



**Operation and Maintenance  
&  
Erosion and Sediment Control Plan**

**ACTON BOXBOROUGH REGIONAL HIGH SCHOOL  
LOWER FIELDS RENOVATIONS PROJECT  
ACTON, MA**

**PART 1 – STORMWATER MANAGEMENT SYSTEM DESCRIPTION**

**1A. OWNER:**

Acton Boxborough Regional School District  
16 Charter Road  
Acton, MA 01720

**1B. OPERATION:**

Stormwater carries pollutants and, by law, must be treated before its discharge to wetlands and water bodies. The site plans which accompany these instructions show the components of the treatment systems, the direction of flow and nearby resource areas.

Runoff generated by the parking lot and entrance drive will be routed through a gravel filter strip where suspended solids and oils/gases will be filtered, prior to its outfall to a bio-retention area. Once the runoff reaches the bio-retention area, it will then filter vertically through 30” of engineered media. This further treats the runoff prior to infiltration into the groundwater table and/or discharge to the adjacent wetlands. Runoff from large or intense storm events will exit the bio-retention through the rip-rap weir, which leads to a rip-rap area prior to release to the wetlands.

Clean runoff from the site walkways and athletic fields will flow via overland flow or “country drainage” before entering the adjacent wetlands.

Runoff from the synthetic turf fields will send storm water vertically through the sand and rubber infill material as well as the 1” top stone layer before reaching the base stone of the field. After permeating through the base stone, the runoff will either infiltrate into the well drained soils beneath the field or collect and drain via flat panel under drains and collector pipes. As a result of installing the base stone directly on the filter fabric separation layer, all of the stormwater that drains

from the field has the opportunity to infiltrate or recharge into the ground.

**1C. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):**

Because the total area proposed to be disturbed is more than one (1) acre, the project must conform to a Stormwater Pollution Prevention Plan (SWPPP) that shall be prepared in conformance with the National Pollutant Discharge Elimination System General Permit for stormwater discharge from construction activities (Federal Register, Part 2, February 17, 1998). A SWPPP will be submitted as part of the construction general permit, prior to commencement of any land disturbing activities.

**PART 2 – RESPONSIBILITY FOR OPERATION AND MAINTENANCE**

**2A. PARTY RESPONSIBLE DURING CONSTRUCTION:**

General Contractor - To Be Determined.

**2B. PARTY RESPONSIBLE FOR POST-CONSTRUCTION:**

Acton Boxborough Regional School District  
16 Charter Road  
Acton, MA 01720

**PART 3 – INSPECTION AND MAINTENANCE SCHEDULE**

**3A. CONSTRUCTION SCHEDULE:**

**3A.1 CONSTRUCTION PERIOD POLLUTION CONTROL**

Erosion and sedimentation control measures will be implemented prior to and during construction activities to minimize impacts from land disturbance activities. Erosion and sedimentation control measures implemented on the site will include, at a minimum, dust control measures, the installation of silt fence barriers on the up-gradient side of resource areas, catch basin inlet protection and temporary sediment basins. Controls may also include temporary seeding. The erosion and sedimentation controls will be inspected at the end of the day, if precipitation is forecast, and after each rainfall event of 0.5 inches or more. Should construction occur during the winter months, seasonally appropriate stabilization measures will be utilized.

Below is a summary of the minimum construction period pollution control requirements. These topics are presented as a means of demonstrating understanding of pollution control, but are not meant to supplant preparation of the SWPPP, as required in the NPDES permit. Please refer to the SWPPP, to be completed by the contractor, for complete construction activity details.

a. Dust Control

Mitigation measures will be implemented to control fugitive dust during construction activities. Dust control measure may include seeding, wet suppression, application of soil stabilization agents, or other measures to control dust generated by construction activities. The Contractor shall confirm with state and local regulations to see if the use of calcium chloride for dust suppression is allowed.

b. Erosion Control Barriers

Prior to any ground disturbance, erosion control barriers will be installed at the limit of work, at down-gradient positions on the site. The barriers will consist of silt fence and/or staked hay bales and will be entrenched in the soil to prevent underflow. Temporary diversion dikes shall also be used to prevent sediment discharge during construction.

c. Catch Basin Inlet Protection

All existing and newly installed catch basins shall be protected during construction with silt sacks or haybale filters. These sedimentation control measures will be regularly maintained until the drainage area tributary to the catch basin has been stabilized.

d. Temporary Sedimentation Basins and Diversion Swales

Temporary sedimentation basins will be constructed, after silt fencing and haybales have been installed, to prevent the transportation of fine-grained sediment into wetland resource areas and other off-site areas. These temporary basins will be located where appropriate, as determined by the contractor. Temporary diversion swales or berms shall be used, if deemed necessary by the contractor, to convey runoff from construction areas to temporary or previously constructed basins.

e. Temporary Seeding

Temporary seeding will be used where vegetative cover is required, for less than one year, on disturbed soil areas. Such areas will be seeded if the soils will be exposed without construction activity for more than 14 days. Rapidly growing annual grasses, such as annual rye grass, oats, perennial rye grass or winter rye will be uniformly applied. Depending on the slope, the soil may be covered with a layer of straw mulch, an erosion control blanket or a bonded fiber matrix.

f. Permanent Seeding

Upon completion of the final grading, any areas not covered by pavement or other forms of stabilization, including landscaping, will be seeded with rapidly growing annual rye grass/red fescue seed mix.

**3B. POST-CONSTRUCTION SCHEDULE:**

**3B.1 ROUTINE SCHEDULE:**

The property's stormwater handling facilities must be inspected on a regular basis. Routine inspections must be made during the months of April and October of each calendar year, as follows:

Inspect all pipes, structures and bio-retention areas at the locations shown on site plans. Look for settling around the structure and repair, as required. Look at the level of sand/silt in the bottom. If the level of sand/silt is greater than or equal to one-half the depth from the bottom of the invert of the lowest pipe in the basin, then the sediment shall be removed. Have the bottom cleaned if the outlet pipe appears blocked.

Look for signs of erosion at the edges of the pavement. Severe erosion may be caused by pipe blockage and result in overflows out of the culverts. Where surface erosion is evident, inspect all downstream structures and look for blockages.

**Segmental Block Retaining Walls (if any)**

Look for erosion at the top and bottom of all retaining walls. Repair as required.

### **Vegetation**

Inspect for diseased/dying trees, shrubs, ground cover and grass. Remove/repair as required.

### **Flared End Sections**

Inspect stone slope protection. Cut vegetation growing in the stones and remove all debris.

### **Bio-Retention Areas**

Inspect in accordance with the Massachusetts Stormwater Management Standards (MASWMS), but no less than twice per year following installation and no less than once a year thereafter.

Inspect soil and repair eroded areas monthly. Re-mulch void areas, as needed. Replace mulch every two years, in the early spring.

Treat diseased vegetation, as needed. Remove and replace dead vegetation twice per year (spring and fall).

Upon failure, excavate the bio-retention area, scarify the bottom and sides, replace the filter fabric and soil, replant and mulch.

### **Restoration Areas**

Monitor for the presence of nuisance and invasive species no less than twice per year following construction and no less than once a year thereafter. Mark and remove all nuisance and invasive species found.

Mow annually, or per the direction of the Conservation Commission, to a minimum height of at least 4 inches to prevent woody stemmed plant development.

## **3B.2 NON-ROUTINE SCHEDULE:**

### **Vegetation**

Inspect after each significant rainfall (1" or more), for the first six (6)-months after construction, to ensure that surface vegetation is healthy, discharge devices are not blocked and banks are not eroding.

Check all components after each major storm (more than 2" rainfall in 24 hours). Clean and/or repair, as required.

### **3B.3 EMERGENCIES:**

In the event of an emergency, spill release or other unexpected contamination event, all contaminated runoff from pavement must be prevented from leaving the property by performing the following:

1. At the discharge pipe to the wetlands, place layers of sand bags to block the pipe end at the wetlands.
2. The contractor must have ready at all times, filled sandbags (or equal) to accomplish containment throughout the construction activity.

## **PART 4 – DOCUMENTATION**

The Owner shall perform inspections in accordance with the "Operation & Maintenance and Erosion Control Plan", as described in this document. A written inspection record should document all areas of concern and identify names of inspectors and dates of inspection (*see attached Operation & Maintenance Log*).

### **Erosion Control Notes**

1. Prior to large or intense rainfall/runoff events, the Contractor shall apply mulch to stabilize disturbed areas not stabilized by vegetation.
2. All drainage and erosion control construction shall be located as depicted on the plan, and as required by the Engineer in the field, dependent on the actual progress and sequence of construction.
3. A silt fence shall be installed around all stockpiled material.
4. All disturbed areas are to be temporarily or permanently stabilized within fourteen (14) days of disturbance.
5. All disturbed areas not under current construction shall be stabilized by rough grading to minimize slopes and then mulched. Following the final grading of any portion of the site, the Contractor shall loam, seed and mulch within forty-eight (48) hours. In areas where the seed and mulch do not take root, erosion control blankets shall be utilized.

6. Erosion control measures shall be monitored and maintained throughout construction and removed after the project area and drainage courses are fully established and stable.
7. Siltation fence shall be installed according to the manufacturer's recommendations. Where possible, silt fences shall be aligned parallel to slope contours, with the ends curved uphill.
8. Inspection and Maintenance: Inspect erosion and sediment control measures frequently. Pay careful attention to weather predictions. Watch for predicted thaws or heavy rains. Before such events, check all control measures to be sure that the structures will manage the potentially heavy and intense runoff and sediment. As early as is practical, install permanent vegetative controls, such as loaming, seeding, sodding, mulching and planting trees.
9. Any slopes greater than 3:1 shall be matted with an erosion control mat, such as North American Green or an approved equal.
10. In loose soil conditions, the use of staple or stake lengths greater than 6" (15cm) may be necessary to properly secure the blankets.
11. If not otherwise noted on the plans, use North American Green SCI50 on slopes less than 2H:1V and C125 matting on slopes greater than 2H:1V and less than 1.5H:1V.

