

SECTION 01570

ENVIRONMENTAL PROTECTION

PART 1. GENERAL

1.01 DESCRIPTION

- A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.
- B. The requirements set forth in this section of the specifications apply to cross-country areas, river and stream crossings, and construction in and adjacent to wetlands, unless otherwise specifically stated.
- C. All work under this Contract shall be in accordance with Federal, State and local regulations.
- D. Prior to commencement of work, the Contractor shall meet with representatives of the Environmental Professional to develop mutual understandings relative to compliance of the environmental protection program.

1.02 RELATED WORK

- A. Section 01562 – DUST CONTROL
- B. Section 02300 – EARTHWORK
- C. Section 02610 – HANDLING, TRANSPORTATION AND DISPOSAL OF EXCAVATED SOILS

1.03 SUBMITTALS

- A. The Contractor shall submit for approval and Environmental Protection Plan including product information sheets and environmental protection methods to be employed in carrying out construction activities at the Site.

PART 2. PRODUCTS

2.01 SILT FENCE

- A. Where need or required per the contract documents, the silt fence shall consist of a 3-foot wide continuous length sediment control fabric, stitched to a 22-foot wide, continuous length support netting, and stapled to pre-weathered oak posts or approved equal. The oak posts shall be 1½-inches by 1½-inches (Minimum Dimension) by 48 inches and shall be tapered. The support netting shall be industrial strength polypropylene. The bottom edge of the sediment control fabric shall be buried as

shown on the drawings. The sediment control fabric shall conform to the following properties:

Property	Value	Test Method
1. Grab Strength (lbs.)	124	ASTM D-4632
2. Elongation (%)	15%	ASTM D-4632
3. Puncture Strength (lbs.)	65	ASTM D-4833
4. Burst Strength (psi)	300	ASTM D-3786
5. Trapezoid Tear (lbs.)	60	ASTM D-4533
6. Equivalent Opening Size (U.S. Sieve)	No. 30	ASTM D-4571
7. Permittivity (sec ⁻¹)	0.10	ASTM D-4491
8. Water Flow Rate (gal/min/sf.)	10	ASTM D-4491
9. UV Resistance (%)	70	ASTM D-4355

- B. The silt fence shall be Mirafi Envirofence manufactured by Mirafi, Inc. or approved equal.
- C. Erosion control on pavement shall consist of another approved device.

2.02 STRAW BALES

- A. Where need or required per the contract documents, the straw bales shall consist of certified seed free stems of agricultural grain and cereal crops and shall be free of grasses and legumes. Standard bales shall be 14-inches high, 18- inches wide and 36- to 40-inches long tied with polypropylene twine and weigh within 5 percent of 7 lbs. per cubic ft.
- B. Care shall be taken to keep the bales from breaking apart. The bales should be securely staked to prevent overturning, flotation, or displacement. All deposited sediment shall be removed periodically.

2.03 STRAW WATTLES

- A. Where need or required per the contract documents, the straw wattles shall consist of a 100% biodegradable exterior jute or coir netting with 100% wheat straw interior filling as manufactured by Granite Environmental, Inc., Sebastian, Florida (Phone: 888-703-9889; website: www.GraniteEnvironmental.com), or approved equal.
- B. The wattles will be placed in a shallow trench (2-3 inches deep) and staked in the ground using wooden stakes. The wooden stakes will be placed at a minimum depth of 24-inches into the ground.

2.04 EROSION CONTROL MIX

- A. Where needed or required per the Contract Documents, erosion control mix shall consist primarily of organic material and will include any of the following: shredded bark, stump grindings, composed bark or other acceptable products based on a similar raw source. Wood or bark chips, ground construction debris or reprocessed wood

products are not acceptable. Erosion control mix shall meet the following specifications:

- Organic matter content between 80-100% dry weight
- Particle size by weight shall be 100% passing a 6-inch screen and between 70-85% passing a 0.75-inch screen
- Organic portion needs to be fibrous and elongated
- Large portions of silts, clays or fine sands are not acceptable in the mix

PART 3. EXECUTION

3.01 NOTIFICATION AND STOPPAGE OF WORK

- A. The Environmental Professional will notify the Contractor in writing of any non-compliance with environmental regulations. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Environmental Professional until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

3.02 AREA OF CONSTRUCTION ACTIVITY

- A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

3.03 PROTECTION OF WATER RESOURCES

- A. The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.
- B. Special measures should be taken to insure against spillage of any pollutants into public waters.

3.04 PROTECTING AND MINIMIZING EXPOSED AREAS

- A. The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2)

months, temporary vegetation, mulching or other protective measures shall be provided as specified.

- B. The Contractor shall take account of the conditions of the soil where temporary cover crop will be used to ensure that materials used for temporary vegetation are adaptive to the sediment control. Materials to be used for temporary vegetation shall be approved by the Environmental Professional.

3.05 PROTECTION OF LANDSCAPE

- A. The Contractor shall not deface, injure, or destroy trees or shrubs nor remove or cut them without written authority from the Owner. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized by the Environmental Professional. Excavating machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees which are not to be removed, particularly overhanging branches and limbs. The Contractor shall, in any event, be responsible for any damage resulting from such use.
- B. Branches, limbs, and roots shall not be cut except by permission of the Environmental Professional. All cutting shall be smoothly and neatly done without splitting or crushing. When there is unavoidable injury to branches, limbs and trunks of trees, the injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint as required.
- C. Where, in the opinion of the Environmental Professional, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting or other operations, the Environmental Professional may require the Contractor to adequately protect such trees by placing boards, planks, poles or fencing around them. Any trees or landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the expense of the Contractor. The Environmental Professional will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed.
- D. Cultivated hedges, shrubs, and plants which could be injured by the Contractor's operations shall be protected by suitable means or shall be dug up, balled and temporarily replanted and maintained. After construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of a kind and quality at least equal to that existing at the start of the work.

3.06 DUST CONTROL

- A. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of streets as necessary, to minimize creation and dispersion of dust. If the Environmental Professional decides it is necessary to use calcium chloride for more effective dust

control, the Contractor shall furnish and spread the material, as required. Calcium chloride shall be as specified under Section 01562: DUST CONTROL.

- B. Calcium Chloride shall not be used for dust control within a drainage basin or in the vicinity of any source of potable water.

3.07 EROSION AND SEDIMENTATION CONTROL MEASURES

- A. The Contractor shall erect and maintain erosion and sedimentation control measures around any soil stockpile areas to prevent inadvertent spreading of contaminated soil outside of the stockpile area.

END OF SECTION