This master should be used by designers working on Port of Portland construction projects and by designers working for PDX tenants (“Tenants”). Usage notes highlight a few specific editing choices, however the entire section should be evaluated and edited to fit specific project needs.

SECTION 312319 - DEWATERING

1. GENERAL
   * + 1. DESCRIPTION
          1. This section describes dewatering required for trenching, excavation, and construction of underground utilities.
          2. Sand, silt, and soils expected to be encountered in this area are sensitive to groundwater seepage and pore pressures.

Delete if dewatering will be a significant portion of the work and will be listed as a separate bid item.

* + - * 1. Excavation and filling of sumps and ditches in the trench or excavation bottoms for dewatering purposes shall be considered incidental to the work and shall be done at no added cost to the Port.
      1. RELATED WORK SPECIFIED ELSEWHERE
         1. Section 260543, Underground Ducts and Raceways for Electrical Systems
         2. Section 312000, Site Clearing and Earthwork
         3. Section 312300, Trenching, Backfilling, and Compacting
      2. REFERENCES
         1. DEQ: Oregon Department of Environmental Quality
         2. OR UIC: Oregon Underground Injection Control
         3. National Pollutant Discharge Elimination System (NPDES) General Permit 1200-CA dated September 15, 2022.
      3. PERMITS
         1. The Port is the administrator of the NPDES General Permit 1200-CA for the Discharge of Construction Site Runoff to Public Waters on projects performed by or for the Port on Port property. A copy of the permit and its regulations is on file at the Port’s Engineering offices. The Port is mandated by law to comply with this permit. The Contractor shall comply with the requirements of the permit.
      4. SUBMITTALS
         1. At least 2 weeks prior to beginning dewatering work, submit a dewatering plan to the Port for review.

The dewatering plan shall describe the method, details, installation, and operation of the proposed system. The plan shall demonstrate the control of groundwater to improve stability of the walls and bottom of the excavations. Include the following:

A site map depicting the work areas where dewatering systems will be installed or locations where dewatering will be performed and location where produced water will be discharged.

A schedule that sets forth anticipated dates of dewatering activities during construction and dates for initial effluent sampling (to be performed by the Port) for each new anticipated location.

Description and location(s) of structures, devices, and other means and methods that will be installed or used to treat/control turbidity, suspended solids, and other pollutants (if any), prior to the discharge of produced waters.

* + - * 1. Submit an operation and maintenance plan if an active treatment system such as electro-coagulation, flocculation, or filtration is employed for sediment or other pollutant removal. This plan, at a minimum, shall include system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and the sample frequency. Do not operate the treatment system until the plan has been approved by the Port and DEQ. Operate and maintain the system in accordance with manufacturer’s requirements.
        2. During the course of dewatering, submit the following:

Copies of inspection logs.

If Contractor elects to conduct independent sampling, provide the Port with copies of all water quality sampling and analysis reports performed or completed.

Any changes to the output capacity of dewatering activities.

* + - * 1. If dewatering wells are installed, submit a copy of the well start card and well report as submitted to the State of Oregon Water Resource Department.

1. PRODUCTS

Not Used.

1. EXECUTION
   * + 1. DISCHARGE INSPECTIONS
          1. At least daily, inspect all locations where water from dewatering activities is being discharged to determine the water’s cleanliness and assure that systems are functioning properly. If contamination is suspected, stop dewatering activities immediately and notify the Port. Evidence of contamination includes oil sheen on the water surface, discoloration of soil or water, odor of solvents or fuel, or any knowledge of pollutants. Submit written logs documenting these inspections.
       2. UNDERGROUND INJECTION
          1. Construction or use of any type of underground injection, including dry wells and stormwater injection wells, is prohibited without prior written approval from the Port. If allowed, the Contractor shall be solely responsible for ensuring that the injection systems comply with Oregon Underground Injection Control (UIC) rules as regulated by the Department of Environmental Quality.
       3. DEWATERING OPTIONS
          1. The Contractor may select from the following options. The range of dewatering options is not intended to exclude the use of open pumping with sumps and ditches.

Option 1, Land Disposal:

Discharge water from dewatering operations to the ground surface for eventual infiltration or evaporation as long as effluent has no indications of contamination (e.g. sheen, odor, etc.). Contain water in a natural or created basin or swale approved by the Port. If satisfactory containment cannot be achieved, utilize Option 2.

Option 2, Storm Sewer System Disposal:

Discharge water from dewatering operations to the storm sewer system as long as the effluent looks clean.

At the Port’s request, provide a discharge sampling site with reasonable access located where water leaves the construction area. Notify the Port at least 24 hours before the sampling site is ready. Assist the Port in obtaining effluent samples at least 48 hours prior to the beginning of dewatering activities. Do not begin dewatering operations, except for Port sampling purposes, until notified by the Port.

Use A if the project is at PDX. Use B for all other locations. Consult with Environmental.

* + - 1. SUSPECTED CONTAMINATION
         1. If, during the course of dewatering, pollutants that are above allowable limits as defined in the Port’s Batch Discharge Permit (BDP), permit number 400.131 issued by the City of Portland (COP), are found in any sample or indicated by visual inspections, the Contractor shall stop dewatering and notify the Port immediately. The Contractor shall not resume discharge until authorized by the Port. The Port will obtain effluent samples for testing per the BDP. The Contractor shall follow the provisions of the COP BDP. Place contaminated water in a holding tank equipped with baffles, weir, or other Port-approved form of oil-water separator. Once analytical results are received that meet the conditions of the BDP, discharge the water from the holding tank to a Port-designated sanitary sewer manhole. No product or sheen will be allowed to be discharged. Discharge shall be metered by the Contractor for the Port’s payment to COP. The Contractor shall continue to perform daily inspection of the effluent to confirm the effectiveness of treatment and determine the water’s cleanliness.
         2. If, during the course of dewatering, pollutants that are above allowable levels are found in any sample or indicated by visual inspections, the Contractor shall stop dewatering and notify the Port immediately. The Port will then obtain effluent samples for testing. Based upon the results of the Port’s tests, the Contractor shall develop and submit an effluent treatment plan for Port review and DEQ approval. The Contractor shall not resume discharge until authorized by the Port and DEQ. Once dewatering activities have resumed, the Contractor shall continue to perform daily inspection of the effluent to confirm the effectiveness of treatment and determine the water’s cleanliness.
      2. DEWATERING OPERATIONS
         1. Dewatering well installation, maintenance, and abandonment shall be in accordance with applicable laws and regulations.
         2. Control ground water in a manner that will preserve the strength of the bottom soils of trenches and excavations, will not cause instability of the excavation slopes, and will not result in damage to existing structures.
         3. Lower the ground water level before beginning excavation using wells, wellpoints, or similar methods. Maintain the drawdown water level at least 12 inches below the bottom of the trench until the trench is backfilled to the original ground water level.
         4. Open pumping with sumps and ditches will not be permitted if it results in boils, loss of fines, softening of the ground, or instability of slopes.
         5. The Contractor is responsible for dewatering, including the adequacy of the dewatering system. Keep trenches and excavations free of water and provide adequate pumping and piping equipment to handle and dispose of water.
         6. Provide adequate screens or plugs to prevent objectionable material from entering the downstream storm sewer system. Provide adequate screens or filters so that continuous pumping of fines does not occur.
      3. WATER QUALITY MONITORING
         1. The Port may collect and analyze samples of water produced during dewatering activities to verify the quality of the water, and to determine if the Contractor’s disposal methods are in compliance with applicable permits, or water quality regulations of the State of Oregon.

If testing indicates the discharge is unacceptable for water quality parameters that the Contractor is required to control or should have reasonably anticipated in his bid, including but not limited to, turbidity and suspended solids, the Contractor shall bring the discharge into conformance with the requirements at no additional expense to the Port. The Port reserves the right to suspend the Contractor’s work, or prohibit the discharge of water failing to meet the requirements until such time as the Contractor demonstrates conformance with the discharge requirements.

If testing indicates the discharge is unacceptable for water quality parameters that the Contractor could not have reasonably anticipated in his bid, the Contractor shall prepare a revised dewatering plan that identifies the additional methods that will be employed to bring the discharge into conformance with the requirements. The Contractor shall submit estimates of additional costs.

END OF SECTION 312319