

Notice of Intent & Stormwater Management Narrative

***Harvard Town Beach
31 Pond Road
Harvard, MA***

April 2024

***Submitted to:
Town of Harvard
Conservation Commission
15 Elm Street
Harvard, MA 01451***

***Submitted by:
Harvard Parks and Recreation Commission
13 Ayer Road
Harvard, MA 01451***

***Prepared by:
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39 Main Street, Suite 301
Ayer, MA 01432***

***Project No:
051001A***





Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



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.

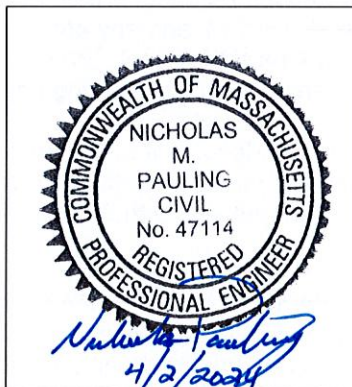
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



Nicholas Pauling 4/2/2024
Signature and Date

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



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.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver 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 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



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.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- ☐ The BMP is sized (and calculations provided) based on:
 - ☐ The ½" 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 propriety 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 existing 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 4-6 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;
 - ☐ 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.

NARRATIVE
to accompany
NOTICE OF INTENT
Harvard Town Beach
31 Pond Road
Harvard, MA

PRELUDE

The proposed Notice of Intent (NOI) application is for a beach improvement project for the Harvard Town Beach located at 31 Pond Road. The primary purpose of the project is to address directives that were issued to the Town of Harvard, in order to document ADA compliant concerns for the subject site. The proposed NOI application and Harvard Town Beach Improvement Plan were submitted by the Harvard Parks and Recreation Commission and the project was discussed and continued during the Conservation Commission public hearing meeting on 3/21/2024. (See Attachment No. 1). Although the project proposes some drainage improvements to the existing, it was noted during the meeting that the proposed project did not address/document the technical aspects of the onsite stormwater management pursuant to the Massachusetts Stormwater Handbook and Harvard's stormwater management (§147-14.C) under the Wetlands Protection Bylaw, therefore further examination of the project area, scope of work and stormwater management conditions should be completed.

Goldsmith, Prest & Ringwall, Inc. (GPR) was brought on by the applicant as consultant engineer for the project, to review the proposed scope of work and document compliance with the applicable stormwater management regulations. Although GPR was not provided with the directives of the ADA compliant concerns, the proposed scope of work was revised in cooperation with the Harbormaster, Robert O'Shea, of the Harvard Parks, Recreation & Community Ed.

PROJECT SITE

The project site consists of three property parcels under the Town of Harvard ownership, known as Map Parcel 22A-008, 22A-013 & 22A-014 under the Harvard Assessors Department. The proposed project area is limited to the existing parking lot and existing storage/recreational building located on the upper portion of the site, outside of the 100-FT wetland buffer limit, and the existing driveway area located at the lower portion of the site at the boat loading ramp/beach area. There is an existing swing gate & post controlling access for the driveway going down to the lower boat ramp area. Based on the existing topographic survey, it appears that the driveway pavement at the swing gate acts as a high point in the stormwater flow path, dividing stormwater runoff for the lower and upper portion of the project site. See attached Figure-1 – Existing Drainage Pattern.

The existing parking area located at the upper portion of the project site is the primary parking area for the Harvard Town Beach, providing multiple parking spaces and one handicap accessible parking space across from the wooden walkway leading up to the existing building. Stormwater runoff from the existing parking area appears to sheet flow towards the sand/grass in front of the existing building. The existing building does not have gutter and is currently allowing stormwater to

drip off the roof edge and sheet flow towards the driveway pavement at the lower portion of the project site.

The existing lower driveway portion of the site has three parking spaces, one of which is a handicap accessible parking space nearest to the existing building. It appears that stormwater runoff generated from the existing pavement is being collected by a drainage flume and discharges onto the wet swale located near the boat ramp. The existing parking spaces, re-pavement, boat ramp, drainage flume and wet swale were designed and constructed as part of the stormwater improvement project for the Harvard Town Beach (See Attachment No. 2), to account for the increase in impervious area footprint and to address the uncontrolled flow coming down from the upper portion of the project site.

There is also an existing bioretention area located north of the existing driveway and building. Based on existing topographic information, it appears that the existing bioretention area was designed/ located with the intent to capture and treat stormwater runoff from the driveway coming down on Pond Road and the parking area at upper portion of the project site. Due to the lack of curbing directing stormwater for the upper parking area and uncontrolled roof runoff from the existing building, the wet swale appears to be inundated caused by the additional unintended flow. As part of the scope of work, the project aims to correct the onsite drainage pattern and catchment areas for the onsite drainage features.

PROPOSED SCOPE OF WORK

At the upper portion of the project site, the project proposes to provide a van accessible handicap parking space by expanding the edge of the existing handicap parking aisle. It was determined during the ADA compliant assessment that the existing handicap parking space is not leveled, therefore the existing handicap parking space shall be converted into a regular parking space. The existing handicap aisle will be sawcut and re-paved as part of the pavement expansion to achieve less than 2% slope in all directions across the handicap aisle and proposed van accessible parking space.

The existing bituminous concrete walkway section south of the existing building shall be removed, replaced and extended to provide access from the building's wooden walkway towards the proposed ADA access mat, leading to the playground/swing set area. Additionally, bituminous concrete curbing shall be provided along the edge of pavement directing stormwater towards the existing bioretention area. Gutters shall be installed to collect stormwater over the existing building roof and conveyed onto existing pavement area, therefore remove the amount of roof discharge that sheet flows over the sand/grass area. The roof discharge for the front portion (400 SF) of the existing building shall also be directed towards the bioretention area catchment area.

The proposed curbing for the existing parking area and redirection of roof discharge for a portion of the existing roof will restore the onsite drainage pattern to allow the intended discharge into the existing bioretention area, therefore reducing the stormwater load on the overburdened and smaller wet swale at the lower portion of the project site. See Figure-2 – Proposed Drainage Pattern.

At the lower portion of the project site, the project proposes to provide a handicap parking space and aisle adjacent to and upgradient of the existing wet swale. The stormwater runoff generated over the proposed handicap parking area will be collected by the existing drainage flume and discharges onto the wet swale. Although the proposed footprint will increase by 310 SF impervious area runoff into the existing swale, the proposed roof outlet for the front portion of the existing building alone will remove approximately 400 SF impervious area going into the wetland, in addition to the restoration of drainage catchment area for the bioretention area to include all of the upper parking area.

A portion of the existing landscaping stone wall and curbing shall be removed to allow for the installation of the ADA access mat, providing access from the lower driveway area to the edge of water. The project also proposes to install a pavilion adjacent to the proposed ADA access mat near the edge of water. The proposed pavilion will be installed over sonotubes and will maintain sand ground cover.

Massachusetts Stormwater Management Standards

Standard 1: (Untreated discharges)

No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

No new outfall proposed as part of the project scope of work.

Standard 2: (Peak rate control and flood prevention)

Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for land subject to coastal storm flowage.

Existing stormwater management systems are designed to control peak runoff rate. The proposed increase in impervious surfaces within the contributing area to each existing stormwater management area is *de minimis* relative to the units of area that would be used within a calculation of runoff. Small watersheds such as those of the subject site are typically quantified using the Rational Method, or $Q = CIA$. For the project site, with existing stormwater management areas already constructed and the intended contributing areas established, there is no change to the runoff coefficient (C within the equation) nor the intensity of rain (I within the equation) since flow patterns and the time of concentration would remain the same. Units of the equation require A, the contributing area to the analysis point, to be in acres. The proposed increase of impervious surface within each contributing area to the existing stormwater management areas, 310± and 176± sf respectively, would be represented as 0.0071 and 0.0004, also respectively. With the other 2 variables of the equation remaining the same, the multiplying of the adjusted contributing areas would reflect an increase below the significant digits that the runoff, Q, is provided in. While runoff to each of the management areas will remain unaffected, the proposed work will also help to restore the intended performance capabilities.

Standard 3: (Recharge to Ground water)

Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts's Stormwater Handbook.

The proposed increase of impervious cover on site is limited to the footprint of handicap accessible spaces, which are de minimis in comparison to existing catchment areas for the existing onsite stormwater management systems, therefore loss of annual recharge to groundwater should be negligible.

Standard 4: (80% TSS Removal)

Stormwater management systems must be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

- a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained;*
- b) Stormwater BMPs are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
- c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

Existing onsite BMPs are suitable to remove pollutants in accordance with the Massachusetts Stormwater Handbook. The proposed work will also help to restore the intended performance capabilities.

Standard 5 (Higher Potential Pollutant Loads (HPPL))

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific stormwater BMPs determined by the Department to be suitable for such use as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

Land uses are not associated with higher potential pollutant loads.

Standard 6 (Critical Areas)

Stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or any other critical area require the use of the specific source control and pollution prevention measures and the specific stormwater best management practices determined by the Department to be suitable for managing discharges to such area, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong

likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters or Special Resource Waters shall be set back from the receiving water and receive the highest and best practical method of treatment. A “stormwater discharge,” as defined in 314 CMR 3.04(2)(a)1. or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.

The existing onsite stormwater discharges are located within an IWPA for a public water supply. The existing onsite BMPs are suitable to remove pollutants in accordance with the Massachusetts Stormwater Handbook.

Standard 8: (Erosion, Sediment Control)

A plan to control construction-related impacts, including erosion sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan), must be developed and implemented.

Erosion control plan and notes provided within Site Plan.

Standard 9: (Operation and Maintenance)

A long-term operation and maintenance plan must be developed and implemented to ensure that stormwater management systems function as designed.

No new BMP proposed.

Standard 10 (Illicit Discharges)

All illicit discharges to the stormwater management system are prohibited.

There are no known or suspected illicit discharges to the stormwater management.

WAIVER REQUEST

Section 147-14C

Requirement:	Enhanced Stormwater management standards.
Request:	Allow the project to provide best management practices pursuant only to Massachusetts Stormwater Handbook standards. To achieve required 5% runoff rate and volume decrease during the 2- and 10-year events would require either the reduction of paved areas (i.e. parking spaces) which would defeat the purpose of the project to provide handicap accessibility and/or the expansion or new installation of stormwater management areas in turn creating additional disturbance within the inner buffer zone areas of the pond.

SUMMARY

The project provides improvements to the existing Town Beach by addressing the ADA compliant concerns and providing proposed solutions that minimize disturbance to the site. The correction of the drainage catchment areas will help to restore the function of an existing onsite BMP that has become inundated. Proposed increase for onsite impervious cover is limited to the expansion of pavement to allow for new handicap accessible parking spaces and will continue to discharge to the existing onsite BMPs, therefore should not have an effect on the overall site stormwater management conditions per the Massachusetts Stormwater Management Standards. The project as a whole improves upon the general drainage conditions for the existing site. Erosion control barrier shall be provided and maintained throughout the construction period.

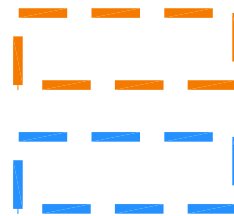
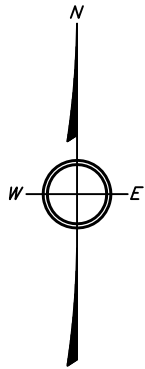
FIGURES

Figure 1 – Existing Drainage Pattern

Figure 2 – Proposed Drainage Pattern

ATTACHMENTS

1. "Harvard Town Beach Improvements" as submitted by the Interim Recreation Director / Harbormaster. Dated July 20th, 2023. Revised November 3rd, 2023.
2. "Bare Hill Pond Stormwater Retrofit Project, Harvard, Massachusetts" Dated August 2012.



DRAINAGE CATCHMENT
ASSESEMENT AREA FOR
EXISTING WET SWALE

DRAINAGE CATCHMENT
ASSESEMENT AREA FOR
EXISTING BIORETENTION



**Engineering Solutions
for Land & Structures**

GOLDSMITH, PREST & RINGWALL, INC.

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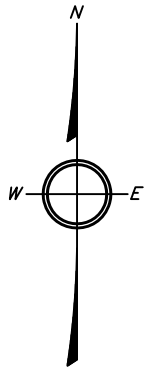
EXISTING DRAINAGE PATTERN

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FIGURE-1



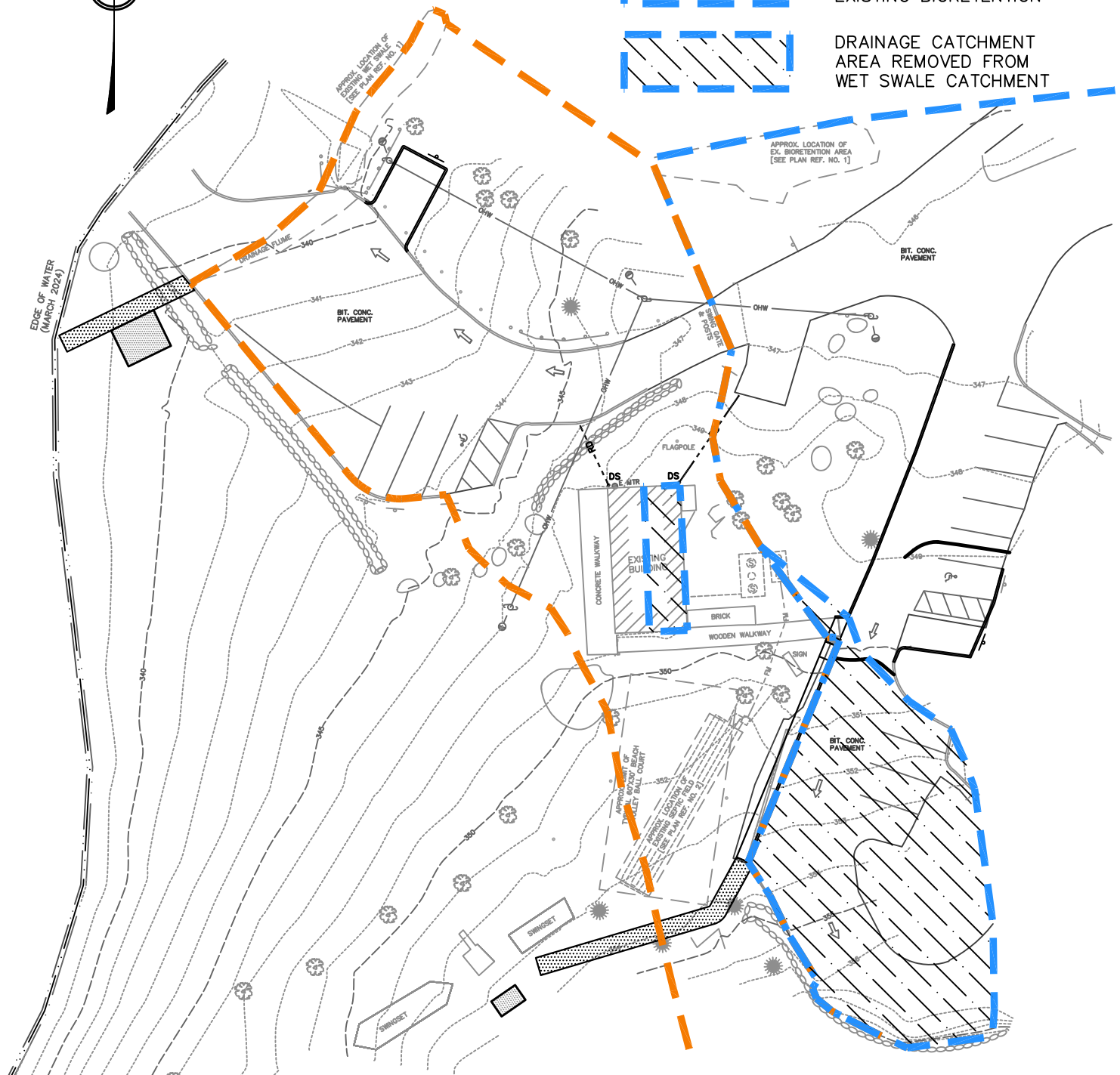
DRAINAGE CATCHMENT
ASSESSMENT AREA FOR
EXISTING WET SWALE



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PROPOSED DRAINAGE PATTERN

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FIGURE-2