



# Appendix C





# **SECTION 656 - TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL**

656.1 Responsibility of the Contractor-Prepare and Follow Plan. The Contractor shall provide continuous and effective temporary soil erosion and water pollution control for the Project that is appropriate to the construction means, methods and sequencing allowed by the Contract and selected by the Contractor. To do so, the Contractor shall prepare and submit a Soil Erosion and Water Pollution Control Plan (SEWPCP) and properly implement its approved SEWPCP. The Contractor shall have its SEWPCP approved, perform a preconstruction field review, and install and certify initial controls before commencing any Work, which could disturb soils or impact water quality.

If the Contractor properly implements its approved SEWPCP, then (1) any Work required in excess of that required by the SEWPCP will be Extra Work, (2) any Delay resulting from any such excess Work will be analyzed in accordance with Section 109.5 - Adjustments for Delay, and (3) the Contractor will not be responsible for damages relating to insufficient soil erosion and water pollution control including the cost of all environmental enforcement actions, penalties, or monetary settlements assessed by any environmental regulatory entity, and all costs incurred by or through the Department.

If the Contractor fails to prepare, submit, or seek approval of a SEWPCP or fails to properly implement its approved SEWPCP, then (1) the Department may suspend all Work, (2) the Department may withhold all Progress Payments or any portion thereof until the Contractor remedies all deficiencies; (3) the Department may remedy deficiencies with Departmental or contracted forces and deduct the cost thereof from payments otherwise due the Contractor; (4) any delay resulting from such failure or non-compliance will be a Non-excusable Delay; and (5) the Contractor will be responsible for all damages arising from or related to such failure or non-compliance including the cost of all environmental enforcement actions, penalties, or monetary settlements assessed by any environmental regulatory entity and all costs incurred by or through the Department including legal and consulting fees.

656.2 Submittal and Approval of the SEWPCP. Within 21 calendar days of Contract Execution, the Contractor must submit two copies of its SEWPCP to the Resident.

Within 14 days of receipt, the Department will determine if the SEWPCP is in accordance with the Contract requirements and (1) notify the Contractor that its SEWPCP is approved or (2) return it for any needed revisions. If returned for revision, the Contractor must resubmit two copies of its revised SEWPCP as provided above within 7 days and the Department will have 7 days from receipt of the revised plan to notify the Contractor whether its SEWPCP is approved or again requires revision. Additional iterations will occur in a like manner until the Department approves the Contractor's SEWPCP. The Contractor must have its SEWPCP approved and implemented before commencing any Work, which could disturb soils or impact water quality.

## **SEWPCP REQUIREMENTS**

656.3.1 Qualifications of Preparer. The preparer of the SEWPCP must be knowledgeable and experienced in erosion and pollution control and must (1) be a "DEP Certified Contractor" as designated by the Maine Department of Environmental Protection (MDEP), or (2) be licensed in Maine as a Professional Engineer, Landscape Architect, or Soil Scientist.

656.3.2 Standards. The SEWPCP must be in accordance with all applicable laws, rules, regulations, permit requirements and conditions, this specification, all other contractual provisions, and the latest version of Department's "Best Management Practices for Erosion & Sedimentation Control" (the "BMP Manual"). In the event of conflicting provisions, the SEWPCP must utilize the more restrictive requirements. If the Work could disturb soils in the watersheds of any sensitive waterbodies identified in the Contract documents, then the SEWPCP must be in accordance with the higher standards for soil erosion and water pollution contained in Section II (D) - "Guidance for Sensitive Waterbodies" of the BMP Manual.

656.3.3 General SEWPCP Elements. In addition to other requirements provided for or referenced in this specification, the SEWPCP must include the following elements.

- a. The name and qualifications of the person preparing the SEWPCP.
- b. The name of the on-site person, the "Environmental Coordinator" responsible for implementation of the SEWPCP, who must be the Prime Contractor's Superintendent or other supervisory employee with the authority to immediately remedy any deficient controls, with their phone number and emergency number (personal cellular phone or pager).
- c. The schedule and sequence of all activities that involve soil disturbance including work on sites outside the right-of-way such as borrow pit operations, haul roads, staging areas, equipment storage sites, mixing plants, and waste disposal sites including expansion of existing sites.
- d. Incorporation of permanent erosion control features into the project at the earliest practicable time.
- e. Identification of steep slopes and highly erodible soils, with the method and frequency of soil stabilization.
- f. Emergency procedures for storms, including availability of Materials and procedures and time frames for corrective action if controls fail.
- g. A discussion of how the SEWPCP meets or exceeds the Standards and Commitments contained in Section II of the BMP Manual.
- h. Type and location of all temporary erosion and sedimentation control measures. Temporary winter stabilization must be used between November 1 and April 1, or outside of said time period if the ground is frozen or snow covered. Temporary winter stabilization involves, at a minimum, covering all disturbed soils with some method other than using unanchored hay or straw mulch. Such other methods may include the use of Erosion Control Mix or other covers that are not susceptible to erosion or wind movement. If temporary winter stabilization practices are used, spring procedures for permanent stabilization shall also be described in the SEWPCP.
- i. Mulching type and frequency of application for disturbed soil areas.
- j. Location and frequency of application of temporary seeding.
- k. Description of all dust control procedures for roadways, haul roads, work areas, and all other contractor activities.
- l. Location and method of temporary sediment control for existing and proposed catch basins and all other drainage inlet and outlet areas.
- m. Describe all in-water work, with timing and plans for temporary stream diversions and cofferdams.

- n. Describe the design, location, and plans for sedimentation basins used for dewatering cofferdams.
- o. Inspection and maintenance schedules for all erosion and water pollution control measures - temporary and permanent - including the method, frequency and disposal location for sediment removal.
- p. Temporary erosion control features for any designated mitigation site that is specified in the Contract.
- q. Procedures for removal of temporary erosion and pollution controls.

656.3.4 Water Pollution Control Requirements. In addition to other requirements provided for or referenced in this specification, the SEWPCP must include all of the following requirements applicable to water pollution control.

- a. The Contractor must comply with the applicable Federal, state, and Local laws, and regulations relating to prevention and abatement of water pollution.
- b. Except as allowed by an approved permit or otherwise authorized by the Department in writing, pollutants and construction debris including excavated material, aggregate, residue from cleaning, sandblasting, or painting, cement mixtures, chemicals, fuels, lubricants, bitumens, raw sewage, wood chips, and other debris shall not be discharged into waterbodies, wetlands, or natural or man-made channels leading thereto and such materials shall not be located alongside waterbodies, wetlands, or such channels such that it will be washed away by high water or runoff.
- c. Construction operations in waterbodies or wetlands shall be restricted to the construction limits shown on the plans and to those areas that must be entered for the construction of temporary or permanent structures, except as allowed by approved permit or otherwise authorized by the Department in writing.
- d. Mechanized equipment shall not be operated in waterbodies or wetlands, except as allowed by approved permit or otherwise authorized by the Department in writing.
- e. Upon completion of the work, waterbodies or wetlands shall be promptly cleared of all falsework, piling, debris or other obstructions caused by the construction operations, except as otherwise authorized by the Department in writing.
- f. Spill Prevention. If the Work includes the handling, use, or storage of petroleum products or hazardous Matter/Substances including the on site fueling of Equipment, the SEWPCP must include a Spill Prevention Control and Countermeasure Plan (SPCCP). At a minimum, the SPCCP must include:
  - 1. The name and emergency response numbers (telephone number, cellular phone and pager numbers, if applicable) of the Contractor's representative responsible for spill prevention and response;
  - 2. General description and location of (1) handling, transfer, storage, and containment facilities of such products or hazardous Matter/Substances ("activities and facilities") and (2) potential receptors of such products or hazardous Matter/Substances including oceans, lakes, ponds, rivers, streams, wetlands, and sand and gravel aquifers ("sensitive resources") including the distances between said activities and facilities and said sensitive resources;
  - 3. Description of preventative measures to be used to minimize the possibility of a spill

including Equipment and/or Materials to be used to prevent discharges including containment and diversionary structures, inspections and personnel training;

4. A contingency response plan to be implemented if spill should occur including a list of emergency phone/pager numbers including the Contractor's representative, MDEP Spill Response, the Resident, and local police and fire authorities, a list of emergency response equipment and locations and a description of the capabilities of the equipment, a description of the general response and clean up protocols by product or Matter/Substances and an overview of the verbal and written notification procedures for Federal, state and Local officials. For a related provision, see 105.2.2 - "Project Specific Emergency Planning".

For a related provision, see Section 105.8.3 - "Wetland and Waterbody Impacts".

656.3.5 Material Requirements. Unless otherwise approved by the Department, the Contractor must use temporary erosion control Materials contained on the Department's Preapproved List of Erosion Control Materials if such a list is established, the Department's latest BMP Manual, or Section 717 - Roadside Improvement Materials.

656.3.6 Construction Requirements. In addition to other requirements provided for or referenced in this specification, the SEWPCP must include all of the following requirements applicable during construction.

- a. The Contractor shall install and maintain all temporary erosion control Materials in accordance with the Manufacturer's Guidelines and Specifications, or the Department's latest BMPs or Standard Specification where applicable.
- b. The Contractor shall perform in-water work during low flow conditions, except as allowed by a specific Permit requirement. During in-water work, the Contractor shall maintain water flow at all times except in ponded water or where specifically authorized. The Contractor, to the maximum extent practicable, shall place pipes in dry conditions.
- c. The Contractor, to the maximum extent practicable, shall install temporary and permanent erosion control measures prior to conducting clearing and grubbing operations. The Contractor shall not conduct clearing operations within any protected vegetative buffer area indicated in the plans, notes, or special provisions. The Contractor shall limit excavation, borrow and embankment operations commensurate with its capability and progress in keeping the finish grading, mulching, seeding, and other such temporary and permanent erosion control measures current in accordance with its schedule. Should seasonal limitations make such coordination impractical, temporary erosion control measures shall be provided immediately.
- d. The Contractor shall not work in a wetland, except as allowed by a specific permit provision. All equipment which must work in a wetland shall travel and work on platforms or mats that protect vegetation which the Department has designated to remain. The Contractor shall not store or stockpile materials in a wetland. The Contractor shall contain and immediately remove from the wetland or waterbody any debris generated by the Work
- e. The Contractor shall not place uncured concrete directly into a waterbody. The Contractor shall not wash tools, forms, or other items in or adjacent to a waterbody or wetland.
- f. The Contractor shall contain all demolition debris (including debris from wearing surface removal, saw cut slurry, dust, etc.) and shall not allow it to discharge to any resource. All demolition debris shall be disposed of in accordance with Section 202.03 - Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Sidewalks and Bridges. The Contractor shall dispose of

debris in accordance with the Maine Solid Waste Law, Title 38 M.R.S.A., Section 1301 et. seq. Containment and disposal of demolition debris shall be addressed in the Contractor's SEWPCP.

g. The Contractor shall air dry all treated lumber for at least 21 days before use. All treated timber surfaces shall be exposed during air-drying.

h. The Contractor shall place all permanent seeding in accordance with Section 618 - Seeding unless the Contract states otherwise. The Contractor shall state what additional measures they will employ for soil stabilization between November 1st and April 1st.

i. The Contractor shall not remove rocks from below the normal high water line of any wetland, great pond, river, stream, or brook, except to the extent necessary for completion of the Work and as allowed by environmental permits. The Contractor shall not work below the high water line of a great pond, river, stream, or brook during periods of elevated water, except as necessary to protect work in progress or for emergency flood control and as allowed by environmental permits.

j. During periods of approved suspension, the Contractor shall inspect and maintain temporary and permanent erosion controls in accordance with its approved SEWPCP.

k. All sites of disturbed soil outside the right-of-way such as haul roads, staging areas, Equipment storage sites, mixing plants, and waste disposal sites including expansion of existing sites shall be graded smooth, loamed, seeded, and mulched upon completion of the work. For a related provision, see Section 105.8.6 - Pit Requirements.

## **IMPLEMENTATION OF SEWPCP**

656.4.1 Preconstruction Field Review. Before commencing any Work, that could disturb soils or impact water quality, the preparer of the SEWPCP and the Environmental Coordinator must field review the project. The Contractor shall provide the Department at least three days prior notice of this review.

656.4.2 Preconstruction Installation of Controls/Certification. Before commencing any Work, which could disturb soils or impact water quality, initial soil erosion and water pollution controls must be installed in compliance with the Contractor's SEWPCP and the Environmental Coordinator must so certify to the Department in writing.

656.4.3 Follow Plan Until Acceptance of the Work, the Contractor must continuously provide soil erosion and water pollution controls in compliance with its approved SEWPCP as amended, if necessary, and in compliance with Section 656.4.5 - Additional Measures/Amendment of SEWPCP.

656.4.4 Inspection and Record Keeping. The Environmental Coordinator must inspect and monitor all controls for the duration of the project and keep a written log. This log must include daily on-site precipitation and air temperature, as well as the performance, failure, and any corrective action for all controls in place. The log must be updated at least weekly and after all significant storm runoff and flood events. The Environmental Coordinator must make this log available to the Department upon request. The Contractor will retain the log for three years after the completion of the project.

656.4.5 Additional Measures/Amendment of SEWPCP If there exists observable evidence of erosion or sedimentation despite the installation of all controls in compliance with the Contractor's approved SEWPCP, then the Contractor must undertake such additional measures as are necessary to stop such erosion and prevent further erosion or sedimentation. Observable evidence of erosion or sedimentation includes visible sheet, rill, or gully erosion, discoloration of water by suspended particles, areas of sediment accumulation,

slumping of banks, deposition of soil, and visible dust. Such additional measures must be undertaken within 24 hours and completed within 48 hours from the time such evidence is observed, unless otherwise authorized by the Department. Within 7 days of that time, the Contractor must submit an amendment to its SEWPCP setting forth the apparent cause of the erosion or sedimentation and the additional measures undertaken and that will continue to be undertaken. If the Contractor complies with the requirements of this Section, all additional measures and the amendment of the SEWPCP will be Extra Work and any Delay resulting from the additional measures will be analyzed in accordance with Section 109.5 - Adjustments for Delay.

656.4.6 Duration of Contractor's Responsibility. The Contractor shall provide temporary soil erosion and water pollution controls in compliance with its SEWPCP and maintain all permanent control features until Acceptance of the Work. Once final surface treatments are established, the Contractor is responsible for removal of all temporary sedimentation control practices such as silt fence. Notwithstanding the preceding sentence, all work needed to remedy damage to properly installed and maintained permanent control features caused by a weather-related Uncontrollable Event shall be Extra Work.

## **PAYMENT**

656.5.1 If Pay Item 656.75 Provided. If the Schedule of Items contains Pay Item 656.75 for Temporary Soil Erosion and Water Pollution Control, payment will be made on a Lump Sum basis, payment of which will constitute full and complete compensation for all labor, equipment, materials, inspection, professional services, and incidentals necessary to prepare, submit, obtain approval of, and properly implement the Contractor's SEWPCP. The Lump Sum will be payable in installments as follows: 10% of the Lump Sum once the final SEWPCP is approved and the initial soil erosion and water pollution controls are in place and certified by the Contractor, with the 90% balance to be paid as the Work progresses at a rate proportional to the percentage completion of the Contract.

Failure by the Contractor to comply with its SEWPCP and/or failure to implement additional measures will result in a reduction in payment, computed by reducing the 90% balance (a) by the number of days deficient divided by the number of days from start of work to project completion or (b) \$100 for each day deficient, whichever is greater. Payment may be further adjusted as provided in Section 656.1 - Responsibility of the Contractor - Prepare and Follow Plan.

Cofferdams and related temporary soil erosion and water pollution controls are incidental to the Pay Item 656.75, unless a specific pay item for cofferdams is included in the Schedule of Items. If a specific pay item for cofferdams is included, then related temporary soil erosion and water pollution controls, including inspection and maintenance, are incidental to the pay item for cofferdams.

656.5.2 If No Pay Item. If Pay Item 656.75 is not provided in the Schedule of Items, then the cost related thereto shall be Incidental to the Contract.

Payment will be made under:

| <b>Pay Item</b>   | <b>Pay Unit</b> |
|---|-----------------|
| 656.75 Temporary Soil Erosion and Water Pollution Control | Lump Sum        |



# Appendix D





# COMMON VALUES AND UNIT CONVERSIONS

## Metric to Imperial

| Metric Unit        | Abbreviation   | Multiplier | = | Imperial Unit          | Abbreviation |
|--------------------|----------------|------------|---|------------------------|--------------|
| hectare            | ha             | 2.47       | = | acres                  | ac           |
| square meter       | m <sup>2</sup> | 1.196      | = | square yard            | sq.yd.       |
| millimeter         | mm             | 0.0394     | = | inch                   | in           |
| meter              | m              | 3.28       | = | feet                   | ft           |
| cubic meter        | m <sup>3</sup> | 1.31       | = | cubic yard             | cu.yd.       |
| cubic meter        | m <sup>3</sup> | 35.31      | = | cubic foot             | cu.ft.       |
| kiloPascal         | kPa            | 0.145      | = | pounds per square inch | psi          |
| cubic meter/second | cms            | 35.31      | = | cubic feet per second  | cfs          |
| meters/second      | mps            | 3.28       | = | feet per second        | fps          |

## Imperial to Metric

| Imperial Unit          | Abbreviation | Multiplier | = | Metric Unit        | Abbreviation   |
|------------------------|--------------|------------|---|--------------------|----------------|
| acres                  | ac           | 0.405      | = | hectare            | ha             |
| square yard            | sq.yd.       | 0.836      | = | square meter       | m <sup>2</sup> |
| inch                   | in           | 25.4       | = | millimeter         | mm             |
| feet                   | ft           | 0.305      | = | meter              | m              |
| cubic yard             | cu.yd.       | 0.7646     | = | cubic meter        | m <sup>3</sup> |
| cubic foot             | cu.ft.       | 0.0283     | = | cubic meter        | m <sup>3</sup> |
| pounds per square inch | psi          | 6.895      | = | kilopascal         | kPa            |
| cubic feet per second  | cfs          | 0.0283     | = | cubic meter/second | cms            |
| feet per second        | fps          | 0.305      | = | meters/second      | mps            |

## Useful Conversions

|                  | Abbreviation            | Multiplier | = |                 | Abbreviation          |
|------------------|-------------------------|------------|---|-----------------|-----------------------|
| acres            | ac                      | 43,560     | = | square feet     | sq. ft.               |
| square miles     | sq. mi.                 | 640        | = | acres           | ac                    |
| hectare          | ha                      | 10,000     | = | square meters   | m <sup>2</sup>        |
| rods             |                         | 16.5       | = | feet            | ft.                   |
| cubic feet       | cu.ft.                  | 7.48       | = | gallons (US)    | gal                   |
| gallons          | gal.                    | 0.1337     | = | cubic feet      | cu.ft.                |
| gallons of water | gal.H <sub>2</sub> O    | 8.33       | = | pounds of water | lbs. H <sub>2</sub> O |
| cubic feet water | cu.ft. H <sub>2</sub> O | 62.4       | = | pounds of water | lbs. H <sub>2</sub> O |

Example: 10 hectares = 24.7 acres (10 X 2.47 = 24.7)