

Stormwater Management System Report

Brodeur Machine Company Inc.

PROPOSED Building Addition

62 Wood Street

NEW BEDFORD, MASSACHUSETTS

Prepared for:

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Project No. 2381

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CONSULTING ENGINEERS

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Preface

Stormwater Management Standards Compliance Checklist



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



 2/10/21
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

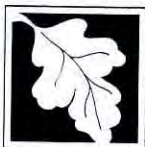
Checklist (continued)

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)

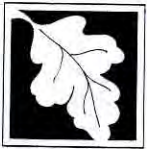
Standard 2: Peak Rate Attenuation

- ☐ 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)

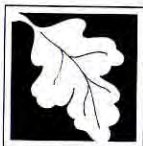
Standard 3: Recharge (continued)

- ☐ 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 proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs) NOT APPLICABLE

- ☐ 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 NOT APPLICABLE

- ☐ 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 **NOT APPLICABLE**

- ☐ 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.

Section 1

Hydrologic Overview

1.0 INTRODUCTION

1.1 Project Description

The applicant is proposing to construct an approximate 3,500 square foot building addition on an existing parcel of land located at 62 Wood Street, New Bedford, MA. The project will consist of demolition of the existing paved area and construction of the proposed addition. The approximate 3,500 square foot building addition will replace existing paved areas, resulting in no change of impervious area.

The existing paved surfaces on the site are serviced by an on-site stormwater management system consisting of overland flow to a catch basin and piping system. Roof runoff from the proposed building addition will be directed to the stormwater system via pipe and conduit. It is anticipated that stormwater quality will improve after construction due to the reduction in paved area and corresponding increase in building area.

1.2 Hydrologic Overview

A hydrologic analysis for the pre and post developed conditions for the project site has been prepared and is submitted in the following sections of this report. The primary goal of this analysis is to evaluate and mitigate the potential impacts of the proposed development to the receiving stormwater system. This system was considered the Analysis Point for the stormwater management analysis.

The analysis and comparison of the present condition and the proposed condition hydrology includes a calculated estimation of the runoff volume and peak storm flow rates from the site for the subject drainage area. The HydroCAD hydrologic program, developed by Applied Microcomputer Systems, was utilized in the preparation of the stormwater runoff models. The HydroCAD software is based upon the Soil Conservation Service, "Technical Release 20 – Urban Hydrology for Small Watersheds" and is a generally accepted industry standard methodology.

Analysis was performed for the 2, 10, 25, and 100-year frequency rainfall events. These events were based on a 24-hour duration storm with a SCS Type III storm distribution curve. Time of Concentration (T_c) values and runoff Curve Numbers (CN) were developed for each of the calculated existing and proposed drainage areas based upon prevalent topographic patterns, ground cover conditions, and SCS Hydrologic Soil Group classifications.

The hydrologic study area in the pre-developed state consists of one (1) watershed area with one (1) corresponding analysis point as described above. The hydrologic study area in the post-developed condition consists of one (1) watershed area with the same analysis point corresponding to the pre-development model. The pre and post development watershed areas and corresponding analysis points are described in the following sections and depicted on the Watershed Plans submitted in Appendix A.

The Bristol County Soil Conservation Service (SCS) mapping for this area indicates one (1) primary soil type over the subject parcel. The predominant soil classification is as follows:

- Urban Land (602) – Hydrologic Soil Group: Unranked

Site conditions and NRCS soil maps were analyzed to better understand soil conditions and properties to more accurately depict current drainage patterns on the site. Through these methods, it was estimated that the soils on site are currently classified as impervious.

1.3 Pre-Development Hydrologic Summary

In the present condition, the site is comprised of one (1) watershed area as shown on the attached Pre-Development Watershed Plan. The watershed designation and corresponding analysis point is as follows:

- Subcatchment PRE 1 is an approximate 0.68 acre area consisting of the watershed which currently flows through the stormwater system, taken as Analysis Point 1 (AP-1). The Time of Concentration (Tc) and Curve Number (CN) for Subcatchment PRE 1 was estimated at 6.0 minutes and 98, respectively.

A summary of the Pre-Development hydrologic conditions for the 2, 10, 25, and 100-year storm events is submitted in Table 1.3 below.

Table 1.3 – Pre-Development Hydrologic Summary

Storm Event	Analysis Point AP-1 Peak Rate of Flow (c.f.s.)
2-year storm	2.18
10-year storm	3.25
25-year storm	3.92
100-year storm	4.94

1.4 Post Development Hydrologic Summary

In the developed condition, the site is comprised of one (1) watershed area as shown on the attached Post Development Watershed Plan. The designated post-development analysis point corresponds to the previously described pre-development analysis point. The watershed designations and corresponding analysis point for each of the post development watersheds are as follows:

- Subcatchment POST 1 is an approximate 0.68 acre portion of the overall watershed area that includes the proposed paved surfaces which will flow through the remodeled stormwater management system, AP-1. Due to the decrease in pavement runoff and corresponding increase in roof runoff, it is anticipated that an increase in stormwater quality is likely. The Time of Concentration (Tc) and Curve Number (CN) for POST 1 were estimated at 6.0 minutes and 98, respectively.

A summary of the post-development hydrologic conditions for the 2, 10, 25, and 100-year storm events is submitted in Table 1.4 below.

Table 1.4 – Post Development Hydrologic Summary

Storm Event	Analysis Point AP-1 Rate of Flow (c.f.s.)
2-year storm	2.18
10-year storm	3.25
25-year storm	3.92
100-year storm	4.94

The hydrologic analysis indicates that the stormwater management system design for the site meets or reduces peak runoff rates for the 2, 10, 25, and 100-year, 24-hour, Type III storm events from the pre-developed levels at the subject analysis point. The analysis anticipates the proposed development of this project area will not result in an increase in the peak rates of runoff from the project site.

1.5 Select Structural Best Management Practices

(BMP's) Hooded Catch Basin

The existing catch basin near the southwest property corner will be fitted with an eliminator hood to provide increased quality of stormwater runoff from the existing contributing paved area. It is anticipated that the hood will reduce floatables exiting the system, including oil, trash, and other common debris associated with urban runoff.

1.6 Select Non-Structural Best Management Practices

(BMP's) Pavement Sweeping Program

All paved surfaces will be swept twice annually (fall and spring). The sweeping program will remove contaminants directly from the paved surfaces before their release into the stormwater system. The U.S. Environmental Protection Agency has determined that pavement sweeping can be an effective initial treatment for reducing pollutant loading into stormwater runoff.

Stormwater Management System Maintenance Program

All structural components of the stormwater management system will be inspected and maintained on a regular basis in accordance with the requirements of the Stormwater Management Policy. A detailed Stormwater Management System Operation and Maintenance Plan has been prepared in accordance with the Stormwater Management Standards and Stormwater Management Handbook prepared by the Massachusetts Department of Environmental Protection.

1.7 Regulatory Compliance

The Massachusetts Stormwater Handbook, Volume 3 (February, 2008), has been used as the primary guidance for the selection and design of permanent non-structural and structural BMPs for the long-term protection of existing wetland and water resources. The Stormwater Management Plan developed for this project incorporates water quantity and quality controls that will protect surface and groundwater resources, wetlands and adjacent properties from potential impacts due to increased impervious areas on the site.

The stormwater performance standards developed by the DEP and a brief discussion on how the proposed project will achieve the standards are provided below. The Stormwater Management System Compliance Certification and Checklist has been included as the Preface to this Report.

Standard 1. No new stormwater conveyances may discharge untreated stormwater directly to, or cause erosion in wetlands or waters of the Commonwealth.

- No proposed site stormwater conveyance system will discharge untreated stormwater runoff directly to wetlands or municipal stormwater systems. Stormwater runoff from the paved parking areas will be collected and treated with structural BMPs including a hooded catch basin.

Standard 2. Stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates.

- The entirety of the area will remain impervious, and there will be minimal changes to grades on site. Due to these factors, it is unlikely that any changes in peak discharge rates will occur due to the proposed development.

Standard 3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater 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 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 Stormwater Handbook.

- The entirety of the area will remain impervious, and there will be minimal changes to grades on site. Due to these factors, it is unlikely that a reduction groundwater recharge will occur due to the proposed development.

Standard 4. Stormwater management systems shall 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) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
- c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

- As a redevelopment project, the goal is to reduce the TSS loads in the post developed condition. The conversion of pavement to roof surfaces, in addition to the use of a hood in the existing catch basin will result in TSS reduction within the subject area.

Standard 5. 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 structural stormwater BMPs determined by the Department to be suitable for such uses 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.

- No portion of the proposed project would be considered a land use with higher potential pollutant loads.

Standard 6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook.

- The project does not discharge within a Critical Area as defined in the Stormwater Management Standards.

Standard 7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

- The project consists of converting an approximate 3,500 square foot paved area into a building addition with no increase in impervious area. As such, the project is considered a redevelopment. All applicable standards described in Standard 7 have been met to the maximum extent practicable.

Standard 8. 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) shall be developed and implemented.

- The proposed development will incorporate erosion and sedimentation controls to minimize the potential for sedimentation in down gradient resources. These controls will include silt sacks in existing catch basins.

Standard 9. A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

- The Stormwater Management Plan for this project has been developed in full compliance with the DEP Stormwater Management Policy. The Plan is based on a multi-dimensional approach to stormwater management that recognizes the need for proper site planning, source control of potential contaminants, and implementation of structural and non-structural treatment methods to ensure the protection of water resources in the vicinity of the site and adjacent properties. A detailed Long-Term Operation and Maintenance Plan is included in the following sections.

Standard 10. Illicit Discharges to the Stormwater Management System are prohibited.

- An Illicit Discharge Compliance Statement has been completed and is included as an Appendix to this report.

1.8 Post Construction Operation and Maintenance Plan

Name and current address of the Applicant

Brodeur Machine Company Inc.
62 Wood Street
New Bedford, MA 02745

Name and address of the Contractor of Record

To be determined and provided upon selection.

Plans of Record

Refer to Proposed Building Addition prepared for Brodeur Machine Company Inc. by Field Engineering Co. Inc. for locations of all BMP's on site as well as construction details of all BMP's.

1. The Owner shall be responsible for the proper inspection and maintenance of the stormwater facilities in accordance with this Operation and Maintenance Plan as well as the continuing conditions of the Certificate of Compliance on the property.
2. All Structural Best Management Practices (BMPs) should be inspected after every major rainfall event exceeding 1.0-inch for the first 6 months after construction to ensure proper stabilization and construction.
3. Thereafter, regular BMP inspections should be conducted according to the following schedule:

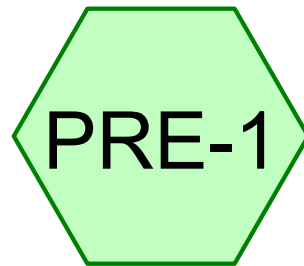
<u>BMP Structure</u>	<u>Inspections per Year</u>
Hooded Catch Basin	4

4. Accumulated silt and sediment should be removed if accumulated depth of sediment exceeds six inches.
5. All removed sediments are to be properly disposed of at a location to be approved by the Board of Health. Transportation and disposal of sediments shall comply with all applicable local, state, and federal regulations.
6. The driveway and parking areas shall be swept at least twice per year.
7. The bioretention area, and all landscaped areas should be inspected for trash on a monthly basis. Any accumulated trash, litter and discarded materials shall be removed.
8. Snow shall be stockpiled within and around areas which drain into the stormwater management system wherever practicable. The discharge of snow directly into the bottom of the bioretention area will be prohibited.
9. No disposal of materials will be permitted within any of the stormwater management system BMP's. This prohibition applies to trash, fill material, construction debris, grass clippings, collected leaves, and cut branches.
10. The embankments and side slopes of the bioretention area shall be mowed at least twice annually to facilitate maintenance.
11. An Operation and Maintenance Inspection Form shall be developed and copies of the completed forms shall be compiled by the Owner. These forms shall be available for review by the Conservation Commission upon request.

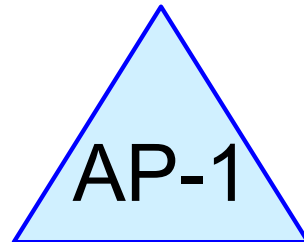
12. The Owner shall contract with a maintenance company on an annual basis that will be responsible for the operation and maintenance of the stormwater management system. The contact information for this company shall be provided to the Conservation Commission for their files.
13. The storm water BMP's will be inspected annually during regularly scheduled mid-summer landscaping and weeding operations for invasive or unwanted plants. If invasive species are found, they will be physically uprooted and removed from the area.

Section 2

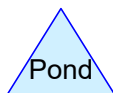
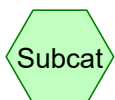
Pre-Development Hydrologic Analysis



Pre-Development
Area-1



Analysis Point-1 (Drain
Flows)



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Type III 24-hr 2-YR Rainfall=3.38"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PRE-1: Pre-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>2.94"
Tc=6.0 min CN=98 Runoff=2.18 cfs 0.166 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=2.18 cfs 0.166 af

Primary=2.18 cfs 0.166 af

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Type III 24-hr 2-YR Rainfall=3.38"

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Page 3

Summary for Subcatchment PRE-1: Pre-Development Area-1

Runoff = 2.18 cfs @ 12.09 hrs, Volume= 0.166 af, Depth> 2.94"

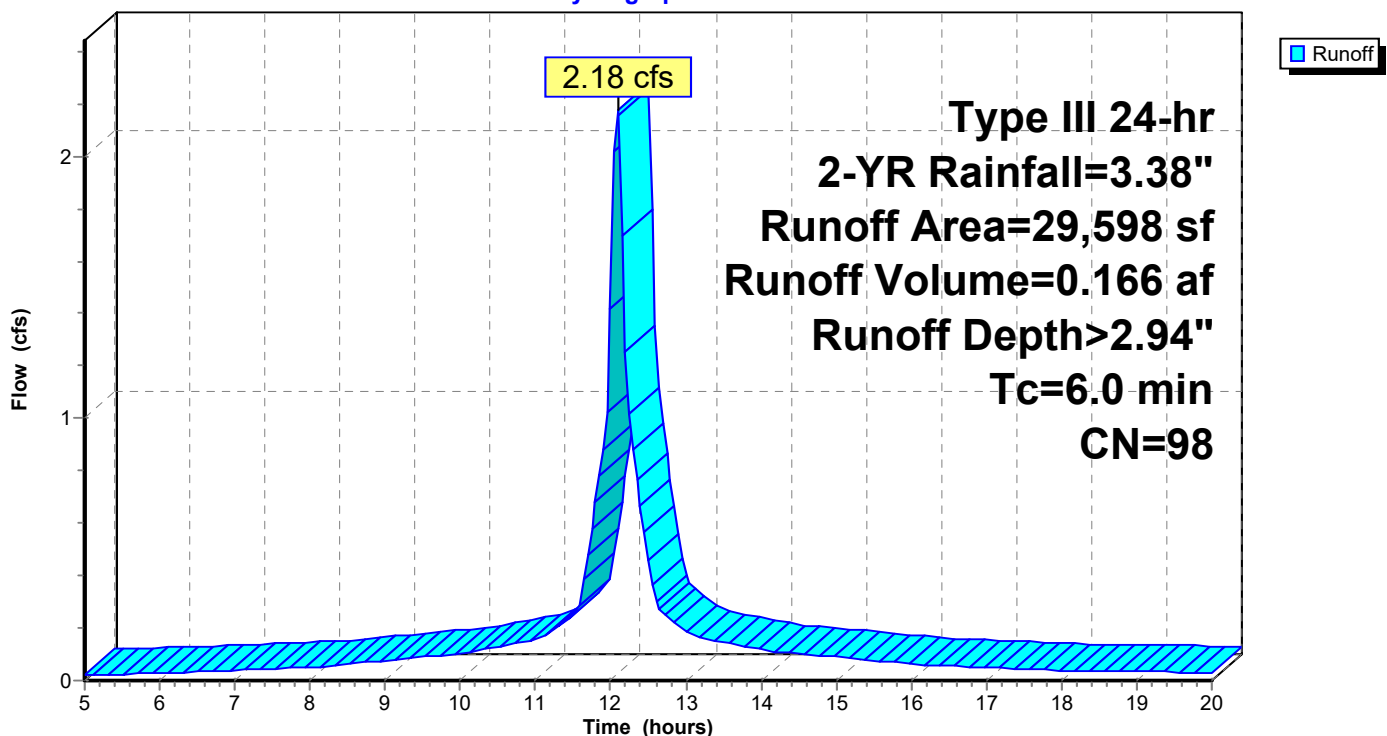
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.38"

	Area (sf)	CN	Description
*	13,405	98	Paved parking
*	16,193	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment PRE-1: Pre-Development Area-1

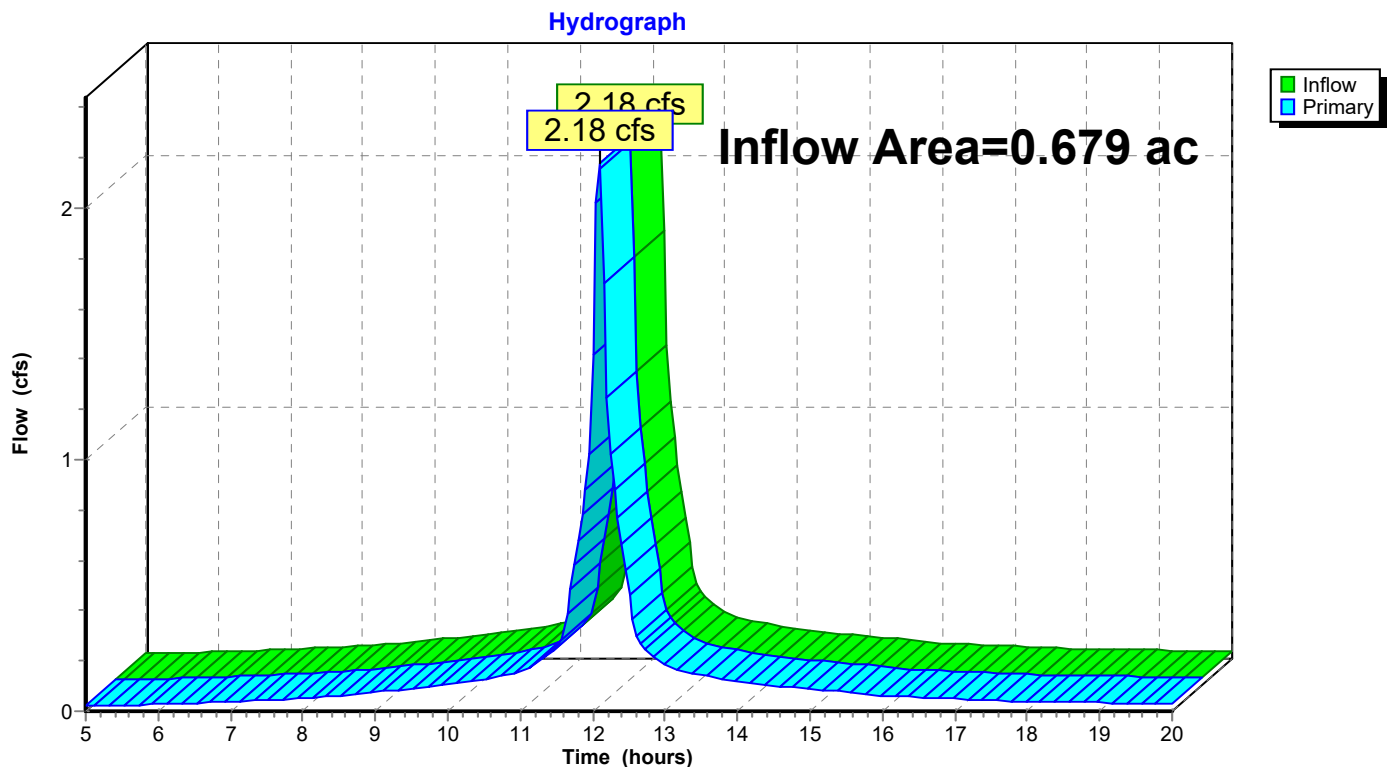
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 2.94" for 2-YR event
Inflow = 2.18 cfs @ 12.09 hrs, Volume= 0.166 af
Primary = 2.18 cfs @ 12.09 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

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Type III 24-hr 10-YR Rainfall=5.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PRE-1: Pre-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>4.43"
Tc=6.0 min CN=98 Runoff=3.25 cfs 0.251 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=3.25 cfs 0.251 af
Primary=3.25 cfs 0.251 af

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Type III 24-hr 10-YR Rainfall=5.01"

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Summary for Subcatchment PRE-1: Pre-Development Area-1

Runoff = 3.25 cfs @ 12.09 hrs, Volume= 0.251 af, Depth> 4.43"

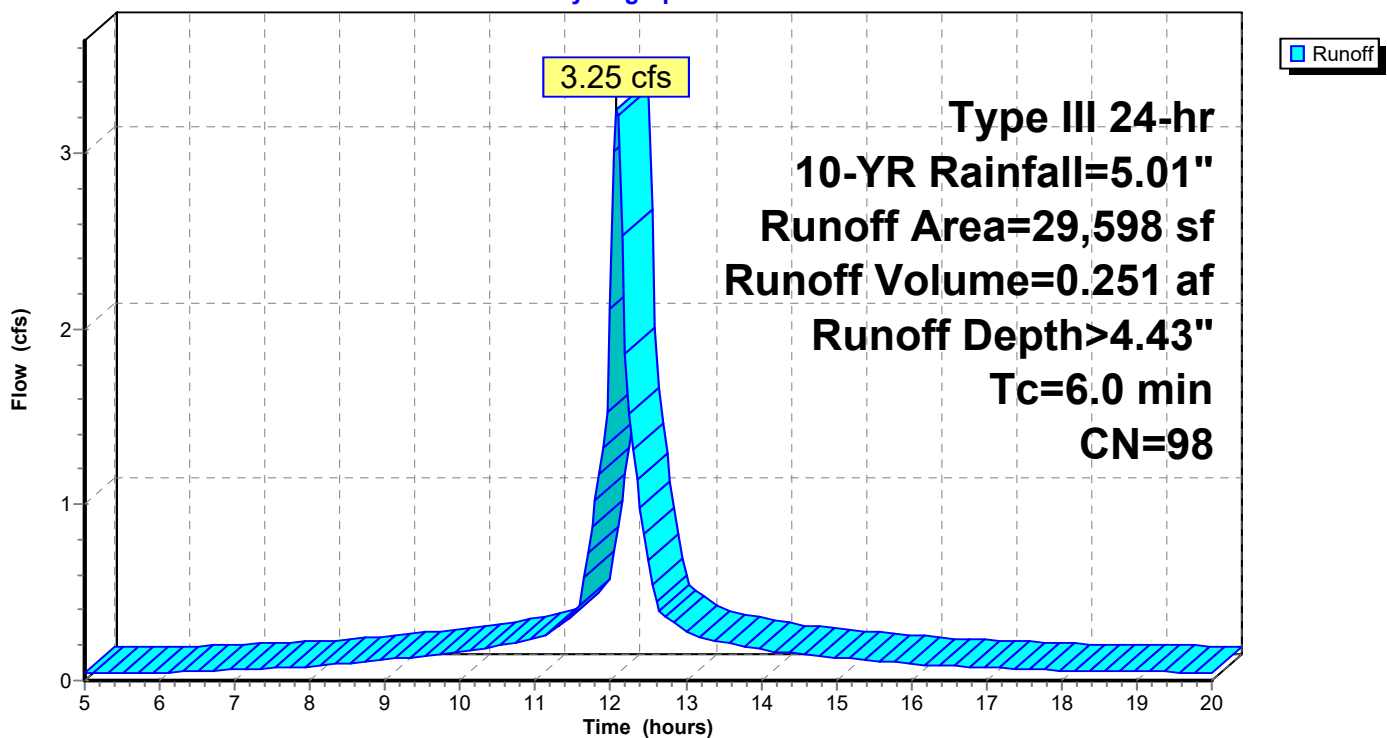
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.01"

	Area (sf)	CN	Description
*	13,405	98	Paved parking
*	16,193	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment PRE-1: Pre-Development Area-1

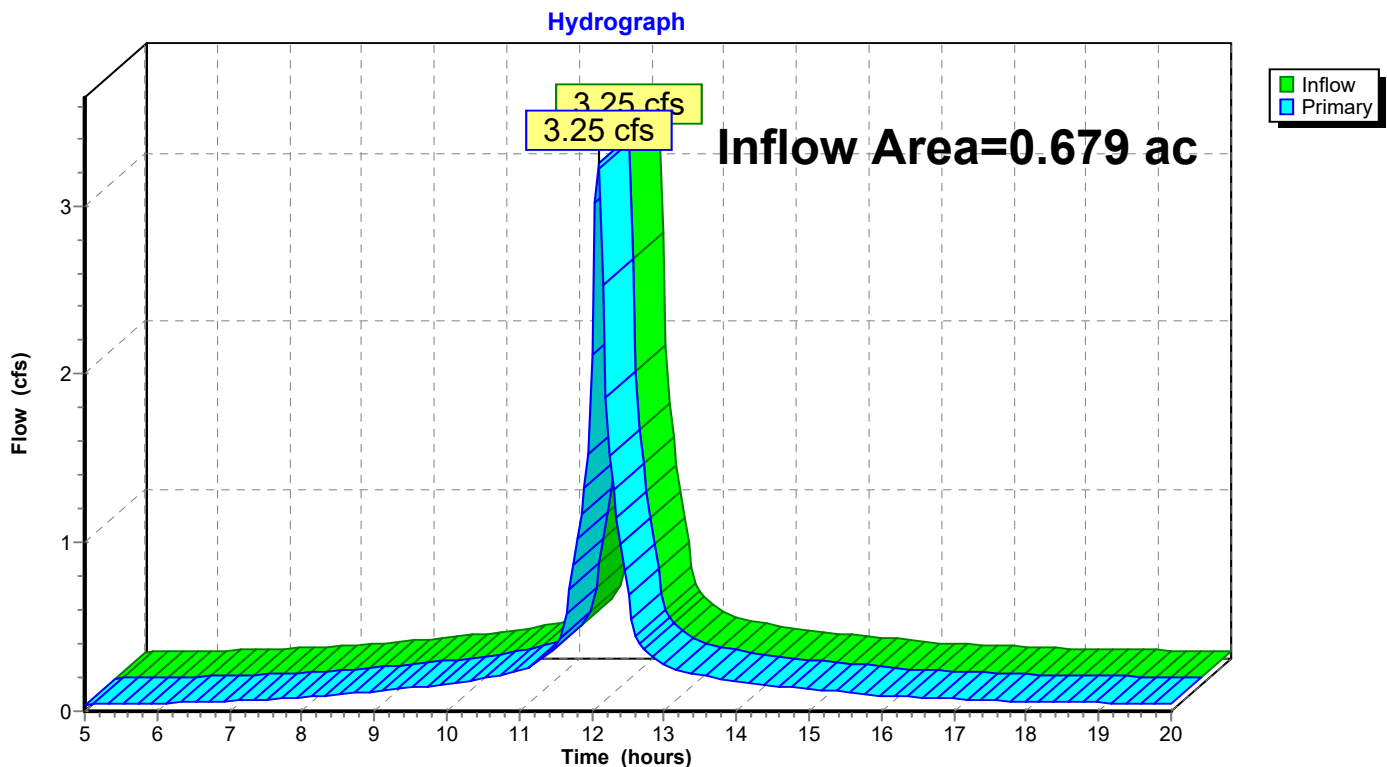
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 4.43" for 10-YR event
Inflow = 3.25 cfs @ 12.09 hrs, Volume= 0.251 af
Primary = 3.25 cfs @ 12.09 hrs, Volume= 0.251 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

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Type III 24-hr 25-YR Rainfall=6.03"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PRE-1: Pre-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>5.36"
Tc=6.0 min CN=98 Runoff=3.92 cfs 0.303 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=3.92 cfs 0.303 af

Primary=3.92 cfs 0.303 af

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Type III 24-hr 25-YR Rainfall=6.03"

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Summary for Subcatchment PRE-1: Pre-Development Area-1

Runoff = 3.92 cfs @ 12.09 hrs, Volume= 0.303 af, Depth> 5.36"

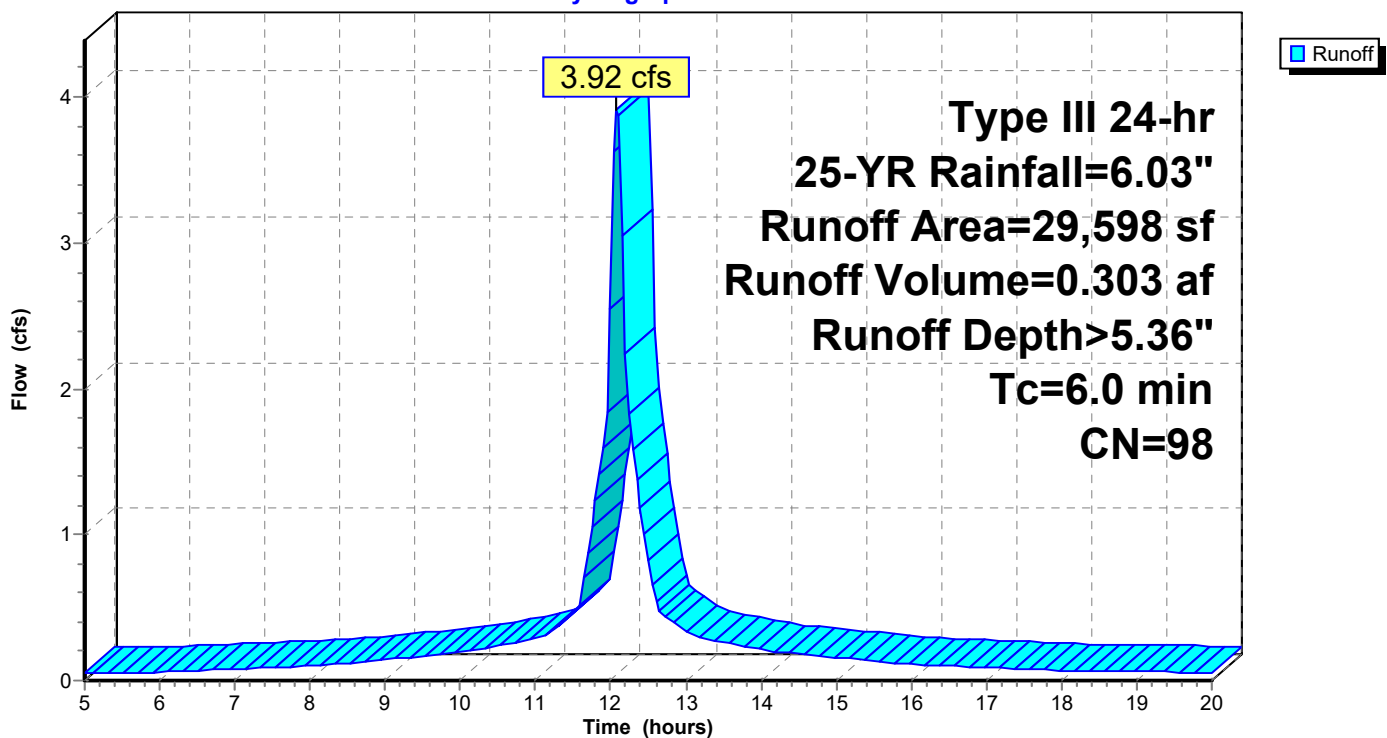
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.03"

	Area (sf)	CN	Description
*	13,405	98	Paved parking
*	16,193	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment PRE-1: Pre-Development Area-1

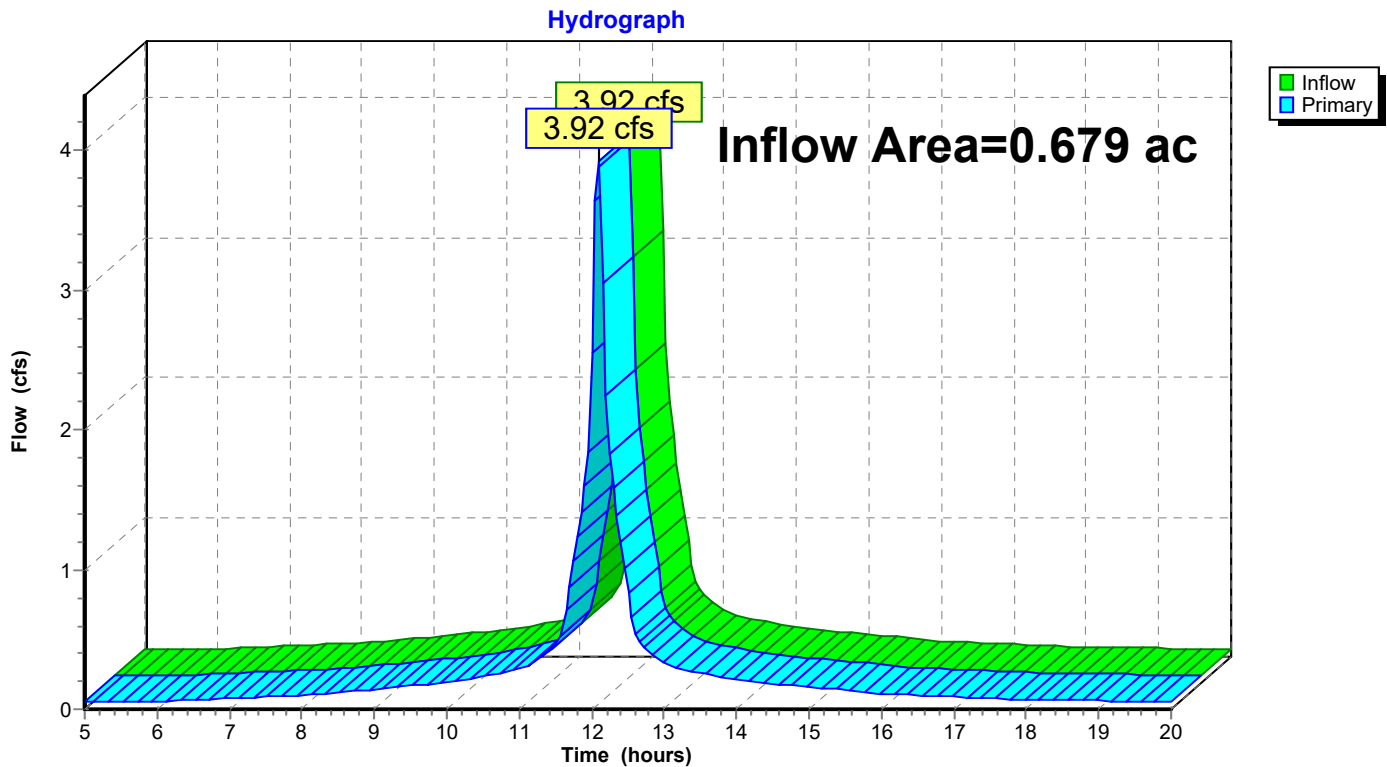
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 5.36" for 25-YR event
Inflow = 3.92 cfs @ 12.09 hrs, Volume= 0.303 af
Primary = 3.92 cfs @ 12.09 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

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Type III 24-hr 100-YR Rainfall=7.59"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PRE-1: Pre-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>6.77"
Tc=6.0 min CN=98 Runoff=4.94 cfs 0.384 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=4.94 cfs 0.384 af
Primary=4.94 cfs 0.384 af

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Type III 24-hr 100-YR Rainfall=7.59"

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Summary for Subcatchment PRE-1: Pre-Development Area-1

Runoff = 4.94 cfs @ 12.09 hrs, Volume= 0.384 af, Depth> 6.77"

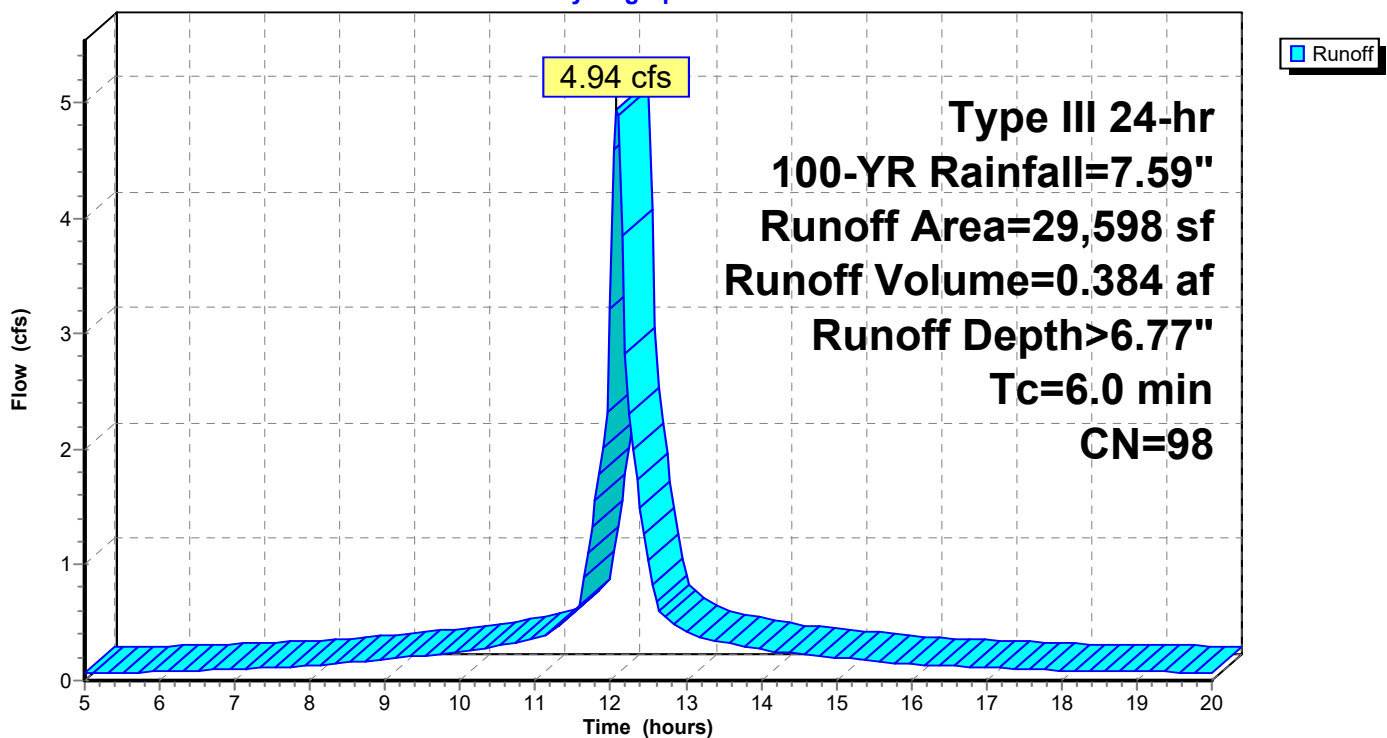
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=7.59"

	Area (sf)	CN	Description
*	13,405	98	Paved parking
*	16,193	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment PRE-1: Pre-Development Area-1

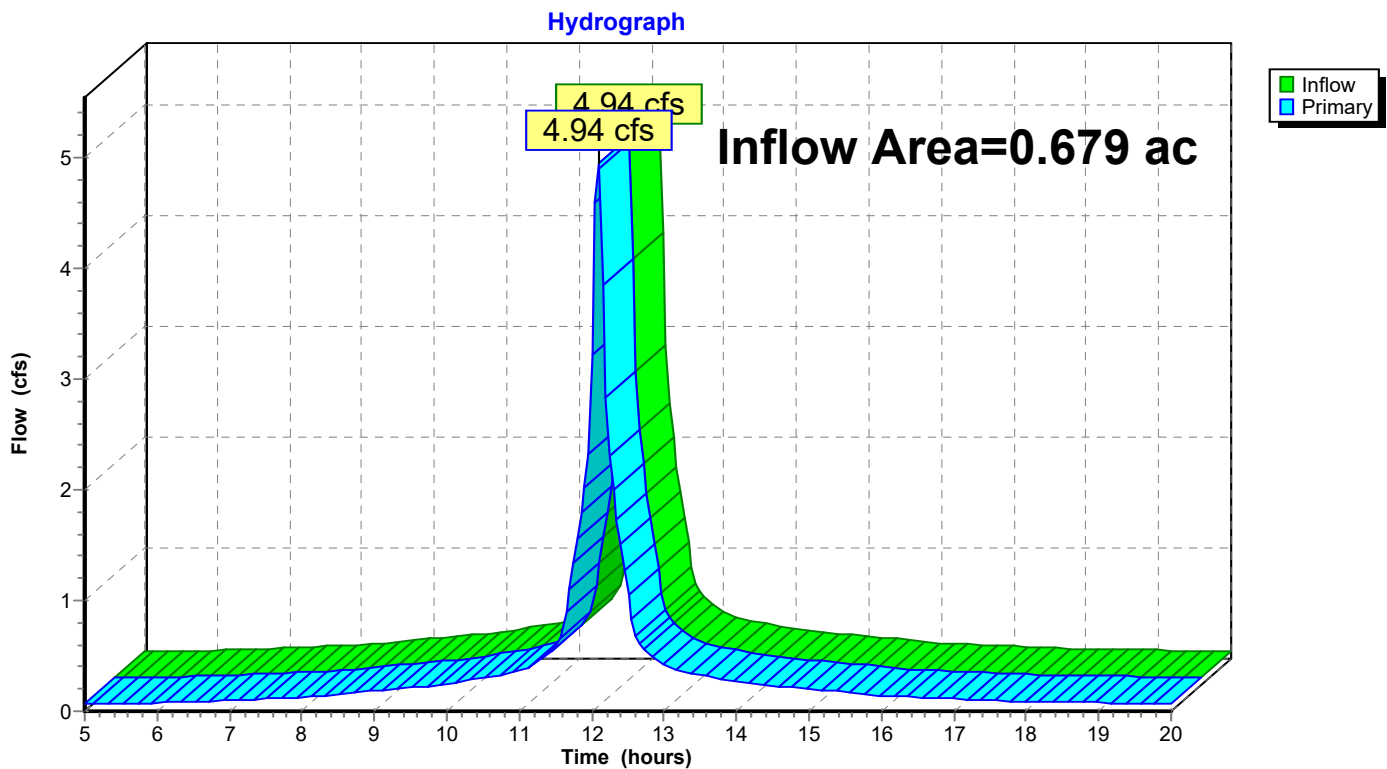
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

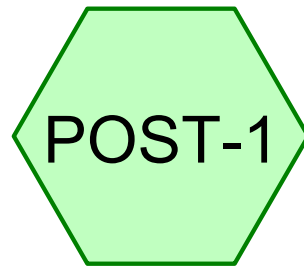
Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 6.77" for 100-YR event
Inflow = 4.94 cfs @ 12.09 hrs, Volume= 0.384 af
Primary = 4.94 cfs @ 12.09 hrs, Volume= 0.384 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

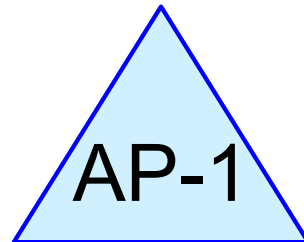
Pond AP-1: Analysis Point-1 (Drain Flows)

Section 3

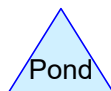
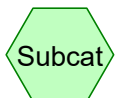
Post-Development Hydrologic Analysis



Post-Development
Area-1



Analysis Point-1 (Drain
Flows)



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Type III 24-hr 2-YR Rainfall=3.38"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment POST-1: Post-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>2.94"
Tc=6.0 min CN=98 Runoff=2.18 cfs 0.166 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=2.18 cfs 0.166 af

Primary=2.18 cfs 0.166 af

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Type III 24-hr 2-YR Rainfall=3.38"

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Page 3

Summary for Subcatchment POST-1: Post-Development Area-1

Runoff = 2.18 cfs @ 12.09 hrs, Volume= 0.166 af, Depth> 2.94"

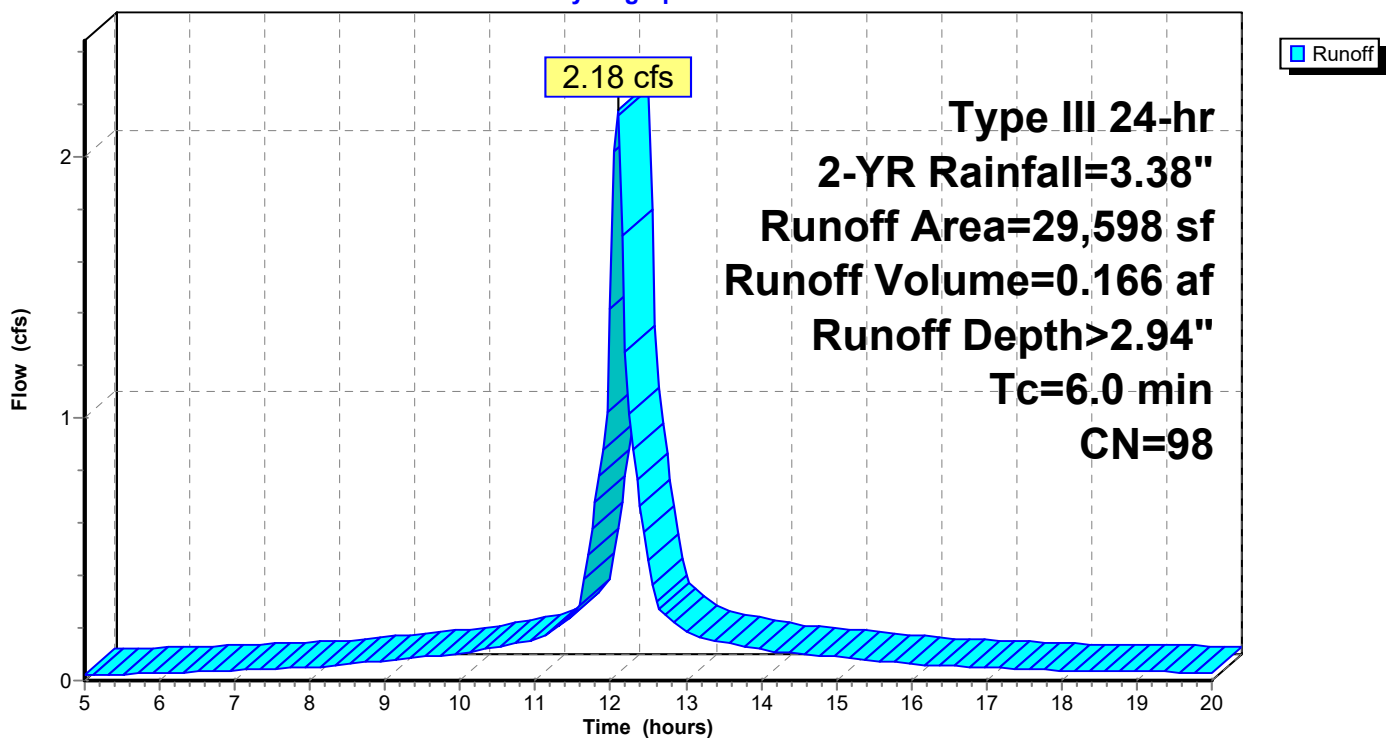
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.38"

	Area (sf)	CN	Description
*	9,877	98	Paved parking
*	19,721	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment POST-1: Post-Development Area-1

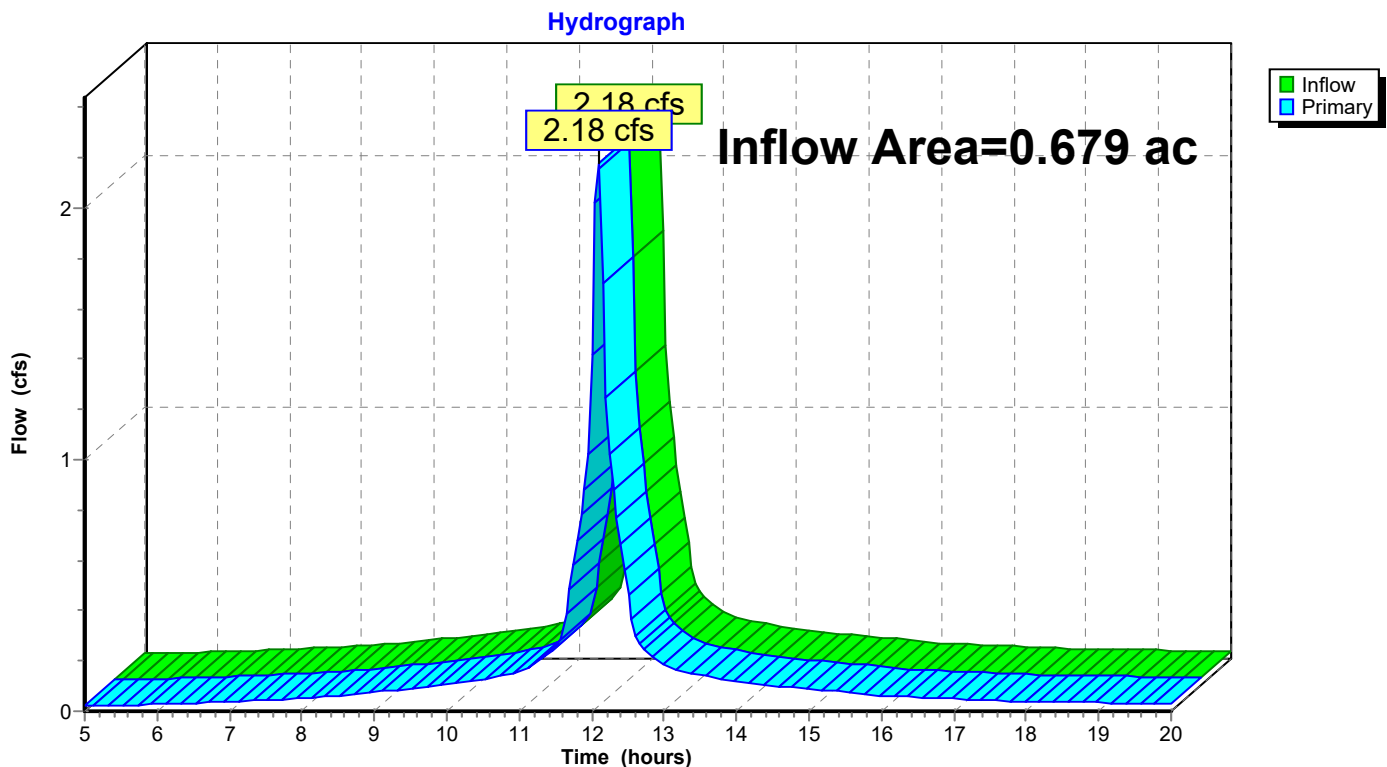
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 2.94" for 2-YR event
Inflow = 2.18 cfs @ 12.09 hrs, Volume= 0.166 af
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Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

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Type III 24-hr 10-YR Rainfall=5.01"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment POST-1: Post-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>4.43"
Tc=6.0 min CN=98 Runoff=3.25 cfs 0.251 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=3.25 cfs 0.251 af
Primary=3.25 cfs 0.251 af

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Type III 24-hr 10-YR Rainfall=5.01"

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Summary for Subcatchment POST-1: Post-Development Area-1

Runoff = 3.25 cfs @ 12.09 hrs, Volume= 0.251 af, Depth> 4.43"

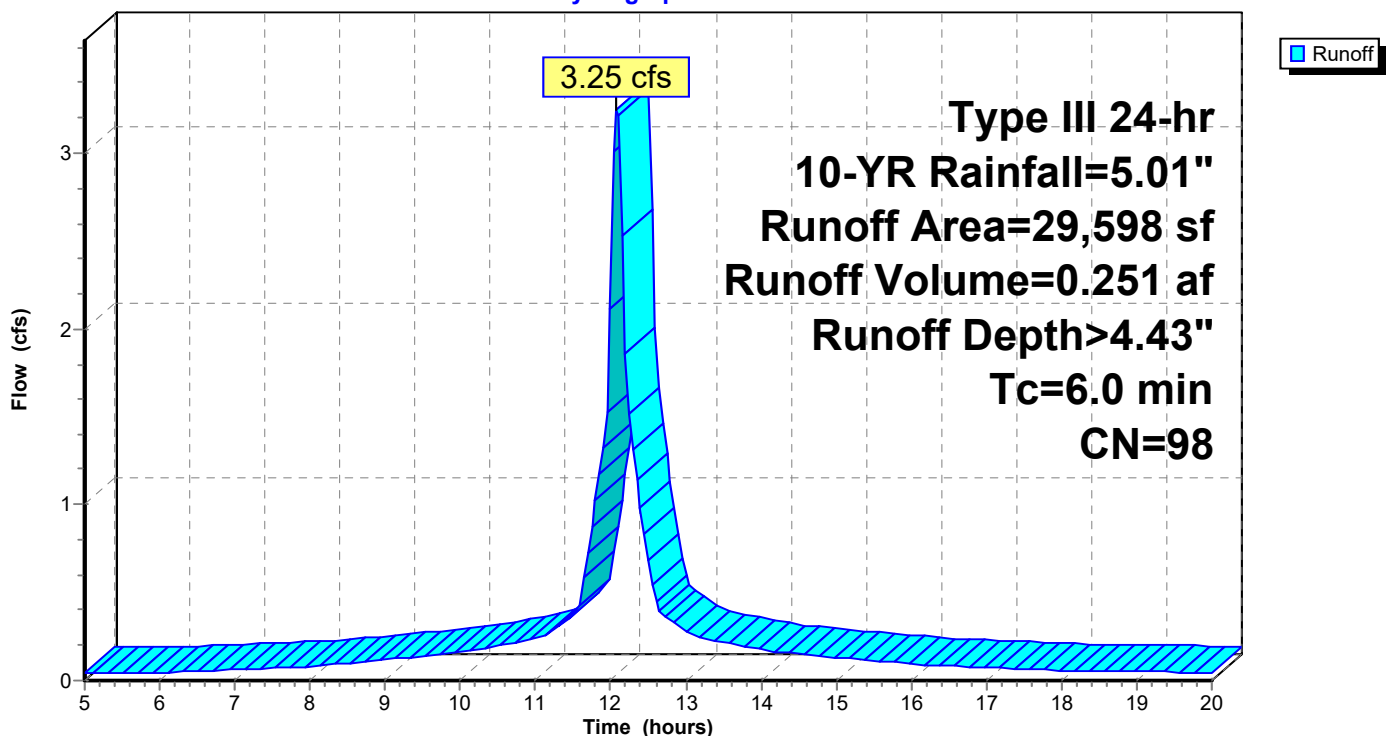
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.01"

	Area (sf)	CN	Description
*	9,877	98	Paved parking
*	19,721	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment POST-1: Post-Development Area-1

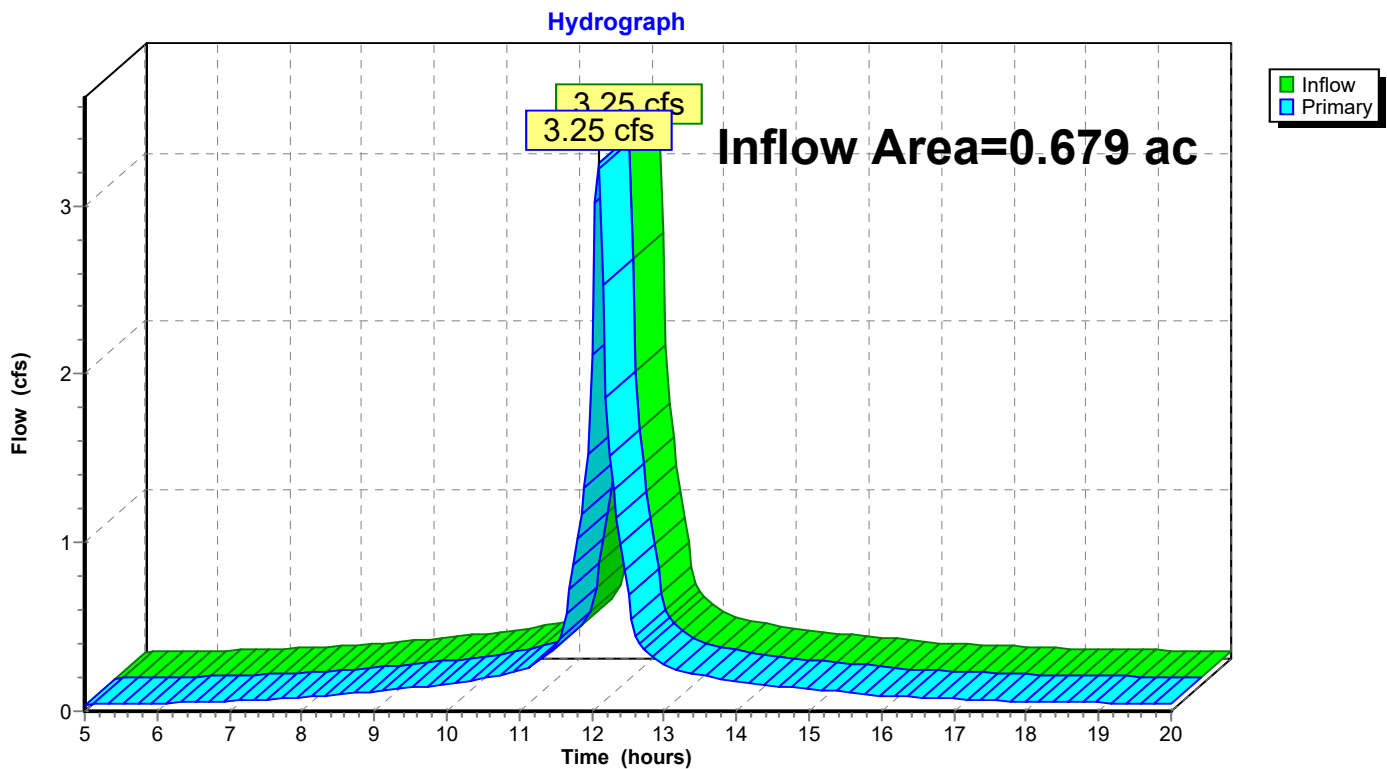
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 4.43" for 10-YR event
Inflow = 3.25 cfs @ 12.09 hrs, Volume= 0.251 af
Primary = 3.25 cfs @ 12.09 hrs, Volume= 0.251 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

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Type III 24-hr 25-YR Rainfall=6.03"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment POST-1: Post-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>5.36"
Tc=6.0 min CN=98 Runoff=3.92 cfs 0.303 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=3.92 cfs 0.303 af

Primary=3.92 cfs 0.303 af

2381_Post-Development

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Type III 24-hr 25-YR Rainfall=6.03"

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Summary for Subcatchment POST-1: Post-Development Area-1

Runoff = 3.92 cfs @ 12.09 hrs, Volume= 0.303 af, Depth> 5.36"

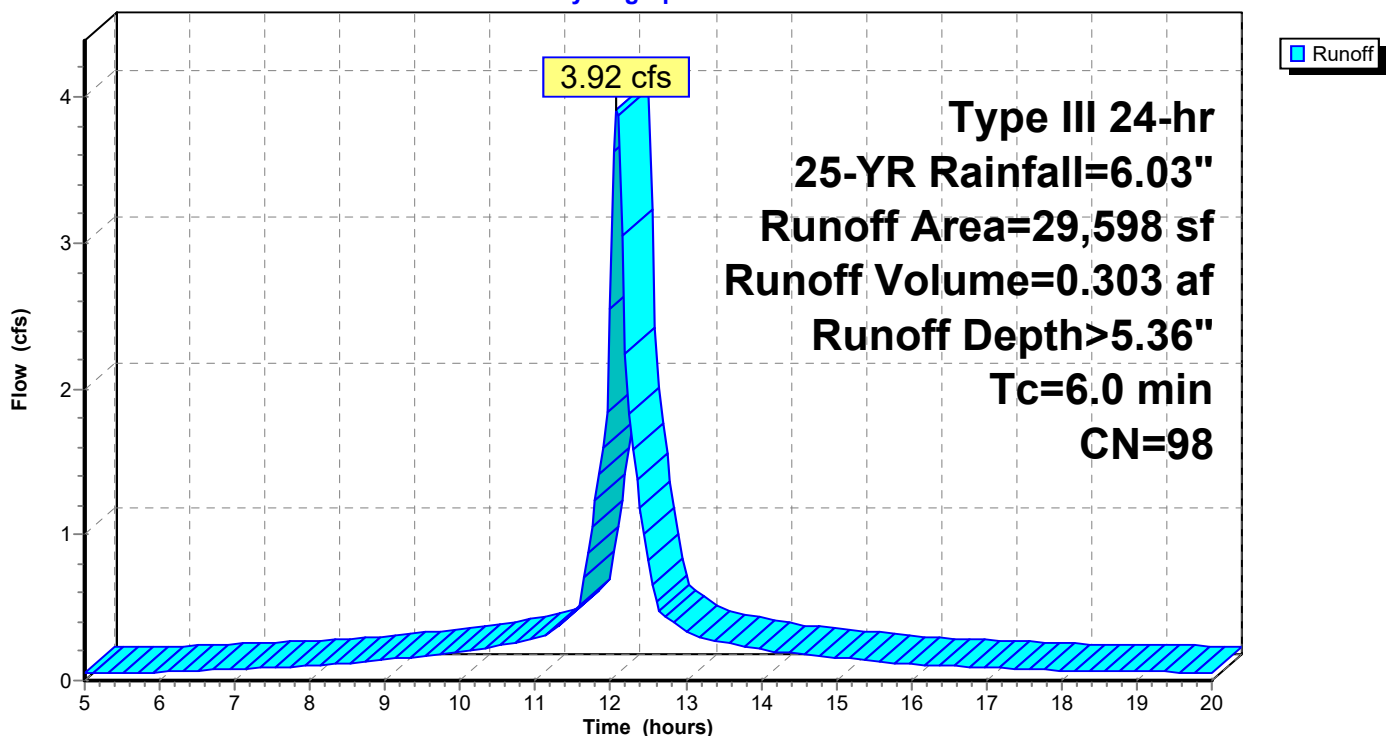
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.03"

	Area (sf)	CN	Description
*	9,877	98	Paved parking
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	29,598	98	Weighted Average
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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment POST-1: Post-Development Area-1

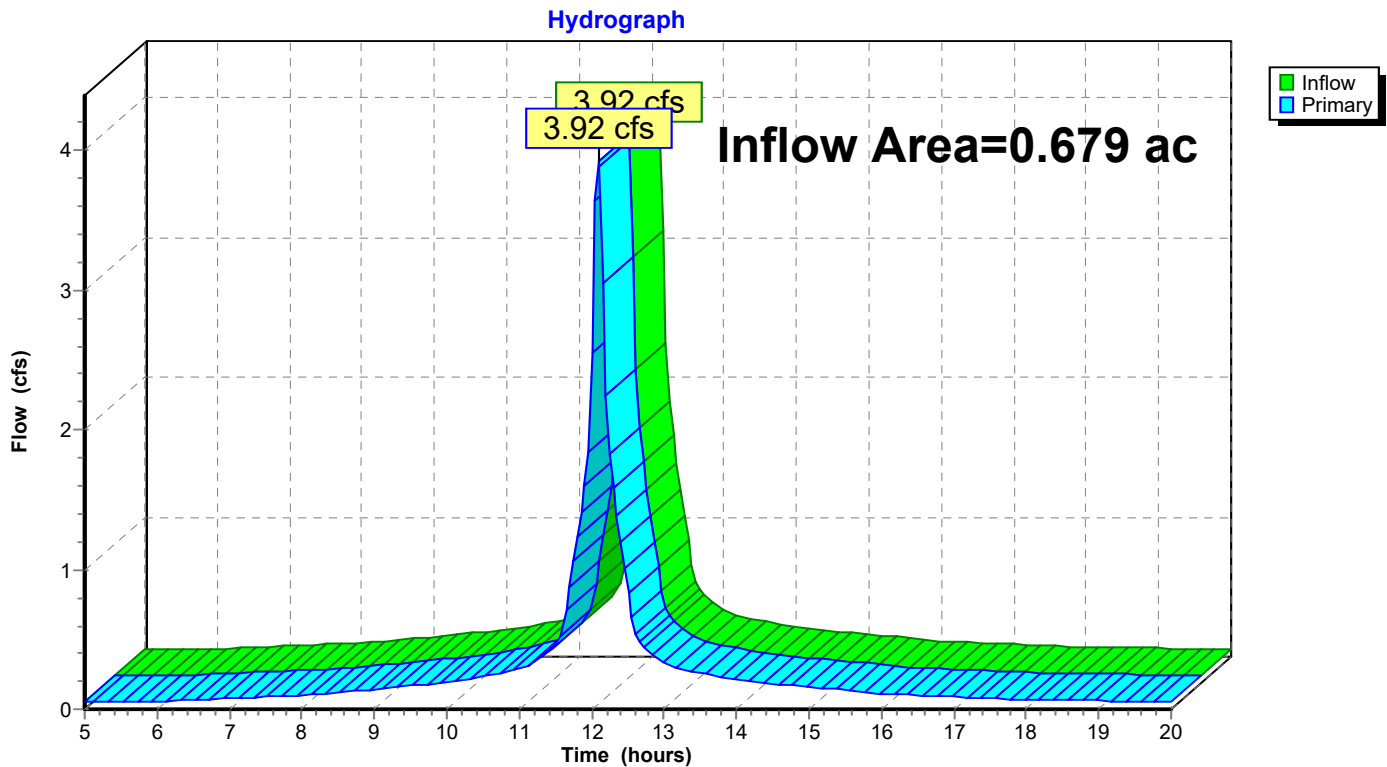
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 5.36" for 25-YR event
Inflow = 3.92 cfs @ 12.09 hrs, Volume= 0.303 af
Primary = 3.92 cfs @ 12.09 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

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Type III 24-hr 100-YR Rainfall=7.59"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment POST-1: Post-Development Area-1 Runoff Area=29,598 sf 100.00% Impervious Runoff Depth>6.77"
Tc=6.0 min CN=98 Runoff=4.94 cfs 0.384 af

Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow=4.94 cfs 0.384 af
Primary=4.94 cfs 0.384 af

2381_Post-Development

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Type III 24-hr 100-YR Rainfall=7.59"

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Summary for Subcatchment POST-1: Post-Development Area-1

Runoff = 4.94 cfs @ 12.09 hrs, Volume= 0.384 af, Depth> 6.77"

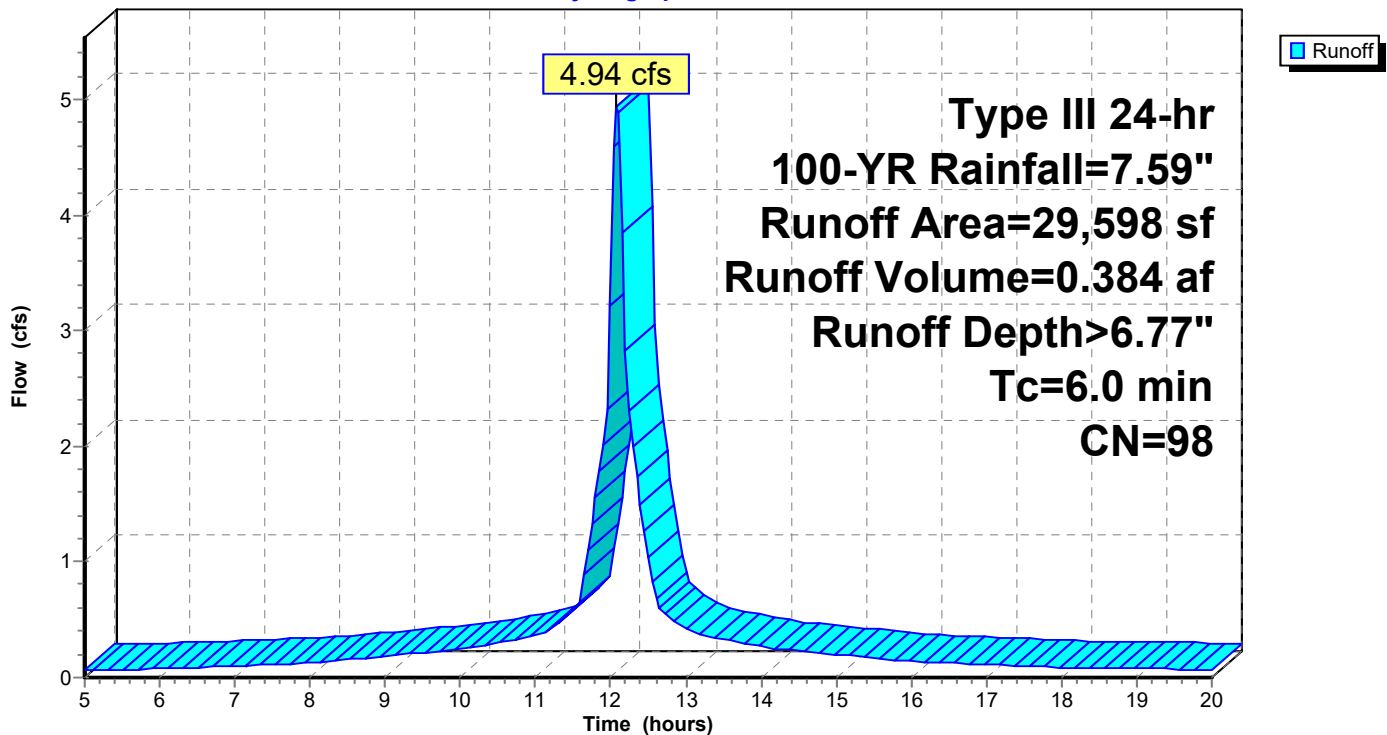
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=7.59"

	Area (sf)	CN	Description
*	9,877	98	Paved parking
*	19,721	98	Roofs
	29,598	98	Weighted Average
	29,598		100.00% Impervious Area

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

Subcatchment POST-1: Post-Development Area-1

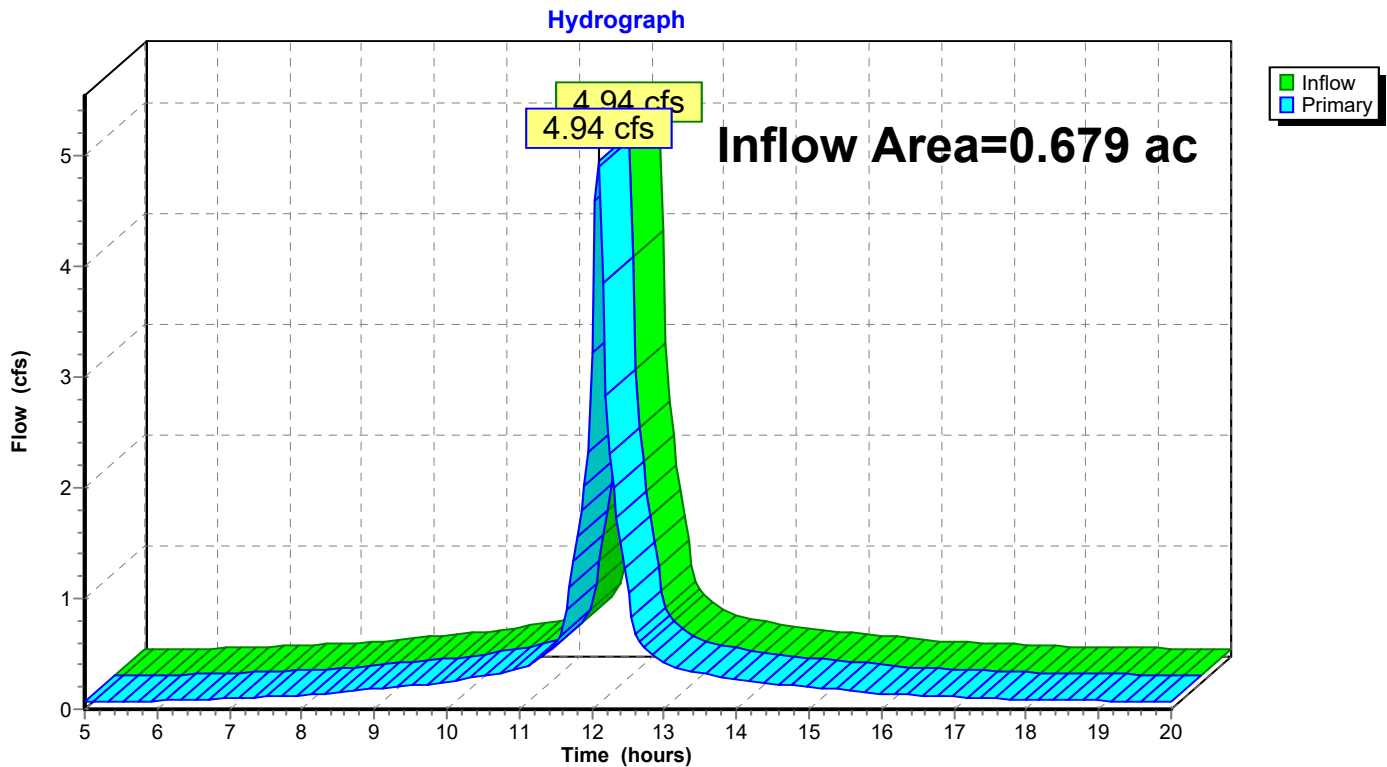
Hydrograph



Summary for Pond AP-1: Analysis Point-1 (Drain Flows)

Inflow Area = 0.679 ac, 100.00% Impervious, Inflow Depth > 6.77" for 100-YR event
Inflow = 4.94 cfs @ 12.09 hrs, Volume= 0.384 af
Primary = 4.94 cfs @ 12.09 hrs, Volume= 0.384 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP-1: Analysis Point-1 (Drain Flows)

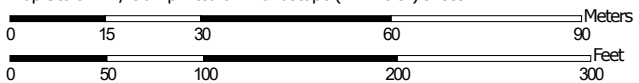
Section 4

Supplemental Data

Soil Map—Bristol County, Massachusetts, Southern Part



Map Scale: 1:1,190 if printed on A landscape (11" x 8.5") sheet.



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



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

2/9/2021
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

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 1:20,000.

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: Bristol County, Massachusetts, Southern Part

Survey Area Data: Version 14, Jun 9, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Jul 3, 2017

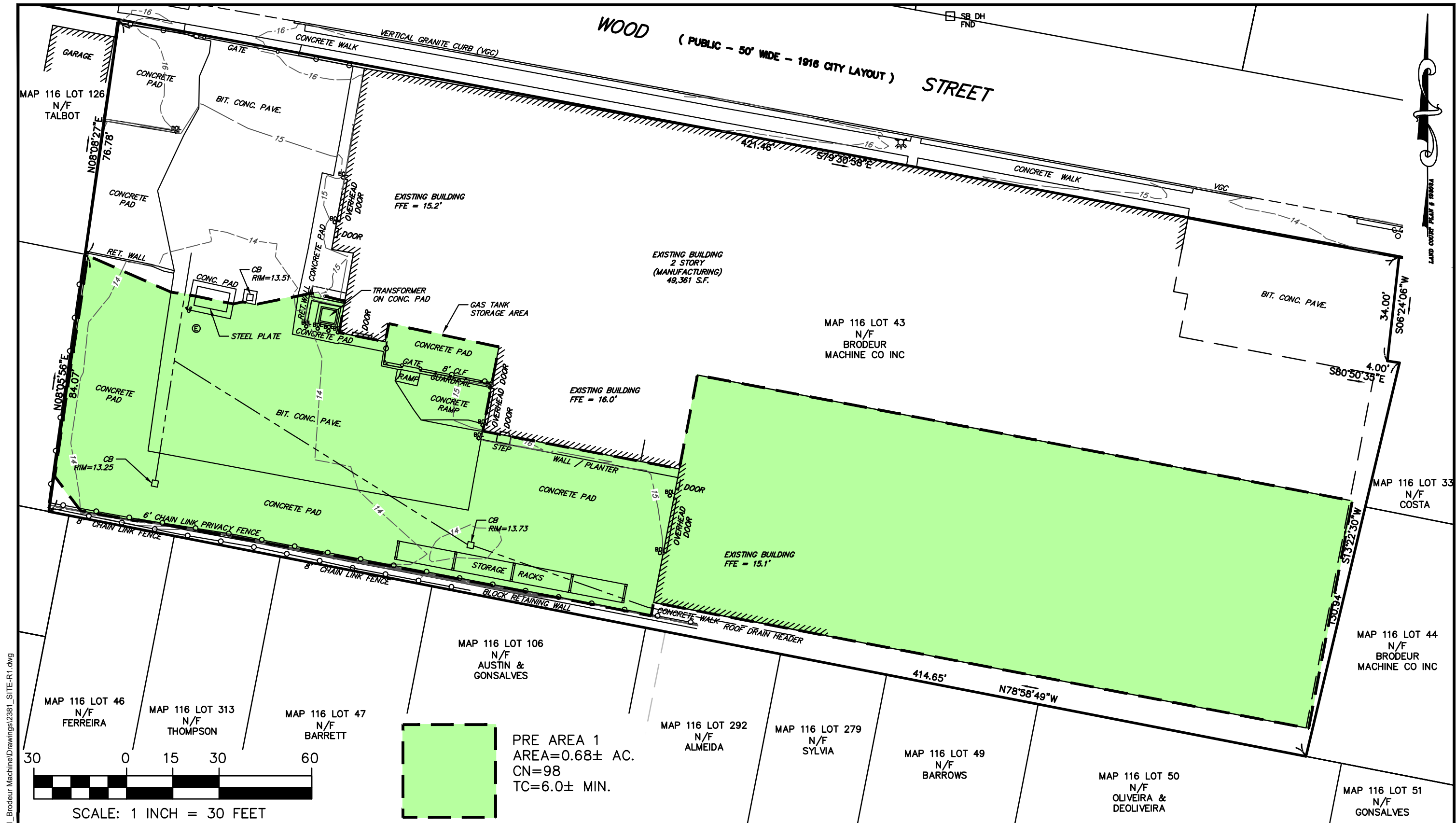
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
602	Urban land	7.4	100.0%
Totals for Area of Interest		7.4	100.0%

Appendix A

Pre and Post Development Watershed Plans



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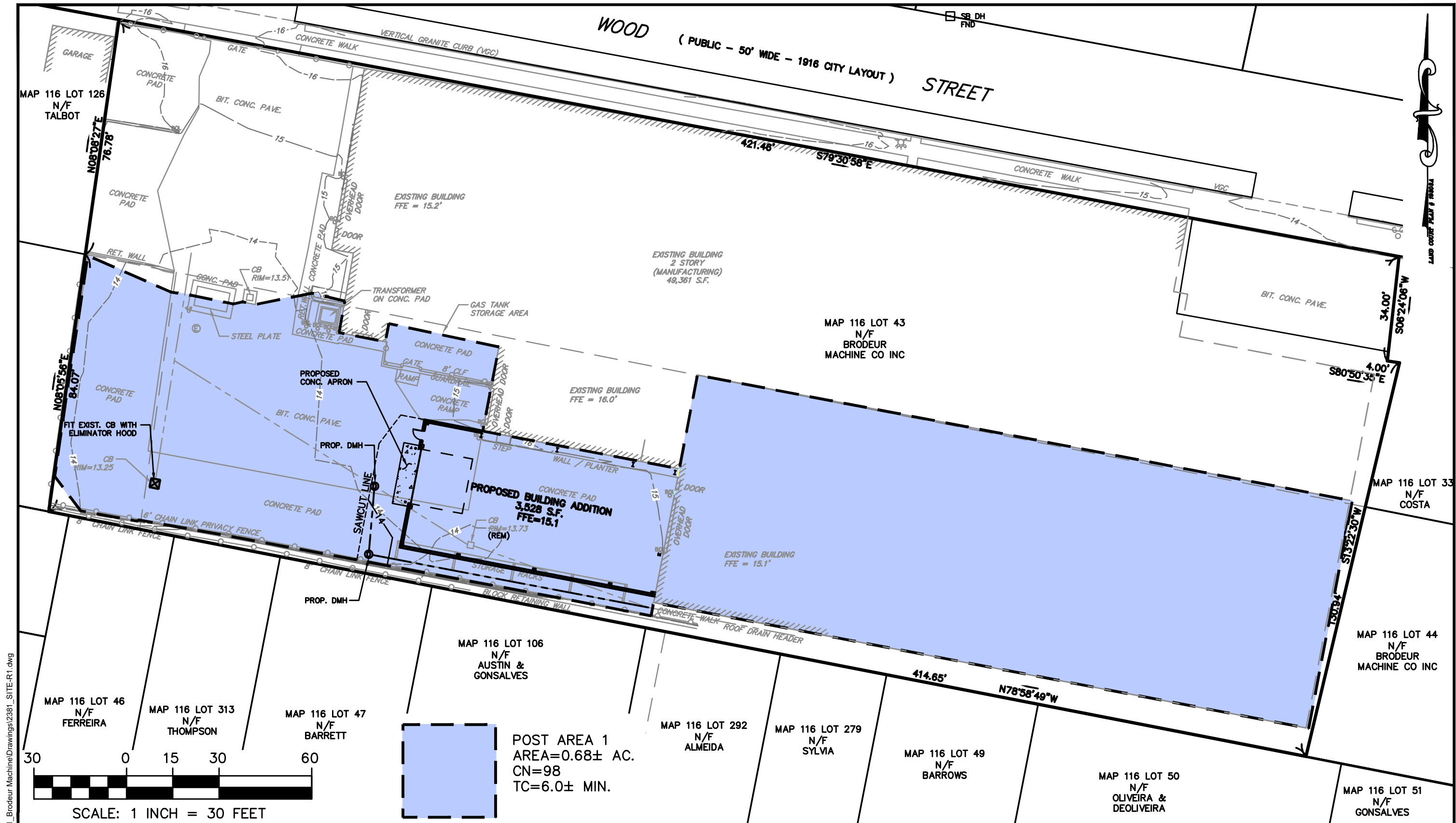
FIELD
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PRE-DEVELOPMENT WATERSHED PLAN BRODEUR MACHINE COMPANY INC.

62 WOOD STREET
NEW BEDFORD, MASSACHUSETTS

Project No.	2381	Date	2/10/2021
Scale	1"=30'	Revised	
Issued For	PERMITTING	Sheet	1 OF 1



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POST-DEVELOPMENT WATERSHED PLAN BRODEUR MACHINE COMPANY INC.

62 WOOD STREET
NEW BEDFORD, MASSACHUSETTS

Project No.	2381	Date	2/10/2021
Scale	1"=30'	Revised	
Issued For	PERMITTING	Sheet	1 OF 1

Appendix B

Long Term Pollution Prevention Plan

Long Term Pollution Prevention Plan and
Post Construction Stormwater Operation and Maintenance Plan
Proposed Building Addition
Brodeur Machine Company Inc.
62 Wood Street
New Bedford, MA

1.0 Introduction

This Long-Term Pollution Prevention Plan has been prepared in accordance with the Massachusetts Stormwater Handbook for Compliance with Stormwater Standards 4-6.

2.0 Good Housekeeping Practices/Storage Provisions

Good housekeeping practices including periodic inspections of stormwater management system components will be performed in accordance with the Stormwater Management System Operation and Maintenance Plan. It is not anticipated that any high pollutant materials would be stored on site in areas that would discharge directly to the drainage system. It is anticipated that a property manager will be on-site and trained in the proper storage of materials and waste products on site.

3.0 Routine Maintenance of Stormwater BMP's

The Stormwater BMP's will be operated and maintained in accordance with the Stormwater Management System Operation and Maintenance Plan which is discussed on the Site Development Plans.

4.0 Spill Prevention and Response Plans

MSDS sheets are required to be on site for the handling of any chemicals or compounds that may be associated with any of the approved uses at the site. Emergency contact numbers will be posted with a 24-hour contact number in the event of any spills on-site.

5.0 Landscaping Provisions

The landscaping on site will be maintained with generally accepted industry practices. Provisions shall be made to minimize the amount of fertilizers and other materials that will be allowed to be discharged within the landscaped areas on the site.

6.0 Pet Waste Management Provisions

It is not anticipated that there would be any pets on site at this commercial facility.

7.0 Provisions for Solid Waste Management

Dumpsters will be provided on-site for the disposal of solid waste. These dumpsters will be enclosed in fencing and emptied on a regular basis in accordance with Board of Health regulations and the Conditions of Site Plan Review approval.

8.0 Snow Disposal Guidelines

All snow stored on site will melt and flow through the stormwater system.

9.0 Winter Road Salt and Sand Use

The use of salt will be minimized on the site for safe pedestrian access and egress. Sand will be used wherever possible. It is not anticipated that large quantities of road salt and/or sand will be stored on site.

10.0 Street Sweeping Schedule

Sweeping of the parking lots will be performed twice annually. Sweeping shall occur in the spring following the winter season and again in the fall.

11.0 Illicit Discharge Prevention

Illicit connections to the stormwater management system will be strictly prohibited. Any contractors performing work at the site will be notified of the prohibition of any illicit connections to the stormwater management system. All work done on site shall be per the approved design plans.

12.0 Training for Staff

It is expected that a Property Management Company would be contracted to manage the site property as a whole. Included in this contract would be the operation and maintenance of the Stormwater Management System. Any Site Management Staff would be properly trained in the operation and maintenance of the Stormwater Management System.

13.0 Emergency Contacts

The applicant of the project, Brodeur Machine Company Inc. will be the emergency contacts for any implementation measures that may be required on this Long-Term Pollution Prevention Plan. It is anticipated that emergency contact numbers will be posted throughout the site building and facilities should any situations arise.

Post Construction Stormwater Operation and Maintenance Plan

Name and current address of the Applicant

Brodeur Machine Company Inc.
62 Wood Street
New Bedford, MA 02745

Name and address of the Contractor of Record

To be determined and provided to the Department of Public Infrastructure upon selection.

Plans of Record

Refer to *Proposed Building Addition* plans prepared for Brodeur Machine, by Field Engineering Co. Inc. for locations of all BMP's on site as well as construction details of all BMPs.

1. The contractor shall be responsible for the proper inspection and maintenance of all stormwater management facilities until such time as the Stormwater System is accepted by the Owner. Thereafter the Owner shall be responsible for the proper inspection and maintenance of the stormwater facilities in accordance with this Operation and Maintenance Plan and the requirements of the City of New Bedford Stormwater Rules and Regulations.
2. All Structural Best Management Practices (BMP's) should be inspected after every major rainfall event exceeding 1.0-inch for the first 6 months after construction to ensure proper stabilization and construction.
3. Thereafter, regular BMP inspections should be conducted according to the following schedule:

<u>BMP Structure</u>	<u>Inspections per Year</u>
Hooded Catch Basin	4

4. Accumulated silt and sediment should be removed if accumulated depth of sediment exceeds six inches.
5. All removed sediments are to be properly disposed of at a location to be approved by the Board of Health. Transportation and disposal of sediments shall comply with all applicable local, state, and federal regulations.
6. The driveway and parking areas shall be swept in the fall and spring of each year.
7. Snow shall be stockpiled within and around areas which drain into the stormwater system wherever practicable.
8. No disposal of materials will be permitted within any of the stormwater management system BMP's. This prohibition applies to trash, fill material, construction debris, grass clippings, collected leaves, and cut branches.
9. An Operation and Maintenance Inspection Form shall be developed and copies of the completed forms shall be compiled by the Owner. These forms shall be available for review by the Department of Public Infrastructure upon request.

Appendix C

Illicit Discharge Compliance Statement

Illicit Discharge Compliance Statement
Proposed Building Addition
Brodeur Machine
62 Wood Street
New Bedford, MA

1.0 Description of Illicit Discharges

Illicit discharges are discharges to the stormwater management system that are not entirely composed of stormwater. Illicit discharges include (but are not limited to) wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

2.0 Illicit Discharge Prevention

The project, as designed, does not provide for any illicit connections to the proposed stormwater system. As part of the long-term pollution prevention plan that will be on file at the City and with the Owners, illicit connections to the stormwater management system will be strictly prohibited. Any contractors performing work at the site will be notified of the prohibition of any illicit connections to the stormwater management system.

3.0 Training for Staff


The property owner/managers responsible for the maintenance of the stormwater management system will be properly trained as required to detect any unauthorized illicit discharges to the stormwater management system and eliminate them as soon as possible. It is anticipated that staff will be performing routine maintenance on the stormwater management system and at this time would be able to detect any unauthorized illicit discharges.

4.0 Site Map

Refer to Proposed Building Addition Plans prepared for Brodeur Machine by Field Engineering Co., Inc. for locations and information on the proposed stormwater management system associated with this project.

5.0 Certification

As the design plans show, there are no provisions for illicit discharges to the stormwater system being proposed. Additionally, there are no proposed connections between any stormwater and wastewater management systems. Illicit discharges will be prohibited to the new stormwater system associated with the proposed project and the property owners have been notified to not allow any unauthorized illicit discharges.


Robert M. Field, P.E.