

## Section 02260

### Sedimentation and Erosion Control

#### PART 1 - GENERAL

##### 1.01 SCOPE

- A. Furnish all labor, materials, equipment and incidentals necessary to perform all installation, maintenance, removal and area cleanup related to sediment and erosion control work as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to installation of silt fences, sediment traps, sediment removal and disposal, device maintenance, removal of temporary devices, temporary mulching, erosion control blanket, and final cleanup.

##### 1.02 SUBMITTALS

- A. Within 10 days after award of Contract, submit to the ENGINEER for approval technical product literature for all commercial products to be used for sedimentation and erosion control.

##### 1.03 REFERENCE MANUAL

- A. Except as otherwise specified herein, the material and construction shall be in accordance with the Department of Transportation "Standard Specifications for Highways and Bridges of the State of Maine" and the "Maine Erosion and Sedimentation Control Handbook for Construction, Best Management Practices" (BMP Handbook).

##### 1.04 PERFORMANCE REQUIREMENTS

- A. The CONTRACTOR shall be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off site areas or into streams and wetland areas via surface runoff or underground drainage systems. Measures in addition to those shown on the drawings necessary to prevent the movement of sediment off site, control erosion or stabilize disturbed areas shall be installed, maintained, removed and cleaned up at no additional cost to the OWNER.
- B. Sedimentation and erosion control measures shall conform to the requirements of the BMP Handbook.
- C. Where CONTRACTOR's effort to control erosion has been demonstrated to be ineffective or potentially ineffective in the opinion of the ENGINEER, the ENGINEER may order that the erosion control plan be amended and that additional erosion control measures be constructed at no additional cost to the OWNER.

##### 1.05 SEQUENCE OF CONSTRUCTION

- A. All hay bale check dams and silt fencing shall be in place below or adjacent to construction areas before actual construction begins. These devices shall remain in place until a healthy grass cover is obtained and the site is stabilized. These temporary structures shall be inspected weekly throughout the construction phase. They shall be repaired or replaced when necessary. These devices shall be removed when the area they serve is completely stabilized.

- B. Permanent re-vegetation or seeding of all disturbed areas shall occur immediately upon completion of work or, if temporary stabilization measures were used, within 7 days from the time the area was last actively worked. Temporary stabilization measures are required within two days from the time the area was last actively worked or prior to storm events.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Silt Fence
  - 1. Steel or wood posts shall be a minimum of 5 feet in length.
  - 2. Silt fence fabric shall be a woven, polypropylene, ultraviolet resistant material such as Mirafi 100X as manufactured by Mirafi, Inc., Charlotte, N.C. or equal.
- B. Mulch material for all slopes equal to or greater than 20% shall be an erosion control blanket (ECB). The ECB shall consist of 70% long fiber hay or straw and 30% coconut fiber. The fibrous material shall be held in place by top and bottom netting sewn together. The fibrous material shall be reasonably free from noxious weeds or other undesirable material. The ECB shall be Type SC150 as manufactured by North American Green, or approved equal.
- C. For slopes less than 20% and level areas, mulch material shall consist of long fiber hay or straw reasonably free from noxious weeds or other undesirable material. No material shall be used which is so wet, decayed, or compacted as to inhibit even and uniform spreading. No chopped hay, grass clippings or other short fiber material shall be used unless directed. The hay or straw shall be treated with a mulch tackifier.
- D. Latex acrylic copolymer such as Soil Sealant with coalescing agent as manufactured by Soil Stabilization Co., Merced, California, or approved equivalent, shall be used as hay or straw mulch tackifier. Asphalt tackifiers are not allowed.

## PART 3 - EXECUTION

### 3.01 MINIMIZATION OF EXPOSED SOILS

- A. Minimizing the exposed soil areas on the construction site is one of the most important and reliable methods of erosion control. The CONTRACTOR must phase the work so that areas of bare soil will be minimized. Exposed areas must be treated as described herein and in the BMP Handbook.

### 3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES

- A. Temporary erosion and sedimentation control measures will include silt fences, hay bale barriers, temporary seeding, temporary mulching and topsoil stockpiling.
- B. Silt fence will be placed down slope of all construction areas which drain toward a stream, wetland or improved area.

- C. Hay bale barriers will be used as necessary until final restoration is complete. They may also be used as check dams in drainage areas. Hay bales will be staked end to end in an excavated trench four inches deep across the area of runoff.
- D. Temporary mulching will be placed on all disturbed areas within two days or prior to any storm event. Mulch anchoring will be used on areas where the slope is greater than 5% or when placed after September 15. Straw mulch shall be applied at a rate of 90 lbs. per 1000 sq. ft. All mulched areas will be inspected before and after storms. If less than 90% of the surface is covered by mulch, additional mulch shall be applied immediately. Mulching shall be installed and maintained as recommended in the BMP Handbook.
- E. Topsoil shall be stockpiled on site with silt fence installed down slope of the piles. These stockpiles shall be mulched in accordance with the temporary mulching requirements.

### 3.03 INSTALLATION

#### A. Silt Fence Installation

1. Position silt fences as shown on the Drawings and as necessary to prevent off site movement of sediment produced by construction activities as directed by the ENGINEER.
2. Dig trench approximately 4 inches wide and 4 inches deep along proposed fence lines.
3. Drive stakes 8 feet on center (maximum) at back edge of trenches. Drive stakes 2 feet (minimum) into ground.
4. Attach filter fabric on stakes to bottom of trench with about 4 inches of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and secure.
5. Backfill trench with excavated material and tamp.
6. Install pre-fabricated silt fence according to manufacturer's instructions.

### 3.04 MAINTENANCE AND INSPECTIONS

#### A. Inspections

1. CONTRACTOR shall make a visual inspection of all sediment control devices daily and immediately before and after every rainstorm.
2. If such inspection reveals that additional measures are needed to prevent movement of sediment to off site areas or into streams or wetland areas, CONTRACTOR shall promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.

#### B. Device Maintenance

1. Silt fences
  - a. Remove accumulated sediment once it builds up to one-half of the height of the fabric.
  - b. Replace damaged fabric or patch with a two foot minimum overlap.

- c. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.

### 3.05 EROSION CONTROL BLANKET

- A. Install erosion control blankets in accordance with manufacturer's instructions. Properly prepare, fertilize and seed the area to be covered with permanent vegetation before the blanket is applied. Apply the blankets in the direction of water flow and staple together in accordance with manufacturer's instructions. Side overlaps shall be 2-inch minimum. The staples shall be made of wire .091-inch in diameter or greater, "U" shaped with legs 10 inches in length and a 1- inch crown. The staples shall be driven vertically into the ground at a rate of one staple per square yard according to manufacturer's staple pattern guide.
- B. Bury upper and lower ends of the matting to a depth of 4 inches in a trench. Where the matting must be cut or more than one roll is required, turn down upper end of downstream roll into a slit trench to a depth of 4 inches. Overlap lower end of upstream roll 4 inches past edge of downstream roll and staple.
- C. To ensure full contact with soil surface, roll matting with a roller weighing 100 pounds per foot of width perpendicular to flow direction after seeding, placing matting, and stapling. Thoroughly inspect after completion. Correct any areas where matting does not present a smooth surface in full contact with the soil below.

### 3.06 REMOVAL AND FINAL CLEANUP

- A. Once the site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Re-grade all areas disturbed during this process and stabilize.

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