LONG-TERM
OPERATION & MAINTENANCE MANUAL

For the Proposed:

BRIDGE STREET
LANDING

Located At:
5 Arlington Street
Dracut, Massachusetts 01826

Prepared On:
December 18th, 2024

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Prepared For:
Town of Dracut
Planning Board Submission

Prepared By:

SOLLI ENGINEERING

11 Vanderbilt Avenue, Suite 240
Norwood, Massachusetts 02062
T: (781) 352-8491

Prepared For:

Twin Coast Properties, LLC

59 Stiles Road, Suite 201
Salem, New Hampshire 03079
T: (603) 296-4930

TABLE OF CONTENTS

SOLLI ENGINEERING

INTRODUCTION

Solli Engineering (Solli) has prepared this Operations and Maintenance Manual in accordance with Standard 9 of the Massachusetts Stormwater Handbook. The Long-Term Operations and Maintenance (O&M) Manual, filed with the Town of Dracut, shall be implemented at the proposed Bridge Street Landing development at 5 Arlington Street in Dracut, Massachusetts to ensure that the stormwater management functions as designed. The owner possesses the primary responsibility for overseeing and implementing the O&M plan and assigning a Property Manager who will be responsible for the proper operation and maintenance of the stormwater structures. In case of transfer of property ownership, future property owners shall be notified of the presence of the stormwater management system and the requirements for proper implementation of the O&M plan. Included in the O&M plan identifying key components of the stormwater system as well as a log for tracking inspections and maintenance.

The stormwater management system protects and enhances the stormwater runoff water quality through the removal of sediment and pollutants, and source control significantly reduces the number of pollutants entering the system. Preventive maintenance of the system will include a comprehensive source reduction program of regular vacuuming and litter removal, prohibitions on the use of pesticides and maintenance of designated waste and recycling. All inspections and maintenance shall be performed in accordance with the Massachusetts Stormwater Handbook and Stormwater Standards.

DOCUMENTATION

An inspection and maintenance record log and schedule will be kept by the Owner or Property Manager summarizing inspections, maintenance, repairs, and any corrective actions taken. The log will include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, the location where the sediment and debris was disposed after removal will be indicated. Inspection & Maintenance Logs will be kept on file at the on-site Property Management office.

RESPONSIBILITY

The purpose of the Long-Term Operation and Maintenance (O&M) Manual is to ensure inspection of the system, removal of accumulated sediments, oils, and debris and implementation of corrective action and record keeping activities. The below O&M activities associated with the site will be performed by a Contract Operator for the scope of maintenance. The Contract Operator will be a professional engineer or other technical professional with expertise and experience with stormwater management facilities operation and maintenance.

The ongoing responsibility is the Owner, its successors, and assigns. Adequate maintenance is defined in this document as good working conditions. The below contact is directly responsible for operation and maintenance of the stormwater system, financing, and all emergency repairs.

Responsibility for O&M (to be transferred upon sale of property / development):

Contact:	Chris Baker / Twin Coast Properties, LLC
Number:	603-296-4930
Address:	59 Stiles Road, Suite 201
City, State:	Salem, New Hampshire 03079

Owner (Signature) Date

Owner's Name (Printed) Date

MAINTENANCE PROGRAM

The Owner, Property Manager, and maintenance staff will conduct the Operation and Maintenance program set forth in this document. The Owner or Property Manager will ensure that inspections and record keeping are timely and accurate, and that cleaning and maintenance are performed in accordance with the recommended frequency for each stormwater component. Inspection & Maintenance Log Forms shall include the date and the amount of the last significant storm event in excess of 1-inch of rain in a 24-hour period, physical conditions of the structures, depth of sediment in structures, evidence of overtopping or debris blockage and maintenance required of each structure. The following areas, facilities and measures will be inspected by the Owner or Property Manager and maintained as specified below. Identified deficiencies will be corrected. Accumulated sediments and debris will be properly handled and disposed of off-site, in accordance with local, state, and federal guidelines and regulations.

All inspections and maintenance performed shall be in accordance with specifications outlined in the Massachusetts Stormwater Handbook.

STORMWATER INFILTRATION BASIN

The proposed stormwater infiltration basin is designed as an impoundment with seed mixes designed to thrive in wet conditions and the basin has been designed to temporarily attenuate stormwater runoff. To successfully maintain the design parameters the following will be required for upkeep:

Maintenance:

- Inspect basin three (3) months post construction to ensure growth of seed mixes;
- Inspect basin during the both the growing and non-growing seasons. This inspection should occur twice a year for the first three years of construction. Said inspection should be by a trained qualified profession.
- Annual inspection of the basin shall occur inspection of side slopes and riprap. Inspections should be observant of sediment deposits, trash, and debris and if observed they shall be removed and disposed of in an approved manner.
- The proposed landscaping shall be maintained on a monthly basis once established. The grass areas should be mowed to 3 to 4 inches. Steep slopes should be weed whacked.
- Inspection and repair of embankments and spillways.

INVASIVE SPECIES MITIGATION

During annual inspection of the basin the inspector should be cognizant of vegetation growing within the system. If unordinary species, or species not specified on the landscape plan are identified, the civil engineer of record and a professional wetlands scientist shall be notified immediately. Unordinary species could be invasive species and if so, should be removed and disposed of in an appropriate manner under the direction of a wetland's scientist or botanist.

HYDRODYNAMIC SEPARATOR UNIT

Hydrodynamic separators protect the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the separator. The units will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the structures will no longer be able to store removed sediment and oil.

The stormwater management system proposes to incorporate a Contech water quality unit. According to the Contech Guide Operation, Design, Performance and Maintenance, inspections shall take place at regular intervals to ensure optimum performance. At a minimum, inspections shall be performed twice a year (Ex.: spring & fall) however more frequent inspections may be required depending on several things, one being severity of winter (excessive sanding/salting). The frequency of cleanout is determined in the field after installation. During the first year of operation, the units should be inspected regularly and then after, every six months (twice a year) to determine the rate of sediment and floatables accumulation. A simple probe can be used to determine the level of accumulated solids stored in the sump. This information should be recorded in the inspection logs. On the log it is important to note the date, location of structure (or identification), estimated volume of floatables, and depth of sediment. Securely replace the top of the structure and take down any safety equipment. Then notify the engineer of record for any irregularities in the structure's performance if any. The systems should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. Sediment and debris removal can be done manually or with approved sumpvac (or equal).

For more information regarding the CDS Guide Operation, Design, Performance and Maintenance visit:
https://www.conteches.com/Portals/0/Documents/Design%20Guides/CDSDesign%20Guide.pdf?ver=2018-05-16-083621-907

DEEP SUMP CATCH BASIN

Deep sump 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 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 discharge.
- An attached hooded outlet, that prevents floatables and sediment from entering the storm sewer pipes.

At a minimum, deep sump catch basins and drain manholes shall be inspected quarterly (four times per year). Ideally, inspections should be conducted in the fall, at the end of the leaf-drop, in the spring following snowmelt and following heavy rain falls, defined as a storm event exceeding 1-inch of rain fall within a twenty-four-hour period to verify that inlet openings are not clogged by debris. 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. Structures shall be inspected for the buildup of sediments, oils, 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 detail, to prevent the storm sewer system from failing.

If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other methods and disposed in conformance with applicable state and federal regulations.

The catch basins shall be cleaned by means of handheld shovels, scallop shovel and/or vacuum truck. A vacuum truck may be required instead of shovels to avoid damage to the structure. The grate opening shall be clear of any foreign or lodged object. If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials or other methods 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 sumps in the late fall. Collected sediment, debris and hydrocarbons will be properly disposed of per local, state, and federal requirements.

Damaged Hoods should be replaced when noted by inspection.

RIPRAP APRON OUTLET PROTECTION

All riprap aprons are to be inspected at a minimum annually for accumulation of sediment and debris and for any signs of erosion within the outlet, riprap apron, or down-slope of the apron. Upon inspection, if any accumulated debris or sediment is observed it should be removed. Snow should not be stored on or down gradient of the riprap aprons. During the inspection, if the apron appears to be degraded or if any erosion is observed the apron shall be re-graded or the riprap shall be replaced, as warranted by inspection.

SNOW REMOVAL

Snow accumulations removed from the driveway, parking areas and other impervious surfaces should be placed in appropriately designated areas. Designated snow storage areas are depicted on the Landscape Plan (Sheet 2.61) within the Permitting Plan Set. Excess snow should be removed from the site and properly disposed of in an approved snow disposal facility. Care must be exercised not to deposit snow in the following areas: on top of storm drain catch basins, in natural depressions and where sand and debris can directly get into the watercourse or within a detention / infiltration basin.

PARKING LOT MAINTENANCE

At a minimum, the proposed parking areas shall be swept annually, in the months of March or April (after the last significant snowfall). Parking lot sweeping may be performed by mechanical sweeping equipment or vacuum equipment. All sediment collected during the sweeping operations shall be removed from the Site and disposed of at an appropriate off-site disposal location.

EMERGENCY SPILL CONTAINMENT

The Owner, along with the on-site Property Manager is responsible for educating staff and informing tenants of the environmental benefits associated with the use of pavement at the site. Staff must be trained, and tenants informed via the community website as to the proper spill prevention control and response procedures should a spill occur on the pavement surface. Proper spill control products, such as a granular dry absorbent, must be kept on-site at the property management office in a clean, dry chemical and corrosion resistant container.

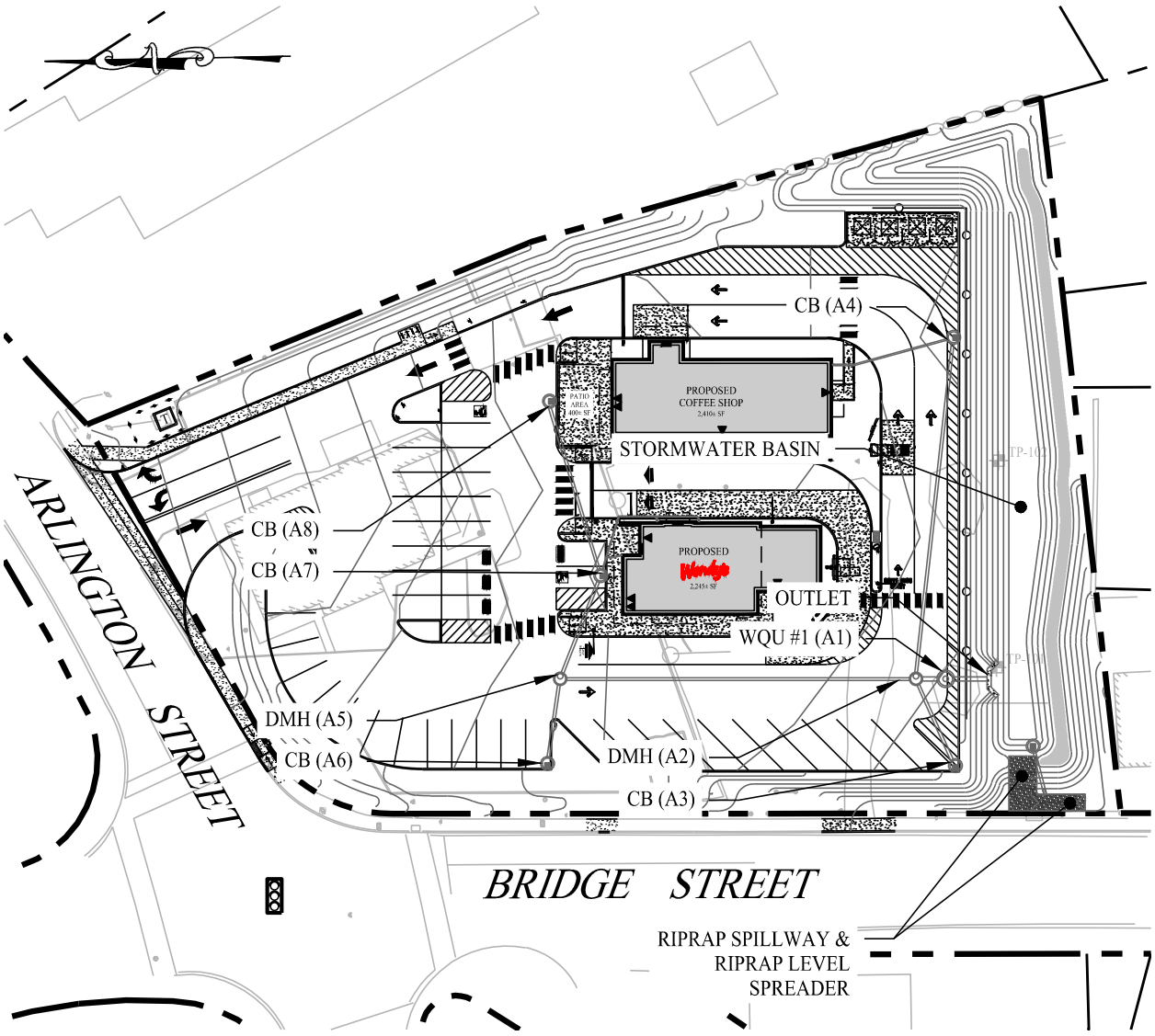
A spill of greater than 10 gallons of oil or a spill of any quantity that has reached a surface water, into a sewer, storm drain, ditch, or culvert leading to a surface water, is immediately reported to one or more municipal, state, or federal authority. In the event of a hazardous waste spill on-site, the following protocol should be followed.

- If it is safe to do so, maintenance staff or tenants detecting an oil spill should immediately stop the release and use available materials to prevent the spread of oil.
- If there is a potentially flammable, toxic, or explosive condition, evacuate the vicinity of the spill.
- If it is believed that a reportable or dangerous condition exists, immediately call your local Fire Department to notify them of the release.
- If it is believed that a reportable condition exists, immediately call the Massachusetts Department of Environmental Protection (DEP) to notify them of the release.
- Call the DEP Emergency Response Section toll free statewide number, 1-888-304-1133. Be prepared to provide the following information to the DEP and the Fire Department:
    - Identity of the caller
    - Contact phone number Location of the spill
    - Type of product spilled
    - Approximate quantity or product spilled Extent of actual and/or potential water pollution
    - Date and time of spill
    - Cause of spill
    - Contact a Licensed Site Professional (LSP) to assist in further handling of the material(s) and DEP.

ESTIMATED OPERATIONS & MAINTENANCE BUDGET

BMP Structure / Service	Estimated Maintenance Cost*	Occurrence *	Total Estimated Annual Maintenance Cost*
BMP Inspectional Services	$1,250*	Quarterly*	$5,000*
Snow Management	$10,000*	Annually*	$10,000*
Pavement Sweeping	$750*	Annually*	$750*
Landscaping	$300*	Bi-Weekly* (Spring through Fall)	$4,500*
		Total	**$20,250***

*The maintenance costs, occurrence of maintenance, and estimated annual maintenance costs are an estimated and this budget was prepared in compliance with #6 within Standard 9 of the MassDEP Stormwater Handbook. This budget is subject to change at the discretion of the Owner & Property Maintenance entity without notice to the Town of Dracut.



NOTES

1. THIS PLAN IS FOR OPERATION & MAINTENANCE REFERENCE ONLY.
2. REFER TO THE GRADING & DRAINAGE PLAN (SHEET 2.21) OF THE PERMITTING PLAN SET FOR THE BRIDGE STREET LANDING PROJECT FOR DETAILED INFORMATION PERTAINING TO THE PROPOSED IMPROVEMENTS.
3. ALL STRUCTURES AND SYSTEMS IDENTIFIED ON THIS PLAN ARE SUBJECT TO THE APPROVED LONG-TERM OPERATION & MAINTENANCE PLAN ASSOCIATED WITH THIS PROJECT.

STORMWATER STRUCTURE LIST

1. STORMWATER BASIN
2. RIPRAP SPILLWAY
3. RIPRAP LEVEL SPREADER
4. OUTLET
5. WQU #1 (A1)
6. DMH (A2)
7. CB (A3)
8. CB (A4)
9. DMH (A5)
10. CB (A6)
11. CB (A7)
12. CB (A8)

ABBREVIATIONS

CB	CATCH BASIN
DMH	DRAINAGE MANHOLE
WQU	WATER QUALITY UNIT

60 0 30 60

SOLLI ENGINEERING
11 Vanderbilt Ave, Norwood, MA 02062
T: (781) 352-8491 | F: (203) 880-9695

STORMWATER MANAGEMENT OPERATION & MAINTENANCE PLAN

BRIDGE STREET LANDING
5 ARLINGTON STREET
DRACUT, MASSACHUSETTS

Project #:	22203701
Plan Date:	03/27/25
Scale:	1" = 60'
Figure:	1

	Title:	Inpsection #:
	Location:	Project #:
		Field Date:

INSPECTION & MAINTENANCE LOG

Name(s) & Title(s) of Individual(s) performing inspection: _____

Week of Inspection: _____

Type of Inspection:

☐ Monthly ☐ Quarterly ☐ Biannually ☐ Annually ☐ Emergency

Weather (during inspection)

☐ Clear ☐ Cloudy ☐ Rain ☐ Snow ☐ Sunny ☐ Windy ☐ Fog

Other:

Time of Inspection:		**Temp. during inspection:**	°F
Start Time:	**a.m.** **End Time:** **a.m.**	**Precip. since last inspection:**	"

Site Specific BMP's

#	BMP	Maintenance Required		Corrective Action Needed & Notes
1		☐ Yes	☐ No	
2		☐ Yes	☐ No	
3		☐ Yes	☐ No	
4		☐ Yes	☐ No	
5		☐ Yes	☐ No	
6		☐ Yes	☐ No	
7		☐ Yes	☐ No	
8		☐ Yes	☐ No	
9		☐ Yes	☐ No	
10		☐ Yes	☐ No	

Overall Site Maintenance Concerns

BMP/Activity	Maintenance Required		Corrective Action Needed & Notes
Are discharge points & receiving waters free of any sediment deposits?	☐ Yes	☐ No	
Are storm drain inlets properly working?	☐ Yes	☐ No	
Is trash/litter from site areas collected & placed in covered dumpsters?	☐ Yes	☐ No	
What is the level of sediment within infiltration basin?	☐ Yes	☐ No	
What is the level of sediment within the hydrodynamic separators?	☐ Yes	☐ No	
What is the levels of oil/grit/trash within the infiltration basin or hydrodynamic separators?	☐ Yes	☐ No	
(Other)	☐ Yes	☐ No	

Inspector(s) Signature(s): _____