Port of Tacoma
People. Partnership. Performance.
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May 30, 2024

TO: PLAN HOLDERS LIST

SUBJECT: PCT STRAD BAY ROOF & HUSKY MAINTENANCE TOWER ROOF REPLACEMENTS
PROJECT NO. 201191.01 & 201204.01
CONTRACT NO. 072112

ADDENDUM NUMBER 01

This addendum is issued to amend the following:

SECTION 00 11 13 - Advertisement for Bids

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 ~~6/6/2024~~ 6/11/2024**, at which time they will be publicly opened and read aloud, and the apparent low bid will be determined.

SPECIFICATIONS

A. SECTION 00 01 10 – Table of Contents

1. **ADD** 'APPENDICES' (Attachment A)
2. **ADD** 'Appendix A – Port of Tacoma Construction SWPPP Short Form' (Attachment A)

B. SECTION 01 20 00 – PRICE AND PAYMENT PROCEDURES

1. **DELETE** the issued additional (2nd Copy) Section 01 20 00 – PRICE AND PAYMENT PROCEDURES.

C. SECTION 01 57 13 –TESC and Project SWPPP

1. **ADD** the Section 01 57 13 – TESC and Project SWPPP (Attachment B)

D. SECTION 01 71 23 – Field Engineering

1. **ADD** the Section 01 71 23 – Field Engineering (Attachment C).

E. SECTION 07 53 00 – Single-Ply Membrane Roofing (PVC)

1. **DELETE** reference to décor ribs in 2.02 Sub Paragraph B (Attachment D).
2. **ADD** 'Walk Pads' to 1.01 Sub Paragraph A (Attachment D).
3. **ADD** paragraph 2.07 for 'Walk Pads' (Attachment D).

F. APPENDICES

1. **ADD** Construction SWPPP Short Form (Attachment E)

DRAWINGS

A. Sheet A1.10 Enlarged Roof Plan - PCT

1. **DELETE** and **REPLACE** the issued Drawings Sheet A1.10 – Enlarged Roof Plan in 072112 'PCT Strad Bay Roof and Husky Maintenance Tower Roof Replacement' Drawings with the attached Drawings (Attachment F).

ATTACHMENTS:

A. 00 01 10 – Table of Contents

B. 01 57 13 – TESC and Project SWPPP

C. 01 71 23 – Field Engineering

D. 07 53 00 – Single-Ply Membrane Roofing (PVC)

E. Construction SWPPP Short Form

F. A1.10 Enlarged Roof Plan - PCT

END OF SECTION

PROCUREMENT AND CONTRACTING REQUIREMENTS

SPECIFICATIONS

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. 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.

C. Acceptance of TESC plans does not constitute an approval of permanent Work or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

D. Contractor shall read and conform to all requirements set forth in Washington Department of Ecology's (Ecology) Phase I Municipal Stormwater Permit (MS4) for projects less than one acre .

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 Phase I Municipal Stormwater Permit (MS4), 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 MS4.

1. Contractor shall comply with a Contractor provided 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 MS4 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 at a time interval (e.g., weekly, monthly) specified by the Engineer.

D. Water Management Plan/Temporary Dewatering Plan.

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 Phase I Municipal Stormwater Permit (MS4). The Contractor shall be responsible for compliance with the Department of Ecology Western Washington Stormwater Management Manual, Volume II, Construction Stormwater Pollution Prevention 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 MS4 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. Contractor shall prepare and submit a site-specific SWPPP prior to initiating ground disturbing activities.

1. The SWPPP describes construction activities and sequencing, and the proposed Temporary and Permanent Erosion and Sediment Control measures. If there are any changes to BMPs or personnel on the site, Contractor must update the SWPPP and be prepared to submit the SWPPP to the Port and Ecology upon request.

2. The SWPPP shall consist of planning, installing, inspecting, maintaining, and removing TESC BMPs per Volume II of the Stormwater Management Manual for Western Washington (current version) or equivalent. The BMPs shown in the Drawings are the minimum required to prevent pollution of air and water, to control peak volumetric flow rates and velocity of stormwater, and to control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract.

3. A SWPPP template is available to the Contractor for this purpose. The template was prepared by the Port to meet part of the National Pollution Discharge Elimination System (NPDES) stormwater permit requirements for the project. Contractor may use the applicable Port template to prepare the project SWPPP or prepare their own SWPPP. If the Contractor elects to prepare their own SWPPP, it must meet or exceed the control measures required by Ecology (reference Ecology's Stormwater Management Manual for Western Washington, current version).

4. If Contractor chooses to write a SWPPP separate from the Port-provided SWPPP, it must comply with all of the requirements set forth by the CSGP.

B. Contractor shall develop project-specific TESC BMPs and incorporate them into the SWPPP. Contractor shall address the following issues as part of developing and implementing the BMPs:

1. TESC BMPs must meet the requirements in Ecology's Volume II of the Stormwater Management Manual for Western Washington (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.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes field engineering and land surveying services by The 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 elevation stakes, and other items.

D. Keeping 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, at the project site at all times.

E. Provision of facilities and assistance necessary for The Architect to check lines and grade points placed by The 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 The Architect.

F. Preparation and maintenance of daily reports of activity on the work. Submission of reports containing key progress indicators and job conditions to The Architect.

1. Major equipment and materials installed as part of the work.
2. Location of areas in which construction was performed.
3. Work performed, including field quality control measures and testing.
4. Weather conditions.
5. Instructions received from The Architect or The Port, if any.

G. Preparation and maintenance of professional-quality, accurate, well organized, legible notes of all measurements and calculations made while surveying and laying out the work.

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 WA.

1.04 QUALITY ASSURANCE

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 FIELD ENGINEERING

A. Maintain field office files, drawings, specifications, and record documents.

B. Coordinate field engineering services with The 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 The Architect and The Port of all discrepancies of which The Contractor is aware.

E. Cooperate as required with The Architect and The Port in observing the work and performing field inspections.

F. Review and coordinate work on a regular basis with shop drawings and The Contractor's other submittals.

G. Check the location, line and grade of every major element as the work progresses. Notify the The Architect 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 The Port's concurrence of the remediation plan.

3.02 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 WA.

C. The 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 The Contractor's expense by a surveyor licensed in WA, and approved by The Architect.

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.

3.03 REPORTS

A. Submit two copies of The Contractor's daily reports at The Architect's field office (or electronically) by 9:00 AM the next working day after the day covered in the associated report. Daily report shall be signed by responsible member of The Contractor's staff, such as project manager or superintendent, or foreman designated by The Contractor as having authority to sign daily reports.

3.04 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 WA. Record The Contractor's surveyor's original field notes, computations, and other surveying data in The Contractor-furnished hard-bound field books. The 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 The 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 The Architect.

B. Submit three copies of final property survey to The Port. Include on the survey a certification, signed by the surveyor, that principal metes, bounds, lines, and levels of the Project are accurately positioned as shown on the survey. Include the following information:

1. Structure locations from property lines, and distances to adjacent buildings.
2. Location of easements.
3. Final grading topographic survey.

END OF SECTION

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PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Existing roof membrane preparation
2. PVC Roof Membrane Assembly (PCT Strad Bay)
    a. Single-Ply PVC Roofing
    b. Insulation
    c. Cover board
3. PVC Roof Membrane Assembly (Husky Maintenance)
    a. Single-Ply PVC Roofing
    b. Cover board
4. Roof system documentation plaque
5. Walk Pads

B. Related Sections:

1. Selective Demolition is covered in Section 02 07 00
2. Flashing and Sheet Metal is covered in Section 07 62 00.
3. Sealants covered in Section 07 92 00.
4. Fall Protection is covered in Section 11 01 00

C. The Drawings, the provisions of the Agreement, the General Conditions, and Division 1 specification sections apply to all work of this Section.

D. Substitutions: Substitute products will be considered only under the terms and conditions of Division 1 Requirements, and products meeting the requirements of this Section

1.02 QUALITY ASSURANCE:

A. Manufacturer Qualifications: Provide primary products, produced by a single manufacturer, which has produced that type product successfully for not less than five (5) years. Provide secondary products only as recommended by manufacturer of primary products for use with roofing system specified.

B. Membrane Certification: submit letter from manufacturer (or outlined in manufacturer's certification data sheet) attesting to the following membrane system requirements outline in Section 2

1. Minimum membrane thickness: 60 mils
2. Minimum wear layer of 30 mils
3. Membrane with above characteristics has been manufactured for at least five (5) years

C. Manufacturer Field Quality Control: A technical representative of the materials manufacturer shall be available for consultation at site with a maximum of 24-hour notice.

D. Manufacturer's representative shall make regular site inspections, no less than one per week. Representative shall provide a copy of a written summary report of the visit to the Architect no more than 2 days after.

1. Installer Qualifications: A single Installer ("Roofer") shall perform the work of this section; and shall be a firm with not less than ten (10) years of successful experience in installation of roofing systems similar to those required for this project and who is trained and authorized by the manufacturer of primary roofing materials for no less than ten (10) years.

E. Installer shall provide all personnel trained in the application of the materials and systems and shall maintain supervision as specified elsewhere. Provide written certification from manufacturer of roofing system certifying that Installer is approved by manufacturer for installation of specified roofing system prior to bid.

F. Manufacturer's Inspection: Upon completion of the installation, and the delivery to the membrane manufacturer's representative by the Contractor of a certification that all work has been done in strict accordance with the contract specifications and membrane manufacturer requirements, an inspection shall be made by a representative of the manufacturer to ascertain that the roofing system has been installed according to applicable manufacturer's specifications and details.

G. Testing: The Owner reserves the right to perform any testing as may be required to determine compliance with these Contract Documents. Costs for such testing will be the Owner's responsibility unless testing indicated non-compliance. Costs for such testing indicating non-complying work shall be corrected and testing will be repeated until the work complies with the Contract Documents.

H. UL Listing: Provide roofing system and component materials which have been tested for application and slopes indicated and are listed by Underwriters Laboratories, Inc. (UL) for class A external fire exposure over noncombustible decks.

I. Provide roof-covering materials bearing Classification Marking (UL) on bundle, package or container indicating that materials have been produced under UL's Classification and Follow- up Service.

1.03 SUBMITTALS

A. Make submittals in accordance with Section 01 33 00.

B. Product Literature: Submit product literature for the following:

1. Roofing materials.

2. Insulation boards.

3. Cover boards

4. Adhesives.

5. Attachment requirements to meet mind uplift identifying fastener rates to meet uplift requirements

6. Submit drawing showing each layer of the roof assembly, method of attachment, including rates of fasteners or adhesive beads to meet wind uplift requirements.

C. Insulation and Roof Board Approval: Manufacturer's written approval for rigid polyisocyanurate insulation and roof board.

D. Samples: Three 3 x 6-inch samples of the insulation and each sheet component of the roofing and flashing membranes.

E. Warranty: Copy of membrane manufacturer's proposed warranty.

F. Evidence of UL and ICBO approvals.

G. Shop Drawings: Submit shop drawings to describe all proposed details which deviate from what is shown on Contract Drawings, fully noted and drawn to scale with references to a roof plan.

H. Roof Board and Insulation Layout: Submit roof plan indicating proposed insulation, crickets, roof board layout and sump taper system to meet FM requirements and manufacturer approval and sump taper system. Include submittals for fastening pattern for roof board meeting FM requirements.

I. Roof Plaque layout

J. Quality Assurance Submittals:

1. Certifications: Letter from roofing manufacturer stating that proposed applicator of roofing system is approved to install roofs meeting the requirements of a 20-year unlimited penal sum warranty. Submit whether the warranty is required or not.

2. Immediately after completion of the roofing system installation, submit report from the roofing system manufacturer, including inspection notes, stating the following:

a. Roofing system was installed in accordance with the manufacturer's recommendations to meet the warranty requirements specified.

1.04 QUALITY ASSURANCE

A. Inspection: Roofing installation may be inspected. Give 72 hours’ notice to the Architect, prior to the start of each work phase.

B. Qualifications of Installers:

1. Approved by the membrane roofing manufacturer to install roofing systems meeting the requirements of a 20-year unlimited warranty.

2. Minimum of 5 years’ experience; use only competent and skilled roofers familiar with the products and the manufacturer's current recommended methods of installation.

C. Pre-Installation Meeting:

1. Prior to starting the work of this Section administer a pre-roofing meeting.

2. Require in attendance the following parties:

a. Owner.

b. Architect.

c. Owner's roofing consultant.

d. Roofing installer.

e. Sheet metal and canopy cladding installers.

f. Mechanical installer.

g. Roofing manufacturer's representative.

3. Agenda: Review all procedures, details, and sequence of construction. Discuss and determine responsibility for protection of the work during and after construction, and subsequent maintenance of the roofing system.

D. Phased Application: Except as otherwise approved, phased application of the roofing system will not be permitted. If emergency dry-in becomes necessary, utilize necessary means/methods to prevent water entry into the building. Upon resumption of work all substrates shall be dry prior to new roof installation.

E. Provide roofing membrane materials from a single manufacturer. Use only roofing accessories and insulation that are approved by the roofing membrane manufacturer, and are warrantable by the manufacturer as part of the entire roofing system.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to job site in sealed, undamaged, original containers imprinted with manufacturer's name, product name, and pertinent identifying numbers.

B. Handle all materials to prevent damage. Place all materials on pallets and fully protected from moisture with clean canvas tarpaulins.

C. Membrane rolls shall be stored lying down on pallets, and fully protected from moisture with clean canvas tarpaulins.

D. Bonding adhesive shall be stored at temperatures above 40 degrees F.

E. All flammable materials shall be stored in a cool dry area away from sparks and open flames. Follow precautions outlined on container or supplied by material manufacturer/supplier.

F. Any materials that are determined by the Architect and/or manufacturer to be damaged are to be removed from the job site and replaced at no cost to the Owner.

1.06 JOB CONDITIONS

A. Roofing Loading Limitations: Okay for contractor to load roofing materials from and stage roofing activities from the roof.

B. Contractor shall verify that all roof drain lines are unblocked, and free running, before starting work. Report any such blockages to the Engineer in writing.

C. Only as much of the new roofing as can be made watertight each day, including flashing work, shall be installed.

D. All roofing, insulation, flashings and metal work removed for construction shall be taken off the site to a legal dumping area for disposal daily.

E. Weather Condition Limitations: Roofing materials shall not be applied when water in any form, i.e., rain, dew, ice, frost, snow, etc., is present on the deck. All surfaces to receive new membrane or flashing shall be thoroughly dry. Should excessive surface moisture occur, the Contractor shall provide the necessary equipment to dry the surface prior to application.

F. Prior to and during all applications, all dirt, debris, and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods.

G. Do not install the PVC membrane in direct contact with any product containing asphalt, coal- tar pitch, creosote or penta-based materials. Consult manufacturer's representative for special installation requirements.

H. Do not allow waste products containing petroleum, grease, acid, solvents, vegetable or mineral oil, animal oil, animal fat, etc. or direct steam venting to come into direct contact with roofing membrane.

I. The contractor shall follow all safety regulations as recommended by OSHA.

J. All local building codes and requirements must be followed where applicable.

K. Solvent welding of detail seams is not allowed.

1.07 PROTECTIONS

A. Provide tarps or plastic sheeting, as required, to adequately protect opened roofs and flashings and to prevent entrance of moisture or rain water into the existing structure until new materials have been applied and roof is in a water tight condition.

1. All glass-faced insulation board (including HD board) shall have the factory wrap removed to allow the boards to breathe, and breathable tarps installed to provide weather protection.

B. Do not open up any more roof surface at one time than can be adequately covered and protected in the event of sudden unexpected rainfall.

C. Have necessary waterproof canvas or plastic sheeting handy in case of emergency. Contractor will be held liable for any damage to building interior due to his negligence.

D. All new and temporary construction, including equipment and accessories, shall be secured against wind blow-off or damage.

E. The Contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas.

F. Temporary cut-offs shall be installed at the end of each day's work, and shall be removed before proceeding with the next day's work. Waterstops shall be compatible with all materials, shall provide a 100% watertight seal, shall be as recommended by the roofing membrane manufacturer, and shall not emit dangerous or incompatible fumes.

G. The contractor is warned that certain PVC membranes are incompatible with asphalt and oil-based materials and cements. Creosote and penta-based materials are also incompatible. Such materials shall not come into contact with PVC membranes at any time. If such contact occurs, the material shall be cut out and discarded. The contractor should consult membrane manufacturer with respect to material compatibility, precautions, and recommendations.

1. Contractor to install insulation and cover board in such a way to prevent seepage of asphalt to areas where contact with new membrane could occur. Existing asphalt surfaces must be removed completely or separated per manufacture’s recommendations.

H. Precaution should be taken when using membrane adhesives at or near rooftop vent or air intakes. Potentially hazardous fumes could enter the building. Coordinate vents and air intakes to be closed or shut off during roofing and flashing operations in the area of such penetrations.

1.08 WARRANTIES

A. Submit in accordance with Division 1 requirements.

B. Installer's Guarantee: The Contractor shall furnish from the roofing installer, a 2-year unlimited guarantee against defects in workmanship and materials.

C. Manufacturer's Warranty: The PVC roofing materials manufacturer shall provide a written twenty (20) year warranty signed by a corporate officer for an unlimited penal sum guarantee covering both materials and installation of the materials and systems. The warranty shall include the entire membrane assembly and shall include replacement of insulation due to membrane system failure. The warranty shall be written to allow for minor roofing repairs by the Owner. All roofing work under this contract to be in accordance with the following warranty standards:

1. Meeting minimum warranty provisions using the warranty language provided at the end of this section as a template
    a. Warranty structured such that Owner is not a signature party to the Warrantee
2. Non-pro-rated, no dollar limit
3. Duration: 20-years

1.09 ROOF MEMBRANE QUALITY CONTROL

A. 60-mil minimum thickness roof membrane is required

B. Each roll delivered to the site is to be stamped by the manufacturer as “Certified 60-mil Minimum Thickness”; rolls delivered not bearing this certification will be rejected.

C. The Architect will field measure the thickness of each roll delivered to the site. Rolls not measuring at 60-mil minimum thickness will be rejected.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Approved Manufacturers: Sika Sarnafil, Carlisle, Soprema

B. General: Ensure that all products used on this project are 100% asbestos free. Provide certification to this effect if requested by the Engineer.

C. Insurance and Code Requirements: Provide materials complying with governing regulations, and which can be installed to comply with the following:

1. Underwriter's Laboratories and/or ICBO approved for a Class "B" rating when installed on combustible decks. Provide documentation meets SEI/ASCE 7 for wind uplift of membrane attachment.

D. Warranty Requirements: Roof membrane manufacturer must approve the use of all accessory materials that affect the manufacturer's warranty and include them in their warranty.

2.02 PVC MEMBRANE

A. Description, 60-mil, minimum thickness, single-ply, felt backed PVC, white.

1. ASTM D 4434-95 standard for polyvinyl chloride sheet roofing. Classification: Type II
    a. Sarnafil: G-410, fully-adhered
    b. Soprema Sentinel P150, fully-adhered
    c. Carlisle: Sure-Flex, fully-adhered
2. Scrim:
    a. Type: fiberglass

b. Stitching: 9” x 9” x 1000 Diniers

3. Membrane requirements

a. Overall membrane thickness: minimum 60 mils

b. Wear layer minimum thickness: 30 mils

B. ~~Décor ribs: PVC décor ribs matching membrane color.~~

1. ~~Sarnafil Décor Profile~~
2. ~~Soprema Sentinel Profile Bars~~
3. ~~Carlisle PVC Contour Rib~~

2.03 INSULATION

A. Install new flute fillers in between metal decking ribs.

1. Verify insulation required by membrane manufacturer for system warranty applications.
2. Approved manufacturers:

a. InsulFoam FL: Flute fill, 1 lbs/sf; 1.5” thick; loose laid

b. or approved equal.

c. Note equal products must have non-organic facers.

B. Flat Stock Roof Insulation: Rigid closed cell polyisocyanurate foam insulation with fiberglass facers, 48" x 96", or approved equal. Minimum edge thickness shall be one-quarter inch (1/4"). Maximum thickness of any single layer shall be 3.5". ASTM C 1289, Type II, Class 2, Grade 2, (20 psi).

1. Verify insulation required by membrane manufacturer for system warranty applications.
2. Approved manufacturers:

a. Carlisle: “SecurShield Polyiso

b. Soprema: “Sopra-Iso Insulation”

c. Sika Sarnafil: “Sarnatherm ISO”

2.04 COVER BOARD

A. Glass-mat, pre-primed water-resistant gypsum board

1. Board Size: 48" x 96", or approved equal
2. Thickness: 1/4 inch
3. Manufacturers:

a. Georgia Pacific, Dens Deck Prime

b. USG Secure-Rock (pre-primed for fully adhered membrane application)

c. or approve equal

B. Glass-mat, pre-primed water-resistant gypsum board

1. Board Size: 48" x 96", or approved equal
2. Thickness: 1/4 inch

3. Manufacturers:
    a. Georgia Pacific, Dens Deck Prime
    b. USG Secure-Rock (pre-primed for fully adhered membrane application)
    c. or approve equal

2.05 MISCELLANEOUS PRODUCTS

A. General: Provide installation accessories as required for complete roofing system and as recommended by membrane manufacturer

B. Membrane Adhesive: water-based adhesive as recommended by manufacturer for particular substrate and project condition, formulated to withstand minimum 60 psf uplift force and as approved by membrane manufacturer.
    1. Screws and plates for insulation (where described in roof assemblies): Factory-coated steel fasteners and 3” diameter metal or plastic plates complying with corrosion- resistance provisions in FM Global 4470, designed for fastening substrate board, insulation, to the roof deck.
    2. Ensure fasteners do not penetrate the roof deck as the underneath side of the roof deck is an exposed surface.

C. Coverboard Fasteners: Coated galvanized steel; with factory-applied corrosion-resistant coating, with three-inch metal disks. Size and type required for substrate type and thickness and for deck type. Provide fasteners which meet requirements for pullout resistance.

D. PVC Coated Steel: 25-gauge galvanized sheet metal with laminated PVC coating.
    1. Sarnaclad: PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles.
    2. Soprema, Sentinel Equivalent
    3. Carlisle PVC Coated Metal

E. Walkways: Preformed walkway boards: As manufactured or recommended by membrane manufacturer. Size: 36 inches wide X 30 inches long; minimum 1/8 inch thick.

F. Walkway board adhesive: As recommended by membrane manufacturer.

G. Preformed Pipe Boot Flashings: Molded from same material as flexible flashings. Provide stainless steel band clamp for top edge.

H. Asphalt Resistant Membrane Flashing: Utilize asphalt resistant membrane where in contact with any existing asphalt residue, if necessary for manufacturer chosen.

I. Provide 1/4" x 1" aluminum termination bar to secure top edge of membrane at wall surfaces.

J. Conduit Blocking: pressure treated 4 x 4 blocking. Provide separate protection under each block to protect roof membrane.

2.06 ROOF PLAQUE

A. Furnish and install “Roof Installation Information Plaque”
    1. Plaque: photo-engraved, aluminum card (for exterior display) at location to be determined by the Engineer.
        a. Size: 5.5” x 8.5” x 3/16”.

B. Engraved Information:

1. Name of Building
2. Date of Substantial Completion
3. Date of Install Warranty Expiration
4. Date of Roof Manufacturer Warranty Expiration
5. Roof Manufacturer and warranty reference number
6. Roof installer and installer warranty reference number (and phone number)
7. Description of Roof assembly

2.07 WALK PADS

A. PVC Cross Grip Walkway Rolls:

1. Open grid, two-layer construction.
2. 3' wide by 9/16" thick, 1.3 lbs/ sf. ft.
3. Carlisle Sure-Flex PVC Crossgrip Walkway
   a. Substitutions under provisions of 01 25 00
4. Color: gray

PART 3 - EXECUTION

3.01 EXAMINATION

A. Carefully inspect substrate and adjacent construction and verify that conditions are suitable for installation of the work as indicated and specified.

1. Verify that all surfaces to be covered by roofing are properly pitched to drain, and suitable for installation of roofing system.
2. Examine surfaces for low areas that will not drain properly, foreign material, ice, wet insulation, unevenness, or any other defect which would prevent the proper execution and quality application of the Roofing System as specified.
3. Verify that installation of wood blocking and grounds, vents, drains, curbs, and other projections has been completed.
4. Verify that roof penetrations are tubular.

B. Discrepancies: In the event of discrepancy, notify the Engineer, and do not proceed with installation until discrepancies have been corrected.

C. Commencement of roofing installation constitutes Contractor acceptance of substrate condition as satisfactory.

D. Removal and Preparation of Existing Roof System(s):

1. Remove existing built-up roof membrane, flashings and other materials noted in the drawings and legally dispose off-site.
2. Remove only enough roofing to accommodate the day’s work and ensure the exposed area can be made 100% watertight at the end of the day or first sign of inclement weather.
3. Ensure that all drains are clear and clamping rings tightened at the end of each work day.

3.02 INSULATION AND COVERBOARD INSTALLATION

A. General Installation Requirements:

1. Install coverboard and substrate coverboard in accordance with approved shop drawings and insulation and adhesive manufacturer's printed instructions.
2. Securely butt edges without deformation. Miter board edges at ridges and elsewhere to prevent open joints.
3. Protect insulation from weather exposure at all times until roofing is installed.
4. Stagger joints between layers
5. Mechanically fasten 3 ½” Rigid insulation to metal roof deck with mechanical fasteners and 3 inch metal disks.
6. Fully-adhere coverboard with manufacturer’s recommended adhesive

3.03 ROOF MEMBRANE INSTALLATION

A. Install membrane materials in accordance with Manufacturer's current published application instructions and these contract documents. Application of roofing membrane shall immediately follow application of insulation assembly as a continuous process with no phased application.

B. Loosely lay sheet membrane over roof insulation and allow the membrane to relax thirty (30) minutes minimum before bonding or splicing. Apply adjoining sheets by lapping the edges and splicing.

C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.

E. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.

F. Apply roofing membrane with side laps shingled with slope of roof deck where possible.

G. Seams: Clean seam areas, overlap roofing membrane, and weld side and end laps of roofing membrane and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation. Weld seams as follows:

1. Weld Method: Hot air.
    a. All side and end lap joints shall be hot air welded. Lap areas shall be a minimum of 3" wide when machine welding and 4" wide when hand welding.
2. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane if required by manufacturer.
3. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
4. Repair tears, voids, and lapped seams in roofing that does not meet requirements.

H. Spread sealant bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.

I. Membrane securement: Provide securement at all locations where membrane ends or goes through angle change except for round pipe penetrations less than 18" in diameter and square penetrations less than 4" square. Utilize batten strips at all horizontal terminations of field plies.

J. Flash all penetrations passing through the sheet membrane. Flashing shall be installed per manufacturer's approved details at roof intersections, parapets, and around penetrations. Use longest pieces practicable

3.04 MEMBRANE FLASHINGS

A. Membrane flashing installation shall progress concurrently with the roof membrane installation.

B. All field membranes shall be terminated at parapets and roof edges with mechanical fasteners fastened into wood nailers at 12" on center.

C. Extend flashing membrane minimum 8 inches above roofing level unless detailed otherwise. All flashing membranes shall be fully adhered with cut and hot air welded interior, exterior and mitered corners and shall extend minimum 5 inches onto field membrane.

D. Utilize premanufactured inside and outside corners, flashing cones, etc. to the greatest extent possible.

3.05 DRAINS AND SCUPPERS

A. Flash drains and scuppers using PVC membrane per the manufacturer’s current details.

B. Flashing material shall cover the flange of the scupper,

C. Install clamping ring if provided as part of the drain or scupper design. Install strainer baskets.

3.06 ACCESSORY INSTALLATION

A. Miscellaneous Items

1. Prime metal flanges as required with a uniform coating of primer (as recommended by the roof membrane manufacturer). All flanges shall be set in a smooth even bed of waterblock sealant, or as detailed by the manufacturer..

2. Overnight seals: Exercise care that moisture does not enter beneath completed section of the roof. Temporarily seal loose edges of the membrane daily and when weather is threatening. Night seals can be built using plastic cement and roofing felts, and constructed to withstand protracted periods of service. Night seals must be completely removed, all felts employed removed, prior to the resumption of roofing.

3. All exposed cap sheet edges at waste stacks, vent stacks, etc., shall be caulked with sealant, tooled into the joint.

4. Raise conduit penetrations, insulated pipes, soil stacks, vents, and curbs as necessary to obtain an 8 inch height above the finished roof surface. Include rewiring and duct extension as necessary to raise or extend conduit or ducts.

5. Place conduit lying on the roof on new PT blocking placed on protection pad at a maximum of 8 feet on center. Adhere traffic pad to block, and not to roofing.

6. Electrical and mechanical work to be performed by journeyman worker experienced and trained in work performed to the building code.

7. Verify all drain lines and downspouts are functional prior to the start of work. Contractor to be responsible to assure drains are free draining upon completion of roofing work.

8. Install 1/4" x 1" aluminum termination bar to secure top edge of membrane at vertical wall surfaces. Fasten with anchors at 8” o.c.

3.07 TERMINATION BAR INSTALLATION

A. Install termination bar in accordance with manufacturer’s written instruction

B. Install termination bar at all reglet and/or skirt flashing location

1. Roof to wall transitions

2. Equipment curbs

3. Other locations as required by the manufacturer to meet warranty requirements

C. Install water block sealant behind top of flashing. Anchor bar through pre-punched holes at a rate to maintain a seal (max 12" o.c.)

D. Remove excess flashing material above bottom of lap sealant reservoir channel.

3.08 FIELD QUALITY CONTROL

A. Manufacturer's Field Services:

1. Require the roofing manufacturer's representative to perform inspection services during the roofing installation period.

2. The roofing manufacturer's representative shall notify the General Contractor and roofing contractor immediately of all observed unacceptable conditions.

B. Ponding Water: Perform flood tests, or utilize rain events, to identify areas of ponding.

1. All depressions subject to ponding to a depth 1/2 inch or greater at any point shall be reviewed for repair options.

2. Repair depressions replacing substrate that has deflected.

3.09 CLEANUP

A. Remove all traces of splashed and spilled roofing materials.

B. Repair or replace with new, as directed, adjacent surfaces permanently damaged from roofing application.

3.10 PROTECTION

A. Protect newly installed materials from damage.

B. No foot or wheel traffic, nor storage of roofing materials or material handling equipment will be permitted over the newly installed roofing.

C. Equipment or materials stored on the new roof surface shall be placed on minimum 5/8" plywood, separated from the roof membrane by a polyethylene sheet to avoid bonding of plywood to the roof surface.

END OF SECTION

CONSTRUCTION SWPPP SHORT FORM

The threshold for using the Port of Tacoma's (Port) short form is a project that proposes to clear or disturb less than one acre of land. Projects falling within this threshold may use this short form instead of preparing a professionally designed Construction Stormwater Pollution Prevention Plan (SWPPP). If project disturbance quantities exceed this threshold, you must prepare of formal Construction SWPPP as part of your submittal package. If your project is within the threshold and includes—or may affect—a critical area, please contact the Port to determine if the SWPPP short form may be used.

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN SHORT FORM

Project Name:

Address:

Contact/Owner: Phone:

Erosion Control Supervisor:

Phone: Cell: Pager:

Emergency (After hours) Contact: Phone:

Permit No.:

Parcel No.:

Required Submittals

A Construction SWPPP consists of both a project narrative and a site plan. The project narrative describes existing conditions on the site, the proposed conditions, and how construction site runoff will be managed until final site stabilization is achieved. Any additional relevant information should be included in the project narrative. All Best Management Practices (BMPs) that will be utilized onsite must be included as part of the project narrative and provided (electronically or hard copy) as part of the submittal package. If additional BMPs beyond those included in the Washington Department of Ecology's (Ecology) Western Washington Stormwater Management Manual (Ecology SWMM) or the City of Tacoma's (City) Stormwater Management Manual (City SWMM) are proposed to be used, a narrative and appropriate details describing the BMP (its function, installation method, and maintenance activities) will be required.

The site plan is a drawing which shows the location of the proposed BMPs to control erosion and sedimentation during and after construction activities.

The City's govMe site (*http://www.govme.org*.) may be used to find much of the information needed to complete this form, such as adjacent areas, topography, critical areas, the downstream drainage path, and information concerning onsite features.

PROJECT NARRATIVE

The Construction SWPPP Short Form narrative must be completed at part of the submittal package. Any information described, as part of the narrative, should also be shown on the site plan.

Note: From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted by special authorization from the Port.

A. Project Description (Check all that apply)

☐ New Structure ☐ Building Addition ☐ Grading/Excavation
☐ Paving ☐ Utilities ☐ Other:

1. Total project area _____ (square feet)
2. Total proposed impervious area _____ (square feet)
3. Total existing impervious area _____ (square feet)
4. Total proposed area to be disturbed _____ (square feet)
5. Total volume of cut/fill _____ (cubic yards)

Additional Project Information:

B. Existing Site Conditions (Check all that apply)

1. Describe the existing vegetation on the site. (Check all that apply)
   ☐ Forest ☐ Pasture/field grass ☐ Pavement ☐ Landscaping ☐ Brush
   ☐ Trees ☐ Other:
2. Describe how surface water (stormwater) drainage flows across/from the site. (Check all that apply)
   ☐ Sheet Flow ☐ Gutter ☐ Catch Basin ☐ Ditch/Swale ☐ Storm Sewer
   ☐ Stream ☐ Other:
3. Describe any unusual site condition(s) or other features of note.
   ☐ Steep Grades ☐ Large depression ☐ Underground tanks ☐ Springs
   ☐ Easements ☐ Existing structures ☐ Existing utilities ☐ Other:

C. Adjacent Areas (Check all that apply)

1. Check any/all adjacent areas that may be affected by site disturbance and fully describe below in item 2:
   ☐ Streams* ☐ Lakes* ☐ Wetlands* ☐ Steep slopes*
   ☐ Residential Areas ☐ Roads ☐ Ditches, pipes, culverts ☐ Other:

   ** If the site is on or adjacent to a critical area (e.g., waterbody), the Port may require additional information, engineering, and other permits to be submitted with this short form.*
2. Describe how and where surface water enters the site from properties located upstream:

N/A

3. Describe the downstream drainage path from the site to the receiving body of water (minimum distance of 0.25 mile [1320 feet]). (E.g., water flows from the site into a curb-line, then to a catch basin at the intersection of X and Y streets. A 10-inch pipe system conveys water another 1000 feet to a wetland.) Include information on the condition of the drainage structures.

   -

D. Soils (Check all that apply)

The intent of this section is to identify when additional soils information may be required for applicants using this short form. There are other site-specific issues that may necessitate a soils investigation or more extensive erosion control practices. The Port will determine these situations on a case-by-case basis as part of their review.

1. Does the project propose infiltration? Infiltration systems require prior Port approval.

   ☐ Yes ☐ No

2. Does the project propose construction on or near steep slopes (15% or greater)?

   ☐ Yes ☐ No

   If infiltration is proposed for the site or steep slopes (15% or greater) have been identified, the Port will require soils information as part of project design. The applicant must contact a soil professional or civil engineer that specializes in soil analysis and perform an in-depth soils investigation. If the Yes box is checked for either question, the Port may not permit the use of this short form.

E. Construction Sequencing/Phasing

1. Construction sequence: the standard construction sequence is as follows:
   - Mark clearing/grading limits.
   - Install initial erosion control Best Management Practices (BMPs) (e.g., construction entrance, silt fence, catch basin inserts, etc.).

- Clear, grade, and fill project site as outlined in the site plan while implementing and maintaining proper temporary erosion and sediment control BMPs simultaneously.
- Install permanent erosion protection as described in the specifications (e.g., impervious surfaces, landscaping, etc.).
- Remove temporary erosion control methods as permitted. Do not remove temporary erosion control until permanent erosion protection is fully established.

List any changes from the standard construction sequence outlined above:

2. Construction phasing: if construction is going to occur in separate phases, please describe:

F. Construction Schedule

1. Provide a proposed construction schedule (dates construction starts and ends, and dates for any construction phasing.)

Start Date: **End Date:**

Interim Phasing Dates:

Wet Season Construction Activities: Wet season occurs from October 1 to April 30. Please describe construction activities that will occur during this time period.

Note: Additional erosion control methods may be required during periods of increased surface water runoff.

2. **Site plan**

A site plan, to scale, must be included with this checklist that shows the following items:

- ☐ a. Address, Parcel Number, Permit Number, and Street Names
- ☐ b. North Arrow
- ☐ c. Indicate boundaries of existing vegetation (e.g., tree lines, grassy areas, pasture areas, fields, etc.)
- ☐ d. Identify any onsite or adjacent critical areas and associated buffers (e.g., wetlands, steep slopes, streams, etc.).
- ☐ e. Identify any FEMA base flood boundaries and Shoreline Management boundaries.
- ☐ f. Show existing and proposed contours.
- ☐ g. Delineate areas that are to be cleared and/or graded.
- ☐ h. Show all cut and fill slopes, indicating top and bottom of slope catch lines.
- ☐ i. Show locations where upstream run-on enters the site and locations where runoff leaves the site.
- ☐ j. Indicate existing surface water flow direction(s).
- ☐ k. Label final grade contour and indicate proposed surface water flow direction and surface water conveyance systems (e.g., pipes, catch basins, ditches, etc.).
- ☐ l. Show grades, dimensions, and direction of flow in all (existing and proposed) ditches, swales, culverts, and pipes.
- ☐ m. Indicate locations and outlets of any dewatering systems (usually to sediment trap).
- ☐ n. Identify and locate all erosion control methods to be used during and after construction.

ONSITE FIELD VERIFICATION OF ACTUAL CONDITIONS IS REQUIRED.

Figure 1. (see page 5 for Site Plan requirements)

GUIDELINES FOR EROSION CONTROL ELEMENTS

This SWPPP must contain the 12 required elements, as required by Ecology. Check off each element as it is addressed in the SWPPP short form and/or on your site plan.

- ☐ 1. Mark Clearing Limits
- ☐ 2. Establish Construction Access
- ☐ 3. Control Flow Rates
- ☐ 4. Install Sediment Controls
- ☐ 5. Stabilize Soils
- ☐ 6. Protect Slopes
- ☐ 7. Protect Drain Inlets
- ☐ 8. Stabilize Channels and Outlets
- ☐ 9. Control Pollutants
- ☐ 10. Control Dewatering
- ☐ 11. Maintain BMPs
- ☐ 12. Manage the Project

The following is a brief description of each of the 12 required elements of a SWPPP. If an element does not apply to the proposed project site, please describe why the element does not apply. Applicable BMPs are listed with each element and in Table 1. Please note that this list is not a comprehensive list of BMPs available for small construction projects, but erosion and sediment control techniques most pertinent to small construction sites are included here. More detailed information on construction BMPs can be found in Ecology's SWMM Volume II and the City's SWMM Volume II (Ecology 2019; City of Tacoma 2016). Please provide hard copies of the BMPs that will be used for the project and include as part of this Construction SWPPP. BMPs that may be used if needed can be noted as being contingent in the event additional erosion control is needed. Describe any additional BMPs that will be utilized onsite and add them to the SWPPP short form.

For phased construction projects, clearly indicate erosion control methods to be used for each phase of construction.

Element #1 – Mark Clearing Limits

All construction projects must clearly mark any clearing limits, sensitive areas and their buffers prior to beginning any land disturbing activities, including clearing and grading. Clearly mark the limits both in the field and on the site plans. Limits shall be marked in such a way that any trees or vegetation that is to remain will not be harmed.

Applicable BMPs include:

- BMP C101: Preserving Natural Vegetation
- BMP C102: Buffer Zones
- BMP C103: High Visibility Plastic or Metal Fence
- BMP C104: Stake and Wire Fence

☐ The BMP(s) being proposed to meet this element are:

_____

_____

OR

☐ This element is not required for this project because:

_____

_____

_____

_____

Element #2 – Establish Construction Access

All construction projects subject to vehicular traffic shall provide a means of preventing vehicle "tracking" soil from the site onto streets or neighboring properties. Limit vehicle traffic on- and off-site to one route if possible. All access points shall be stabilized with a rock pad construction entrance or other Port-approved BMP. The applicant should consider placing the entrance in the area for future driveway(s), as it may be possible to use the rock as a driveway base material. The entrance(s) must be inspected weekly, at a minimum, to ensure no excess sediment buildup or missing rock.

Applicable BMPs include:

- BMP C105: Stabilized Construction Entrance
- BMP C106: Wheel Wash
- BMP C107: Construction Road/Parking Area Stabilization

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #3 – Control Flow Rates

Protect properties and waterways downstream of the project site from erosion due to increases in volume, velocity, and peak flow of stormwater runoff from the project site.

Permanent infiltration facilities shall not be used for flow control during construction unless specifically approved by the Environmental Department. Sediment traps can provide flow control for small sites by allowing water to pool and allowing sediment to settle out of the water.

Applicable BMPs include:

- BMP C207: Check Dams
- BMP C240: Sediment Trap

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element 4 – Install Sediment Controls

Surface water runoff from disturbed areas must pass through an appropriate sediment removal device prior to leaving a construction site or discharging into a waterbody. Sediment barriers are typically used to slow stormwater sheet flow and allow the sediment to settle out behind the barrier.

Sediment controls must be installed/constructed prior to site grading.

Applicable BMPs include:

- BMP C208: Triangular Silt Dike
- BMP C232: Gravel Filter Berm
- BMP C233: Silt Fence
- BMP C235: Straw Wattles

☐ The BMP(s) being proposed to meet this element are:

_____

_____

OR

☐ This element is not required for this project because:

_____

_____

_____

_____

Element #5 – Stabilize Soils

Stabilize exposed and unworked soils by applying BMPs that protect the soils from raindrop impact, flowing water, and wind.

From October 1 through April 30, no soils shall remain exposed or unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed or unworked for more than 7 days. This applies to all soils whether at final grade or not.

Applicable BMPs include:

- BMP C120: Temporary and Permanent Seeding
- BMP C121: Mulching
- BMP C122: Nets and Blankets
- BMP C123: Plastic Covering
- BMP C140: Dust Control

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #6 – Protect Slopes

Protect slopes by diverting water at the top of the slope. Reduce slope velocities by minimizing the continuous length of the slope.

Applicable BMPs include:

- BMP C200: Interceptor Dike and Swale
- BMP C204: Pipe Slope Drains
- BMP C207: Check Dams

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #7 – Protect Drain Inlets

All operable storm drain inlets must be protected during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment. Install catch basin protection on all catch basins within 500 feet downstream of the project.

Applicable BMPs include:

- BMP C220: Storm Drain Inlet Protection

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #8 – Stabilize Channels and Outlets

Stabilize all temporary onsite conveyance channels. Provide stabilization to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the conveyance system outlets.

Applicable BMPs include:

- BMP C202: Channel Lining
- BMP C209: Outlet Protection

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #9 – Control Pollutants

Handle and dispose of all pollutants, including demolition debris and other solid wastes in a manner that does not cause stormwater contamination. Provide cover and containment for all chemicals, liquid products (including paint), petroleum products, and other materials. Handle all concrete and concrete waste appropriately.

Applicable BMPs include:

- BMP C150: Materials on Hand
- BMP C151: Concrete Handling
- BMP C152: Sawcutting and Surface Pollution Prevention
- BMP C153: Material Delivery, Storage and Containment

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Element #10 – Control Dewatering

Clean, non-turbid dewatering water, such as groundwater, can be discharged to the stormwater system provided the dewatering flow does not cause erosion or flooding of receiving waters. All other dewatering water shall be pumped to a settling container and taken offsite or discharged to the City sewer system. All discharges to the City sewer system require City approval, which may include a Special Approved Discharge (SAD) permit.

Applicable BMPs include:

- BMP C150: Materials on Hand

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

_____

_____

_____

_____

Element #11 – Maintain BMPs

Maintain and repair temporary erosion and sediment control BMPs as needed. Inspect all BMPs at least weekly and after every storm event.

Remove all temporary erosion and sediment control BMPs within 30 days after final site stabilization or if the BMP is no longer needed. Any sediment trapped during construction activities should be removed or stabilized onsite. No sediment shall be discharged into the stormwater drainage system or any natural conveyance system (e.g., streams).

Applicable BMPs include:

- BMP C160: Certified Erosion and Sediment Control Lead

☐ The BMP(s) being proposed to meet this element are:

_____

_____

OR

☐ This element is not required for this project because:

_____

_____

_____

_____

Element #12 – Manage the Project

Phase development projects to prevent soil erosion and the transport of sediment from the project site during construction. Coordinate all work prior initial construction with subcontractors and other utilities to ensure no areas are worked prematurely.\

A designated erosion and sediment control person is required for all construction projects. This person is responsible for ensuring that the project's erosion and sediment control BMPs are appropriate for the site and are functioning properly. They are also responsible for updating the

SWPPP as necessary as site conditions warrant. They must be available 24 hours a day to ensure compliance.

Applicable BMPs include:

- BMP C160: Certified Erosion and Sediment Control Lead
- BMP C162: Scheduling
- BMP C180: Small Project Construction Stormwater Pollution Prevention

☐ The BMP(s) being proposed to meet this element are:

OR

☐ This element is not required for this project because:

Table 1. Applicable BMPs for the 12 Elements of a SWPPP

Element #1 – Mark Clearing Limits		
BMP C101	Preserving Natural Vegetation	
BMP C102	Buffer Zones	
BMP C103	High Visibility Plastic and Wire Fence	
BMP C104	Stake and Wire Fence	
Element #2 – Establish Construction Entrance		
BMP C105	Stabilized Construction Entrance	
BMP C106	Wheel Wash	
BMP C107	Construction Road/Parking Area Stabilization	
Element #3 – Control Flow Rates		
BMP C207	Check Dams	
BMP C240	Sediment Trap	
Element #4 – Install Sediment Controls		
BMP C208	Triangular Silt Trap	
BMP C232	Gravel Filter Berm	
BMP C233	Silt Fence	
BMP C235	Straw Wattles	
Element #5 – Stabilize Soils		
BMP C120	Temporary and Permanent Seeding	
BMP C121	Mulching	
BMP C122	Nets and Blankets	
BMP C123	Plastic Covering	
BMP C140	Dust Control	
Element #6 – Protect Slopes		
BMP C200	Interceptor Dike and Swale	
BMP C204	Pipe Slope Drains	
BMP C207	Check Dams	
Element #7 – Protect Drain Inlets		
BMP C220	Storm Drain Inlet Protection	
Element #8 – Stabilize Channels and Outlets		
BMP C202	Channel Lining	
BMP C209	Outlet Protection	
Element #9 – Control Pollutants		
BMP C150	Materials on Hand	

Element #9 – Control Pollutants, cont.		
BMP C151	Concrete Handling	
BMP C152	Sawcutting and Surfacing Pollution Prevention	
BMP C153	Materials, Delivery, Storage and Containment	
Element #10 – Control Dewatering		
BMP C150	Materials on Hand	
Element #11 – Maintain BMPs		
BMP C160	Certified Erosion and Sediment Control Lead	
Element #12 – Manage the Project		
BMP C160	Certified Erosion and Sediment Control Lead	
BMP C162	Scheduling	
BMP C180	Small Project Construction Stormwater Pollution Prevention	

REFERENCES

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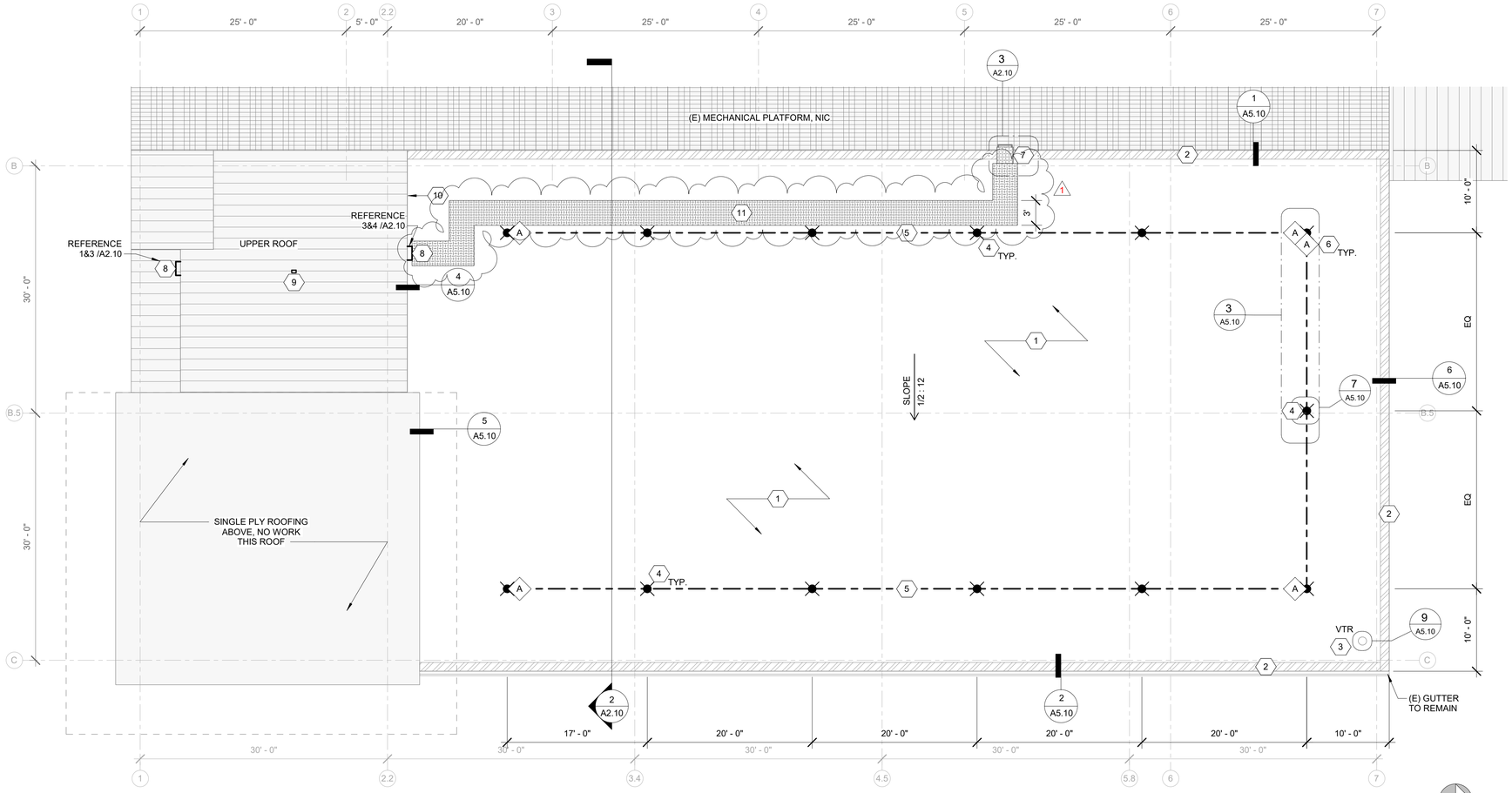
Washington State Department of Ecology (Ecology). 2019. Stormwater Management Manual for Western Washington. Water Quality Program, Lacey, Washington.



1 A1.10 — PCT STRAD BAY ENLARGED ROOF PLAN

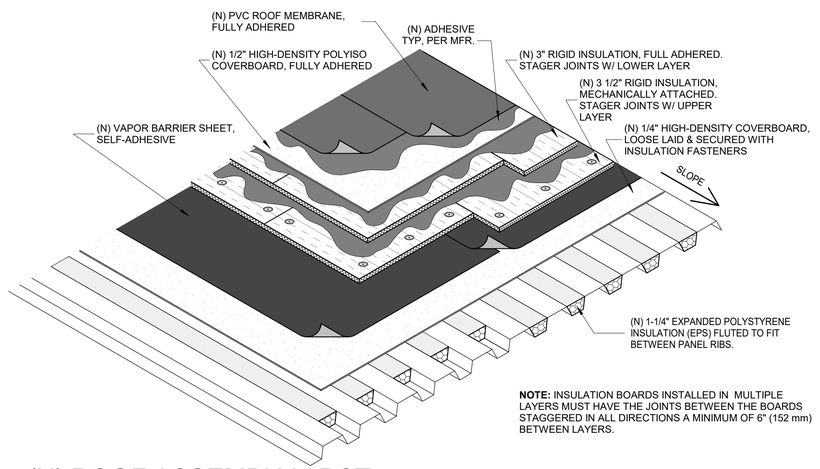
1/8" = 1'-0"

ROOF REPLACEMENT KEYNOTES

1. INSTALL (N) PVC ROOF ASSEMBLY, PER DETAIL 2/A1.10
2. (N) 22GA PREFINISHED METAL ROOF FLASHING, SEE DETAILS
3. (N) BOOT FLASHING AT EXISTING VENT THRU ROOF (VTR), PER 9/A5.10.
4. INSTALL (N) CB-18 FALL PROTECTION ANCHORS, PER 7/A5.10
5. (N) STAINLESS STEEL HORIZONTAL CABLE LIFELINE PER **11 01 00**
6. (N) IMPACT ABSORBER AT LIFELINE CONNECTION PER **11 01 00**
7. CUT & EXTEND (E) ROOF ACCESS LADDER, PER 10/A5.10
8. PROVIDE (N) ROOF ACCESS LADDER FOR UPPER ROOF
9. 2-WAY STANDING SEAM ROOF CLAMP
10. FURNISH & INSTALL "ROOF INSTALLATION INFORMATION PLAQUE" @ LOCATION DETERMINED BY THE ARCHITECT.
11. HEAVY DUTY WALK PADS

DRAWING LEGEND

- (E) VENT THROUGH ROOF (VTR) PER NOTE 3
- (N) FALL PROTECTION ANCHOR PER KEYNOTE 4
- (N) HORIZONTAL LIFELINE CABLE PER KEYNOTE 5
- A — (N) LIFELINE IMPACT ABSORBER PER KEYNOTE 6
- (N) WALK PAD 1



NOTE: INSULATION BOARDS INSTALLED IN MULTIPLE LAYERS MUST HAVE THE JOINTS BETWEEN THE BOARDS STAGGERED IN ALL DIRECTIONS A MINIMUM OF 6" (152 mm) BETWEEN LAYERS.

2 A1.10 — (N) ROOF ASSEMBLY - PCT

3/4" = 1'-0"

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ARCHITECTURE + PLANNING
1011 SW KLICKITAT WAY, STE. 208
SEATTLE, WA 98134 | (206) 631-8442

MARK:	REVISION:	BY:	APPR:	DATE:
1	ADDENDUM #1	CY		

REGISTERED ARCHITECT
6273
JERRY D. OSBORN
STATE OF WASHINGTON

Checker
CHECKED BY DATE

DIRECTOR ENG. DATE
PROJ. ENGR DATE
PRINTED BY: CY
PORT ADDRESS: 3205 PORT OF TACOMA RD
TACOMA, WA. 98421

APPROVED:

PCT STRAD BAY ROOF & HUSKY MAINTENANCE TOWER ROOF REPLACEMENTS
ENLARGED ROOF PLAN - PCT

TOWNSHIP: 20	RANGE: 03	SECTION: 02	
DAT-HRZ:	VERT:	DRAWING SCALE: As indicated	
PARCEL: 0320024098			

6694
A1.10
SHT # 8 OF 16

CONT/CONS: 072112
M. ID: 201191.01
PHASE: BID SET