Stormwater Report
143 Pleasant Valley Street
Methuen, Massachusetts

December 1, 2025

Prepared for:
Park Silver Development
8171 Maple Lawn Blvd, Suite 375 & 380
Fulton, MD 20759

Prepared By:

andover consultants inc.

1 East River Place
Methuen, MA 01844

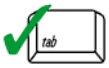
Checklist for Stormwater Report

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

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 8[2]
- 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.

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.

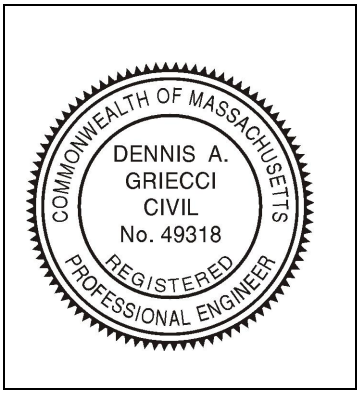
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



Dennis A. Griecci

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 Field[1]

☒ 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 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.

Stormwater Report Narrative

This Stormwater Report has been prepared to demonstrate compliance with the Massachusetts Stormwater Management Standards in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00.

Project Description

The Applicant, Park Silver Development, is proposing to construct a four story, 122 room extended stay hotel on an existing 11.05 acre lot. The proposed work will also include the construction of a parking area, drive aisles, and one access curb cut to Pleasant Valley Street. The proposed development will utilize previously installed site infrastructure and utilities (stormwater basin, drainage, sewer, etc.) for a larger proposed project previously issued a Superseding Order of Conditions from MassDEP. Additionally, a subsurface stormwater detention structure, lot grading, drainage and other utilities are proposed to support the proposed use. No alteration of existing wetland resource areas are proposed.

Site Description

The Project Site is a 11.05 acre parcel located on the southerly side of Pleasant Valley Street in Methuen, Massachusetts. The site is bound by Pleasant Valley Street to the north, Interstate Route 495 to the south-west and by Route 213 by the south-east. Bare Meadow Brook runs through the parcel, from west to east and the bordering vegetated wetland and flood plain associated with it comprise a large portion of the south and east portions of the lot. The proposed work will be performed in the upland portion of the lot, within the northwest quadrant, portions of which will be within the 100 foot buffer zone.

Extensive site work has been completed at the site under a previously issued Superseding Order of Conditions (SOC) from MassDEP. That project proposed a total of ±28,100 square feet of building footprint and ±68,200 square feet of impervious surfaces (pavement, walkways, patios, etc). To accommodate the proposed development the site was graded to rough finish elevation (roughly between elevation 70 and 76) and utilities were installed including stormwater catch basins, manholes and a closed drainage pipe network and sewer manholes and sewer mains. In addition to the installed utilities retaining walls were constructed along a slope leading down to a well-defined wetland. The wetland resource areas on the site were flagged by Norse Environmental services and confirmed via the issuance of the SOC issued by MassDEP.

The previously completed site work also included the installation of a sediment forebay, infiltration basin, and overflow outlet control to accommodate the previously approved, larger proposed site development.

Soils on the site were mapped by the National Resources Conservation Service (NRCS) as Hinckley loamy sand (map unit designation 253C), Scarboro mucky fine sandy loam (map unit designation 6A) and smoothed Udorthents (map unit designation 651), which are associated with the work done to grade Route 495 and Route 213 along the parcel boundaries. The Hinckley soil, on which the proposed work will occur, is classified as a Hydrologic Soil Group A soil. Elevations on the lot vary from elevation 88 in the northwest quadrant to elevation 34 in the southeast, within the wetland area. Approximately 64% of the lot (7± acres) is within wetland area which will remain undisturbed.

The Site does not lie within floodplain according to FEMA Flood Insurance Rate Map 25009C0204F, dated July3, 2012.

The Site is not in or near habitat of rare or endangered species according to the NHESP online map, dated August 1, 2021.

Existing Drainage Conditions

The Site was previously cleared and rough-graded to near-proposed elevations under a Superseded Order of Conditions (SOC) issued by MassDEP (DEP File #219-1139), with work completed circa 2016. Since that time, some vegetative regrowth has occurred; however, the Site remains largely bare with compacted soils. Existing topography is generally flat across the front portion of the Site, with elevations ranging from approximately 78 to 68. Along the Pleasant Valley Street frontage, elevations range from approximately 88 to 68. The rear portion of the Site, adjacent to the bordering wetland, slopes down to elevations between approximately 58 and 50.

For this study, the existing drainage conditions were represented by a single subcatchment and a single design/discharge point within the HydroCAD stormwater model. Under existing conditions, stormwater flows via sheet flow toward the rear of the Site and down the slope, ultimately discharging to the wetland at the base of the slope. This wetland area was therefore used as the existing-conditions design/discharge point.

Proposed Drainage Conditions

Under developed conditions, the Site will be developed to include the proposed hotel building, paved driveway aisles, paved parking spaces and landscaped areas. Efforts have been made to mimic existing drainage patters in to the proposed development of the site.

Under developed conditions, two subcatchment areas were analyzed. Developed subcatchment 1PR is a ±2.23 acre portion of the project area that includes the building, pavement, and landscaping areas surrounding the building. These areas will be collected by catch basins into the closed drainage system which will discharge to the existing infiltration basin. The infiltration basin was designed and constructed

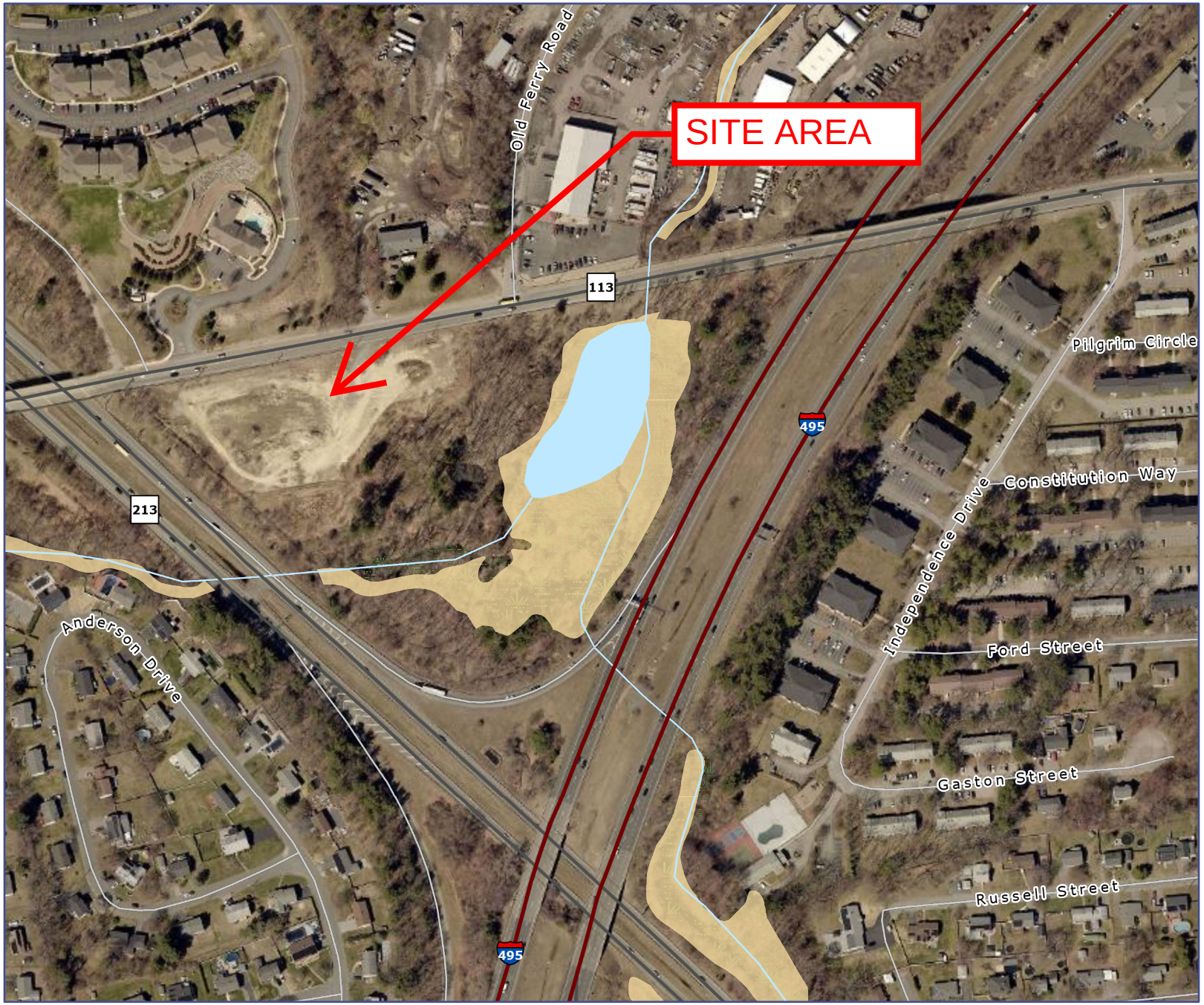
for a project previously approved by MassDEP which had 53% more impervious surfaces than the currently submitted project (97,849 sf vs 63,624 sf)

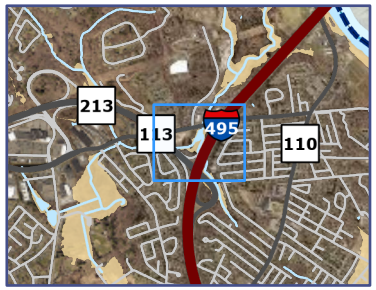
The system will allow for infiltration/recharge of stormwater and has been designed with an overflow emergency rip rap outlet; however, the basin is sized to contain the 100 year storm event with over two feet of freeboard.

Developed subcatchment 2PR is a ±11,238 square foot sub-watershed consisting of pervious areas (lawn areas, etc.) areas that will not be captured by and conveyed to the underground detention system. This area will sheet flow, as it does under existing conditions, to the wetland resource area at the bottom of the slope.

Figure 1: Site Locus Map

City of Methuen





Legend

GIS Layers

Municipality

- Methuen
- Local Road
- Major Road
- Interstate
- Hydrographic Features
- Streams
- 100-year floodplain
- Wetlands

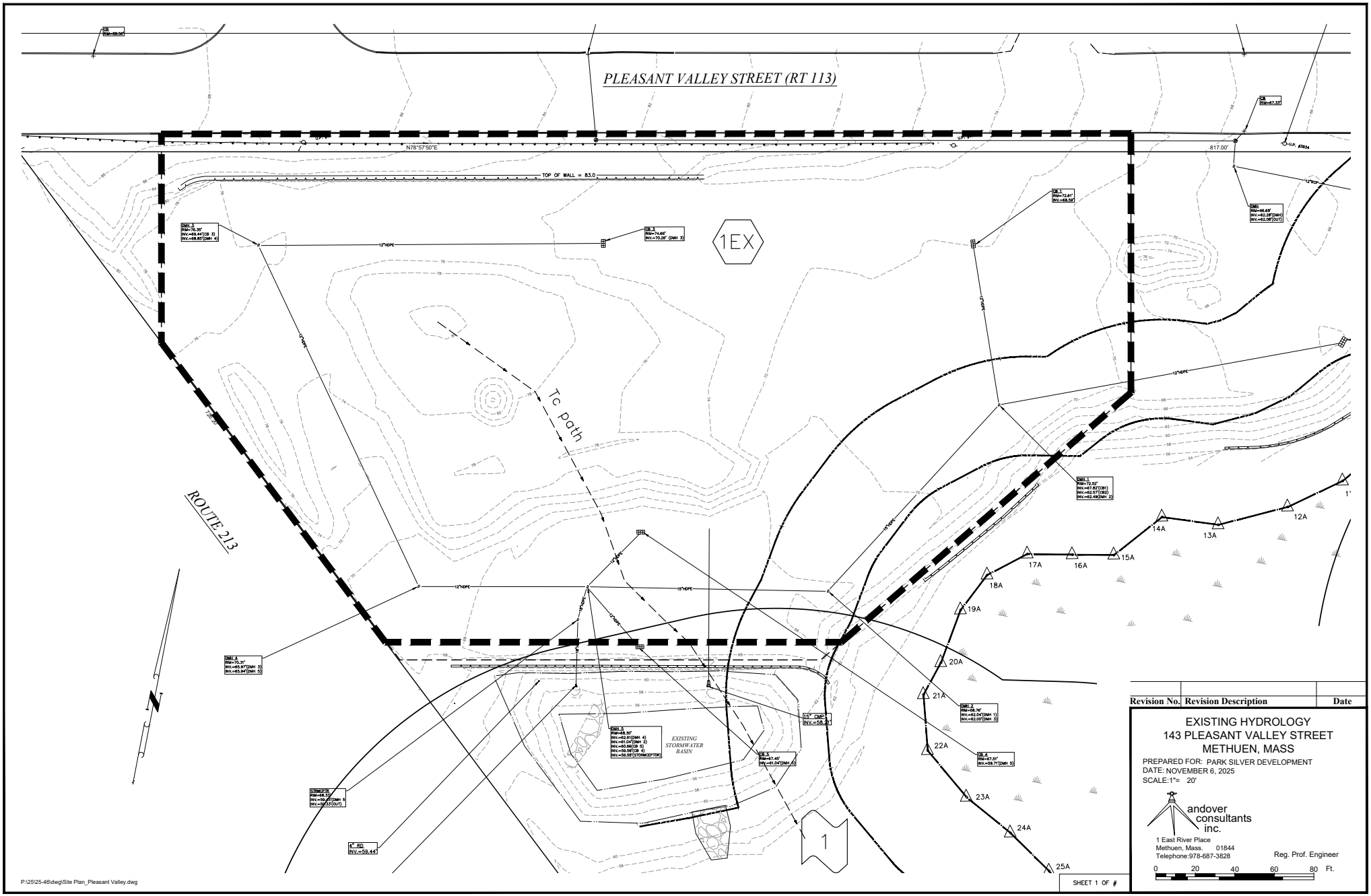
N

0 1500 Feet

Scale 1 : 4800

Produced by Merrimack Valley Planning Commission (MVPC) using data provided by municipal governments & MassIT/MassGIS.

Figure 2: Existing Conditions Drainage Divide Area Map



Revision No.	Revision Description	Date

EXISTING HYDROLOGY
143 PLEASANT VALLEY STREET
METHUEN, MASS

PREPARED FOR: PARK SILVER DEVELOPMENT
DATE: NOVEMBER 6, 2025
SCALE:1"= 20'

andover consultants inc.
1 East River Place
Methuen, Mass. 01844
Telephone:978-687-3828
Reg. Prof. Engineer

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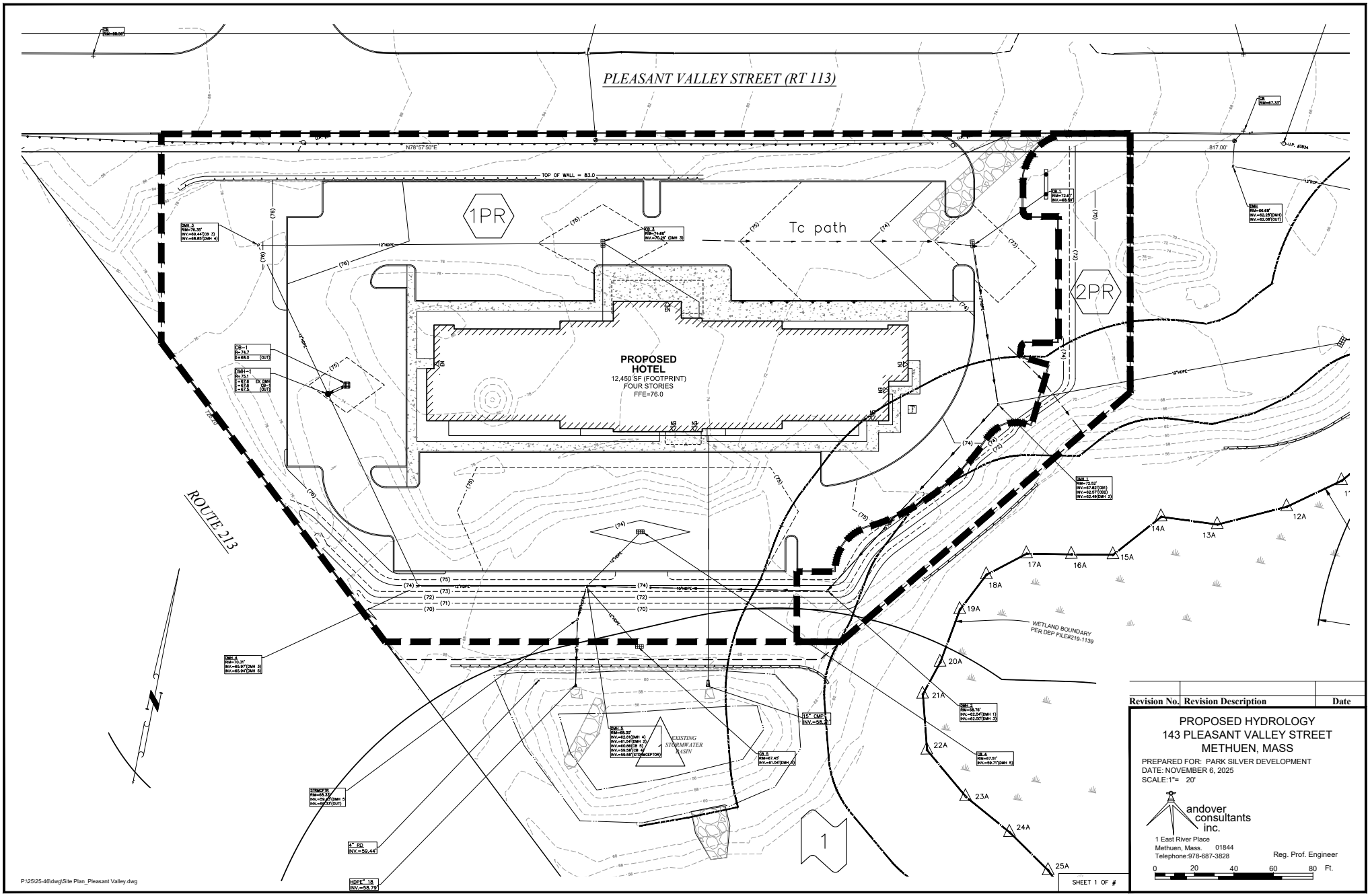
SHEET 1 OF #

Figure 3: Developed Conditions Drainage Divide Area Map



Revision No.	Revision Description	Date

PROPOSED HYDROLOGY
143 PLEASANT VALLEY STREET
METHUEN, MASS

PREPARED FOR: PARK SILVER DEVELOPMENT
DATE: NOVEMBER 6, 2025
SCALE:1"= 20'

andover consultants inc.
1 East River Place
Methuen, Mass. 01844
Telephone:978-687-3828
Reg. Prof. Engineer

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Regulatory Compliance

Massachusetts Department of Environmental Protection (DEP) - Stormwater Management Standards

As demonstrated below, the proposed Project fully complies with the DEP Stormwater Management Standards.

Standard 1: No New Untreated Discharges or Erosion to Wetlands

The Project has been designed to fully comply with Standard 1.

The Best Management Practices (BMPs) included in the proposed stormwater management system have been designed in accordance with the Massachusetts Stormwater Handbook. Supporting information and computations demonstrating that no new untreated discharges will result from the Project are presented through compliance with Standards 4 through 6.

Standard 2: Peak Rate Attenuation

The Project has been designed to comply with Standard 2.

The rainfall-runoff response of the Site under existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100-years. The results of the analysis, as summarized in the table below, indicate that there is no increase in peak discharge rates between the existing and proposed conditions for all storm events.

HydroCAD hydrologic modeling result printouts are attached at the end of this report.

Peak Discharge Rates (cfs*)

Design Point	*2-year*	*10-year*	*25-year*	*100-year*
Design Point 1: bottom of slope/wetland				
Existing	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.2

Standard 3: Stormwater Recharge

The Project has been designed to comply with Standard 3. Recharge of stormwater has been provided through the use of the subsurface infiltration system which has been designed to drain completely within 72 hours per the following calculation using the static method and the provided recharge volume demonstrated below.

Recharge Required/Provided:
R_v = F x impervious area

R_v = 0.6″/12 x 63,623 square feet

R_v = 3,181 cubic feet

Recharge provided below overflow outlet elevation = 30,596 sf

Drawdown Calculations:
Time $_{Drawdown}$ = R_v/ (K) (Bottom Area)
R_v = 30,596 c.f.
K =2.41 in/hr for HSG A soils
Bottom Area = 3,576 s.f.

Time $_{Drawdown}$ = 30,596 c.f. / ((2.41 in/hr) (1′/12″) (3,576 sf))
Time $_{Drawdown}$ = 42.6 hours < 72 hours, OK

Natural Resource Conservation Services Web Soil Survey data and supporting information are included at the end of this report.

Standard 4: Water Quality

The Project has been designed to fully comply with Standard 4.

The proposed stormwater management system implements a treatment train of BMPs that has been designed to provide a minimum 80% TSS removal of stormwater runoff from all proposed impervious surfaces. See TSS removal spreadsheets in the appendix for TSS treatment removal.

The required water quality volume required based on the total impervious area is calculated below:

$V_{WQ} = (D_{WQ}/12″/foot) \times (A_{IMP})$
Where:
V_{WQ} = Require Water Quality Volume (cf)
D_{WQ} = Water Quality Depth = ½″
A_{IMP} = Total Impervious Area = 63,623 s.f.

V_{WQ} = (1/2″) x (1′/12″) x (63,623 s.f.)
V_{WQ} = 2,651 c.f.

Volume provided below overflow outlet elevation = 30,596 sf

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

The Project is not considered a LUHPPL.

Standard 6: Critical Areas

The Project will not discharge stormwater near or to a critical area.

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable

Although some of the property has been previously developed, this project is not considered a redevelopment.

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

The Project will disturb approximately 2.4 acres of land and therefore requires coverage under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP). The Owner, or the responsible on-site contractor, will obtain CGP coverage prior to initiating any land-disturbing activities.

A recommended Construction Period Pollution Prevention Plan, including erosion and sedimentation control measures, is provided at the end of this report.

Standard 9: Operation and Maintenance Plan

In compliance with Standard 9, a Post Construction Stormwater Operation and Maintenance (O&M) Plan has been developed for the Project. The O&M Plan is included at the end of this report as part of the Long Term Pollution Prevention Plan.

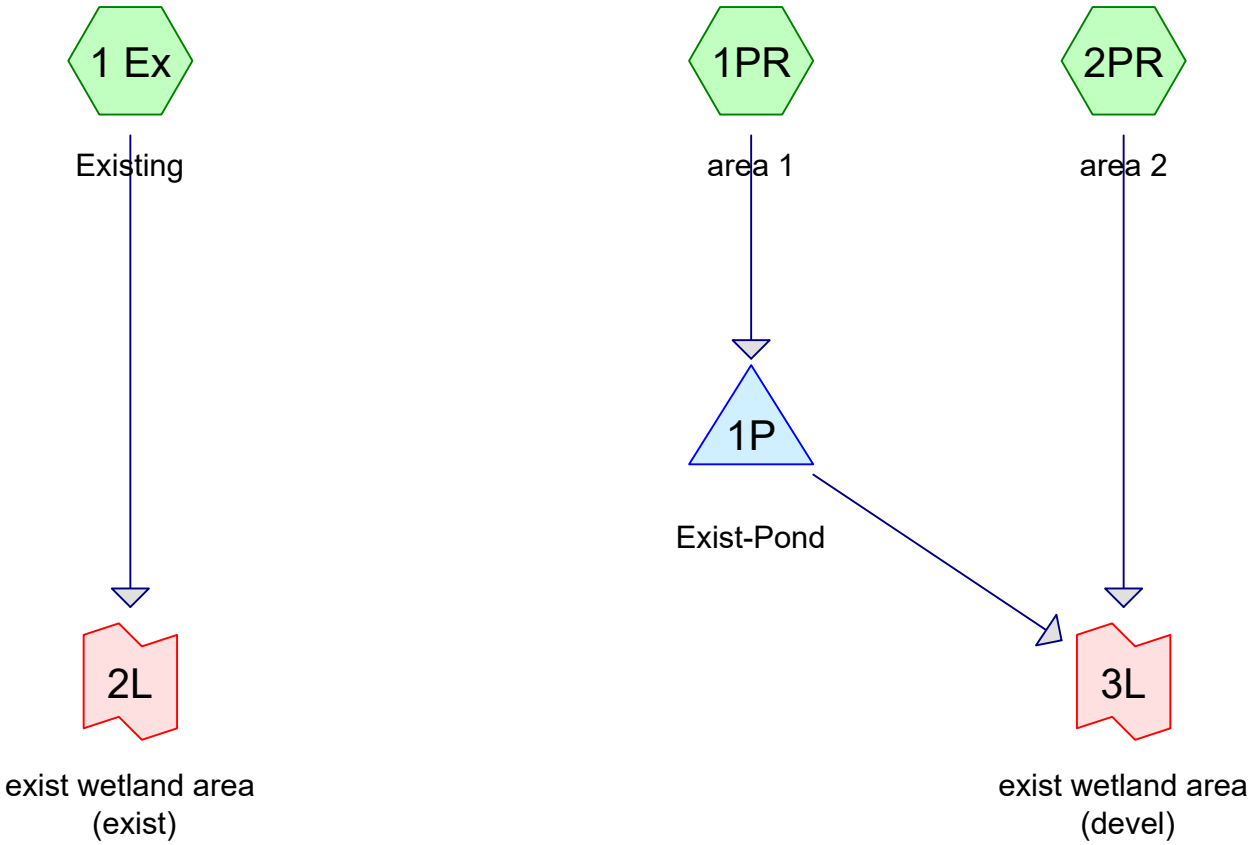
Standard 10: Prohibition of Illicit Discharges

Based on available records, there are no known illicit discharges generated by the property owner. No illicit discharges are proposed. Prior to land disturbance, an illicit discharge statement will be provided, if requested.

Appendix - Standard 2 Supporting Information

Rainfall volumes used for this analysis were based on the Natural Resources Conservation Service (NRCS) Type III, 24-hour storm event for Andover, Massachusetts. Runoff coefficients for the existing and proposed conditions were determined using NRCS Technical Release 55 (TR-55) methodology as provided in HydroCAD. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

HydroCAD Analysis: Existing/Proposed Conditions



Subcat Reach Pond Link

Routing Diagram for Pleasant Valley St_HydroCAD
Prepared by Andover Consultants, Inc., Printed 11/24/2025

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
44,895	39	>75% Grass cover, Good, HSG A (1PR, 2PR)
12,448	98	Bldg (1PR)
51,175	98	Paved parking & walks (1PR)
108,518	30	Woods, Good, HSG A (1 Ex)
217,036	**52**	**TOTAL AREA**

Summary for Subcatchment 1 Ex: Existing

Runoff = 0.0 cfs @ 1.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Yr Rainfall=3.15"

Area (sf)	CN	Description
108,518	30	Woods, Good, HSG A
108,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	230	0.1400	6.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.5	100	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	20	0.5000	11.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.8	400	Total			

Summary for Subcatchment 1PR: area 1

Runoff = 3.1 cfs @ 12.10 hrs, Volume= 10,027 cf, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Yr Rainfall=3.15"

	Area (sf)	CN	Description
*	12,448	98	Bldg
	51,175	98	Paved parking & walks
	33,657	39	>75% Grass cover, Good, HSG A
	97,280	78	Weighted Average
	33,657		34.60% Pervious Area
	63,623		65.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 2PR: area 2

Runoff = 0.0 cfs @ 23.99 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Yr Rainfall=3.15"

Area (sf)	CN	Description
11,238	39	>75% Grass cover, Good, HSG A
11,238		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Exist-Pond

Inflow Area = 97,280 sf, 65.40% Impervious, Inflow Depth = 1.24" for 2-Yr event
Inflow = 3.1 cfs @ 12.10 hrs, Volume= 10,027 cf
Outflow = 0.4 cfs @ 13.01 hrs, Volume= 10,026 cf, Atten= 89%, Lag= 54.7 min
Discarded = 0.4 cfs @ 13.01 hrs, Volume= 10,026 cf
Primary = 0.0 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 56.95' @ 13.01 hrs Surf.Area= 4,544 sf Storage= 3,856 cf

Plug-Flow detention time= 114.4 min calculated for 10,012 cf (100% of inflow)
Center-of-Mass det. time= 114.3 min (964.3 - 850.0)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	39,593 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	3,576	249.0	0	0	3,576
58.00	5,744	312.0	9,235	9,235	6,444
60.00	7,608	348.0	13,308	22,543	8,447
61.00	8,505	375.0	8,052	30,596	10,041
62.00	9,500	395.0	8,998	39,593	11,326

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.00'	**2.400 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 54.00' Phase-In= 0.01'
#2	Primary	61.00'	**17.5' long x 13.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.62 2.66 2.70 2.66 2.65 2.66 2.65 2.63

Discarded OutFlow Max=0.4 cfs @ 13.01 hrs HW=56.95' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.4 cfs)

Primary OutFlow Max=0.0 cfs @ 1.00 hrs HW=56.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link 2L: exist wetland area (exist)

Inflow Area = 108,518 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2-Yr event
Inflow = 0.0 cfs @ 1.00 hrs, Volume= 0 cf
Primary = 0.0 cfs @ 1.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Link 3L: exist wetland area (devel)

Inflow Area = 108,518 sf, 58.63% Impervious, Inflow Depth = 0.00" for 2-Yr event
Inflow = 0.0 cfs @ 23.99 hrs, Volume= 0 cf
Primary = 0.0 cfs @ 23.99 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1 Ex: Existing

Runoff = 0.0 cfs @ 24.00 hrs, Volume= 38 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=4.98"

Area (sf)	CN	Description
108,518	30	Woods, Good, HSG A
108,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	230	0.1400	6.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.5	100	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	20	0.5000	11.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.8	400	Total			

Summary for Subcatchment 1PR: area 1

Runoff = 6.9 cfs @ 12.09 hrs, Volume= 21,845 cf, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=4.98"

	Area (sf)	CN	Description
*	12,448	98	Bldg
	51,175	98	Paved parking & walks
	33,657	39	>75% Grass cover, Good, HSG A
	97,280	78	Weighted Average
	33,657		34.60% Pervious Area
	63,623		65.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 2PR: area 2

Runoff = 0.0 cfs @ 12.48 hrs, Volume= 184 cf, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=4.98"

Area (sf)	CN	Description
11,238	39	>75% Grass cover, Good, HSG A
11,238		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Exist-Pond

Inflow Area = 97,280 sf, 65.40% Impervious, Inflow Depth = 2.69" for 10-Yr event
Inflow = 6.9 cfs @ 12.09 hrs, Volume= 21,845 cf
Outflow = 0.6 cfs @ 13.37 hrs, Volume= 21,845 cf, Atten= 92%, Lag= 76.7 min
Discarded = 0.6 cfs @ 13.37 hrs, Volume= 21,845 cf
Primary = 0.0 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 58.13' @ 13.37 hrs Surf.Area= 5,854 sf Storage= 9,965 cf

Plug-Flow detention time= 204.5 min calculated for 21,814 cf (100% of inflow)
Center-of-Mass det. time= 204.4 min (1,031.7 - 827.3)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	39,593 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	3,576	249.0	0	0	3,576
58.00	5,744	312.0	9,235	9,235	6,444
60.00	7,608	348.0	13,308	22,543	8,447
61.00	8,505	375.0	8,052	30,596	10,041
62.00	9,500	395.0	8,998	39,593	11,326

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.00'	**2.400 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 54.00' Phase-In= 0.01'
#2	Primary	61.00'	**17.5' long x 13.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.62 2.66 2.70 2.66 2.65 2.66 2.65 2.63

Discarded OutFlow Max=0.6 cfs @ 13.37 hrs HW=58.13' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.6 cfs)

Primary OutFlow Max=0.0 cfs @ 1.00 hrs HW=56.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link 2L: exist wetland area (exist)

Inflow Area = 108,518 sf, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr event
Inflow = 0.0 cfs @ 24.00 hrs, Volume= 38 cf
Primary = 0.0 cfs @ 24.00 hrs, Volume= 38 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Link 3L: exist wetland area (devel)

Inflow Area = 108,518 sf, 58.63% Impervious, Inflow Depth = 0.02" for 10-Yr event
Inflow = 0.0 cfs @ 12.48 hrs, Volume= 184 cf
Primary = 0.0 cfs @ 12.48 hrs, Volume= 184 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1 Ex: Existing

Runoff = 0.0 cfs @ 24.00 hrs, Volume= 38 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Yr Rainfall=4.98"

Area (sf)	CN	Description
108,518	30	Woods, Good, HSG A
108,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	230	0.1400	6.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.5	100	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	20	0.5000	11.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.8	400	Total			

Summary for Subcatchment 1PR: area 1

Runoff = 6.9 cfs @ 12.09 hrs, Volume= 21,845 cf, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Yr Rainfall=4.98"

	Area (sf)	CN	Description
*	12,448	98	Bldg
	51,175	98	Paved parking & walks
	33,657	39	>75% Grass cover, Good, HSG A
	97,280	78	Weighted Average
	33,657		34.60% Pervious Area
	63,623		65.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 2PR: area 2

Runoff = 0.0 cfs @ 12.48 hrs, Volume= 184 cf, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Yr Rainfall=4.98"

Area (sf)	CN	Description
11,238	39	>75% Grass cover, Good, HSG A
11,238		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Exist-Pond

Inflow Area = 97,280 sf, 65.40% Impervious, Inflow Depth = 2.69" for 25-Yr event
Inflow = 6.9 cfs @ 12.09 hrs, Volume= 21,845 cf
Outflow = 0.6 cfs @ 13.37 hrs, Volume= 21,845 cf, Atten= 92%, Lag= 76.7 min
Discarded = 0.6 cfs @ 13.37 hrs, Volume= 21,845 cf
Primary = 0.0 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 58.13' @ 13.37 hrs Surf.Area= 5,854 sf Storage= 9,965 cf

Plug-Flow detention time= 204.5 min calculated for 21,814 cf (100% of inflow)
Center-of-Mass det. time= 204.4 min (1,031.7 - 827.3)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	39,593 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	3,576	249.0	0	0	3,576
58.00	5,744	312.0	9,235	9,235	6,444
60.00	7,608	348.0	13,308	22,543	8,447
61.00	8,505	375.0	8,052	30,596	10,041
62.00	9,500	395.0	8,998	39,593	11,326

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.00'	**2.400 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 54.00' Phase-In= 0.01'
#2	Primary	61.00'	**17.5' long x 13.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.62 2.66 2.70 2.66 2.65 2.66 2.65 2.63

Discarded OutFlow Max=0.6 cfs @ 13.37 hrs HW=58.13' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.6 cfs)

Primary OutFlow Max=0.0 cfs @ 1.00 hrs HW=56.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link 2L: exist wetland area (exist)

Inflow Area = 108,518 sf, 0.00% Impervious, Inflow Depth = 0.00" for 25-Yr event
Inflow = 0.0 cfs @ 24.00 hrs, Volume= 38 cf
Primary = 0.0 cfs @ 24.00 hrs, Volume= 38 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Link 3L: exist wetland area (devel)

Inflow Area = 108,518 sf, 58.63% Impervious, Inflow Depth = 0.02" for 25-Yr event
Inflow = 0.0 cfs @ 12.48 hrs, Volume= 184 cf
Primary = 0.0 cfs @ 12.48 hrs, Volume= 184 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1 Ex: Existing

Runoff = 0.2 cfs @ 12.49 hrs, Volume= 3,559 cf, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Yr Rainfall=7.90"

Area (sf)	CN	Description
108,518	30	Woods, Good, HSG A
108,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	230	0.1400	6.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.5	100	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	20	0.5000	11.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.8	400	Total			

Summary for Subcatchment 1PR: area 1

Runoff = 13.4 cfs @ 12.09 hrs, Volume= 42,954 cf, Depth= 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Yr Rainfall=7.90"

	Area (sf)	CN	Description
*	12,448	98	Bldg
	51,175	98	Paved parking & walks
	33,657	39	>75% Grass cover, Good, HSG A
	97,280	78	Weighted Average
	33,657		34.60% Pervious Area
	63,623		65.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 2PR: area 2

Runoff = 0.2 cfs @ 12.13 hrs, Volume= 1,045 cf, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Yr Rainfall=7.90"

Area (sf)	CN	Description
11,238	39	>75% Grass cover, Good, HSG A
11,238		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Exist-Pond

Inflow Area = 97,280 sf, 65.40% Impervious, Inflow Depth = 5.30" for 100-Yr event
Inflow = 13.4 cfs @ 12.09 hrs, Volume= 42,954 cf
Outflow = 0.9 cfs @ 13.63 hrs, Volume= 42,955 cf, Atten= 93%, Lag= 92.6 min
Discarded = 0.9 cfs @ 13.63 hrs, Volume= 42,955 cf
Primary = 0.0 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 59.93' @ 13.63 hrs Surf.Area= 7,534 sf Storage= 21,984 cf

Plug-Flow detention time= 291.7 min calculated for 42,893 cf (100% of inflow)
Center-of-Mass det. time= 291.8 min (1,099.8 - 808.0)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	39,593 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	3,576	249.0	0	0	3,576
58.00	5,744	312.0	9,235	9,235	6,444
60.00	7,608	348.0	13,308	22,543	8,447
61.00	8,505	375.0	8,052	30,596	10,041
62.00	9,500	395.0	8,998	39,593	11,326

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.00'	**2.400 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 54.00' Phase-In= 0.01'
#2	Primary	61.00'	**17.5' long x 13.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.62 2.66 2.70 2.66 2.65 2.66 2.65 2.63

Discarded OutFlow Max=0.9 cfs @ 13.63 hrs HW=59.93' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.9 cfs)

Primary OutFlow Max=0.0 cfs @ 1.00 hrs HW=56.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link 2L: exist wetland area (exist)

Inflow Area = 108,518 sf, 0.00% Impervious, Inflow Depth = 0.39" for 100-Yr event
Inflow = 0.2 cfs @ 12.49 hrs, Volume= 3,559 cf
Primary = 0.2 cfs @ 12.49 hrs, Volume= 3,559 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Summary for Link 3L: exist wetland area (devel)

Inflow Area = 108,518 sf, 58.63% Impervious, Inflow Depth = 0.12" for 100-Yr event
Inflow = 0.2 cfs @ 12.13 hrs, Volume= 1,045 cf
Primary = 0.2 cfs @ 12.13 hrs, Volume= 1,045 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

NOAA Atlas 14, Volume 10, Version 3
Location name: Methuen, Massachusetts, USA*
Latitude: 42.744°, Longitude: -71.142°
Elevation: 40 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.310** (0.243-0.388)	**0.370** (0.289-0.463)	**0.467** (0.364-0.588)	**0.548** (0.424-0.692)	**0.659** (0.493-0.869)	**0.743** (0.545-1.00)	**0.830** (0.590-1.16)	**0.927** (0.625-1.32)	**1.06** (0.690-1.58)	**1.18** (0.744-1.78)
10-min	**0.439** (0.344-0.550)	**0.524** (0.409-0.656)	**0.662** (0.516-0.832)	**0.776** (0.601-0.980)	**0.933** (0.699-1.23)	**1.05** (0.772-1.42)	**1.18** (0.836-1.64)	**1.31** (0.885-1.88)	**1.51** (0.977-2.23)	**1.66** (1.05-2.52)
15-min	**0.517** (0.404-0.647)	**0.616** (0.482-0.772)	**0.778** (0.606-0.978)	**0.913** (0.707-1.15)	**1.10** (0.822-1.45)	**1.24** (0.908-1.67)	**1.38** (0.984-1.93)	**1.54** (1.04-2.21)	**1.77** (1.15-2.62)	**1.96** (1.24-2.96)
30-min	**0.712** (0.557-0.891)	**0.849** (0.663-1.06)	**1.07** (0.835-1.35)	**1.26** (0.973-1.59)	**1.51** (1.13-1.99)	**1.70** (1.25-2.30)	**1.90** (1.35-2.66)	**2.13** (1.44-3.04)	**2.44** (1.58-3.61)	**2.70** (1.71-4.07)
60-min	**0.907** (0.710-1.14)	**1.08** (0.845-1.35)	**1.36** (1.06-1.72)	**1.60** (1.24-2.02)	**1.93** (1.44-2.54)	**2.17** (1.59-2.92)	**2.43** (1.72-3.39)	**2.71** (1.83-3.87)	**3.11** (2.02-4.60)	**3.43** (2.17-5.19)
2-hr	**1.17** (0.920-1.45)	**1.40** (1.10-1.74)	**1.78** (1.40-2.22)	**2.09** (1.63-2.63)	**2.53** (1.91-3.33)	**2.85** (2.11-3.84)	**3.20** (2.31-4.48)	**3.61** (2.44-5.13)	**4.23** (2.75-6.23)	**4.75** (3.02-7.14)
3-hr	**1.35** (1.07-1.67)	**1.62** (1.28-2.01)	**2.07** (1.63-2.58)	**2.44** (1.92-3.06)	**2.96** (2.25-3.89)	**3.34** (2.49-4.49)	**3.75** (2.72-5.26)	**4.25** (2.88-6.03)	**5.03** (3.27-7.38)	**5.69** (3.62-8.51)
6-hr	**1.72** (1.37-2.11)	**2.08** (1.66-2.56)	**2.68** (2.13-3.31)	**3.17** (2.50-3.94)	**3.85** (2.95-5.04)	**4.35** (3.27-5.83)	**4.90** (3.59-6.86)	**5.58** (3.80-7.86)	**6.64** (4.34-9.68)	**7.56** (4.82-11.2)
12-hr	**2.15** (1.73-2.63)	**2.62** (2.11-3.22)	**3.40** (2.73-4.19)	**4.05** (3.23-5.01)	**4.94** (3.81-6.43)	**5.60** (4.23-7.46)	**6.32** (4.65-8.78)	**7.20** (4.93-10.1)	**8.58** (5.63-12.4)	**9.77** (6.25-14.4)
24-hr	**2.53** (2.06-3.08)	**3.15** (2.55-3.83)	**4.15** (3.35-5.07)	**4.98** (4.00-6.12)	**6.13** (4.77-7.94)	**6.97** (5.31-9.25)	**7.90** (5.86-11.0)	**9.07** (6.22-12.6)	**10.9** (7.17-15.7)	**12.5** (8.02-18.3)
2-day	**2.83** (2.32-3.42)	**3.59** (2.94-4.34)	**4.83** (3.94-5.86)	**5.86** (4.74-7.15)	**7.27** (5.70-9.39)	**8.30** (6.39-11.0)	**9.45** (7.10-13.1)	**11.0** (7.55-15.2)	**13.4** (8.83-19.2)	**15.5** (10.0-22.6)
3-day	**3.11** (2.56-3.74)	**3.92** (3.22-4.73)	**5.25** (4.30-6.35)	**6.35** (5.16-7.72)	**7.87** (6.20-10.1)	**8.97** (6.93-11.9)	**10.2** (7.70-14.1)	**11.8** (8.17-16.3)	**14.5** (9.56-20.6)	**16.8** (10.8-24.4)
4-day	**3.38** (2.79-4.06)	**4.21** (3.48-5.07)	**5.58** (4.58-6.74)	**6.72** (5.48-8.15)	**8.28** (6.54-10.6)	**9.42** (7.30-12.4)	**10.7** (8.08-14.8)	**12.4** (8.56-17.0)	**15.1** (9.99-21.5)	**17.5** (11.3-25.3)
7-day	**4.12** (3.42-4.92)	**4.98** (4.14-5.96)	**6.40** (5.29-7.68)	**7.58** (6.22-9.14)	**9.19** (7.30-11.7)	**10.4** (8.07-13.5)	**11.7** (8.85-16.0)	**13.4** (9.32-18.3)	**16.2** (10.7-22.9)	**18.6** (12.1-26.9)
10-day	**4.79** (4.00-5.70)	**5.68** (4.73-6.77)	**7.13** (5.92-8.53)	**8.34** (6.88-10.0)	**10.0** (7.96-12.6)	**11.2** (8.74-14.5)	**12.6** (9.50-17.0)	**14.3** (9.96-19.5)	**17.0** (11.3-24.0)	**19.4** (12.6-27.9)
20-day	**6.69** (5.63-7.91)	**7.67** (6.45-9.08)	**9.27** (7.77-11.0)	**10.6** (8.82-12.7)	**12.4** (9.94-15.5)	**13.8** (10.8-17.6)	**15.3** (11.5-20.2)	**16.9** (11.9-22.9)	**19.4** (13.0-27.1)	**21.4** (13.9-30.5)
30-day	**8.27** (7.00-9.75)	**9.33** (7.89-11.0)	**11.1** (9.31-13.1)	**12.5** (10.4-14.9)	**14.5** (11.6-17.9)	**16.0** (12.5-20.2)	**17.5** (13.1-22.8)	**19.2** (13.5-25.7)	**21.4** (14.4-29.8)	**23.1** (15.1-32.9)
45-day	**10.3** (8.75-12.1)	**11.4** (9.72-13.4)	**13.3** (11.3-15.7)	**14.9** (12.5-17.6)	**17.0** (13.7-20.9)	**18.7** (14.6-23.4)	**20.3** (15.1-26.2)	**21.9** (15.5-29.3)	**24.0** (16.2-33.2)	**25.5** (16.6-36.1)
60-day	**12.0** (10.3-14.1)	**13.2** (11.3-15.5)	**15.2** (12.9-17.9)	**16.9** (14.2-19.9)	**19.1** (15.4-23.4)	**20.9** (16.3-26.0)	**22.6** (16.9-28.9)	**24.2** (17.2-32.3)	**26.2** (17.7-36.2)	**27.6** (18.0-39.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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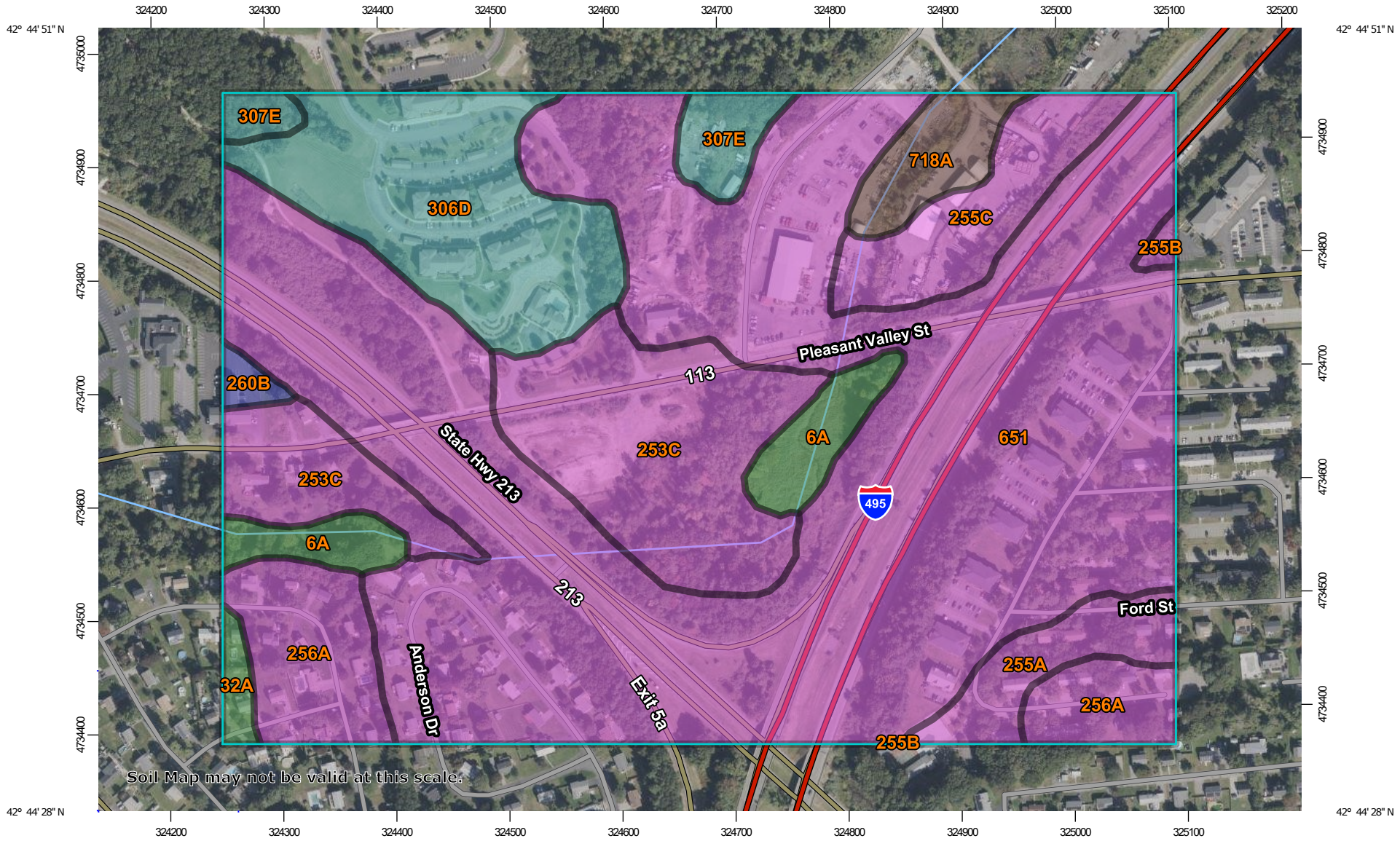
PF graphical

Appendix - Standard 3
Supporting Information

Soil Evaluation and Analysis

Hydrologic Soil Group—Essex County, Massachusetts, Northern Part
(143 Pleasant Valley Street)



Map Scale: 1:4,860 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Essex County, Massachusetts, Northern Part
Survey Area Data: Version 21, Sep 5, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	A/D	3.7	3.0%
32A	Wareham loamy sand, 0 to 3 percent slopes	A/D	0.7	0.6%
253C	Hinckley loamy sand, 8 to 15 percent slopes	A	15.0	12.5%
255A	Windsor loamy sand, 0 to 3 percent slopes	A	3.2	2.7%
255B	Windsor loamy sand, 3 to 8 percent slopes	A	0.3	0.2%
255C	Windsor loamy sand, 8 to 15 percent slopes	A	4.9	4.1%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	7.0	5.8%
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	B	0.5	0.4%
306D	Paxton fine sandy loam, 15 to 25 percent slopes, very stony	C	11.6	9.7%
307E	Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony	C	2.3	1.9%
651	Udorthents, smoothed	A	68.4	56.9%
718A	Saco variant silt loam, frequently ponded, 0 to 1 percent slopes, frequently flooded	B/D	2.6	2.2%
Totals for Area of Interest			**120.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix - Standard 4/8 Supporting Information

TSS Removal Worksheet

TSS Removal Calculation Worksheet

Project Name: **Proposed Hotel**
Location: **143 Pleasant Valley**
Methuen, Mass

Date: **1-Dec-25**

A	B	C	D	E
BMP*	TSS Removal Rate*	Starting TSS Load**	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	**25%**	**1.00**	**0.25**	**0.75**
Oil Grit Separator	**25%**	**0.75**	**0.19**	**0.56**
Infiltration Basin	**80%**	**0.56**	**0.45**	**0.11**
	0%	**0.11**	**0.00**	**0.11**

* BMP and TSS Removal Rate Values from the MassDEP Stormwater Handbook Vol.
** Equals remaining load from previous BMP (E)

Treatment Train TSS Removal = **89%**

Recommended Construction Period Pollution Prevention and Erosion Control

Recommended Construction Period Pollution Prevention and Erosion Control

Proposed Hotel – 143 Pleasant Valley Street Methuen, Mass

General

Sediment control measures will be implemented prior to the start of construction. A staked hay or straw bale barrier will be installed as shown on the Site Plan. When Construction is complete all disturbed areas shall be completely stabilized.

Responsible Party

The **Property Owner** shall be responsible for ensuring that the site development contractor hired for the work is continually in compliance with this Plan.

Site Development Plan

See the Site Plans prepared by Andover Consultants, Inc. for the proposed development details.

Construction Sequencing Plan

Major activities will *generally proceed* as follows:

1. Obtain all required permits from City Departments. .
2. Install perimeter sediment control barrier of staked hay bales and/or silt fence as shown on the plans and demarcate the limit of work in other areas prior to commencing any work.
3. Grub areas where construction will occur and remove vegetation/roots off site. No stumps or trees/vegetation shall be buried on site.
4. Remove topsoil and stockpile on site or transport offsite. Protect stockpile with a perimeter of silt fencing or hay bales if stockpiling on site.
5. Obtain all required permits to construct buildings and install utilities.
6. Install underground utilities.
7. Rough grade for parking area and building pad.
8. Perform rough earthwork activities consisting of cut and fill on lot.
9. Construct building and connect utility services.
10. Place and compact pavement base for driveway, parking area, sidewalks, etc.
11. Place and compact bituminous concrete for paved driveway and parking area.
12. Fine grade remaining areas of non-paved areas, loam, seed, mulch and install landscaping.
13. Clean project area as necessary.

Construction Period Pollution Prevention Measures

1. Appropriate erosion and sediment control measures shall be installed prior to soil disturbance. Measures shall be taken to control erosion within the project area. Sediment in runoff water shall be trapped and retained within the project area. Wetland areas and surface waters shall be protected from sediment.

2. Runoff shall be controlled and conveyed into storm drains and other outlets so it will not erode the land or cause off-site damage; sediment in runoff shall be trapped by using staked hay bales, silt fencing, or sedimentation traps, or other approved erosion control devices.

3. Temporary sediment basins shall be constructed where necessary to detain runoff and to trap sediment during construction;

4. Sediment shall be removed once the volume reaches ¼ to ½ the height of the silt fence or hay bale barrier.

5. Any offsite runoff shall be diverted from highly erodible soils and steep slopes to stable areas downstream.

6. Soil and other materials shall not be stockpiled or redistributed, either temporarily or permanently, in locations or in such a manner as would cause suffocation of tree root systems. Stockpiles shall not be located where they could impact wetland.

7. Topsoil shall be stripped from disturbed areas, stockpiled in approved areas and stabilized with temporary vegetative cover if it is to be left for more than thirty (30) calendar days; perimeter sediment controls shall be installed around each area of stockpiled topsoil.

8. Soil stockpiles shall be stabilized or covered at the end of each workday.

9. The area of disturbance shall be kept to a minimum. Disturbed areas remaining idle for more than 14 days shall be stabilized with mulch or matting nets.

10. A crushed stone tracking pad shall be maintained at the start of the proposed road entrance onto Haverhill Street. Once binder is placed, the paved way may act as the tracking pad. Soil tracking onto Haverhill Street shall be closely monitored and any soil tracked onto the pavement shall be removed prior to leaving the site for the day.

11. All graded areas shall be covered with four (4") inches of topsoil and planted with a native species of vegetative cover, sufficient to prevent erosion;

12. Temporary seeding, mulching or other suitable stabilization methods shall be used to protect exposed soil areas during construction; as feasible, natural vegetation shall be retained and protected; during the months of October through March.

13. Permanent seeding should be undertaken in the spring from March through May, and in late summer and early fall from August to October 15. During the peak summer months and in the fall after October 15, when seeding is found to be impractical, appropriate temporary mulch shall be applied. Permanent seeding may be undertaken during the summer if plans provide for adequate mulching and watering. All plantings shall comply with the erosion and sedimentation vegetative practices recommended by the U.S. Soil Conservation Service;

14. All slopes steeper than 3:1 (H – V, 33.3%), shall, upon completion, be immediately stabilized with sod, or seed with straw mulch, or other approved stabilization measures (e.g. manufactured straw mats). Areas outside of the perimeter sediment control system shall not be disturbed.

15. Monitoring, daily, and maintenance of erosion and sediment control measures, when required, shall be performed throughout the course of construction.

16. Temporary sediment trapping devices shall not be removed until permanent stabilization is established in all contributory drainage areas.

17. All temporary erosion and sediment control measures shall be removed after final site stabilization. Disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized within 30 days.

18. Dust shall be controlled at the site.

Inspection Schedule

During construction the inspection schedule shall consist of the following:

1. The sediment barrier shall be visually inspected daily. The barrier shall be repaired or replaced immediately, as necessary.
2. All seeded areas shall be inspected periodically to insure proper germination and adequate coverage and shall be reseeded as necessary. Any wash outs shall be promptly repaired, reseeded and mulched
3. Maintain a construction exit at the edge of the existing pavement/sidewalk on Pleasant Valley Street and clean vehicles tires as needed and sweep as required to prevent the spread of sediment.
4. Inspect Pleasant Valley Street sidewalk/pavement for soil tracking daily and prior to leaving the site for the day. Any tracked soil onto the street shall be swept up as needed prior to leaving the site. No sediments tracked onto the existing ways shall remain on the ways overnight.

Long Term Operation and Maintenance Plan

Operation and Maintenance Plan
Proposed Hotel – 143 Pleasant Valley Street Methuen, Mass

1. All components of the drainage system, including the catch basin sediment sumps, sediment forebay, detention basin, crushed stone diversions, and flared end, riprap outlets shall be maintained by the Property Owner.

2. The Owner, or his designated agent, shall inspect all components of the stormwater management system at least four times per year. The owner shall ensure that no portion of the stormwater management system is damaged, blocked or otherwise in a state that prevents its proper operation.

3. The Owner, or designated agent, shall ensure that accumulated silt and debris within the catch basins is removed in a timely manner. The catch basins shall be cleaned four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. The use of vacuum trucks to clean the structures is recommended.

4. The Owner, or designated agent, shall inspect the sediment forebay monthly and clean sediment forebays four times per year and when sediment depth is between 3 to 6 inches. Sediment forebays should also be inspected after every major storm (rainfall exceeding 3 inches in 25 hours).

5. The Owner, or designated agent, shall inspect the detention basin twice per year, and shall mow the buffer area, side slopes, and bottom of basin twice per year. The Owner, or designated agent, shall also rake stone overflow areas, remove trash, grass clippings and other accumulated organic matter. The detention basin should also be inspected after every major storm (rainfall exceeding 3 inches in 25 hours).

6. The flared end outlet pipes shall be monitored for sediment build up which may indicate the need to the clean the site catch basins.

7. Illicit discharges are to be prohibited. The Owner shall report any illicit discharges once discovered to the Methuen Police and Health Departments.

8. The parking area shall be cleaned of sand and debris at least twice per year, preferably after the fall foliage and winter sanding seasons.

9. The existing site shall be cleared of litter at least weekly.

Inspection and Maintenance Report

143 Pleasant Valley Street
Methuen, Mass

	Condition	Action Taken
Catch basins:		
Stormwater Basin		
Sediment Forebay		
Parking Lot sediments		
Flared End Section(s)		
Other		

Signed _____ **Date**

Long Term Pollution Prevention Plan

Good housekeeping practices

The Property Owner shall ensure regular maintenance activities at the site remain on schedule. Professional Landscape services may be utilized to maintain the grounds.

Provisions for storing materials and waste products inside or under cover

No Hazardous materials shall be stored at this site.

Requirements for routine inspections and maintenance of stormwater BMPs

The Applicant will be responsible for ensuring that the inspection and maintenance activities including regular inspection and maintenance of the storm water management structures continue indefinitely.

Requirements for storage and use of fertilizers, herbicides, and pesticides

No fertilizers, herbicides or pesticides shall be stored outside at this site and must be stored in compliance with manufacturer's recommendations if stored inside.

Provisions for solid waste management

Solid waste produced at the site will be temporarily stored in trash receptacles and removed from the site via a licensed trash hauler and hauled off site.

Snow disposal and plowing

Snow shall not be plowed directly into the right-of-way but stored just off the edge of the parking lot pavement or at a designated area within the site. Plow damage to grassed areas adjacent to the pavement shall be repaired in the spring once growing season starts.

Winter Road Salt and/or Sand Use and Storage restrictions

No salt shall be stored outside at the site. Minimal use of salt and sand is encouraged, if safe to do so, to mitigate slippery conditions.

Parking Lot sweeping schedule

The parking area shall be cleaned of sand and debris at least twice per year, preferably after the fall foliage and winter seasons.

Provisions for prevention of illicit discharges to the stormwater management system

The storage and use of hazardous materials is prohibited. No illicit discharges of oil or other hazardous materials shall occur at the site. Any detected illicit discharges shall be reported immediately to the Methuen Police and Board of Health.

List of Emergency Contacts for implementing Long-Term Pollution Prevention Plan

Methuen Police Department	(978) 983-8698
Methuen Conservation Department	(978) 983-8650
Methuen Health Department	(978) 983-8655
Massachusetts Department of Environmental Protection	(978) 694-3200

(Owner to sign prior to proposed stormwater discharges)

Illicit Discharge Statement

143 Pleasant Valley Street
Methuen, Mass 01844

As the Owner of the parcel depicted on Assessor Map 1113-109W-20A, 14 Calumet Road in Methuen, Massachusetts, I hereby certify that no illicit discharges from the site are proposed or exist on the site. No such certification is made for adjacent or nearby parcels which discharge onto this parcel.

_____
Print Name

_____ _____
Signature Date