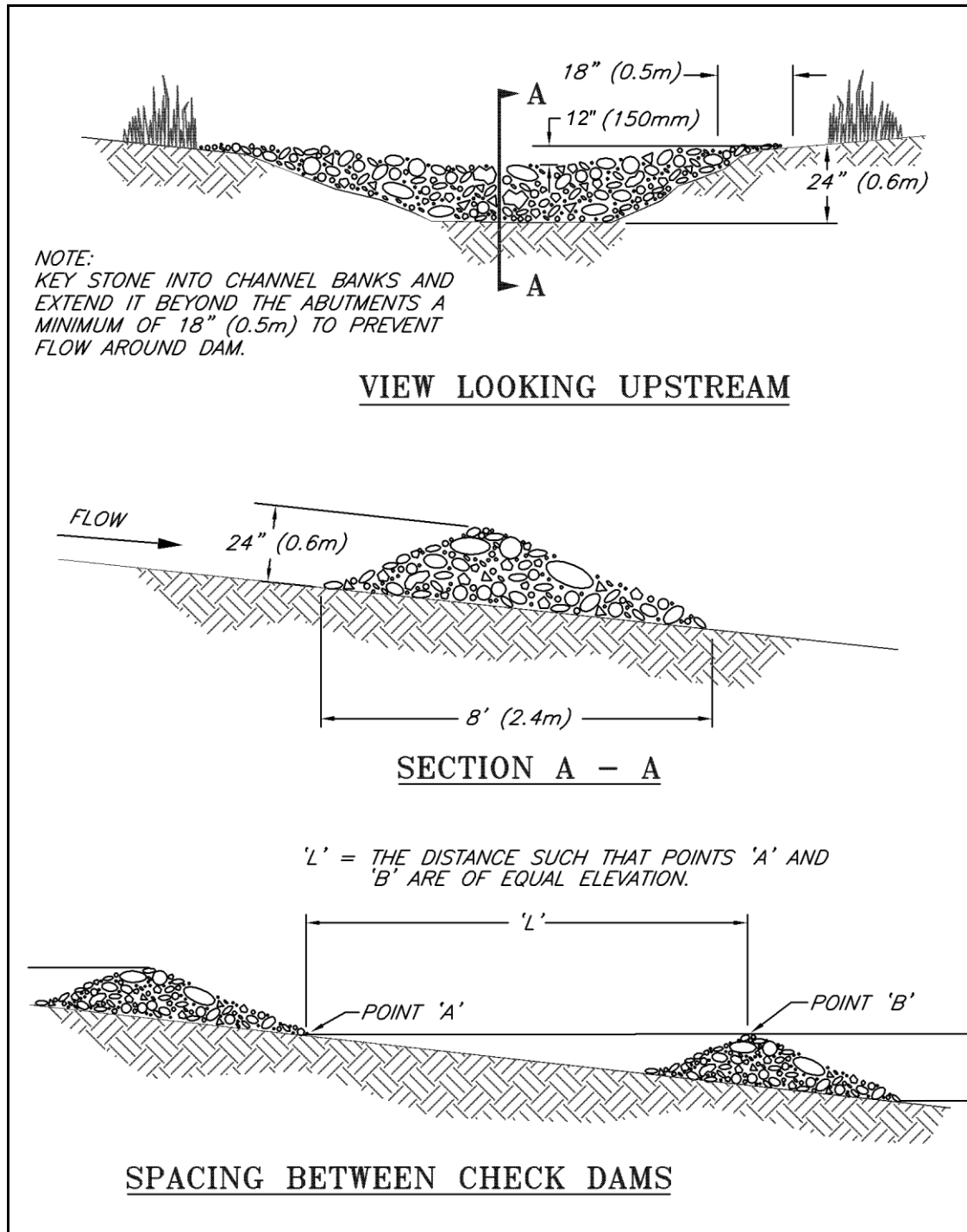


Figure 3 - 15: Check Dams

## 1.35 BMP C220: Stormwater System Inlet Protection

### 1.35.1 Purpose

To prevent coarse sediment from entering stormwater systems prior to permanent stabilization of the disturbed area.

### 1.35.2 Conditions of Use

- Use where inlets are to be made operational before permanent stabilization of the disturbed area.
- Provide protection for all stormwater system inlets downslope and within 500 feet of a disturbed or construction area, unless those inlets are preceded by another sediment trapping device.
- Table 3 - 11: Stormwater System Inlet Protection lists several options for inlet protection. All of the methods for stormwater system inlet protection are prone to plugging and require a high frequency of maintenance. Contributing areas should be limited to 1 acre or less. Emergency overflows may be required where stormwater ponding would cause a hazard. If an emergency overflow is provided, additional end-of-pipe treatment may be required.

**Table 3 - 11: Stormwater System Inlet Protection**

| Type of Inlet Protection                 | Emergency Overflow                 | Applicable for Paved/ Earthen Surfaces | Conditions of Use                                                                         |
|------------------------------------------|------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------|
| Excavated drop inlet protection          | Yes, temporary flooding will occur | Earthen                                | Applicable for heavy flows. Easy to maintain. Large area requirement: 30' x 30' per acre. |
| Block and gravel drop filter             | Yes                                | Paved or earthen                       | Applicable for heavy concentrated flows. Will not pond.                                   |
| Gravel and mesh filter                   | No                                 | Paved                                  | Applicable for heavy concentrated flows. Will pond. Can withstand traffic.                |
| Catch basin filters                      | Yes                                | Paved or earthen                       | Frequent maintenance required.                                                            |
| Curb inlet protection with a wooden weir | Small capacity overflow            | Paved                                  | Used for sturdy, more compact installation.                                               |
| Block and gravel curb inlet protection   | Yes                                | Earthen                                | Sturdy, but limited filtration.                                                           |
| Culvert inlet sediment trap              |                                    |                                        | 18-month expected life.                                                                   |

### 1.35.3 Design and Installation Specifications

#### *Excavated Drop Inlet Protection*

- An excavated impoundment around the inlet. Sediment settles out of the stormwater prior to entering the stormwater conveyance system..

- Provide depth of 1 to 2 feet, as measured from the crest of the inlet structure.
- Slope sides of excavation no steeper than 2H:1V.
- Minimum volume of excavation 35 cubic yards.
- Shape excavation to fit site with longest dimension oriented toward the longest inflow area.
- Install provisions for collection and conveyance to prevent standing water problems.
- Clear the area of all debris.
- Grade the approach to the inlet uniformly.
- Drill weep holes into the side of the inlet.
- Protect weep holes with screen wire and washed aggregate.
- Seal weep holes when removing structure and stabilizing area.
- It may be necessary to build a temporary dike to the down slope side of the structure to prevent bypass flow.

### ***Block and Gravel Filter***

- A block and gravel filter is a barrier formed around the stormwater system inlet with standard concrete blocks and gravel. See Figure 3 - 17: Drop Inlet with Block and Gravel Filter.
- Provide a height 1 to 2 feet above inlet.
- Recess the first row 2 inches into the ground for stability.
- Support subsequent courses by placing a piece of 2x4 lumber through the block opening.
- Do not use mortar.
- Lay some blocks in the bottom row on their side for dewatering the pool.
- Place hardware cloth or comparable wire mesh with ½-inch openings over all block openings.
- Place gravel just below the top of blocks on slopes of 2H:1V or flatter.
- An alternative design is a gravel berm surrounding the inlet with the following characteristics:
  - Provide an inlet slope of 3H:1V.
  - Provide an outlet slope of 2H:1V.
  - Provide a 1-foot wide level stone area between the structure and the inlet.
  - Use inlet slope stones 3 inches in diameter or larger.
  - For outlet slope use gravel ½- to ¾-inch at a minimum thickness of 1-foot.

### ***Gravel and Wire Mesh Filter***

- A gravel and wire mesh filter is a gravel barrier placed over the top of the inlet (see ). This structure does not provide an overflow.
- Use a hardware cloth or comparable wire mesh with 1/2-inch openings.

- Place wire mesh over the drop inlet so that the wire extends a minimum of 1-foot beyond each side of the inlet structure.
- Overlap the strips if more than one strip of mesh is necessary.
- Place coarse aggregate over the wire mesh.
  - Provide at least a 12-inch depth of aggregate over the entire inlet opening and extend at least 18-inches on all sides.

***Catch Basin Filters***

- Inserts (Figure 3 - 19: Catch Basin Filter) shall be designed by the manufacturer for use at construction sites. The limited sediment storage capacity increases the frequency of inspection and maintenance required, which may be daily for heavy sediment loads. The maintenance requirements can be reduced by combining a catch basin filter with another type of inlet protection. This type of inlet protection provides flow bypass without overflow and therefore may be a better method for inlets located along active rights-of-way.
- Provide a minimum of 5 cubic feet of storage.
- Requires dewatering provisions.
- Provide a high-flow bypass that will not clog under normal use at a construction site.
- The catch basin filter is inserted in the catch basin just below the grating.

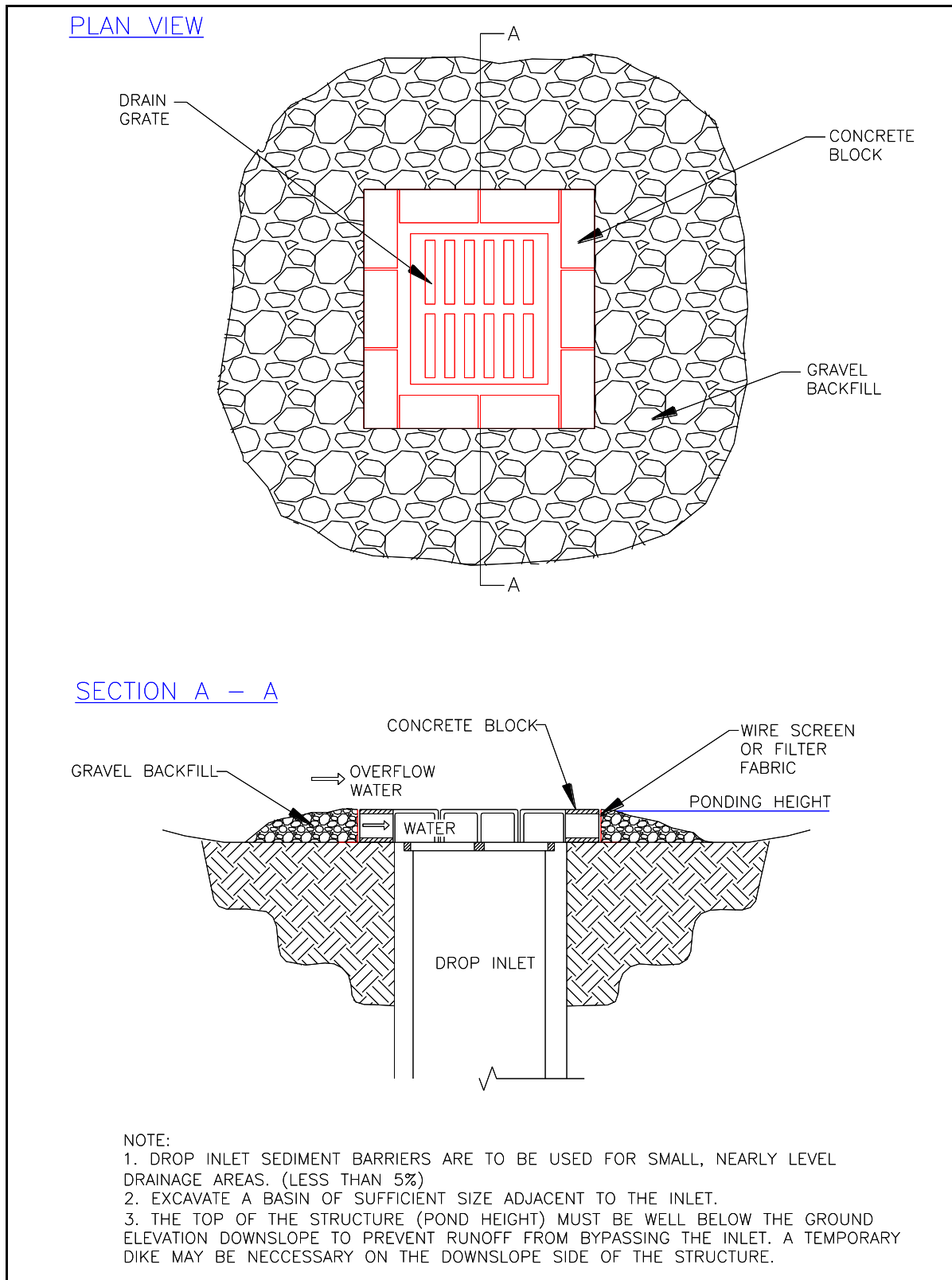


**Figure 3 - 17: Drop Inlet with Block and Gravel Filter**

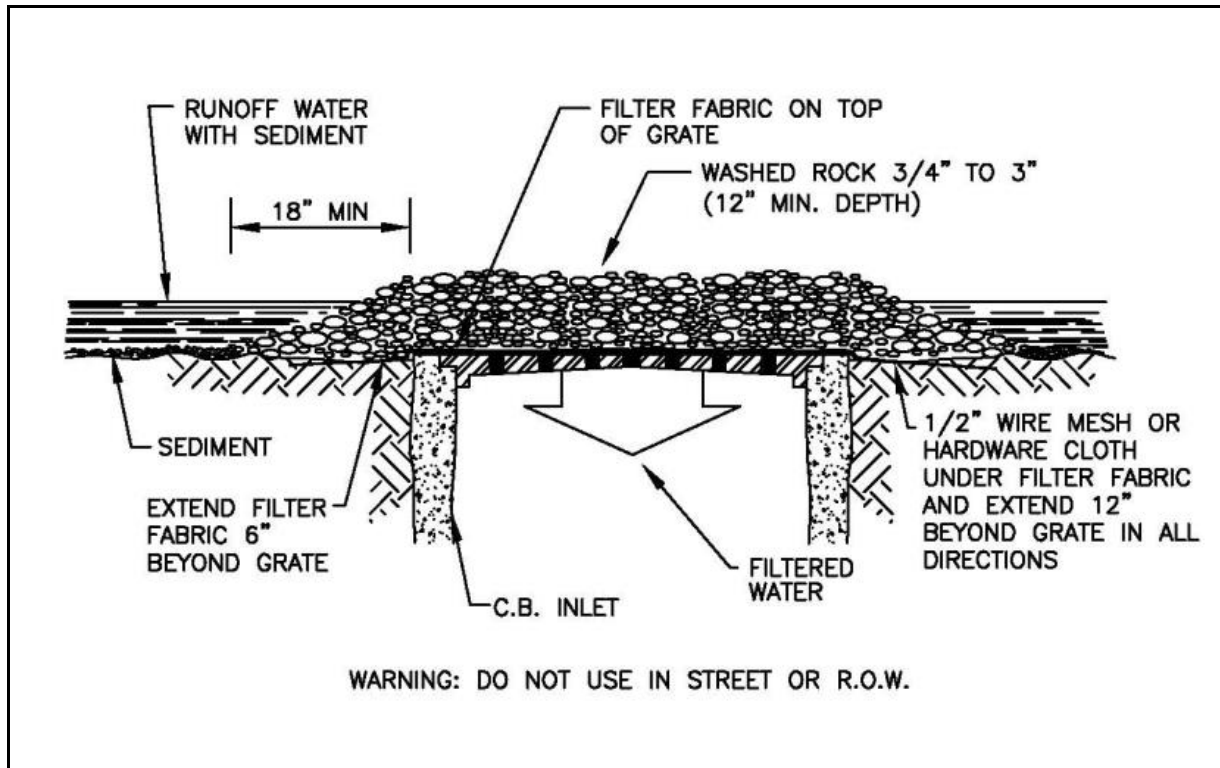


**Figure 3 - 18: Gravel and Wire Mesh Filter**



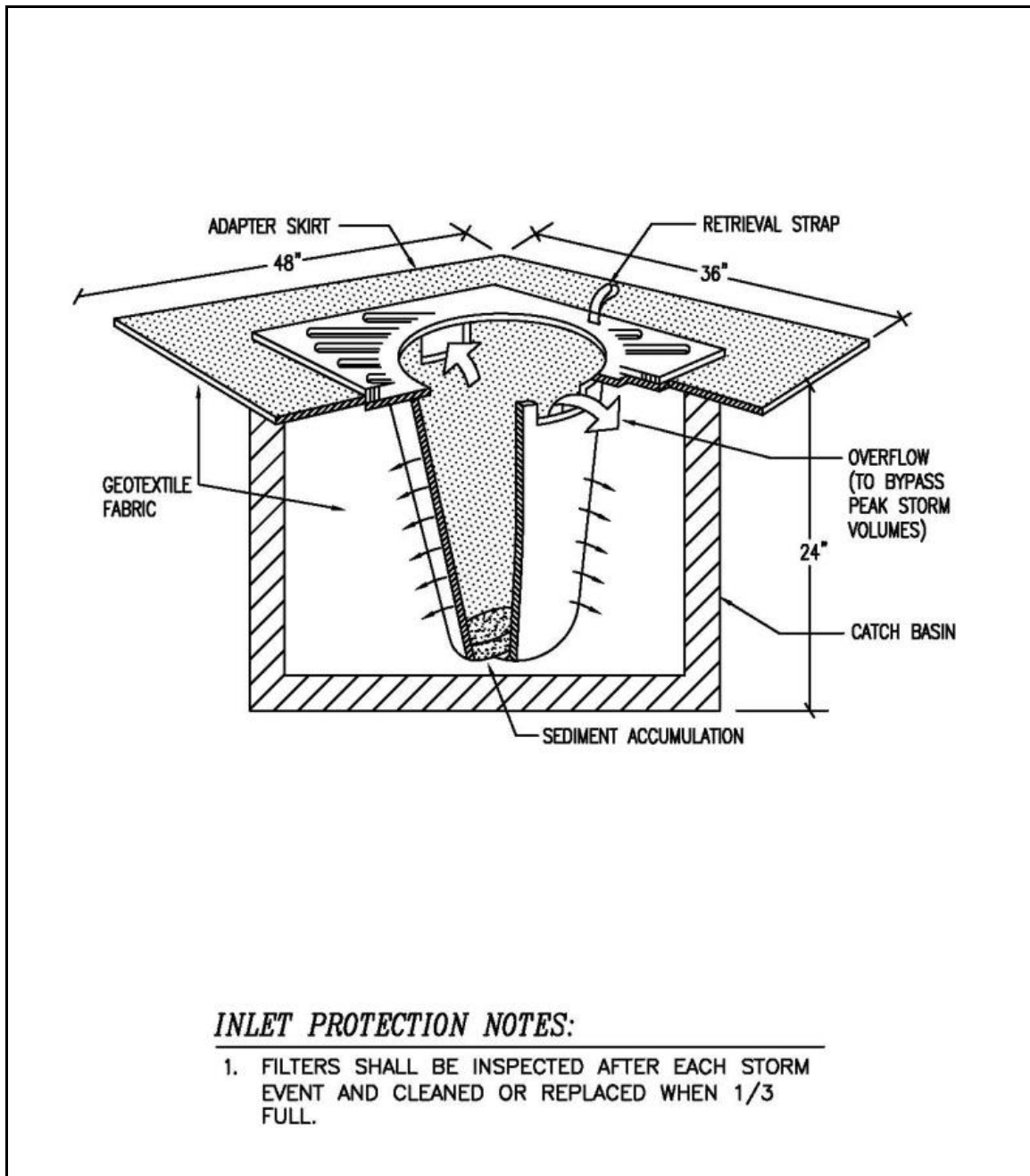


**Figure 3 - 19: Catch Basin Filter**

***Curb Inlet Protection with Wooden Weir***

Barrier formed around a curb inlet with a wooden frame and gravel.

- Use wire mesh with ½-inch openings.
- Use extra strength filter cloth.
- Construct a frame.
- Attach the wire and filter fabric to the frame.
- Pile coarse washed aggregate against the wire and fabric.
- Place weight on frame anchors.

***Block and Gravel Curb Inlet Protection***

Barrier formed around an inlet with concrete blocks and gravel. See Figure 3 - 20: Block and Gravel Curb Inlet Protection.

- Use wire mesh with ½-inch openings.
- Place two concrete blocks on their sides abutting the curb at either side of the inlet opening. These are spacer blocks.
- Place a 2x4 stud through the outer holes of each spacer block to align the front blocks.
- Place blocks on their sides across the front of the inlet and abutting the spacer blocks.
- Place wire mesh over the outside vertical face.
- Pile coarse aggregate against the wire to the top of the barrier.

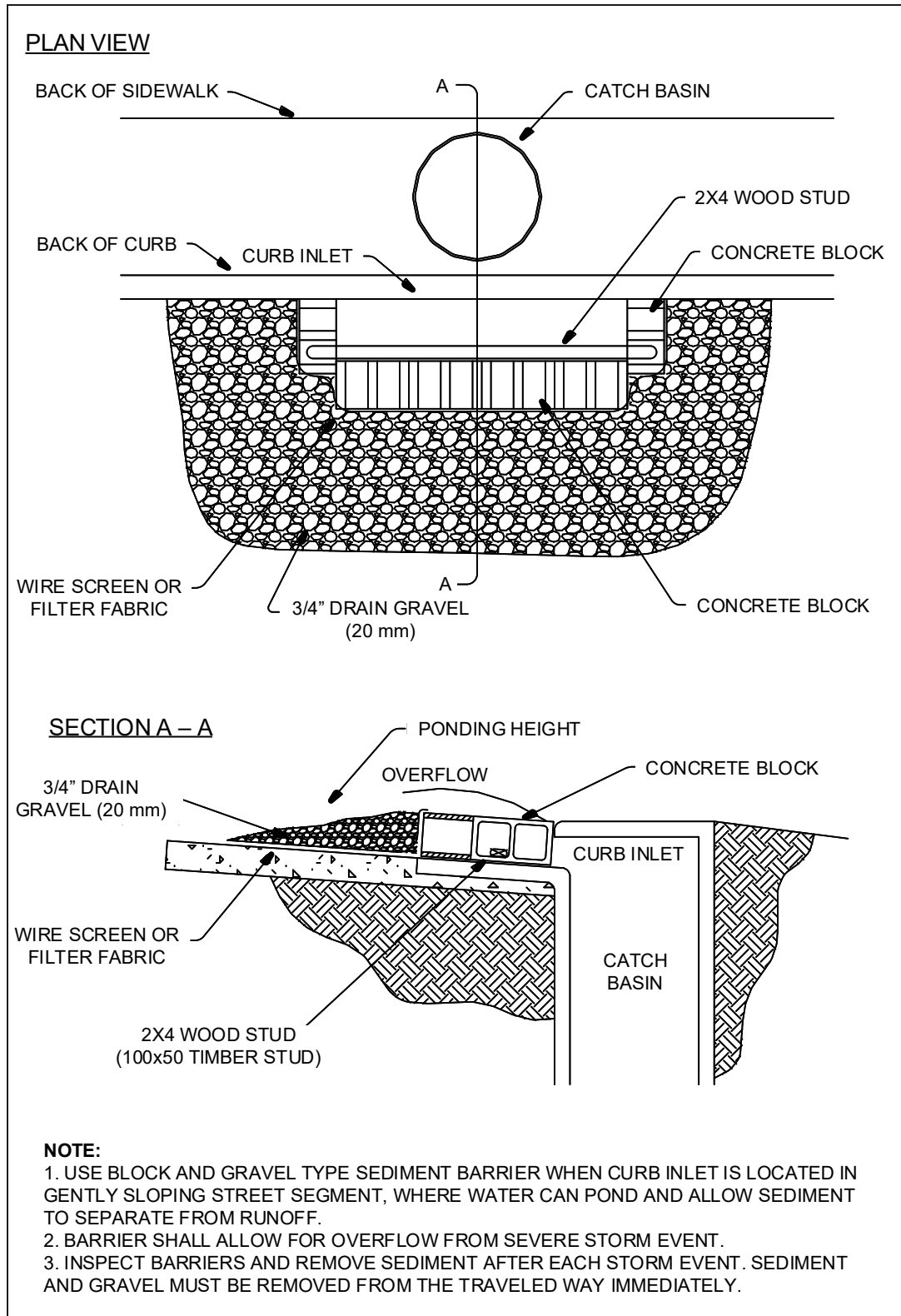


**Figure 3 - 20: Block and Gravel Curb Inlet Protection**

***Curb and Gutter Sediment Barrier***

Sandbag or rock berm (riprap and aggregate) 3 feet high and 3 feet wide in a horseshoe shape. See Figure 3 - 21: Curb and Gutter Sediment Barrier.

- Construct a horseshoe shaped berm, faced with coarse aggregate if using riprap, 3 feet high and 3 feet wide, at least 2 feet from the inlet.
- Construct a horseshoe shaped sedimentation trap on the outside of the berm sized to sediment trap standards for protecting a culvert inlet.

**1.35.4 Maintenance Standards**

- Inspect inlet protection frequently, especially after storm events. If the insert becomes clogged, clean or replace it.
- For systems using stone filters: If the stone filter becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of gravel at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill and put fresh stone around the inlet.
- Do not wash sediment into the stormwater system while cleaning. Spread all excavated material evenly over the surrounding land area or stockpile and stabilize as appropriate.
- Do not allow accumulated sediment to enter the stormwater system.
- Inlet protection shall be removed when area is fully stabilized and erosion and sediment controls are no longer needed.

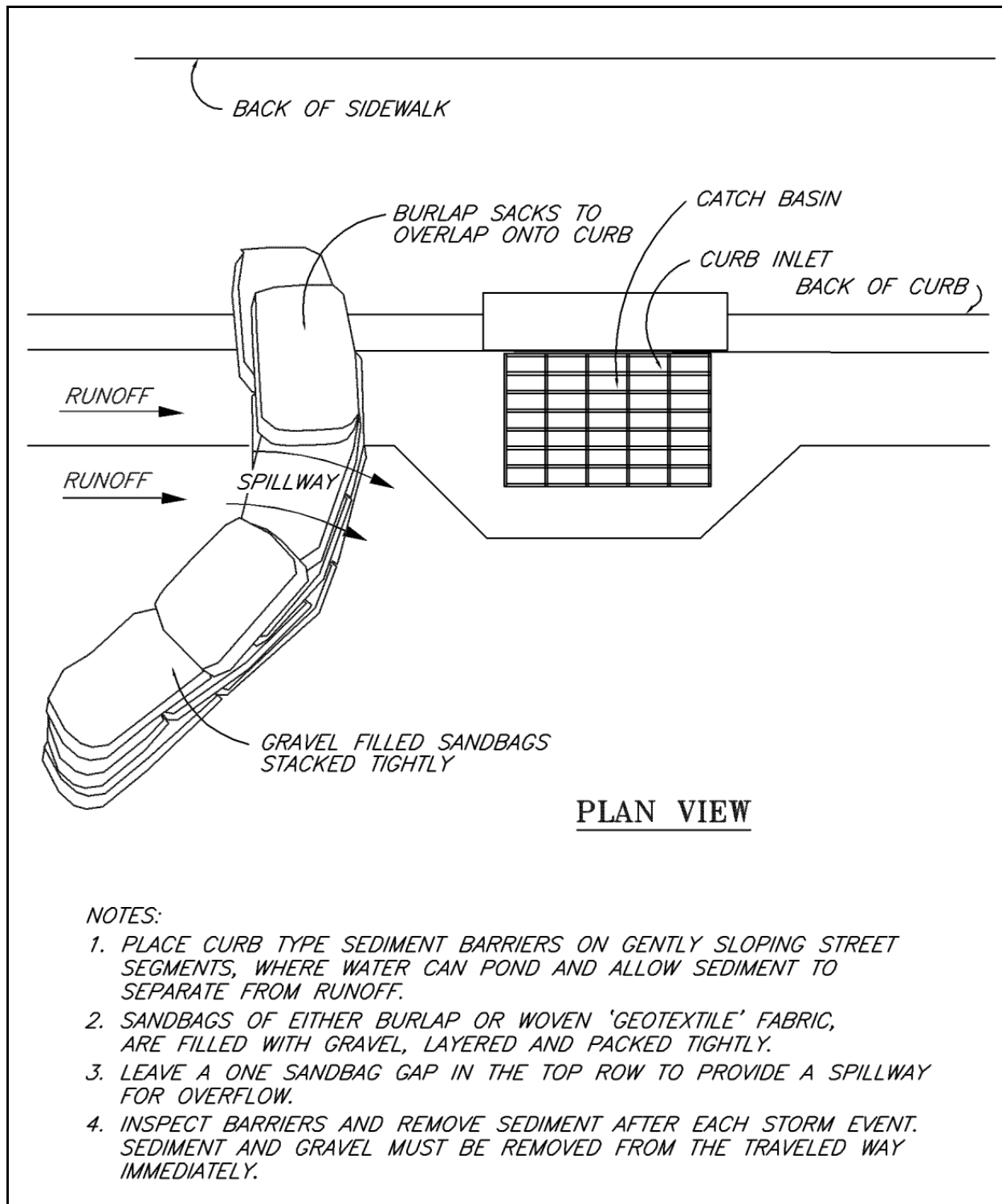


**Figure 3 - 21: Curb and Gutter Sediment Barrier**

## 1.38 BMP C233: Silt Fence

### 1.38.1 Purpose

Silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow.

### 1.38.2 Conditions of Use

- Silt fence may be used downslope of all disturbed areas.
- Silt fence shall prevent sediment carried by runoff from going beneath, through, or over the top of the silt fence, but shall allow the water to pass through the fence.
- Silt fence is not intended to treat concentrated flows, nor is it intended to treat substantial amounts of overland flow. Convey concentrated flows to a sediment trapping BMP.
- Do not construct silt fences in streams or use them in V-shaped ditches. Silt fences do not provide an adequate method of silt control for anything deeper than sheet or overland flow.

### 1.38.3 Design and Installation Specifications

- Use in combination with other construction stormwater BMPs.
- Maximum slope steepness (perpendicular to the silt fence line) 1H:1V.
- Maximum sheet or overland flow path length to the silt fence of 100 feet.
- Do not allow flows greater than 0.5 cfs.
- Use geotextile fabric that meets the following standards or WSDOT Standard Specification 9-33.2(1) Table 6 - Geotextile for Temporary Silt Fence. All geotextile properties listed below are minimum average roll values (i.e., the test result for any sampled roll in a lot shall meet or exceed the values shown in Table 3 - 12: Geotextile Fabric Standards for Silt Fence):

**Table 3 - 12: Geotextile Fabric Standards for Silt Fence**

| Standard                            | Description                                                                                                                                                      |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Polymeric Mesh AOS (ASTM D4751)     | 0.60 mm maximum for silt film wovens (#30 sieve). 0.30 mm maximum for all other geotextile types (#50 sieve). 0.15 mm minimum for all fabric types (#100 sieve). |
| Water Permittivity (ASTM D4491)     | 0.02 sec <sup>-1</sup> minimum                                                                                                                                   |
| Grab Tensile Strength (ASTM D4632)  | 180 lbs. minimum for extra strength fabric.<br>100 lbs. minimum for standard strength fabric.                                                                    |
| Grab Tensile Strength (ASTM D4632)  | 30% maximum                                                                                                                                                      |
| Ultraviolet Resistance (ASTM D4355) | 70% minimum                                                                                                                                                      |

- Support standard strength fabrics with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the geotextile. Silt fence materials are available that have synthetic mesh backing attached.
- Silt fence material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0° F to 120° F.

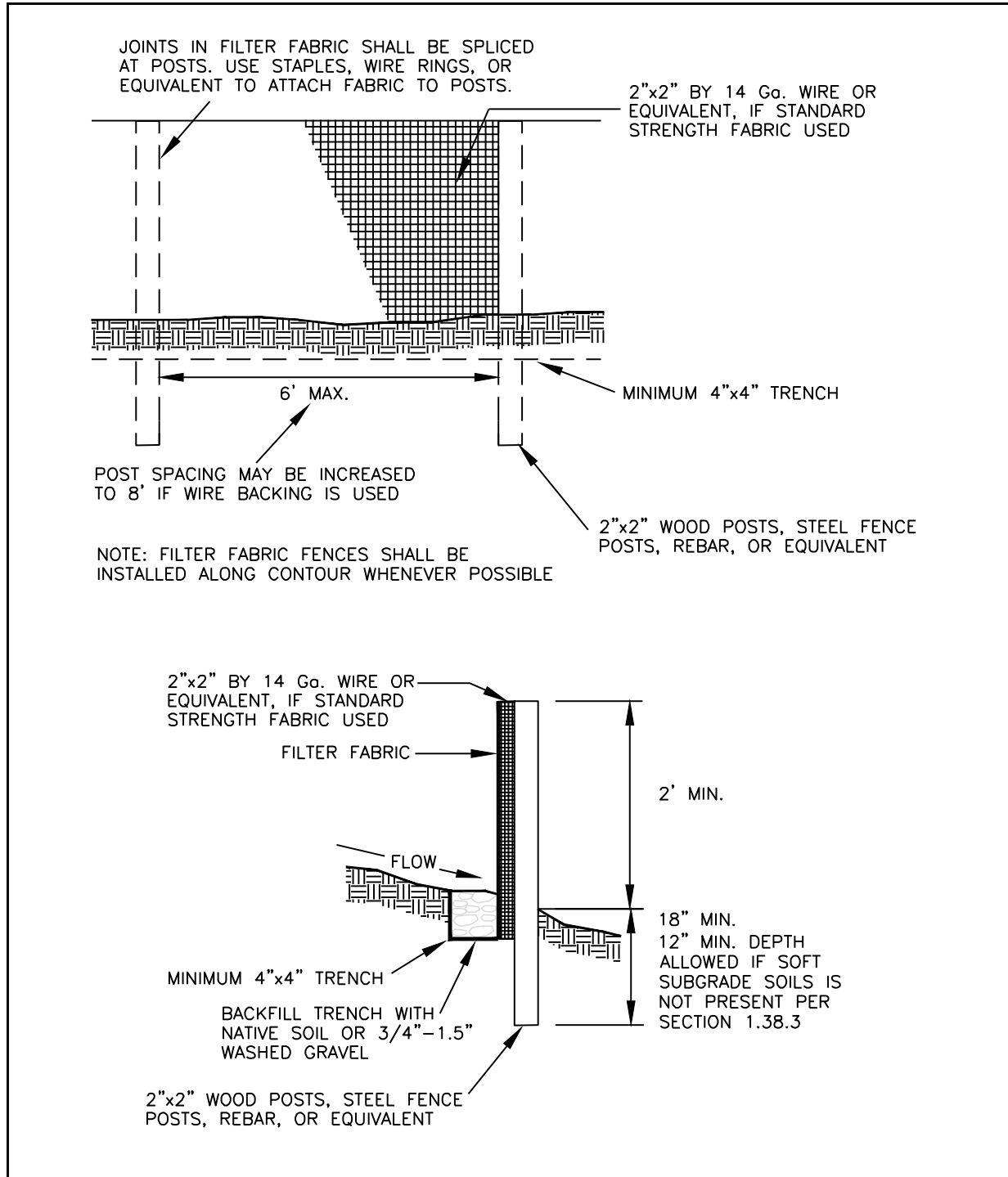
- 100 percent biodegradable silt fence is available that is strong, long lasting, and can be left in place after the project is completed, if permitted by the local jurisdiction.
- Refer to Figure 3 - 23: Silt Fence for standard silt fence details. Include the following Standard Notes for silt fence on construction plans and specifications:
  - The Contractor shall install and maintain temporary silt fences at the locations shown in the Plans.
  - Construct silt fences in areas of clearing, grading, or where runoff will drain prior to starting those activities.
  - The silt fence shall have a 2-feet min. and a 2½-feet max. height above the original ground surface.
  - The geotextile fabric shall be sewn together at the point of manufacture to form fabric lengths as required. Locate all sewn seams at support posts. Alternatively, two sections of silt fence can be overlapped, provided that the overlap is long enough and that the adjacent silt fence sections are close enough together to prevent silt laden water from escaping through the fence at the overlap.
  - Attach the geotextile fabric on the up-slope side of the posts and secure with staples, wire, or in accordance with the manufacturer's recommendations. Attach the geotextile fabric to the posts in a manner that reduces the potential for tearing.
  - Support the geotextile fabric with wire or plastic mesh, dependent on the properties of the geotextile selected for use. If wire or plastic mesh is used, fasten the mesh securely to the up-slope side of the posts with the geotextile fabric up-slope of the mesh.
  - Mesh support, if used, shall consist of steel wire with a maximum mesh spacing of 2-inches, or a prefabricated polymeric mesh. The strength of the wire or polymeric mesh shall be equivalent to or greater than 180 lbs. grab tensile strength. The polymeric mesh must be as resistant to the same level of ultraviolet radiation as the geotextile fabric it supports.
  - Bury the bottom of the geotextile fabric 4-inches min. below the ground surface. Backfill and tamp soil in place over the buried portion of the geotextile fabric, so that no flow can pass beneath the silt fence and scouring cannot occur. When wire or polymeric back-up support mesh is used, the wire or polymeric mesh shall extend into the ground 3-inches min.
  - Drive or place the silt fence posts into the ground 18-inches min. A 12-inch min. depth is allowed if topsoil or other soft subgrade soil is not present and 18-inches cannot be reached. Increase fence post min. depths by 6 inches if the fence is located on slopes of 3H:1V or steeper and the slope is perpendicular to the fence. If required post depths cannot be obtained, the posts shall be adequately secured by bracing or guying to prevent overturning of the fence due to sediment loading.
  - Use wood, steel or equivalent posts. The spacing of the support posts shall be a maximum of 6-feet. Posts shall consist of either:
    - Wood with minimum dimensions of 2 inches by 2 inches by 3 feet. Wood shall be free of defects such as knots, splits, or gouges.
    - No. 6 steel rebar or larger.

- ASTM A 120 steel pipe with a minimum diameter of 1-inch.
- U, T, L, or C shape steel posts with a minimum weight of 1.35 lbs./ft.
- Other steel posts having equivalent strength and bending resistance to the post sizes listed above.
- Locate the silt fences on contour as much as possible, except at the ends of the fence, where the fence shall be turned uphill such that the silt fence captures the runoff water and prevents water from flowing around the end of the fence.
- If the fence must cross contours, with the exception of the ends of the fence, place check dams perpendicular to the back of the fence to minimize concentrated flow and erosion. The slope of the fence line where contours must be crossed shall not be steeper than 3H:1V.
  - Check dams shall be approximately 1-foot deep at the back of the fence. Check dams shall be continued perpendicular to the fence at the same elevation until the top of the check dam intercepts the ground surface behind the fence.
  - Check dams shall consist of crushed surfacing base course, gravel backfill for walls, or shoulder ballast. Check dams shall be located every 10 feet along the fence where the fence must cross contours.
- Refer to Figure 3 - 24: Silt Fence Installation by Slicing for slicing method details. The following are specifications for silt fence installation using the slicing method:
  - The base of both end posts must be at least 2 to 4 inches above the top of the geotextile fabric on the middle posts for ditch checks to drain properly. Use a hand level or string level, if necessary, to mark base points before installation.
  - Install posts 3 to 4 feet apart in critical retention areas and a maximum of 6 feet apart in standard applications.
  - Install posts 24 inches deep on the downstream side of the silt fence, and as close as possible to the geotextile fabric, enabling posts to support the geotextile fabric from upstream water pressure.
  - Install posts with the nipples facing away from the geotextile fabric.
  - Attach the geotextile fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. Each tie should be positioned to hang on a post nipple when tightening to prevent sagging.
  - Wrap approximately 6 inches of geotextile fabric around the end posts and secure with 3 ties.
  - No more than 24 inches of a 36-inch geotextile fabric is allowed above ground level.
  - Compact the soil immediately next to the geotextile fabric with the front wheel of a tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips. Check and correct the silt fence installation for any deviation before compaction. Use a flat-bladed shovel to tuck the fabric deeper into the ground if necessary.



**1.38.4 Maintenance Standards**

- Repair any damage immediately.
- Intercept and convey all evident concentrated flows uphill of the silt fence to a sediment trapping BMP.
- Check the uphill side of the fence for signs of the fence clogging and acting as a barrier to flow and then causing channelization of flows parallel to the fence. If this occurs, replace the fence and remove the trapped sediment.
- Remove sediment deposits when the deposit reaches approximately one-third the height of the silt fence, or install a second silt fence.
- Replace geotextile fabric that has deteriorated due to ultraviolet breakdown.

**Figure 3 - 23: Silt Fence**

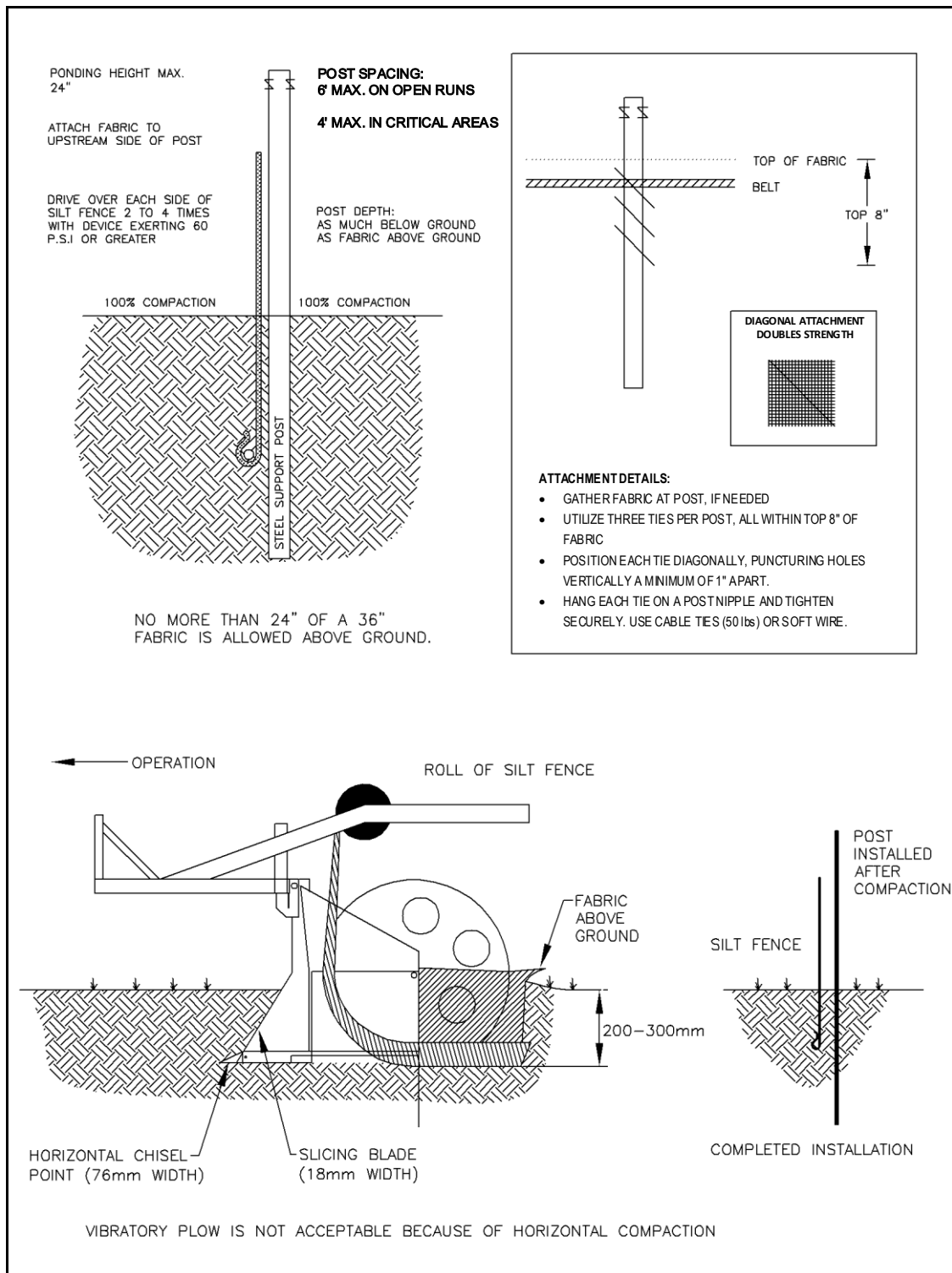


**Figure 3 - 24: Silt Fence Installation by Slicing**

## **1.40 BMP C235: Wattles**

### **1.40.1 Purpose**

Wattles are temporary erosion and sediment control barriers consisting of straw, compost or other material that is wrapped in netting made of natural plant fiber or similar encasing material. They reduce the velocity and can spread the flow of rill and sheet runoff, and can capture and retain sediment.

### **1.40.2 Conditions of Use**

- Wattles shall consist of cylinders of plant material such as weed-free straw, coir, wood chips, excelsior, or wood fiber or shavings encased within netting made of natural plant fibers unaltered by synthetic materials.
- Use wattles
  - In disturbed areas that require immediate erosion protection.
  - On exposed soils during the period of short construction delays, or over winter months.
  - On slopes requiring stabilization until permanent vegetation can be established.
- The material used dictates the effectiveness period of the wattle. Generally, wattles are effective for one to two seasons.
- Prevent rilling beneath wattles by entrenching and overlapping wattles to prevent water from passing between them.

### **1.40.3 Design Criteria**

- See Figure 3 - 25: Straw Wattles for typical construction details.
- Wattles are typically 8 to 10 inches in diameter and 25 to 30 feet in length.
- Install wattles perpendicular to the flow direction and parallel to the slope contour.
- Place wattles in shallow trenches, staked along the contour of disturbed or newly constructed slopes. Dig narrow trenches across the slope (on contour) to a depth of 3 to 5 inches on clay soils and soils with gradual slopes. On loose soils, steep slopes, and areas with high rainfall, dig the trenches to a depth of 5 to 7 inches, or 1/2 to 2/3 of the thickness of the wattle.
- Start building trenches and installing wattles from the base of the slope and work up. Spread excavated material evenly along the uphill slope and compact it using hand tamping or other methods.
- Construct trenches at contour intervals of 10-to 25- feet apart depending on the steepness of the slope, soil type, and rainfall. The steeper the slope the closer together the trenches .
- Install the wattles snugly into the trenches and overlap the ends of adjacent wattles 12 inches behind one another.
- Install stakes at each end of the wattle, and at 4-foot centers along entire length of wattle.
- If required, install pilot holes for the stakes using a straight bar to drive holes through the wattle and into the soil.

- Wooden stakes should be approximately 0.75 x 0.75 x 24 inches min. Live cuttings or 3/8-inch rebar can also be used for stakes.
- Stakes should be driven through the middle of the wattle, leaving 2 to 3 inches of the stake protruding above the wattle.

#### **1.40.4 Maintenance Standards**

- Wattles may require maintenance to ensure they are in contact with soil and thoroughly entrenched, especially after significant rainfall on steep sandy soils.
- Inspect the slope after significant storms and repair any areas where wattles are not tightly abutted or water has scoured beneath the wattles.

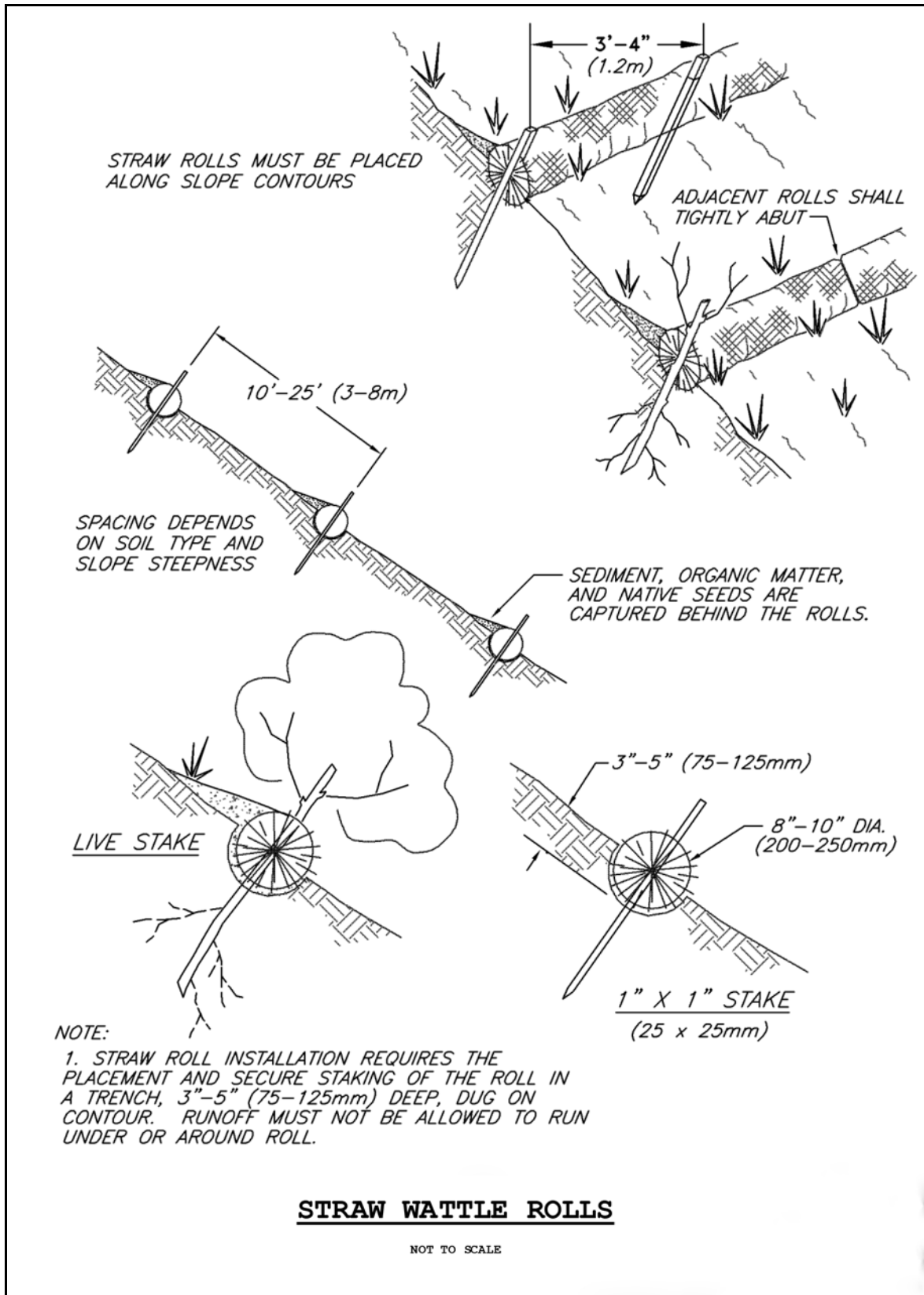


Figure 3 - 25: Straw Wattles

**APPENDIX B**

**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.

## 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)

- |                                        |                                            |                                             |
|----------------------------------------|--------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> New Structure | <input type="checkbox"/> Building Addition | <input type="checkbox"/> Grading/Excavation |
| <input type="checkbox"/> Paving        | <input type="checkbox"/> Utilities         | <input type="checkbox"/> 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:

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### B. Existing Site Conditions (Check all that apply)

1. Describe the existing vegetation on the site. (Check all that apply)
 

|                                 |                                              |                                   |                                      |                                |
|---------------------------------|----------------------------------------------|-----------------------------------|--------------------------------------|--------------------------------|
| <input type="checkbox"/> Forest | <input type="checkbox"/> Pasture/field grass | <input type="checkbox"/> Pavement | <input type="checkbox"/> Landscaping | <input type="checkbox"/> Brush |
| <input type="checkbox"/> Trees  | <input type="checkbox"/> Other:              |                                   |                                      |                                |
2. Describe how surface water (stormwater) drainage flows across/from the site. (Check all that apply)
 

|                                     |                                 |                                      |                                      |                                      |
|-------------------------------------|---------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> Sheet Flow | <input type="checkbox"/> Gutter | <input type="checkbox"/> Catch Basin | <input type="checkbox"/> Ditch/Swale | <input type="checkbox"/> Storm Sewer |
| <input type="checkbox"/> Stream     | <input type="checkbox"/> Other: |                                      |                                      |                                      |
3. Describe any unusual site condition(s) or other features of note.
 

|                                       |                                              |                                             |                                  |
|---------------------------------------|----------------------------------------------|---------------------------------------------|----------------------------------|
| <input type="checkbox"/> Steep Grades | <input type="checkbox"/> Large depression    | <input type="checkbox"/> Underground tanks  | <input type="checkbox"/> Springs |
| <input type="checkbox"/> Easements    | <input type="checkbox"/> Existing structures | <input type="checkbox"/> Existing utilities | <input type="checkbox"/> 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:

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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.

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**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:

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2. Construction phasing: if construction is going to occur in separate phases, please describe:

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**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.

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**Note:** Additional erosion control methods may be required during periods of increased surface water runoff.

**2. Site plan** (see Figure 1, page 6)

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.** (to be worked out with Engineering Dept.)

## 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 2005; City of Tacoma 2012). 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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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.

Applicable BMPs include:

- BMP C150: Materials on Hand

☐ The BMP(s) being proposed to meet this element are:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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*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:

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**OR**

☐ This element is not required for this project because:

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**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. 2012. Stormwater Management Manual 2012 Edition. Public Works/ Environmental Services, Maintenance Division, Tacoma, Washington.

Washington State Department of Ecology (Ecology). 2005. Stormwater Management Manual for Western Washington. Water Quality Program, Lacey, Washington.

**APPENDIX C**

**STATE ENVIRONMENTAL**

**POLICY ACT (SEPA)**

**DETERMINATION OF**

**NONSIGNIFICANCE**

## **DETERMINATION OF NON-SIGNIFICANCE WAC 197-11-970**

**Project Name:** Port of Tacoma General Central Peninsula Improvement Program

**Description of proposal:** The General Central Peninsula (GCP) Improvement Program includes projects to be completed at Terminal 3 and 4 backlands area, Thorne Road Properties, Lot F, East Sitcum Terminal (EST), Pier 7, North Intermodal Yard (NIM) and Port Parcel 14, 1131 Alexander Avenue. Projects include realigning the Husky backlands to run parallel to the berth face, restriping, fencing, utility improvements, stormwater treatment improvements, moving transactions at the Husky gate to Lot F, moving and improving the East Sitcum Entry Control Point, and redevelopment of parcels across from Washington United Terminals into a near dock container yard.

**Proponent:** Port of Tacoma

**Location of proposal, including street address, if any:** Thorne Road; 1702 Port of Tacoma Road; 1721 Thorne Road; 1451 Thorne Road; 1101 Port of Tacoma Road; and 1131 Alexander Avenue all in Tacoma, WA

**Lead agency:** Port of Tacoma

The lead agency for this proposal has determined that the project does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under Revised Code of Washington (RCW) 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. Additional project and/or State Environmental Policy Act (SEPA) information is available upon request at the Port of Tacoma's Administration building, located at One Sitcum Plaza, Tacoma, WA 98421 or at the Port's website at <http://www.portoftacoma.com/sepa>.

**Comments and Request for Reconsideration:** This Determination of Non-Significance (DNS) is issued under Chapter 197-11-340(2) Washington Administrative Code (WAC). Pursuant to Port policy, all interested parties shall have 14 calendar days to comment on the proposed SEPA threshold determination. Only those who commented within the 14-day comment period shall have standing to file a Request for Reconsideration. Any challenge to a SEPA threshold determination shall be initiated by filing a Request for Reconsideration with the Responsible Official or designee no later than 7 calendar days following the end of the 14-day comment period for the SEPA determination. The lead agency will not act on this proposal for 14 days from the start date of the comment period described below. Comments shall be submitted to the Port of Tacoma, Environmental Programs, C/O Kim Mahoney at One Sitcum Plaza, Tacoma, WA 98421 or at the Port's website at <http://www.portoftacoma.com/sepa>.

**Responsible official:** Dakota Chamberlain  
**Position/title:** Chief Facilities Development Officer  
**Signature**  **Date:** 6/15/2018  
**Comment Start Date:** June 18, 2018  
**Comment End Date:** July 2, 2018  
**Request for Reconsideration End Date:** July 9, 2018

**APPENDIX D**

**NATIONAL ENVIRONMENTAL  
POLICY ACT (NEPA)**

**FINDING OF NO SIGNIFICANT  
IMPACT (FONSI)**

**Maritime Administration**  
**Finding of No Significant Impact**

**For the Port of Tacoma**  
**Off-Dock Container Support Facility**  
**Tacoma, WA**

This Finding of No Significant Impact (FONSI) and the accompanying Environmental Assessment (EA) are submitted pursuant to NEPA, 42 U.S. C. 4332 (2).

The Maritime Administration (MARAD) has determined that this project, for which the Proposed Action has been selected, will have no significant effect on the human or natural environment, individually or cumulatively, under normal conditions.

**BACKGROUND**

International container ports up and down the West Coast, including the Port of Tacoma (Port), have become congested and therefore inefficient. These inefficiencies are contributing to increased cargo handling costs and excessive greenhouse gas emissions (GHG) and air quality impacts.

The Purpose of the Off-Dock Container Support Facility project is to relieve congestion and improve marine container terminal capacity and efficiency at the Port of Tacoma in order to meet the public's need and demand for increased cargo movement. This project is needed because existing Puget Sound Gateway Ports are operating above 80 percent capacity utilization. This is causing inefficient operations and inefficient container handling, which is resulting in a ripple of supply chain impacts that include excessive truck queuing and idling, cargo ships waiting at anchor or offshore for available terminal berths, train backlogs, delayed cargo deliveries, and slowed or halted manufacturing.

In addition, inefficiency is both expensive and contributes to air quality and climate change impacts. Removing that inefficiency will have immediate positive impacts to air quality and a reduction in fuel consumption and greenhouse gas emissions. As part of the Port's and Northwest Seaport Alliance's (NWSA) emphasis on limiting its role in global warming and reducing greenhouse gas emissions, the Port is committed to improving the efficiency of cargo processing (terminal efficiency), both inbound and outbound. This includes the use of on-dock and near-dock rail to move containers, efficient access to nearby highway corridors, and maximizing terminal efficiency.

**PROPOSED ACTION**

The Port plans to create an off-dock container yard and support facility on a site known as the Thorne Road Properties site, which is located near the center of what is known as the General Central Peninsula (GCP) of the Tacoma Tideflats, as close as practicably possible to the Husky and Washington United Terminal (WUT) entry gate.

The proposed Off-Dock Container Support Facility project site will be used for container and chassis storage, a single-high reefer (a refrigerated container) wash facility, and a wheeled reefer valet drop-off location. Other site features will include a truck entry and exit gate on Maxwell Way with a guard shelter, an office trailer, perimeter security fencing, site lighting and power, security

cameras, a roadability area, and stormwater improvements. A single driveway from Maxwell Way, which would be located about 470 feet west of Port of Tacoma Road, would provide access for inbound and outbound security and processing. The north and south sections of the site are bisected by two railroad tracks; at grade crossing of those tracks is proposed near the west edge of the property in order to connect the two project areas. Work will include clearing and grubbing, earth fill, isolated excavation, subgrade preparation, base course and pavement systems, stormwater infrastructure, and other utilities. Stormwater treatment will be by overland sheet flow conveyance and at-grade treatment. Work in the public right of way will include driveways and utility connections.

The project would construct frontage improvements along Thorne Road and Maxwell Way per City of Tacoma's requirements. On Thorne Road, the project would construct new sidewalk along its entire frontage and new curb along the 1400 block. The project would also improve or provide a landscape strip between the street and the sidewalk. The existing gravel pedestrian crossing of the railroad tracks that bisects the site would be paved and shifted to the edge of the street to enhance pedestrian sight lines to the ungated pedestrian crossing. Along Maxwell Way, the project would construct a new five-foot-wide sidewalk. Additional construction would include curb, landscape strip, street lighting and street trees. The improvements along Maxwell Way would retain on-street parking, except near the new site driveway, where parking would be prohibited to retain sight lines to and from the driveway.

The project has approximately 4.42 acres of wetland impact that the Port proposes to mitigate using credits from either the Port's Lower Wapato Creek Advance Mitigation Site or Upper Clear Creek Mitigation Bank site.

The off-dock container support facility is not anticipated to increase the Port's container throughput, which is tied to regional and international market demand. Instead, the Off-Dock Container Support Facility project would improve the operational efficiency of existing terminals by removing lower-priority functions from the dock where they may otherwise clutter internal circulation routes or require inefficient stacking operations. The number of truck trips at the Port would also not increase under the Off-Dock Container Support Facility project, although the local travel patterns would change close to the proposed facility.

## **ALTERNATIVES**

MARAD considered reasonable alternatives for the Proposed Action, which includes the No Action Alternative and the Action Alternative.

No-Action Alternative – As required by NEPA, the No Action Alternative was analyzed in the document as the basis for comparison with the Action Alternative. Under the No Action Alternative, the Port would not perform the proposed construction, and as such, the project purpose and need would not be met.

Action Alternative - The total Proposed Action area is comprised of approximately 24.5 acres and includes creation of an off-dock container yard and support facility to relieve congestion and improve marine container terminal capacity and efficiency at the Port of Tacoma.



## SUMMARY OF ENVIRONMENTAL CONSEQUENCES

| Impact Category                            | No Action Alternative | Proposed Action                                                                            |
|--------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------|
| Earth                                      | No impacts            | Negligible short-term construction-related adverse impacts; no operational adverse impacts |
| Air Quality and Greenhouse Gas Emissions   | No impacts            | Negligible temporary or long-term adverse impacts                                          |
| Hazardous Materials                        | No impacts            | Negligible adverse impacts                                                                 |
| Noise and Vibration                        | No impacts            | Negligible temporary or long-term adverse impacts                                          |
| Public Services and Utilities              | No impacts            | Negligible temporary or long-term adverse impacts                                          |
| Water (Surface and Ground)                 | No impacts            | Negligible temporary or long-term adverse impacts                                          |
| Wetlands, T&E Species and Critical Habitat | No impacts            | Minimal adverse impacts                                                                    |
| Cultural Resources                         | No impacts            | Negligible temporary or long-term adverse impacts                                          |
| Environmental Justice                      | No impacts            | Negligible temporary or long-term adverse impacts                                          |
| Transportation                             | Minor Adverse Impacts | Negligible temporary or long-term adverse impacts                                          |
| Land Use and Visual Resources              | No impacts            | Negligible temporary or long-term adverse impacts                                          |

Because no significant adverse impacts are anticipated, no specific mitigation measures are required other than for impacts identified for wetlands. Under the Action Alternative, best management procedures would be followed to minimize all adverse impacts during construction.

The project has approximately 4.42 acres of wetland impact that the Port proposes to mitigate using credits from the Port's Lower Wapato Creek Advance Mitigation Site. If this first option is not available, then credits from the Port's Upper Clear Creek Mitigation Bank would be used. The preferred proposed wetland mitigation site will provide a Category I wetland with floodplain and fish habitat with a fully functioning buffer to mitigate for the loss of degraded, isolated, Category III wetland that does not have any fish habitat and that has very limited and interrupted buffers. All loss of critical area functions will be mitigated for (and significantly improved) at the 18.5-acre site located approximately 1.75 miles from the project site. This location has been designed to provide pristine wildlife habitat that will be protected in perpetuity. The mitigation site provides foraging and shelter functions, connectivity to Wapato creek, and access to wildlife corridors. The site is a developing diverse community with mature cottonwood trees, and installed downed wood, standing snags and other features suited to best provide habitat function for a broad range of avian, mammal and

amphibious species. The presence of streamflow through the site ensures export of production for insects, aquatic invertebrates and fish. This will also provide a location for osprey to teach their young to hunt, as osprey eat fish and require a waterbody for hunting. In addition to the already-established trees on the site, the Port has scheduled planting of 7,600 large shrubs and trees, including 200 black cottonwoods, 500 red alder (*Alnus rubra*), and 1,500 conifers for Fall 2022.

The Maritime Administration has determined that the EA adequately and accurately discusses the environmental issues and effects of the proposed action and specifies appropriate mitigation measures and standard conditions of approval in order to minimize environmental effects. Therefore, a FONSI is warranted, and preparation of an Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969 (Public Law 91-190), is not required.



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Office of Environment Reviewer

1/21/23  
Date

*Michael C. Carter*

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Associate Administrator for Environment and Compliance

1/23/23  
Date

**APPENDIX E**

**UNITED STATES ARMY CORPS**

**OF ENGINEERS**

**NWS-2020-557-WRD**



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT  
4735 EAST MARGINAL WAY SOUTH, BLDG 1202  
SEATTLE, WA 98134-2388

Regulatory Branch

September 15, 2023

Port of Tacoma  
Post Office Box 1837  
Tacoma, Washington 98401

Reference: NWS-2020-557-WRD  
Tacoma, Port of

Enclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application. You are cautioned that any change in the location, plans, or timing of the approved activities will require submittal of revised plans to this office for approval prior to accomplishment. Deviation from the approved plans may result in imposition of criminal or civil penalties.

Your attention is drawn to General Condition 1 of the permit which specifies the expiration date for completion of the work. Upon completing the authorized work, please fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form.

We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: [www.nws.usace.army.mil](http://www.nws.usace.army.mil) select "Regulatory Branch, Permit Information" and then "Contact Us."

If you have any questions please contact Jacalen Printz by email at [jacalen.m.printz@usace.army.mil](mailto:jacalen.m.printz@usace.army.mil) or by telephone at (206) 764-6901.

Sincerely,

A handwritten signature in blue ink, reading "Todd N. Tillinger", is positioned above the typed name.

Todd N. Tillinger, P.E.  
Chief, Regulatory Branch

Enclosures

# DEPARTMENT OF THE ARMY PERMIT

**Permittee:** Tacoma, Port of

PO Box 1837

**Permit No:** NWS-2020-557-WRD

Tacoma, Washington 98401

**Issuing Office:** Seattle District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** Place fill in 4.42 acres of wetland to construct a container support facility in wetland near the Blair Waterway in Tacoma, Washington (in accordance with the plans and drawings dated October 22, 2022 attached hereto which are incorporated in and made a part of this permit). The purpose of the project is to provide additional areas for container storage and processing in support of the marine cargo shipping at the Port of Tacoma.

**Project Location:** In wetland near the Blair Waterway at Tacoma, Pierce County, Washington.

**Permit Conditions:**

*General Conditions:*

1. The time limit for completing the work authorized ends on September 15, 2028. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in accordance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification to this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification (Order Number: 21410, dated October 7, 2022) is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.
7. After a detailed and careful review of all the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps, nonetheless the permittee agreed to

those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

*Special Conditions:*

- a. You must provide a copy of the permit transmittal letter, the permit form, and drawings to all contractors performing any of the authorized work.
- b. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the No Effect Technical Memo, dated January 24, 2022, in its entirety. The U.S. Army Corps of Engineers (Corps) made a determination of No Effect for all species and critical habitat based on this document. Failure to comply with the commitments made in this document constitutes non-compliance with the ESA and your Corps permit.
- c. Permittees must clearly mark all construction area boundaries within waters of the United States before beginning work on projects that involve grading or placement of fill. Boundary markers and/or construction fencing must be maintained and clearly visible for the duration of construction. In cases where wetland vegetation is high, a demarcation of the edge should be at height level visible to construction and/or grading and clearing crews.
- d. The Port will include standard language in their contractor specifications for identifying, segregating, testing, and disposing of suspected contaminated materials. Any encountered contaminated material will be disposed off-site at an approved location based on state requirements and Tacoma-Pierce County Health Department guidelines with a waste disposal authorization, as necessary. If contaminated materials are uncovered on site, this information, including final disposition of the materials, will be provided to RPM Kristine Koch at [koch.kristine@epa.gov](mailto:koch.kristine@epa.gov)
- e. By accepting this permit, the permittee agrees to accept such potential liability for response costs, response activity and natural resource damages as the permittee would have under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA) or the Model Toxics Control Act, R.C.W. 70.105 (MTCA) absent the issuance of this permit. Further, the permittee agrees that this permit does not provide the permittee with any defense from liability under the CERCLA or the MTCA. Additionally, the permittee shall be financially responsible for any incremental response costs attributable under CERCLA or MTCA to the permittee's activities under this permit
- f. You shall implement and abide by the Advanced Mitigation Site Use Plan dated June 16, 2022 in its entirety.

**Further Information:**

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:
  - ☐ Section 10 of the Rivers and Harbor Act of 1899 (33 United States Code (U.S.C.) 403).
  - ☒ Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C 1413).
2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of the permit.
- b. The information provided by you in support of your application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 Code of Federal Regulations (CFR), Part 325.7 or enforcement procedures such as those contained in 33 CFR, Parts 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR, Part 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

*Mark Rettmann*

Port of Tacoma

September 8, 2023

(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

*Kathryn P. Sanborn*

For Kathryn P. Sanborn, PhD, PE, PMP  
Colonel, Corps of Engineers  
District Commander

September 15, 2023

(DATE)



When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFeree)

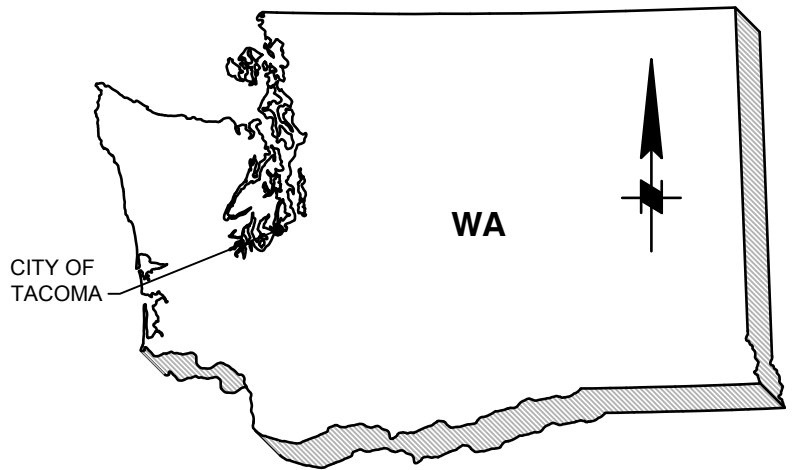
\_\_\_\_\_  
(DATE)

HORIZONTAL DATUM:  
WASHINGTON STATE PLANE COORDINATE  
SYSTEM, SOUTH ZONE, NAD 83/2011 (PER PORT  
OF TACOMA SURVEY CONTROL MAP - 2016)

VERTICAL DATUM:  
MLLW (PER PORT OF TACOMA 2016 SURVEY  
CONTROL MAP)  
TIDE 22 1935 BENCHMARK: LOCATED AT NE  
CORNER OF 11TH STREET BRIDGE AT THE  
INTERSECTION OF 11TH STREET AND  
MILWAUKEE WAY  
ELEVATION = +19.18  
(BASED ON 1983-2001 TIDAL EPOCH)

SITE TEMPORARY BENCHMARK:  
PORT OF TACOMA MONUMENT #104 AT  
INTERSECTION OF PORT OF TACOMA ROAD  
AND MAXWELL WAY  
ELEVATION = +17.59

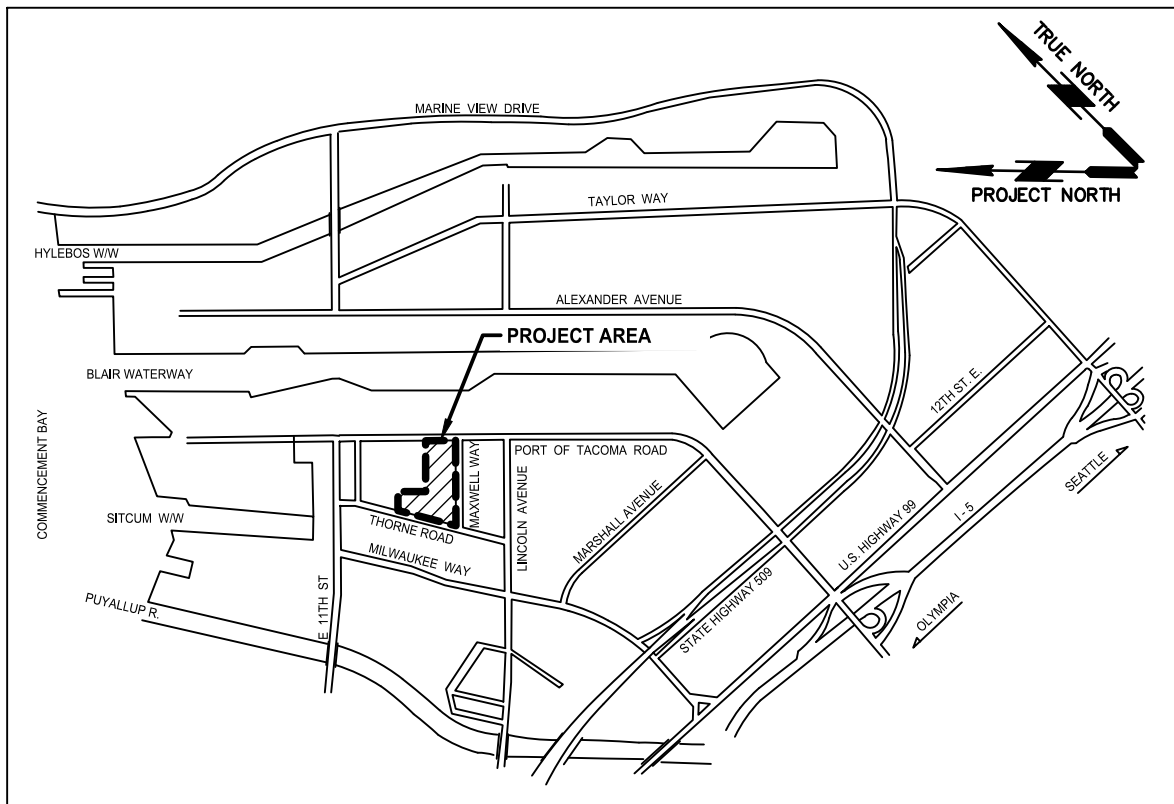
0.00 FT MLLW + 2.67 FT = 0.00 NAVD88



**DIRECTIONS TO SITE FROM SEATTLE:**

- |                                    | <u>MILES</u> |
|------------------------------------|--------------|
| 1. I-5 S TO EXIT #136              | ~30          |
| 2. TURN RIGHT ON PORT OF TACOMA RD | ~0.5         |
| 3. ARRIVE AT PROJECT SITE          | ~1.8         |

**VICINITY MAP**  
SCALE: NTS



**LOCATION MAP**  
SCALE: NTS

**USACE REFERENCE:** NWS-2020-557-WRD

**APPLICANT:** PORT OF TACOMA

**ADJACENT PROPERTY OWNERS:**  
SEE THE JOINT AQUATIC RESOURCES  
PERMIT APPLICATION (JARPA)

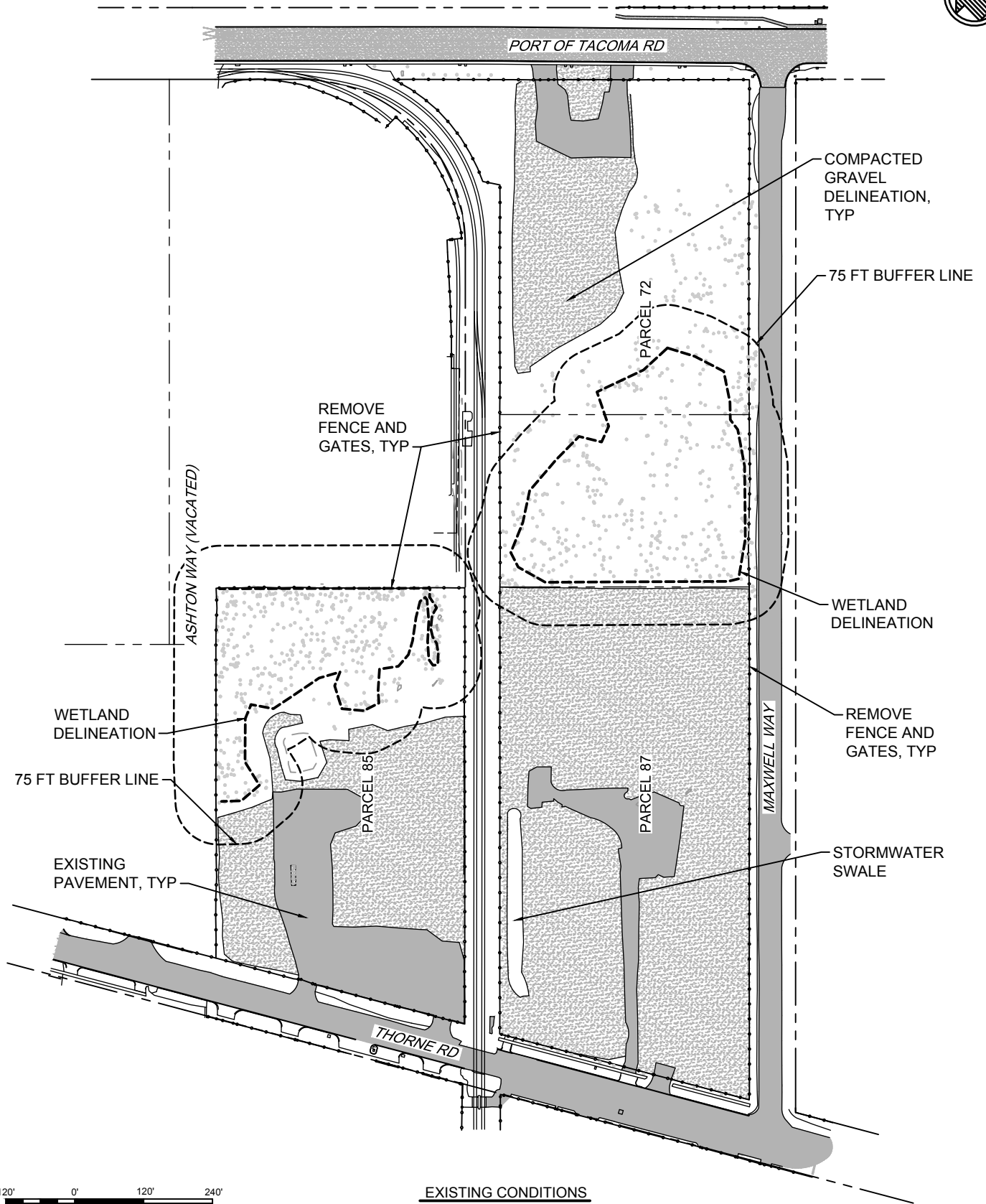
**LOCATION:** 1451 & 1721 THORNE ROAD AND  
1702 PORT OF TACOMA ROAD  
TACOMA, WA

**LAT/LONG:** 47.264 N  
-122.401 W

**DATUM:** MLLW=19.39' TIDE 22 1935 BENCHMARK  
**SHEET:** 1 OF 7 **DATE:** OCTOBER 22, 2022

**PROPOSED PROJECT:** OFF-DOCK CONTAINER  
SUPPORT FACILITY

**IN:** NOT LOCATED IN A WATERBODY  
**NEAR/AT:** CITY OF TACOMA  
**COUNTY:** PIERCE **STATE:** WA  
**SEC:** 34 **T:** 21 N **R:** 3 E



USACE REFERENCE: NWS-2020-557-WRD

APPLICANT: PORT OF TACOMA

ADJACENT PROPERTY OWNERS:  
SEE THE JOINT AQUATIC RESOURCES  
PERMIT APPLICATION (JARPA)

LOCATION: 1451 & 1721 THORNE ROAD AND  
1702 PORT OF TACOMA ROAD  
TACOMA, WA

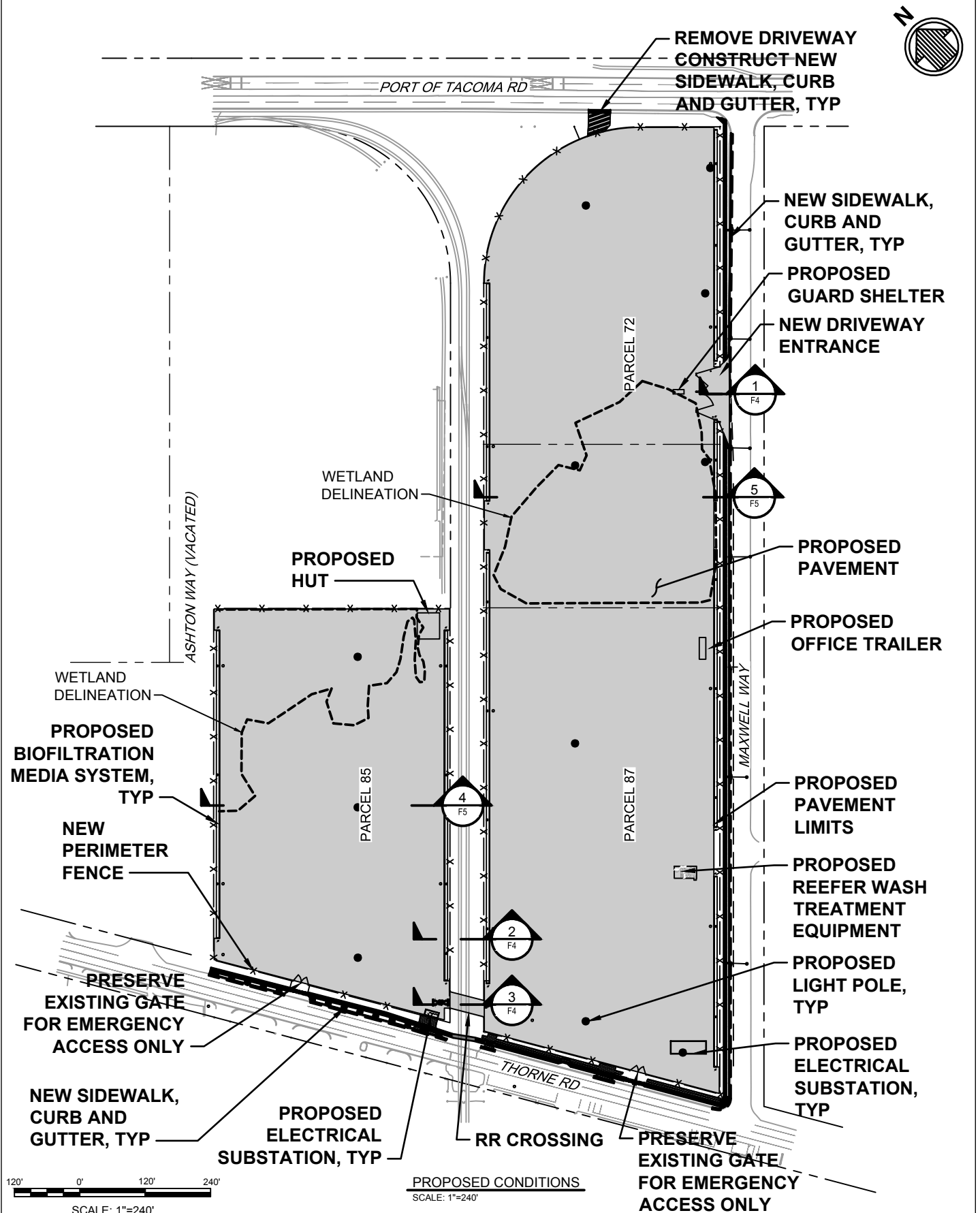
LAT/LONG: 47.264 N  
-122.401 W

DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK  
SHEET: 2 OF 7 DATE: OCTOBER 22, 2022

PROPOSED PROJECT: OFF-DOCK CONTAINER  
SUPPORT FACILITY

IN: NOT LOCATED IN A WATERBODY  
NEAR/AT: CITY OF TACOMA  
COUNTY: PIERCE STATE: WA  
SEC: 34 T: 21 N R: 3 E

File: Q:\SEA\10284-02\CADD\Active\JARPA\1028402\_F2-F3



USACE REFERENCE: NWS-2020-557-WRD

APPLICANT: PORT OF TACOMA

ADJACENT PROPERTY OWNERS:  
SEE THE JOINT AQUATIC RESOURCES  
PERMIT APPLICATION (JARPA)

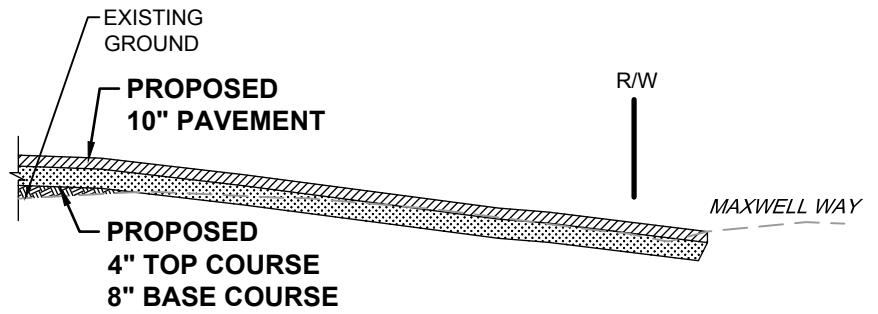
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1702 PORT OF TACOMA ROAD  
TACOMA, WA

LAT/LONG: 47.264 N  
-122.401 W

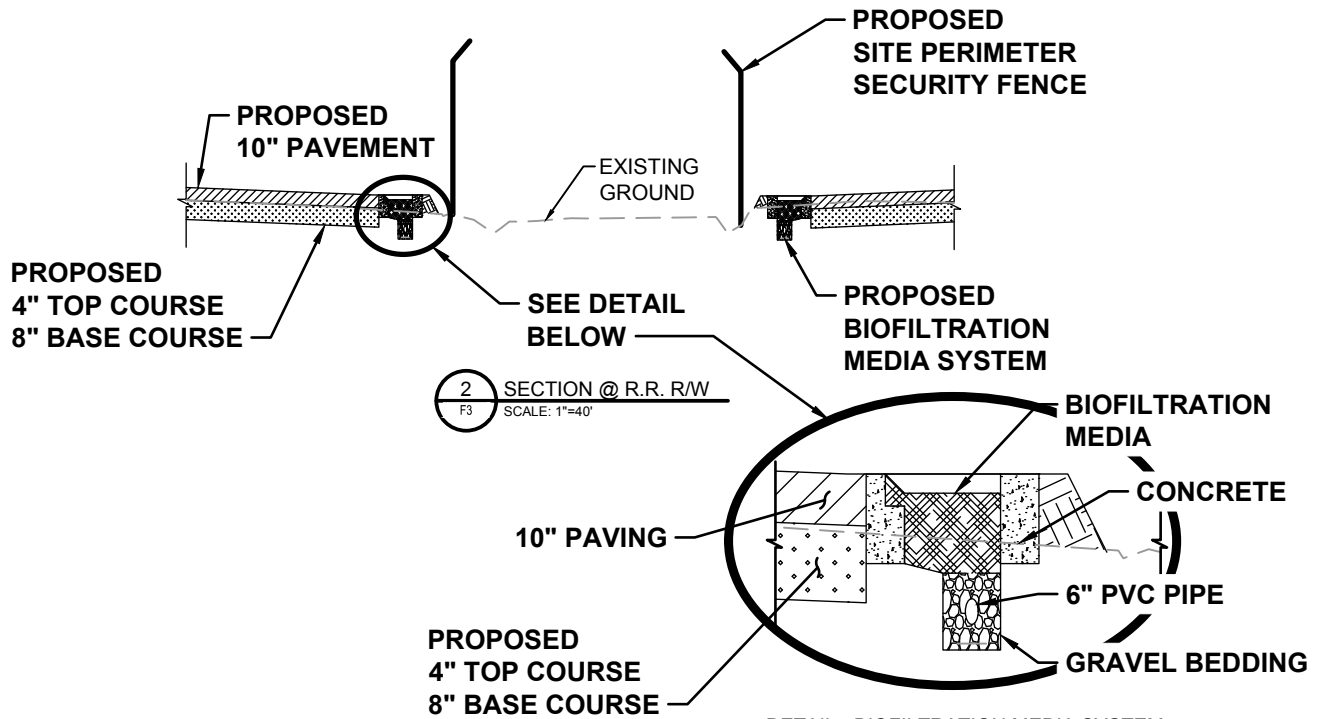
DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK  
SHEET: 3 OF 7 DATE: OCTOBER 22, 2022

PROPOSED PROJECT: OFF-DOCK CONTAINER  
SUPPORT FACILITY

IN: NOT LOCATED IN A WATERBODY  
NEAR/AT: CITY OF TACOMA  
COUNTY: PIERCE STATE: WA  
SEC: 34 T: 21 N R: 3 E

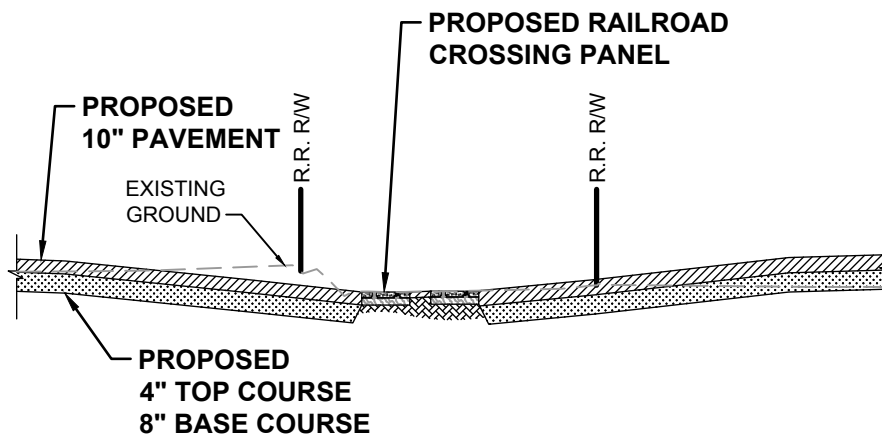


1 SECTION @ MAXWELL WAY ENTRANCE  
F3 SCALE: 1"=40'



2 SECTION @ R.R. R/W  
F3 SCALE: 1"=40'

DETAIL - BIOFILTRATION MEDIA SYSTEM  
SCALE: 1"=10'



3 SECTION @ R.R. CROSSING PANELS  
F3 SCALE: 1"=40'

40' 0' 40' 80'  
SCALE: 1"=40'

USACE REFERENCE: NWS-2020-557-WRD

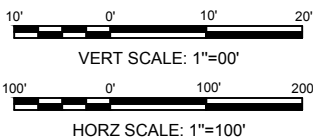
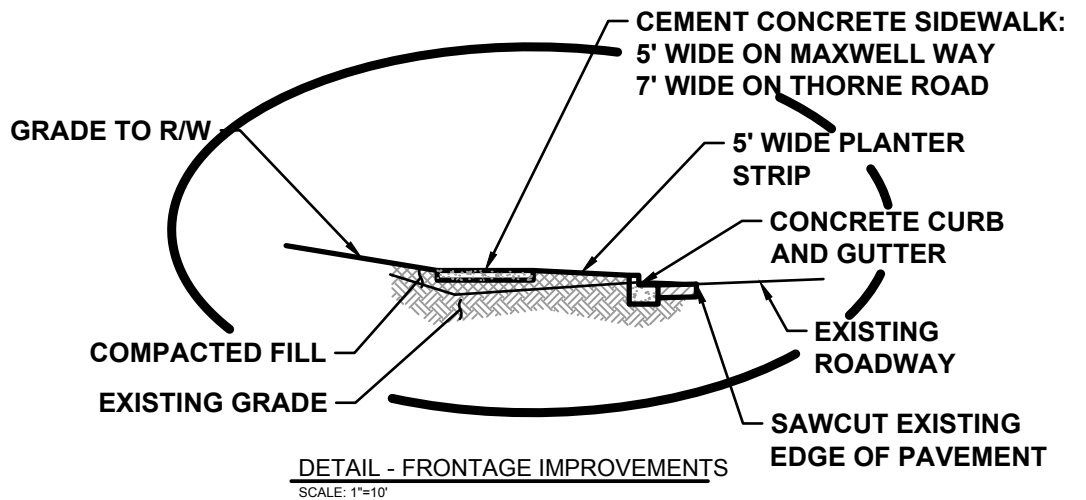
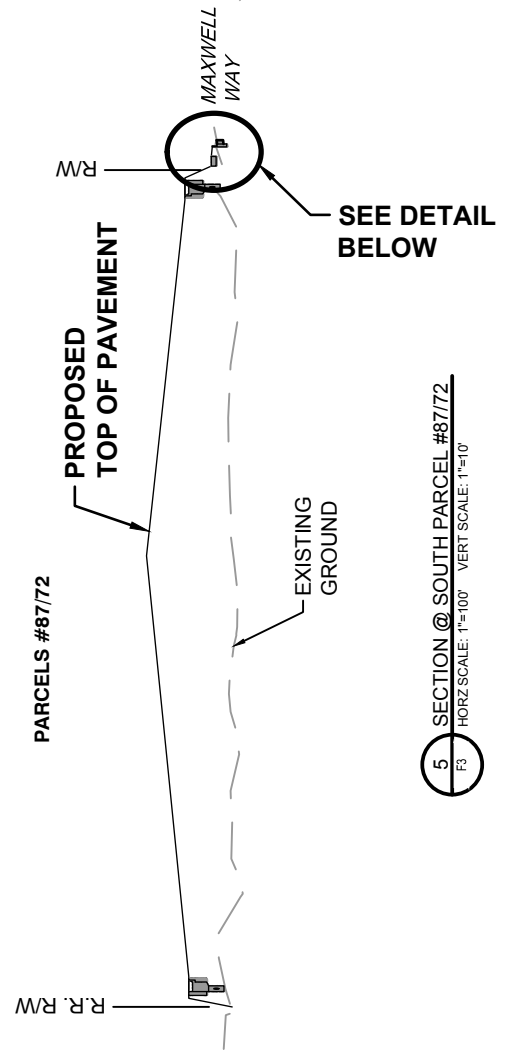
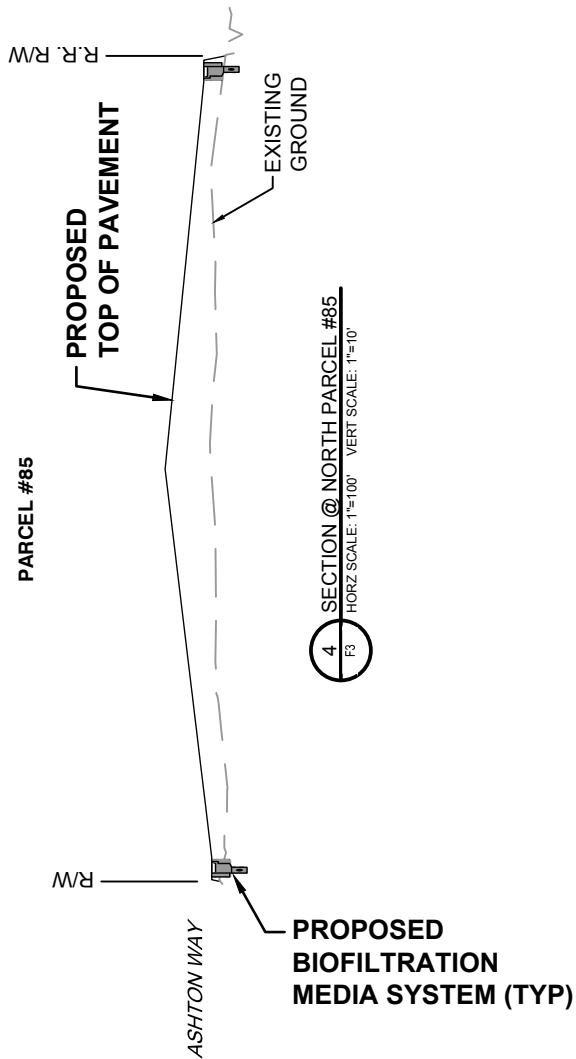
APPLICANT: PORT OF TACOMA

ADJACENT PROPERTY OWNERS:  
SEE THE JOINT AQUATIC RESOURCES  
PERMIT APPLICATION (JARPA)

LOCATION: 1451 & 1721 THORNE ROAD AND  
1702 PORT OF TACOMA ROAD  
TACOMA, WA  
LAT/LONG: 47.264 N  
-122.401 W  
DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK  
SHEET: 4 OF 7 DATE: OCTOBER 22, 2022

PROPOSED PROJECT: OFF-DOCK CONTAINER  
SUPPORT FACILITY

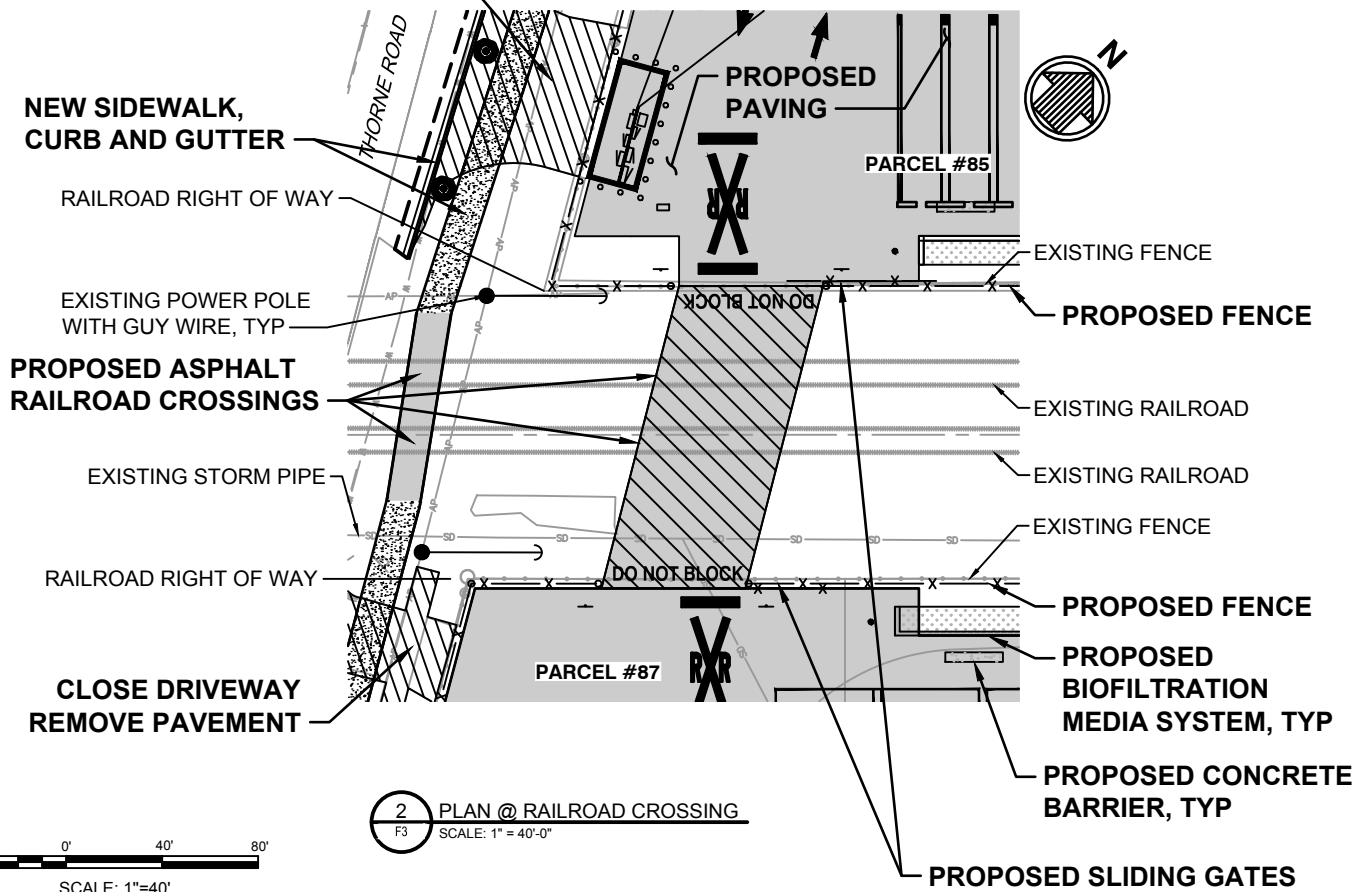
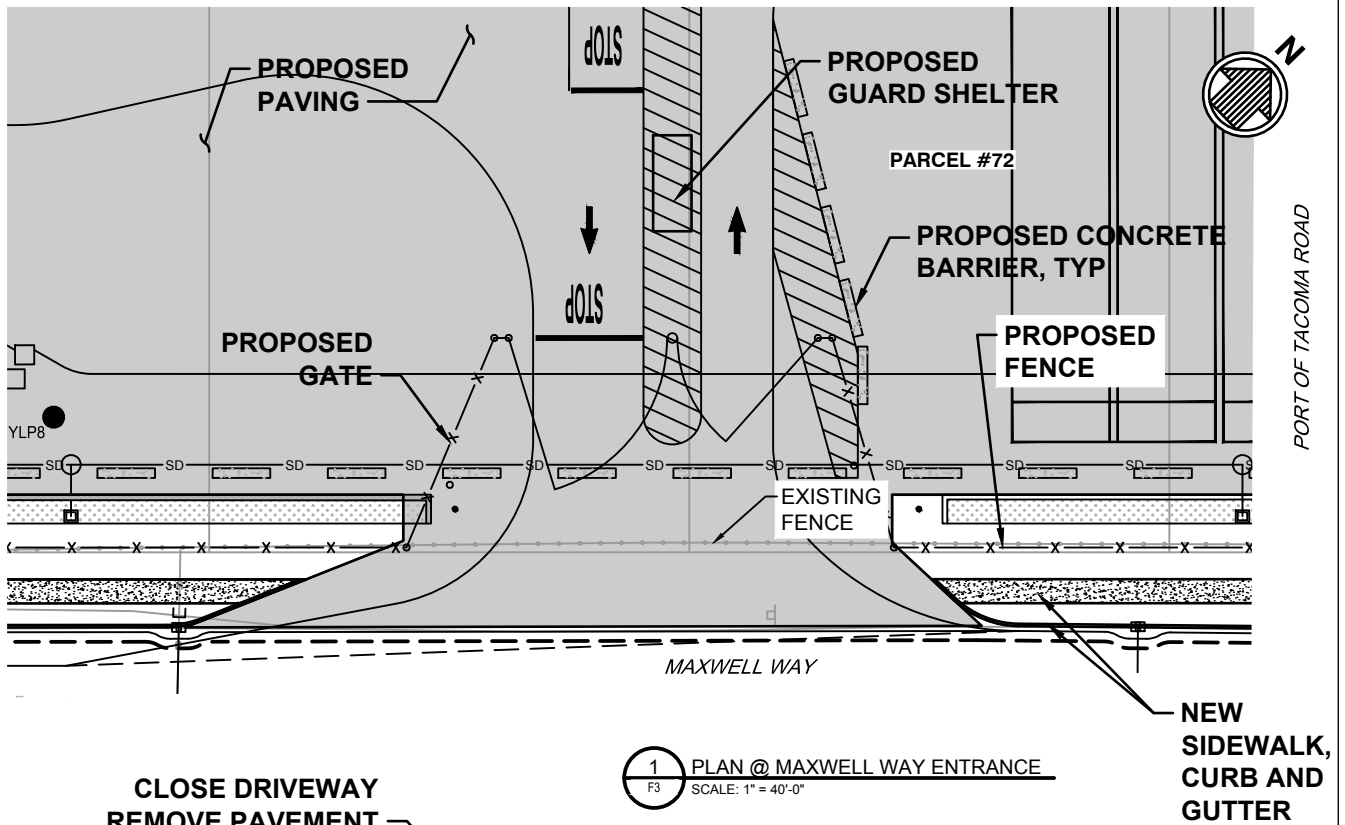
IN: NOT LOCATED IN A WATERBODY  
NEAR/AT: CITY OF TACOMA  
COUNTY: PIERCE STATE: WA  
SEC: 34 T: 21 N R: 3 E



**USACE REFERENCE:** NWS-2020-557-WRD  
**APPLICANT:** PORT OF TACOMA  
**ADJACENT PROPERTY OWNERS:**  
 SEE THE JOINT AQUATIC RESOURCES  
 PERMIT APPLICATION (JARPA)

**LOCATION:** 1451 & 1721 THORNE ROAD AND  
 1702 PORT OF TACOMA ROAD  
 TACOMA, WA  
**LAT/LONG:** 47.264 N  
 -122.401 W  
**DATUM:** MLLW=19.39' TIDE 22 1935 BENCHMARK  
**SHEET:** 5 OF 7 **DATE:** OCTOBER 22, 2022

**PROPOSED PROJECT:** OFF-DOCK CONTAINER  
 SUPPORT FACILITY  
**IN:** NOT LOCATED IN A WATERBODY  
**NEAR/AT:** CITY OF TACOMA  
**COUNTY:** PIERCE **STATE:** WA  
**SEC:** 34 **T:** 21 N **R:** 3 E



**USACE REFERENCE:** NWS-2020-557-WRD

**APPLICANT:** PORT OF TACOMA

**ADJACENT PROPERTY OWNERS:**  
SEE THE JOINT AQUATIC RESOURCES  
PERMIT APPLICATION (JARPA)

**LOCATION:** 1451 & 1721 THORNE ROAD AND  
1702 PORT OF TACOMA ROAD  
TACOMA, WA

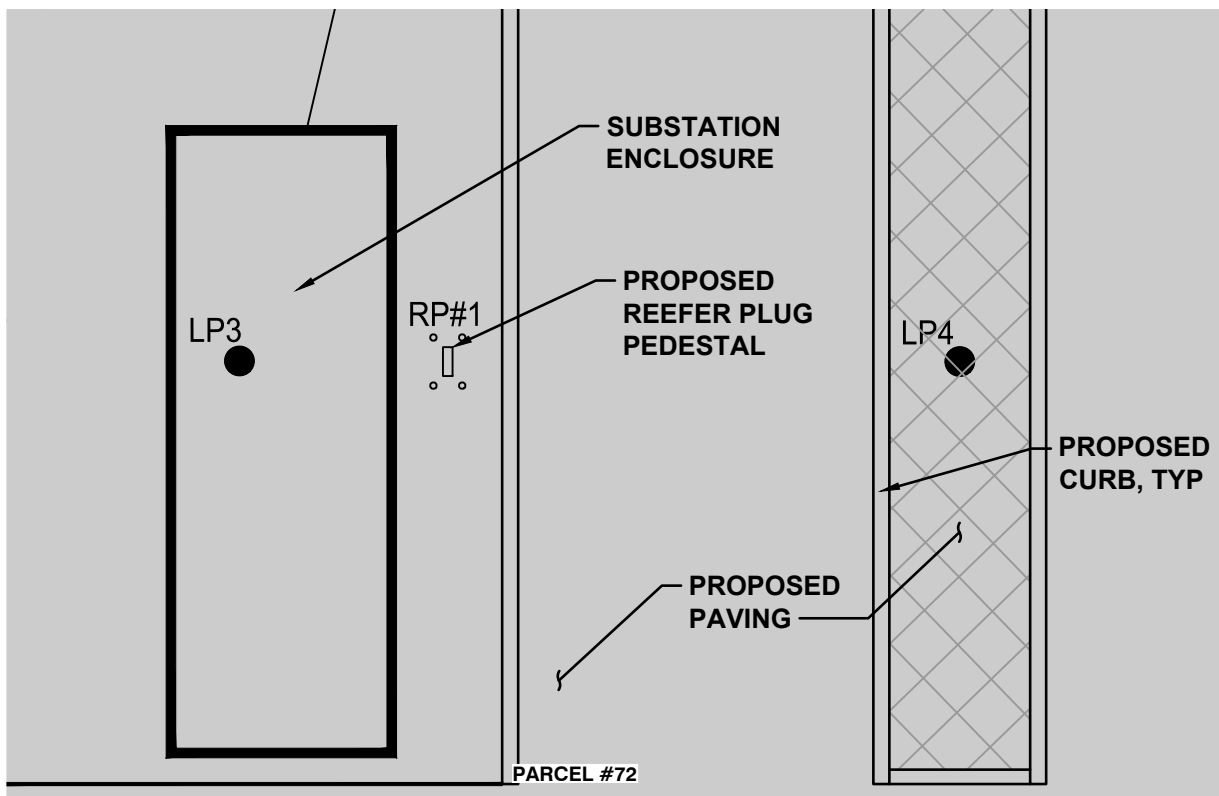
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-122.401 W

**DATUM:** MLLW=19.39' TIDE 22 1935 BENCHMARK

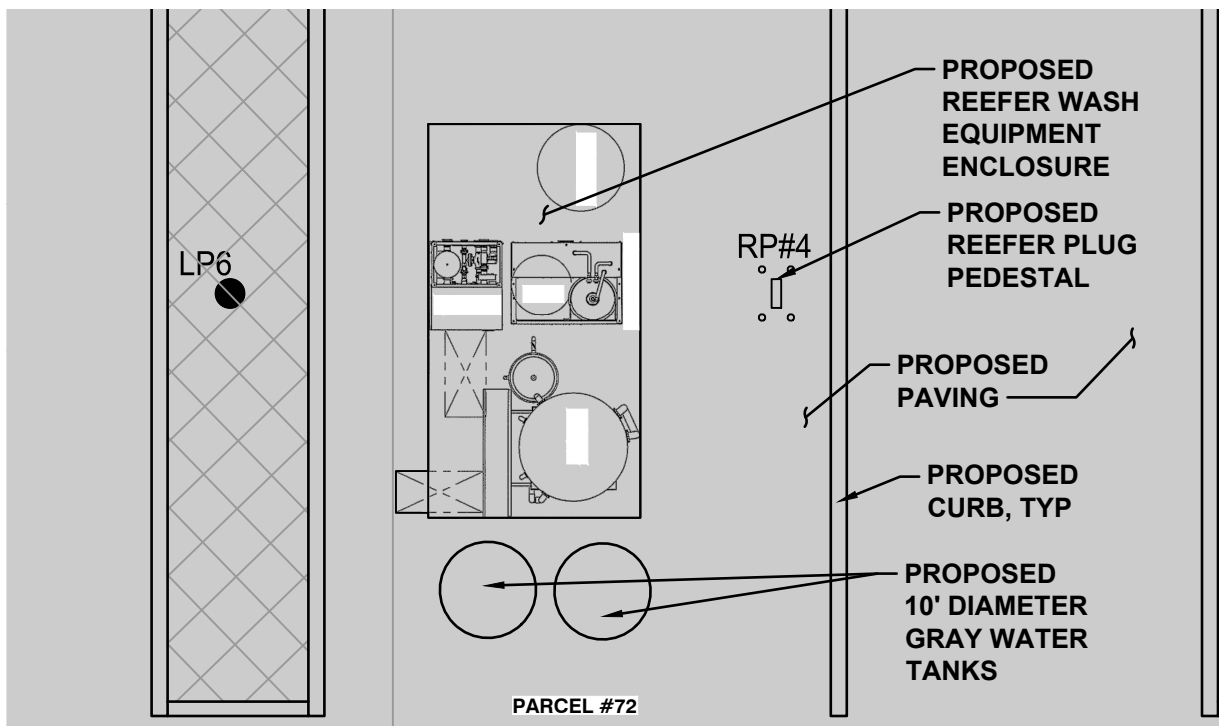
**SHEET:** 6 OF 7 **DATE:** OCTOBER 22, 2022

**PROPOSED PROJECT:** OFF-DOCK CONTAINER  
SUPPORT FACILITY

**IN:** NOT LOCATED IN A WATERBODY  
**NEAR/AT:** CITY OF TACOMA  
**COUNTY:** PIERCE **STATE:** WA  
**SEC:** 34 **T:** 21 N **R:** 3 E



1 PLAN AT ELECTRICAL SUBSTATION AREA  
F3 SCALE: 1"=20'



20' 0' 20' 40'  
SCALE: 1"=20'

2 PLAN AT WASH ENCLOSURE  
F3 SCALE: 1"=20'

|                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>USACE REFERENCE:</b> NWS-2020-557-WRD</p> <p><b>APPLICANT:</b> PORT OF TACOMA</p> <p><b>ADJACENT PROPERTY OWNERS:</b><br/>SEE THE JOINT AQUATIC RESOURCES<br/>PERMIT APPLICATION (JARPA)</p> | <p><b>LOCATION:</b> 1451 &amp; 1721 THORNE ROAD AND<br/>1702 PORT OF TACOMA ROAD<br/>TACOMA, WA</p> <p><b>LAT/LONG:</b> 47.264 N<br/>-122.401 W</p> <p><b>DATUM:</b> MLLW=19.39' TIDE 22 1935 BENCHMARK</p> <p><b>SHEET:</b> 7 OF 7 <b>DATE:</b> OCTOBER 22, 2022</p> | <p><b>PROPOSED PROJECT:</b> OFF-DOCK CONTAINER<br/>SUPPORT FACILITY</p> <p><b>IN:</b> NOT LOCATED IN A WATERBODY<br/><b>NEAR/AT:</b> CITY OF TACOMA<br/><b>COUNTY:</b> PIERCE <b>STATE:</b> WA<br/><b>SEC:</b> 34 <b>T:</b> 21 N <b>R:</b> 3 E</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|





US Army Corps  
of Engineers ®  
Seattle District

## CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT



Permit Number: NWS-2020-557-WRD

Name of Permittee: Port of Tacoma

Date of Issuance: September 15, 2023

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following email or mailing address:

NWS.Compliance@usace.army.mil

OR

Department of the Army  
U.S. Army Corps of Engineers Seattle  
District, Regulatory Branch  
4735 E. Marginal Way S, Bldg 1202  
Seattle, Washington 98134-2388

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

|                          |                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <p>The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit.</p> <p>Date work complete: _____</p> <p><input type="checkbox"/> Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).</p> |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <p>If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring).</p> <p>Date work complete: _____ <input type="checkbox"/> N/A</p> <p><input type="checkbox"/> Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).</p> |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <p>Provide phone number/email for scheduling site visits (must have legal authority to grant property access).</p> <p>Printed Name: _____</p> <p>Phone Number: _____ Email: _____</p> |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



**STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY**

**Southwest Region Office**  
PO Box 47775, Olympia, WA 98504-7775 • 360-407-6300

October 7, 2022

Port of Tacoma  
ATTN: Mark Rettmann  
PO Box 1837  
Tacoma, WA 98401

Re: Water Quality Certification Order No. 21410 for Corps No. NWS-2020-557, Off-Dock  
Container Support Facility, Pierce County, Washington

Dear Mark Rettmann:

On October 11, 2021, the Port of Tacoma submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Off-Dock Container Support Facility located in Tacoma, Pierce County, Washington.

On behalf of the state of Washington, the Department of Ecology certifies that the work described in the Water Quality Certification Request and supplemental documents complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended, and applicable state laws. This certification is subject to the enclosed Water Quality Certification Order (WQC Order).

Please ensure that anyone doing work under this WQC Order has read, is familiar with, and is able to follow all of the provisions within the attached WQC Order.

If you have any questions about this decision, please contact Lori Kingsbury at [Lori.kingsbury@ecy.wa.gov](mailto:Lori.kingsbury@ecy.wa.gov). The enclosed WQC Order may be appealed by following the procedures described within.

Sincerely,

Joe Burcar, Section Manager  
Shorelands and Environmental Assistance Program

Enclosure

WQ Order No. 21410  
Corps No. NWS-2020-557  
Aquatics ID No. 140546  
October 7, 2022  
Page 2 of 2

ec: Dan Krenz, U.S. Army Corps of Engineers  
Linda Storm, EPA  
Loree' Randall, Ecology, HQ-SEA  
Rick Mraz, Ecology, HQ-SEA  
Patricia Johnson, HQ-SEA  
Lori Kingsbury, Ecology, SWRO-SEA  
ECYREFEDPERMITS@ecy.wa.gov



|                                       |   |                                               |
|---------------------------------------|---|-----------------------------------------------|
| <b>IN THE MATTER OF GRANTING A</b>    | ) | <b>WQC ORDER No. 21410</b>                    |
| <b>WATER QUALITY CERTIFICATION TO</b> | ) | <b>Corps Reference No. NWS-2020-557-WRD</b>   |
| Port of Tacoma                        | ) | Off-Dock Container Support Facility, Wetlands |
| pursuant to 33 U.S.C. 1341 (FWPCA §   | ) | Adjacent to Blair Waterway, Pierce County,    |
| 401), RCW 90.48.120, RCW 90.48.260    | ) | Washington.                                   |
| and Chapter 173-201A WAC              | ) |                                               |

Port of Tacoma  
ATTN: Mark Rettmann  
PO Box 1837  
Tacoma, WA 98401

On October 11, 2021, the Port of Tacoma submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Off-Dock Container Support Facility, located in Tacoma, Pierce County, Washington. The following required processing dates are referenced below:

- On May 10, 2021, the Port of Tacoma submitted a pre-filing meeting request.
- On November 22, 2021, the Port of Tacoma submitted additional information, and the Department of Ecology (Ecology) considered the request valid on this date.
- On January 26, 2022, the U.S. Army Corps of Engineers (Corps) and Ecology issued a joint public notice.

The project proposes to construct a container support facility for empty container and chassis storage, a single-high reefer pre-trip wash facility, and a wheeled reefer valet drop-off location. Other site features will include truck entry and exit gates on Thorne Road and Maxwell Way, a guard shelter, an office trailer, perimeter security fencing, site lighting and power, security cameras, a railroad crossing, and stormwater improvements.

The project purpose is to provide additional areas for storage, staging, preparing, and processing of containers and chassis in support of marine cargo shipping at the Port of Tacoma.

The proposed project will fill in 4.42 acres of palustrine forested wetland on two parcels. To compensate for the wetland impacts, the Port will use credits generated from the Port's Lower Wapato Creek Advance Mitigation site.

The project site is located at 1451 Thorne Road, 1721 Thorne Road, and 1702 Port of Tacoma Road, Tacoma, Pierce County, Washington, Section 34, Township 21 North, Range 3 East; within Water Resource Inventory Area (WRIA) 10, Puyallup-White Watershed.

## **AUTHORITIES**

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has reviewed this WQC request pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §§1311, 1312, 1313, 1316, and 1317.
2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws.
3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.
4. Conformance with Washington's prohibition on discharges that cause or tend to cause pollution of waters of the state of Washington. RCW 90.48.080.
5. The project proponent of the project authorized is responsible for obtaining all other permits, licenses, and certifications that may be required by federal, state, local or tribal authorities.

With this Water Quality Certification (WQC) Order, Ecology is granting with conditions, the Port of Tacoma's request for a Section 401 Water Quality Certification for the Off-Dock Container Support Facility, within wetlands adjacent to the Blair Waterway, located in Tacoma, Pierce County. Ecology has determined that the proposed discharges will comply with all applicable state water quality requirements, provided the project is conducted in accordance with the Section 401 Water Quality Certification request that Ecology received on October 11, 2021, the supporting documents referenced in Table 1 below, **and the conditions of this WQC Order.**

**Table 1.** Supporting Documents

| Date Received     | Document Type                                                        | Title & Date                                                                                             | Author                                     |
|-------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------|
| October 11, 2021  | Joint Aquatic Resources Permit Application (JARPA) Form and Drawings | JARPA signed and dated October 8, 2021                                                                   | Mark Rettmann                              |
| October 8, 2021   | State Environmental Policy Act                                       | SEPA DNS, Port of Tacoma General Central Improvement Program dated June 18, 2018                         | Port of Tacoma, Dakota Chamberlain         |
| November 22, 2021 | Project BMPs                                                         | Off-Dock Container Storage Yard, Proposed Construction Best Management Practices                         | Northwest Seaport Alliance, Anita Fichthor |
| January 7, 2022   | Final Advance Mitigation Plan, Revised March 2021                    | Final Advance Mitigation Plan Lower Wapato Creek Habitat Project, dated June 1, 2020, Revised March 2021 | Port of Tacoma                             |

|               |                                           |                                                                                                                                   |                      |
|---------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------|
| June 7, 2022  | E-mail from Corps PM                      | Corrected AJD, May 25, 2022                                                                                                       | Jason Sweeney, USACE |
| June 16, 2022 | Advance Mitigation Site Use Plan, Revised | Lower Wapato Creek Advance Mitigation Site Use Plan for Port of Tacoma's Off Dock Container Support Facility, dated June 16, 2022 | Port of Tacoma       |
| July 11, 2022 | 404b(1) Alternatives Analysis             | Port of Tacoma. Off-Dock Container Support Facility Alternatives Analysis dated July 8, 2022                                      | Grette Associates    |

Issuance of this Section 401 Water Quality Certification for this proposal does not authorize the Port of Tacoma to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this Section 401 Water Quality Certification absolves the Port of Tacoma from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments resulting from project construction or operations.

#### Water Quality Certification Conditions

The following conditions will be incorporated into the Corps permit and strictly adhered to by the Port of Tacoma. Specific condition justifications and citations required by 40 CFR 121.7(d)(1) are provided below each condition in *italic text*.

#### **A. General Conditions**

1. In this WQC Order, the term "Project Proponent" shall mean the Port of Tacoma and its agents, assignees, and contractors.
  - *Justification - Ecology needs to identify that conditions of this WQC Order apply to anyone conducting work on behalf of the Project Proponent to ensure compliance with the water quality standards and other applicable state laws.*
  - *Citation - 40 CFR 121.1(j), Chapter 90.48 RCW, Chapter 90.48.080 RCW, Chapter 90.48.120 RCW, Chapter 90.48.260 RCW, Chapter 173-200 WAC, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
2. All submittals required by this WQC Order shall be sent to Ecology's Headquarters Office, Attn: Federal Permit Manager, via e-mail to [fednotification@ecy.wa.gov](mailto:fednotification@ecy.wa.gov) with a copy to [Lori.kingsbury@ecy.wa.gov](mailto:Lori.kingsbury@ecy.wa.gov). The submittals shall be identified with WQC Order No. 21410 and include the Project Proponent's name, Corps permit number, project name, project contact, and the contact phone number.

- *Justification - Ecology needs to identify where information and submittals are to be submitted to be in compliance with the requirements of this WQC Order.*
  - *Citation - 40 CFR 121, Chapter 90.48 RCW, Chapter 90.48.120 RCW, Chapter 90.48.260 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
3. Work authorized by this WQC Order is limited to the work described in the WQC request package received by Ecology on October 11, 2021, and the supporting documentation identified in Table 1.
- *Justification - Ecology has the authority to prevent and control pollution of state waters. By authorizing a discharge into a water of the state, through a WQC, Ecology is certifying the project as proposed will not negatively impact our state's water quality. Therefore, it is imperative the project is conducted as it was presented during the review process. Any deviations from information within the WQC Request package and this WQC Order must be disclosed prior to the initiation of the planned work.*
  - *Citation - 40 CFR 121.5, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.120 RCW, Chapter 90.48.260 RCW, Chapter 173-200 WAC, Chapter 173-201A WAC, Chapter 173-204 WAC, and Chapter 173-225-010 WAC.*
4. The Project Proponent shall keep copies of this WQC Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
- *Justification - All parties (including on-site contractors) must be aware of and comply with the WQC Order for the protection of water quality.*
  - *Citation - 40 CFR 121.3, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
5. The Project Proponent shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, and/or necessary data collection, to ensure that conditions of this WQC Order are being met.
- *Justification - Ecology must be able to investigate and inspect construction sites and facilities for compliance with all state rules and laws.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.090 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
6. The Project Proponent shall ensure that all project engineers, contractors, and other workers at the project site with authority to direct work have read and understand relevant conditions of this WQC Order and all permits, approvals, and documents referenced in this WQC Order. The Project Proponent shall provide Ecology a signed statement (see Attachment A for an example) before construction begins.
- *Justification - Ecology needs to ensure that anyone conducting work at the project, on behalf of the Project Proponent, are aware of and understand the required conditions of this WQC*

*Order to ensure compliance with the water quality standards and other applicable state laws.*

- *Citation - 40 CFR 121.1(j), Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
7. This WQC Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this WQC Order.
- *Justification - Ecology has the authority to prevent and control pollution of state waters, and to protect designated uses. By authorizing a discharge into a water of the state, through a water quality certification, we are certifying the project as proposed will not negatively impact our state's water quality and will comply with the state's water quality requirements. Therefore, it is imperative the project is conducted as it was presented during the review process, and as conditioned herein.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-200 WAC, Chapter 173-201A WAC, Chapter 173-201A-300(2)(e)(i) WAC, Chapter 173-201A-310 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
8. Failure of any person or entity to comply with the WQC Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the state's water quality standards.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses. Civil penalties and other enforcement actions are the primary means of securing compliance with water quality requirements.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.037 RCW, Chapter 90.48.080 RCW, Chapter 90.48.120 RCW, Chapter 90.48.142 RCW, Chapter 90.48.144 RCW, and Chapter 173-225-010 WAC.*
9. The Project Proponent shall provide Ecology documentation for review before undertaking any major changes to the proposed project that could significantly and adversely affect water quality, other than those project changes required by this WQC Order.
- *Justification- Ecology has independent authority to enforce our 401 certification conditions issued through this WQC Order pursuant to RCW 90.48. In order to ensure the project will comply with water quality standards in the event of any major changes, Ecology must be able to review the scope of work involved in the construction and operation of the project, otherwise all work must stop and a new 401 certification pre-filing meeting, followed by a new 401 request (after requisite 30-days) is required.*
  - *Citation- 40 CFR 121.1(k) & (n), 40 CFR 121.3, Chapter 90.48 RCW, and Chapter 173-201 WAC.*



10. The Project Proponent shall send (per A.2.) a copy of the final Corps permit to Ecology's Federal Permit Manager within two weeks of receiving it.
  - *Justification - This conditions is needed to ensure that all the conditions of the WQC Order have been incorporated into the federal permit.*
  - *Citation- 40 CFR 121.10.*
11. Nothing in this WQC Order waives Ecology's discretionary authority to issue additional Orders if Ecology determines that further actions are necessary to implement the water quality laws of the state.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48.120 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
12. This Order will automatically transfer to a new owner or operator if:
  - a. A written agreement between the Project Proponent and new owner or operator with the specific transfer date of the WQC Order's obligations, coverage, and liability is submitted to Ecology per condition A.2.;
  - b. A copy of this Order is provided to the new owner or operator; and,
  - c. Ecology does not notify the new Project Proponent that a new WQC Order is required to complete the transfer.
    - *Justification – Ecology needs to ensure that anyone conducting work at the project, including any new owners or operators, are aware of and understand the required conditions of this WQC Order to ensure compliance with the water quality standards and other applicable state laws.*
    - *Citation – 40 CFR 121.3, Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*

#### **B. Notification Requirements:**

1. The following notification shall be made via phone or e-mail (e-mail is preferred) to Ecology's Federal Permit Manager via e-mail to [fednotification@ecy.wa.gov](mailto:fednotification@ecy.wa.gov) with a copy to [Lori.kingsbury@ecy.wa.gov](mailto:Lori.kingsbury@ecy.wa.gov). Notifications shall be identified with WQC Order No. 21410 Corps Reference No. 2020-557, and include the Project Proponent name, project name, project location, project contact and the contact phone number.
  - a. Immediately following a violation of state water quality standards or when the project is out of compliance with any conditions of this WQC Order.
  - b. At least ten (10) days prior to conducting initial in-water work activities.
  - c. Within seven (7) days of completing in-water work activities.

- *Justification - Ecology must be aware of when a project starts and ends and whether there are any issues. This allows Ecology to evaluate compliance with the state water quality requirements.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204 WAC, and Chapter 173-225-010 WAC.*
2. In addition to the phone or e-mail notification required under Condition B.1.a. above, the Project Proponent shall submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.
- *Justification - Ensure the Project Proponent remains in full compliance with state water quality requirements for the duration of the project.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.120 RCW, Chapter 173-201A WAC, and Chapter 173-225-010 WAC.*
3. If the project construction is not completed within 13 months of issuance of this WQC Order, the Project Proponent shall submit per Condition A2 a written construction status report and submit status reports every 12 months until construction and mitigation are completed.
- *Justification - Ecology must be aware of when a project starts and ends and whether there are any issues. This allows Ecology to evaluate compliance with the state water quality requirements.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204 WAC, and Chapter 173-225-010 WAC.*

### C. Timing

This WQC Order is effective upon issuance of the U.S. Corps of Engineers (Corps) individual permit for this project and will remain valid until the Project Proponent meets all its requirements and conditions.

- *Justification – Certifications are required for any license or permit that authorizes an activity that may result in a discharge or fill material into waters. This WQC Order is not valid until the Federal agency issues a permit. Additionally, Ecology needs to be able to specify how long the WQC Order will be in effect.*
- *Citation –Chapter 90.48 RCW, Chapter 173-201A, and Chapter 173-225-010 WAC.*

### D. Construction

#### General Conditions

1. All work in and near waters of the state shall be conducted to minimize turbidity, erosion, and other water quality impacts. Construction stormwater, sediment, and erosion control Best Management Practices (BMPs) suitable to prevent exceedances of state water quality standards shall be in place before starting maintenance and shall be maintained throughout the duration of the activity.

- *Justification - Disturbed areas without appropriate BMP's and construction methods can discharge excess sediment to waters of the state and degrade water quality. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
2. All clearing limits, stockpiles, staging areas, and trees to be preserved shall clearly be marked prior to commencing construction activities and maintained until all work is completed for each project.
- *Justification -Ensures that the project proponent preserves sensitive areas from discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
3. No stockpiling or staging of materials shall occur at or below the OHWM of any waterbody, including wetlands.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
4. The Project Proponent shall obtain and comply with the conditions of the Construction Stormwater General Permit (National Pollutant Discharge Elimination System - NPDES) issued for this project.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation – Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
5. Within the project limits<sup>1</sup> all environmentally sensitive areas including, but not limited to, wetlands, wetland buffers, and mitigation areas shall be fenced with high visibility construction

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<sup>1</sup> Project limits include mitigation sites, staging areas, borrow sources, and other sites developed or used to support project construction.

fencing (HVF), prior to commencing construction activities. Construction activities include equipment staging, materials storage, and work vehicle parking. Note: This condition does not apply to activities such as pre-construction surveying and installing HVF and construction zone signage.

- a. All field staff shall be trained to recognize HVF, understand its purpose and properly install it in the appropriate locations.
  - b. HVF shall be maintained until all work is completed for each project or each stage of a staged project.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
- *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
6. All clearing limits, stockpiles, staging areas, and trees to be preserved shall clearly be marked prior to commencing construction activities and maintained until all work is completed for each project.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
7. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation -Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
8. All construction debris, excess sediment, and other solid waste material shall be properly managed and disposed of in an upland disposal site approved by the appropriate regulatory authority.

- *Justification - Ecology must be assured that the Project Proponent is managing and disposing of material to protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation- Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
9. All equipment being used below the ordinary high water mark shall utilize biodegradable hydraulic fluid.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

#### Equipment & Maintenance

10. Staging areas will be located a minimum of 50 feet and, where practical, 200 feet, from waters of the state including wetlands.
- *Justification - Requiring a minimum setback ensures that material will not end up in waters of the state. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
11. Equipment used for this project shall be free of external petroleum-based products while used around the waters of the state, including wetlands. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and the undercarriage of equipment prior to its use around waters of the state, including wetlands.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

12. No equipment shall enter, operate, be stored or parked within any sensitive area except as specifically provided for in this WQC Order.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
13. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 173-200, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
14. Wash water containing oils, grease, or other hazardous materials resulting from washing of equipment or working areas shall not be discharged into state waters. The Project Proponent shall set up a designated area for washing down equipment.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*
15. A separate area shall be set aside, which does not have any possibility of draining to surface waters, for the wash-out of concrete delivery trucks, pumping equipment, and tools.
  - *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, and Chapter 173-225-010 WAC.*

#### **E. Wetland Mitigation Conditions**

1. The Project Proponent shall mitigate wetland impacts as described in the *Lower Wapato Creek Advance Mitigation Site Use Plan for Port of Tacoma's Off-Dock Container Support Facility*,

dated June 16, 2022 (hereafter called the “Mitigation Plan”) as identified in Table 1 or as required by this Order.

- *Justification - Alteration of water quality necessitates the use of mitigation as a method of controlling pollution. When adequate mitigation is provided, the impacts are not considered significant enough to water quality, at least in the long-term. The water quality standards, along with mitigation, protect wetlands as well as permitting some level of degradation where unavoidable or necessary.*
  - *Citation – 33 CFR 332, 40 CFR 131.12, 40 CFR 230, subpart J, Chapter 90.48 RCW, Chapter 90.54 RCW, Chapter 90.74 RCW, Chapter 173-201A-260 (3)(i-ii) WAC, Chapter 173-201A-300, and Chapter 173-225-010.*
2. The Project Proponent shall submit any proposed changes to the Mitigation Plan in writing to Ecology (per Condition A.2.) for review before implementing the changes.
- *Justification –When adequate mitigation is provided, the water quality impacts are offset and not considered significant, at least in the long-term. Changes in impact warrant review to ensure adequate mitigation is provided.*
  - *Citation –33 CFR 332, 40 CFR 131.12, 40 CFR 230, subpart J, Chapter 47.85.040 RCW, Chapter 90.48 RCW, Chapter 90.54 RCW, Chapter 90.74 RCW, Chapter 173-201A-260 (3)(i-ii) WAC, Chapter 173-201A-300 WAC, and Chapter 173-225-010 WAC.*
3. Prior to impacting wetlands, the Project Proponent shall submit to Ecology the following as proof of advance mitigation credit withdrawal:
- a. A ledger showing that the required amount of credits has been deducted from the advance wetland mitigation site.
  - b. The ledger must include the Order number, Order issuance date, impact acreage, the amount of credits required by the Order, and the date the credit was deducted.
- *Justification - This condition is necessary to ensure the compensatory mitigation was actually provided by the advance mitigation site.*
  - *Citation – 33 CFR 332, 40 CFR 131.12, 40 CFR 230, subpart J, Chapter 47.85.040 RCW, Chapter 90.48 RCW, Chapter 90.54 RCW, Chapter 90.74 RCW, WAC 173-201A-260 (3)(i-ii) and WAC 173-201A-300.*
4. If the Off-Dock Container Support Facility Project has not occurred within 13 months of the date of this Order, the Project Proponent shall inform Ecology, in writing, of the status of:
- a. Off-Dock Container Support Facility

- b. Reason for delay
- c. Expected date of completion

The Project Proponent shall submit an updated written notification every 12 months thereafter until the Off-Dock Container Support Facility is complete and the required ledger has been submitted.

- *Justification - Mitigation that is not emplaced concurrent with impacts will result in degradation of existing beneficial uses of the wetlands affected by the proposed action through temporal of functions.*
- *Citation – 33 CFR 332, 40 CFR 131.12, 40 CFR 230, subpart J, Chapter 47.85.040 RCW, Chapter 90.48 RCW, Chapter 90.54 RCW, Chapter 90.74 RCW, Chapter 173-201A-260 (3)(i-ii) WAC, Chapter 173-201A-300 WAC, and Chapter 173-225-010 WAC.*

5. The Project Proponent's obligation to compensate for wetland impacts under Condition E.1 is not met until the Project Proponent has received written notice from Ecology that the obligation is met.

- *Justification - If the mitigation site is not meeting all compensatory mitigation conditions then the water quality impacts will not be offset by the mitigation.*
- *Citation – 33 CFR 332, 40 CFR 131.12, 40 CFR 230, subpart J, Chapter 47.85.040 RCW, Chapter 90.48 RCW, Chapter 90.54 RCW, Chapter 90.74 RCW, Chapter 173-201A-260 (3)(i-ii) WAC, Chapter 173-201A-300 WAC, and Chapter 173-225-010 WAC.*

## **H. Emergency/Contingency Measures**

1. The Project Proponent shall develop and implement a spill prevention and containment plan for this project.

- *Justification - Ecology must ensure that the Project Proponent has a plan to prevent pollution from entering waterways. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
- *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

2. The Project Proponent shall have adequate and appropriate spill response and cleanup materials available on site to respond to any release of petroleum products or any other material into waters of the state.

- *Justification - Ecology must have assurance that the Project Proponent has the material readily available in WQC Order to address any spills that might occur to protect waters of the state. Ecology must protect waters of the state from all discharges and potential*



*discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*

- *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*
3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters.
- *Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*
4. Work causing distressed or dying fish and discharges of oil, fuel, or chemicals into state waters or onto land with a potential for entry into state waters is prohibited. If such work, conditions, or discharges occur, the Project Proponent shall notify Ecology's Federal Permit Manager per condition A2 and immediately take the following actions:
- a. Cease operations at the location of the non-compliance.
  - b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and prevent further environmental damage.
  - c. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state 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 any spilled material and used cleanup materials.
  - d. Immediately notify Ecology's Regional Spill Response Office and the Washington State Department of Fish & Wildlife with the nature and details of the problem, any actions taken to correct the problem, and any proposed changes in operation to prevent further problems.
  - e. Immediately notify the National Response Center at 1-800-424-8802, for actual spills to water only.

- *Justification - This condition is necessary to prevent oil and hazardous materials spills from causing environmental damage and to ensure compliance with water quality requirements. The sooner a spill is reported, the quicker it can be addressed, resulting in less harm. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*
5. Notify Ecology's Regional Spill Response Office immediately if chemical containers (e.g. drums) are discovered on-site or any conditions present indicating disposal or burial of chemicals on-site that may impact surface water or ground water.
- *Justification - Oil and hazardous materials spills cause environmental damage. The sooner a spill is reported, the quicker it can be addressed, resulting in less harm. Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.*
  - *Citation - Chapter 90.48 RCW, Chapter 90.48.030 RCW, Chapter 90.48.080 RCW, Chapter 90.56 RCW, Chapter 90.56.280 RCW, Chapter 173-201A WAC, Chapter 173-201A-300-330 WAC, Chapter 173-204-120 WAC, Chapter 173-225-010 WAC, and Chapter 173-303-145 WAC.*

### **Your right to appeal**

You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt. The appeal process is governed by RCW 43.21B and WAC 371-08. "Date of receipt" is defined in RCW 43.21B.001(2). More information is available at <https://eluh.wa.gov/content/11>.

To appeal, you must do all of the following within 30 days of the date of receipt of this Order:

- File your notice of appeal and a copy of this Order with the PCHB (see filing options below). "Filing" means actual receipt by the PCHB during regular business hours as defined in WAC 371-08-305 and -335. "Notice of appeal" is defined in WAC 371-08-340.
- Serve a copy of your notice of appeal and this Order on the Department of Ecology, in paper form, by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in RCW 43.21B and WAC 371-08.

### Filing an appeal with the PCHB:

For the most current information regarding filing with the PCHB, visit:

<https://eluho.wa.gov/content/11>

#### Filing by mail

##### Mailing Address:

Pollution Control Hearings Board  
PO Box 40903  
Olympia, WA 98504-0903

#### Filing in person (or by certified mail/courier)

##### Street Address:

Pollution Control Hearings Board  
1111 Israel RD SW  
STE 301  
Tumwater, WA 98501

#### Filing electronically

##### E-mail Address:

[pchb-shbappeals@eluho.wa.gov](mailto:pchb-shbappeals@eluho.wa.gov)

### Serving a copy of the appeal on Ecology:

Electronic copies of appeals are not accepted at the Department of Ecology per WAC 371-08-305(10).

#### Filing by mail

##### Mailing Address:

Department of Ecology  
Attn: Appeals Processing Desk  
PO Box 47608  
Olympia, WA 98504-7608

#### Filing in person (or by certified mail/courier)

##### Street Address:

Department of Ecology  
Attn: Appeals Processing Desk  
300 Desmond Drive SE  
Lacey, WA 98503

### Contact Information

Please direct all questions about this WQC Order to:

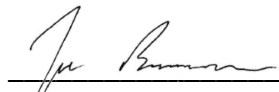
Lori Kingsbury  
Department of Ecology  
PO Box 47775  
Olympia, WA 98504-47775  
[Lori.kingsbury@ecy.wa.gov](mailto:Lori.kingsbury@ecy.wa.gov)

### More Information

- **Pollution Control Hearings Board Website**  
<https://eluho.wa.gov/content/11>
- **Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board**  
<http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B>

- **Chapter 371-08 WAC – Practice And Procedure**  
<http://app.leg.wa.gov/WAC/default.aspx?cite=371-08>
- **Chapter 34.05 RCW – Administrative Procedure Act**  
<http://app.leg.wa.gov/RCW/default.aspx?cite=34.05>
- **Chapter 90.48 RCW – Water Pollution Control**  
<http://app.leg.wa.gov/RCW/default.aspx?cite=90.48>
- **Chapter 173.204 WAC – Sediment Management Standards**  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204>
- **Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-200>
- **Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A>

Signature



Joe Burcar, Section Manager  
Shorelands and Environmental Assistance Program  
Department of Ecology

October 7, 2022  
Date

**Attachment A**

**Statement of Understanding  
Water Quality Certification Conditions**

Off-Dock Container Support Facility

Water Quality Certification WQC Order No. 21410

As the Project Proponent for the Off-Dock Container Support Facility project, I have read and understand the conditions of Washington State Department of Ecology WQC Order No. 21410, and any permits, plans, documents, and approvals referenced in the WQC Order. I have and will continue to ensure that all project engineers, contractors, and other workers at the project site with authority to direct work have read and understand the conditions of this WQC Order and any permits, plans, documents, and approvals referenced in the WQC Order.

\_\_\_\_\_

Signature

Date

\_\_\_\_\_

Title

Phone

\_\_\_\_\_

Company

**APPENDIX F**

**CONSTRUCTION**

**STORMWATER GENERAL**

**PERMIT**

**WAR312684**



STATE OF WASHINGTON  
**DEPARTMENT OF ECOLOGY**

PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

July 18, 2023

Anita Fichthorn  
NWSA/Port of Tacoma  
PO Box 1837  
Tacoma, WA 98401

**RE: Coverage under the Construction Stormwater General Permit**

**Permit number:** WAR312684  
**Site Name:** Off Dock Container Support Facility Tacoma  
**Location:** 1702 Port of Tacoma Rd  
Tacoma, WA County: Pierce  
**Disturbed Acres:** 24.5

Dear Anita Fichthorn:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (CSWGP). This is your permit coverage letter. Your permit coverage is effective July 18, 2023.

Retain this letter as an official record of permit coverage for your site. You may keep your records in electronic format if you can easily access them from your construction site. You can get the CSWGP, permit forms, and other information at Ecology's [CSWGP eCoverage Packet webpage](#)<sup>1</sup>. Contact your Permit Administrator, listed below, if you want a copy of the CSWGP mailed to you. Please read the permit and contact Ecology if you have any questions.

**Electronic Discharge Monitoring Reports (WQWebDMR)**

This permit requires you to submit monthly discharge monitoring reports (DMRs) for the full duration of permit coverage (from the first full month of coverage to termination). Your first sampling and reporting period will be for the month of **August** and your first DMR must be submitted by **September 15, 2023**.

You must submit your DMRs electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to Ecology's [WQWebPortal guidance webpage](#)<sup>2</sup>. If you have

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<sup>1</sup> <http://www.ecology.wa.gov/eCoverage-packet>

<sup>2</sup> <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>

Anita Fichthorn

July 18, 2023

Page 2

questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/Option 3, or email [WQWebPortal@ecy.wa.gov](mailto:WQWebPortal@ecy.wa.gov).

### **Appeal Process**

You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB). Appeals must be filed within 30 days of the date of receipt of this letter. Any appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2). For more information regarding your right to appeal, please reference Ecology's Focus Sheet: [Appeal of General Permit Coverage](#)<sup>3</sup>.

### **Annual Permit Fees**

RCW 90.48.465 requires Ecology to recover the costs of managing the permit program. Permit fees are invoiced annually until the permit is terminated. Termination conditions are described in the permit. For permit fee related questions, please contact the Water Quality Fee Unit at [wqfeeunit@ecy.wa.gov](mailto:wqfeeunit@ecy.wa.gov) or (800) 633-6193/Option 2. You can also visit [Water Quality Permit Fees Webpage](#)<sup>4</sup> for more information.

### **Ecology Field Inspector Assistance**

If you have questions regarding stormwater management at your construction site, please contact your Regional Inspector, Joseph McCord of Ecology's Southwest Regional Office in Lacey at [joseph.mccord@ecy.wa.gov](mailto:joseph.mccord@ecy.wa.gov), or (360) 791-5017.

### **Questions or Additional Information**

Ecology is here to help. Please review our [Construction Stormwater General Permit webpage](#)<sup>5</sup> for more information. If you have questions about the Construction Stormwater General Permit, please contact your Permit Administrator, Melinda Wilson at [melinda.wilson@ecy.wa.gov](mailto:melinda.wilson@ecy.wa.gov), or (360) 870-8290.

Sincerely,



Jeff Killelea, Manager  
Permit and Technical Services Section  
Water Quality Program

---

<sup>3</sup> <https://apps.ecology.wa.gov/publications/summarypages/1710007.html>

<sup>4</sup> <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Fees>

<sup>5</sup> [www.ecology.wa.gov/constructionstormwaterpermit](http://www.ecology.wa.gov/constructionstormwaterpermit)



Issuance Date: November 18, 2020  
Effective Date: January 1, 2021  
Expiration Date: December 31, 2025

# CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge  
General Permit for Stormwater Discharges Associated with Construction Activity

**State of Washington**  
**Department of Ecology**  
Olympia, Washington 98504

In compliance with the provisions of  
Chapter 90.48 Revised Code of Washington  
(State of Washington Water Pollution Control Act)  
and  
Title 33 United States Code, Section 1251 et seq.  
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified, or revoked, Permittees that have properly  
obtained coverage under this general permit are authorized to discharge in accordance  
with the special and general conditions that follow.



---

Vincent McGowan, P.E.  
Water Quality Program Manager  
Washington State Department of Ecology

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## SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions within this permit for additional submittal requirements. Appendix A provides a list of definitions. Appendix B provides a list of acronyms.

**Table 1 Summary of Required Submittals**

| Permit Section                              | Submittal                                                   | Frequency      | First Submittal Date                                                                                                                                            |
|---------------------------------------------|-------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">S5.A</a> and <a href="#">S8</a> | High Turbidity/Transparency Phone Reporting                 | As Necessary   | Within 24 hours                                                                                                                                                 |
| <a href="#">S5.B</a>                        | Discharge Monitoring Report                                 | Monthly*       | Within 15 days following the end of each month                                                                                                                  |
| <a href="#">S5.F</a> and <a href="#">S8</a> | Noncompliance Notification – Telephone Notification         | As necessary   | Within 24 hours                                                                                                                                                 |
| <a href="#">S5.F</a>                        | Noncompliance Notification – Written Report                 | As necessary   | Within 5 Days of non-compliance                                                                                                                                 |
| <a href="#">S9.D</a>                        | Request for Chemical Treatment Form                         | As necessary   | Written approval from Ecology is required prior to using chemical treatment (with the exception of dry ice, CO <sub>2</sub> or food grade vinegar to adjust pH) |
| <a href="#">G2</a>                          | Notice of Change in Authorization                           | As necessary   |                                                                                                                                                                 |
| <a href="#">G6</a>                          | Permit Application for Substantive Changes to the Discharge | As necessary   |                                                                                                                                                                 |
| <a href="#">G8</a>                          | Application for Permit Renewal                              | 1/permit cycle | No later than 180 days before expiration                                                                                                                        |
| <a href="#">S2.A</a>                        | Notice of Permit Transfer                                   | As necessary   |                                                                                                                                                                 |
| <a href="#">G19</a>                         | Notice of Planned Changes                                   | As necessary   |                                                                                                                                                                 |
| <a href="#">G21</a>                         | Reporting Anticipated Non-compliance                        | As necessary   |                                                                                                                                                                 |

**NOTE:** \*Permittees must submit electronic Discharge Monitoring Reports (DMRs) to the Washington State Department of Ecology monthly, regardless of site discharge, for the full duration of permit coverage. Refer to Section S5.B of this General Permit for more specific information regarding DMRs.

**Table 2 Summary of Required On-site Documentation**

| <b>Document Title</b>                          | <b>Permit Conditions</b> |
|------------------------------------------------|--------------------------|
| Permit Coverage Letter                         | See Conditions S2, S5    |
| Construction Stormwater General Permit (CSWGP) | See Conditions S2, S5    |
| Site Log Book                                  | See Conditions S4, S5    |
| Stormwater Pollution Prevention Plan (SWPPP)   | See Conditions S5, S9    |
| Site Map                                       | See Conditions S5, S9    |

# SPECIAL CONDITIONS

## S1. PERMIT COVERAGE

### A. Permit Area

This Construction Stormwater General Permit (CSWGP) covers all areas of Washington State, except for federal operators and Indian Country as specified in Special Condition S1.E.3 and 4.

### B. Operators Required to Seek Coverage Under this General Permit

1. Operators of the following construction activities are required to seek coverage under this CSWGP:
  - a. Clearing, grading and/or excavation that results in the disturbance of one or more acres (including off-site disturbance acreage related to construction-support activity as authorized in S1.C.2) and discharges stormwater to surface waters of the State; and clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.
    - i. This category includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State (that is, forest practices that prepare a site for construction activities); and
  - b. Any size construction activity discharging stormwater to waters of the State that the Washington State Department of Ecology (Ecology):
    - i. Determines to be a significant contributor of pollutants to waters of the State of Washington.
    - ii. Reasonably expects to cause a violation of any water quality standard.
2. Operators of the following activities are not required to seek coverage under this CSWGP (unless specifically required under Special Condition S1.B.1.b, above):
  - a. Construction activities that discharge all stormwater and non-stormwater to groundwater, sanitary sewer, or combined sewer, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.
  - b. Construction activities covered under an Erosivity Waiver (Special Condition S1.F).
  - c. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

### C. Authorized Discharges

1. ***Stormwater Associated with Construction Activity.*** Subject to compliance with the terms and conditions of this permit, Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the State or to a storm sewer system that drains to surface waters of the State. (Note that “surface waters of the

State” may exist on a construction site as well as off site; for example, a creek running through a site.)

2. ***Stormwater Associated with Construction Support Activity.*** This permit also authorizes stormwater discharge from support activities related to the permitted construction site (for example, an on-site portable rock crusher, off-site equipment staging yards, material storage areas, borrow areas, etc.) provided:
  - a. The support activity relates directly to the permitted construction site that is required to have an NPDES permit; and
  - b. The support activity is not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and
  - c. Appropriate controls and measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) for the discharges from the support activity areas.
3. ***Non-Stormwater Discharges.*** The categories and sources of non-stormwater discharges identified below are authorized conditionally, provided the discharge is consistent with the terms and conditions of this permit:
  - a. Discharges from fire-fighting activities.
  - b. Fire hydrant system flushing.
  - c. Potable water, including uncontaminated water line flushing.
  - d. Hydrostatic test water.
  - e. Uncontaminated air conditioning or compressor condensate.
  - f. Uncontaminated groundwater or spring water.
  - g. Uncontaminated excavation dewatering water (in accordance with S9.D.10).
  - h. Uncontaminated discharges from foundation or footing drains.
  - i. Uncontaminated or potable water used to control dust. Permittees must minimize the amount of dust control water used.
  - j. Routine external building wash down that does not use detergents.
  - k. Landscape irrigation water.

The SWPPP must adequately address all authorized non-stormwater discharges, except for discharges from fire-fighting activities, and must comply with Special Condition S3. At a minimum, discharges from potable water (including water line flushing), fire hydrant system flushing, and pipeline hydrostatic test water must undergo the following: dechlorination to a concentration of 0.1 parts per million (ppm) or less, and pH adjustment to within 6.5 – 8.5 standard units (su), if necessary.

#### **D. Prohibited Discharges**

The following discharges to waters of the State, including groundwater, are prohibited:

1. Concrete wastewater
2. Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
3. Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2 (See Appendix A of this permit).
4. Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to Special Condition S9.D.9.j.
5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
6. Soaps or solvents used in vehicle and equipment washing.
7. Wheel wash wastewater, unless managed according to Special Condition S9.D.9.
8. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to Special Condition S9.D.10.

#### **E. Limits on Coverage**

Ecology may require any discharger to apply for and obtain coverage under an individual permit or another more specific general permit. Such alternative coverage will be required when Ecology determines that this CSWGP does not provide adequate assurance that water quality will be protected, or there is a reasonable potential for the project to cause or contribute to a violation of water quality standards.

The following stormwater discharges are not covered by this permit:

1. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.
2. Non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance, from which there is natural runoff as excluded in 40 CFR Subpart 122.
3. Stormwater from any federal operator.
4. Stormwater from facilities located on **Indian Country** as defined in 18 U.S.C. §1151, except portions of the Puyallup Reservation as noted below.

**Indian Country** includes:

- a. All land within any Indian Reservation notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation. This includes all federal, tribal, and Indian and non-Indian privately owned land within the reservation.
- b. All off-reservation Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.
- c. All off-reservation federal trust lands held for Native American Tribes.



Puyallup Exception: Following the *Puyallup Tribes of Indians Land Settlement Act of 1989*, 25 U.S.C. §1773; the permit does apply to land within the Puyallup Reservation except for discharges to surface water on land held in trust by the federal government.

5. Stormwater from any site covered under an existing NPDES individual permit in which stormwater management and/or treatment requirements are included for all stormwater discharges associated with construction activity.
6. Stormwater from a site where an applicable Total Maximum Daily Load (TMDL) requirement specifically precludes or prohibits discharges from construction activity.

#### **F. Erosivity Waiver**

Construction site operators may qualify for an Erosivity Waiver from the CSWGP if the following conditions are met:

1. The site will result in the disturbance of fewer than five (5) acres and the site is not a portion of a common plan of development or sale that will disturb five (5) acres or greater.
2. Calculation of Erosivity “R” Factor and Regional Timeframe:
  - a. The project’s calculated rainfall erosivity factor (“R” Factor) must be less than five (5) during the period of construction activity, (See the CSWGP homepage <http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html> for a link to the EPA’s calculator and step by step instructions on computing the “R” Factor in the *EPA Erosivity Waiver Fact Sheet*). The period of construction activity starts when the land is first disturbed and ends with final stabilization. In addition:
  - b. The entire period of construction activity must fall within the following timeframes:
    - i. For sites west of the Cascades Crest: June 15 – September 15.
    - ii. For sites east of the Cascades Crest, excluding the Central Basin: June 15 – October 15.
    - iii. For sites east of the Cascades Crest, within the Central Basin: no timeframe restrictions apply. The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches. For a map of the Central Basin (Average Annual Precipitation Region 2), refer to: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/resourcesguidance.html>.
3. Construction site operators must submit a complete Erosivity Waiver certification form at least one week before disturbing the land. Certification must include statements that the operator will:
  - a. Comply with applicable local stormwater requirements; and
  - b. Implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.
4. This waiver is not available for facilities declared significant contributors of pollutants as defined in Special Condition S1.B.1.b or for any size construction activity that could

reasonably expect to cause a violation of any water quality standard as defined in Special Condition S1.B.1.b.ii.

5. This waiver does not apply to construction activities which include non-stormwater discharges listed in Special Condition S1.C.3.
6. If construction activity extends beyond the certified waiver period for any reason, the operator must either:
  - a. Recalculate the rainfall erosivity “R” factor using the original start date and a new projected ending date and, if the “R” factor is still under 5 *and* the entire project falls within the applicable regional timeframe in Special Condition S1.F.2.b, complete and submit an amended waiver certification form before the original waiver expires; *or*
  - b. Submit a complete permit application to Ecology in accordance with Special Condition S2.A and B before the end of the certified waiver period.

## S2. APPLICATION REQUIREMENTS

### A. Permit Application Forms

#### 1. *Notice of Intent Form*

- a. Operators of new or previously unpermitted construction activities must submit a complete and accurate permit application (Notice of Intent, or NOI) to Ecology.
- b. Operators must apply using the electronic application form (NOI) available on Ecology’s website (<http://ecy.wa.gov/programs/wq/stormwater/construction/index.html>). Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

Department of Ecology  
Water Quality Program - Construction Stormwater  
PO Box 47696  
Olympia, Washington 98504-7696

- c. The operator must submit the NOI at least 60 days before discharging stormwater from construction activities and must submit it prior to the date of the first public notice (See Special Condition S2.B, below, for details). The 30-day public comment period begins on the publication date of the second public notice. Unless Ecology responds to the complete application in writing, coverage under the general permit will automatically commence on the 31<sup>st</sup> day following receipt by Ecology of a *completed* NOI, or the issuance date of this permit, whichever is later; unless Ecology specifies a later date in writing as required by WAC173-226-200(2). See S8.B for Limits on Coverage for New Discharges to TMDL or 303(d)-Listed Waters.
- d. If an applicant intends to use a Best Management Practice (BMP) selected on the basis of Special Condition S9.C.4 (“demonstrably equivalent” BMPs), the applicant must notify Ecology of its selection as part of the NOI. In the event the applicant selects BMPs after submission of the NOI, the applicant must provide notice of the

selection of an equivalent BMP to Ecology at least 60 days before intended use of the equivalent BMP.

- e. Applicants must notify Ecology if they are aware of contaminated soils and/or groundwater associated with the construction activity. Provide detailed information with the NOI (as known and readily available) on the nature and extent of the contamination (concentrations, locations, and depth), as well as pollution prevention and/or treatment BMPs proposed to control the discharge of soil and/or groundwater contaminants in stormwater. Examples of such detail may include, but are not limited to:
  - i. List or table of all known contaminants with laboratory test results showing concentration and depth,
  - ii. Map with sample locations,
  - iii. Related portions of the Stormwater Pollution Prevention Plan (SWPPP) that address the management of contaminated and potentially contaminated construction stormwater and dewatering water,
  - iv. Dewatering plan and/or dewatering contingency plan.

## **2. *Transfer of Coverage Form***

The Permittee can transfer current coverage under this permit to one or more new operators, including operators of sites within a Common Plan of Development, provided:

- i. The Permittee submits a complete Transfer of Coverage Form to Ecology, signed by the current and new discharger and containing a specific date for transfer of permit responsibility, coverage and liability (including any Administrative Orders associated with the permit); and
- ii. Ecology does not notify the current discharger and new discharger of intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the written agreement.

When a current discharger (Permittee) transfers a portion of a permitted site, the current discharger must also indicate the remaining permitted acreage after the transfer. Transfers do not require public notice.

## **3. *Modification of Coverage Form***

Permittees must notify Ecology regarding any changes to the information provided on the NOI by submitting an Update/Modification of Permit Coverage form in accordance with General Conditions G6 and G19. Examples of such changes include, but are not limited to:

- i. Changes to the Permittee's mailing address,
- ii. Changes to the on-site contact person information, and
- iii. Changes to the area/acreage affected by construction activity.

## B. Public Notice

For new or previously unpermitted construction activities, the applicant must publish a public notice at least one time each week for two consecutive weeks, at least 7 days apart, in a newspaper with general circulation in the county where the construction is to take place. The notice must be run after the NOI has been submitted and must contain:

1. A statement that *“The applicant is seeking coverage under the Washington State Department of Ecology’s Construction Stormwater NPDES and State Waste Discharge General Permit.”*
2. The name, address, and location of the construction site.
3. The name and address of the applicant.
4. The type of construction activity that will result in a discharge (for example, residential construction, commercial construction, etc.), and the total number of acres to be disturbed over the lifetime of the project.
5. The name of the receiving water(s) (that is, the surface water(s) to which the site will discharge), or, if the discharge is through a storm sewer system, the name of the operator of the system and the receiving water(s) the system discharges to.
6. The statement: *Any persons desiring to present their views to the Washington State Department of Ecology regarding this application, or interested in Ecology’s action on this application, may notify Ecology in writing no later than 30 days of the last date of publication of this notice. Ecology reviews public comments and considers whether discharges from this project would cause a measurable change in receiving water quality, and, if so, whether the project is necessary and in the overriding public interest according to Tier II antidegradation requirements under WAC 173-201A-320. Comments can be submitted to: Department of Ecology, PO Box 47696, Olympia, Washington 98504-7696 Attn: Water Quality Program, Construction Stormwater.*

## S3. COMPLIANCE WITH STANDARDS

- A. Discharges must not** cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), groundwater quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington. (40 CFR Part 131.45) Discharges that are not in compliance with these standards are prohibited.
- B. Prior to the discharge** of stormwater and non-stormwater to waters of the State, the Permittee must apply All Known, Available, and Reasonable methods of prevention, control, and Treatment (AKART). This includes the preparation and implementation of an adequate SWPPP, with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.
- C. Ecology presumes** that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:

1. Comply with all permit conditions, including; planning, sampling, monitoring, reporting, and recordkeeping conditions.
  2. Implement stormwater BMPs contained in stormwater management manuals published or approved by Ecology, or BMPs that are demonstrably equivalent to BMPs contained in stormwater management manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the *Phase I Municipal Stormwater Permit* are approved by Ecology.)
- D. Where construction sites** also discharge to groundwater, the groundwater discharges must also meet the terms and conditions of this CSWGP. Permittees who discharge to groundwater through an injection well must also comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

## **S4. MONITORING REQUIREMENTS, BENCHMARKS, AND REPORTING TRIGGERS**

### **A. Site Log Book**

The Permittee must maintain a site log book that contains a record of the implementation of the SWPPP and other permit requirements, including the installation and maintenance of BMPs, site inspections, and stormwater monitoring.

### **B. Site Inspections**

Construction sites one (1) acre or larger that discharge stormwater to surface waters of the State must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Sites less than one (1) acre may have a person without CESCL certification conduct inspections. (See Special Conditions S4.B.3 and B.4, below, for detailed requirements of the Permittee's CESCL.)

Site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points under the Permittee's operational control.

1. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:
  - a. Site conditions and construction activities that could impact the quality of stormwater; and
  - b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. The SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL (sites one (1) acre or more) must obtain this certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology. (See BMP C160 in the manual, referred to in Special Condition S9.C.1 and 2.)
2. The CESCL or inspector must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. BMP effectiveness must be evaluated to

determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, the Permittee must correct the problems identified, by:

- a. Reviewing the SWPPP for compliance with Special Condition S9 and making appropriate revisions within 7 days of the inspection.
  - b. Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs, within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
  - c. Documenting BMP implementation and maintenance in the site log book.
3. The CESCL or inspector must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one (1) day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one (1) inspection is required that week.) Inspection frequency may be reduced to once every calendar month for inactive sites that are temporarily stabilized.
4. The Permittee must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book. At a minimum, each inspection report or checklist must include:
  - a. Inspection date and time.
  - b. Weather information.
  - c. The general conditions during inspection.
  - d. The approximate amount of precipitation since the last inspection.
  - e. The approximate amount of precipitation within the last 24 hours.
  - f. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.
  - g. A description of:
    - i. BMPs inspected (including location).
    - ii. BMPs that need maintenance and why.
    - iii. BMPs that failed to operate as designed or intended, and
    - iv. Where additional or different BMPs are needed, and why.
  - h. A description of stormwater discharged from the site. The Permittee must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.

- i. Any water quality monitoring performed during inspection.
- j. General comments and notes, including a brief description of any BMP repairs, maintenance, or installations made following the inspection.
- k. An implementation schedule for the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.
- l. A summary report of the inspection.
- m. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement:  
*I certify that this report is true, accurate, and complete to the best of my knowledge and belief.*

**Table 3 Summary of Primary Monitoring Requirements**

| Size of Soil Disturbance <sup>1</sup>                                                    | Weekly Site Inspections | Weekly Sampling w/ Turbidity Meter             | Weekly Sampling w/ Transparency Tube | Weekly pH Sampling <sup>2</sup> | CESCL Required for Inspections? |
|------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------|--------------------------------------|---------------------------------|---------------------------------|
| Sites that disturb less than 1 acre, but are part of a larger Common Plan of Development | Required                | Not Required                                   | Not Required                         | Not Required                    | No                              |
| Sites that disturb 1 acre or more, but fewer than 5 acres                                | Required                | Sampling Required – either method <sup>3</sup> |                                      | Required                        | Yes                             |
| Sites that disturb 5 acres or more                                                       | Required                | Required                                       | Not Required <sup>4</sup>            | Required                        | Yes                             |

<sup>1</sup> Soil disturbance is calculated by adding together all areas that will be affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

<sup>2</sup> If construction activity results in the disturbance of 1 acre or more, and involves significant concrete work (1,000 cubic yards of concrete or recycled concrete placed or poured over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer stormwater collection system that drains to other surface waters of the State, the Permittee must conduct pH sampling in accordance with Special Condition S4.D.

<sup>3</sup> Sites with one or more acres, but fewer than 5 acres of soil disturbance, must conduct turbidity or transparency sampling in accordance with Special Condition S4.C.4.a or b.

<sup>4</sup> Sites equal to or greater than 5 acres of soil disturbance must conduct turbidity sampling using a turbidity meter in accordance with Special Condition S4.C.4.a.

### **C. Turbidity/Transparency Sampling Requirements**

#### **1. Sampling Methods**

- a. If construction activity involves the disturbance of five (5) acres or more, the Permittee must conduct turbidity sampling per Special Condition S4.C.4.a, below.
- b. If construction activity involves one (1) acre or more but fewer than five (5) acres of soil disturbance, the Permittee must conduct either transparency sampling *or* turbidity sampling per Special Condition S4.C.4.a or b, below.

#### **2. Sampling Frequency**

- a. The Permittee must sample all discharge points at least once every calendar week when stormwater (or authorized non-stormwater) discharges from the site or enters any on-site surface waters of the state (for example, a creek running through a site); sampling is not required on sites that disturb less than an acre.
- b. Samples must be representative of the flow and characteristics of the discharge.
- c. Sampling is not required when there is no discharge during a calendar week.
- d. Sampling is not required outside of normal working hours or during unsafe conditions.
- e. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR).
- f. Sampling is not required before construction activity begins.
- g. The Permittee may reduce the sampling frequency for temporarily stabilized, inactive sites to once every calendar month.

#### **3. Sampling Locations**

- a. Sampling is required at all points where stormwater associated with construction activity (or authorized non-stormwater) is discharged off site, including where it enters any on-site surface waters of the state (for example, a creek running through a site).
- b. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion.
- c. The Permittee must identify all sampling point(s) in the SWPPP and on the site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.
- d. Sampling is not required for discharge that is sent directly to sanitary or combined sewer systems.
- e. The Permittee may discontinue sampling at discharge points in areas of the project where the Permittee no longer has operational control of the construction activity.



#### 4. Sampling and Analysis Methods

- a. The Permittee performs turbidity analysis with a calibrated turbidity meter (turbidimeter) either on site or at an accredited lab. The Permittee must record the results in the site log book in nephelometric turbidity units (NTUs).
- b. The Permittee performs transparency analysis on site with a 1¾ inch diameter, 60 centimeter (cm)-long transparency tube. The Permittee will record the results in the site log book in centimeters (cm).

**Table 4 Monitoring and Reporting Requirements**

| Parameter    | Unit | Analytical Method                              | Sampling Frequency     | Benchmark Value |
|--------------|------|------------------------------------------------|------------------------|-----------------|
| Turbidity    | NTU  | SM2130                                         | Weekly, if discharging | 25 NTUs         |
| Transparency | Cm   | Manufacturer instructions, or Ecology guidance | Weekly, if discharging | 33 cm           |

#### 5. Turbidity/Transparency Benchmark Values and Reporting Triggers

The benchmark value for turbidity is 25 NTUs. The benchmark value for transparency is 33 centimeters (cm). Note: Benchmark values do not apply to discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus; these discharges are subject to a numeric effluent limit for turbidity. Refer to Special Condition S8 for more information and follow S5.F – Noncompliance Notification for reporting requirements applicable to discharges which exceed the numeric effluent limit for turbidity.

- a. Turbidity 26 – 249 NTUs, or Transparency 32 – 7 cm:

If the discharge turbidity is 26 to 249 NTUs; or if discharge transparency is 32 to 7 cm, the Permittee must:

- i. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs, and no later than 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
- ii. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
- iii. Document BMP implementation and maintenance in the site log book.

- b. Turbidity 250 NTUs or greater, or Transparency 6 cm or less:

If a discharge point's turbidity is 250 NTUs or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive

management process described below. For discharges which are subject to a numeric effluent limit for turbidity, see S5.F – Noncompliance Notification.

- i. Within 24 hours, telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) number (or through Ecology's Water Quality Permitting Portal [WQWebPortal] – Permit Submittals when the form is available), in accordance with Special Condition S5.A.
  - **Central Region** (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490
  - **Eastern Region** (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
  - **Northwest Region** (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000
  - **Southwest Region** (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

These numbers and a link to the ERTS reporting page are also listed at the following website: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html>.

- ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
- iii. Sample discharges daily until:
  - a) Turbidity is 25 NTUs (or lower); or
  - b) Transparency is 33 cm (or greater); or
  - c) The Permittee has demonstrated compliance with the water quality standard for turbidity:
    - 1) No more than 5 NTUs over background turbidity, if background is less than 50 NTUs, or
    - 2) No more than 10% over background turbidity, if background is 50 NTUs or greater; or

\*Note: background turbidity in the receiving water must be measured immediately upstream (upgradient) or outside of the area of influence of the discharge.
  - d) The discharge stops or is eliminated.
- iv. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within seven (7) days of the date the discharge exceeded the benchmark.

- v. Document BMP implementation and maintenance in the site log book.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with permit benchmarks.

#### **D. pH Sampling Requirements – Significant Concrete Work or Engineered Soils**

If construction activity results in the disturbance of 1 acre or more, *and* involves significant concrete work (significant concrete work means greater than 1000 cubic yards placed or poured concrete or recycled concrete used over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer system that drains to surface waters of the State, the Permittee must conduct pH sampling as set forth below. Note: In addition, discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for high pH are subject to a numeric effluent limit for pH; refer to Special Condition S8.

1. The Permittee must perform pH analysis on site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH sampling results in the site log book.
2. During the applicable pH monitoring period defined below, the Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week.
  - a. For sites with significant concrete work, the Permittee must begin the pH sampling period when the concrete is first placed or poured and exposed to precipitation, and continue weekly throughout and after the concrete placement, pour and curing period, until stormwater pH is in the range of 6.5 to 8.5 (su).
  - b. For sites with recycled concrete where monitoring is required, the Permittee must begin the weekly pH sampling period when the recycled concrete is first exposed to precipitation and must continue until the recycled concrete is fully stabilized with the stormwater pH in the range of 6.5 to 8.5 (su).
  - c. For sites with engineered soils, the Permittee must begin the pH sampling period when the soil amendments are first exposed to precipitation and must continue until the area of engineered soils is fully stabilized.
3. The Permittee must sample pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.
4. The benchmark value for pH is 8.5 standard units. Anytime sampling indicates that pH is 8.5 or greater, the Permittee must either:
  - a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters of the state; *or*
  - b. If necessary, adjust or neutralize the high pH water until it is in the range of pH 6.5 to 8.5 (su) using an appropriate treatment BMP such as carbon dioxide (CO<sub>2</sub>) sparging, dry ice or food grade vinegar. The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO<sub>2</sub> sparging, dry ice or food grade vinegar.

## S5. REPORTING AND RECORDKEEPING REQUIREMENTS

### A. High Turbidity Reporting

Anytime sampling performed in accordance with Special Condition S4.C indicates turbidity has reached the 250 NTUs or more (or transparency less than or equal to 6 cm), high turbidity reporting level, the Permittee must notify Ecology within 24 hours of analysis either by calling the applicable Ecology Region's Environmental Report Tracking System (ERTS) number by phone or by submitting an electronic ERTS report (through Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals when the form is available). See the CSWGP website for links to ERTS and the WQWebPortal. (<http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html>) Also, see phone numbers in Special Condition S4.C.5.b.i.

### B. Discharge Monitoring Reports (DMRs)

Permittees required to conduct water quality sampling in accordance with Special Conditions S4.C (Turbidity/Transparency), S4.D (pH), S8 (303[d]/TMDL sampling), and/or G12 (Additional Sampling) must submit the results to Ecology.

Permittees must submit monitoring data using Ecology's WQWebDMR web application accessed through Ecology's Water Quality Permitting Portal.

Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR at:

Department of Ecology  
Water Quality Program - Construction Stormwater  
PO Box 47696  
Olympia, WA 98504-7696

Permittees who obtain a waiver not to use WQWebDMR must use the forms provided to them by Ecology; submittals must be mailed to the address above. Permittees must submit DMR forms to be received by Ecology within 15 days following the end of each month.

If there was no discharge during a given monitoring period, all Permittees must submit a DMR as required with "no discharge" entered in place of the monitoring results. DMRs are required for the full duration of permit coverage (from the first full month following the effective date of permit coverage up until Ecology has approved termination of the coverage). For more information, contact Ecology staff using information provided at the following website: [www.ecy.wa.gov/programs/wq/permits/paris/contacts.html](http://www.ecy.wa.gov/programs/wq/permits/paris/contacts.html).

### C. Records Retention

The Permittee must retain records of all monitoring information (site log book, sampling results, inspection reports/checklists, etc.), Stormwater Pollution Prevention Plan, copy of the permit coverage letter (including Transfer of Coverage documentation) and any other documentation of compliance with permit requirements for the entire life of the construction project and for a minimum of five (5) years following the termination of permit coverage. Such information must include all calibration and maintenance records, and records of all data used to complete the application for this permit. This period of retention must be extended during

the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

#### **D. Recording Results**

For each measurement or sample taken, the Permittee must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The first and last name of the individual who performed the sampling or measurement.
3. The date(s) the analyses were performed.
4. The first and last name of the individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

#### **E. Additional Monitoring by the Permittee**

If the Permittee samples or monitors any pollutant more frequently than required by this permit using test procedures specified by Special Condition S4 of this permit, the sampling results for this monitoring must be included in the calculation and reporting of the data submitted in the Permittee's DMR.

#### **F. Noncompliance Notification**

In the event the Permittee is unable to comply with any part of the terms and conditions of this permit, and the resulting noncompliance may cause a threat to human health or the environment (such as but not limited to spills or fuels or other materials, catastrophic pond or slope failure, and discharges that violate water quality standards), or exceed numeric effluent limitations (see S8 – Discharges to 303(d) or TMDL Waterbodies), the Permittee must, upon becoming aware of the circumstance:

1. Notify Ecology within 24 hours of the failure to comply by calling the applicable Regional office ERTS phone number (refer to Special Condition S4.C.5.b.i, or go to <https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue> to find contact information for the regional offices.)
2. Immediately take action to prevent the discharge/pollution, or otherwise stop or correct the noncompliance, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to Ecology within five (5) days of becoming aware of the violation (See S5.F.3, below, for details on submitting results in a report).
3. Submit a detailed written report to Ecology within five (5) days of the time the Permittee becomes aware of the circumstances, unless requested earlier by Ecology. The report must be submitted using Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals, unless a waiver from electronic reporting has been granted according to S5.B. The report must contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Permittee must report any unanticipated bypass and/or upset that exceeds any effluent limit in the permit in accordance with the 24-hour reporting requirement contained in 40 C.F.R. 122.41(l)(6).

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply. Upon request of the Permittee, Ecology may waive the requirement for a written report on a case-by-case basis, if the immediate notification is received by Ecology within 24 hours.

#### **G. Access to Plans and Records**

1. The Permittee must retain the following permit documentation (plans and records) on site, or within reasonable access to the site, for use by the operator or for on-site review by Ecology or the local jurisdiction:
  - a. General Permit
  - b. Permit Coverage Letter
  - c. Stormwater Pollution Prevention Plan (SWPPP)
  - d. Site Log Book
  - e. Erosivity Waiver (if applicable)
2. The Permittee must address written requests for plans and records listed above (Special Condition S5.G.1) as follows:
  - a. The Permittee must provide a copy of plans and records to Ecology within 14 days of receipt of a written request from Ecology.
  - b. The Permittee must provide a copy of plans and records to the public when requested in writing. Upon receiving a written request from the public for the Permittee's plans and records, the Permittee must either:
    - i. Provide a copy of the plans and records to the requester within 14 days of a receipt of the written request; *or*
    - ii. Notify the requester within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed; and provide access to the plans and records within 14 days of receipt of the written request; *or*

Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requester at an Ecology office, or a mutually agreed location. If plans and records are viewed and/or copied at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged. The Permittee must notify the requester within 10 days of receipt of the request where the plans and records may be viewed and/or copied.

## S6. PERMIT FEES

The Permittee must pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit are established by Chapter 173-224 WAC. Ecology continues to assess permit fees until the permit is terminated in accordance with Special Condition S10 or revoked in accordance with General Condition G5.

## S7. SOLID AND LIQUID WASTE DISPOSAL

The Permittee must handle and dispose of solid and liquid wastes generated by construction activity, such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, in accordance with:

- A. Special Condition S3, Compliance with Standards.
- B. WAC 173-216-110.
- C. Other applicable regulations.

## S8. DISCHARGES TO 303(d) OR TMDL WATERBODIES

### A. Sampling and Numeric Effluent Limits For Certain Discharges to 303(d)-Listed Water Bodies

1. Permittees who discharge to segments of water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorus, must conduct water quality sampling according to the requirements of this section, and Special Conditions S4.C.2.b-f and S4.C.3.b-d, and must comply with the applicable numeric effluent limitations in S8.C and S8.D.
2. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters (Category 5) that exists on January 1, 2021, or the date when the operator's complete permit application is received by Ecology, whichever is later.

### B. Limits on Coverage for New Discharges to TMDL or 303(d)-Listed Waters

Construction sites that discharge to a TMDL or 303(d)-listed waterbody are not eligible for coverage under this permit *unless* the operator:

1. Prevents exposing stormwater to pollutants for which the waterbody is impaired, and retains documentation in the SWPPP that details procedures taken to prevent exposure on site; *or*
2. Documents that the pollutants for which the waterbody is impaired are not present at the site, and retains documentation of this finding within the SWPPP; *or*
3. Provides Ecology with data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retains such data on site with the SWPPP. The operator must provide data and other technical information to Ecology that sufficiently demonstrate:
  - a. For discharges to waters without an EPA-approved or -established TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the waterbody; *or*
  - b. For discharges to waters with an EPA-approved or -established TMDL, that there is sufficient remaining wasteload allocation in the TMDL to allow construction stormwater discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards.

Operators of construction sites are eligible for coverage under this permit only after Ecology makes an affirmative determination that the *discharge will not cause or contribute to the existing impairment or exceed the TMDL*.

**C. Sampling and Numeric Effluent Limits for Discharges to Water Bodies on the 303(d) List for Turbidity, Fine Sediment, or Phosphorus**

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus must conduct turbidity sampling in accordance with Special Condition S4.C.2 and comply with either of the numeric effluent limits noted in Table 5 below.
2. As an alternative to the 25 NTUs effluent limit noted in Table 5 below (applied at the point where stormwater [or authorized non-stormwater] is discharged off-site), Permittees may choose to comply with the surface water quality standard for turbidity. The standard is: no more than 5 NTUs over background turbidity when the background turbidity is 50 NTUs or less, or no more than a 10% increase in turbidity when the background turbidity is more than 50 NTUs. In order to use the water quality standard requirement, the sampling must take place at the following locations:
  - a. Background turbidity in the 303(d)-listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.
  - b. Turbidity at the point of discharge into the 303(d)-listed receiving water, inside the area of influence of the discharge.
3. Discharges that exceed the numeric effluent limit for turbidity constitute a violation of this permit.
4. Permittees whose discharges exceed the numeric effluent limit must sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.



**Table 5 Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters**

| Parameter identified in 303(d) listing                                                                 | Parameter Sampled | Unit | Analytical Method | Sampling Frequency     | Numeric Effluent Limit <sup>1</sup>                                                                                                                             |
|--------------------------------------------------------------------------------------------------------|-------------------|------|-------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Turbidity</li> <li>Fine Sediment</li> <li>Phosphorus</li> </ul> | Turbidity         | NTU  | SM2130            | Weekly, if discharging | 25 NTUs, at the point where stormwater is discharged from the site; <b>OR</b><br>In compliance with the surface water quality standard for turbidity (S8.C.2.a) |

<sup>1</sup> Permittees subject to a numeric effluent limit for turbidity may, at their discretion, choose either numeric effluent limitation based on site-specific considerations including, but not limited to, safety, access and convenience.

#### **D. Discharges to Water Bodies on the 303(d) List for High pH**

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for high pH must conduct pH sampling in accordance with the table below, and comply with the numeric effluent limit of pH 6.5 to 8.5 su (Table 6).

**Table 6 pH Sampling and Limits for 303(d)-Listed Waters**

| Parameter identified in 303(d) listing | Parameter Sampled/Units | Analytical Method | Sampling Frequency     | Numeric Effluent Limit       |
|----------------------------------------|-------------------------|-------------------|------------------------|------------------------------|
| High pH                                | pH /Standard Units      | pH meter          | Weekly, if discharging | In the range of 6.5 – 8.5 su |

2. At the Permittee's discretion, compliance with the limit shall be assessed at one of the following locations:
  - a. Directly in the 303(d)-listed waterbody segment, inside the immediate area of influence of the discharge; *or*
  - b. Alternatively, the Permittee may measure pH at the point where the discharge leaves the construction site, rather than in the receiving water.
3. Discharges that exceed the numeric effluent limit for pH (outside the range of 6.5 – 8.5 su) constitute a violation of this permit.
4. Permittees whose discharges exceed the numeric effluent limit must sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

#### **E. Sampling and Limits for Sites Discharging to Waters Covered by a TMDL or another Pollution Control Plan**

1. Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL. Refer to <http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html> for more information on TMDLs.
  - a. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges must be consistent with any specific waste load allocations or requirements established by the applicable TMDL.
    - i. The Permittee must sample discharges weekly, unless otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.
    - ii. Analytical methods used to meet the monitoring requirements must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136.
    - iii. Turbidity and pH methods need not be accredited or registered unless conducted at a laboratory which must otherwise be accredited or registered.
  - b. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but has not identified specific requirements, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.
  - c. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.
  - d. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

## S9. STORMWATER POLLUTION PREVENTION PLAN

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

### **A. The Permittee's SWPPP must meet the following objectives:**

1. To identify best management practices (BMPs) which prevent erosion and sedimentation, and to reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
2. To prevent violations of surface water quality, groundwater quality, or sediment management standards.
3. To control peak volumetric flow rates and velocities of stormwater discharges.

## **B. General Requirements**

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:
  - a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).
  - b. Potential erosion problem areas.
  - c. The 13 elements of a SWPPP in Special Condition S9.D.1-13, including BMPs used to address each element.
  - d. Construction phasing/sequence and general BMP implementation schedule.
  - e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.
  - f. Engineering calculations for ponds, treatment systems, and any other designed structures. When a treatment system requires engineering calculations, these calculations must be included in the SWPPP. Engineering calculations do not need to be included in the SWPPP for treatment systems that do not require such calculations.
2. The Permittee must modify the SWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:
  - a. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the inspection or investigation.
  - b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
  - c. Document BMP implementation and maintenance in the site log book.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

## **C. Stormwater Best Management Practices (BMPs)**

BMPs must be consistent with:

1. *Stormwater Management Manual for Western Washington* (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; *or*

2. *Stormwater Management Manual for Eastern Washington* (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; *or*
3. Revisions to the manuals listed in Special Condition S9.C.1 & 2, or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230; *or*
4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including:
  - a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
  - b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

#### **D. SWPPP – Narrative Contents and Requirements**

The Permittee must include each of the 13 elements below in Special Condition S9.D.1-13 in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits
  - a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
  - b. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable.
2. Establish Construction Access
  - a. Limit construction vehicle access and exit to one route, if possible.
  - b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.
  - c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
  - d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.
  - e. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d.
  - f. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

### 3. Control Flow Rates

- a. Protect properties and waterways downstream of construction sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.
- b. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater infiltration or detention BMPs as one of the first steps in grading. Assure that detention BMPs function properly before constructing site improvements (for example, impervious surfaces).
- c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from sedimentation during the construction phase.

### 4. Install Sediment Controls

The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must:

- a. Construct sediment control BMPs (sediment ponds, traps, filters, infiltration facilities, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
- b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.
- d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
- e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
- f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

### 5. Stabilize Soils

- a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion

control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.

- b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.
- c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
- d. Depending on the geographic location of the project, the Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion.

**West of the Cascade Mountains Crest**

During the dry season (May 1 - September 30): 7 days

During the wet season (October 1 - April 30): 2 days

**East of the Cascade Mountains Crest, except for Central Basin\***

During the dry season (July 1 - September 30): 10 days

During the wet season (October 1 - June 30): 5 days

**The Central Basin\*, East of the Cascade Mountains Crest**

During the dry Season (July 1 - September 30): 30 days

During the wet season (October 1 - June 30): 15 days

**\*Note: The Central Basin** is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches.

- e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
- f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.
- g. The Permittee must minimize the amount of soil exposed during construction activity.
- h. The Permittee must minimize the disturbance of steep slopes.
- i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

**6. Protect Slopes**

- a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
- b. The Permittee must divert off-site stormwater (run-on) or groundwater away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
- c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.

- i. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."
  - ii. East of the Cascade Mountains Crest: Temporary pipe slope drains must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.
- d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
- e. Place check dams at regular intervals within constructed channels that are cut down a slope.
- 7. Protect Drain Inlets
  - a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
  - b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
- 8. Stabilize Channels and Outlets
  - a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:
    - i. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."
    - ii. East of the Cascade Mountains Crest: Channels must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.
  - b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

## 9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

- a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
- b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. Minimize storage of hazardous materials on-site. Safety Data Sheets (SDS) should be supplied for all materials stored. Chemicals should be kept in their original labeled containers. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume of the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.
- c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
- d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.
- e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
- f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, recycled concrete stockpiles, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A – Definitions.)
- g. Adjust the pH of stormwater or authorized non-stormwater if necessary to prevent an exceedance of groundwater and/or surface water quality standards.
- h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete truck drums onto the ground, or into storm drains, open ditches, streets, or streams. Washout of small concrete handling equipment may be disposed of in a formed area awaiting concrete where it will not contaminate surface or groundwater. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge directly to groundwater or surface waters of the State is



prohibited. At no time shall concrete be washed off into the footprint of an area where an infiltration BMP will be installed.

- i. Obtain written approval from Ecology before using any chemical treatment, with the exception of CO<sub>2</sub>, dry ice or food grade vinegar, to adjust pH.
- j. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

#### 10. Control Dewatering

- a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, in conjunction with BMPs to reduce sedimentation before discharge to a sediment trap or sediment pond.
- b. Permittees may discharge clean, non-turbid dewatering water, such as well-point groundwater, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.
- c. Other dewatering treatment or disposal options may include:
  - i. Infiltration
  - ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
  - iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies (See S9.D.9.i, regarding chemical treatment written approval).
  - iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.
  - v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.
- d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

#### 11. Maintain BMPs

- a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.
- b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

## 12. Manage the Project

- a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.
- b. Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S4.
- c. Maintain, update, and implement the SWPPP in accordance with Special Conditions S3, S4, and S9.

## 13. Protect Low Impact Development (LID) BMPs

The primary purpose of on-site LID Stormwater Management is to reduce the disruption of the natural site hydrology through infiltration. LID BMPs are permanent facilities.

- a. Permittees must protect all LID BMPs (including, but not limited to, Bioretention and Rain Garden facilities) from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden facilities. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the facility must include removal of sediment and any sediment-laden bioretention/ rain garden soils, and replacing the removed soils with soils meeting the design specification.
- b. Permittees must maintain the infiltration capabilities of LID BMPs by protecting against compaction by construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.
- c. Permittees must control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements or base materials.
- d. Permittees must clean permeable pavements fouled with sediments or no longer passing an initial infiltration test using local stormwater manual methodology or the manufacturer's procedures.
- e. Permittees must keep all heavy equipment off existing soils under LID BMPs that have been excavated to final grade to retain the infiltration rate of the soils.

### **E. SWPPP – Map Contents and Requirements**

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions.

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.

3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface waterbody, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.
11. Location or proposed location of LID facilities.

## **S10. NOTICE OF TERMINATION**

Partial terminations of permit coverage are not authorized.

**A.** The site is eligible for termination of coverage when it has met any of the following conditions:

1. The site has undergone final stabilization, the Permittee has removed all temporary BMPs (except biodegradable BMPs clearly manufactured with the intention for the material to be left in place and not interfere with maintenance or land use), and all stormwater discharges associated with construction activity have been eliminated; *or*
2. All portions of the site that have not undergone final stabilization per Special Condition S10.A.1 have been sold and/or transferred (per Special Condition S2.A), and the Permittee no longer has operational control of the construction activity; *or*
3. For residential construction only, the Permittee has completed temporary stabilization and the homeowners have taken possession of the residences.

**B.** When the site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form, signed in accordance with General Condition G2, to:

Department of Ecology  
Water Quality Program - Construction Stormwater  
PO Box 47696  
Olympia, WA 98504-7696

When an electronic termination form is available, the Permittee may choose to submit a complete and accurate Notice of Termination (NOT) form through the Water Quality Permitting Portal rather than mailing a hardcopy as noted above.

The termination is effective on the 31st calendar day following the date Ecology receives a complete NOT form, unless Ecology notifies the Permittee that termination request is denied because the Permittee has not met the eligibility requirements in Special Condition S10.A.

Permittees are required to comply with all conditions and effluent limitations in the permit until the permit has been terminated.

Permittees transferring the property to a new property owner or operator/Permittee are required to complete and submit the Notice of Transfer form to Ecology, but are not required to submit a Notice of Termination form for this type of transaction.

# GENERAL CONDITIONS

## G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this general permit must be consistent with the terms and conditions of this general permit. Any discharge of any pollutant more frequent than or at a level in excess of that identified and authorized by the general permit must constitute a violation of the terms and conditions of this permit.

## G2. SIGNATORY REQUIREMENTS

- A. All permit applications must bear a certification of correctness to be signed:
  - 1. In the case of corporations, by a responsible corporate officer.
  - 2. In the case of a partnership, by a general partner of a partnership.
  - 3. In the case of sole proprietorship, by the proprietor.
  - 4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.
- B. All reports required by this permit and other information requested by Ecology (including NOIs, NOTs, and Transfer of Coverage forms) must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - 1. The authorization is made in writing by a person described above and submitted to Ecology.
  - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.
- C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G2.B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section must make the following certification:

*I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

### **G3. RIGHT OF INSPECTION AND ENTRY**

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

- A.** To enter upon the premises where a discharge is located or where any records are kept under the terms and conditions of this permit.
- B.** To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
- C.** To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D.** To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

### **G4. GENERAL PERMIT MODIFICATION AND REVOCATION**

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

- A.** When a change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this permit.
- B.** When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of dischargers covered under this permit.
- C.** When a water quality management plan containing requirements applicable to the category of dischargers covered under this permit is approved, or
- D.** When information is obtained that indicates cumulative effects on the environment from dischargers covered under this permit are unacceptable.

### **G5. REVOCATION OF COVERAGE UNDER THE PERMIT**

Pursuant to Chapter 43.21B RCW and Chapter 173-226 WAC, the Director may terminate coverage for any discharger under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:

- A.** Violation of any term or condition of this permit.
- B.** Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.
- C.** A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
- D.** Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
- E.** A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.
- F.** Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.

- G.** Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.

The Director may require any discharger under this permit to apply for and obtain coverage under an individual permit or another more specific general permit. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within ninety (90) days from the time of revocation and is submitted along with a complete individual permit application form.

## **G6. REPORTING A CAUSE FOR MODIFICATION**

The Permittee must submit a new application, or a supplement to the previous application, whenever a material change to the construction activity or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least sixty (60) days prior to any proposed changes. Filing a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

## **G7. COMPLIANCE WITH OTHER LAWS AND STATUTES**

Nothing in this permit will be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

## **G8. DUTY TO REAPPLY**

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit. The Permittee must reapply using the electronic application form (NOI) available on Ecology's website. Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

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Water Quality Program - Construction Stormwater  
PO Box 47696  
Olympia, WA 98504-7696

## **G9. REMOVED SUBSTANCE**

The Permittee must not re-suspend or reintroduce collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to the final effluent stream for discharge to state waters.

## **G10. DUTY TO PROVIDE INFORMATION**

The Permittee must submit to Ecology, within a reasonable time, all information that Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

## **G11. OTHER REQUIREMENTS OF 40 CFR**

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

## **G12. ADDITIONAL MONITORING**

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

## **G13. PENALTIES FOR VIOLATING PERMIT CONDITIONS**

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment at the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

## **G14. UPSET**

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Special Condition S5.F, and; 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

## **G15. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort, or any exclusive privilege.

## **G16. DUTY TO COMPLY**

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.



## **G17. TOXIC POLLUTANTS**

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

## **G18. PENALTIES FOR TAMPERING**

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four (4) years, or both.

## **G19. REPORTING PLANNED CHANGES**

The Permittee must, as soon as possible, give notice to Ecology of planned physical alterations, modifications or additions to the permitted construction activity. The Permittee should be aware that, depending on the nature and size of the changes to the original permit, a new public notice and other permit process requirements may be required. Changes in activities that require reporting to Ecology include those that will result in:

- A.** The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).
- B.** A significant change in the nature or an increase in quantity of pollutants discharged, including but not limited to: a 20% or greater increase in acreage disturbed by construction activity.
- C.** A change in or addition of surface water(s) receiving stormwater or non-stormwater from the construction activity.
- D.** A change in the construction plans and/or activity that affects the Permittee's monitoring requirements in Special Condition S4.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

## **G20. REPORTING OTHER INFORMATION**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

## **G21. REPORTING ANTICIPATED NON-COMPLIANCE**

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least forty-five (45) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of

operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

## **G22. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT**

Any discharger authorized by this permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger must submit to the Director an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons will fully document how an individual permit will apply to the applicant in a way that the general permit cannot. Ecology may make specific requests for information to support the request. The Director will either issue an individual permit or deny the request with a statement explaining the reason for the denial. When an individual permit is issued to a discharger otherwise subject to the construction stormwater general permit, the applicability of the construction stormwater general permit to that Permittee is automatically terminated on the effective date of the individual permit.

## **G23. APPEALS**

- A.** The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.
- B.** The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.
- C.** The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

## **G24. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

## **G25. BYPASS PROHIBITED**

### **A. Bypass Procedures**

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited for stormwater events below the design criteria for stormwater management. Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, 3 or 4) is applicable.

- 1. Bypass of stormwater is consistent with the design criteria and part of an approved management practice in the applicable stormwater management manual.
- 2. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health.

3. Bypass of stormwater is unavoidable, unanticipated, and results in noncompliance of this permit.

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
  - b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.
  - c. Ecology is properly notified of the bypass as required in Special Condition S5.F of this permit.
4. A planned action that would cause bypass of stormwater and has the potential to result in noncompliance of this permit during a storm event.

The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

- a. A description of the bypass and its cause
  - b. An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
  - c. A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
  - d. The minimum and maximum duration of bypass under each alternative.
  - e. A recommendation as to the preferred alternative for conducting the bypass.
  - f. The projected date of bypass initiation.
  - g. A statement of compliance with SEPA.
  - h. A request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated.
  - i. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
5. For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during

preparation of the Stormwater Pollution Prevention Plan (SWPPP) and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

Ecology will consider the following before issuing an administrative order for this type bypass:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve, conditionally approve, or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

#### **B. Duty to Mitigate**

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

## APPENDIX A – DEFINITIONS

**AKART** is an acronym for “**All Known, Available, and Reasonable** methods of prevention, control, and Treatment.” AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge.

**Applicable TMDL** means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2021, or before the date the operator’s complete permit application is received by Ecology, whichever is later. TMDLs completed after a complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

**Applicant** means an *operator* seeking coverage under this permit.

**Benchmark** means a pollutant concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not water quality standards and are not numeric effluent limitations; they are indicator values.

**Best Management Practices (BMPs)** means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control stormwater associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Buffer** means an area designated by a local jurisdiction that is contiguous to and intended to protect a sensitive area.

**Bypass** means the intentional diversion of waste streams from any portion of a treatment facility.

**Calendar Day** A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

**Calendar Week** (same as **Week**) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

**Certified Erosion and Sediment Control Lead (CESCL)** means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (See BMP C160 in the SWMM).

**Chemical Treatment** means the addition of chemicals to stormwater and/or authorized non-stormwater prior to filtration and discharge to surface waters.

**Clean Water Act (CWA)** means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

**Combined Sewer** means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

**Common Plan of Development or Sale** means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

**Composite Sample** means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots).

**Concrete Wastewater** means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When stormwater combines with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to waters of the State, including groundwater.

**Construction Activity** means land disturbing operations including clearing, grading or excavation which disturbs the surface of the land (including off-site disturbance acreage related to construction-support activity). Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, site preparation, soil compaction, movement and stockpiling of topsoils, and demolition activity.

**Construction Support Activity** means off-site acreage that will be disturbed as a direct result of the construction project and will discharge stormwater. For example, off-site equipment staging yards, material storage areas, borrow areas, and parking areas.

**Contaminant** means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of "hazardous substance" and WAC 173-340-200.

**Contaminated soil** means soil which contains contaminants, pollutants, or hazardous substances that do not occur naturally or occur at levels greater than natural background.

**Contaminated groundwater** means groundwater which contains contaminants, pollutants, or hazardous substances that do not occur naturally or occur at levels greater than natural background.

**Demonstrably Equivalent** means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.
2. The pollutant removal performance expected from the BMPs selected.

3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

**Department** means the Washington State Department of Ecology.

**Detention** means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

**Dewatering** means the act of pumping groundwater or stormwater away from an active construction site.

**Director** means the Director of the Washington State Department of Ecology or his/her authorized representative.

**Discharger** means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

**Domestic Wastewater** means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration or surface waters as may be present.

**Ecology** means the Washington State Department of Ecology.

**Engineered Soils** means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

**Equivalent BMPs** means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to groundwater than BMPs selected from the SWMM.

**Erosion** means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

**Erosion and Sediment Control BMPs** means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

**Federal Operator** is an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

**Final Stabilization** (same as **fully stabilized** or **full stabilization**) means the completion of all soil disturbing activities at the site and the establishment of permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions, or geotextiles) which will prevent erosion. See the applicable Stormwater Management Manual for more information on vegetative cover expectations and equivalent permanent stabilization measures.

**Groundwater** means water in a saturated zone or stratum beneath the land surface or a surface waterbody.

**Hazardous Substance** means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous sub-stance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

**Injection Well** means a well that is used for the subsurface emplacement of fluids. (See **Well**.)

**Jurisdiction** means a political unit such as a city, town or county; incorporated for local self-government.

**National Pollutant Discharge Elimination System (NPDES)** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology.

**Notice of Intent (NOI)** means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

**Notice of Termination (NOT)** means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

**Operator** means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

**Permittee** means individual or entity that receives notice of coverage under this general permit.

**pH** means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

**pH Monitoring Period** means the time period in which the pH of stormwater runoff from a site must be tested a minimum of once every seven days to determine if stormwater pH is between 6.5 and 8.5.



**Point Source** means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which pollutants are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture. (See the Fact Sheet for further explanation)

**Pollutant** means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

**Pollution** means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

**Process Wastewater** means any non-stormwater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. If stormwater commingles with process wastewater, the commingled water is considered process wastewater.

**Receiving Water** means the waterbody at the point of discharge. If the discharge is to a storm sewer system, either surface or subsurface, the receiving water is the waterbody to which the storm system discharges. Systems designed primarily for other purposes such as for groundwater drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey stormwater are considered the receiving water.

**Representative** means a stormwater or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time-proportionate *composite sample*, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

**Responsible Corporate Officer** for the purpose of signatory authority means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

**Sanitary Sewer** means a sewer which is designed to convey domestic wastewater.

**Sediment** means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

**Sedimentation** means the depositing or formation of sediment.

**Sensitive Area** means a waterbody, wetland, stream, aquifer recharge area, or channel migration zone.

**SEPA** (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

**Significant Amount** means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a reasonable potential to cause a violation of surface or groundwater quality or sediment management standards.

**Significant Concrete Work** means greater than 1000 cubic yards placed or poured concrete or recycled concrete used over the life of a project.

**Significant Contributor of Pollutants** means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the State of Washington.

**Site** means the land or water area where any "facility or activity" is physically located or conducted.

**Source Control BMPs** means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

**Stabilization** means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

**Storm Drain** means any drain which drains directly into a *storm sewer system*, usually found along roadways or in parking lots.

**Storm Sewer System** means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying stormwater. This does not include systems which are part of a *combined sewer* or Publicly Owned Treatment Works (POTW), as defined at 40 CFR 122.2.

**Stormwater** means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface waterbody, or a constructed infiltration facility.

**Stormwater Management Manual (SWMM) or Manual** means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

**Stormwater Pollution Prevention Plan (SWPPP)** means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

**Surface Waters of the State** includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

**Temporary Stabilization** means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent “final stabilization.”

**Total Maximum Daily Load (TMDL)** means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

**Transfer of Coverage (TOC)** means a request for transfer of coverage under this general permit as specified by Special Condition S2.A of this permit.

**Treatment BMPs** means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

**Transparency** means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a “turbidity tube.”

**Turbidity** means the clarity of water expressed as nephelometric turbidity units (NTUs) and measured with a calibrated turbidimeter.

**Uncontaminated** means free from any contaminant. See definition of “contaminant” and WAC 173-340-200.

**Upset** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

**Waste Load Allocation (WLA)** means the portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

**Water-Only Based Shaft Drilling** is a shaft drilling process that uses water only and no additives are involved in the drilling of shafts for construction of building, road, or bridge foundations.

**Water Quality** means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

**Waters of the State** includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt

waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

**Well** means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See **Injection Well**.)

**Wheel Wash Wastewater** means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When stormwater comes in contact with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

## APPENDIX B – ACRONYMS

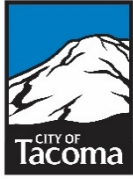
|              |                                                                                    |
|--------------|------------------------------------------------------------------------------------|
| <b>AKART</b> | All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment |
| <b>BMP</b>   | Best Management Practice                                                           |
| <b>CESCL</b> | Certified Erosion and Sediment Control Lead                                        |
| <b>CFR</b>   | Code of Federal Regulations                                                        |
| <b>CKD</b>   | Cement Kiln Dust                                                                   |
| <b>cm</b>    | Centimeters                                                                        |
| <b>CPD</b>   | Common Plan of Development                                                         |
| <b>CTB</b>   | Cement-Treated Base                                                                |
| <b>CWA</b>   | Clean Water Act                                                                    |
| <b>DMR</b>   | Discharge Monitoring Report                                                        |
| <b>EPA</b>   | Environmental Protection Agency                                                    |
| <b>ERTS</b>  | Environmental Report Tracking System                                               |
| <b>ESC</b>   | Erosion and Sediment Control                                                       |
| <b>FR</b>    | Federal Register                                                                   |
| <b>LID</b>   | Low Impact Development                                                             |
| <b>NOI</b>   | Notice of Intent                                                                   |
| <b>NOT</b>   | Notice of Termination                                                              |
| <b>NPDES</b> | National Pollutant Discharge Elimination System                                    |
| <b>NTU</b>   | Nephelometric Turbidity Unit                                                       |
| <b>RCW</b>   | Revised Code of Washington                                                         |
| <b>SEPA</b>  | State Environmental Policy Act                                                     |
| <b>SWMM</b>  | Stormwater Management Manual                                                       |
| <b>SWPPP</b> | Stormwater Pollution Prevention Plan                                               |
| <b>TMDL</b>  | Total Maximum Daily Load                                                           |
| <b>UIC</b>   | Underground Injection Control                                                      |
| <b>USC</b>   | United States Code                                                                 |
| <b>USEPA</b> | United States Environmental Protection Agency                                      |
| <b>WAC</b>   | Washington Administrative Code                                                     |
| <b>WQ</b>    | Water Quality                                                                      |
| <b>WWHM</b>  | Western Washington Hydrology Model                                                 |

**APPENDIX G**

**CITY OF TACOMA LAND USE**

**PERMIT**

**LU22-0140**



**City of Tacoma**  
Office of the Director  
Report and Decision

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**CRITICAL AREA  
DEVELOPMENT PERMIT  
APPLICATION FOR:**

**FILE NO: LU22-0140**

Port of Tacoma  
C/O Mark Rettmann  
P.O. Box 1837  
Tacoma, WA 98421

**SUMMARY OF REQUEST:**

A Critical Area Development Permit to develop approximately 24.49 acres of off-dock property to use as a shipping container storage and maintenance facility. The Port of Tacoma (Port) proposes to fill two wetlands consisting of approximately 4.42 acres and remove a .9 acre biodiversity area for this development.

The Port proposes to use the innovative mitigation options under the Critical Areas Preservation Ordinance, Tacoma Municipal Code (TMC) Chapter 13.11 and its Lower Wapato Creek Advance Mitigation Site (Lower Wapato Creek AMS) to mitigate for impacts to the wetland and biodiversity area.

**LOCATION:**

1702 Port of Tacoma Road, Parcel Numbers: 6965000350, 6965000380, 6965000390, and 696500400

**SUMMARY OF DECISION:**

The request for a Critical Area Development Permit is **Approved**, subject to conditions.

**Notes:**

The appeal period on this decision closes **May 2, 2023** and the effective date of this decision is the following business day, provided no requests for reconsideration or appeals are timely filed as identified in APPEAL PROCEDURES of this report and decision.

The Director has jurisdiction in this matter per TMC 13.05.080.A.6. The applicant bears the burden of proof to demonstrate the proposal is consistent with the provisions of the TMC, the applicable provisions and policies of the City's Comprehensive Plan, and other applicable ordinances of the City.

**FOR ADDITIONAL INFORMATION CONCERNING THIS LAND USE PERMIT PLEASE  
CONTACT:**

Shanta Frantz, Senior Planner  
Planning and Development Services Department  
747 Market Street, Room 345, Tacoma, WA 98402  
[sfrantz@cityoftacoma.org](mailto:sfrantz@cityoftacoma.org) | 253-260-0769

## **SUMMARY OF RECORD**

The following attachments and exhibits constitute the administrative record:

### Attachments:

- Attachment A: Site Plan
- Attachment B: Technical Memorandum, provided by Karla Kluge, Senior Environmental Specialist, dated April 10, 2023

### Exhibits<sup>1</sup>:

- Exhibit A: Revised Joint Aquatic Resources Permit Application (JARPA)
- Exhibit B: SEPA Environmental Checklist, prepared May 25, 2018 and Port of Tacoma Determination of Non-Significance (DNS) dated June 18, 2018
- Exhibit C: Wetland Analysis Report, dated October 2021, Grette Associates
- Exhibit D: Off-Dock Container Support Facility Project Critical Areas Preservation Ordinance Analysis, July 2022, Grette Associates
- Exhibit E: Lower Wapato Creek AMS Use Plan for Port of Tacoma's Off-Dock Container Support Facility, June 16, 2022
- Exhibit F: Final Advance Mitigation Plan Lower Wapato Creek Habitat Project, June 1, 2020, Revised March 2021, Port of Tacoma
- Exhibit G: Alternatives Site Analysis
- Exhibit H: Biodiversity Areas and Corridor Review Comments Technical Memorandum, February 22, 2023
- Exhibit I: Grette Biodiversity Supporting Data, March 27, 2023
- Exhibit J: Technical Memorandum Biodiversity Area and Mitigation, April 7, 2023, prepared by Grette Associates
- Exhibit K: WA Department of Ecology Section 401 Water Quality Certification Letter, October 7, 2022
- Exhibit L: Transportation Technical Report, September 20, 2022, Heffron Transportation Inc.
- Exhibit M: Cultural Resources Overview for the Port of Tacoma General Central Peninsula Environmental Assessment, May 9, 2018, SWCA Environmental Consultants
- Exhibit N: Cultural Resources Assessment for the Port of Tacoma Off-Dock Container Support Facility, June 21, 2022, Willamette CRA
- Exhibit O: Inadvertent Discovery Plan, June 22, 2022, Port of Tacoma
- Exhibit P: Summary of Public Comments, Applicant's Response and Public Meeting Documents
- Exhibit Q: City Staff Comment Memos: Traffic Comment Memo, dated April 4, 2023 and Consolidated Staff Comment Memo, dated February 24, 2023

The Director of Planning and Development Services (Director) enters the following Findings and Conclusions based upon the applicable criteria and standards set forth in the TMC, as well as the attachments and exhibits listed above.

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<sup>1</sup> All Exhibits are contained in Planning and Development Services Department File No. LU22-0140. They are referenced and incorporated herein as though fully set forth.



## **FINDINGS**

### **Proposal:**

1. The Port proposes to develop approximately 24.49 acres of off-dock property to use as a shipping container storage and maintenance facility. Specifically, the site will be used for empty container and chassis storage, a single-high reefer pre-trip wash facility, a wheeled reefer valet drop-off location, and associated facilities. Other site work will include truck entry and exit gates on Thorne Road and Maxwell Way with a guard shelter at the Maxwell Way location, an office trailer, perimeter security fencing, site lighting and power, security cameras, a railroad crossing (between Parcel 85 & 87), a roadability area, and stormwater improvements. Work will include clearing and grubbing, earth fill, isolated excavation, subgrade preparation, base course and pavement systems, stormwater infrastructure, and other utilities. Stormwater treatment will be by overland sheet flow conveyance and at-grade biofiltration stormwater treatment.
2. A Critical Area Development Permit is required to fill two wetlands consisting of approximately 4.42 acres and remove a .9 acre biodiversity area for this development. The Port proposes to use the innovative mitigation options under the Critical Areas Preservation Ordinance (CAPO), TMC Chapter 13.11 and its Lower Wapato Creek AMS to mitigate for impacts to the wetland and biodiversity area. The proposal's Site Plan is attached to this report and decision as Attachment A.

### **Project Site and Surrounding Area:**

3. The project site is vacant and located between the Port of Tacoma Road and Thorne Road, directly adjacent to Maxwell Way to the south.
4. The Blair Waterway is located across the Port of Tacoma Road to the east and Commencement Bay is located to the north.
5. The site and surrounding area is zoned "PMI" – Port Maritime Industrial District and is developed with high-intensity shipping, industrial, and manufacturing activities. It is largely covered with impervious surfaces and vehicle infrastructure associated with the Port of Tacoma.
6. Critical areas located on site include two wetlands and a Fish and Wildlife Habitat Conservation Area (Biodiversity Area). Wetland A which is located on Parcel 85 and Wetland B which is located on Parcel 72 were formed in the fill layer above the historic Commencement Bay tideflats. The wetlands are palustrine forested wetlands and are hydrogeomorphically classified as depressional wetlands. These features are situated within the undeveloped portions of the subject parcels.
7. Vegetation on-site primarily consists of Black cottonwood (*Populus balsamifera*), Himalayan blackberry (*Rubus armeniacus*) and Slough sedge (*Carex obnupta*). Other vegetation that occurs on the development site includes Pacific madrone (*Arbutus menziesii*), Red-osier dogwood (*Cornus sericea*), Pacific willow (*Salix lasiandra*), English holly (*Ilex aquifolium*) Reed canarygrass (*Phalaris arundinacea*), and Swordfern (*Polystichum munitum*).
8. A detailed project description, an analysis of the site's critical areas and their delineation, and the mitigation proposal are provided within Exhibits A – J; and within the Technical Memo provided by the City's Senior Environmental Specialist (SES), Karla Kluge, attached to this report and decision as Attachment B.

## **Applicable Code and Analysis**

### **9. TMC 13.11.220 Application Types.**

- A. This chapter allows three types of Critical Area applications, which result in the issuance of an administratively appealable decision consistent with chapter 13.05. After the appeal period expires, the Director's approved decision becomes the official permit. Programmatic Restoration Projects processed under with the Minor Development Permit or the Development permit may qualify for additional time extensions according to 13.05.070.

\*\*\*

- B. 3. Development Permit. A decision will be issued where the Director determines that avoidance and minimization have not eliminated all impacts and compensatory mitigation will be required as a result of the proposal.
- i. The applicant must meet the requirements of one of three legal tests: No Practicable Alternatives, Public Interest or Reasonable Use, and
  - ii. Demonstrate Mitigation Sequencing, and
  - iii. Provide mitigation as required in accordance with the Chapter.

### **10. TMC 13.01.110 Definitions**

*13.01.110.B - "Biodiversity Areas".* Biodiversity Areas include those areas that contain native vegetation that is diverse with a mosaic of habitats and microhabitats. They include areas dominated by a vertically diverse assemblage of native vegetation containing multiple canopy layers and/or areas that are horizontally diverse with a mosaic of habitats and microhabitats. They also include areas with rare or uncommon plant species and associations designated by the City or identified by Federal and State agencies such as the Department of Natural Resources Heritage Program. They are not associated with a specific priority species and their overall habitat function may be limited due to their location in a highly urbanized area; however, they are diverse relative to other areas in the City and support common urban species.

"Biodiversity Corridors." Areas of relatively undisturbed and unbroken tracts of vegetation that connect Biodiversity Areas, other Priority Habitat and Critical Areas, including shorelines and serve to protect those areas and allow movement of common urban species.

"Buffer or Buffer zone." An area required by this chapter that is contiguous to and protects a critical area which is required for the continued maintenance, functioning, and/or structural stability of a critical area. The area may be surrounding a natural, restored, or newly created critical area.

*13.01.110.W - "Wetlands."* Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include small lakes, ponds, swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including but not limited to irrigation and drainage ditches, grass-lined swales, canals, detention facilities, farm ponds, and landscape amenities if routinely maintained for those purposes. Wetlands do not include those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands do include those artificial wetlands intentionally created to mitigate conversion of wetlands.

**11. TMC 13.11.240 Legal Test(s).**

**A. No Practicable Alternatives.** *An alternative is considered practicable if the site is available and the project is capable of being done after taking into consideration cost, existing technology, infrastructure, and logistics in light of overall project purposes. No practicable alternatives need be considered if the applicant can demonstrate all of the following:*

- 1. The project cannot be reasonably accomplished using one or more other sites in the general region that would avoid or result in less adverse impacts to the Critical Area;*
- 2. The goals of the project cannot be accomplished by a reduction in the size, scope, configuration or density as proposed, or by changing the design of the project in a way that would avoid or result in fewer adverse effects on the Critical Area; and*
- 3. In cases there the applicant has rejected alternatives to the project as proposed, due to constraints on the site such as inadequate zoning, infrastructure or parcel size, the applicant has attempted to remove or accommodate such constraints, unless the applicant can demonstrate that such attempt would be futile.*

**Staff Analysis:** The applicant provided an argument documenting that the project cannot be reasonably accomplished using one or more other sites and continue to achieve the goals of the project. An Alternative Analysis was provided that reviewed all other potential sites that are available for development within the Port of Tacoma area. In order to conduct the analysis, the project scope was consolidated into the absolute minimize size, scope, and configuration possible to meet the goals of the project and operate an off-dock container support facility efficiently, effectively, and safely. Attempting to avoid and minimize any further would divide the project into small discrete spaces that do not meet the goals of the Project. The site is not constrained by zoning or infrastructure and the existing rail and wetland areas remain the only existing constraints. The result of the Alternative Analysis demonstrated that there are no feasible design alternatives, nor an alternate site that is either Port owned or would be available through purchase that would not be economically infeasible to develop following cost of acquisition, relocating businesses, demolition and site preparation, environmental investigation, and potential clean-up costs - assuming the property owner would even be willing to sell.

The SES finds that the applicant has demonstrated that they meet the requirements for this legal test through their response and analysis including the Alternative Analysis.

**C. Public Interest.** *In determining whether a proposed use or activity in any Critical Area is in the public interest, the public benefit of the proposal and the impact to the Critical Area must be evaluated by the Director. The proposal is in the public interest if its benefit to the public exceeds its detrimental impact on the Critical Area. In comparing the proposal's public benefit and impact, the following should be considered:*

- 1. The extent of the public need and benefit;*
- 2. The extent and permanence of the beneficial or detrimental effects of the use or activity;*
- 3. The quality and quantity of the Critical Area that may be affected;*
- 4. The economic or other value of the use or activity to the general area and public;*
- 5. The ecological value of the Critical Area;*
- 6. Probable impact on public health and safety, fish, plants, and wildlife; and*
- 7. The policies of the Comprehensive Plan.*

**Staff Analysis:** The proposal is in the public interest if its benefit to the public exceeds its detrimental impact on the wetlands and Fish and Wildlife Habitat Conservation Area (Biodiversity Area). The applicant argues that the Project is of critical importance to the public need and benefit due to west coast ports being congested, especially during mid-summer to the end of the year. Disruptions in supply chain caused by delays associated with the congestion have led to increased economic and trade problems, which in turn has led to high inflation. These issues have continually increased becoming a high priority for the current Biden Administration.

The proposed project will alleviate some of the impacts through the improvement of cargo terminal efficiencies which will in turn correct economic and trade issues downstream. The impact to the on-site Category III wetlands will be permanent; however, mitigated and this Port-cargo improvement project will be permanent and will continue to offer relief for the foreseeable future. In addition, the Port, as part of the Northwest Seaport Alliance (NWSA) marine cargo gateway, will provide significant jobs and revenue to Washington State, where 40 percent of jobs are tied to trade.

The Port argues that the wetlands are degraded and formed on fill material that was placed in the early- to mid- 1900s. They do not provide fish habitat or connect to Biodiversity Corridors offsite and are not located within a floodplain area. Thus, the wetlands have limited ecological value as they are isolated in the middle of a large industrial area. The proposed mitigation area in the Lower Wapato Creek Habitat Project Advance Mitigation Site will provide mitigation and functions will be mitigated for equal to or better than the functions being impacted with the added benefit of floodplain connection, estuary, riverine, and fish habitat.

Public health and safety will improve slightly as a result of the project. Providing additional storage area for cargo storage and transport, greenhouse gas emissions will be reduced, and the potential for traffic congestion and/or incidents will diminish. In contrast, the removal of the wetlands will not have a significant effect on the public health because an enhanced stormwater treatment system will be installed replacing the water quality and hydrologic functions of the wetlands. Greenhouse gas emissions will also be sequestered within the Lower Wapato Habitat Mitigation Area.

The City's Comprehensive Plan designates the Port Industrial Area as a Manufacturing Industrial Center (MIC), defining it as an area of high intensity development, high activity patterns, and high traffic generation. Comprehensive Policies to support this proposal is included within Finding No. 19.

The SES finds that the applicant has met the requirements of this test demonstrating that the benefit to the public exceeds its impact to the wetlands.

**12. TMC 13.11.250 General Standards.**

*A. General permit standards. No regulated activity or use shall be permitted in or adjacent to a Critical Area or buffer, management area, or geo-setback without prior approval and without meeting the provisions of this section.*

- 1. The applicant has taken appropriate action to first, avoid adverse impacts, then minimize impacts and finally, compensate or mitigate for unavoidable impacts;*
- 2. The result of the proposed activity is no net loss of Critical Area functions;*
- 3. The existence of plant or wildlife species appearing on the federal or state endangered, sensitive, or threatened species list will not be jeopardized;*
- 4. The proposal will not lead to significant degradation of groundwater or surface water quality; and*

5. *The proposal complies with the remaining standards of this chapter, which include those pertaining to compensation and the provision of bonds.*

**TMC 13.11.270 General Mitigation Requirements.**

*F. Mitigation Sequencing. When an alteration to a critical area or its buffer/management area/geo-setback is proposed, such alteration shall be avoided, minimized, or compensated for in the following order of preference.*

1. *Avoiding the impact altogether by not taking a certain action or parts of an action.*

**Applicant's Response:** The project cannot be accomplished through avoidance. No practicable alternatives exist which would completely or partially avoid wetland impacts and still meet the goals (purpose and need) of the project. Refer to Section 6.1 for the No Practicable Alternatives legal test and the Alternative Analysis Report (Grette Associates 2022c) for additional detail.

2. *Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.*

**Applicant's Response:** Similar to avoidance, the project cannot be accomplished through minimization. No practicable alternatives exist which would completely or partially avoid wetland impacts and still meet the goals (purpose and need) of the project. Refer to Section 6.1 for No Practicable Alternatives legal test and the Alternative Analysis Report (Grette Associates 2022c) for additional detail.

3. *Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.*

**Applicant's Response:** The project will require permanent impacts to Wetlands A and B to construct the project; therefore, repairing, rehabilitating, or restoring the wetland impacts is not feasible.

4. *Reducing or eliminating the impact over time by preservation and maintenance operations.*

**Applicant's Response:** The project will require permanent impacts to Wetlands A and B; therefore, reducing or eliminating the wetland impacts over time is not feasible.

5. *Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.*

**Applicant's Response:** There will be approximately 4.42 acres of unavoidable, permanent impacts to Wetlands A and B from the placement of fill material. As discussed in this CAPO Analysis and detailed in the Alternative Analysis Report, the project cannot avoid or minimize impacts to the wetlands and still accomplish the project goals (purpose and need). As a result, no feasible on-site compensatory mitigation opportunity is available. The project will compensate for the unavoidable impacts through a permittee-responsible mitigation (PRM) approach using credits from the Port's Lower Wapato Creek AMS, which is an approved advance mitigation site located in the Tacoma Tideflats. See the Lower Wapato Creek Habitat Project Advance Mitigation Plan (Port of Tacoma 2021a) and the Lower Wapato Creek AMS Use Plan for Port of Tacoma's Off-Dock Container Support Facility (Port of Tacoma 2021b) for additional details.

6. *Monitoring the required mitigation and taking remedial action where necessary.*

**Applicant's Response:** The Lower Wapato Creek AMS will be monitored and evaluated against a set of performance standards for a period of 10 years to demonstrate the site is providing the ecological functions and values as designed. If monitoring indicates performance standards are not being met, the Port will take a proactive adaptive management approach to ensure the site meets its performance standards. Refer to Lower Wapato Creek Advance Mitigation Plan (Port of Tacoma 2021a) for details on monitoring and performance standards.

13. **Staff Analysis – Avoidance Hierarchy:** The applicant has provided an Alternative Analysis demonstrating avoidance is not possible with the project goals and requirements as part of the mitigative hierarchy analysis required by the CAPO. The Alternatives Analysis was prepared in accordance with the guidance in the U.S. Army Corps of Engineers' (USACE) Seattle District Alternatives Analysis Framework (USACE 2016) to meet the requirements of the Clean Water Act Section 404 (b)(1) Guidelines along with 40 CFR 230.

The proposed project is required to address congestion and improve container terminal capacity and efficiency within the Port of Tacoma in order to meet the public's need and demand for increased cargo movement. The inefficiencies of the current situation in the Port has documented bottlenecks throughout the supply chain including ships at anchor across Puget Sound and idling for weeks or longer, North America manufacturing slowing or halting due to shipping restrictions, and reduced inventory on retailers' shelves. Data presented by the Port shows that 20 percent of global container fleet is stuck in port congestion.

The current Port of Tacoma terminal is above 80 percent capacity utilization, and thus as more containers are added to the Port, movement of containers continues to be reduced. Storage of containers is problematic and areas that were not meant to be used as container storage such as loading/unloading areas are being used because there are no other areas. The significant storage inefficiencies prompted the Biden Administration to help working ports to increase capacity. Currently, the Biden Administration has many on-going initiatives, including an executive order, Ocean Shipping Reform Act of 2022; and a bipartisan infrastructure deal to improve the national supply chain, including providing over \$15 million to the Port of Tacoma to provide this off-dock container facility.

Thus, the Port analyzed the entire Port area identifying heavy haul corridor routes and state and interstate highway corridors, 25-acre sites of contiguous area as close as practicably possible to the Husky and Washington United Terminals (WUT) entry Gate, with a maximum distance of 1 mile. The shape of the site must be generally square or rectangular and of sufficient width to accommodate the project design to allow for efficient, effective, and safe use and operations of the facility.

All contiguous properties meeting the design criteria were identified and of the initial 14 reviewed, five of the largest sites were reviewed as potential Alternatives, noting three of which were large enough to meet the 25-acre criteria. The continued evaluation considered availability, cost, logistics, and existing technology.

Based on the evaluation of the potentially practicable alternatives and the no-action alternative also provided, the only practicable alternative that would meet the requirements of the proposed project's purpose, need, and design criteria, based on the evaluation criteria of availability, cost, logistics, and existing technology is Alternative 1 (proposed project site). This alternative is also the Port's Preferred Alternative. Alternative 1 meets the size and proximity (geographic area) requirements, while also being primarily vacant (no permanent existing jobs or infrastructure to remove), free of known or suspected contaminants, and

Port-owned. While the site does contain a low volume rail spur bisecting the site, the shape of the site allows adequate interior space with which to design around the rail spur and to provide a crossing of the rail spur. Furthermore, utility infrastructure is present at the perimeter of the site and would not need to be demolished or rerouted within the site or extended to the site from outside utility corridors.

In this analysis, the applicant demonstrates that impacts to the wetlands are unavoidable given the proposed projects goals and demonstrated need. Minimization will not occur as the entire area of Wetland A and Wetland B will be removed. Mitigation will be provided through an Advanced Mitigation Site constructed by the Port of Tacoma.

#### 14. **TMC 13.11.270.M. Innovative Mitigation**

*The Director may approve innovative mitigation projects that area based on best available science including but not limited to activities such as advance mitigation and preferred environmental alternatives. Innovative mitigation proposals must offer an equivalent or better level of critical area functions and values than would be provided by the strict application of this chapter. Such mitigation proposals must demonstrate special consideration and protection measures for anadromous fishes. The Director shall consider the following for approval of an innovative mitigation proposal.*

*1. Creation or enhancement of a larger system of natural areas and open space is preferable to the preservation of many individual habitat areas;*

**Applicant's Response:** The Lower Wapato Creek AMS includes a large, complex network of interspersed habitats within the approximate 18.5-acre site, including estuary, freshwater and realigned creek channels which benefit anadromous fishes.

**Biodiversity Area:** The potential biodiversity area on the project site that is outside of the regulated wetland and wetland buffer area is approximately 0.9 acres in size. The proposed compensatory mitigation for impacts to the potential biodiversity areas on the project site will be provided through the use of the Port's Lower Wapato Creek AMS Use Plan for Port of Tacoma's Off-Dock Container Support Facility (the "Use Plan"; Port of Tacoma 2021a).

The buffer areas associated with Wetland A and Wetland B that are proposed to be developed by the project are approximately 2.8 acres in size. Approximately 1.6 acres of that buffer area is developed and not providing any buffer function. The 1.6 acres of developed wetland buffer at the project site is being mitigated for under the Use Plan. The proposed innovative mitigation approach will utilize the 1.6 acres of excess buffer mitigation to address the approximately 0.9 acres of potential biodiversity area impacts within the project site. The Lower Wapato Creek AMS includes a large, complex network of interspersed habitats within the approximately 18.5-acre site, including estuary, freshwater, and realigned creek channels which benefit anadromous fishes.

In summary, the proposed innovative mitigation approach will incorporate the 1.6 acres of wetland buffer that is being established at the Lower Wapato Creek AMS which is not being utilized to address the existing wetland and buffer impact. This innovative approach will create a large system of natural areas in comparison to the preservation of approximately 0.9 acres of forested area at the project site that contains a significant amount of non-native vegetation and is more ecologically beneficial than the creation, enhancement, or preservation of many individual smaller habitat areas.

*2. The applicant demonstrates that long-term protection and management of the habitat area will be provided;*

**Applicant's Response:** The Lower Wapato Creek AMS will be protected and maintained in perpetuity as a habitat area. An advance mitigation agreement was finalized with Washington Department of Fish and Wildlife (WDFW) in March 2021; an agreed order was finalized with The Washington State Department of Ecology (Ecology) in June 2021; and an Ecology-approved restrictive covenant was recorded with Pierce County in March 2022. After the site completes the performance monitoring period, it will enter into the Port's long-term stewardship program Port of Tacoma 23 July 2022 Port of Tacoma Off-Dock Container Support Facility Project Grette Associates, LLC Critical Areas Preservation Ordinance Analysis to ensure its ongoing success. See the Lower Wapato Creek Habitat Project Advance Mitigation Plan for additional details (Port of Tacoma 2021a).

*3. There is clear potential for success of the proposed mitigation at the proposed mitigation site;*

**Applicant's Response:** The Port has a long history of successfully creating and maintaining habitat mitigation sites. The project site is located within the service area of the Lower Wapato Creek AMS and the Lower Wapato Creek Habitat Project-Advance Mitigation Plan (Port of Tacoma 2021a) specifically defines the project site as one of the sites the Lower Wapato Creek AMS is intended to address. The Lower Wapato Creek AMS has been modeled to provide high-quality Category I estuarine wetland, freshwater wetlands, and densely vegetated upland buffers. See the Lower Wapato Creek Habitat Project Advance Mitigation Plan for additional details (Port of Tacoma 2021a).

*4. Mitigation according to TMC 13.11.270.E is not feasible due to site constraints such as parcel size, stream type, wetland category, or excessive costs;*

**Applicant's Response:** As detailed in the Off-Dock Container Support Facility Project – Critical Areas Preservation Ordinance Analysis (Grette Associates 2022), no practicable alternatives exist which would completely or partially avoid impacts to the undeveloped areas within the project site. Please refer to this document for more details. (Section 6.2 in the Port's document refers to the Mitigation Sequencing criteria response including the Alternative Analysis)

*5. A wetland of a different type is justified based on regional needs or functions and values;*

**Applicant's Response:** With regards to Wetlands: Over 90 percent of the estuary in the Puyallup River delta was lost due to over 100 years of development. The Port focuses on habitat mitigation projects that incorporate salmon recovery as opposed to wetlands with no salmon habitat. The Lower Wapato Creek AMS will have Category I estuarine wetland and the realigned creek channel, both of which are vital to a salmon's lifecycle.

With regards to Biodiversity Areas: Not applicable. This document is intended to address the 0.9 acre of potential biodiversity area impacts situated within the project site.

*6. The replacement ratios are not reduced or eliminated; unless the reduction results in a preferred environmental alternative; and*

**Applicant's Response:** With regards to Wetlands: The age of the Lower Wapato Creek AMS determines the specific acre-credit use ratios for the type of wetland acre-credits required for compensatory mitigation (Port of Tacoma 2021a). Generally, an advance mitigation site does not generate advance mitigation credits until after the second-year post-construction; however, in some cases, fish passage barrier removal and wetland reestablishment can generate advance mitigation credits at the time of construction on a



case-by-case basis (Port of Tacoma 2021a). As outlined in the Lower Wapato Creek AMS Use Plan for Port of Tacoma's Off-Dock Container Support Facility Use Plan (Port of Tacoma 2021b), the Port is proposing slightly different credit use ratios because the functions provided at the Lower Wapato Creek AMS are significantly higher than the limited functions of the impacted wetlands. In addition to the improved functions, with the exception of installation of the native shrubs and trees at 409 East 54th Street, all of the wetland and habitat areas have been constructed, all of the emergent and grass areas have been seeded, and all of the habitat structures were installed in the Lower Wapato Creek AMS by the end of December 2021. There are two types of wetland credits available at the Lower Wapato Creek AMS: estuarine emergent (EEM) and palustrine forest (PFO). EEM wetland credits can be used to address estuarine or palustrine wetland impacts only. According to the Use Plan (Port of Tacoma 2021b), the Lower Wapato Creek AMS is expected to generate approximately 6.27 EEM acre-credits and 3.08-3.75 PFO acre-credits. Given that the project impacts are not anticipated to occur until at least the second quarter of 2023 and that the construction of the Lower Wapato Creek AMS is largely complete and currently providing some water quality, hydrology, and habitat wetland functions, the Port is proposing to utilize the Year 2-Age of Site credit use ratios (EEM: 1.8:1 and PFO: 1.85:116) defined in the Lower Wapato Creek Habitat Project Advance Mitigation Plan (Table 2; Port of Tacoma 2021a).

With regards to Biodiversity Areas: No mitigation ratio to address critical areas (including biodiversity areas) is defined in the innovative mitigation requirements outlined in TMC 13.11.270.M. Per TMC 13.11.270.M., innovative mitigation must offer an equivalent or better level of protection of critical area functions and values, including vegetation diversity and habitat complexity. Such innovative mitigation proposals must demonstrate special consideration for conservation and protection measures for anadromous fisheries. As summarized in the Off-Dock Container Support Facility Project – Critical Areas Preservation Ordinance Analysis (Grette Associates 2022), the understory within the non-wetland forested areas contains significant amounts of non-native vegetation and does not provide quality habitat. Utilizing the Lower Wapato Creek AMS will ensure no net loss and will establish a forest vegetation community that will provide high quality vegetation diversity and complex habitats, including wetlands and anadromous fish habitat within the Wapato Creek floodplain. In Grette's professional opinion, this innovative mitigation approach will achieve elevated ecological functions in comparison to the habitats that exist within the project site.

*7. Public entity cooperative preservation agreements such as conservation easements are applied.*

**Applicant's Response:** Public entity cooperative preservation agreements have been applied. See Section 6.4.4.2 and refer to the Off-Dock Container Support Facility Project – Critical Areas Preservation Ordinance Analysis (Grette Associates 2022) for more details.

Analysis for use of innovative mitigation: Innovative mitigation may be used for activities such as Advance Mitigation and preferred environmental alternatives, both of which the Port has proposed using the Advance Mitigation Plan at the Lower Wapato Creek Habitat Project. This form of mitigation will address regional needs through watershed planning including additional habitat for anadromous fish and provide elevated functions associated with the preservation of wetlands and upland forested areas in perpetuity.

## **15.TMC 13.11.320 Buffers**

*A. General. A buffer area shall be provided for all uses and activities adjacent to a wetland area to protect the integrity, function, and value of the wetland. Buffers adjacent to wetlands*

are important because they help to stabilize soils, prevent erosion, act as filters for pollutants, enhance wildlife diversity, and support and protect plants and wildlife. A permit may be granted if it has been demonstrated that no adverse impact to a wetland will occur and a minimum buffer width will be provided in accordance with this section. The buffer shall be measured horizontally from the delineated edge of the wetland. The buffer shall be vegetated with the exception of areas that include development interruptions as described within this chapter.

#### 16.TMC 13.11.340 Wetland Mitigation Requirements

A. The applicant shall avoid all impacts that degrade the functions and values of wetland and their buffers. Unless otherwise provided in this Title, if alteration to the wetland or its buffer is unavoidable, all adverse impacts resulting from a development proposal or alteration shall be mitigated using the best available science, so as to result in no net loss of critical area functions and values.

B. All wetland mitigation will comply with applicable mitigation requirements specified in 13.11.270, including, but not be limited to, mitigation plan requirements, monitoring and bonding.

C. Preference of Mitigation Actions. Methods to achieve compensation for wetland functions shall be approached in the following order of preference:

1. Restoration (re-establishment and rehabilitation) of wetlands on upland sites that were formerly wetlands.
2. Creation (Establishment) of wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of non-native introduced species. This should only be attempted when there is an adequate source of water and it can be shown that the surface and subsurface hydrologic regime is conducive for the wetland community that is being designed.
3. Enhancement of significantly degraded wetlands in combination with restoration or creation. Such enhancement should be part of a mitigation package that includes replacing the impacted area and meeting appropriate ratio requirements.

D. Mitigation ratios.

1. The ratios contained within Table 5 shall apply to all Creation, Re-establishment, Rehabilitation, and Enhancement compensatory mitigation.

| Table 5. Mitigation ratios for projects in Western Washington that do not alter the hydro-geomorphic setting of the site*** |                              |                |                                                            |                  |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------|------------------------------------------------------------|------------------|
| Category and Type of Wetland                                                                                                | Re-establishment or Creation | Rehabilitation | 1:1 Re-establishment of Creation (R/C) and Enhancement (E) | Enhancement Only |
| All Category III                                                                                                            | 2:1                          | 4:1            | 1:1 R/C and 2:1 E                                          | 8:1              |

**Staff Analysis – Wetland Mitigation Requirements:** Based on the above factors and an anticipated earliest start of the impact project construction of 2nd or 3rd Quarter of 2023, for the Category III wetland impact, the Port proposes the credit use ratio in Table 3 (use ratios for EEM credits) corresponding to “Age of the Site (Years)” 2 and 0 & 1 for Table 4 (use ratios for PFO credits). Therefore, the EEM wetland credit use ratio (credit: impact acre) will be 1.8:1 (Table 3, Year 2) and the PFO wetland credit use ratio will be 2:1 (Table 4, Year 0 & 1). (The tables referred to can be found within the Lower Wapato Creek AMS Use Plan).

As the final number of EEM and PFO wetland acre-credits generated by the Lower Wapato Creek AMS are not known at this time, the Port proposes to use all generated PFO wetland credits to mitigate this project first and use the EEM wetland credits to fulfill any remaining credit need. The Lower Wapato Creek AMS is anticipated to generate approximately 6.27

EEM acre-credits and 3.08 to 3.75 PFO acre-credits for a total of 9.35-to-10.02-acre credits. An example of potential types of mitigation credits and the associated credit use ratios that are needed to compensate for the project impacts can be found in **Table 5. Lower Wapato Creek AMS Credits Proposed for Use by Impact Project** in the *Off-Dock Container Support Facility Project Critical Areas Preservation Ordinance Analysis*, July 2022, prepared by Grette Associates.

In summary, the SES agrees that the proposed mitigation will comply with the required wetland mitigation ratios involved with filling the wetland area. The use of credits within the Lower Wapato Creek Advance Mitigation Area will fully mitigate functions lost that are associated with the Category III low habitat value wetlands and replace them with high habitat value Category II wetlands that also include habitat for anadromous fish area even though wetland area was lost.

**17. TMC 13.11.550.E. Fish and Wildlife Habitat Conservation Area Standards**

E. The following shall apply for proposed modifications within or affecting Biodiversity Areas and Corridors.

*1. In determining which areas are least sensitive to development impacts, the following criteria shall apply:*

*A. A minimum of 65 percent of the Biodiversity Area and Corridor area shall be left in an undisturbed natural vegetated state. The undisturbed area set aside shall contain all other Priority Habitats, Priority Species, and Critical Areas and Buffers that may be present, per applicable standards.*

*B. A contiguous Biodiversity Corridor with a width of 300-feet shall be retained connecting onsite and offsite Priority Habitats and Critical Areas including shorelines, as well as significant trees per the definition below. The minimum 300 feet shall be a contiguous area that enters and exits the property.*

*C. Retain exceptional trees and rare or uncommon plant species or habitat types as identified by the City or by state or federal agencies. Conifers and Madrone are considered exceptional trees.*

**18. TMC 13.11.560 Biodiversity Area and Corridor Mitigation Requirements**

*A. Mitigation must compensate for the adverse impacts and achieve equivalent or higher ecological functions including, vegetation diversity and habitat complexity and connectivity.*

*B. Enhancement or Restoration requires the following ratios:*

| Onsite Mitigation                | Offsite Mitigation             |
|----------------------------------|--------------------------------|
| 1.5:1 Enhancement or Restoration | 3:1 Enhancement or Restoration |

*C. The protection covenant or conservation easement recorded with Pierce County Assessor's Office shall include all mitigation areas including those located off-site.*

**Staff Analysis for Fish and Wildlife Conservation Areas impacts (Biodiversity Areas):**

The SES finds that the proposed innovative mitigation approach that will utilize the 1.6 acres of excess buffer mitigation to replace the approximately 0.9 acres of Biodiversity Area loss at the subject development site is a reasonable mitigation ratio (1.8:1) where none is provided for replacement of Biodiversity Areas within the critical area code. The Biodiversity Area on site is thus generally viewed as an extension of functioning wetland buffer at Wetland A and Wetland B that will be replaced at the same mitigation site as the wetlands. The proposed mitigation for the forested Biodiversity Area is combined with the proposed mitigation for the wetland buffer areas of Wetland A and Wetland B.

**19. The One Tacoma: Comprehensive Plan, which sets forth policy regarding development in**

the City of Tacoma, provides the following policy guidance relative to this development permit application:

**Goal EN–5** Plan at a watershed scale to restore and protect natural resources that contribute to watershed health.

**Policy EN–1.11** Coordinate and partner with federal, state, regional and local governmental jurisdictions and the public to manage the City’s environmental assets.

**Policy EN–1.12** Coordinate plans and investments with other jurisdictions, air and water quality regulators, watershed councils, soil conservation organizations and community organizations and groups to maximize the benefits and cost-effectiveness of watershed environmental efforts and investments.

**Policy EN–1.13** Coordinate transportation and stormwater system planning in areas with unimproved or substandard rights of way to improve water quality, prevent localized flooding, enhance pedestrian safety and neighborhood livability.

**Policy EN–1.16** Coordinate with state and federal public agencies and tribal governments when reviewing permits to ensure streamlined permit review and avoid redundant regulatory requirements.

**Policy EN–1.17** Assess and periodically review the best available science for managing critical areas and natural resources and utilize the development of plans and regulation while also taking into consideration Tacoma’s obligation to meet urban-level densities under the Growth Management Act.

**Policy EN–3.1** Ensure that the City achieves no-net-loss of ecological functions over time.

**Policy EN–3.3** Require that developments avoid and minimize adverse impacts, to the maximum extent feasible, to existing natural resources, critical areas and shorelines through site design prior to providing mitigation to compensate for project impacts.

**Policy EN–3.4** Encourage mitigation approaches when preservation is not feasible that maximize the intended ecosystem benefits. Require on-site or use of established approved mitigation banks versus off-site mitigation; unless off-site mitigation within the same watershed will improve mitigation effectiveness.

**Additional Information:**

20. Karla Kluge, SES, the subject matter expert for critical area review within the Planning and Development Services Department, conducted several site visits, has visited the surrounding area for previous critical area permits, and is very familiar with area. Ms. Kluge reviewed the proposal materials provided by the applicant, the public comments, and provided a Technical Memorandum indicating that the proposal complies with the requirements of TMC 13.11.

The Director notes that substantial weight is given to Ms. Kluge’s review of the proposal for potential impacts to critical areas. Her comments are included in Attachment B and in some cases, are repeated verbatim herein.

### **Environmental Review:**

21. Pursuant to SEPA, WAC 197-11-340, the Port of Tacoma, as Lead Agency, issued an environmental determination for the project. The SEPA Determination is included with the application documents within Exhibit B. For further information regarding SEPA, please contact the project applicant.

### **Notification and Comments:**

22. The application was determined to be complete for review on September 30, 2022.
23. Written notice of the application was transmitted to state agencies and for public review on October 20, 2022. Prior to the end of the 30-Day public comment period, a virtual public meeting was requested by the Northeast Tacoma Neighborhood Council. The public meeting was held on January 12, 2023, at which almost all of the participants expressed substantial concerns about the proposal. These concerns were highlighted again within written public comments received before the public comment period ended on January 19, 2023.
- **Public Support:** One letter of support was provided by WUT which highlights the need for more land to accommodate higher volumes of import and export cargo and is critical to reduce congestion on land and by sea. If developed as planned, this proposal will improve service levels for manufacturers, warehousing, and transloading – which will benefit everyone.
    - At the public meeting a representative from the International Longshore and Warehouse Union (ILWU) expressed his support as the Port's docks are operating at capacity. This proposal will cut down substantially on time that truckers from eastern Washington wait on long lines, with their trucks idling to get into the Port. Instead, they will be able drop off and pick up at this facility. This facility will also allow the truckers more flexibility on the days they are on Tacoma's roads instead of being limited by the current small window of time to get in and out of the Port.
    - Long queue lines of idling trucks and a bottle neck of trucks on City and Port roads are environmental health concerns for Port workers. This project will help to reduce these impacts and improve the delivery of time for imported and exported goods, which is good for the Tacoma and Washington economies.
  - **Public Opposition:** All of the other written comments and oral comments provided at the public meeting expressed deep concern and frustration over the proposed loss of wetlands and tree canopy within the middle of the Port and the Puyallup Tribe Reservation, both of which contribute to the presence and migration of birds and other wildlife, within and outside of the Port, and capturing carbon. This is unfathomable, especially in the middle of the climate and biodiversity crises when we need to be protecting as much forest as possible.

There was a general consensus that the virtual public meeting is a bad format as it did not allow for the type of back-and-forth discussion that the some of the public was expecting. For example, the public wanted to further discuss the alternative sites identified by the Port and how they could improve its operational efficiency.

Also, there were concerns that the range for the public notice and public meeting notice were not adequate, that there was no notice of this project on the City Council and Port websites, nor have there been discussions at their public meetings. Finally, it was noted that the application states that the Port planned starting construction in October 2022.

This does not give the public any faith, as the Port thought it would start building before the public meeting. This does not give the public confidence in the application process

as it is being handled backwards.

24. Exhibit P contains the public meeting documents and written comments that include photographs, videos, local media coverage for this application, a detailed summary of all comments received, and a response from staff when applicable. This Exhibit also contains the applicant's response to the written public comments and to the questions from the chat feature at the public meeting.
25. No comments were received from outside agency reviewers. The applicant provided a copy the Washington State Department of Ecology Section 401 Water Quality Certification letter. See Exhibit K.
26. Advisory comments and recommended conditions from the City reviewers are provided below and within the comment memos contained within Exhibit Q. As with the City's SES, the Director gives substantial weight to the City reviewers, as they are the subject matter experts for each of their respective disciplines.

### **Conclusion of Law as Finding of Fact:**

27. Any conclusion of law herein stated which may be deemed a finding of fact herein is hereby adopted as such.

### **CONCLUSIONS<sup>2</sup>**

1. The Planning Director has jurisdiction in this matter. See TMC 13.05.080.A.6.
2. The applicant bears the burden of proof to demonstrate the proposal's consistency with the policies of the One Tacoma: Comprehensive Plan, including its implementing regulations set forth in TMC Chapter 13.11, and other applicable City Ordinances.
3. Specific to TMC 13.11.220.B.3. - Development Permit: The applicant has met the requirements for issuance of a Critical Area Development Permit.
4. Specific to TMC 13.11.240 A. and C. – Legal Tests: The applicant has satisfied the legal test requirement under the Public Interest Test and the No Practicable Alternatives Test.
5. Specific to TMC 13.11.250 and TMC 13.11.270 – General Standards and General Mitigation Requirements: The applicant provided justification under the avoidance and minimization hierarchy through the use of an Alternative Analysis justifying that avoidance is not possible with achievement of project goals.

The Alternative Analysis and legal test arguments apply to both wetlands and Biodiversity Areas when evaluating avoidance and minimization. Neither the wetlands nor the Biodiversity Areas can be avoided while also allowing the Port Cargo areas to be developed. The entirety of the site area is necessary to achieve project goals.

Finally, the proposed mitigation will fully mitigate or replace functions lost at the impact site with more desirable functions including anadromous fish support, no net loss of wetlands in area, and associated functions and long-term preservation of forested wetland and upland areas.

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<sup>2</sup> Conclusions are based upon the applicable criteria and standards set forth in the Tacoma Municipal Code (TMC), the policies of the One Tacoma: Comprehensive Plan, and the Attachments and Exhibits listed herein. Any conclusion of law hereinafter stated which may be deemed a finding of fact herein is hereby adopted as such.

6. Based on the above findings and conclusions, and with the following conditions, the proposal is consistent with TMC Chapter 13.11 and the applicable City's Comprehensive Plan policies. See Findings 1 – 26, Attachments A – B, and Exhibits A – Q.

### **DECISION**

Based upon the above findings and conclusions, the request for a Critical Area Development Permit is **Approved**, subject to the following conditions:

#### **Conditions:**

1. Based on an increase of traffic from this proposal on Maxwell Way, the following traffic conditions are required with the development permits for this proposal:
  - a. New sidewalk on Thorne Road abutting the site shall be a minimum of 7 feet wide. The sidewalk alignment and buffer width shall match that of the existing sidewalk. This new sidewalk will be required to cross the rail spur, where it must be equipped with appropriate safety features.

The sidewalk alignment should be shifted within the right-of-way near the at-grade crossing to ensure a perpendicular crossing of tracks. This shift should bring the sidewalk closer to the street. Consider bicycle design speed guidance in Chapter 10-2.1 of the Public Works Right-of-Way Design Manual when designing the shift in alignment. On each side of the crossing, the sidewalk should shift back to an alignment and offset that is consistent with existing sidewalk on Thorne Road, south the railroad tracks.
  - b. New sidewalk on Maxwell Way abutting the site shall be a minimum of 5 feet wide with a planter strip. If a planter strip is omitted and sidewalk is located abutting the curb, the sidewalk shall be a minimum of 7 feet wide.
  - c. Gates will not be allowed to open into the right-of-way or be placed in a manner that impedes public pedestrian or vehicular access. Gates for truck/passenger access on Thorne Road and Maxwell Way shall be set back a minimum of 20 feet from the right-of-way to allow vehicles to pull-off of the road while opening the gate. Gates for emergency access only shall be signed appropriately and can be located on the property line. No driveway is proposed to directly serve Port of Tacoma Road. Any change in travel patterns that would allow trucks to use different driveways would require a separate approval through a new permit process for the driveway modification.
  - d. The Maxwell Way driveway shall be reconstructed at the time of development to address impacts to Maxwell Way. The City will allow a minimum 6 inches of Asphalt Concrete over 13 inches of Crushed Surface Base Course or alternate pavement design that meets City standards to address truck traffic and turning movements. Pavement Design Worksheet (PD-02) can be utilized for consideration. The extents of the pavement reconstruction will be determined as part of the Work Order Permit.
2. The development permit applications shall include the Inadvertent Discovery Plan provided within the Cultural Resources documents for this application. See Exhibits M, N, and O.
3. Notice on Title. The applicant must record Notice on Title per TMC Section 13.11.280 prior to the final approval of all development permits.
4. A Conservation Easement shall be placed on the Advanced Mitigation Site (i.e., The Lower Wapato Creek AMS) prior to final approval for development permits.
5. The applicant shall mitigate wetland and Biodiversity Area impacts as described in the Lower Wapato Creek Advance Mitigation Site Use Plan for Port of Tacoma's Off-Dock

Container Support Facility, June 16, 2002, Corps Reference No. NWS-2020-557-WRD, and Technical Memorandum (Biodiversity Areas), April 7, 2023, prepared by Grette Associates.

7. Prior to impacting wetlands, the applicant shall submit to Ecology the following as proof of advance mitigation credit withdrawal:
  - a. A ledger showing that the required amount of credits has been deducted from the advance wetland mitigation site.
  - b. The ledger must include the Order number, Order issuance date, impact acreage, the amount of credits required by the Order, and the date the credit was deducted.
8. The applicant shall provide a copy of the letter received from Ecology to the City that documents written notice that the obligation has been met.
9. The applicant shall provide a copy of the Army Corp of Engineers (ACE), or concurrence that a permit is not required, prior to issuance of any development permits.
10. Work authorized under this Critical Area Development Permit shall commence within five (5) years of the effective date of this decision.

**Advisory Notes:**

The below notes are meant to provide additional information to the applicant relative to the specific development proposal. These notes are not conditions of the permit nor do they constitute a complete review of the project.

1. This permit is only applicable to the proposed project as described above and based upon the information submitted by the applicant. Modifications to this proposal and future activities or development may be subject to further review and additional permits as required in accordance with the TMC.
2. The applicant must obtain other approvals prior to construction as required by other local, state and federal agencies including the ACE and WDFW which have requirements that may be applicable to the project.
3. Staff's First Review Comment Memo, dated February 24, 2023, is contained within Exhibit Q and provides advisory comments from all reviewers, except for Critical Areas and Traffic Engineering who have provided separate memos.

ORDERED this 18th day of April 2023



Peter Huffman  
Director, Planning and Development  
Services Department

**FULL DECISION TRANSMITTED** by e-mail to:

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City Staff – Shanta Frantz, Elliott Barnett, Carol Wolfe, Shari Hart, [neighborhoodcouncils@cityoftacoma.org](mailto:neighborhoodcouncils@cityoftacoma.org), Karla Kluge, Jennifer Kammerzell, Mieke Hoppin, Britany Avila, Chris Seaman, Craig Kuntz, Dan Hansen, Dan Reed, Heather Croston, Joy Rodriguez, Lyle Hauenstein, Reuben McKnight, Vicki Marsten, Carleen Bruner, Joe Graff

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**SUMMARY OF DECISION TRANSMITTED** by e-mail or first-class mail to:

New Tacoma Neighborhood Council

Northeast Neighborhood Council

Railroad Lines - [pygbuhay@up.com](mailto:pygbuhay@up.com), [kkellem@cityoftacoma.org](mailto:kkellem@cityoftacoma.org), [scott.huston@bnsf.com](mailto:scott.huston@bnsf.com), [perry.weinberg@soundtransit.org](mailto:perry.weinberg@soundtransit.org)

Puyallup Tribe of Indians - [SEPARreview@puyalluptribe-nsn.gov](mailto:SEPARreview@puyalluptribe-nsn.gov)

Metro Parks - [joeb@tacomaparks.com](mailto:joeb@tacomaparks.com), [martys@tacomaparks.com](mailto:martys@tacomaparks.com), [marya@tacomaparks.com](mailto:marya@tacomaparks.com), [alisa.ohanlonregala@tacomaparks.com](mailto:alisa.ohanlonregala@tacomaparks.com)

WA Dept of Fish and Wildlife - [R6SSplanning@dfw.wa.gov](mailto:R6SSplanning@dfw.wa.gov)

Pierce County Assessor-Treasurer – [dbrandv@co.pierce.wa.us](mailto:dbrandv@co.pierce.wa.us)

Port of Tacoma - [twarfield@portoftacoma.com](mailto:twarfield@portoftacoma.com), [dwilson@nwseaportalliance.com](mailto:dwilson@nwseaportalliance.com)

TPCHD – [sepa@tpchd.org](mailto:sepa@tpchd.org)

U.S. Army Corps of Engineers (Pierce County West) – [halie.endicott@usace.army.mil](mailto:halie.endicott@usace.army.mil)

WA Dept of Ecology – [zmey461@ecy.wa.gov](mailto:zmey461@ecy.wa.gov)

Puyallup Tribe of Indians, 3009 East Portland Avenue, Tacoma, WA 98404

U.S. Fish & Wildlife Service, Attn Judy Lantor, 510 Desmond Drive SE #102, Lacey, WA 98503

Tahoma Audubon Society, Attn Matt Mega, 2917 Morrison Road West, University Place, WA 98466

**PURSUANT TO RCW 36.70B.130, YOU ARE HEREBY NOTIFIED THAT AFFECTED PROPERTY OWNER(S) RECEIVING THIS NOTICE OF DECISION MAY REQUEST A CHANGE IN VALUATION FOR PROPERTY TAX PURPOSES CONSISTENT WITH PIERCE COUNTY'S PROCEDURE FOR ADMINISTRATIVE APPEAL. TO REQUEST A CHANGE IN VALUE FOR PROPERTY TAX PURPOSES YOU MUST FILE WITH THE PIERCE COUNTY BOARD OF EQUALIZATION ON OR BEFORE JULY 1ST OF THE ASSESSMENT YEAR OR WITHIN 30 DAYS OF THE DATE OF NOTICE OF VALUE FROM THE ASSESSOR-TREASURER'S OFFICE. TO CONTACT THE BOARD CALL 253-798-7415 OR [WWW.CO.PIERCE.WA.US/BOE](http://WWW.CO.PIERCE.WA.US/BOE).**

## **RECONSIDERATION/APPEAL PROCEDURES**

Any request for RECONSIDERATION and/or APPEAL must be submitted in the applicable manner as outlined below on or before **May 2, 2023**.

### **RECONSIDERATION:**

Any person having standing under the ordinance governing this application and feeling that the decision of the Director is based on errors of procedure or fact may make a written request for review by the Director within 14 days of the issuance of the written order. The fee for reconsideration is **\$300.00**. This request shall set forth the alleged errors, and the Director may, after further review, take such further actions as deemed proper, and may render a revised decision.

A request for RECONSIDERATION of the Director's decision in this matter must be submitted in writing, by e-mail to [sfrantz@cityoftacoma.org](mailto:sfrantz@cityoftacoma.org). Filing of the reconsideration shall not be complete until both the reconsideration request and required filing fee are received. THE FEE SHALL BE REFUNDED SHOULD THE RECONSIDERATION REQUESTOR PREVAIL. (Pursuant to Section 2.09.020 of the TMC, fees for reconsideration shall be waived for qualifying senior citizens and persons who are permanently handicapped who are eligible for tax exemption because of financial status.)

### **APPEAL TO THE HEARING EXAMINER:**

Any decision of the Director may be appealed by any aggrieved person or entity as defined in Sections 13.01.050.A. and 13.05.090 of the TMC, within 14 days of the issuance of this decision, or within seven days of the date of issuance of the Director's decision on a reconsideration, to appeal the decision to the Hearing Examiner.

An appeal to the Hearing Examiner is initiated by filing a Notice of Appeal accompanied by the required filing fee of **\$1,200.00**. Filing of the appeal shall not be complete until both the Notice of Appeal and required filing fee has been received. THE FEE SHALL BE REFUNDED TO THE APPELLANT SHOULD THE APPELLANT PREVAIL. (Pursuant to Section 2.09.020 of the TMC, fees for appeals shall be waived for qualifying senior citizens and persons who are permanently handicapped who are eligible for tax exemption because of financial status.)

The Notice of Appeal must be submitted in writing, by e-mail to [sfrantz@cityoftacoma.org](mailto:sfrantz@cityoftacoma.org) and [hearing.examiner@cityoftacoma.org](mailto:hearing.examiner@cityoftacoma.org). The Notice of Appeal shall contain the following:

- (1) A brief statement showing how the appellant is aggrieved or adversely affected.
- (2) A statement of the grounds for the appeal, explaining why the appellant believes the administrative decision is wrong.
- (3) The requested relief, such as reversal or modification of the decision.
- (4) The signature, mailing address and telephone number of the appellant and any representative of the appellant.

"The Rules of Procedures for Hearings" may be viewed at:

[http://cms.cityoftacoma.org/hex/HEX\\_RulesofProcedureforHearings\\_ResolutionNo39843\\_Adopted10.pdf](http://cms.cityoftacoma.org/hex/HEX_RulesofProcedureforHearings_ResolutionNo39843_Adopted10.pdf)

**APPENDIX H**

**INADVERTANT DISCOVERY**

**PLAN**



# INADVERTENT DISCOVERY PLAN

## PLAN AND PROCEDURES FOR THE DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6000 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with a speech disability may call TTY at 877-833-6341.

Site Name(s):  Location:

Project Lead/Organization:  County:

*If this Inadvertent Discovery Plan (IDP) is for multiple (batched) projects, ensure the location information covers all project areas.*

### 1. INTRODUCTION

The IDP outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws. An IDP is required, as part of Agency Terms and Conditions for all grants and loans, for any project that creates disturbance above or below the ground. An IDP is not a substitute for a formal cultural resource review (Executive 21-02 or Section 106).

Once completed, **the IDP should always be kept at the project site** during all project activities. All staff, contractors, and volunteers should be familiar with its contents and know where to find it.

### 2. CULTURAL RESOURCE DISCOVERIES

A cultural resource discovery could be prehistoric or historic. Examples include (see images for further examples):

- An accumulation of shell, burned rocks, or other food related materials.
- Bones, intact or in small pieces.
- An area of charcoal or very dark stained soil with artifacts.
- Stone tools or waste flakes (for example, an arrowhead or stone chips).
- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings.
- Agricultural or logging materials that appear older than 50 years. These could include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, and many other items.
- Clusters of tin cans or bottles, or other debris that appear older than 50 years.
- Old munitions casings. **Always assume these are live and never touch or move.**
- Buried railroad tracks, decking, foundations, or other industrial materials.
- Remnants of homesteading. These could include bricks, nails, household items, toys, food containers, and other items associated with homes or farming sites.

The above list does not cover every possible cultural resource. When in doubt, assume the material is a cultural resource.

### 3. ON-SITE RESPONSIBILITIES

If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains at any point in the project, take the following steps to ***Stop-Protect-Notify***. **If you suspect that the discovery includes human remains, also follow Sections 5 and 6.**

#### STEP A: Stop Work.

All work must stop immediately in the vicinity of the discovery.

#### STEP B: Protect the Discovery.

Leave the discovery and the surrounding area untouched and create a clear, identifiable, and wide boundary (30 feet or larger) with temporary fencing, flagging, stakes, or other clear markings. Provide protection and ensure integrity of the discovery until cleared by the Department of Archaeological and Historical Preservation (DAHP) or a licensed, professional archaeologist.

Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site. Do not allow work to resume within the boundary until the requirements of this IDP are met.

#### STEP C: Notify Project Archaeologist (if applicable).

If the project has an archaeologist, notify that person. If there is a monitoring plan in place, the archaeologist will follow the outlined procedure.

#### STEP D: Notify Project and Washington Department of Ecology (Ecology) contacts.

##### Project Lead Contacts

###### Primary Contact

Name: Norm Gilbert  
Organization: Port of Tacoma  
Phone: (253) 383-9406  
Email: ngilbert@portoftacoma.com

###### Alternate Contact

Name: Mark Rettmann  
Organization: Port of Tacoma  
Phone: (253) 592-6716  
Email: mrettmann@portoftacoma.com

##### Ecology Contacts (completed by Ecology Project Manager)

###### Ecology Project Manager

Name:   
Program:   
Phone:   
Email:

###### Alternate or Cultural Resource Contact

Name:   
Program:   
Phone:   
Email:

## STEP E: Ecology will notify DAHP.

Once notified, the Ecology Cultural Resource Contact or the Ecology Project Manager will contact DAHP to report and confirm the discovery. To avoid delay, the Project Lead/Organization will contact DAHP if they are not able to reach Ecology.

DAHP will provide the steps to assist with identification. DAHP, Ecology, and Tribal representatives may coordinate a site visit following any necessary safety protocols. DAHP may also inform the Project Lead/Organization and Ecology of additional steps to further protect the site.

**Do not continue work until DAHP has issued an approval for work to proceed in the area of, or near, the discovery.**

### DAHP Contacts:

Name: Rob Whitlam, PhD  
Title: State Archaeologist  
Cell: 360-890-2615  
Email: [Rob.Whitlam@dahp.wa.gov](mailto:Rob.Whitlam@dahp.wa.gov)  
Main Office: 360-586-3065

### **Human Remains/Bones:**

Name: Guy Tasa, PhD  
Title: State Anthropologist  
Cell: 360-790-1633 (24/7)  
Email: [Guy.Tasa@dahp.wa.gov](mailto:Guy.Tasa@dahp.wa.gov)

## 4. TRIBAL CONTACTS

In the event cultural resources are discovered, the following tribes will be contacted. See Section 10 for Additional Resources.

|        |                                                                          |        |                      |
|--------|--------------------------------------------------------------------------|--------|----------------------|
| Tribe: | <input type="text" value="Puyallup Tribe of Indians"/>                   | Tribe: | <input type="text"/> |
| Name:  | <input type="text" value="Brandon Reynon"/>                              | Name:  | <input type="text"/> |
| Title: | <input type="text" value="Tribal Historic Preservation Officer"/>        | Title: | <input type="text"/> |
| Phone: | <input type="text" value="Cell: (253) 442-9361 / Work: (253) 573-7965"/> | Phone: | <input type="text"/> |
| Email: | <input type="text" value="Brandon.Reynon@PuyallupTribe-nsn.gov"/>        | Email: | <input type="text"/> |
| Tribe: | <input type="text" value="Puyallup Tribe of Indians"/>                   | Tribe: | <input type="text"/> |
| Name:  | <input type="text" value="Mike Shong"/>                                  | Name:  | <input type="text"/> |
| Title: | <input type="text" value="Archaeologist"/>                               | Title: | <input type="text"/> |
| Phone: | <input type="text" value="Cell: (253) 339-1967"/>                        | Phone: | <input type="text"/> |
| Email: | <input type="text" value="Mike.Shong@PuyallupTribe-nsn.gov"/>            | Email: | <input type="text"/> |

Please provide contact information for additional tribes within your project area, if needed, in Section 11.

## 5. FURTHER CONTACTS (if applicable)

If the discovery is confirmed by DAHP as a cultural or archaeological resource, or as human remains, and there is a partnering federal or state agency, Ecology or the Project Lead/Organization will ensure the partnering agency is immediately notified.

Federal Agency:

Agency: U.S. Army Corps of Engineers (USACE)-Seattle District  
Name: LeeAnn Simmons  
Title: Project Manager, Biologist  
Phone: Cell: (206) 949-1461  
Email: Leeann.W.Simmons@usace.army.mil

State Agency:

Agency: USACE-Seattle District  
Name: Lance Lundquist  
Title: Archaeologist USACE-Seattle District  
Phone: (206) 764-6909  
Email: cultural.resources@usace.army.mil

## 6. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Follow the steps under ***Stop-Protect-Notify***. For specific instructions on how to handle a human remains discovery, see: [RCW 68.50.645: Skeletal human remains—Duty to notify—Ground disturbing activities—Coroner determination—Definitions.](#)

**Suggestion:** If you are unsure whether the discovery is human bone or not, contact Guy Tasa with DAHP, for identification and next steps. Do not pick up the discovery.

Guy Tasa, PhD State Physical Anthropologist

[Guy.Tasa@dahp.wa.gov](mailto:Guy.Tasa@dahp.wa.gov)

(360) 790-1633 (Cell/Office)

For discoveries that are confirmed or suspected human remains, follow these steps:

1. Notify law enforcement and the Medical Examiner/Coroner using the contacts below. **Do not call 911** unless it is the only number available to you.

Enter contact information below (required):

- Local Medical Examiner or Coroner name and phone:

Karen Cline-Parhamovich, 253-798- 6494

- Local Law Enforcement main name and phone:

Tacoma Police Dept., 253-287-4455

- Local Non-Emergency phone number (911 if without a non-emergency number):

Pierce County Sheriff, (253)798-7530

2. The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human or if the discovery site constitutes a crime scene and will notify DAHP.
3. **DO NOT speak with the media, allow photography or disturbance of the remains, or release any information about the discovery on social media.**
4. If the remains are determined to be non-forensic, Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed by others or disturbed.



Further activities:

- Per [RCW 27.44.055](#), [RCW 68.50](#), and [RCW 68.60](#), DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation. Organizations may also participate in consultation.
- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in [RCW 27.44.055](#), [RCW 68.50](#), and [RCW 68.60](#).
- When consultation and documentation activities are complete, work in the discovery area may resume as described in Section 8.

If the project occurs on federal lands (such as a national forest or park or a military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) apply and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Lead/Organization will comply with applicable state and federal laws, and the above protocol.

## **7. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS**

Archaeological resources discovered during construction are protected by state law [RCW 27.53](#) and assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

The Project Lead/Organization must ensure that proper documentation and field assessment are made of all discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and the archaeologist.

The archaeologist will record all prehistoric and historic cultural material discovered during project construction on a standard DAHP archaeological site or isolate inventory form. They will photograph site overviews, features, and artifacts and prepare stratigraphic profiles and soil/sediment descriptions for minimal subsurface exposures. They will document discovery locations on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require the archaeologist to conduct further evaluation using hand-dug test units. They will excavate units in a controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. They may also use a test unit or trench excavation to determine if an intact occupation surface is present. They will only use test units when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. They will conduct excavations using standard archaeological techniques to precisely document the location of cultural deposits, artifacts, and features.

The archaeologist will record spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock for each unit on a standard form. They will complete test excavation unit level forms, which will include plan maps for each excavation level and artifact counts and material types, number, and vertical provenience (depth below



surface and stratum association where applicable) for all recovered artifacts. They will draw a stratigraphic profile for at least one wall of each test excavation unit.

The archaeologist will screen sediments excavated for purposes of cultural resources investigation through 1/8-inch mesh, unless soil conditions warrant 1/4-inch mesh.

The archaeologist will analyze, catalogue, and temporarily curate all prehistoric and historic artifacts collected from the surface and from probes and excavation units. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology, and the affected tribe(s).

Within 90 days of concluding fieldwork, the archaeologist will provide a technical report describing any and all monitoring and resultant archaeological excavations to the Project Lead/Organization, who will forward the report to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s) for review and comment.

If assessment activities expose human remains (burials, isolated teeth, or bones), the archaeologist and Project Lead/Organization will follow the process described in **Section 6**.

## **8. PROCEEDING WITH WORK**

The Project Lead/Organization shall work with the archaeologist, DAHP, and affected tribe(s) to determine the appropriate discovery boundary and where work can continue.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Lead/Organization, DAHP, any affected tribe(s), Ecology, and the federal agencies (if any) determine that compliance with state and federal laws is complete.

## **9. ORGANIZATION RESPONSIBILITY**

The Project Lead/Organization is responsible for ensuring:

- This IDP has complete and accurate information.
- This IDP is immediately available to all field staff at the sites and available by request to any party.
- This IDP is implemented to address any discovery at the site.
- That all field staff, contractors, and volunteers are instructed on how to implement this IDP.

## **10. ADDITIONAL RESOURCES**

### **Informative Video**

Ecology recommends that all project staff, contractors, and volunteers view this informative video explaining the value of IDP protocol and what to do in the event of a discovery. The target audience is anyone working on the project who could unexpectedly find cultural resources or human remains while excavating or digging. The video is also posted on DAHP's inadvertent discovery language website.

[Ecology's IDP Video](https://www.youtube.com/watch?v=ioX-4cXfbDY) (<https://www.youtube.com/watch?v=ioX-4cXfbDY>)

## Informational Resources

[DAHP \(https://dahp.wa.gov\)](https://dahp.wa.gov)

[Washington State Archeology \(DAHP 2003\)](https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

[\(https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch\\_0.pdf\)](https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

[Association of Washington Archaeologists \(https://www.archaeologyinwashington.com\)](https://www.archaeologyinwashington.com)

## Potentially Interested Tribes

[Interactive Map of Tribes by Area](https://dahp.wa.gov/archaeology/tribal-consultation-information)

[\(https://dahp.wa.gov/archaeology/tribal-consultation-information\)](https://dahp.wa.gov/archaeology/tribal-consultation-information)

[WSDOT Tribal Contact Website](https://wsdot.wa.gov/tribal/TribalContacts.htm)

[\(https://wsdot.wa.gov/tribal/TribalContacts.htm\)](https://wsdot.wa.gov/tribal/TribalContacts.htm)

## 11. ADDITIONAL INFORMATION

Please add any additional contact information or other information needed within this IDP.

Additional Contacts:

MARAD Grant  
Adam Sutherland  
adam.sutherland.ctr@dot.gov

Port Security  
Fabulich Center, 3600 Port of Tacoma Rd,  
24 hr, 7 days a week 253-383-9472

**Implement the IDP if you see...**

**Chipped stone artifacts.**

Examples are:

- Glass-like material.
- Angular material.
- "Unusual" material or shape for the area.
- Regularity of flaking.
- Variability of size.



*Stone artifacts from Oregon.*



*Stone artifacts from Washington.*



*Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.*

**Implement the IDP if you see...**

**Ground stone artifacts.**

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.



*Above: Fishing Weight - credit [CRITFC Treaty Fishing Rights website](#).*



*Artifacts from unknown locations (left and right images).*





**Implement the IDP if you see...**

**Bone or shell artifacts, tools, or beads.**

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell ( “dentalium” ) or tusk.



Upper Left: Bone Awls from Oregon.

Upper Center: Bone Wedge from California.

Upper Right: Plateau dentalium choker and bracelet, from [Nez Perce National Historical Park](#), 19th century, made using [Antalis pretiosa](#) shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, [Public Domain](#).

Above: Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.



**Implement the IDP if you see...**

**Culturally modified trees, fiber, or wood artifacts.**

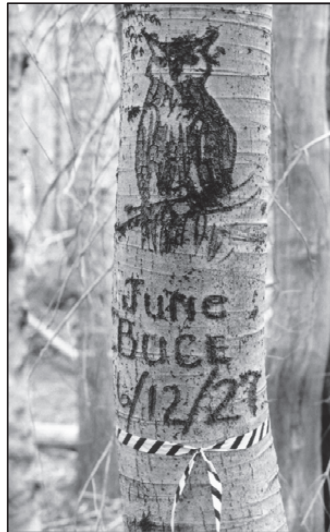
Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.



*Left and Below: Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

*Right, Top to Bottom: Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry.*





**Implement the IDP if you see...**

**Strange, different, or interesting looking dirt, rocks, or shells.**

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- “Unusual” accumulations of rock (especially fire-cracked rock).
- “Unusual” shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a “layer cake” appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the “unusual” or out of place (for example, rock piles in areas with otherwise few rocks).



*Underground oven. Courtesy of DAHP.*



*Shell midden with fire cracked rock.*



*Shell Midden pocket in modern fill discovered in sewer trench.*



*Hearth excavated near Hamilton, WA.*

**Implement the IDP if you see...**

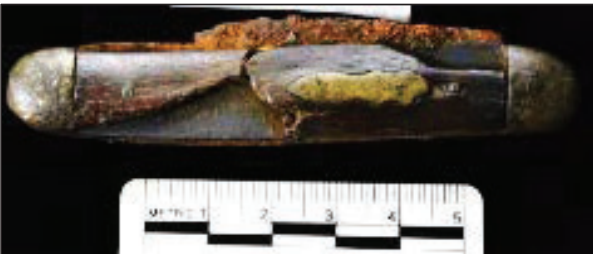
**Historic period artifacts (historic archaeology considered older than 50 years).**

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.



Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*



Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*



Implement the IDP if you see...

**Historic period artifacts (historic archaeology considered older than 50 years).**

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.



Main Image: Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.



Right, from Top to Bottom: Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.



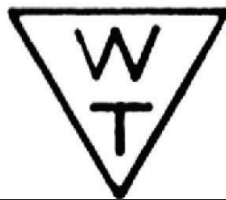
## Implement the IDP if you see...

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.

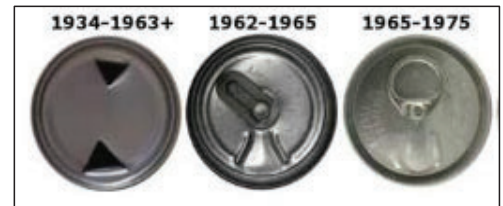


Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!  
Left: Maker's mark on bottom of old bottle.

Right: Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).



Can opening dates, courtesy of W.M. Schroeder.



**Implement the IDP if you see...**

**You see historic foundations or buried structures.**

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.



Counter Clockwise, Left to Right: Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.

**Implement the IDP if you see...**

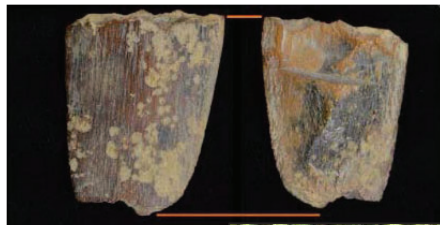
**Potential human remains.**

Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.

Center: *Bone wedge tool*,  
courtesy of Smith Cove  
Shantytown excavation  
(45KI1200).

Other images (Top Right,  
Bottom Left, and Bottom)  
Center: Courtesy of DAHP.



Directly Above: This is a real discovery at an Ecology sewer project site.

*What would you do if you found these items at a site? Who would be the first person you would call?*

*Hint: Read the plan!*

**APPENDIX I**  
**CITY OF TACOMA**  
**SITE DEVELOPMENT**  
**SDEV23-0193**



# CITY OF TACOMA

Planning and Development Services  
(253) 591-5030

747 Market St. 3rd Floor  
Tacoma, WA 98402  
Inspections (253) 573-2587

## Site Development Permit #SDEV23-0193

Issued Date: 05/29/2025

Expiration Date: 11/25/2025

### SITE INFORMATION

Address: 1702 PORT OF TACOMA RD

Parcel:

#### PERMIT ISSUED TO

PORT OF TACOMA  
PO BOX 1837  
TACOMA, WA 98401

#### LICENSED CONTRACTOR

#### PROPERTY OWNER

PORT OF TACOMA  
PO BOX 1837  
TACOMA, WA 98401

### PERMIT INFORMATION

**Project Description:** Develop approximately 24.5 acres of Port owned property into an off-dock container support facility. This facility will be used for container storage, chassis storage, reefer wash facility, wheeled reefer valet drop-off location. Other site features will include truck entry and exit gates on Maxwell Way, including a guard shelter, perimeter fencing, site lighting, power, security cameras, a railroad crossing and stormwater improvements. Work will include clearing and grubbing, earth fill, isolated excavations, subgrade preparation, base course and pavement systems, stormwater infrastructure, and other utilities. Stormwater treatment will be by overland sheet flow conveyance and at-grade treatment.

**Permit Fee:** \$27,758.65

**Project Coordinator:** Joe Graff

**Related Site Record:** N/A

**Related Land Use Record:** N/A

### CONDITIONS OF APPROVAL

A land use inspection is required to be completed by land use staff prior to scheduling final inspection. Schedule your land use inspection by calling (253) 591-5030 Option 4.

As part of as-builts a new Operation and Maintenance Manual must be provided that includes the facility site plan with detail drawing for all stormwater facilities.

Per redlined approval comments on plans, and as coordinated with Applicant, mobilization onsite is not allowed until after precon meeting and permit transfer to Port's selected contractor, after bidding process and contract award is complete. Confirmed with Port: "intend to be out to bid within a month of permit issuance with a 30 day bid period. Under contract about 3 months out. We will definitely be ready for the precon and on site work within 6 months.", to ensure permit remains active.

### Discovery of archaeological/cultural sites during construction

In the event of an unanticipated discovery of suspected archaeological materials or human remains during the course of construction, all work within 30 feet of the discovery site shall cease immediately and the project management personnel must follow procedures outlined in the City of Tacoma standard Unanticipated Discovery Plan (UDP). All project management personnel should access and familiarize themselves with the UDP steps and requirements prior to the start of construction, and shall inform workers and equipment operators of the UDP as well.

The UDP can be accessed here: <https://cityoftacoma.org/culturalResources/>

To schedule or manage inspections by phone (253) 573-2587 or online at [aca-prod.accela.com/TACOMA/](https://aca-prod.accela.com/TACOMA/)

### PRINTED PERMIT AND APPROVED PLANS MUST BE KEPT ON SITE DURING CONSTRUCTION

All plumbing, heating, and electrical work will be performed by either the home owner or by a contractor licensed to do the same. Separate permits are required for other work, including but not limited to, sanitary and storm sewer, sidewalk, curb and gutter, driveways, parking lot paving, street improvements, fire protection, and signs. Plumbing and mechanical permits can be incorporated into some permits.



## CITY OF TACOMA

Planning and Development Services  
(253) 591-5030

Page 2 of 6

747 Market St. 3rd Floor  
Tacoma, WA 98402  
Inspections (253) 573-2587

### Site Development Permit #SDEV23-0193

Issued Date: 05/29/2025

Expiration Date: 11/25/2025

#### VALUATIONS

##### Estimated Valuation:

\$27,000,000

#### PROJECT DETAILS

##### Night or Weekend Work:

YES

##### Pre-Application Number:

PRE21-0352



# CITY OF TACOMA

Planning and Development Services  
(253) 591-5030

747 Market St. 3rd Floor  
Tacoma, WA 98402  
Inspections (253) 573-2587

## Site Development Permit #SDEV23-0193

Issued Date: 05/29/2025

Expiration Date: 11/25/2025

Row



**APPROVED REVIEWERS**

| <b>Category</b>           | <b>Approved By</b>  | <b>Email</b>            | <b>Phone Number</b> |
|---------------------------|---------------------|-------------------------|---------------------|
| ADA Review                | Gail Himes          | ghimes@tacoma.gov       | 253-591-5785        |
| Building Review           | Chris Seaman        | cseaman@tacoma.gov      | 253-591-5503        |
| Building Review           | Ravi Mahajan        | rmahajan@tacoma.gov     | 253-355-2481        |
| Critical Areas Review     | Karla Kluge         | kkluge@tacoma.gov       | 253-365-4932        |
| Document Review           | Randy Jones         | rjones8@tacoma.gov      | 253.290.2837        |
| Fire Protection Review    | Derek Gust          | dgust@tacoma.gov        |                     |
| Land Use Review           | Shanta Frantz       | sfrantz@tacoma.gov      | 253-260-0769        |
| Real Property Review      | Carleen Bruner      | cbruner@tacoma.gov      | 253-591-5570        |
| Signal/Streetlight Review | Vicki Marsten       | vmarsten@tacoma.gov     | 253-591-5556        |
| Site Development Review   | Gary Allen          | gallen@tacoma.gov       | 253-591-5772        |
| Site Development Review   | Joy Rodriguez       | jrodrigu@tacoma.gov     | 253-312-3513        |
| Site Development Review   | Randy Jones         | rjones8@tacoma.gov      | 253.290.2837        |
| Tacoma Power Review       | Dan Reed            | dlreed@cityoftacoma.org | 253-502-8292        |
| Tacoma Water Review       | Heather Croston     | hcroston@tacoma.gov     | 253-331-3830        |
| Tacoma Water Review       | Katherine Belin     | kbelin@cityoftacoma.org | 253-651-2331        |
| Tacoma Water Review       | Sabrina O'Donnell   | sodonnell@tacoma.gov    | 253-503-8023        |
| Traffic Review            | Jennifer Kammerzell | jkammerzell@tacoma.gov  | 253-591-5511        |
| Water Quality Review      | Scott Hallenberg    | shallenb@tacoma.gov     | 253-502-8215        |

**GENERAL:**

PERMISSION IS HEREBY GIVEN TO DO THE DESCRIBED WORK, AS NOTED ON THE REVERSE SIDE, ACCORDING TO THE CONDITIONS HEREON AND ACCORDING TO THE APPROVED PLANS AND SPECIFICATIONS PERTAINING THERETO, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF TACOMA.,

YOUR ATTENTION IS CALLED TO THE FACT THAT IT SHALL BE THE DUTY OF THE PERMITEE (General Contractor) to assure that all necessary inspections are called for and approved by the City Inspectors.

YOUR ATTENTION IS CALLED to the fact that in addition to the called for inspections specified by the applicable codes, the Building Official may make or require any other inspections of any construction work necessary to ascertain compliance with the provisions of City Codes and other laws which are enforced by the City of Tacoma.

YOUR ATTENTION IS CALLED to the fact that in addition to regularly scheduled inspections during construction there shall be a final inspection and approval on all buildings or structures when completed and ready for occupancy. AU required off-site improvements (curbs, sidewalks, storm sewers, etc.) must be completed at time a final inspection and prior to occupancy of building. Construction of off-site improvements requires scheduled inspections during construction in addition to the final inspection.

**SPECIAL PERMITS**

The holder of Special Permits agrees to the following stipulations:

1. To complete the work encompassed by the Special Permit in accordance with the current edition of the WSDOTIAFWA Standard Specifications as amended by the City of Tacoma General Special Provisions and in accordance with any special provisions or conditions set forth before final acceptance as required by the provisions of the Street Obstruction Bond.
2. To indemnify and hold the City of Tacoma harmless from any and all damages done to any person or property which may arise from the construction encompassed by the Special Permit.
3. To submit for review and approval to the Traffic Engineer a traffic control plan developed in accordance with the "Manual on Uniform Traffic Control Devices" {MUTCD}. The traffic control plan shall show pedestrian access through the work zone.
4. To protect the public by placing adequate barricades, signs, cones, lights or other traffic control devices in accordance with the approved traffic control plan. It is understood that traffic lane closures and or sidewalk closures are limited to that which is specifically permitted herein. No other closures will be allowed without prior written approval of the City Engineer.
5. To provide and maintain protected pedestrian and ADA compliant disability access on walkways at all times.
6. The City of Tacoma does not guarantee sewer location or depth information. It shall be the permittee's responsibility to verify sewer and sewer stub locations and depths.
7. To restore Rights-of-Way in accordance with the City's Rights-of-Way Restoration Policy and City of Tacoma Standard Plans
8. Trench backfill within all improved streets or streets proposed for improvement shall be full depth bank run gravel or approved equal by the Construction Division.
9. All cuts in arterial streets shall be patched and maintained with Hot Mix Asphalt until permanent repairs are completed. All cuts in residential streets or alleys shall be patched and maintained with cold mix asphalt until permanent repairs are made. Permanent repairs shall be per current City of Tacoma Standard Plans. Streets and alleys shall be permanently repaired within 30 days.
10. To be responsible for the preservation of any utilities within the construction area.

**CALL TOLL FREE BEFORE YOU DIG -1-800-424-5555 (Utilities Underground Location Center)**

11. 24 Hour notice is required prior to any inspection. Construction Division 253-591-5760, Traffic Signal/Streetlight 253-591-5287.
12. The Special Permit Expiration date is 30 days from the issue date unless otherwise noted.

**9.08.070 Revocation of permits and removal of development.**

All permits and/or development granted under the provisions of this chapter may, in any case, be revoked by the Director of Planning and Development Services, or designee, upon 30 days' notice, or without notice in case any such use or occupation shall become dangerous or any structure or obstruction permitted shall become insecure or unsafe, or shall not be constructed, maintained, or used in accordance with the provisions of this chapter. The development shall be removed at the expense of the permittee and/or adjacent property owner.

If any such structure, obstruction, use, or occupancy is not discontinued on notice to do so by the Director of Planning and Development Services, the City may forthwith remove such structure or obstruction from such place, or make such repairs upon such structure or obstruction as may be necessary to render the same secure and safe, at the expense of the permittee or successor, and such expense, together with the cost of its collection, may be collected in the manner provided by law. As an alternative, the City may enforce under Title 8.

(Ord. 28501 Ex. A; passed Apr. 10, 2018: Ord. 22865 § 1; passed Jan. 18, 1983: Ord. 21035 § 1; passed Apr. 5, 1977)

04/18/2024 - REAL PROPERTY SVCS - Approved w/Comments (C.Bruner)

Please notify and coordinate site work with TPU Rail for any work occurring near the railroad tracks.

04/19/2024 - SIGNAL/STREETLIGHT - APPROVED W/COMMENTS REVISIONS REQUIRED ON WO23-0096 SEE CIVIL DRAWINGS

SITE DEVELOPMENT: STORM/SANITARY - APPROVED WITH COMMENTS DATE: 04/29/2025 NAME: Mieke Hoppin

Comments on SSP.

As part of project closeout, an updated O&M Manual can be submitted that clearly includes a site map with drawings of the facility. The Permit will not obtain closeout until this document is received.

BUILDING 2/28/2025 APPROVED W/ FOLLOWING CONDITIONS: SEPARATE BUILDING PERMITS ARE REQUIRED FOR THE INSTALLATION OF LIGHT POLES AND ABOVE GROUND STORAGE TANK. COMPLETE STRUCTURAL DETAILS AND DESIGN ANALYSIS PERFORMED TO 2021 IBC AND NOT 2019 CBC IS REQUIRED TO BE SUBMITTED W/ THOSE TWO BUILDING PERMITS.

8/17/2023 - TACOMA POWER REVIEW -

COULD NOT DETERMINE IF THERE ARE ANY CONSTRUCTION CONFLICTS WITH TPU FACILITIES, IF FOUND CONTACT JOE REMPEE OR THAD GLASSY IN LINE ENGINEERING.

PORT COMMISSIONERS:

JOHN McCARTHY  
RICHARD MARZANO  
DON MEYER  
DEANNA KELLER  
KRISTIN ANG

PORT STAFF:

ERIC JOHNSON  
Executive Director

THAIS HOWARD, P.E.  
Director of Engineering

NORMAN GILBERT, P.E.  
Engineering Project Manager

2/27/25 - Tacoma Water - Approved with comments

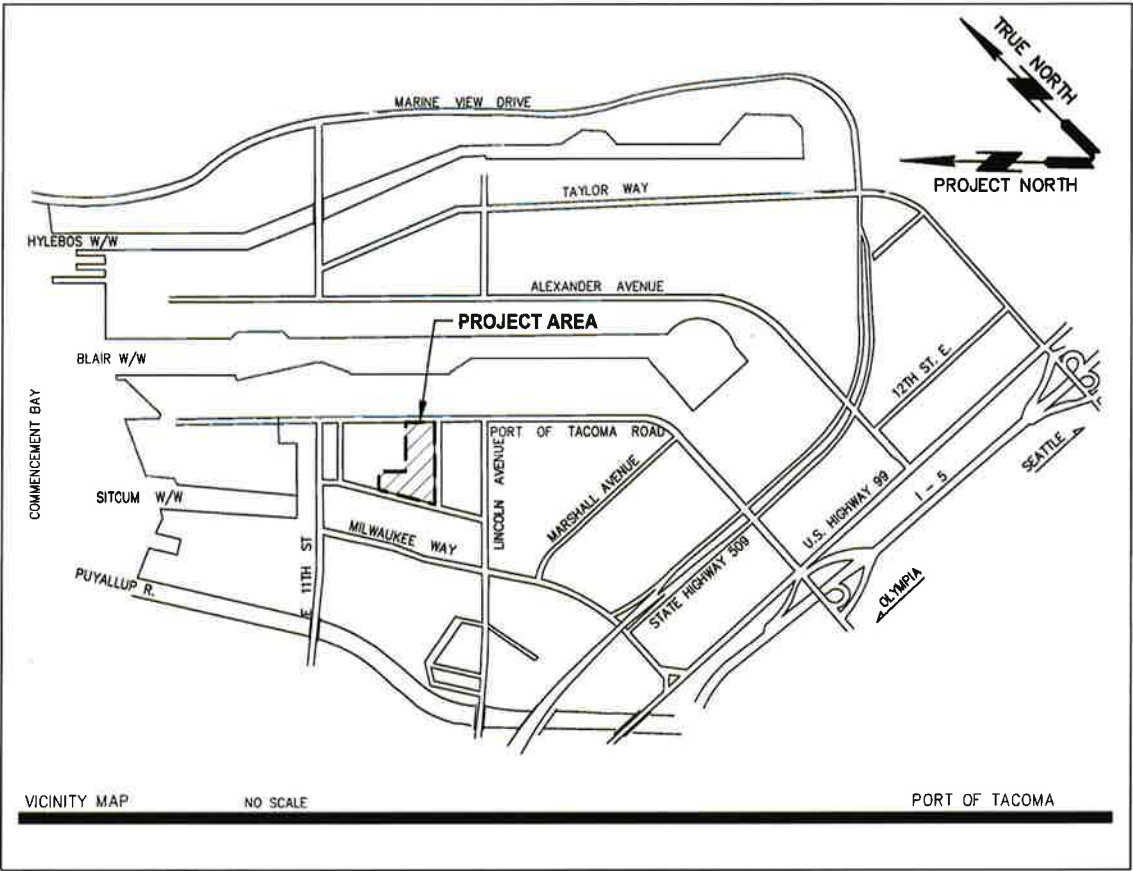
Meter located on Thorne St must be placed outside of paved areas and sidewalks in the amenity zone. Continue to work with Chris Hicks for service needs.

For utilities other than sanitary sewer, the proposed facilities shall have a minimum horizontal separation of five (5) feet and vertical separation of twelve (12) inches from Tacoma Water facilities.

Cathodic Protection test station at Maxwell & Port of Tacoma Road needs to be protected and possibly relocated to meet ADA requirements. Please contact Michael Duffy at mduffy@cityoftacoma.org or 253.405.7980. 30 days advance notice is required.

PORT OF TACOMA

THORNE ROAD  
OFF DOCK CONTAINER YARD  
PROJECT NO. 101241.01  
CONTRACT NUMBER 071908



CONSULTANTS:

moﬀatt & nichol  
600 UNIVERSITY STREET  
SUITE# 610  
SEATTLE, WA 98101  
(206) 622-0222

SITTS & HILL  
ENGINEERS, INC.  
CIVIL • STRUCTURAL • SURVEYING

Kennedy Jenks

CROSS ENGINEERS, INC.  
3733 MAX J. Way  
Tacoma, WA 98405  
info@crossengineers.com  
Phone (253) 786-0118  
Fax (253) 786-0122

09/01/2023 - WATER QUALITY REVIEW - APPROVED W/COMMENTS BELOW:  
A lead free State of Washington approved reduced pressure backflow assembly (RPBA) is required on the domestic water supply line to the building prior to any branch line connections. The premises RPBA may be installed at the Tacoma Water meter or at the point the water service first enters the building with minimal exposed piping (less than 5 feet). It may not be installed below grade and must have proper drainage to accommodate the relief valve full design discharge flow rate. An independent shut off valve is required to be installed between the Tacoma Water meter and the required premises RPBA.

An approved DCVA must be installed on the water supply line to the irrigation system unless pumps, chemicals or auxiliary water are utilized in the system then an RPBA is required. If installed below ground, the DCVA can be no deeper than 12" below grade and must have a minimum of 6" air space clearance underneath it. Threaded plugs are required in each of the 4 test ports. An independent shut off valve is required to be installed between the Tacoma Water meter and the required irrigation system DCVA.

A State of Washington approved double check valve assembly (DCVA) is required to be installed on the water supply line to the fire sprinkler system. If there are any provisions for chemical additives or if there is a storage tank/reservoir as part of the fire system then an RPBA is required in place of the DCVA.

Any new water meters will be installed in the off position and water service will only be provided after inspection by the Tacoma Water Water Quality Section. Failure to arrange water service turn on with the Water Quality Section may result in a self-cut in fee of \$500.

Please contact Scott Hallenberg at Tacoma Water for specific requirements or to arrange for water service turn on (including temp water for construction, system filling and/or testing). shallenb@cityoftacoma.org or 253-502-8215.

THIS PROJECT IS FUNDED IN PART  
BY THE WASHINGTON STATE  
DEPARTMENT OF ECOLOGY

APPLICANT:  
PORT OF TACOMA, C/O NORM GILBERT  
1 SITCUM PLAZA, TACOMA, WA 98421  
NGILBERT@PORTOFTACOMA.COM  
253-383-9406

PLANS PREPARER:  
MOFFATT & NICHOL, C/O JAMES TODD  
600 UNIVERSITY STREET, SUITE #610, SEATTLE, WA 98101  
JTODD@MOFFATTNICHOL.COM

PROJECT ENGINEER:  
(SAME AS APPLICANT)

SITE DEVELOPMENT No. S-DEV 23-0193  
LAND USE PERMIT No.  
COMMERCIAL BUILDING PERMIT No. (TBD)  
ECOLOGY PERMIT AND DNR FOR MONUMENTS:  
SEE SHEET V01.01 FOR PRECISE BOUNDARY LINES AND LENGTHS  
PROPERTY AREA: 1,038,392 SF OR 28.3 ACRE

|       |  |  |  |  |  |  |  |  |  |                                                       |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |             |  |  |  |  |  |  |  |  |  |                                                                            |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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100% - DESIGN  
ISSUED: 2025-04-03

**APPENDIX J**

**CITY OF TACOMA**

**WORK ORDER**

**WO23-0096**



# CITY OF TACOMA

Planning and Development Services  
(253) 591-5030

747 Market St. 3rd Floor  
Tacoma, WA 98402  
Inspections (253) 573-2587

## Work Order Permit #WO23-0096

Issued Date: 09/02/2025

Expiration Date: 09/02/2027

### SITE INFORMATION

Address: 1702 PORT OF TACOMA RD

Parcel: 6965000380

### PERMIT ISSUED TO

PORT OF TACOMA  
PO BOX 1837  
TACOMA, WA 98401

### LICENSED CONTRACTOR

### PROPERTY OWNER

PORT OF TACOMA  
PO BOX 1837  
TACOMA, WA 98401

### PERMIT INFORMATION

**Project Description:** Per the requirements requested during PRE21-0352 review, the Port of Tacoma has designed the and detailed the requested frontage improvements which include: curb, gutter, sidewalk, street lighting, street trees and storm drainage along Maxwell Way between Port of Tacoma Road and Thorne Road; curb, gutter, sidewalk and street trees along the property side of Thorne Road between the 1400 and 1700 blocks; and removing a driveway and replacing sidewalk and curb along the 1700 block of Port of Tacoma Road. This application also includes the right-of-way construction needed to install or extend utilities into the property.

**Permit Fee:** \$23,492.72

**Project Coordinator:** Joe Graff

**Related Site Record:** N/A

**Related Land Use Record:** N/A

### CONDITIONS OF APPROVAL

A land use inspection is required to be completed by land use staff prior to scheduling final inspection.  
Schedule your land use inspection by calling (253) 591-5030 Option 4.

#### Discovery of archaeological/cultural sites during construction

In the event of an unanticipated discovery of suspected archaeological materials or human remains during the course of construction, all work within 30 feet of the discovery site shall cease immediately and the project management personnel must follow procedures outlined in the City of Tacoma standard Unanticipated Discovery Plan (UDP). All project management personnel should access and familiarize themselves with the UDP steps and requirements prior to the start of construction, and shall inform workers and equipment operators of the UDP as well.

The UDP can be accessed here: <https://cityoftacoma.org/culturalResources/>

**PRINTED PERMIT AND APPROVED PLANS MUST BE KEPT ON SITE DURING CONSTRUCTION**

All plumbing, heating, and electrical work will be performed by either the home owner or by a contractor licensed to do the same. Separate permits are required for other work, including but not limited to, sanitary and storm sewer, sidewalk, curb and gutter, driveways, parking lot paving, street improvements, fire protection, and signs. Plumbing and mechanical permits can be incorporated into some permits.

Page 2 of 5



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### Work Order Permit #WO23-0096

Issued Date: 09/02/2025

Expiration Date: 09/02/2027

#### VALUATIONS

Estimated Valuation:

\$2,300,000

#### PROJECT DETAILS

Does work include the installation of Small Cell  
Infrastructure?:

Night or Weekend Work:  
YES

#### BARRICADE

Barricade Duration:

1 Month

Description of Barricade Work:

Traffic cones/barrels to separate travel lanes from  
parking area and shoulders.



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## Work Order Permit #WO23-0096

Issued Date: 09/02/2025

Expiration Date: 09/02/2027

### APPROVED REVIEWERS

| Category                  | Approved By         | Email                   | Phone Number |
|---------------------------|---------------------|-------------------------|--------------|
| ADA Review                | Gail Himes          | ghimes@tacoma.gov       | 253-591-5785 |
| Building Review           | Chris Seaman        | cseaman@tacoma.gov      | 253-591-5503 |
| Critical Areas Review     | Karla Kluge         | kkluge@tacoma.gov       | 253-365-4932 |
| Document Review           | Chris Johnson       | cjohnso2@tacoma.gov     | 253-502-2164 |
| Land Use Review           | Shanta Frantz       | sfrantz@tacoma.gov      | 253-260-0769 |
| Real Property Review      | Carleen Bruner      | cbruner@tacoma.gov      | 253-591-5570 |
| RUCO Review               | Jennifer Kammerzell | jkammerzell@tacoma.gov  | 253-591-5511 |
| Signal/Streetlight Review | Vicki Marsten       | vmarsten@tacoma.gov     | 253-591-5556 |
| Site Development Review   | Joy Rodriguez       | jrodrigu@tacoma.gov     | 253-312-3513 |
| Site Development Review   | Randy Jones         | rjones8@tacoma.gov      | 253.290.2837 |
| Tacoma Power Review       | Dan Reed            | dlreed@cityoftacoma.org | 253-502-8292 |
| Tacoma Water Review       | Katherine Belin     | kbelin@cityoftacoma.org | 253-651-2331 |
| Tacoma Water Review       | Sabrina O'Donnell   | sodonnell@tacoma.gov    | 253-503-8023 |
| Traffic Review            | Jennifer Kammerzell | jkammerzell@tacoma.gov  | 253-591-5511 |



**GENERAL:**

PERMISSION IS HEREBY GIVEN TO DO THE DESCRIBED WORK, AS NOTED ON THE REVERSE SIDE, ACCORDING TO THE CONDITIONS HEREON AND ACCORDING TO THE APPROVED PLANS AND SPECIFICATIONS PERTAINING THERETO, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF TACOMA.,

YOUR ATTENTION IS CALLED TO THE FACT THAT IT SHALL BE THE DUTY OF THE PERMITEE (General Contractor) to assure that all necessary inspections are called for and approved by the City Inspectors.

YOUR ATTENTION IS CALLED to the fact that in addition to the called for inspections specified by the applicable codes, the Building Official may make or require any other inspections of any construction work necessary to ascertain compliance with the provisions of City Codes and other laws which are enforced by the City of Tacoma.

YOUR ATTENTION IS CALLED to the fact that in addition to regularly scheduled inspections during construction there shall be a final inspection and approval on all buildings or structures when completed and ready for occupancy. AU required off-site improvements (curbs, sidewalks, storm sewers, etc.) must be completed at time a final inspection and prior to occupancy of building. Construction of off-site improvements requires scheduled inspections during construction in addition to the final inspection.

**SPECIAL PERMITS**

The holder of Special Permits agrees to the following stipulations:

1. To complete the work encompassed by the Special Permit in accordance with the current edition of the WSDOTIAFWA Standard Specifications as amended by the City of Tacoma General Special Provisions and in accordance with any special provisions or conditions set forth before final acceptance as required by the provisions of the Street Obstruction Bond.
2. To indemnify and hold the City of Tacoma harmless from any and all damages done to any person or property which may arise from the construction encompassed by the Special Permit.
3. To submit for review and approval to the Traffic Engineer a traffic control plan developed in accordance with the "Manual on Uniform Traffic Control Devices" {MUTCD}. The traffic control plan shall show pedestrian access through the work zone.
4. To protect the public by placing adequate barricades, signs, cones, lights or other traffic control devices in accordance with the approved traffic control plan. It is understood that traffic lane closures and or sidewalk closures are limited to that which is specifically permitted herein. No other closures will be allowed without prior written approval of the City Engineer.
5. To provide and maintain protected pedestrian and ADA compliant disability access on walkways at all times.
6. The City of Tacoma does not guarantee sewer location or depth information. It shall be the permittee's responsibility to verify sewer and sewer stub locations and depths.
7. To restore Rights-of-Way in accordance with the City's Rights-of-Way Restoration Policy and City of Tacoma Standard Plans
8. Trench backfill within all improved streets or streets proposed for improvement shall be full depth bank run gravel or approved equal by the Construction Division.
9. All cuts in arterial streets shall be patched and maintained with Hot Mix Asphalt until permanent repairs are completed. All cuts in residential streets or alleys shall be patched and maintained with cold mix asphalt until permanent repairs are made. Permanent repairs shall be per current City of Tacoma Standard Plans. Streets and alleys shall be permanently repaired within 30 days.
10. To be responsible for the preservation of any utilities within the construction area.

**CALL TOLL FREE BEFORE YOU DIG -1-800-424-5555 (Utilities Underground Location Center)**

11. 24 Hour notice is required prior to any inspection. Construction Division 253-591-5760, Traffic Signal/Streetlight 253-591-5287.
12. The Special Permit Expiration date is 30 days from the issue date unless otherwise noted.

**9.08.070 Revocation of permits and removal of development.**

All permits and/or development granted under the provisions of this chapter may, in any case, be revoked by the Director of

Planning and Development Services, or designee, upon 30 days' notice, or without notice in case any such use or occupation

shall become dangerous or any structure or obstruction permitted shall become insecure or unsafe, or shall not be constructed,

maintained, or used in accordance with the provisions of this chapter. The development shall be removed at the expense of the

permittee and/or adjacent property owner.

If any such structure, obstruction, use, or occupancy is not discontinued on notice to do so by the Director of Planning and Development Services, the City may forthwith remove such structure or obstruction from such place, or make such repairs

upon such structure or obstruction as may be necessary to render the same secure and safe, at the expense of the permittee or

successor, and such expense, together with the cost of its collection, may be collected in the manner provided by law. As an

alternative, the City may enforce under Title 8.

(Ord. 28501 Ex. A; passed Apr. 10, 2018: Ord. 22865 § 1; passed Jan. 18, 1983: Ord. 21035 § 1; passed Apr. 5, 1977)

Plotted By: Todd, James 8/25/2025 10:16 AM

ELEVATION DATUM:  
MEAN LOWER LOW WATER (MLLW);  
CONVERSION: MLLW DATUM MINUS 5.96' = NGVD 29 CITY OF TACOMA DATUM

HORIZONTAL DATUM:  
NAD 83 (2011)

CONVERSION: PORT OF TACOMA DATUM MINUS N 0.22, E 0.00 = NAD 83/91  
CITY OF TACOMA DATUM. SEE THREE CITY OF TACOMA MONUMENTS ON SHEET  
WO-17

SPECIAL TRAFFIC CONTROL REQUIREMENTS:

1.

A MINIMUM OF ONE 20-FOOT WIDE ACCESS SHALL BE MAINTAINED TO ALL PROPERTIES AT ALL TIMES.
2.

THREE (3) WORKING DAYS PRIOR TO ANY STREET OR LANE CLOSURE, THE CONTRACTOR SHALL NOTIFY:  
  
TACOMA PUBLIC WORKS ENGINEERING DIVISION (253) 591-5500  
TACOMA PUBLIC WORKS STREETS AND GROUNDS (253) 591-5495  
TACOMA PUBLIC WORKS SOLID WASTE (253) 591-5544  
TACOMA FIRE DEPARTMENT (253) 591-5733  
TACOMA POLICE DEPARTMENT (253) 591-5951  
LESA COMMUNICATION CENTER (253) 798-4721  
OPT. #3
3.

A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO, AND APPROVED BY THE TACOMA PUBLIC WORKS, ENGINEERING DIVISION, PRIOR TO BEGINNING ANY WORK ON CITY RIGHT OF WAY.

GENERAL CONSTRUCTION SEQUENCE:

1.

HOLD AND ATTEND PRE-CONSTRUCTION MEETING WITH THE CITY OF TACOMA CONSTRUCTION DIVISION AND BUILDING AND LAND USE SERVICE, TACOMA POWER, TACOMA WATER, PORT OF TACOMA, ENGINEER AND OTHERS AS APPLICABLE PRIOR TO COMMENCEMENT OF WORK.
2.

STAKE PROJECT LIMITS PRIOR TO BEGINNING CONSTRUCTION.
3.

WHEN COMPLETED CONTACT CITY INSPECTOR FOR FINAL APPROVAL.
- THIS WORK ORDER DRAWING SET IS ALSO UNDER REVIEW BY CITY OF TACOMA SITE DEVELOPMENT AS PERMIT SDEV23-0193.
4.

RIGHTS OF WAY RESTORATION SHALL BE PER THE POLICY AS ADOPTED BY THE CITY AUGUST 2017. THE CITY OF TACOMA INSPECTOR SHALL HAVE FINAL DIRECTION FOR LIMITS OF RESTORATION.
5.

SEE SHEETS WO-16 AND WO-17 FOR BENCHMARK AND SITE SURVEY DATA.

PROJECT CONTACT INFORMATION

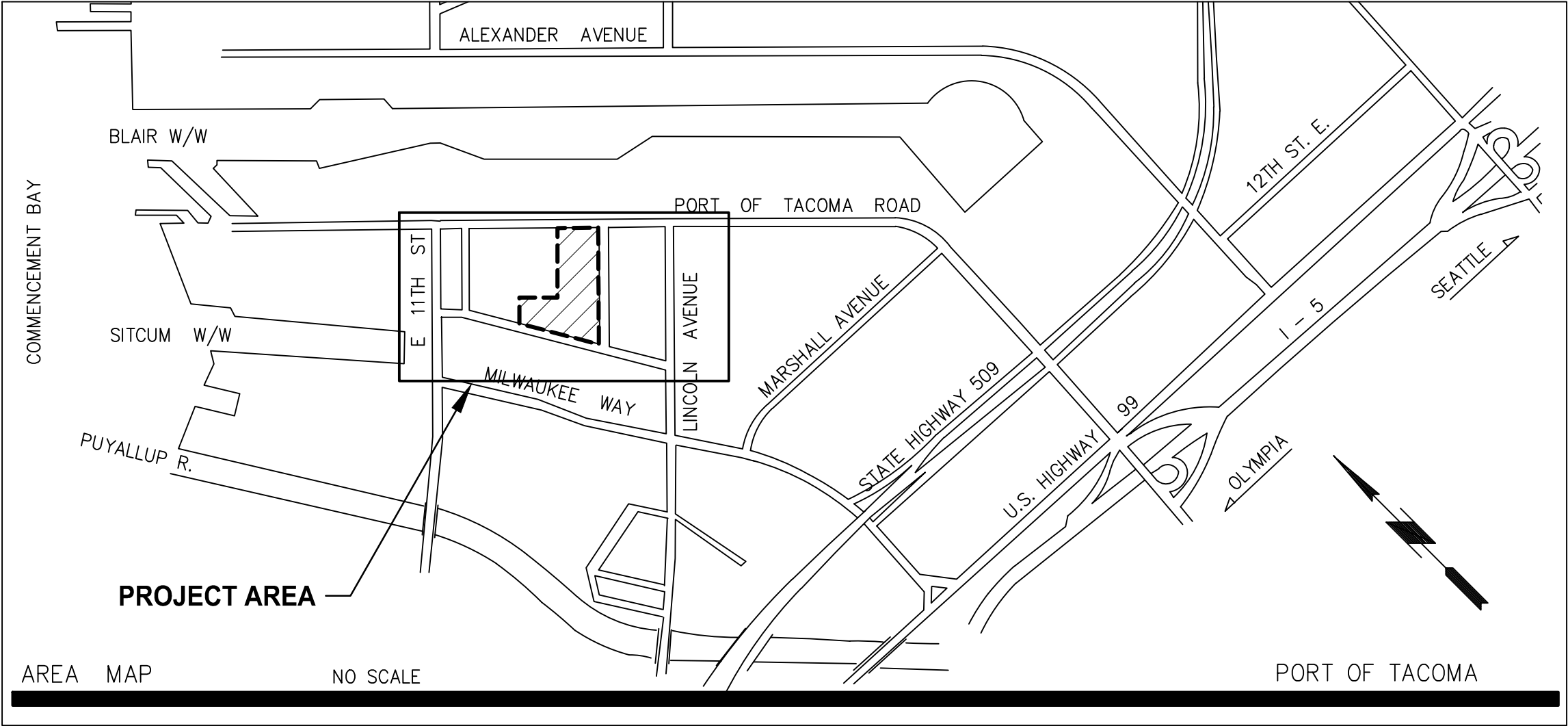
OWNER - PORT OF TACOMA  
NORMAN GILBERT, P.E.  
PROJECT MANAGER II  
PHONE: (253).383-9406  
ONE SITCUM PLAZA, TACOMA, WA 98421  
EMAIL: NGILBERT@PORTOFTACOMA.COM

CONSULTING ENGINEERS - MOFFATT & NICHOL  
JAMES TODD, P.E.  
505 S 336TH STREET, STE 510, FEDERAL WAY, WA 98003  
PHONE: (206) 622-0222  
EMAIL: JTODD@MOFFATTNICHOL.COM

OTHER CONSULTANTS:  
KENNEDY JENKS & CROSS ENGINEERS

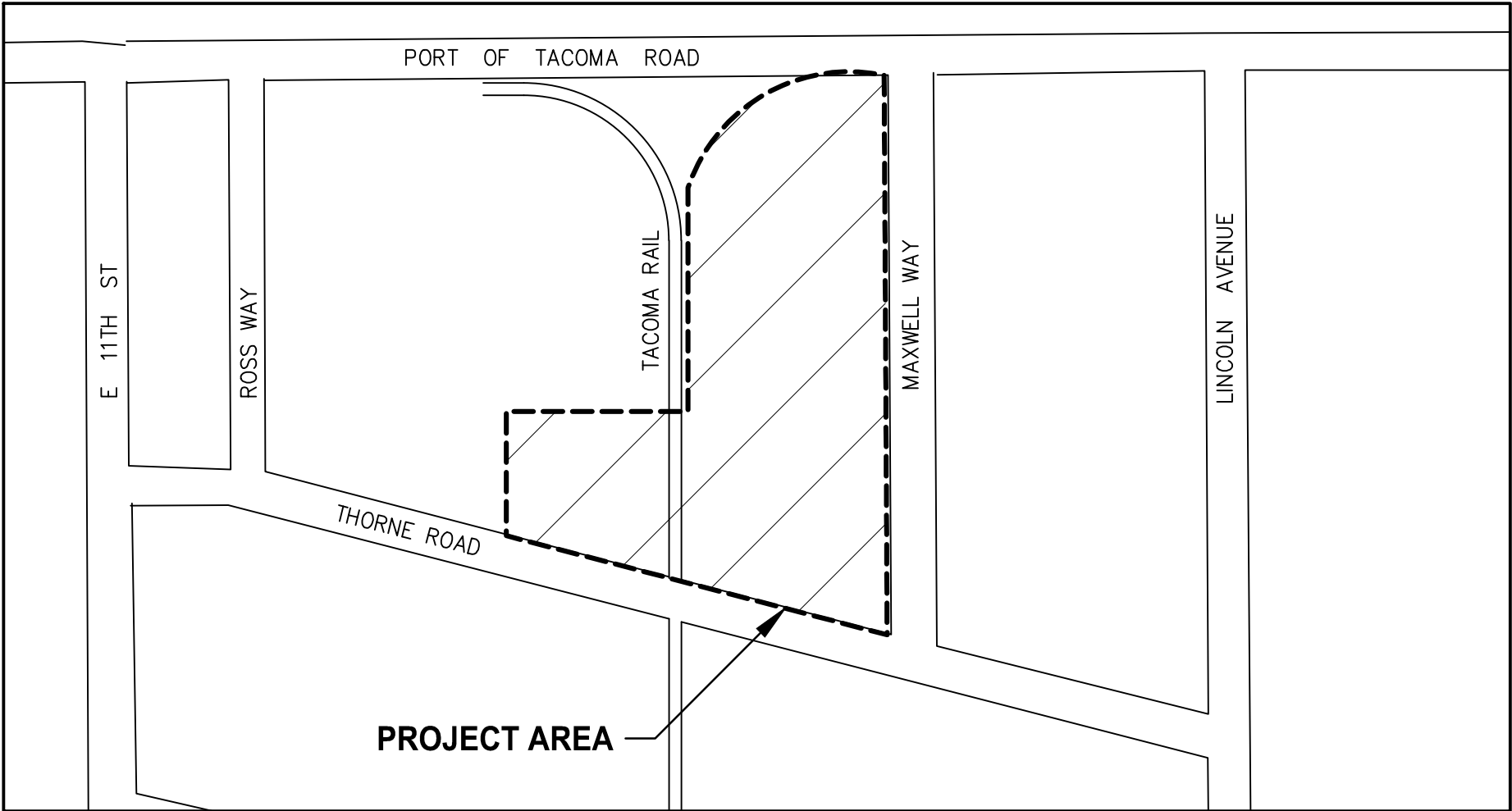
THORNE ROAD  
OFF DOCK CONTAINER YARD  
TACOMA, WASHINGTON

Meter located on Thorne St must be placed outside of paved areas and sidewalks in the amenity zone. Continue to work with Chris Hicks for service needs.  
For utilities other than sanitary sewer, the proposed facilities shall have a minimum horizontal separation of five (5) feet and vertical separation of twelve (12) inches from Tacoma Water facilities.  
Cathodic Protection test station at Maxwell & Port of Tacoma Road needs to be protected and possibly relocated to met ADA requirements. Please contact Michael Duffy at mduffy@cityoftacoma.org or 253.405.7980. 30 days advance notice is required.



SITE: STREETS REVIEW - 08/01/2025 - APPROVED WITH COMMENTS

1. Flowlines shall be constructed to DM standards. 0.3% minimum for concrete and 1.0% minimum for asphalt.
2. FRC (Field Revision Change) required for field changes.



WO23-0096 will be issued to Port of Tacoma (POT) after final plan approval for use in bidding process. No precon meeting will be required at that time. Permit will be transferred to POT's selected contractor prior to mobilization onsite. Permit transfer fee will apply. POT shall keep the Site Review Engineer advised of the construction contracting process and timeline for contract award and notice to proceed.  
  
A virtual Preconstruction Meeting will be required prior to SDEV permit transfer to POT's contractor. POT and their selected Contractor shall be required to attend. Contractor shall provide project-specific contact and subcontractor information and provide any required TCP, PAR, or Haul Route information prior to scheduling Preconstruction Meeting.

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| 1             | WO-01        | COVER SHEET AND SHEET INDEX                                    |
| 2             | WO-02        | DEMOLITION PLAN - SHEET 1                                      |
| 3             | WO-03        | DEMOLITION PLAN - SHEET 2                                      |
| 4             | WO-04        | DEMOLITION PLAN - SHEET 3                                      |
| 5             | WO-05        | SITE PLAN & GUTTER PROFILE - SHEET 1                           |
| 6             | WO-06        | SITE PLAN & GUTTER PROFILE - SHEET 2                           |
| 7             | WO-07        | SITE PLAN & GUTTER PROFILE - SHEET 3                           |
| 8             | WO-08        | SITE PLAN & GUTTER PROFILE - SHEET 4                           |
| 9             | WO-09        | SITE PLAN & GUTTER PROFILE - SHEET 5                           |
| 10            | WO-10        | SITE PLAN & GUTTER PROFILE - SHEET 6                           |
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| 22            | WO-22        | ROAD FRONTAGE STORMWATER ENLARGED PLAN 01                      |
| 23            | WO-23        | ROAD FRONTAGE STORMWATER ENLARGED PLAN 02                      |
| 24            | WO-24        | ROAD FRONTAGE STORM DRAIN LATERAL TYPICAL SECTION              |
| 25            | WO-25        | ROAD FRONTAGE STORMWATER DETAILS 01                            |
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| 27            | WO-27        | ROAD FRONTAGE STORMWATER DETAILS 03                            |
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| 39            | WO-L3        | LANDSCAPE PLAN-SHEET 3                                         |
| 40            | WO-L4        | LANDSCAPE NOTES AND DETAILS                                    |
| 41            | WO-L5        | LANDSCAPE NOTES AND DETAILS                                    |
| 42            | WO-D1        | TACOMA DETAILS                                                 |
| 43            | WO-D2        | TACOMA DETAILS                                                 |
| 44            | WO-D3        | TACOMA DETAILS                                                 |
| 45            | WO-D4        | TACOMA DETAILS                                                 |
| 46            | WO-GN        | GENERAL NOTES                                                  |

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|        |  |    |  |          |  |      |  |      |  |                            |  |      |  |       |  |          |  |          |  |         |  |     |  |     |  |           |  |              |  |              |  |      |  |          |  |                |  |                            |  |             |  |                         |  |                             |  |           |  |       |  |           |  |   |  |    |  |    |  |
|--------|--|----|--|----------|--|------|--|------|--|----------------------------|--|------|--|-------|--|----------|--|----------|--|---------|--|-----|--|-----|--|-----------|--|--------------|--|--------------|--|------|--|----------|--|----------------|--|----------------------------|--|-------------|--|-------------------------|--|-----------------------------|--|-----------|--|-------|--|-----------|--|---|--|----|--|----|--|
| TACOMA |  | NO |  | REVISION |  | DATE |  | APPD |  | FINAL CONSTRUCTION CHECKED |  | DATE |  | SCALE |  | AS NOTED |  | DESIGNED |  | CHECKED |  | JAT |  | JMB |  | SENIOR PM |  | PROJECT NAME |  | DRAWING NAME |  | DATE |  | 6/6/2025 |  | CITY OF TACOMA |  | DEPARTMENT OF PUBLIC WORKS |  | THORNE ROAD |  | OFF DOCK CONTAINER YARD |  | COVER SHEET AND SHEET INDEX |  | WO23-0096 |  | WO-01 |  | SHEET NO. |  | 1 |  | OF |  | 46 |  |
|--------|--|----|--|----------|--|------|--|------|--|----------------------------|--|------|--|-------|--|----------|--|----------|--|---------|--|-----|--|-----|--|-----------|--|--------------|--|--------------|--|------|--|----------|--|----------------|--|----------------------------|--|-------------|--|-------------------------|--|-----------------------------|--|-----------|--|-------|--|-----------|--|---|--|----|--|----|--|

**APPENDIX K**  
**CITY OF TACOMA/**  
**TACOMA RAIL**  
**RIGHT-of-ENTRY**  
**PERMIT REQUIREMENTS**

## RIGHT OF ENTRY AGREEMENT APPLICATION

Date: \_\_\_\_\_

*The following specifications for Work within the Rail Corridor are hereby submitted to the City of Tacoma for their review and approval. Work must be described and/or shown on an enclosed drawing. Application requirements must be met within 120 days of the submittal date or it will be cancelled.*

**A \$1500 Administrative Fee is required to process the Application.**

Legal name of company or entity 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: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

Telephone number and email address: \_\_\_\_\_

Return to:

[psullivan@cityoftacoma.org](mailto:psullivan@cityoftacoma.org)

or mail to:

Tacoma Public Utilities Real Property Services

3628 South 35<sup>th</sup> St.

Tacoma, WA 98409



# How to Submit Your Application

Each installation requires a Right of Entry to allow their contractor to install the Facility. The Right of Entry requires an application as follows:

**Right of Entry Agreement:** Allows the owner's contractor to install the Facility in the Rail Corridor. 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 installation area, and an area map depicting the location of the installation.

## DESIGN REQUIREMENTS

### OVERHEAD

Follow National Electric Safety Code (NESC) - No overhead attachment shall allowed to be located lower than 23.5' above top of rail. If you move other attachments to accommodate your attachment, you can NOT attach lower than 23.5' above top of rail.

### UNDERGROUND

Installations must be in steel casing and at a minimum depth of 5.5' below bottom of rail.

## CONFIDENTIALITY STATEMENT

All submittals are subject to public disclosure. Proprietary or private information is not protected.

## INSURANCE

Facility owner and Contractor (Permittee) must, at its sole cost and expense, procure and maintain during the life of the Permit or 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 can 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:

- ◆ 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.

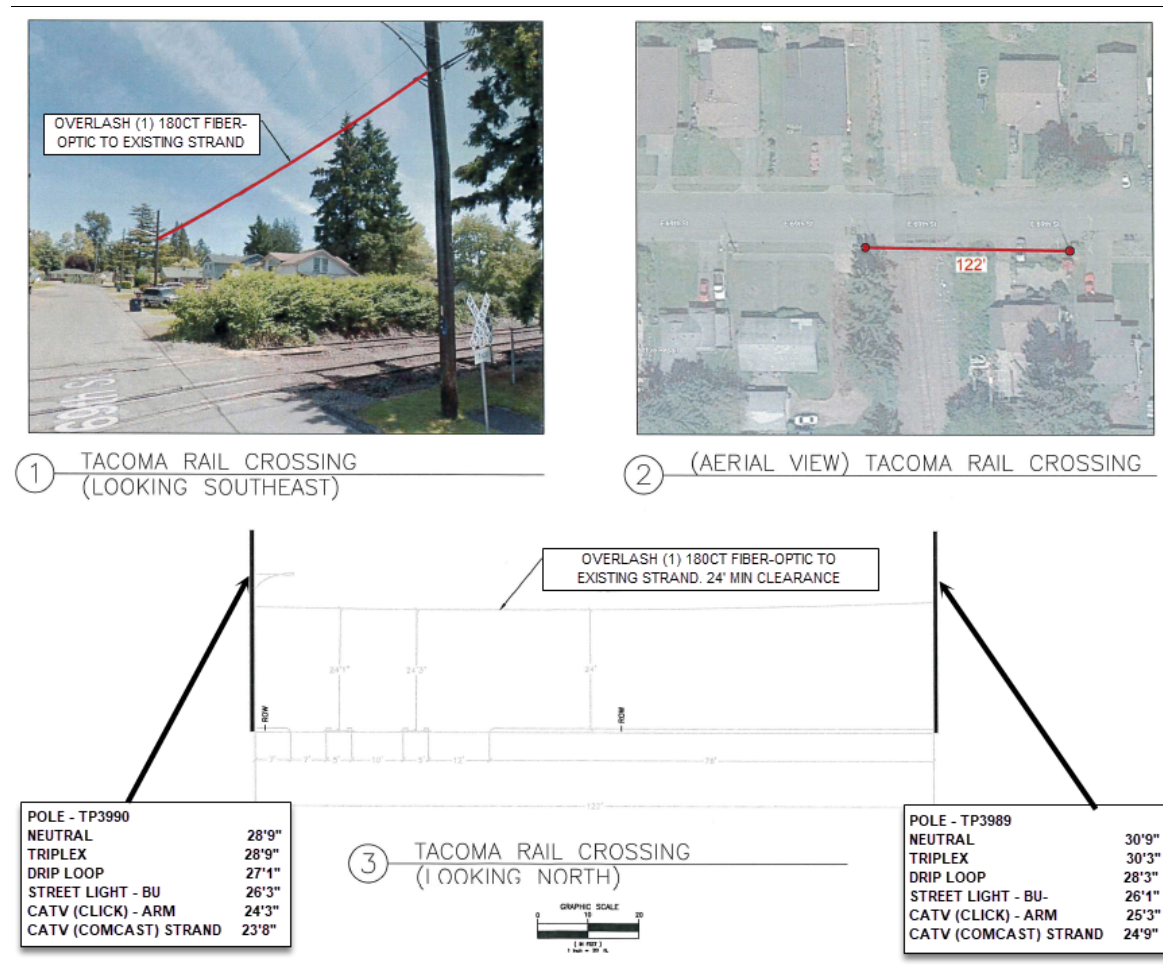


The fact that insurance (including, without limitation, self-insurance) is obtained by Permittee will not be deemed to release or diminish the liability of Permittee including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railway will not be limited by the amount of the required insurance coverage.

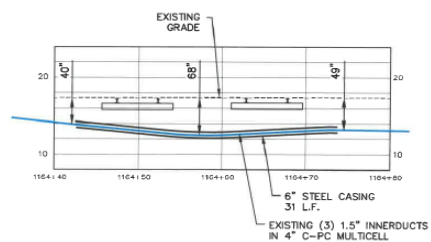
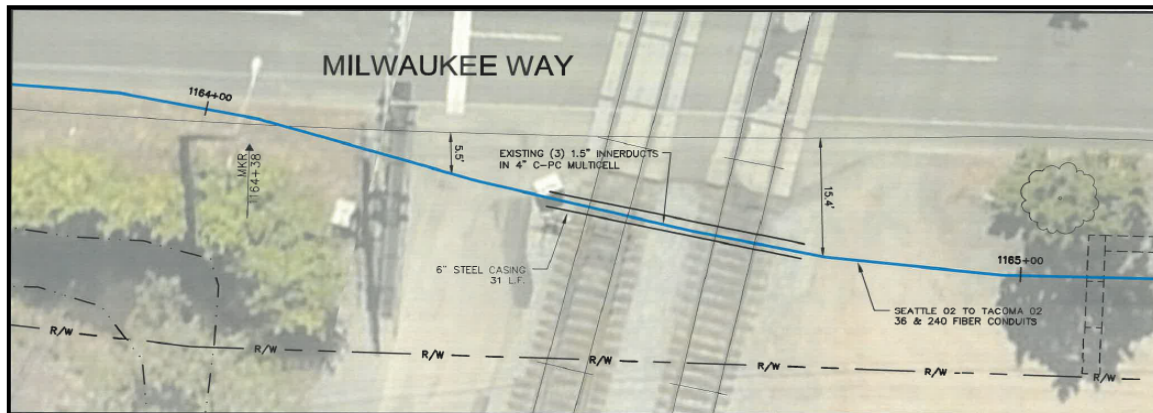
## BOND REQUIREMENTS

Facility owner shall obtain a “Permit and Performance Bond to the City of Tacoma” in the amount determined by the City of Tacoma for each location. A Performance Bond form will be issued to the Permittee once the application is processed.

## EXAMPLE PLAN SUBMITTAL FOR RIGHT OF ENTRY



Example Plan View



RAILROAD CROSSING PROFILE

HORZ. SCALE: 1"=10'

VERT. SCALE: 1"=10'

**APPENDIX L**

**SHORT TERM LEASE EXHIBIT**

**for**

**PARCEL 85 (1451 Thorne Rd)**





## EXHIBIT A

**PABCO BUILDING PRODUCTS**  
**1451 THORNE RD**  
**TACOMA WA, 98421**  
**PORT PARCEL #: 85**

-  Port Parcels
-  Wetlands
-  Yard Area = .35 Acres
-  Yard, Common Drive



**SHEET: 1 OF 1**  
**PURPOSE: LEASE**  
**DATE: 8/20/2025**  
**AUTHOR: Brian Archer**

0 45 90 180 Feet

**DISCLAIMER:** The information included on this map has been compiled by Port of Tacoma staff from a variety of sources and is subject to change without notice. These data are intended for informational purposes and should not be considered authoritative for engineering, navigational, legal and other site-specific uses. The Port of Tacoma makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information.

