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Holliston Conservation Commission
Town Hall
Concord Street
Holliston, MA 01746
Via email-

November 21, 2023

Re 156-165 Lowland Street NOI

Dear Members of the Commission:

Attached please find another copy of the Stormwater Report, a copy of the Planning Boards Consultant's final peer review, and a copy of the Landscape Frameworks Plan.

In addition, below are responses to outstanding questions relative to this application:

- This project is solely for a contractor's garage on a portion of the site as indicated.
- As noted in the cover narrative of the NOI application this site has Orders of Conditions dating back to 1978, and 2012, referencing the Commissions acknowledgement of on-going activities.
- This application does not include any work relative to materials processing.
- The term "disturbed" used in the application relates directly to 310 CMR 10.58 as an existing surface condition of the land (ie not natural).
- This project does not have any relation whatsoever to the RDA currently being 'continued.' We would direct you to the Building Inspector for further clarification.
- The 2012 Order of Conditions obtained a Certificate of Compliance on or about February 2019 (see meeting minuets attached).
- The berm is said to be constructed of loam.

Very truly,


George Connors

Encls

Cc's

STORMWATER REPORT

157-165 Lowland Street
Holliston, MA

October 14, 2022

PREPARED BY:
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TABLE OF CONTENTS

1. Stormwater Narrative
2. Locus Mapping
3. Checklist for Stormwater Report
4. MassDEP Stormwater Standards and Supporting Documentation
5. Drainage system sizing summary
6. Hydrologic Calculations
7. Water Quality Structure (Stormceptor) sizing data
8. Stormwater Operations and Maintenance Plan and Long term Pollution Prevention Program

Project Summary

The purpose of this analysis is to summarize the design calculations, and design a stormwater management system in accordance with the Mass Department of Environmental Protection Stormwater Standards.

Site Description

Location: 157-165 Lowland Street

Assessors Map / Parcel: Map 4 Parcel 34 and Map 3 Parcel 16

Project Area: Approximately 7.1 acres

Zoning District: Industrial and Groundwater Protection Overlay District (Zone II)

Existing Site Conditions: The site is currently occupied as a material yard with multiple structures toward the rear of the site. The remainder of the yard includes stockpile areas and a compacted gravel surface.

Site Topography: The site is generally flat with the exception of the stockpile areas and screening berm.

Wetland Resource Areas: Wetland resource areas exist along the westerly side of the site associated with a perennial stream (Bogastow Brook). The stream would have the associated resources areas of Bank, Riverfront Area, and Bordering Land Subject to Flooding (BLSF). The limits of the flood plain and BLSF have been delineated as the 157 contour elevation based upon the most recent FEMA flood insurance rate mapping and flood insurance study.

Soil Mapping: The Natural Resource Conservation Service has mapped the soils on site as Udorthents, which is currently developed land. This soil classification does not have a soil group rating or description. Surrounding areas are Merrimac and Hinckley soils, which are sandy well drained soils within soil group A. The USGS mapping also shows this area as a previous gravel pit.

Soil testing has been performed throughout the site, and the results have shown a deep layer of fill ranging from 86 inches to greater than 132 inches. When soils were encountered below the fill layer the texture ranged from sandy loam to medium sand.

Proposed Project Summary

Proposed Use: The proposed project includes the construction of a 7,200 square foot contractor garage building, 180'x260' paved pad around the building, new septic system, utility connections, a stormwater management system, and related site work.

The project will create 46,700 square feet of impervious surfaces for the new building and paved areas. Stormwater runoff from all of the new paved areas and roof areas will be collected and conveyed to a proposed infiltration basin for treatment and recharge, the basin has been sized to fully infiltrate the 100 year storm event. Pretreatment has been provided through proprietary separators (Stormceptors). The overall system exceeds MassDEP standards for groundwater recharge and treatment. The remaining portions of the site will remain to match the current existing conditions.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

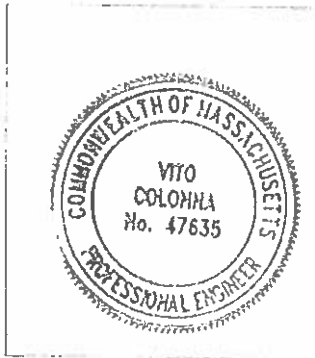
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



[Handwritten Signature]
Signature and Date 2/19/12

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



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Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe):

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



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Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waived requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 60% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



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Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
- The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



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Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The 1/2" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted *prior* to the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does *not* cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has *not* been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- Limited Project
- Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- Bike Path and/or Foot Path
- Redevelopment Project
- Redevelopment portion of mix of new and redevelopment.

- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-5 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has *not* been included in the Stormwater Report but will be submitted *before* land disturbance begins.
- The project is *not* covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas; - Site Plan
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is *not* the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted *prior* to the discharge of any stormwater to post-construction BMPs.

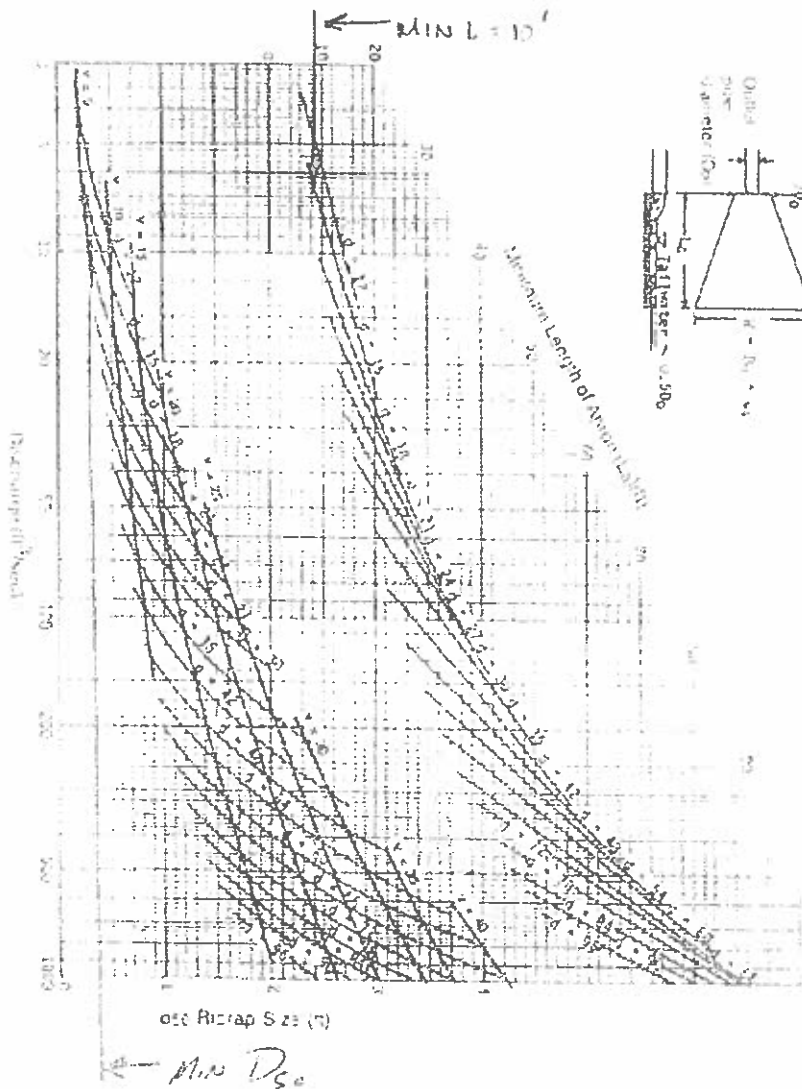
MA D.E.P. STORMWATER STANDARDS

Standard 1: No New Untreated Discharges

There are no new untreated discharges to any wetland resource area or related buffer zones. All stormwater from the current development portion of the site will be fully contained through the 100-year storm event.

Pipe Point Discharge Design:

- Stormwater Discharge Velocity:
15° FE: $Q_{FULL FLOW} = 6.3 \text{ cfs} / V_{FULL FLOW} = 5.1 \text{ fps}$ (15" HDPE @ 0.8% slope)
- Riprap sizing: Use: Riprap Size = $4 \times D_3$; Minimum... Use 6-12"
Length = 10 feet



Standard 2: Peak Rate Attenuation

The proposed project has been design to fully contain and infiltrate the entire development area through the 100 year storm event. A large infiltration basin has been proposed along the rear of the proposed building and parking area. This design will control the rate of runoff leaving the site and provide an increase the groundwater recharge.

The pre- and post-development stormwater runoff has been analyzed using HydroCAD 9.10, which is a stormwater modeling computer program utilizing a collection of techniques for the generation and routing of hydrographs, including Soil Conservation Service (SCS) Technical Release No. 20 (TR-20) and SCS Technical Release 55 (TR-55), *Urban Hydrology for Small Watersheds*. Rainfall intensities were determined from the most recent NOAA Atlas 14 data.

Runoff would have the potential to leave the site toward the stream to the west of the site. However, all of the developed areas will be fully contained on-site with zero runoff up to, and including, the 100-year storm event.

Analysis Point 1 – Flow to the West from development area

Storm Event	Peak Rate of Runoff	Volume of Runoff
	Proposed	Proposed
2-year (3.36 inches)	0.0 cfs	0.0 ac-ft
10-year (5.25 inches)	0.0 cfs	0.0 ac-ft
100-year (8.26 inches)	0.0 cfs	0.0 ac-ft

Standard 3: Stormwater Recharge

The proposed site plan has not proposed any increase to the impervious surfaces. Therefore, recharge is not required for the proposed project. Although not required, recharge has been provided through the proposed stormwater basin.

Recharge Volume Summary:

Post development increased impervious area = 46,700 S.F. (net reduction)

Recharge volume required = 46,700 s.f. x 0.6 inches / 12 = 2,335

Recharge volume proposed = 29,500 C.F. volume proposed (up to overflow spillway)

Soil Conditions:

Soil mapping has shown the work area as Udorthents, which is developed area without a Hydrologic Soil Group. Soil testing has been performed throughout the site, and the results have shown a deep layer of fill ranging from 86 inches to greater than 132 inches. When soils were encountered below the fill layer the texture ranged from sandy loam closer to Lowland Street to a loamy sand and medium in the rear portions of the site. Areas nearest to the septic system and infiltration basin included fine sand and medium sand. All fill below the limits of the infiltration basin would be removed and replaced with clean free draining fill as noted on the plans.

Groundwater was encountered with evidence of seasonal high groundwater (mottles) in the infiltration basin area at elevation 151.8. This would provide a minimum four (4) foot separation from the bottom of basin.

Draw down Time (maximum 72 hours allowable):

$(WQV) / (\text{infiltration rate} \times \text{bottom area}) = \text{drawdown time}$

$(29,500 \text{ cubic feet WQV}) / (2.42 \text{ in/hr} \times 1/12 \times 6,400 \text{ sq. ft. bottom area}) = \underline{23 \text{ hours}}$

2.42 in/hr = rawles rate for underlying native soil

Mounding Analysis

The bottom of infiltration basin has been maintained at least 4-feet above estimated seasonal high groundwater. In accordance with the Massachusetts Stormwater Handbook a mounding analysis would not be required.

Standard 4: Water Quality

All new impervious surfaces have been collected and treated through proprietary separators and an infiltration basin designed to meet MassDEP's Stormwater Handbook.

1 BMP	2 TSS removal	3 Starting TSS (5 from previous BMP)	4 TSS Removal (2 * 3)	5 Remaining TSS (3 - 4)
Stormceptor	83%	100%	83%	20%
Infiltration Basin	80%	17%	14%	3%
Total TSS Removal =			97%	

1. Infiltration Basin:

Required WQV: (1 inch) x (Impervious Area 46,700 s f) = 3,892 C.F.

Provided WQV: Available volume below spillway = 29,500 C.F.

Forebay sizing required = 0.1 inch x 46,700 s.f. = 390 c.f.

forebay sizing proposed = 400 c.f

Pretreatment prior to infiltration basin = >80% TSS removal
(minimum 44% TSS required).

2. Stormceptor = 83% TSS Removal

Water Quality Flow Rate Conversion

$$WQF = qu \times A \times WQV = 0.7 \text{ cfs}$$

Where

$$qu = 835 \text{ csm/in}$$

$$A = \text{impervious area} = 23,800 \text{ s.f. or } 0.00086 \text{ sq. mi}$$

$$WQV = 1\text{-inch}$$

Standard 5: Land uses with higher pollutant Loads

The proposed use may include a fleet of vehicles. Appropriate BMP's and pretreatment have been provided. Water Quality Structures have been proposed to provide enhanced oil/gas separation and containment.

Standard 6: Critical Areas

The project is located within a MassDEP approved Zone II. The infiltration basin has been sized for a 1-inch WQV and appropriate pretreatment BMP's have also been included.

Standard 7: Redevelopment

The proposed project may qualify as a redevelopment project. However, all of the MassDEP standards have been met.

Standard 8: Construction Period Controls

Erosion controls have been provided on the plans including perimeter erosion barriers down-gradient of all proposed work, and sedimentation and erosion control notes are provided on the plans. A project Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the project and is attached with this report.

Standard 9: Operation and Maintenance Plan

The owner will be responsible for all future operation and maintenance of the proposed stormwater management system. A recommended Operation and Maintenance Plan has been provided with this report.

Standard 10: Illicit Discharges

Based upon site observations and review of the design plans, no illicit discharges would be allowed or proposed on-site. The proposed building would be serviced by a new on-site septic system, and Illicit discharges are prohibited.

STORMWATER DRAINAGE SYSTEM DESIGN

The street drainage system has been designed from calculations based upon the 25-year design storm to ensure capacity to convey stormwater.

Storm intensities were determined from exhibit 8-14 *Intensity – Duration – Frequency Curve for Worcester, MA* from the MassHighway Design Manual. The resulting analysis was performed using the Rational Method of determining peak storm flows. All storm sewer pipe sizes were determined using Manning's Equation for pipes flowing full.

The following table presents the hydraulic calculations performed for sizing the site drainage system. The structure references refer to those as shown on the site plan submitted with this report.

WATER QUALITY STRUCTURE (STORMCEPTOR) SIZING DATA



Stormceptor Design Summary

PCSWMM for Stormceptor

Project Information

Date	10/14/2022
Project Name	Lowland Street
Project Number	N/A
Location	Holliston

Designer Information

Company	N/A
Contact	N/A

Notes

STC-2

Drainage Area

Total Area (ac)	0.54
Imperviousness (%)	100

The Stormceptor System model STC 450i achieves the water quality objective removing 83% TSS for a Fine (organics, silts and sand) particle size distribution providing continuous positive treatment for a stormwater quality flow rate of 0.7 cfs.

Rainfall

Name	WORCESTER WSO AP
State	MA
ID	9923
Years of Records	1948 to 2005
Latitude	42°16'2"N
Longitude	71°52'34"W

Water Quality Objective

TSS Removal (%)	44
WQ Flow Rate (cfs)	0.7

Upstream Storage

Storage (ac-ft)	Discharge (cfs)
0	0

Stormceptor Sizing Summary

Stormceptor Model	TSS Removal %
STC 450i	83
STC 900	89
STC 1200	89
STC 1800	90
STC 2400	92
STC 3600	92
STC 4800	94
STC 6000	94
STC 7200	95
STC 11000	97
STC 13000	97
STC 15000	97



Stormceptor Design Summary

PCSWMM for Stormceptor

Project Information

Date	10/14/2022
Project Name	Lowland Street
Project Number	N/A
Location	Holliston

Designer Information

Company	N/A
Contact	N/A

Notes

STC-1

Drainage Area

Total Area (ac)	0.7
Imperviousness (%)	75

The Stormceptor System model STC 4500 achieves the water quality objective removing 84% TSS for a Fine (organics, silt and sand) particle size distribution providing continuous positive treatment for a stormwater quality flow rate of 0.7 cfs.

Rainfall

Name	WORCESTER WSO AP
State	MA
ID	9923
Years of Records	1948 to 2005
Latitude	42°16'2"N
Longitude	71°52'34"W

Water Quality Objective

TSS Removal (%)	44
WQ Flow Rate (cfs)	0.7

Upstream Storage

Storage (ac-ft)	Discharge (cfs)
0	0

Stormceptor Sizing Summary

Stormceptor Model	TSS Removal
	%
STC 4500	84
STC 900	90
STC 1200	90
STC 1800	90
STC 2400	92
STC 3600	93
STC 4800	94
STC 6000	94
STC 7200	95
STC 11000	97
STC 13000	97
STC 16000	98

3.3. Double Wall Containment

The Stormceptor System was conceived as a pollution identifier to assist with identifying illicit discharges. The fiberglass insert has a continuous skirt that lines the concrete barrel wall for a depth of 18 inches (457 mm) that provides double wall containment for hydrocarbons storage. This protective barrier ensures that toxic floatables do not migrate through the concrete wall into the surrounding soils.

4. Stormceptor Product Line

4.1. Stormceptor Models

A summary of Stormceptor models and capacities are listed in Table 1.

Table 1. Stormceptor Models

Stormceptor Model	Total Storage Volume U.S. Gal (L)	Hydrocarbon Storage Capacity U.S. Gal (L)	Maximum Sediment Capacity ft ³ (L)
STC 450i	470 (1,780)	86 (330)	46 (1,302)
STC 900	952 (3,600)	251 (950)	89 (2,520)
STC 1200	1,234 (4,670)	251 (950)	127 (3,596)
STC 1800	1,833 (6,940)	251 (950)	207 (5,861)
STC 2400	2,462 (9,320)	840 (3,180)	205 (5,805)
STC 3600	3,715 (1,406)	840 (3,180)	373 (10,562)
STC 4800	5,059 (1,950)	909 (3,440)	543 (15,376)
STC 6000	6,136 (23,230)	909 (3,440)	687 (19,453)
STC 7200	7,420 (28,090)	1,059 (4,010)	839 (23,757)
STC 11000	11,194 (42,370)	2,797 (10, 590)	1,086 (30,752)
STC 13000	13,348 (50,530)	2,797 (10, 590)	1,374 (38,907)
STC 16000	15,918 (60,260)	3,055 (11, 560)	1,677 (47,487)

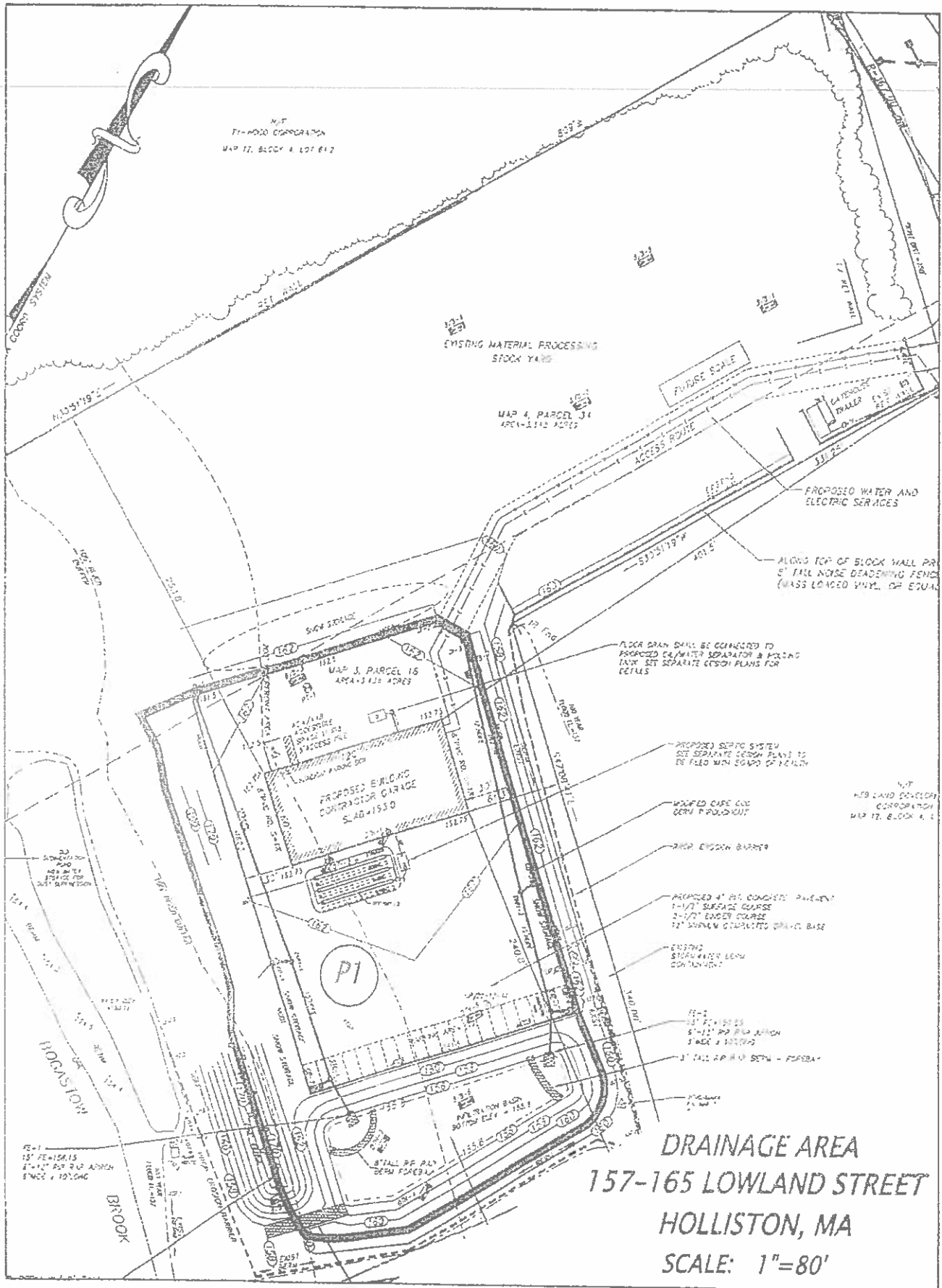
NOTE: Storage volumes may vary slightly from region to region. For detailed information, contact your local Stormceptor representative.

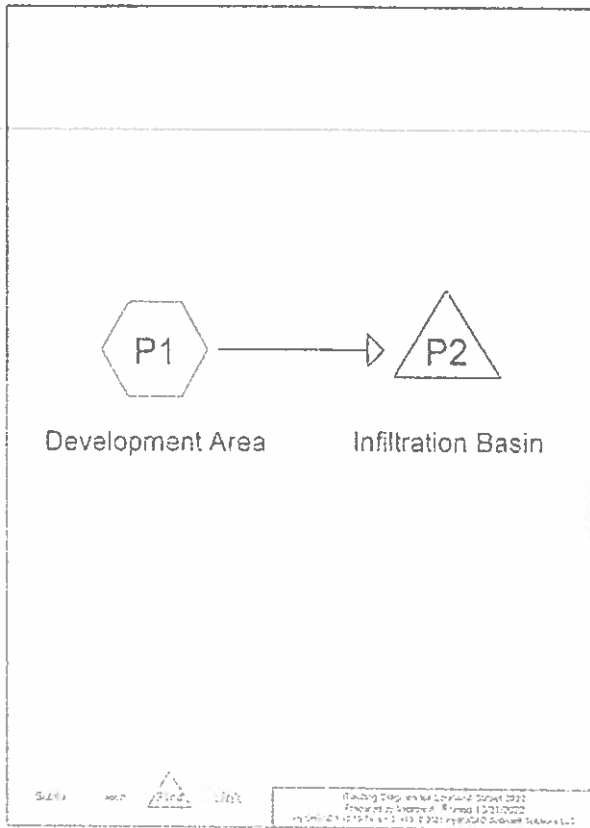
4.2. Inline Stormceptor

The Inline Stormceptor, Figure 1, is the standard design for most stormwater treatment applications. The patented Stormceptor design allows the Inline unit to maintain continuous positive treatment of total suspended solids (TSS) year-round, regardless of flow rate. The Inline Stormceptor is composed of a precast concrete tank with a fiberglass insert situated at the invert of the storm sewer pipe, creating an upper chamber above the insert and a lower chamber below the insert.

HYDROCAD CALCULATIONS

2-, 10-, and 100-Year Storm
Calculation Sheets





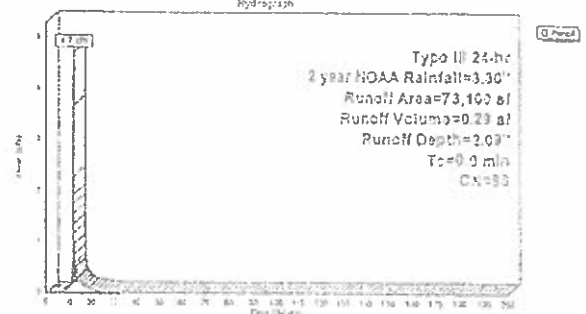
Summary for Subcatchment P1: Development Area

Runoff = 4.7 cfs @ 12.00 hrs. Volume = 0.23 af. Depth = 2.09"
 Routed to Pond P2 Infiltration Basin

Runoff by SCS TR-20 method, UH+SCS, Weight=CN, Time Span=0.00-200.00 hrs. at 0.25 hrs
 Type III 24 hr 2 year NOAA Rainfall=3.30"

Area (sf)	CN	Description
39,000	58	Paved parking
7,250	83	Roofs
27,750	61	75% Grass cover, Good, HSG B
8,250	51	soil bed/stm
78,100	65	Weighted Average
29,700	23	30% Paved Area
52,400	71	85% Impervious Area

Subcatchment P1: Development Area



Summary for Pond P2: Infiltration Basin

Inflow Area = 1,573.90 78.80% Impervious, Inflow Depth = 2.09" for 2 year NOAA event
 Inflow = 4.7 cfs @ 12.00 hrs. Volume = 0.23 af
 Outflow = 0.8 cfs @ 12.00 hrs. Volume = 0.04 af. Depth = 0.29"
 Detention = 0.8 cfs @ 12.00 hrs. Volume = 0.04 af
 Retention = 0.0 cfs @ 0.00 hrs. Volume = 0.00 af

Runoff by SCS TR-20 method, Time Span=0.00-200.00 hrs. at 0.25 hrs
 Peak Elev=156.41 @ 12.00 hrs. Surf Area=5,064 sf. Storage=4,599 sf

Pipe flow distance from 75.3 min calculated for 0.29 af (100% of inflow)
 Catchment Mass det. time = 3.9 min @ 10.3 ft / 2.6 ft/s

Volume (af)	Area (sf)	Storage (sf)	Depth (ft)
0	0	0	0
0.04	5,064	4,599	0.29
0.08	10,128	9,198	0.58
0.12	15,192	13,797	0.87
0.16	20,256	18,396	1.16
0.20	25,320	22,995	1.45
0.24	30,384	27,594	1.74
0.28	35,448	32,193	2.03
0.32	40,512	36,792	2.32
0.36	45,576	41,391	2.61
0.40	50,640	45,990	2.90
0.44	55,704	50,589	3.19
0.48	60,768	55,188	3.48
0.52	65,832	59,787	3.77
0.56	70,896	64,386	4.06
0.60	75,960	68,985	4.35
0.64	81,024	73,584	4.64
0.68	86,088	78,183	4.93
0.72	91,152	82,782	5.22
0.76	96,216	87,381	5.51
0.80	101,280	91,980	5.80
0.84	106,344	96,579	6.09
0.88	111,408	101,178	6.38
0.92	116,472	105,777	6.67
0.96	121,536	110,376	6.96
1.00	126,600	114,975	7.25

Order	Basin	Area (sf)	Depth (ft)	Storage (sf)	Volume (af)
01	Detention	1573.90	2.09	4599	0.10
02	Primary	1573.90	2.09	4599	0.10

Secondary Outlet: Max=0.5 cfs @ 12.00 hrs. (156.41) - (Peak Discharge)
 1-16 Extension (Circle) 3.5 ft

Primary Outlet: Max=0.3 cfs @ 12.00 hrs. (156.41) - (Peak Discharge)
 1-16 Round Grated Rectangular: 18" x 24" (Circle) 3.5 ft

Pond P2: Infiltration Basin



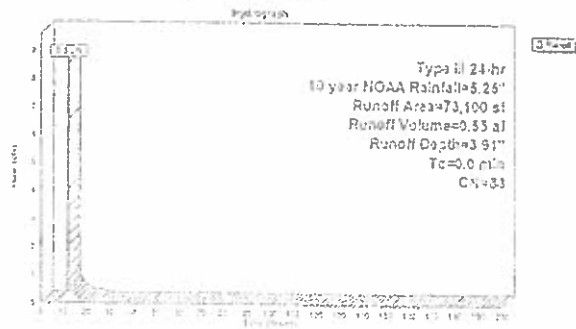
Summary for Subcatchment P1: Development Area

Runoff = 8.8 cfs @ 12.00 hrs, Volume = 0.55 af, Depth = 3.91"
 Routed to Pond P2 Infiltration Basin

Routed by SCS TR-20 method, Use SCS Weighted-CN, Time Span = 0.00-200.00 hrs, cr = 0.05 hrs
 Type = 24-hr 10-year NOAA Rainfall=5.25"

Area (sf)	CN	Description
13,000	98	Paved parking
7,200	98	Roofs
20,700	81	>75% Grass cover: Good, HSG B
8,200	58	pond bottom
73,100	83	Weighted Average
20,700		23.3% Pervious Area
52,400		71.6% Impervious Area

Subcatchment P1: Development Area



Development Area Infiltration Basin

Summary for Pond P2: Infiltration Basin

Inflow Area = 1,678 sf, 71.50 cfs @ peak, Inflow Depth = 0.97' for 10-year NOAA event
 Inflow = 5.8 cfs @ 12.00 hrs, Volume = 0.02 af
 Outflow = 0.5 cfs @ 12.00 hrs, Volume = 0.00 af, Pervious Area = 100% of Inflow
 Outflow = 0.5 cfs @ 12.00 hrs, Volume = 0.01 af
 Primary = 0.5 cfs @ 4.00 hrs, Volume = 0.00 af

Routed by Routing method, Time Span = 0.00-200.00 hrs, cr = 0.05 hrs
 Peak Out = 157.06 cfs @ 10.00 hrs, Surf Area = 8,812 sf, Storage = 10,105 cf

Avg Flow infiltration over 120 min calculated for 0.55 af (100% of Inflow)
 Calculated Inflow over 120 min (0.97' x 71,500 sf)

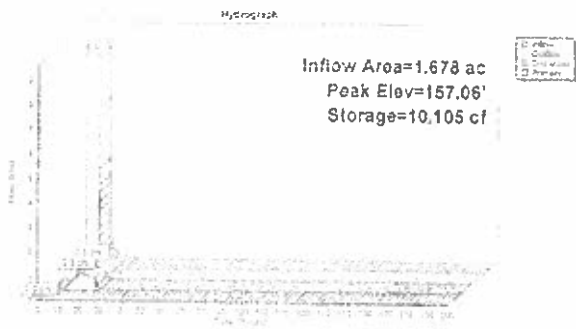
Volume	Inflow	Outflow	Storage	Storage Description
af	101.80	11.495 af	11.495 af	Custom Storage Data (Total of User-Specified)
Elevation (ft)	Surf Area (sf)	Inflow (cfs)	Outflow (cfs)	Net Inflow (cfs)
123.00	9,400	0	0	9,400
130.00	1,600	1.25	1.23	0.02
134.00	13,000	17.66	11.01	6.65
137.00	17,500	22.81	11.01	11.80

Curve	Points	Inflow	Outflow
1	Control	157.06	0.00
2	Primary	157.06	0.50

Calculated Outflow = 0.5 cfs @ 12.00 hrs, PWH=10.00, after Dead Time
 Infiltration = 0.00 cfs @ 0.00 hrs

Primary Outflow Area = 0.5 cfs @ 4.00 hrs, PWH=4.00, after Dead Time
 Infiltration = 0.00 cfs @ 0.00 hrs

Pond P2: Infiltration Basin



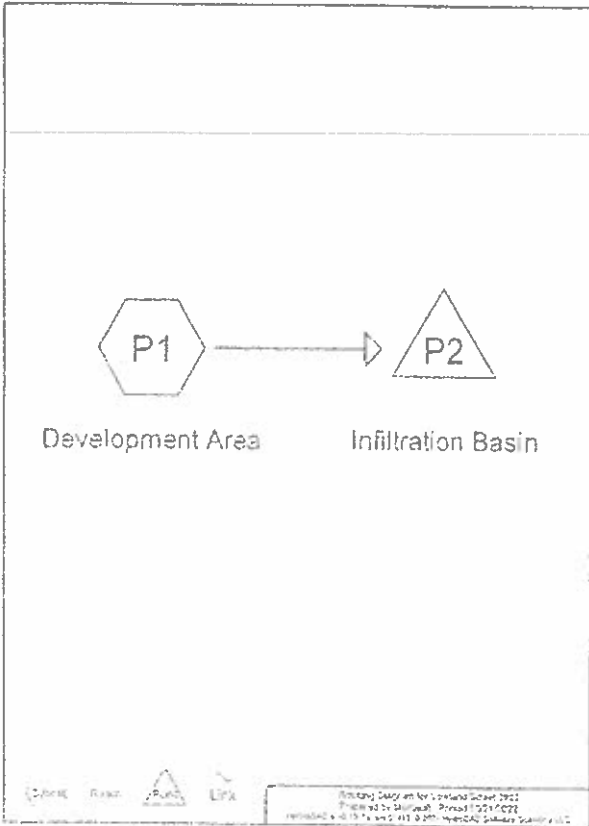
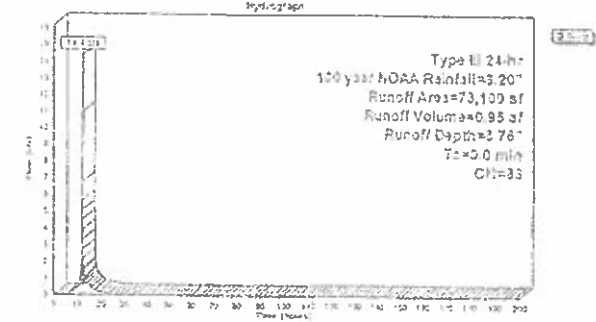
Summary for Subcatchment P1: Development Area

Runoff = 14.4 cfs @ 12.06 hrs Volume = 0.95 ac Depth = 8.76"
 Routed to Pond P2 Infiltration Basin

Runoff by SCS TR 20 method, Unit=CS, Weighted-CN, Time Span=0.20-200.00 hrs, cr=0.05 hrs
 Type III 24-hr 100-year NOAA Rainfall=8.20"

Area (sf)	CN	Description
13,200	98	Paved parking
7,200	98	Roofs
20,750	81	>75% Grass cover, Good HSG B
8,200	88	pond bottom
73,150	83	Weighted Average
20,700		20.32% Pervious Area
52,450		71.68% Impervious Area

Subcatchment P1: Development Area



Summary for Pond P2: Infiltration Basin

Inflow Area = 1,678 ac 71.68% Impervious Inflow Depth = 8.76" for 100-year NOAA Rainfall
 Inflow = 14.4 cfs @ 12.06 hrs Volume = 0.95 ac
 Outflow = 0.8 cfs @ 13.45 hrs Volume = 0.95 ac Atank Size: 19,744 cfs
 Overflow = 0.8 cfs @ 13.45 hrs Volume = 0.95 ac
 Retention = 0.0 cfs @ 0.00 hrs Volume = 0.00 ac

Routing by Storage method, Time Span=0.20-200.00 hrs, cr=0.05 hrs
 Peak Eff=158.08 @ 13.45 hrs Out Area=10,000 sf Storage=19,744 cf

Peak Flow rate (cfs) = 21.8 Area (ac) = 100.00 @ 0.25 ac (100% at 100%)
 Center of Mass per Area = 2.45 Hours (1.0242 - 375.8)

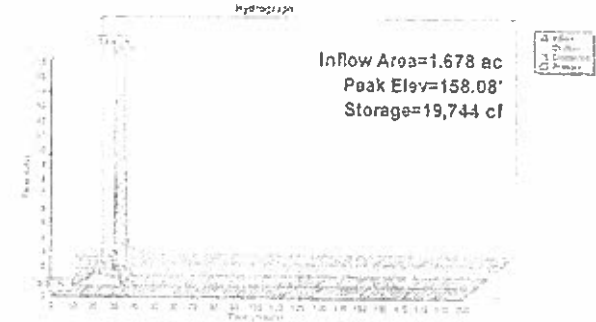
Volume (ac)	Time (hr)	Avail Storage (ac)	Storage Occupancy (%)	
0.00	0.00	47,493.00	Custom Basin Data (Custom Basin Data)	
Flow rate (cfs)	Storage (ac)	Inflow (cfs)	Cum. Inflow (ac-hrs)	Wt. Avg. (hr)
158.08	1.678	0	0	0.00
158.08	7.600	1.254	1.254	7.601
153.00	12.000	17.915	19.169	11.051
132.00	12.000	22.150	41.319	12.738

Outlet Points	Flow (cfs)	Outlet Points
01 Outlet (P2)	158.08	0.425 (Infl. Basin) and 0.425 (Infl. Basin)
02 Retention	132.00	Custom Basin Data (Custom Basin Data)

0.425 (Infl. Basin) and 0.425 (Infl. Basin) (Flow Distribution)
 Custom Basin Data (Custom Basin Data)

Retention Outflow Rate: 0.0 cfs @ 0.00 hrs (0.00 ac) (Flow Control)
 Custom Basin Data (Custom Basin Data)

Pond P2: Infiltration Basin



STORMWATER OPERATION & MAINTENANCE PLAN

STORMWATER OPERATION AND MAINTENANCE PLAN

157-165 Lowland Street
Holliston, MA

January 4, 2022

Stormwater Management System Owner:
and Responsible Party Name : Master Paving Corp. & Middlesex
Asphalt Services, Inc.

This Operation and Maintenance Plan has been prepared in accordance with the recommendations outlined in the DEP stormwater handbook. This plan outlines the minimum efforts necessary to ensure that the stormwater collection and infiltration system for this site operates in accordance with the design. Efforts in addition to the minimum listed herein may be required to ensure adequate stormwater management.

This plan includes general site restrictions, routing/non-routine operation and maintenance; reporting and record keeping; and an estimated budget.

General Site Conditions

The following conditions are imposed as part of this Plan.

- Illicit discharges into the site or any other stormwater management system are perpetually prohibited.
- Uncovered and/or uncontained road de-icing materials shall not be stored on-site.

Operation and Maintenance:

Schedule:

Overall stormwater management system: Inspected at least four times per year.
Stormceptors (water quality structures): Inspected monthly (two on-site in rear parking lot)

Specific inspection and maintenance practices are listed under each component below. Upon completion of inspection, the inspector should specify any necessary corrective actions to be taken by ownership of the facility. The items to be inspected and maintained are described in the following sections.

Based on the observed conditions, the Responsible Party shall immediately schedule the appropriate maintenance. Some minor maintenance, such as the removal of blockages, debris and saplings in the basins may be conducted at the time of the inspection. More difficult maintenance activities, requiring special equipment, will have to be scheduled, such as the removal of excessive sediment or the repair of eroded areas.

Estimated Budget: Approximately \$4,000 per year.

Public Safety Features

All Cast Iron storm water structure grates and covers shall be kept in good condition and kept closed at all times. Any damaged or broken structures will be replaced immediately upon discovery.

Infiltration Basin

After every major storm during the first 3 months of operation and at least four times per year thereafter, the inspector shall visually inspect the basin, noting each of the items listed below (Vegetation, Dewatering, Inlets, Outlets and Structural Stability). If any of the items are in need of attention, it shall be noted and the proper remedial action initiated, as described below, as soon as possible.

The inspector shall visit the site three to four days after the rainfall of a major storm has ended to ensure that the facility has drained to the appropriate level. If significant water remains ponded in the system three (3) days after the latest rainfall, sediment removal/blockage removal activities shall be investigated and/or performed. Sediment removal may require excavation of the soils. Areas shall be replaced to finish grade with either clean coarse sand or a highly permeable sand compost mix and then seeded.

The interior check dams and perimeter check dams should be inspected for sediment accumulation and overall condition. Sediment shall be removed whenever visible and any damaged sections shall be repaired. The perimeter check dam should be continuous along the entire top of basin with no breaks between the basin and operations yard.

At a minimum of twice per year, mow the buffer area, side slopes, and basin bottom (if grassed floor); remove trash and debris; remove grass clippings and accumulated organic matter. The embankment and side slopes of the basin should exhibit no visible signs of erosion, settlement, slope failure, wildlife damage, or vehicle damage. Damaged side slopes should be repaired using similar fill of adequate permeability. Damaged embankments should be filled and compacted with impermeable soils to prevent seepage. Eroded areas should be reseeded as discussed under "vegetation". Repeated repairs to side slopes may necessitate the flattening of the slopes to ensure structural stability. Signs of vehicle damage may necessitate the construction of fences around certain areas.

Vegetation should be dense (and aesthetically acceptable on all portions of the device, including the side slopes, basin floor, buffer strips and the embankments. The inspector shall determine: (1) whether fertilizing is required (2) the areas where grass should be mowed, and (3) the areas which should be protected against erosion. In addition, recently seeded areas should be inspected for failures. Grasses of the fescue family can be mowed a minimum of twice per year, in July and late September. In addition to grass maintenance, any other vegetation in the basin area or access areas which has reached nuisance levels, (e.g., bushes, trees and weeds) should be trimmed or removed.

Repairs to damaged or deteriorating structures shall be made as soon as possible. Materials that cannot be adequately repaired, must be replaced.

Outlet spillways should be inspected for settlement, debris and/or vegetation blockages, and evidence of flow. The basin is designed to infiltrate the entire 100 year storm and discharge through the spillway should not occur.

Catch Basins, and Stormceptors.

- Catch basins inspected four times annually, and cleaned whenever sediment accumulation exceeds 12 inches in catch basins
- Stormceptors should be inspected monthly and cleaned whenever sediment accumulation exceeds 8 inches.

Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations. At each inspection, inspect gas trap hoods and repair as necessary. Inspect outlet pipe and remove debris. Vacuum trucks shall be utilized for all cleanings.

The actual removal of sediments and associated pollutants and trash occurs only when sumps are cleaned out; therefore, regular maintenance is required. The more frequent the cleaning, the less likely sediments will be resuspended and subsequently discharged. Frequent cleaning also results in more volume available for future storms and enhances the overall performance.

Activity	Frequency
Perform Inspection of: All System Components Stormceptors..... Prepare Report for each inspection	Four times per year Once per month
Clean Catch Basins & Stormceptor	Minimum once per year or when sediment reaches 12-inches in catch basins or 8-inches in Stormceptor
Mow surface Infiltration area. Remove trash and debris; remove grass clippings and accumulated organic matter.	Minimum of twice per year
Clean Sediment Forebays	Four times per year
Clean Gutters	Minimum twice per year or whenever debris is noted

Reporting and Record Keeping

The responsible party will be responsible for maintaining accurate Maintenance Logs for all maintenance, inspections, repairs, replacements, and disposal (for disposal, the log shall indicate the type of material and the disposal location). The logs shall be kept on site be available for inspection by the Town municipal departments or other auditing authority. This will be a perpetual requirement of the Owners or their Designated Party.

The Site Maintenance Log will be completed as described above, and at a minimum will include:

- a. The date of inspection or activity;
- b. Name of inspector;
- c. The condition of each BMP, including components such as:
 - i. Pretreatment devices
 - ii. Vegetation
 - iii. Inlets and outlets
 - iv. Swales
 - v. Underground drainage
 - vi. Sediment and debris accumulation.
 - vii. Any nonstructural practices
 - viii. Pavement condition
 - ix. Roof drains and gutter conditions
 - ix. Any other item that could affect the proper function of the stormwater management system
- d. Description of the need for maintenance; and
- e. For disposal include type of material and the disposal location;

Drainage Easements:

No drainage easements are currently proposed or required.

Changes to Operation and Maintenance Plans

The owner(s) of the stormwater management system must notify the Stormwater Permitting Authority or its designated Reviewing Agent of changes in ownership or assignment of financial responsibility.

Emergency Response Plan / Spill Control Practices

On-site storage of hazardous materials shall not be allowed.

In the event of an accident in the driveway where a significant amount of gasoline or other petroleum product is released, the following procedure should be followed:

1. Immediately contact the following agencies:

Holliston Fire Department	(508) 429-4631
MassDEP Emergency response	(888) 304-1133

2. Provide support to agencies listed above, which may include contacting an outside contractor to provide clean-up or contacting a Licensed Site Professional (LSP) to lead the clean-up.

The drainage systems in the vicinity should be inspected. If there is evidence of discharge from the drainage system, additional corrective actions must be taken extending to the receiving water or beyond.

MAINTENANCE INSPECTION FORM
157-165 Lowland Street
Holliston, MA

Date: _____ Inspector: _____ Signature: _____

Drainage Structures

DESIGNATION	DEPTH OF SEDIMENT	ACTION REQUIRED / TAKEN
DI-1		
DI-2		
DI-3		
CB-1		
CB-2		
CB-3		
CB-4		
STC-1		
STC-2		
Forebay -1		
Forebay -2		
Infiltration Basin		Dewatered (Y/N)

Drainage outlets

	Scour/erosion	
FE-1		
FE-2		
Overflow spillway		

Inspect Vegetation _____

Inspect Pavement Condition _____

COMMENTS / MAINTENANCE REQUIRED: _____

January 5, 2023

Ms. Karen Sherman
Town Planner
Town of Holliston
703 Washington Street
Holliston, MA 01746

**Re: Site Plan, Zoning, & Stormwater Design Engineering Peer Review #3
Master Paving Corp. & Middlesex Asphalt Services, Inc.
157 - 165 Lowland Street Holliston, MA
CMG ID 2022-154**

Dear Karen,

CMG is providing this letter report detailing our third site plan, zoning, and stormwater design engineering peer review of the site improvements for the Master Paving Corp. & Middlesex Asphalt Services, Inc. proposed contractor garage building project. The project is located on an approximately 7.07 +/- Acre parcel identified as 157 – 165 Lowland Street in Holliston, MA (the “Site”).

The project Applicant, *Master Paving Corporation and Middlesex Asphalt Services Inc.* is proposing to construct an approximate 7,200 s.f. contractor garage building, new septic system, and limited pavement areas, and associated access on a portion of the Site. The Site is located within an Industrial District Zone and Groundwater Protection District.

CMG is in receipt of the following documents:

- Five (5) Plan Sheets entitled “Proposed Site Plan of 157-165 Lowland Street in Holliston, MA” prepared by Connorstone Engineering, Inc., date 4/07/22, revise date 11/23/22.
- “Stormwater Operation & Maintenance Plan” for 157-165 Lowland Street Holliston, MA prepared by Connorstone Engineering, Inc., date 11/23/22.
- Comment / Response Letter entitled “Peer Review #2 157—165 Lowland Street” prepared by Connorstone Engineering, Inc., date 11/23/22.
- Supplemental Comment / Response Letter “Peer Review 157-165 Lowland Street” prepared by Connorstone Engineering, Inc., date 1/04/23.

Connorstone’s plan and stormwater report revisions listed above address the majority of CMG’s October 28, 2022 civil engineering peer review #2 comments relating to the engineering and stormwater design.

CMG is providing the following remaining comments and recommendations for conditions of approval for the Planning Board’s consideration:

10. Section V-L.4.A.3) c. Groundwater Protection District Zone II Permitted Uses: Portions of the Site constitute redevelopment; however, CMG believes the additional impervious areas beyond existing constitute “new” development in accordance with the MassDEP Stormwater Regulations. Therefore, “new” development areas must recharge roof, parking and drive runoff on-site to the

maximum extent practicable with parking and drive runoff discharged to oil/gas trap catch basins with 4 ft. depth sumps prior to recharge as per current MassDEP Stormwater Management Standards.

In addition, 44% TSS Removal pre-treatment and off-line oil/water separator are also required in accordance with the MassDEP Stormwater Management Standards for a land use with higher potential pollutant load prior to recharge to groundwater.

Connorstone Response (10/25/22): The site plans have been revised to include a Stormwater Management System in compliance with MassDEP standards.

CMG Comment #2: MassDEP Stormwater Management Standard 5 requires the use of an oil / grit separator be included in the treatment train designed to treat the water quality volume (i.e. 1 inch of runoff). Proprietary treatment BMPS may not be used as a terminal treatment device for a LUHPPL.

Connorstone Response (11/23/22): The review comment had requested the use of an oil/grit separator as pretreatment prior to infiltration. MassDEP Stormwater Handbook, Volume 1, Standard 5 requires pretreatment for fleet storage to include "an oil grit separator, a sand filter, organic filter, filtering bioretention area, or equivalent. The table of recommended BMP's under this standard also includes Proprietary Separators as an acceptable form of pretreatment.

The proposed plans have proposed an equivalent to an oil/grit separator with a proprietary separator. The proposed separator is designed to remove both oils and sediment (grit). The proposed separator provides double wall oil containment with a continuous fiberglass insert to ensure any hazardous floatable do not migrate through the concrete walls. In order to provide enhanced level of treatment the sizing of the separator has been increased on the proposed plans to a STC 900.

As an added benefit, the proposed separator also provides a far higher level of TSS removal. A typical oil / grit separator provides 25% TSS removal, while the proposed separator provides greater than 80% TSS removal. This will significantly increase the lifespan of the infiltration basin and provide increased removal of hydrocarbons that may bond to sediment particles.

Our office would consider the proposed separator to be an equivalent to the requested oil/grit separator, and would provide increased benefits above that which a typical oil/grit separator could provide.

Connorstone Response (1/04/23): Oil/Gas Containment – the applicant has confirmed the largest oil / gas storage tank on-site would be a 150 gallon gas tank on the largest piece of equipment. The proposed Stormceptors (model 900) have an oil/gas storage capacity of 251 gallons each. The product data to verify the storage is attached.

CMG Comment #3: CMG is in agreement the chosen proprietary separator, Stormceptor Model 900, is appropriate for use as pre-treatment as proposed for this project. CMG recommends "monthly" inspections of the STC 900 water quality units and cleaning twice / year or when the sediment depth is greater than 8 inches.

CMG recommends the Planning Board consider this as a Condition of Approval

12. Section V-L.4.B.2) i. CMG recommends additional information be provided to verify compliance with state and federal regulations relating to the proposed storage of liquid hazardous materials and/or liquid petroleum products within the proposed garage building. CMG recommends a list of potential products, quantities, storage practices, and spill prevention measures be provided.

Connorstone Response (10/25/22): A locked storage container would be provided within the garage for any minor maintenance items, as approved through DEP by the RCC Permit. Bulk asphalt paving materials would not be storage on-site.

CMG recommends the Planning Board consider this as a Condition of Approval

13. Section V-L.4.B.2) j. Applicant should confirm there will be no on-site storage sodium chloride and /or chemically treated abrasives or other chemical used for the removal of ice and snow from pavement areas. A note relating to this requirement shall be added to the Stormwater O&M Plan.

Connorstone Response (10/25/22): No on-site storage of chemical de-icing materials would be proposed.

CMG recommends the Planning Board consider this as a Condition of Approval

Holliston Planning Board Site Plan Review & Special Permit Regulations

19. 7.3.2. h): A lighting plan is not provided and no waiver is requested.

Connorstone Response (10/25/22): A Lighting Plan has been provided to the Board.

CMG Comment #2: Comment Remains. A lighting plan is not included in the revised 10/14/22 Site Plan set.

Connorstone Response (11/23/22): A Lighting Plan to be provided by others.

CMG Comment #3: Comment Remains.

22. 7.3.4: Landscape Plan signed and sealed by a registered landscape architect must be provided where the Site Plan requires construction of five or more parking spaces.

Connorstone Response (10/25/22): A Landscape Plan has been included (not stamped by a registered Landscape Architect).

CMG Comment #2: CMG recommends the Applicant provide a waiver request for consideration by the Planning Board to not require a Landscape Architect.

Connorstone Response (11/23/22): A waiver request has been included related to the Landscape Plan requirements.

CMG Comment #3: Applicant's Attorney is providing a waiver request from Section 7.3.4 to allow the landscape design be allowed as-is (See Attachment to Connorstone's 11/23/22 Comment / Response Letter). A Landscape Framework Plan is provided in the plan set depicting proposed screening plantings, block walls, and noise mitigation fencing.

CMG finds this waiver request acceptable; however, it is subject to final review and approval by the Holliston Planning Board.

27. Section 7.4.2.G.1. – Current plan depicts the schematic layout of the proposed septic system to service the proposed building. CMG recommend the Planning Board require the Applicant provide an approved Septic System Design Plan and proof of Board of Health approval prior to construction.

Connorstone Response (10/25/22): Comment noted related to the septic system.

CMG recommends the Planning Board consider this as a Condition of Approval

General Engineering & Stormwater Management Design Comments

41. A Notice of Intent is required to be filed with the Holliston Conservation Commission for all work within the 100 ft. wetlands buffer zone and / or 200 ft. riverfront zone and flood plain.

Connorstone Response (10/25/22): The required permitting will be submitted to the Conservation Commission.

CMG recommends the Planning Board consider this as a Condition of Approval

43. A 10 FT height sound barrier fence is noted on the plans. CMG recommends additional detail be provided to confirm it will comply with snow / wind loads and noise mitigation for the project.

Connorstone Response (10/25/22): Design of any fences would be provided by a Structural Engineer, and could be provided to the Town prior to construction.

CMG recommends the Planning Board consider this as a Condition of Approval

61. The Project proposes to alter > 1 Acre therefore an EPA NPDES Construction General Permit (CGP) registration and SWPPP is required to be submitted prior to construction. CMG recommends the Planning Board make this a condition of approval.

Connorstone Response (10/25/22): The proposed site has been designed to fully contain runoff on-site and the NPDES GCP may not apply to the work. However, if requested a SWPPP could be prepared and submitted for review.

CMG Comment #2: If all of the stormwater from the construction activity is captured on-site and allowed to evaporate, soak into the ground on-site, or is used for irrigation (i.e., not discharged to a water of the U.S.), CMG is in agreement the NPDES Construction General Permit may not apply. Under the Clean Water Act (CWA), it is illegal to have a point source discharge of pollutants to a water of the U.S. that is not authorized by the CWA.

Applicant's Engineer is responsible to determine if there is a potential for a discharge during construction given the Site's close proximity to Bogastow Brook. If the Applicant's Engineer believes there is a potential for a discharge it is recommended to apply for NPDES CGP permit coverage before any potential discharge occurs. The controls used to keep the stormwater on-site so it does not reach a water of the U.S. must be effective under any size storm.

Connorstone Response (11/23/22): Comment acknowledged. If coverage under the CGP is requested, a copy of the SWPPP could be provided to the Town.

CMG recommends the Planning Board consider this as a Condition of Approval

65. A revised "Long -term Operation and Maintenance Plan" must be provided based on the updated site stormwater management system design in full compliance with Standard 9.

Connorstone Response (10/25/22): A long term Operation and Maintenance Plan is included I the updated Stormwater Report.

CMG Comment #2: The O&M Plan is missing the following required information:

- Name of the stormwater management system Owners / Responsible Party;
- Party responsible for operation and maintenance;
- An inspection and maintenance schedule narrative is contained within the O&M plan. However, CMG recommends a schedule in table format be provided for clarity for implementation of routine and non-routine tasks for each stormwater BMP;
- Plan showing the location the location of all stormwater BMPs maintenance access areas need to be included within the O&M Plan;
- Description and delineation of public safety features. At a minimum, CMG recommends a statement be provided similar to the following: "All cast iron storm water structure grates and covers shall be kept in good condition and kept closed at all times. Any damaged or broken structures will be replaced immediately upon discovery";
- A site-specific "Operation and Maintenance Log Form" is not provided in the O&M plan. CMG recommends a corresponding Stormwater BMP figure also be included depicting the locations of all on-site stormwater piping and structures.

Connorstone Response (11/23/22): The long term Operation and Maintenance Plan has been updated to include the items requested.

Connorstone Response (1/04/23): The Operation and Maintenance Plan has been updated to require monthly inspections of the Stormceptor Units, and a copy has been attached.

Comment Addressed (Also see CMG Response to Comment 10.)

If you have any questions or need additional information, please contact me at (508) 864-6802.

Sincerely,
CMG



David T. Faist, PE
Principal Engineer

- Mr. Clapp suggested the Commission allow Mr. Antony to schedule for the cutting of these trees, but for him to return for the meeting on 2/19/19 to discuss mitigation measures.
- The Commission gave approval for Mr. Antony to remove the flagged trees with the condition of compensatory mitigation to be discussed. Mr. Clapp will issue a letter authorizing the removal.

Request for a Certificate of Compliance - DEP File #185-720: 157-165 Lowland Street

Documents: WPA Form 8A; Letter from Connorstone Engineering, Inc. dated 1/21/19; Plan of Land entitled "Topographic Plan of 157-165 Lowland Street in Holliston, Mass." dated 1/18/19.

This portion of the meeting was filmed by Ms. Cassandra Brumber

- Mr. Clapp reported that he had received a Request for a Certificate of Compliance for DEP File #185-720: 157-165 Lowland Street.
- Mr. Clapp made a site visit yesterday with Mr. Michael Brumber, property owner, to assess the drainage structures associated with this Order and Request. He noted that during the site visit, New England Emulsions was discharging stormwater into the stormwater trench, offering an opportunity to witness the structure in operation. Mr. Clapp noted the structure was working properly and was in favor of issuing a Certificate of Compliance.
- Mr. Brumber noted that the Order of Conditions DEP #185-74 holds Mr. Herb Brockert of the abutting HEB Land Development was responsible for maintenance of the stormwater system. Mr. Brumber noted that as such, and given that parts of the stormwater system were on HEB Land Development property, New England Emulsions property, and his property, he should not be held solely responsible for the maintenance of the system.
- Mr. Brumber further referred to the court case *Conservation Law Foundation, Inc. v. American Recycled Materials, Inc.*, which found that his operation (American Recycled Materials, Inc.) did not discharge stormwater into Bogastow Brook. As such, he is maintaining a stormwater system he does not even use.
- Mr. Clapp suggested mediating a discussion between the three property owners to determine a maintenance schedule reflecting each property owner's responsibilities for stormwater upkeep.

Ms. Pilch made a motion to issue a Certificate of Compliance for DEP File #185-720: 157-165 Lowland Street. Dr. Rutberg seconded the motion. Vote passes unanimously (7-0-0).

Ms. Brumber ended filming

Request for Administrative Update to Record Plan - DEP File #185-843: 289 Hollis Street

Documents: Plot plan entitled "Proposed Sewage Disposal System," dated 7/24/18; Plot plan entitled "Proposed Sewage Disposal System," dated 7/24/18 (rev. 1/7/19).

- Mr. Ted Gowdy, representative for the applicant, noted that the new proposal encroached less into the buffer zone. However, he understands the concern the Commission has that the deck encroaches further into the 50' no-disturbance buffer zone.
- Ms. Pilch noted that this leaves no margin of error, as it is right on the limit of work.