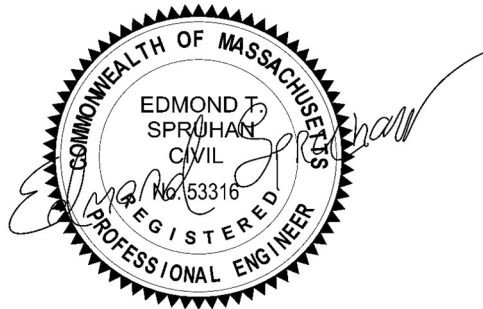


OPERATION & MAINTENANCE PLAN

8 ELIZABETH LANE, HINGHAM, MA.

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September 13, 2022; Revised November 7, 2023.

Operations & Maintenance Plan

Introduction

The following Storm water Operations & Maintenance plan is for 8 Elizabeth Lane, Hingham, MA. All erosion and sediment control measures to be used are to be constructed and installed according to the 'Massachusetts Erosion and Sediment Control Guidelines for Urban and Sub-Urban Areas.'

The plan consists of the following elements:

- Owners' information
- Operation and maintenance guidance – Pre and Post Construction
- Landscape installation and maintenance guidance
- Proposed inspection log

All erosion and sediment control measures must be installed prior to commencement of any work. All sediment and erosion control measures shall remain in place until the entire site has been stabilized. The site is deemed stabilized when all landscaped areas have been loamed and seeded with vegetation having had the chance to establish itself. Any proposed paved areas shall have its binder course of pavement installed prior to the removal of these control measures.

The long-term operation and maintenance of a stormwater management system is as critical to its performance as its design and construction. Proper operation and maintenance ensure that the BMP will continue to remove pollutants effectively over the long-term, decreases the risk of re-suspending sediment; and therefore, improves water quality. Without proper maintenance, BMPs are likely to fail and no longer provide the necessary stormwater treatment.

- **Property Owners:**

Name and contact information:

Owner: 8 Elizabeth Lane Llc

Address: 13 Tech Circle, Natick, MA, 01760

Phone: 617-996-6728

Email: info@northamericadevelopment.com

Change on ownership: The owner(s) of the stormwater management systems, with the exception of those associated with single family dwellings, shall notify the Conservation Commission of changes in ownership or assignment of financial responsibility.

This plan is valid in perpetuity and any future property owners are solely responsible for management of the stormwater system on-site in accordance with this O&M Plan

Operations & Maintenance

The following operations and maintenance plan has been developed in order to preserve the drainage infrastructure that will be constructed and to ensure the drainage and infiltration system continues to function as designed.

- **Before & During Construction Operation and Maintenance Plan:**

- Significant efforts shall be made to only disturb the minimum amount of area necessary to reduce potential erosion and sediment runoff. The control of dust in disturbed areas shall consist of at the least, wetting of disturbed soil or application of calcium chloride as required to minimize airborne dust.
- Compost socks shall be installed per the site plan to prevent sediment from being washed off site.
- All drainage structures shall be protected by filter fabric (or approved equal) to prevent sedimentation from entering the drainage system during the construction period.
- Driveway, pavement and roadway (if required) areas shall be swept to remove sediments prior to introduction into the storm water management system.
- Drainage structures shall be inspected daily and cleaned as necessary of all sedimentation and construction materials during the construction period.
- The contractor is required to contact the engineer of record for drainage system inspection at least 72 hours prior to backfilling in order to receive inspection signoff.
- Construction entrance must be maintained in good condition and crushed stone must be replaced as needed.
- Catch basin inlet protection must be installed per the Detail Plan Sheet. Filter fabric is not an acceptable substitute. The City will notify the contractor to remove catch basin inlet protection in advance of a forecast for heavy rain.

- **Post Construction Operation and Maintenance Plan**

Once the construction is completed, it is the owner's responsibility to maintain the items outlined below to ensure the efficiency and integrity of the drainage systems. The post construction inspections shall take place at a minimum of once during the Spring (March-May), and a minimum of once during the fall (September – November) and after every major storm.

- All drainage structures and pipes shall be inspected on a minimum on a semi-annual basis. These inspections shall take place during the spring and fall months of the year. The inspector shall take note of any debris/sediment/clogging and shall document the condition of each structure. Based upon the observed condition, the inspector shall make recommendations if any further action is required.
- Roof Gutters shall be inspected annually and after major rain events. Remove leaves and sediment as necessary to allow rainwater to flow to system.

- Storm-tech SC-740 Maintenance procedures:
 - Storm-tech system shall be inspected at a minimum on a semi-annual basis, or after a major storm event.
 - Remove lid and cap from inspection ports
 - Using a flashlight and stadia rod, measure the depth of sediment
 - If sediment is above 3” depth, then cleaning is required
 - A licensed professional shall provide cleanout/ flushing services of all sediment and debris via cleanouts and catch basins located per plans.
 - All caps and covers shall be replaced

- Permeable pavers.
 - Normal Maintenance: All permeable pavers surfaces will require standard structural BMP practices for pavement maintenance regarding sweeping procedures. A dry vacuum type sweeper may be used during dry periods to remove encrusted sediment, leaves, grass clippings, etc. Vacuum and sweeper settings may require adjustments to prevent uptake of aggregate from the paver voids and joints. Once a year sweeping is normal unless excessive silts and fines are present, which will require additional monitoring of surface to determine silt build-up and then adjust sweeping schedule to remove accumulated debris. Additional void materials may be added by mechanically or manually sweeping into joints and void areas if necessary. Refer to specifications for type and grade. It is not recommended to utilize pressure washer on open jointed systems. Adjacent properties, pavements, landscaped areas and grasses should be monitored periodically to ensure that run-off from these sources is not depositing silts and debris on the permeable surface. Construction traffic, agricultural areas (no ground cover), beach area, areas subject to high winds that will carry these fine particles, will require more frequent sweeping than urban areas. Settlements in pavement surface, access for utility repair, removal of broken or damaged pavers may be performed by an experienced paver installer. Pavers will be removed, setting bed and void materials will be salvaged and kept separate. Base materials are to be removed if access for utilities is required, Settlement repair depending on depth will be restored with additional base materials if settlement exceeds ½”. Setting bed will be made level and pavers re-instated with void materials replaced in joints and voids with compaction bringing the pavers to flush condition and ready to use.
 - Remedial Maintenance: Application of a commercial vacuum sweeper with water jets, sweeper and vacuum bar attachment will cause evacuation of clogged void materials from joint and void openings. This material may be recycled at a wash site or new aggregate materials may be utilized. (Refer to specifications for size and grade) Jointing materials are to be swept into joints and void openings until full, typically the bottom of chamfer is full.
 - Winter Maintenance: Snow Removal: A four season parking surface, street or plaza may be plowed with truck-mounted blades, power brooms, snow-blowers or manually shoveled. Salt may be used to melt ice, but will affect the quality and pH of water leaving

the permeable paver system and could require additional monitoring and analysis. Sand should not be used as this will accelerate rate of clogging in voids and will require increased frequency of sweeping. Open graded chips may be used for traction when ice is present, but more than likely will require sweeping and removal in the spring.

An INSPECTION LOG example format is shown below on Table B.1. This must be filled every time an inspection or maintenance activity is performed on any element of the stormwater management on site, included but not limited to:

- a) Pretreatment devices.
- b) Vegetation or filter media.
- c) control structures.
- d) Embankments and slopes.
- e) Inlet and outlet channels and structures.
- f) Underground drainage.
- g) Sediment and debris accumulation in storage and forebay areas (including catch basins).
- h) Any nonstructural practices.
- i) Any other item that could affect the proper function of the stormwater management system

*** FINAL IMPORTANT NOTE: PROVISIONS MUST EXIST ALLOWING THE CONCOM OR ITS DESIGNEE TO ENTER THE PROPERTY AT REASONABLE TIMES AND IN A REASONABLE MANNER FOR THE PURPOSE OF INSPECTION.**

Table B.1. Inspection log

STORMWATER MANAGEMENT SYSTEMS INSPECTION LOG					
DATE	NAME OF INSPECTOR	NAME/TYPE OF BMP INSPECTED	CONDITION OF BMP OBSERVED	DESCRIPTION OF NEED FOR MAINTENANCE	OBSERVATIONS OF ANY PHYSICAL CHANGES TO SYSTEM COMPARED TO AS BUILT PLAN