

AGREEMENT EXHIBIT 11

ENVIRONMENTAL PROTECTION PROCEDURES

PART 1 GENERAL

1.1 CONTRACT REFERENCES

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SCOPE OF WORK

- A. Furnishing all labor, materials, and equipment and perform all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants. Work shall include installing, maintaining and removing sedimentation and erosion control components within the limits of work.

1.3 SECTION INCLUDES

- A. Applicable Regulations.
- B. Notifications.
- C. Implementation.
- D. Construction Entrance
- E. Erosion Control
- F. Dust Control
- G. Protection of Streams.
- H. Protection of Land Resources.
- I. Protection of Air Quality.

J. Maintenance of Pollution Control Facilities during Construction.

K. Noise Control.

1.4 APPLICABLE REGULATIONS

- A. The Contractor shall comply with all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement.
- B. All erosion and sedimentation control work shall comply with applicable requirements of governing authorities having jurisdiction. These specifications are not comprehensive, but rather convey the intent to provide complete slope protection and erosion control for both Owner's and the adjacent properties.
- C. Fines and related costs resulting from failure to provide adequate protection against soil erosion and sedimentation are the obligation of the Contractor.
- D. Erosion and sedimentation control measures employed will be subject to approval and inspection by governing agencies having jurisdiction over such work.
- E. All erosion and sedimentation control work shall be conducted in accordance with the Erosion and Sedimentation Control Guidelines (MassDEP Division of Water Supply).
- F. All work shall comply with the Acton Conservation Commission's Order of Conditions (RFB Exhibit C).

1.5 NOTIFICATIONS

- A. OWNER may notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements may notify the Contractor in writing, through Owner, of any non-compliance with the State or local requirements. After receipt of such notice from Owner or from the regulatory agency through Owner, the Contractor shall immediately take corrective action. Such notice, when delivered to the Contractor or his/her authorized representative at the site of the Work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

1.6 IMPLEMENTATION

- A. Prior to commencement of the Work, the Contractor shall meet with Owner and the Engineer to further mutual understandings relative to compliance with the Acton

Conservation Commission's Order of Conditions as well as other applicable regulatory permits and requirements pertaining to the project.

1.7 COORDINATION

- A. Prior to commencement of the Work, the Contractor shall meet with Owner and the Engineer to further mutual understandings relative to compliance with the Acton Conservation Commission's Order of Conditions, and the Massachusetts Contingency Plan.

1.8 SCHEDULING AND SEQUENCING

- A. Erosion control measures shall be established at the beginning of construction and maintained during the entire period of construction. On-site areas that are subject to severe erosion, and off-site areas that are especially vulnerable to damage from erosion and/or sedimentation shall be identified and receive special attention.
- B. Erosion control measures shall be installed as shown on the Drawings prior to the commencement of work at the site.
- C. All land-disturbing activities shall be planned and conducted to minimize the size of the area exposed at any one time and the length of the time of exposure.
- D. Surface water runoff originating from upgrade of exposed areas shall be controlled to reduce erosion and sediment loss during the period of exposure.
- E. All land-disturbing activities shall be planned and conducted in a manner, which minimizes off-site sedimentation damage.
- F. Erosion control measures shall be removed when the vegetative cover has been established and the site is permanently stabilized. The Contractor shall not remove the erosion control measures without Engineer approval. Proper disposal of erosion and sediment control materials shall be the responsibility of the Contractor. Removal is subject to issuance of certificate of compliance by the Acton Conservation Commission.
- G. Clearing activities shall be performed only after erosion and sediment controls are in place.

PART 2 PRODUCTS

2.1 HAY BALES

- A. Hay bales shall consist of straw from acceptable grasses and legumes, free from weeds, reeds, twigs, chaff, debris, other objectionable material or excessive amounts of seeds and grain. It should be free from rot or mold, and the moisture content shall not exceed fifteen (15) percent of weight at the time of weighing.

2.2 SILT FENCE

A. Material characteristics for the silt fence fabric are presented on Table 01110-1.

Table 01110-1 Physical and Mechanical Properties of Silt Fence			
Property	Test Method	Required Minimum Value	Unit
Unit Weight	ASTM D3776	5	oz/yd ²
Thickness	ASTM D177764	80	mils
Puncture Strength	ASTM D4833	60	lbs
Apparent Opening Size (AOS)	ASTM D4751	40 (0.425)	US Std Sieve (mm)
Grab Tensile Strength	ASTM D4632	100 x 100	lbs
Grab Elongation	ASTM D4632	15 x 15	%
Trapezoidal Tear Strength	ASTM D4533	60 x 60	lbs
Mullen Burst Strength	ASTM D3786	350	psi
Permittivity	ASTM D4491	0.9	cm/sec
Water Flow Rate	ASTM D4491	75	gpm/ft
UV Resistance ³ (@ 500 hrs.)	ASTM D4355	90	% strength retained at 500 hours

Table Notes:

1. Properties to reflect minimum average roll values (MARV).
2. Manufacturer's certification required which states product exceeds required value for typical roll values.

B. Silt fence shall be approved by the Engineer.

2.3 WATER

A. Water used for wheel wash station shall be clean and free of salt, oil, and other injurious materials. Water is not available on site and will have to be imported by the Contractor.

PART 3 EXECUTION

3.1 CONSTRUCTION ENTRANCE

- A. The Construction Entrance for the project site will be via Stow Street and existing site roads as indicated in the Contract Documents. The Contractor shall not access the site by other routes.
- B. Contractor shall install a wheel wash station at the location shown on the plans to remove and retain soil and sediments from truck wheels to prevent this material from being deposited on public roads. All wheel wash water will be pumped and removed from the site as required in the Order of Conditions.

3.2 EROSION CONTROL

- A. No materials from excavations, stockpiles or site preparation activities shall be deposited in flood plains or within 100 feet of any body of water or within 100 feet of a wetland boundary or within a wetland buffer zone without compliance under provisions of Chapter 131, Section 40 of the Massachusetts Wetlands Protection Act and the Rivers Protection Act.
- B. 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 site to off site areas or in the adjacent stream system via surface runoff. Measures necessary to prevent the movement off-site of sediment shall be installed, maintained, removed, and cleaned at the expense of the Contractor. No additional charges to Owner will be considered.
- C. Erosion control measures shall consist of a straw wattle and silt fence sedimentation barrier. Straw wattles and silt fence shall be installed as shown on the drawings.
- D. A straw wattle/silt fence barrier shall be installed around any stockpiled material within 100 feet of the wetlands and equipment staging/soil stockpile area.
- E. Surface water runoff originating from upland exposed areas shall be controlled to reduce erosion and sediment loss during the period of exposure.

3.3 STRAW WATTLE BARRIER INSTALLATION

- A. Straw wattle barriers shall be installed around all stockpiled soil, and between the Work area and any environmentally sensitive areas when these areas are within 100 feet of the Work area, and as shown on the Drawings.
- B. Wattles shall be placed in a single row, length wise on proposed line, with ends of adjacent wattles tightly abutting one another. In swales, the barrier shall extend to

such a length that the bottoms of the end wattles are higher in elevation than the top of the lowest wattle.

- C. Staking shall be accomplished to securely anchor wattles by driving at least 1 stake or rebar through each wattle every 8 feet on center.
- D. Gaps between wattles shall be filled with straw to prevent water from channeling between the wattles.
- E. Any straw wattles, which become clogged or otherwise deteriorate, shall be properly maintained or replaced as necessary by the Contractor at no additional cost to Owner.

3.4 SILT FENCE INSTALLATION

- A. The Contractor shall install the pre manufactured silt fencing in accordance with the manufacturer's recommendations.

3.5 DUST CONTROL

- A. The CONTRACTOR shall implement strict dust control measures during active construction periods on-site. These control measures shall generally consist of the use of dust covers on trucks, limiting driving speeds on site to less than 5 mph and halting excavation at wind speeds over 20 mph, or as directed by the Engineer or Owner.

3.6 PROTECTION OF STREAMS

- A. Care shall be taken to prevent damage to Mill Pond or any stream or wetland from pollution by debris, sediment or other material. No withdrawal of water from Mill Pond or any wetland or stream is permitted. Manipulation of equipment and/or materials outside of the work area is prohibited. Water that has been used for washing or processing, or that has been derived from dewatering activity, or that contains oils or sediments that will reduce the quality of the water in Mill Pond or any stream or wetland, shall not be discharged to Mill Pond or any stream or wetland. Any project wastewater will be collected and disposed of in accordance with all applicable Federal, State and local regulations.

3.7 PROTECTION OF LAND RESOURCES

- A. After completion of the project, land resources within the work area shall be restored to a natural appearing condition that does not detract from the appearance of the project. Construction activities shall be confined to areas shown on the Drawings.
- B. Outside of the area of Work, as shown on the Drawing, do not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval of Owner. To help prevent damage to trees, snow fence or other approved equal shall be wrapped around tree trunks if heavy equipment has the potential to damage the tree bark.

- C. The locations of storage, decontamination pad, and other facilities, required in the performance of the Work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawings and shall not be within the wetlands or resource areas or within the 100 foot buffer zone.
- D. Remove all signs of temporary construction facilities such as Work areas, structures, stockpiles of excess of fill materials, stockpile and decontamination pads, or any other vestiges of construction at the completion of Work. The disturbed areas shall be graded as described in Exhibit 18, or as approved by the Engineer.

3.8 PROTECTION OF AIR QUALITY

- A. The use of burning at the project site for the disposal of refuse and debris is not permitted.
- B. Maintain all excavations, stockpiles, waste areas, and all other work areas within or without the project boundaries free from the dust. Nuisance dust conditions will not be permitted. Contractor shall control dust through the use of polyethylene plastic sheeting and other dust suppression measures approved by the Engineer.

3.9 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution, erosion, and siltation control as long as the operations creating the particular pollutant are being carried out.
- B. The straw wattle/silt fence barrier shall be inspected by the Contractor once per week and after storm events of 1/2 -inch of rain or more. Accumulated material shall be removed from the barrier when it reaches 1/3 the height of the barrier. A minimum of 100 feet of silt fence and 20 feet of straw wattles shall be maintained on the site, under protective cover, for routine maintenance and emergency repair.
- C. Once the site has been fully stabilized against erosion and inspected by the Conservation Commission, remove both silt fence/straw wattle and all accumulated silt. Dispose of silt and waste materials in proper manner. Regrade all areas disturbed during this process and stabilize against erosion and surfacing materials.

3.10 NOISE CONTROL

- A. Contractor shall make every effort to minimize noises caused by the work of this Contract. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with Federal and State regulations.