

Long Term Pollution Prevention & Stormwater System Operation and Maintenance Plan

***91 Groton-Harvard Rd
Ayer, MA***

March 2024

**Submitted to:
Ayer Planning Board
Ayer Town Hall
1 Main Street
Ayer, MA 01432**

**Submitted by:
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**Project No:
231083**

LONG TERM POLLUTION PREVENTION AND STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Preface:

The goal of this manual is to improve water quality by initiating performance standards for the operation and maintenance of stormwater management structures, facilities, and recognized practices. The stormwater performance standards are set up to meet the statutory and regulatory authorities of the Department of Environmental Protection, including the Wetland Protection Act, surface water discharge permits under the Clean Waters Act, the 401 certification program for fill in wetlands, the 401 certification of federal permits based on the water quality standards, and local regulatory stormwater requirements.

The discharge of pollutants to water of the Commonwealth without a permit is prohibited under the state Clean Waters Act, MGL c. 21, ss 26-53. Stormwater discharges are subject to regulations when two criteria are met under 314 CMR 3.04(2). First, there must be “conveyance or system of conveyances (including pipes, ditches, and channels) primarily used for collecting and conveying stormwater runoff.” 314 CMR 3.04(2)(a). Second, the stormwater runoff must be “contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, or oil and grease,” or, be designated on a case-by-case basis. Such designations must be made when the “stormwater discharge” is subject to effluent or toxic pollutant limitations, is located in an industrial plant area, or may be a significant contributor of pollutants to waters of the Commonwealth. Any activity resulting in a discharge to waters of the United States must comply with Section 401 of the Federal Clean Water Act and comply with state water quality standards. All stormwater discharges must be set back from the receiving waters or wetlands and best management practices (BMP) must be implemented. A permit is required for any stormwater discharge to an Outstanding Resource Water (ORW) which meets the regulatory definition in 314 CMR 3.04(2). Outstanding Resource Waters are defined under Surface Water Quality Standards 314 CMR 4.06 and include public surface water supplies, coastal and some inland Areas of Critical Environmental Concern (ACECs), and certified vernal pools.

This manual is set up to explain how to operate and maintain Best Management Practices that control erosion and minimize delivery of sediment and other pollutants to surrounding water and air.

- Chapter 1 is an introduction to the site and describes the Best Management Practices used on this site.
- Chapter 2 outlines the inspection and maintenance schedules for the site.
- Chapter 3 shows the location of the Best Management Practices used on-site.
- Chapter 4 outlines the operation and function of the Best Management Practices.
- Chapter 5 describes how and when the Best Management Practices should be inspected and how frequently they must be maintained and cleaned.

1. Introduction:

The proposed project is a commercial redevelopment at 91 Groton-Harvard Road located between Oak Ridge Drive and Washington Street in Ayer, MA. The project site parcel is designated as Map 13, Parcel 8 by the Town of Ayer Assessors department. The project site is a parcel consisting of 4.2± Ac. of land area. Approximately 2/3 of the subject site on the western portion is an existing developed area with general commercial mixed uses, while the remaining 1/3 is undisturbed wooded area on the eastern portion of the subject site. The subject site is located south of the abutting the Ayer Transfer Station, west of the abutting a large network of wetland area surrounding the Upper Flannegan Pond, and north of the abutting wooded conservation land. The disturbed portion of the project site is generally surrounded by trees, acting as natural screening to the surrounding area, and is approximately 300 FT away from the existing network of wetland area east of the subject site.

There is an existing commercial building located approximately 75 FT away from the Groton-Harvard Road street line and surrounded by a large paved/gravel footprint that is currently being used for general commercial access and exterior storage. There are two existing driveway accesses located north and south of the existing building on site. The limit of the proposed work on site shall remain solely within the existing disturbed limit of the subject site, while maintaining approximately 300 FT away from the existing wetland area.

The project proposes to demolish the existing commercial building and construct a 12,000± SF while maintaining the existing commercial mixed uses. The proposed project will also provide 16 paved parking spaces, an onsite subsurface sewage disposal system, and utility connections. The proposed development will maintain its existing onsite exterior storage areas. The existing driveway accesses shall be paved and adjusted/shifted as needed to accommodate the proposed building and parking areas. In order to offset the increase in stormwater runoff on site, various stormwater Best Management Practices (BMP) are proposed. Onsite stormwater BMPs are designed to capture and treat stormwater, provide groundwater recharge, reduce stormwater runoff than existing conditions to the maximum practicable as a commercial redevelopment project.

To control erosion and minimize delivery of sediment and other pollutants into the atmosphere and adjacent wetlands, Best Management Practices (BMP's) have been provided within the site's stormwater management system. These practices include but are not limited to:

- Rain Guardian Turret
- FocalPoint Biofiltration System
- Infiltration Chamber (Isolator Row)
- Deep Sump Hooded Catch Basin

This manual is designed to help responsible parties become aware of urban non-point pollution problems and to provide detailed information about operating and maintaining stormwater management practices. The success of the Best Management Practices is dependent on their continued operations and maintenance.

2. Maintenance Requirements:

BMP's Owners:

- The OWNERS of the BMP's shall be the person, persons, trust, corporation, etc., or their successors who have title to the land on which the BMP is located. Should the title of land upon which they are located is transferred the purchaser of the property, at that time, will assume all responsibilities set forth within this document.

Operation and Maintenance Responsibilities:

- The party or parties responsible for the funding, operation and maintenance of the BMP's shall be the OWNER or their designees.
- BMP's each have specific maintenance requirements to ensure long-term effectiveness. These stormwater management systems will be operated, inspected and maintained on a regular basis **by a qualified professional with expertise in inspecting drainage system components**. All of the stormwater BMP's shall be kept in good working order at all times.

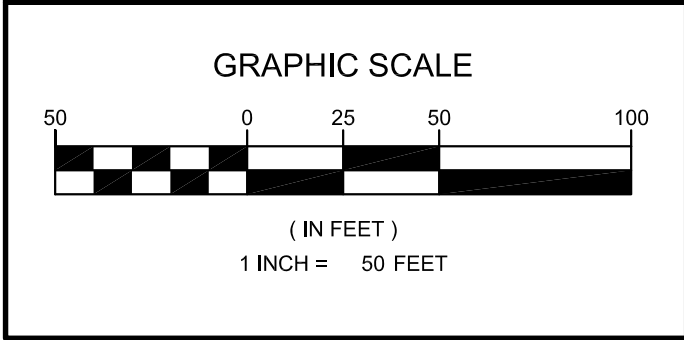
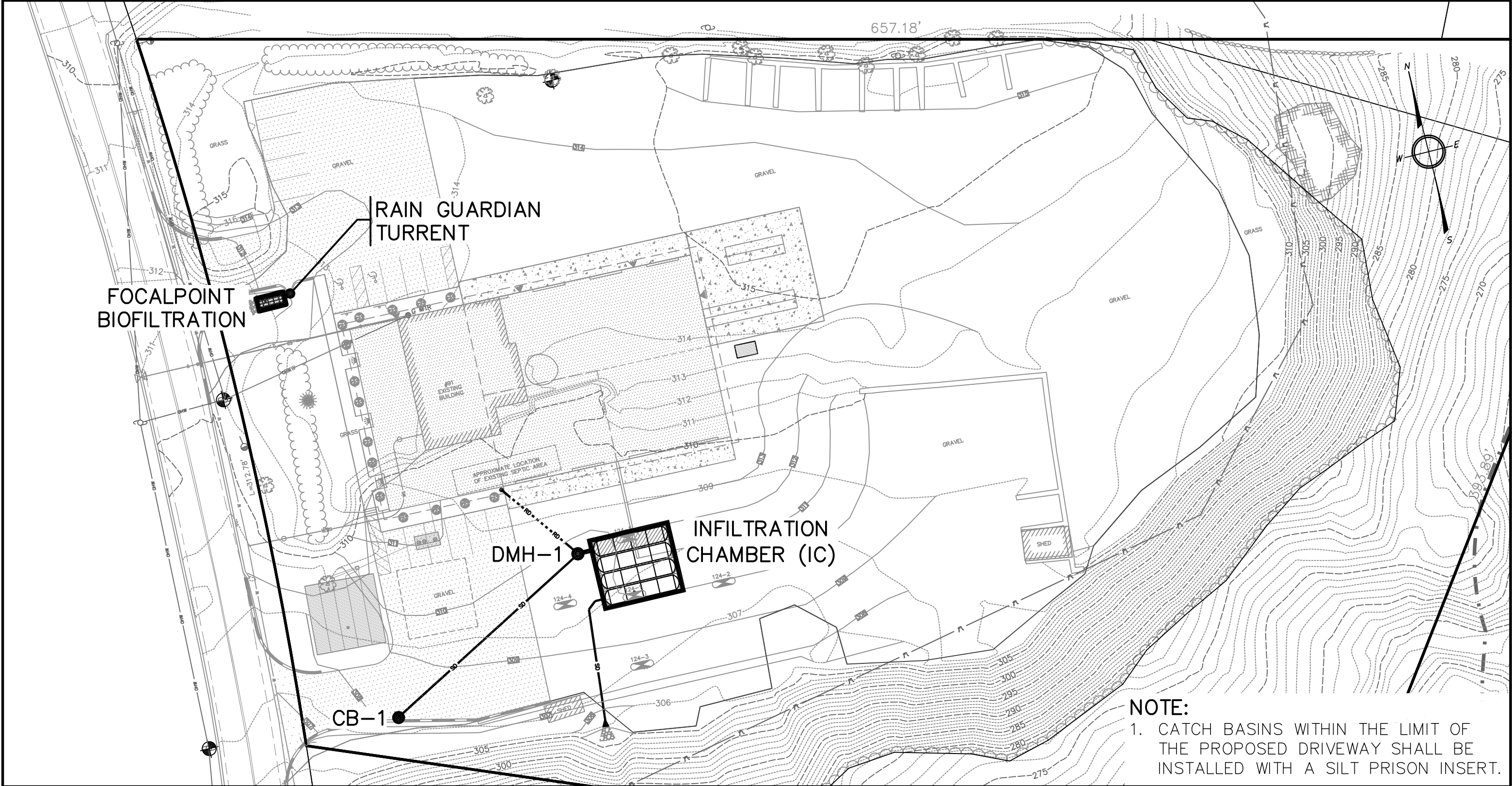
Source of Funding for Operation and Maintenance:

- The party or parties responsible for the funding, operation and maintenance of the BMP's shall be the OWNER or their designees.
- Approximate estimated annual maintenance costs for the site are:

-	Rain Guardian Turret	\$250
-	FocalPoint Biofiltration System	\$500 (See Owner's Manual)
-	Infiltration Chamber (Isolator Row)	\$500
-	Deep Sump Hooded Catch Basin	\$250

Schedule for Inspection and Maintenance:

- * BMP's each have specific maintenance requirements to ensure long-term effectiveness. These stormwater management systems will be operated, inspected and maintained on a regular basis in accordance with this manual. All of the stormwater BMP's shall be kept in good working order at all times.
- * As a minimum, the OWNER shall follow the general guidelines outlined herein for the BMP's provided on this site.
- * An Operation and Maintenance log must be maintained for the last three years, outlining inspections, repairs, replacement and disposal for each Best Management Practice (BMP). In the case of disposal, the log shall indicate the type and material and the disposal location. This rolling log shall be made available to the Mass DEP and/or the local approving authority upon request.





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DES'D BY: KI	CHK'D BY: NMP
DATE: MARCH 2024	

BMP LOCUS	
NORTH ATLANTIC CONCRETE 91 GROTON-HARVARD ROAD AYER, MA	
PROJECT: 231083	BMP

4. Operation of Best Management Practices:

Rain Guardian Turret – is an in-ground concrete structure which are designed to collect, retain trash, coarse sediment from stormwater runoff. The functions of a Rain Guardian Turret include:

- An inlet grate located at the top to allow stormwater to enter the structure while filtering out larger objects such as trash and leaves;
- An outlet opening at the bottom with a removable filter to discharge stormwater down onto the next step of the treatment train;
- Inlet grate and outlet filters are easily removable to allow for maintenance of the system.

FocalPoint Biofiltration System – is an in-ground biofiltration system that treats and drains large volumes of stormwater runoff within a small footprint. The system removes pollutants from stormwater runoff through the physical, chemical, and biological media with an infiltration rate exceeding 100 inch/hour. The functions of a FocalPoint Biofiltration System includes:

- Removes stormwater pollutants using fast draining soil media;
- Provides some stormwater attenuation and groundwater recharge;
- Provides planting and landscaping

Infiltration Chamber – are subsurface plastic chambers that are designed to retain and infiltrate stormwater runoff over permeable soils into the groundwater. The functions of an infiltration chamber include:

- Provide groundwater recharge;
- Reduce local flooding;
- Preserve the natural water balance of the site

Deep Sump Hooded Catch Basins – are underground concrete structures which are designed to retain removed trash, debris and coarse sediment from stormwater runoff and serve as temporary spill containment devices for floatables such as oil and greases prior to discharge into a storm sewer pipe. The functions of a deep sump hooded catch basin include:

- A grate and/or vertical notch found in the curbing, that allow stormwater to enter the structure while filtering out larger objects such as trash and leaves;
- A four foot (minimum) sump below the invert of the storm sewer pipe provides an area for detention time which allows sands and other sediments to settle out of the runoff prior to discharge.

5. Inspection and Maintenance of Best Management Practices:

Rain Guardian Turret - at a minimum, Rain Guardian Turret shall be inspected four times per year. Ideally, inspection should be conducted at the end of the foliage and snow removal seasons, with remaining inspections at regular intervals between these times. System shall be inspected for trash/debris removal collected above the top inlet grate, as well as removing said grate to remove sediment build up collected at the outlet grate.

Collected sediment and debris will be properly disposed of per local, state and federal

requirements. Any sediment and debris removed from the infiltration basin deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

FocalPoint Biofiltration System – System shall be inspected seasonally; the spring visit aims to clean up after winter loads including salts and sands. The fall visit helps the system by removing excessive leaf litter.

A first inspection to determine if maintenance is necessary should be performed at least twice annually after storm events of greater than (1) one inch total depth (subject to regional climate). Please refer to the maintenance checklist for specific conditions that indicate if maintenance is necessary. It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required. Regions with less rainfall often only require (1) one visit per annum. Varying land uses can affect maintenance frequency.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the VAR/Maintenance contractor and Owner predict future maintenance frequencies, reacting individual site conditions. Owners must promptly notify the VAR/Maintenance contractor of any damage to the plant(s), which constitute(s) an integral part of the biofiltration technology. Owners should also advise other landscape or maintenance contractors to leave all maintenance of the HPMBs to the VAR/Maintenance contractor (i.e. no pruning or fertilizing).

Each maintenance visit consists of the following simple tasks (detailed instructions below):

1. Inspection of FocalPoint® and surrounding area
2. Removal of debris, trash and mulch
3. Mulch replacement
4. Plant health evaluation and pruning or replacement as necessary
5. Clean area around FocalPoint®

Collected sediment and debris will be properly disposed of per local, state and federal requirements. Any sediment and debris removed from the infiltration basin deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

Infiltration Chamber – Inlets and inspection ports shall be inspected after every major storm event (1-inch of rain or greater) for the first six (6) months, then twice a year, thereafter. Note how long water remains standing within the chambers after a storm; standing water within the chambers >72 hours after storm events suggests potential clogging.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the sump of the drain manhole. The JetVac process shall only be performed on the StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by Stormtech) over their angular base stone.

Collected sediment and debris will be properly disposed of per local, state and federal requirements. Any sediment and debris removed from the infiltration basin deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

Deep Sump Hooded Catch Basins and Drain Manholes - at a minimum, deep sump hooded catch basins and drain manholes shall be inspected four times per year. Ideally, inspection should be conducted at the end of the foliage and snow removal seasons, with remaining inspections at regular intervals between these times. Each structure should be cleaned whenever the depth of sediment deposits is greater than or equal to one half the depth of the sump from the bottom of the structure to the bottom of the lowest pipe invert, or at a minimum once per year. Structures shall be inspected for a buildup of sediments, oils and debris, cracks, breaks, or deformations. Any function of the catch basin and drain manhole that is not in working order will be replaced with similar materials, as per the detail, to prevent the storm sewer system from failing.

The catch basins and drain manholes shall be cleaned by means of hand held shovels, scallop shovel and/or vacuum truck. The grate opening shall be clear of any foreign or lodged object. Sands and salts used in the winter will be removed from the catch basin sumps in the early spring. Leaves, pine needles, and branches brought down by autumn winds, rain, and cold weather will be removed from the catch basin and drain manhole sumps in the late fall.

Collected sediment and debris will be properly disposed of per local, state and federal requirements. Any sediment and debris removed from a catch basin deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

Best Management Practices (BMP) Inspection Log

General Information			
Project Name	North Atlantic Concrete		
Location	91 Groton-Harvard Rd, Ayer, MA		
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Type of Inspection: <input type="checkbox"/> Regular <input type="checkbox"/> Emergency			
Weather Information			
Weather at time of this inspection? <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____			
Are there any discharges at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe:			

Site-specific BMPs

- The structural BMPs are identified on the BEST MANAGEMENT PRACTICES LOCUS included within the LONG TERM POLLUTION PREVENTION & STORMWATER SYSTEM OPERATION & MAINTENANCE PLAN. Carry a copy of the Locus map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are discharge points and receiving waters free of any sediment deposits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Are storm drain inlets properly working?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Is trash/litter from site areas collected and placed in covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	(Other)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Print name and title: _____

Signature: _____ **Date:** _____