Atlantic
DESIGN ENGINEERS, INC.

December 2, 2021

Town of Wareham
Planning Board
54 Marion Road
Wareham, MA 02571

Re: ***Definitive Subdivision Plan***
Weweantic Circle Definitive Subdivision
91 & 101 Fearing Hill Road Wareham, MA (Parcel ID: 91-1000 & 74-1007)
Atlantic Job #3055.02

Dear Members of the Planning Board:

On behalf of the applicant, Wareham MA 3, LLC, we respectfully submit the following relative to a Definitive Subdivision of the above-mentioned property:

- Nine (9) copies of a properly executed Form C – Application for Approval of Definitive Subdivision Plan.
- Two (2) full-size and (9) 11 X 17 copies Definitive Subdivision Plan dated 12/2/2021
- One (1) Copy List of Requested Waivers
- Three (3) Stormwater Reports dated 12/2/2021
- One copy Planning Board Tax Verification Form - Signed
- One check for $1,054.00 made out to the Town of Wareham for the Definitive Subdivision filing fee ($750.00 + $75/Lot x 2 plus $1.00 per linear feet of road totaling 154 feet)
- One for $100.00 made out to the Wareham Week for the advertising fee.
- (2) Certified Abutters Lists (1 for each lot)
- One check for $367.29 made out to the Town of Wareham for the abutter mailing fees
- Definitive Plan Checklist
- Copy of Deeds
- One copy transmittal letters to Board of Health and Town Clerk
- (1) USB containing full submittal

This filing is pursuant to the Town of Wareham's Rules and Regulations Governing the Subdivision of Land as well as the requirements of M.G.L. Chapter 41, Sections 81 O, T and U. Accordingly, the Form C application and plans have also been submitted to the Planning Board via certified mail and to the Town Clerk (certified mail and hand delivery) and the Board of Health.

If you have questions, please feel free to reach out to us at (508) 888-9282.

Very truly yours,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President

cc: Wareham MA 3, LLC

Form C

APPLICATION FOR APPROVAL OF
DEFINTIVE SUBDIVISION PLAN

December 2, 2021

To the Planning Board of the City/Town of Wareham

The undersigned, being the applicant as defined under the Chapter 41, Section 81-L, for approval of a proposed subdivision shown on a plan entitled: Definitive Subdivision Plan of Weweantic Circle

by Atlantic Design Engineers, Inc., dated December 2, 2021 and described as follows: A subdivision comprised of 2 lots and a short ±150' long cul-de-sac, located on the north side of Fearing Hill Road (Map 91 Lot 1000 and Map 74 Lot 1007), number of lots proposed 2 total acreage of tract 44 acres, said applicant hereby submits said plan as a **DEFINITIVE** plan in accordance with the Rules and Regulations of the Wareham Planning Board and makes application to the Board for approval of said plan.

The undersigned's title to said land is derived from Michael E. O'Neil, Jr., Esq., duly appointed Commissioner to Sell Real Estate by deed dated March 24, 2021 and recorded in the Plymouth County District Registry of Deeds Book 56648, Page 68, and from Robert B Ahearn by deed dated February 9, 2012 and recorded in the Plymouth County Registry of Deeds Book 40960 Page 290 registered in the Registry District of the Land Court. Certificate of Title No. and said land is free of encumbrances except for the following:

Said plan has (X) has not ( ) evolved from a preliminary plan submitted to the Board on May 6, 2021 and approved (with modifications) (X) (disapproved) ( ) on June 14, 2021.

The undersigned hereby applies for the approval of said DEFINITIVE plan by the Board, in belief that the plan conforms to the Board's Rules and Regulations.

Received by City/Town Clerk:

Date

Time

Signature

Treasurers office:

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Applicant's signature Joe Sheridan (POA)
Applicant' address Wareham MA 3, LLC
100 Summit Lake Drive, Suite 210
Valhalla, NY 10595
Applicant's phone # (978) 888-4088
Owner's signature and address if not the applicant or applicant's authorization if not the owner Joseph Crespi (POA)
Ninety Six Realty, LLC
246 South Meadow Rd., Gate 4, Hangar NW8
Plymouth, MA 02360

Atlantic
DESIGN ENGINEERS, INC.

December 2, 2021

Planning Board
Town of Wareham
54 Marion Road
Wareham, MA 02571

RE: List of Requested Waivers
Definitive Subdivision Plan of Weweantic Circle
91 & 101 Fearing Hill Road – Wareham, MA

Dear Board Members:

We respectfully request on behalf of the applicant (Wareham MA 3, LLC) the following list of waivers to the requirements of the Rules and Regulations governing the Subdivision of Land relative to the Definitive Subdivision Plan of Weweantic Circle:

Section IV.C – Performance Guarantee
Request waiver of the requirement for a Performance Guarantee. If approved, the applicant only intends to build a short ±150' long and 18' wide gravel drive that will provide access to a proposed solar development on the ±39-acre lot (Lot 2).

Section VI. – Required Improvements for An Approved Subdivision
Request waiver of the Required Improvements for an Approved Subdivision. If approved, the applicant only intends to build a short ±150' long and 18' wide gravel drive that will provide access to a proposed solar development on the ±39-acre lot (Lot 2).

Please call me at (508) 888-9282 if you should have any questions.

Sincerely,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President

DESIGN ENGINEERS, INC.

Stormwater Report
For
Weweantic Circle Definitive Subdivision
Wareham, Massachusetts

Prepared for:
WAREHAM MA 3, LLC
100 Summit Lake Drive, Suite 210
Valhalla, NY 10595

Prepared by:
Atlantic Design Engineers, Inc.
P.O. Box 1051
Sandwich, Massachusetts 02563

December 2, 2021
Atlantic Project No. 3055.02

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APPENDICES

1.0 INTRODUCTION

This report analyzes the hydrological impacts of the Weweantic Circle Definitive Subdivision, a proposed division of ±44 acres of land located at 91 & 101 Fearing Hill Road (Lots 1000 and 1007 on Wareham Assessor Maps 91 and 74) in Wareham, Massachusetts (the "site"). The site is privately owned land on the north side of Fearing Hill Road, and is currently undeveloped woodland, with adjacent residential properties to the south and west and undeveloped woodlands to the north and east.

The site does not fall within any DEP mapped surface or groundwater protection areas, or Town designated Aquifer Protection or Watershed Protection Overlay Districts. The site is not located within a FEMA Flood Zone or an Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species, as mapped by the Natural Heritage and Endangered Species Program (NHESP). The site is not located within any Area of Critical Environmental Concern (ACEC).

The property has a Bordering Vegetated Wetland (BVW) system located along the northern portion of the site and an Isolated Vegetated Wetland System (IVW) located along the western property boundary along an abandoned railroad bed.

Topography throughout the undeveloped site can be generalized as a gentle, gradual slope which runs uphill from south to north to a peak in the center of the site. A slight north/south ridge line divides the property, with the northern portion draining toward the wetland system to the north and the southern portion of the site draining to the aforementioned isolated wetland system to the west.

The proposed two lot subdivision is comprised of a short 154-foot-long cul-de-sac road designed to the standards of the Subdivision Regulations with associated sidewalk, utilities, and stormwater facilities.

2.0 PROPOSED STORMWATER MANAGEMENT SYSTEM

The Stormwater system for the project has been evaluated and designed based upon the Town of Wareham Planning Board Rules and Regulations Governing the Subdivision of Land.

The short roadway will be designed using low impact development (LID) methods and will be graded in such a way that stormwater runoff from it will be directed to a series of stormwater Best Management Practices (BMPs), including a forebay and infiltration basin which will prevent discharge of untreated stormwater off site. The proposed stormwater management system has also been designed to attenuate any increase in peak flows resulting from construction of the roadway.

3.0 COMPLIANCE WITH DEP STORMWATER MANAGEMENT STANDARDS

Standard 1: No New Untreated Discharges

All stormwater runoff from proposed impervious surfaces will be directed to stormwater Best Management Practices (BMPs) consisting of a forebay and infiltration basin. Therefore, there will be no untreated discharge and it is our opinion that Standard 1 has been met.

Standard 2: Peak Rate Attenuation

Based upon the existing contours and runoff patterns on the site, and the fact that the proposed roadway only affects one watershed on the site, one Design Point was evaluated for peak rate attenuation. Pre- and Post-Development stormwater calculations were performed for the 2, 10 and 100-year, Type III storm events. A comparison of the Pre- vs. Post-Development peak runoff rates for each storm event at the Design Point is summarized in the tables below:

Design Point #1 – Fearing Hill Road and Western Wetland		
Storm Event	***Pre-Development***	***Post-Development***
2-year	7.61 cfs	6.94 cfs
10-year	21.41 cfs	19.51 cfs
100-year	48.60 cfs	44.30 cfs

As shown in the table, the peak rates for stormwater runoff generated under Post Development condition will be equal to or less than the peak rates generated under Pre-Development conditions for all storm events.

A comparison of the Pre- vs. Post-Development volume rates for each storm event at the Design Point is summarized in the tables below:

Design Point #1 – Fearing Hill Road and Western Wetland		
Storm Event	***Pre-Development***	***Post-Development***
2-year	42,044 cf	38,320 cf
10-year	100,077 cf	91,214 cf
100-year	215,343 cf	196,271 cf

As shown in the table, the runoff volume totals for stormwater runoff generated under Post Development condition will be equal to or less than the runoff volume totals generated under Pre-Development conditions for all storm events.

Complete runoff calculations for the 2, 10 and 100-year Type III storm events including ground cover, soil types and times of concentration paths for the Pre-Development conditions and Post-Development conditions are provided in Appendix B.

Standard 3: Groundwater Recharge

Based upon a review of the Web Soil Survey, soils within the proposed development area have been identified as Broxton sandy loam, Mattapoisett loamy sand, Montauk Fine sandy loam, Scituate gravelly sandy loam, and Birchwood sand, which have been classified as Hydrologic Soil

Groups C/D, D, C, C/D, B/D, respectfully. The groundwater recharge volume required for the proposed impervious surfaces is calculated by the following formula:

$$R_v = (F)(A_{IMP})$$

R_v = Required Recharge Volume
F=Target Depth Factor: 0.25 inch for C soils
A_{IMP} = Proposed Impervious Area

The calculations in the Appendix show that the infiltration basin recharge volume provided exceeds the required recharging volume. As a result, it is our opinion that Standard 3 has been met.

Standard 4: Water Quality

All stormwater runoff from proposed impervious surfaces will be directed to stormwater Best Management Practices (BMPs) consisting of a forebay and infiltration basin.

The calculations in the Appendix show that the BMPs provide the required Water Quality Volume and remove the required TSS from the stormwater generated by the proposed impervious surfaces.

Therefore, it is our opinion that Standard 4 has been met.

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

The proposed development is not a LUHPPL and therefore Standard 5 is not applicable.

Standard 6: Critical Areas

The project does not have any discharges within a Zone II, Interim Wellhead Protection Areas or near or to any Critical Areas as defined by the Massachusetts Stormwater Handbook. Therefore, it is our opinion that Standard 6 is not applicable.

Standard 7: Redevelopment Projects

The proposed project is not a redevelopment project and therefore Standard 7 is not applicable.

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

Construction Period Erosion and Sedimentation Control measures are provided on the Site plans along with notes/instructions for the contractor and details/location of all erosion control measures.

Standard 9: Long Term Operation and Maintenance Plan

A Long-Term Pollution Prevention and Stormwater Operation and Maintenance Plan is provided in the Appendix.

Standard 10: Prohibition of Illicit Discharges

To our knowledge, there are no existing illicit discharges to existing stormwater systems on the Site and measures to prevent illicit discharges from the proposed development to proposed stormwater systems on the Site is included within the Long-Term Pollution Prevention Plan. As required, an Illicit Discharge Compliance Statement will be submitted prior to the discharge of any stormwater to the post-construction stormwater Best Management Practices (BMPs).

APPENDIX A

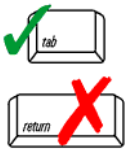
MassDEP Checklist for Stormwater Report

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.

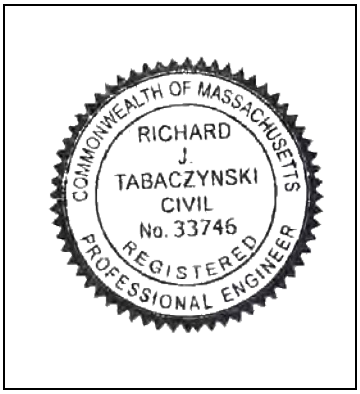
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



December 2, 2021

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:

- [X] 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
- [X] 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
- [X] Other (describe): Sediment Forebay, Infiltration Basin

Standard 1: No New Untreated Discharges

- [X] No new untreated discharges
- [X] Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- [X] 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;

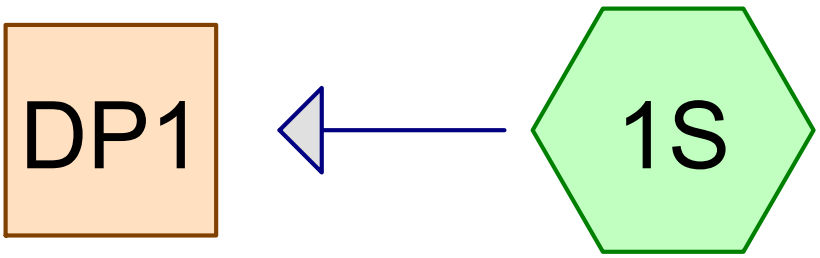
☐ An Illicit Discharge Compliance Statement is attached;

☒ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

APPENDIX B

Pre- and Post-Development HydroCAD Stormwater Analysis

PRE-DEVELOPMENT



Western Wetland 1S

Subcat Reach Pond Link

Routing Diagram for 3055.01- FEARING HILL RD - PRE-NOAA
Prepared by Atlantic Design Engineers, Printed 12/1/2021
HydroCAD® 10.00-25 s/n 00480 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
5,052	74	>75% Grass cover, Good, HSG C (1S)
294,009	55	Woods, Good, HSG B (1S)
448,421	70	Woods, Good, HSG C (1S)
747,482	**64**	**TOTAL AREA**

Time span=1.00-36.00 hrs, dt=0.05 hrs, 701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: 1S Runoff Area=747,482 sf 0.00% Impervious Runoff Depth=0.67"
Flow Length=576' Tc=17.7 min CN=64 Runoff=7.61 cfs 42,044 cf

Reach DP1: Western Wetland Inflow=7.61 cfs 42,044 cf
Outflow=7.61 cfs 42,044 cf

Total Runoff Area = 747,482 sf Runoff Volume = 42,044 cf Average Runoff Depth = 0.67"
100.00% Pervious = 747,482 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: 1S

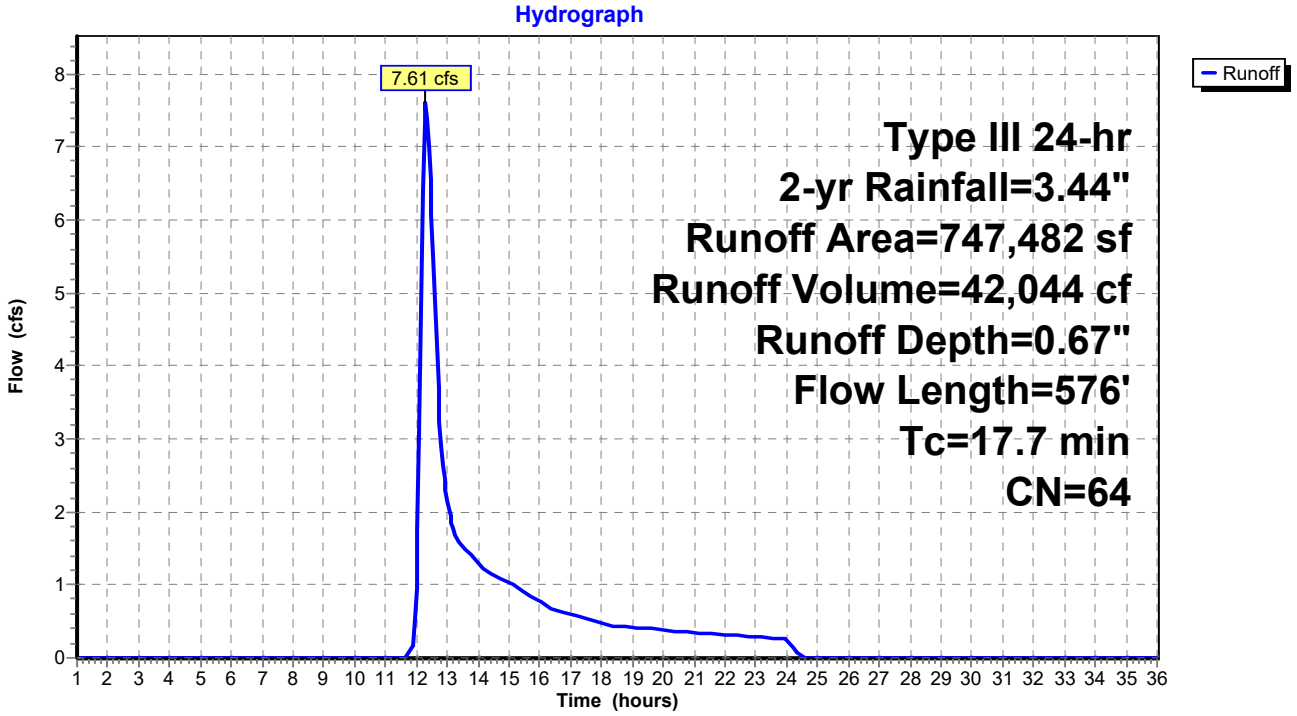
Runoff = 7.61 cfs @ 12.30 hrs, Volume= 42,044 cf, Depth= 0.67"

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=3.44"

Area (sf)	CN	Description
294,009	55	Woods, Good, HSG B
448,421	70	Woods, Good, HSG C
5,052	74	>75% Grass cover, Good, HSG C
747,482	64	Weighted Average
747,482		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	526	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.7	576	Total			

Subcatchment 1S: 1S

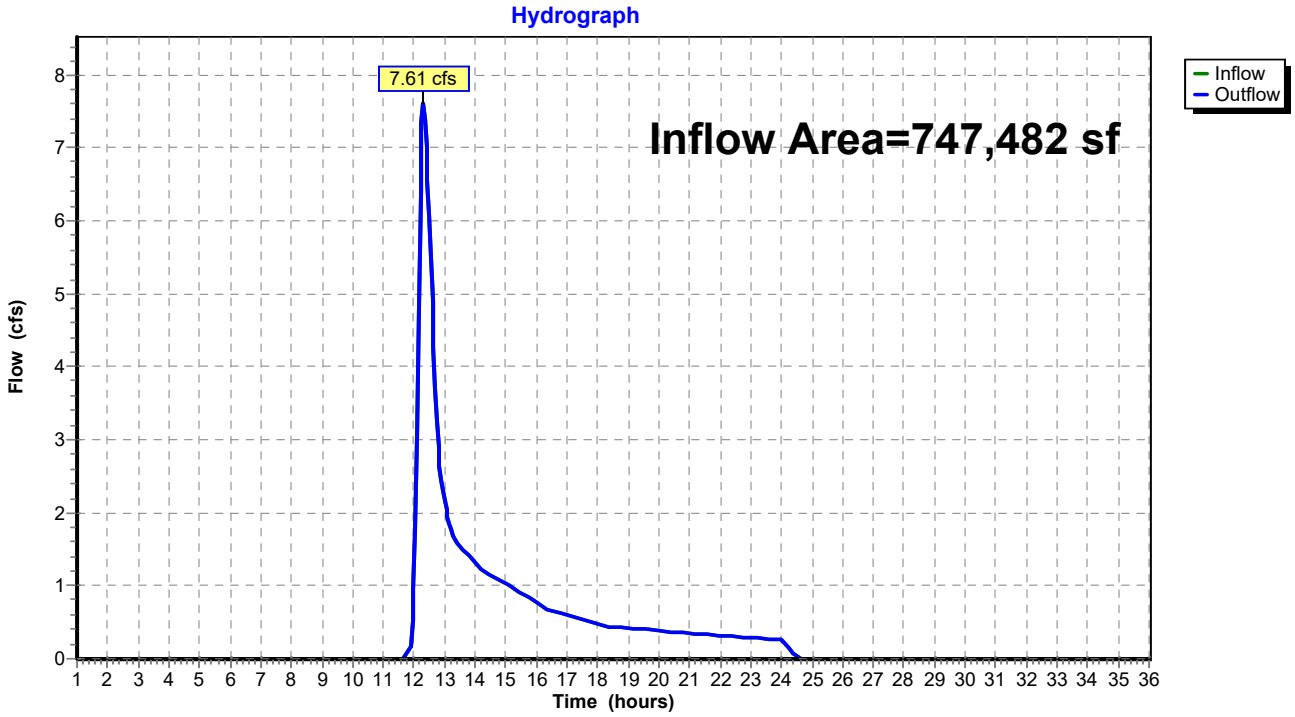


Summary for Reach DP1: Western Wetland

Inflow Area = 747,482 sf, 0.00% Impervious, Inflow Depth = 0.67" for 2-yr event
Inflow = 7.61 cfs @ 12.30 hrs, Volume= 42,044 cf
Outflow = 7.61 cfs @ 12.30 hrs, Volume= 42,044 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Reach DP1: Western Wetland



Time span=1.00-36.00 hrs, dt=0.05 hrs, 701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: 1S Runoff Area=747,482 sf 0.00% Impervious Runoff Depth=1.61"
Flow Length=576' Tc=17.7 min CN=64 Runoff=21.41 cfs 100,077 cf

Reach DP1: Western Wetland Inflow=21.41 cfs 100,077 cf
Outflow=21.41 cfs 100,077 cf

Total Runoff Area = 747,482 sf Runoff Volume = 100,077 cf Average Runoff Depth = 1.61"
100.00% Pervious = 747,482 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: 1S

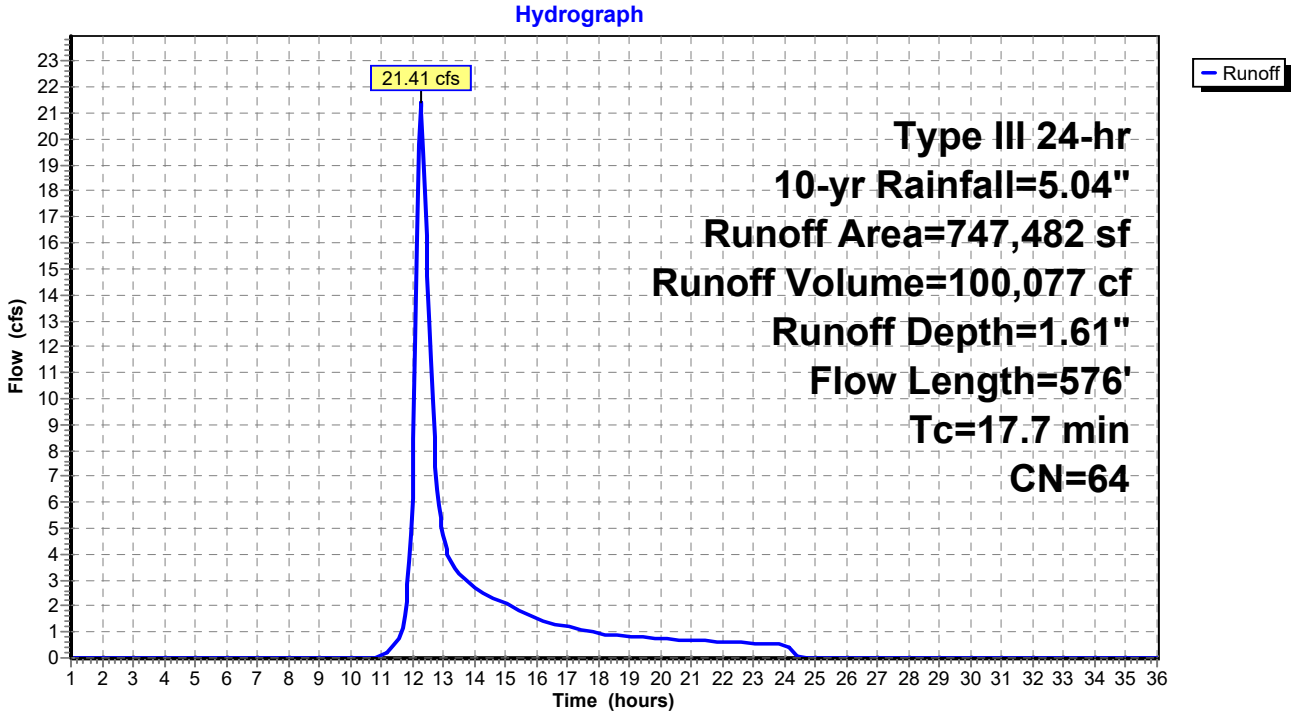
Runoff = 21.41 cfs @ 12.27 hrs, Volume= 100,077 cf, Depth= 1.61"

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=5.04"

Area (sf)	CN	Description
294,009	55	Woods, Good, HSG B
448,421	70	Woods, Good, HSG C
5,052	74	>75% Grass cover, Good, HSG C
747,482	64	Weighted Average
747,482		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	526	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.7	576	Total			

Subcatchment 1S: 1S

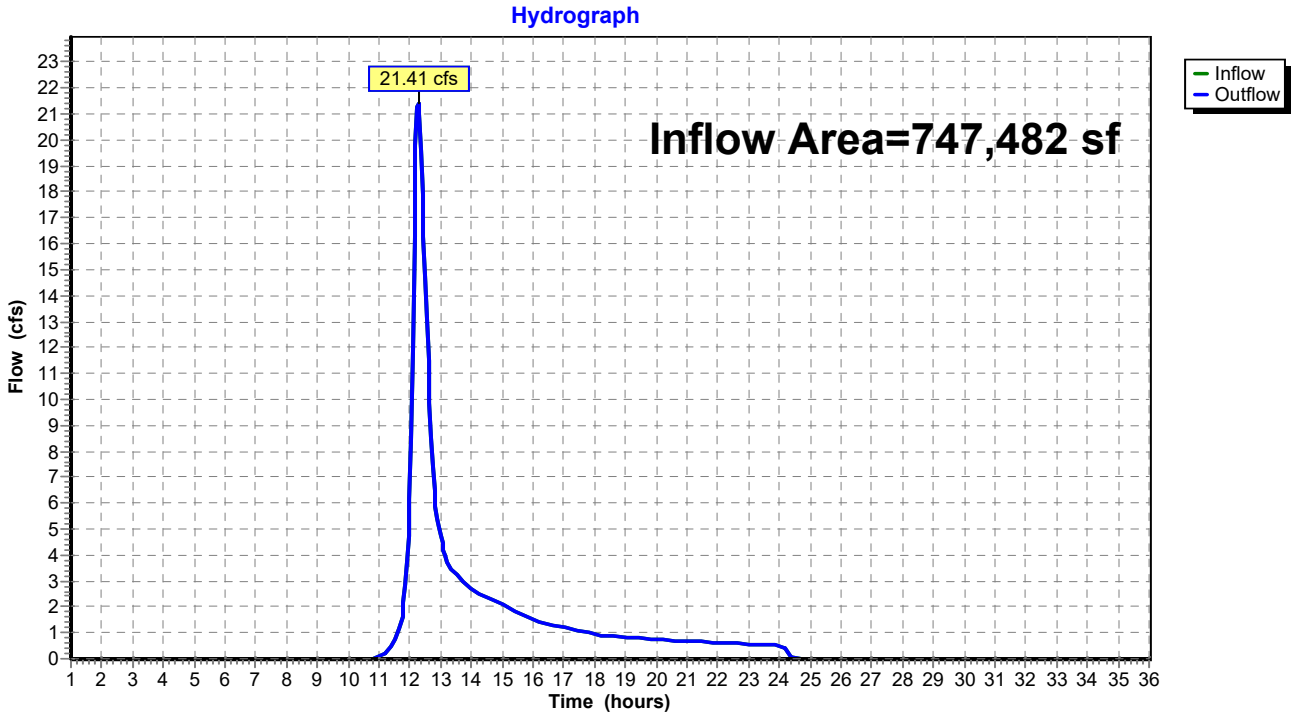


Summary for Reach DP1: Western Wetland

Inflow Area = 747,482 sf, 0.00% Impervious, Inflow Depth = 1.61" for 10-yr event
Inflow = 21.41 cfs @ 12.27 hrs, Volume= 100,077 cf
Outflow = 21.41 cfs @ 12.27 hrs, Volume= 100,077 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Reach DP1: Western Wetland



Time span=1.00-36.00 hrs, dt=0.05 hrs, 701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: 1S Runoff Area=747,482 sf 0.00% Impervious Runoff Depth=3.46"
Flow Length=576' Tc=17.7 min CN=64 Runoff=48.60 cfs 215,343 cf

Reach DP1: Western Wetland Inflow=48.60 cfs 215,343 cf
Outflow=48.60 cfs 215,343 cf

Total Runoff Area = 747,482 sf Runoff Volume = 215,343 cf Average Runoff Depth = 3.46"
100.00% Pervious = 747,482 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: 1S

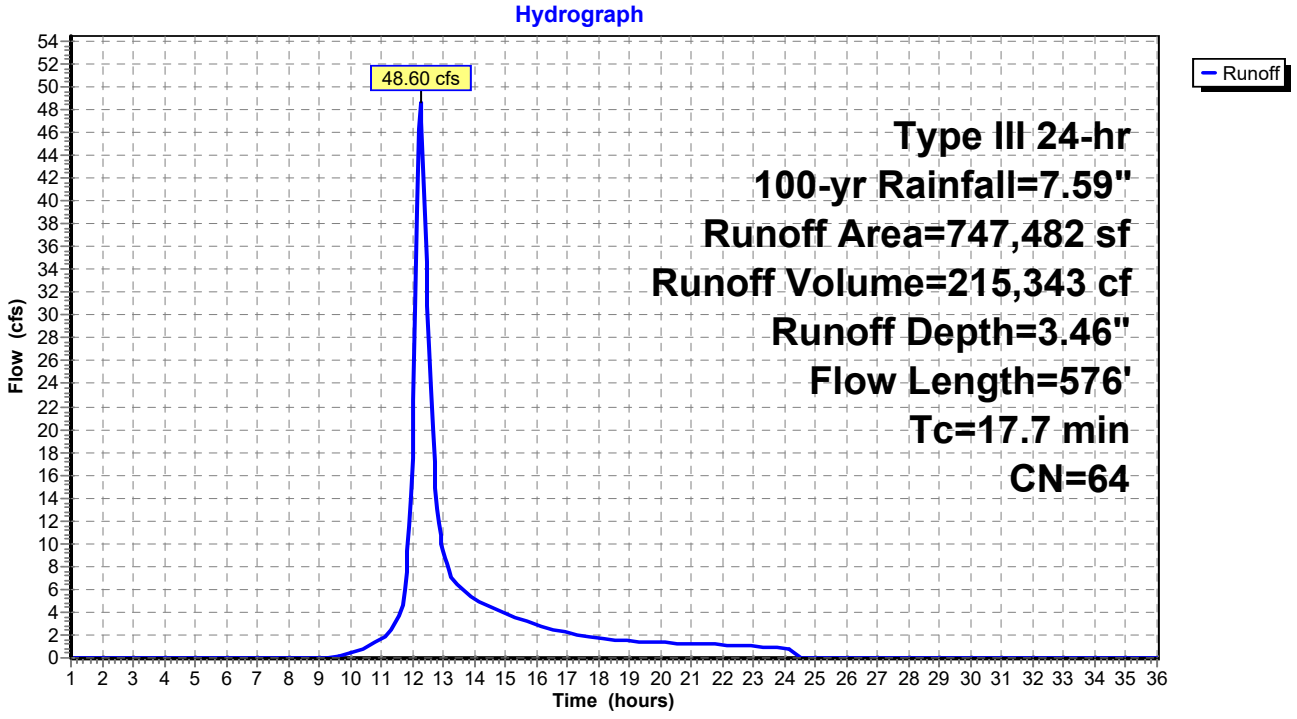
Runoff = 48.60 cfs @ 12.25 hrs, Volume= 215,343 cf, Depth= 3.46"

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=7.59"

Area (sf)	CN	Description
294,009	55	Woods, Good, HSG B
448,421	70	Woods, Good, HSG C
5,052	74	>75% Grass cover, Good, HSG C
747,482	64	Weighted Average
747,482		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	526	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.7	576	Total			

Subcatchment 1S: 1S

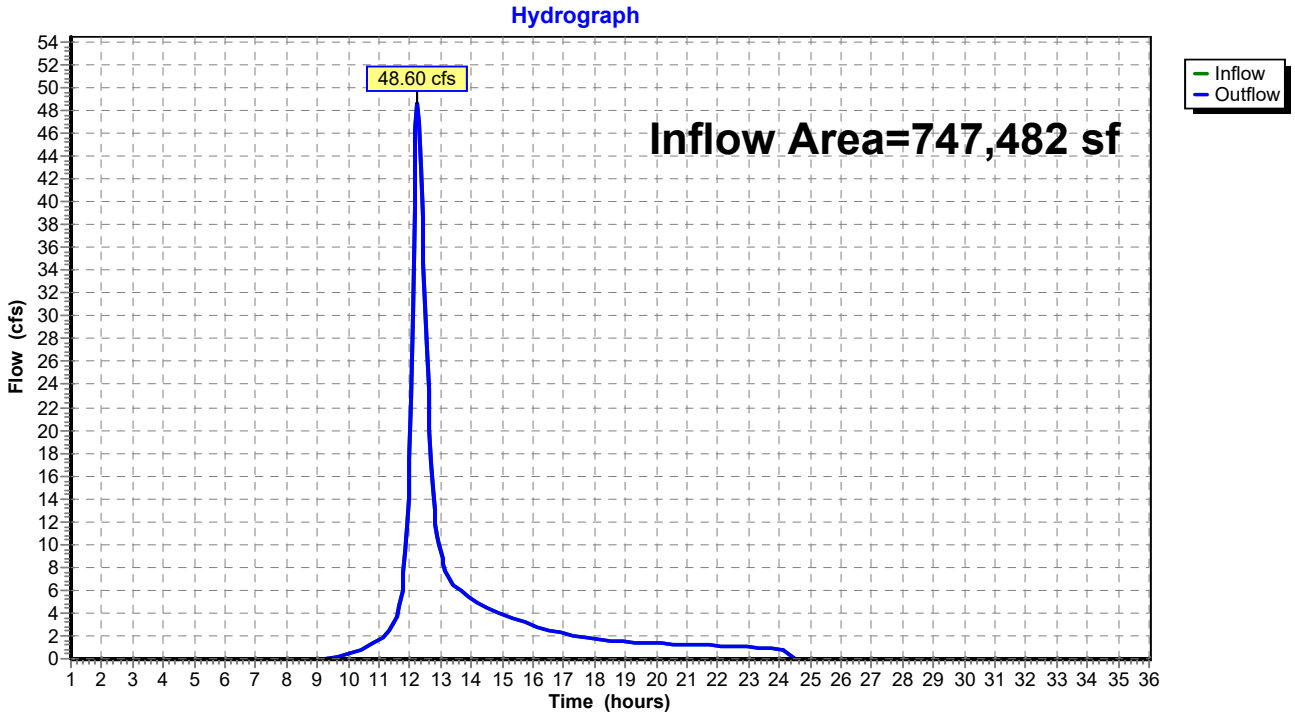


Summary for Reach DP1: Western Wetland

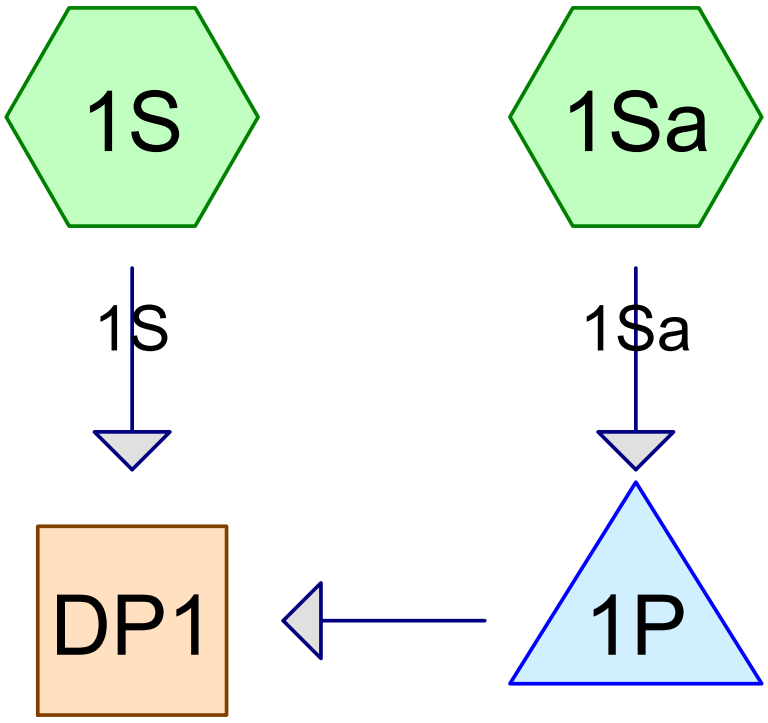
Inflow Area = 747,482 sf, 0.00% Impervious, Inflow Depth = 3.46" for 100-yr event
Inflow = 48.60 cfs @ 12.25 hrs, Volume= 215,343 cf
Outflow = 48.60 cfs @ 12.25 hrs, Volume= 215,343 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Reach DP1: Western Wetland



POST-DEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 3055.01- FEARING HILL RD - POST-NOAA
Prepared by Atlantic Design Engineers, Printed 12/1/2021

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
27,469	74	>75% Grass cover, Good, HSG C (1S, 1Sa)
11,182	98	Paved parking, HSG C (1S, 1Sa)
294,009	55	Woods, Good, HSG B (1S)
414,822	70	Woods, Good, HSG C (1S, 1Sa)
747,482	**65**	**TOTAL AREA**

Time span=1.00-36.00 hrs, dt=0.05 hrs, 701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: 1S Runoff Area=681,282 sf 0.14% Impervious Runoff Depth=0.67"
Flow Length=576' Tc=17.7 min CN=64 Runoff=6.94 cfs 38,320 cf

Subcatchment 1Sa: 1Sa Runoff Area=66,200 sf 15.49% Impervious Runoff Depth=1.32"
Flow Length=300' Tc=16.5 min CN=76 Runoff=1.66 cfs 7,293 cf

Reach DP1: Western Wetland Inflow=6.94 cfs 38,320 cf
Outflow=6.94 cfs 38,320 cf

Pond 1P: 1P Peak Elev=69.04' Storage=5,220 cf Inflow=1.66 cfs 7,293 cf
Discarded=0.05 cfs 4,160 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 4,160 cf

Total Runoff Area = 747,482 sf Runoff Volume = 45,613 cf Average Runoff Depth = 0.73"
98.50% Pervious = 736,300 sf 1.50% Impervious = 11,182 sf

Summary for Subcatchment 1S: 1S

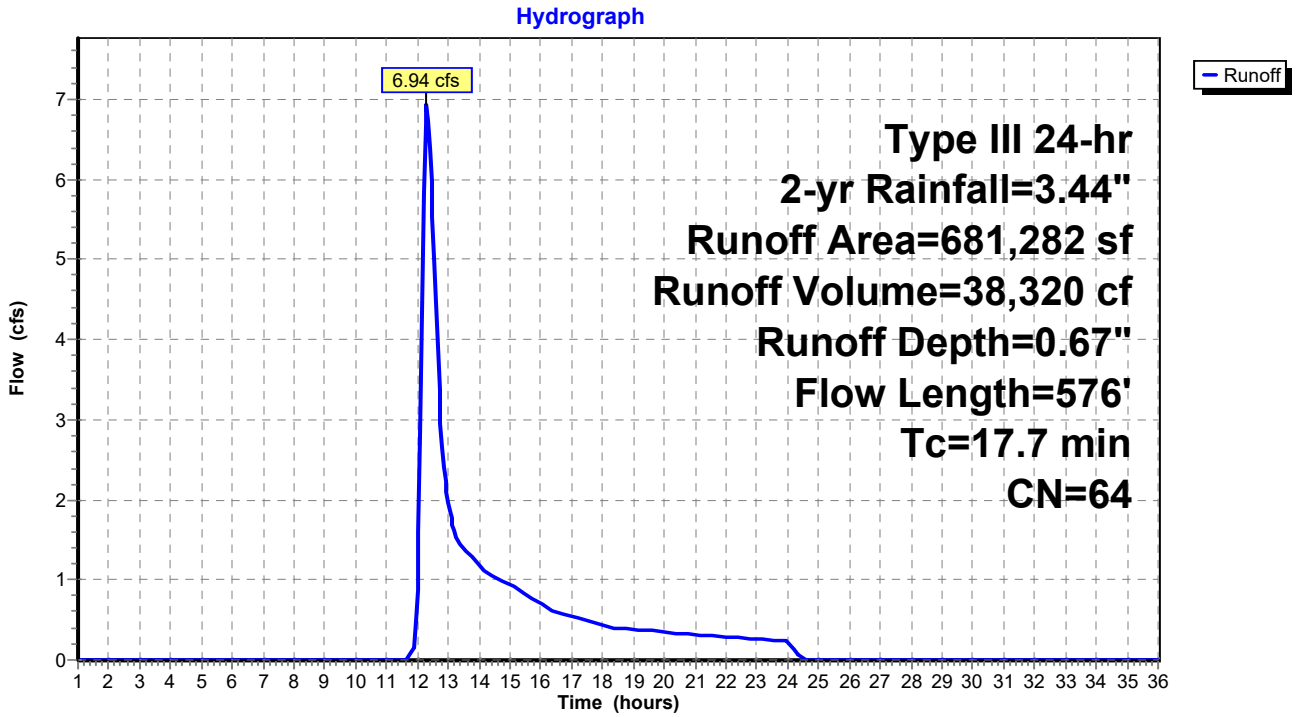
Runoff = 6.94 cfs @ 12.30 hrs, Volume= 38,320 cf, Depth= 0.67"

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=3.44"

Area (sf)	CN	Description
294,009	55	Woods, Good, HSG B
381,295	70	Woods, Good, HSG C
5,052	74	>75% Grass cover, Good, HSG C
926	98	Paved parking, HSG C
681,282	64	Weighted Average
680,356		99.86% Pervious Area
926		0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	526	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.7	576	Total			

Subcatchment 1S: 1S



Summary for Subcatchment 1Sa: 1Sa

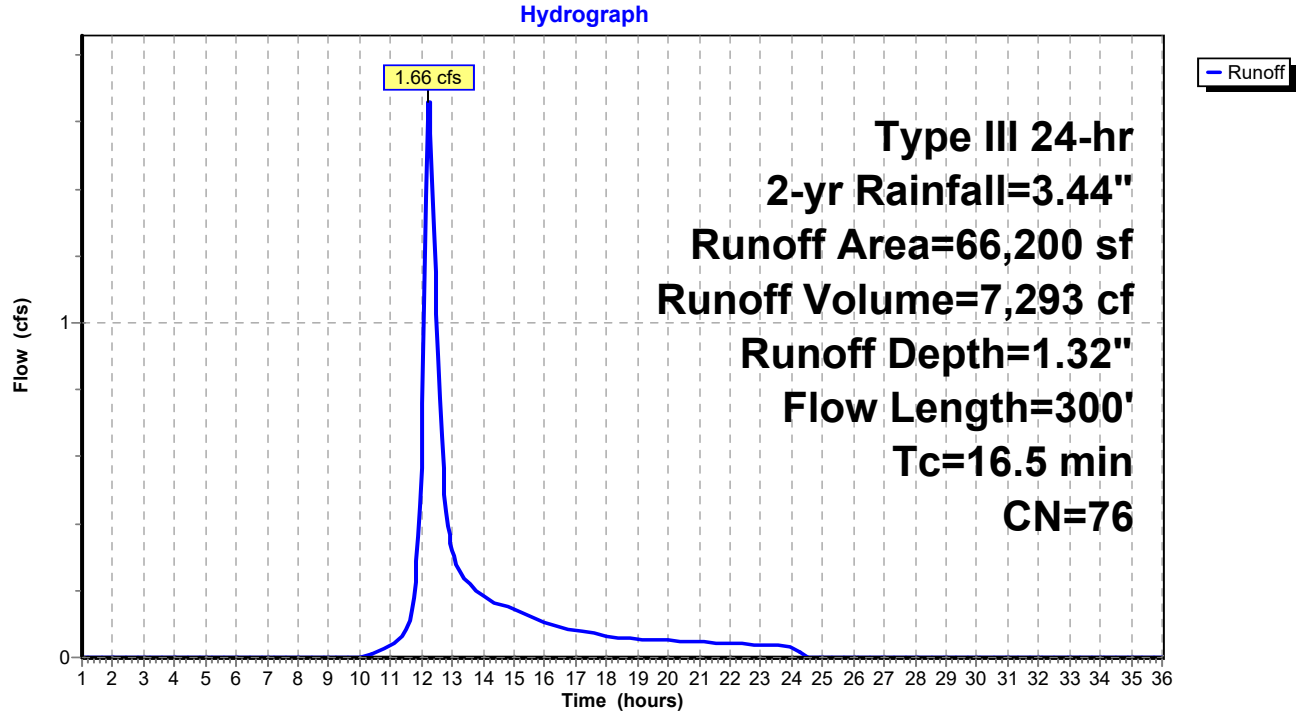
Runoff = 1.66 cfs @ 12.24 hrs, Volume= 7,293 cf, Depth= 1.32"

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=3.44"

Area (sf)	CN	Description
22,417	74	>75% Grass cover, Good, HSG C
10,256	98	Paved parking, HSG C
33,527	70	Woods, Good, HSG C
66,200	76	Weighted Average
55,944		84.51% Pervious Area
10,256		15.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.2	250	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.5	300	Total			

Subcatchment 1Sa: 1Sa

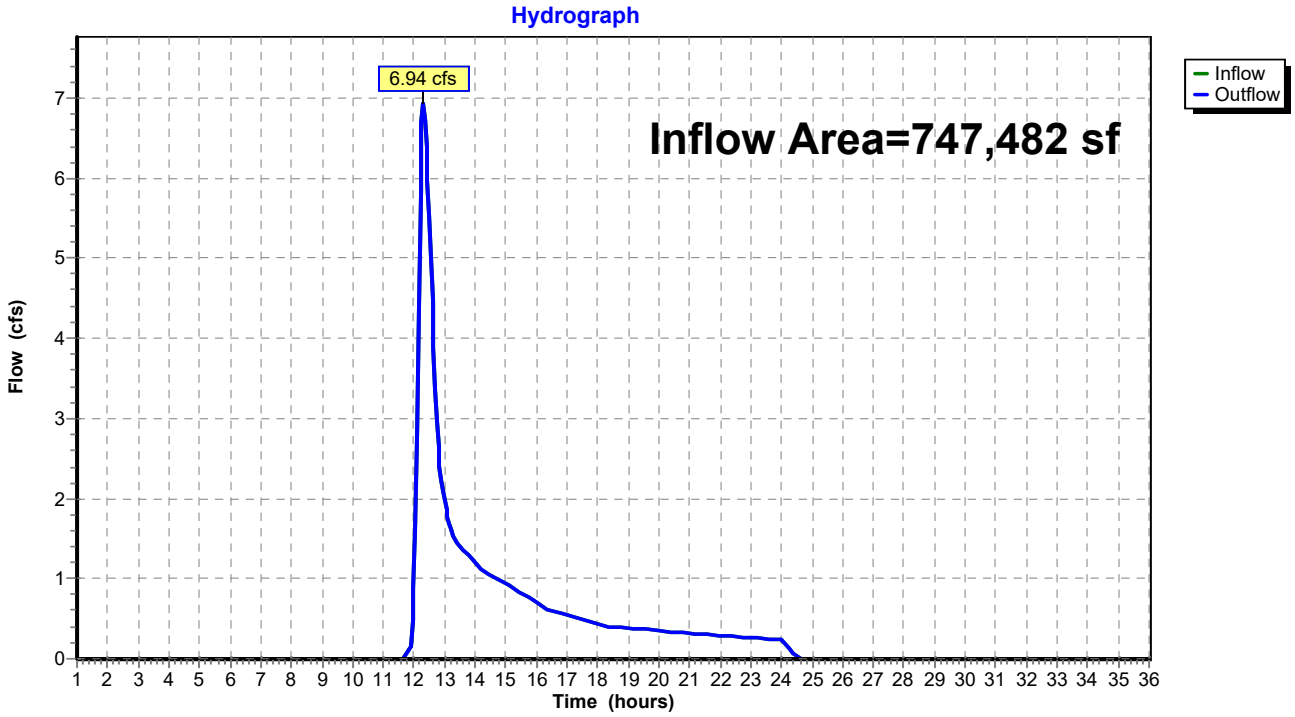


Summary for Reach DP1: Western Wetland

Inflow Area = 747,482 sf, 1.50% Impervious, Inflow Depth = 0.62" for 2-yr event
Inflow = 6.94 cfs @ 12.30 hrs, Volume= 38,320 cf
Outflow = 6.94 cfs @ 12.30 hrs, Volume= 38,320 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Reach DP1: Western Wetland



Summary for Pond 1P: 1P

Inflow Area = 66,200 sf, 15.49% Impervious, Inflow Depth = 1.32" for 2-yr event
Inflow = 1.66 cfs @ 12.24 hrs, Volume= 7,293 cf
Outflow = 0.05 cfs @ 19.63 hrs, Volume= 4,160 cf, Atten= 97%, Lag= 443.2 min
Discarded = 0.05 cfs @ 19.63 hrs, Volume= 4,160 cf
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 69.04' @ 19.63 hrs Surf.Area= 8,259 sf Storage= 5,220 cf

Plug-Flow detention time= 674.2 min calculated for 4,160 cf (57% of inflow)
Center-of-Mass det. time= 554.3 min (1,415.5 - 861.2)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	29,145 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

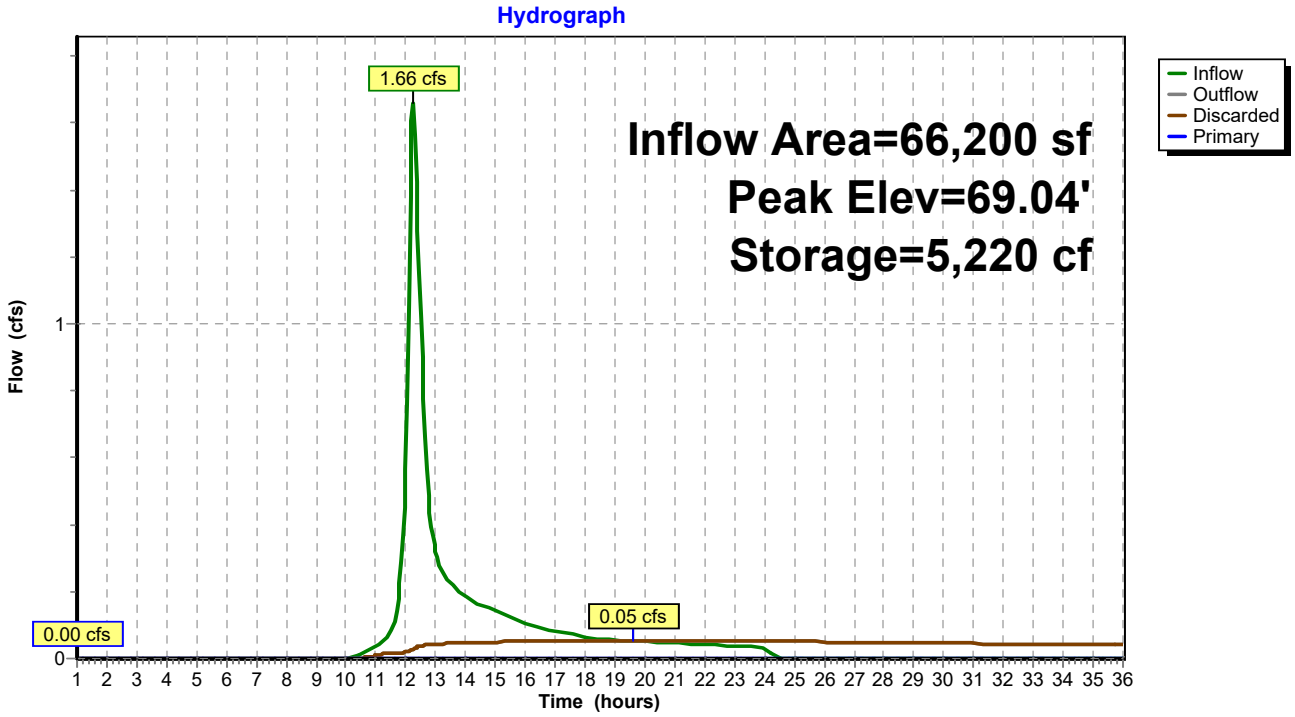
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,317	220.7	0	0	2,317
69.00	8,116	351.3	4,923	4,923	8,269
70.00	12,512	417.3	10,235	15,158	12,324
71.00	15,515	465.0	13,987	29,145	15,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	70.50'	**20.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Discarded OutFlow Max=0.05 cfs @ 19.63 hrs HW=69.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=68.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: 1P


Hydrograph
Inflow Area=66,200 sf
Peak Elev=69.04'
Storage=5,220 cf
1.66 cfs
0.05 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Time span=1.00-36.00 hrs, dt=0.05 hrs, 701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: 1S Runoff Area=681,282 sf 0.14% Impervious Runoff Depth=1.61"
Flow Length=576' Tc=17.7 min CN=64 Runoff=19.51 cfs 91,214 cf

Subcatchment 1Sa: 1Sa Runoff Area=66,200 sf 15.49% Impervious Runoff Depth=2.57"
Flow Length=300' Tc=16.5 min CN=76 Runoff=3.31 cfs 14,170 cf

Reach DP1: Western Wetland Inflow=19.51 cfs 91,214 cf
Outflow=19.51 cfs 91,214 cf

Pond 1P: 1P Peak Elev=69.66' Storage=11,173 cf Inflow=3.31 cfs 14,170 cf
Discarded=0.07 cfs 5,772 cf Primary=0.00 cfs 0 cf Outflow=0.07 cfs 5,772 cf

Total Runoff Area = 747,482 sf Runoff Volume = 105,383 cf Average Runoff Depth = 1.69"
98.50% Pervious = 736,300 sf 1.50% Impervious = 11,182 sf

Summary for Subcatchment 1S: 1S

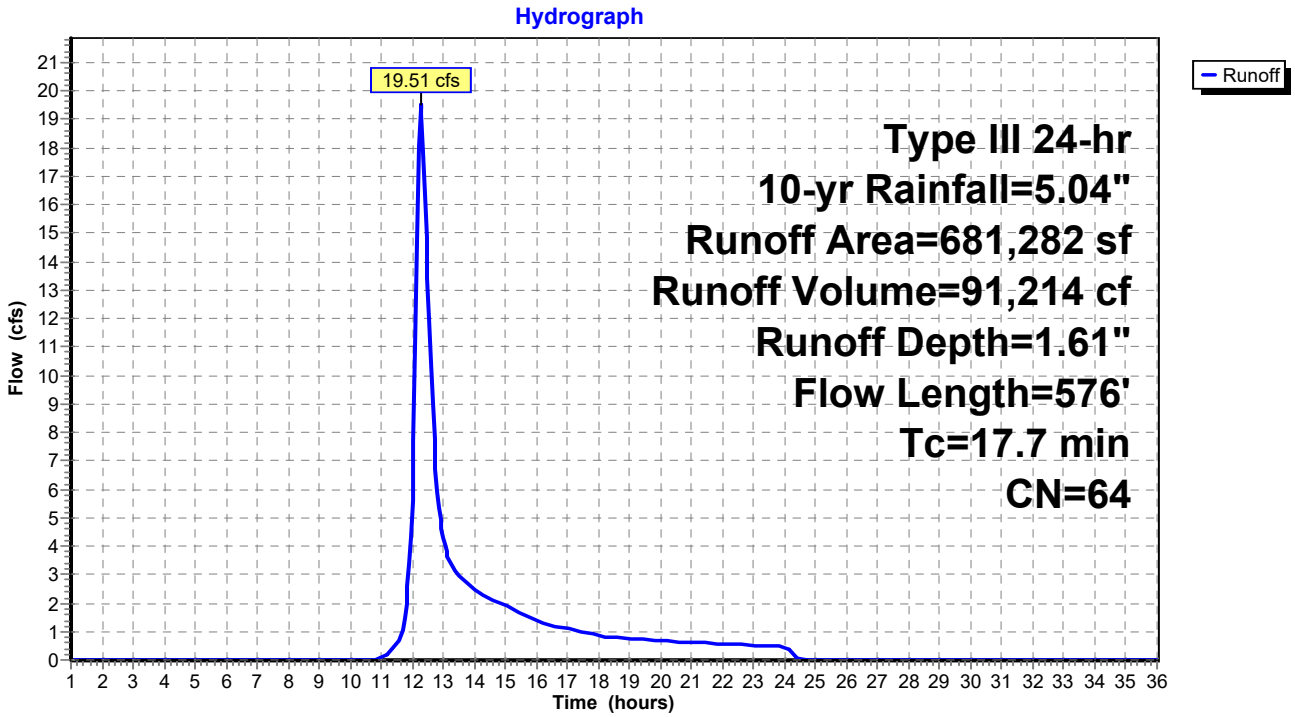
Runoff = 19.51 cfs @ 12.27 hrs, Volume= 91,214 cf, Depth= 1.61"

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=5.04"

Area (sf)	CN	Description
294,009	55	Woods, Good, HSG B
381,295	70	Woods, Good, HSG C
5,052	74	>75% Grass cover, Good, HSG C
926	98	Paved parking, HSG C
681,282	64	Weighted Average
680,356		99.86% Pervious Area
926		0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	526	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.7	576	Total			

Subcatchment 1S: 1S



Summary for Subcatchment 1Sa: 1Sa

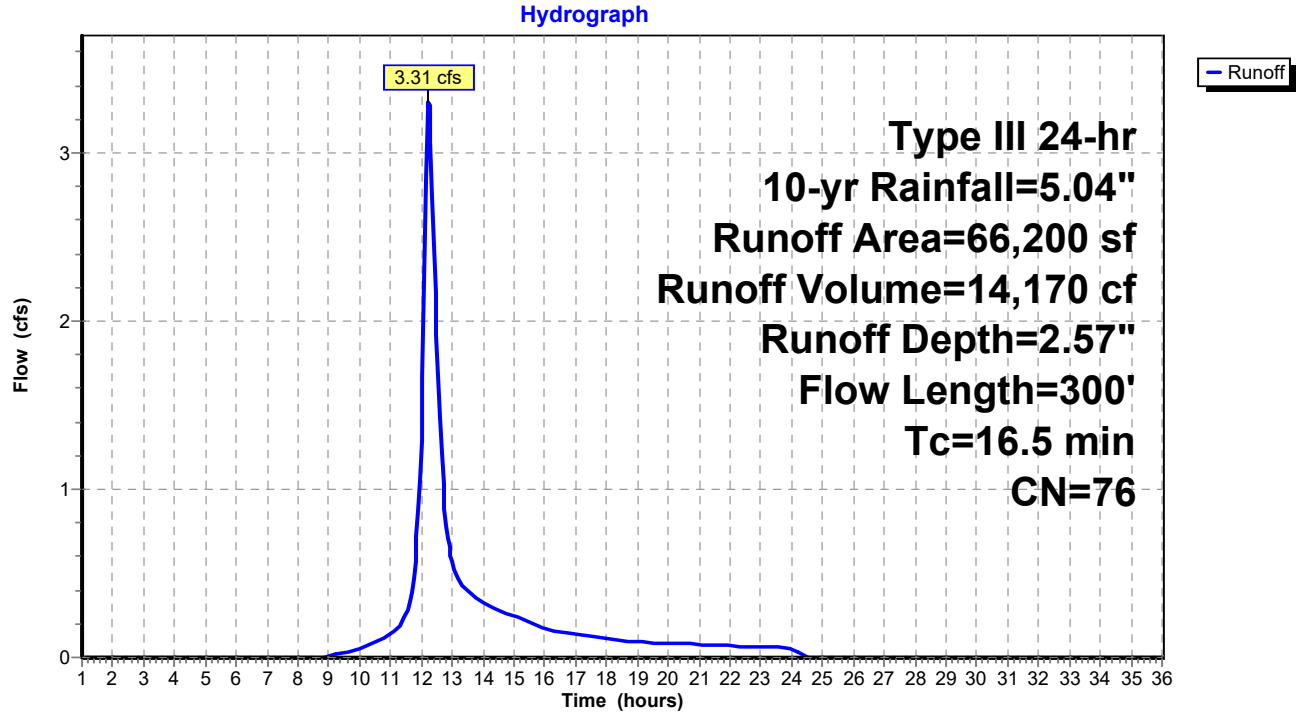
Runoff = 3.31 cfs @ 12.23 hrs, Volume= 14,170 cf, Depth= 2.57"

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=5.04"

Area (sf)	CN	Description
22,417	74	>75% Grass cover, Good, HSG C
10,256	98	Paved parking, HSG C
33,527	70	Woods, Good, HSG C
66,200	76	Weighted Average
55,944		84.51% Pervious Area
10,256		15.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.2	250	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.5	300	Total			

Subcatchment 1Sa: 1Sa

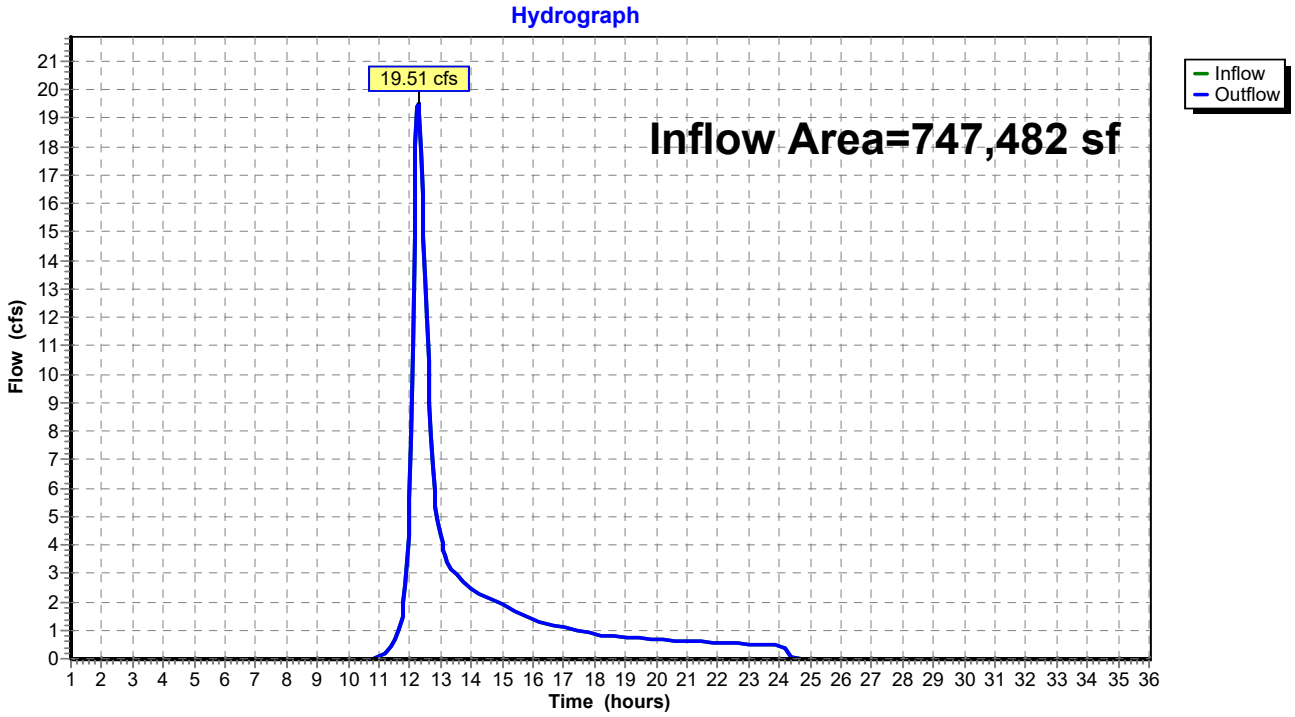


Summary for Reach DP1: Western Wetland

Inflow Area = 747,482 sf, 1.50% Impervious, Inflow Depth = 1.46" for 10-yr event
Inflow = 19.51 cfs @ 12.27 hrs, Volume= 91,214 cf
Outflow = 19.51 cfs @ 12.27 hrs, Volume= 91,214 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Reach DP1: Western Wetland



Summary for Pond 1P: 1P

Inflow Area = 66,200 sf, 15.49% Impervious, Inflow Depth = 2.57" for 10-yr event
Inflow = 3.31 cfs @ 12.23 hrs, Volume= 14,170 cf
Outflow = 0.07 cfs @ 22.26 hrs, Volume= 5,772 cf, Atten= 98%, Lag= 601.4 min
Discarded = 0.07 cfs @ 22.26 hrs, Volume= 5,772 cf
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 69.66' @ 22.26 hrs Surf.Area= 10,909 sf Storage= 11,173 cf

Plug-Flow detention time= 700.2 min calculated for 5,764 cf (41% of inflow)
Center-of-Mass det. time= 576.9 min (1,418.5 - 841.7)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	29,145 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

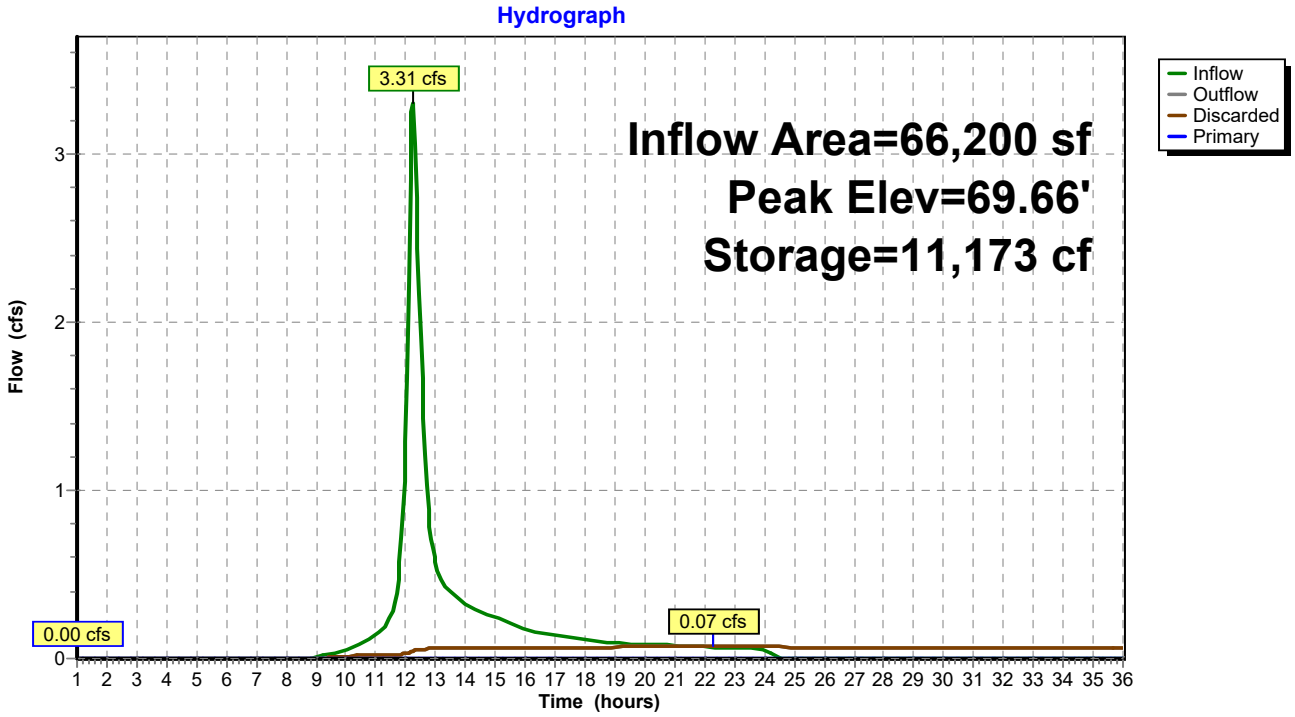
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,317	220.7	0	0	2,317
69.00	8,116	351.3	4,923	4,923	8,269
70.00	12,512	417.3	10,235	15,158	12,324
71.00	15,515	465.0	13,987	29,145	15,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	70.50'	**20.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Discarded OutFlow Max=0.07 cfs @ 22.26 hrs HW=69.66' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=68.00' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: 1P


Hydrograph
Inflow Area=66,200 sf
Peak Elev=69.66'
Storage=11,173 cf
3.31 cfs
0.07 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
2
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

Time span=1.00-36.00 hrs, dt=0.05 hrs, 701 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: 1S Runoff Area=681,282 sf 0.14% Impervious Runoff Depth=3.46"
Flow Length=576' Tc=17.7 min CN=64 Runoff=44.30 cfs 196,271 cf

Subcatchment 1Sa: 1Sa Runoff Area=66,200 sf 15.49% Impervious Runoff Depth=4.79"
Flow Length=300' Tc=16.5 min CN=76 Runoff=6.16 cfs 26,404 cf

Reach DP1: Western Wetland Inflow=44.30 cfs 196,810 cf
Outflow=44.30 cfs 196,810 cf

Pond 1P: 1P Peak Elev=70.51' Storage=21,867 cf Inflow=6.16 cfs 26,404 cf
Discarded=0.09 cfs 7,668 cf Primary=0.05 cfs 539 cf Outflow=0.13 cfs 8,207 cf

Total Runoff Area = 747,482 sf Runoff Volume = 222,675 cf Average Runoff Depth = 3.57"
98.50% Pervious = 736,300 sf 1.50% Impervious = 11,182 sf

Summary for Subcatchment 1S: 1S

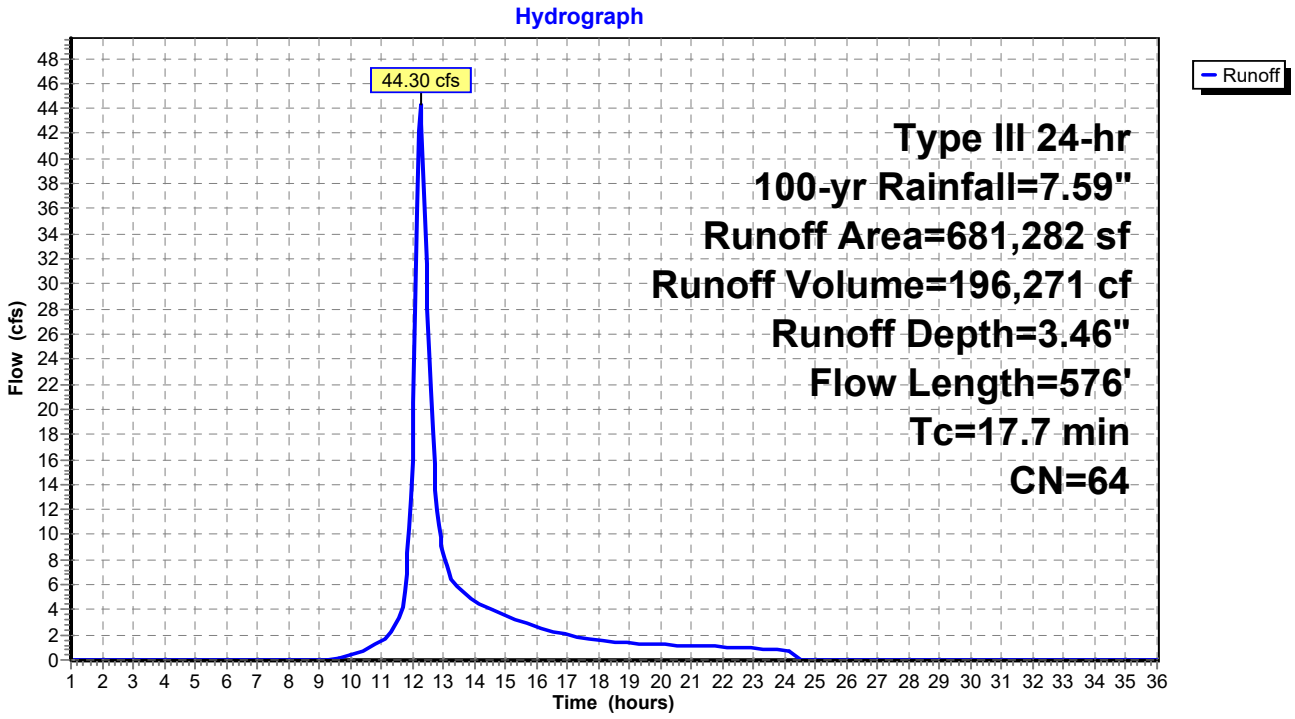
Runoff = 44.30 cfs @ 12.25 hrs, Volume= 196,271 cf, Depth= 3.46"

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=7.59"

Area (sf)	CN	Description
294,009	55	Woods, Good, HSG B
381,295	70	Woods, Good, HSG C
5,052	74	>75% Grass cover, Good, HSG C
926	98	Paved parking, HSG C
681,282	64	Weighted Average
680,356		99.86% Pervious Area
926		0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.4	526	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.7	576	Total			

Subcatchment 1S: 1S



Summary for Subcatchment 1Sa: 1Sa

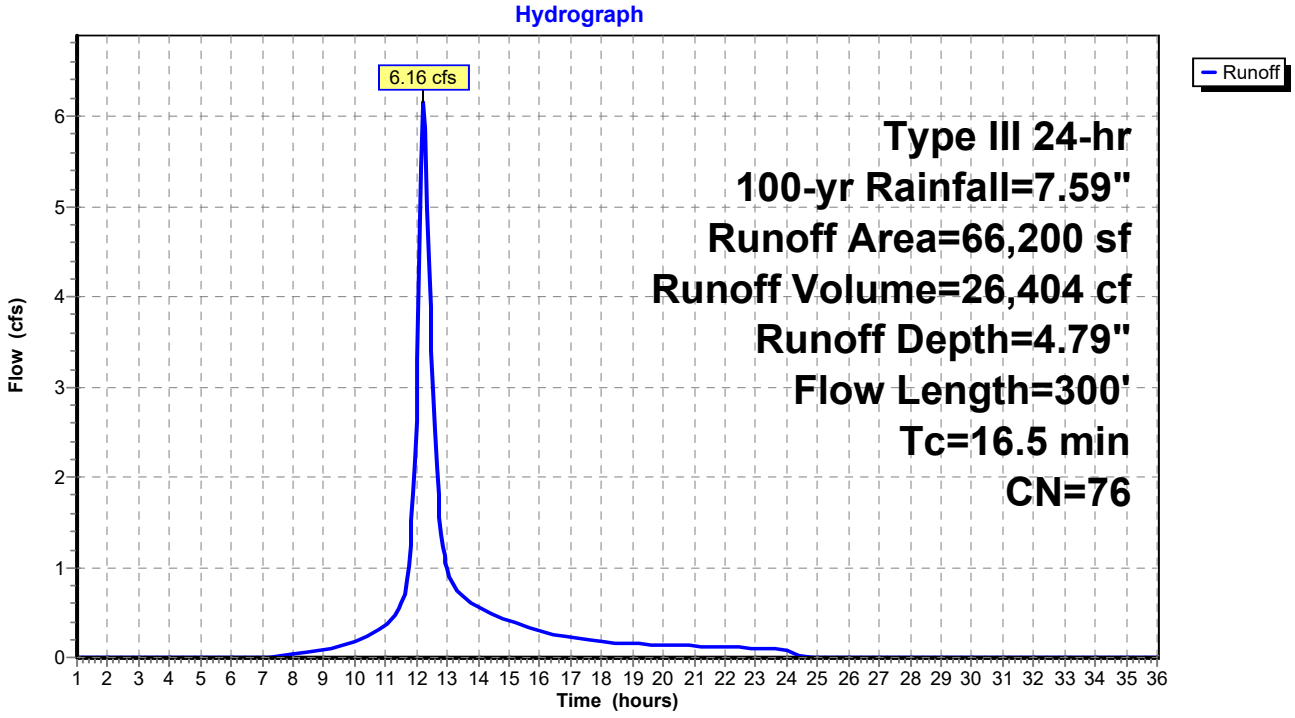
Runoff = 6.16 cfs @ 12.23 hrs, Volume= 26,404 cf, Depth= 4.79"

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=7.59"

Area (sf)	CN	Description
22,417	74	>75% Grass cover, Good, HSG C
10,256	98	Paved parking, HSG C
33,527	70	Woods, Good, HSG C
66,200	76	Weighted Average
55,944		84.51% Pervious Area
10,256		15.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.2	250	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.5	300	Total			

Subcatchment 1Sa: 1Sa

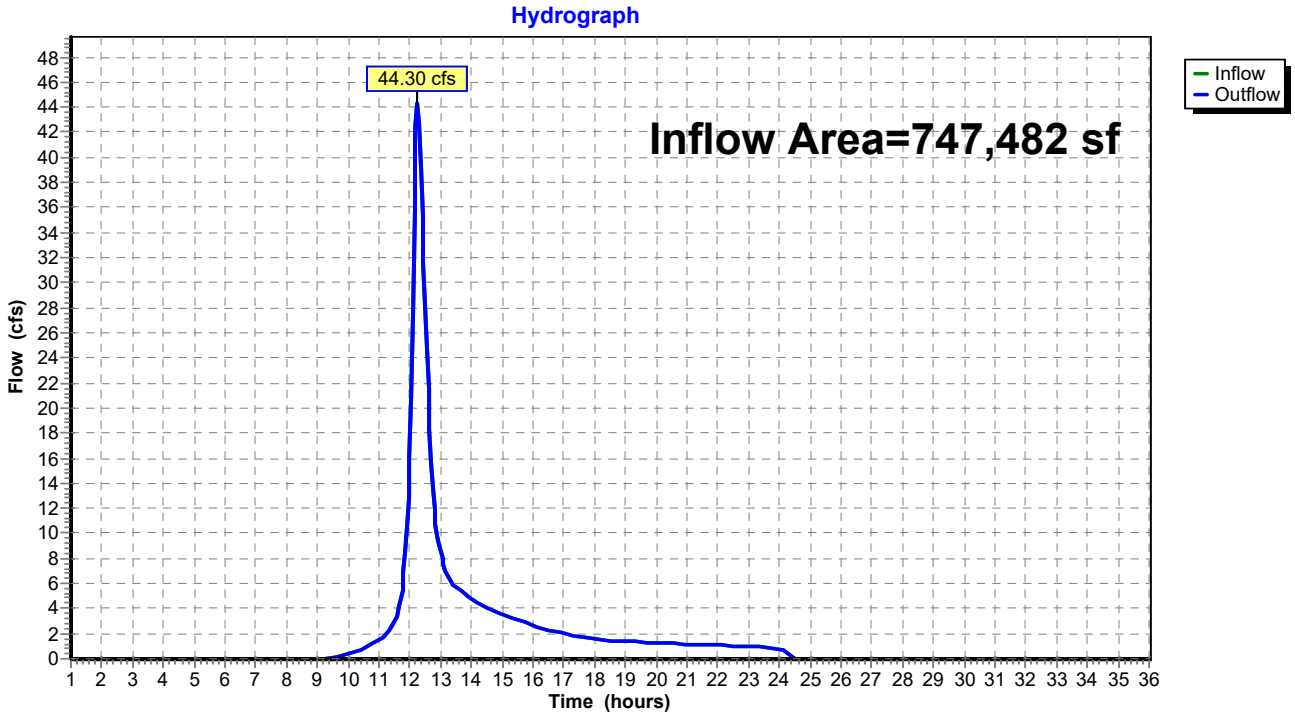


Summary for Reach DP1: Western Wetland

Inflow Area = 747,482 sf, 1.50% Impervious, Inflow Depth = 3.16" for 100-yr event
Inflow = 44.30 cfs @ 12.25 hrs, Volume= 196,810 cf
Outflow = 44.30 cfs @ 12.25 hrs, Volume= 196,810 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs

Reach DP1: Western Wetland



Summary for Pond 1P: 1P

Inflow Area = 66,200 sf, 15.49% Impervious, Inflow Depth = 4.79" for 100-yr event
Inflow = 6.16 cfs @ 12.23 hrs, Volume= 26,404 cf
Outflow = 0.13 cfs @ 20.52 hrs, Volume= 8,207 cf, Atten= 98%, Lag= 497.4 min
Discarded = 0.09 cfs @ 20.52 hrs, Volume= 7,668 cf
Primary = 0.05 cfs @ 20.52 hrs, Volume= 539 cf

Routing by Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 70.51' @ 20.52 hrs Surf.Area= 13,993 sf Storage= 21,867 cf

Plug-Flow detention time= 708.8 min calculated for 8,207 cf (31% of inflow)
Center-of-Mass det. time= 576.1 min (1,399.9 - 823.8)

Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	29,145 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

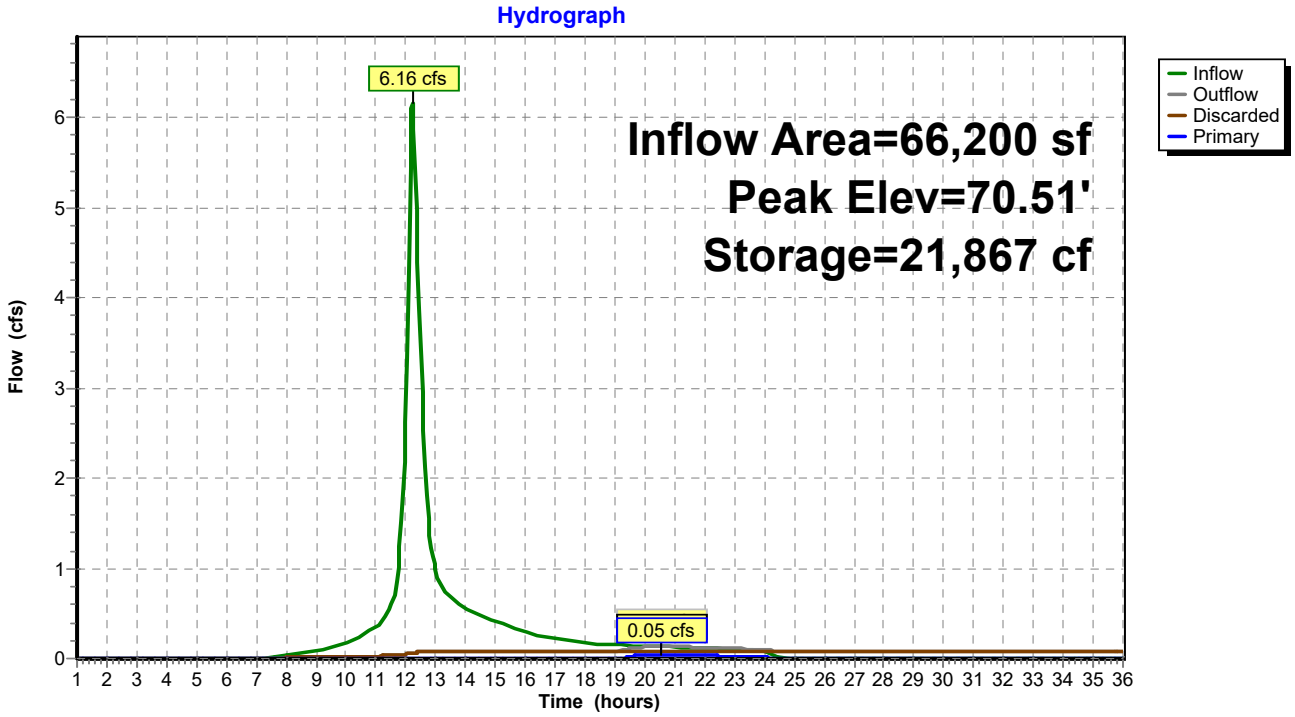
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	2,317	220.7	0	0	2,317
69.00	8,116	351.3	4,923	4,923	8,269
70.00	12,512	417.3	10,235	15,158	12,324
71.00	15,515	465.0	13,987	29,145	15,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	68.00'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	70.50'	**20.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Discarded OutFlow Max=0.09 cfs @ 20.52 hrs HW=70.51' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=0.03 cfs @ 20.52 hrs HW=70.51' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.20 fps)

Pond 1P: 1P


Hydrograph
6.16 cfs
0.05 cfs
Inflow Area=66,200 sf
Peak Elev=70.51'
Storage=21,867 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

APPENDIX C

Pre- and Post-Development Watershed Plans

LEGEND

- 1P — STORMWATER BASIN
- 1S — SUBCATCHMENT AREA
- DP1 — DESIGN POINT
- Tc PATH
- SUBCATCHMENT AND UNDISTURBED AREA BOUNDARY
- 32A "D" — HYDROLOGIC SOIL GROUP AND BOUNDARY

FILE: 3055.02-WSHD-DEF

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE
SCALE 1" = 80'
0 20 40 80 160

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595

PRE DEVELOPMENT WATERSHED PLAN
FOR
FEARING HILL RD DEFINITIVE SUBDIVSION PLAN
WAREHAM, MA 02576
DECEMBER 2, 2021

Sheet 1 of 1
JOB NUMBER 3055.02

LEGEND

- 1P — STORMWATER BASIN
- 1S — SUBCATCHMENT AREA
- DP1 — DESIGN POINT
- Tc PATH
- SUBCATCHMENT AND UNDISTURBED AREA BOUNDARY
- 32A "D" — HYDROLOGIC SOIL GROUP AND BOUNDARY

FILE: 3055.02-WSHD

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 80'
0 20 40 80 160

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595

POST DEVELOPMENT WATERSHED PLAN
FOR
FEARING HILL ROAD SOLAR PROJECT
WAREHAM, MA 02576
DECEMBER 2, 2021

Sheet 1 of 1
JOB NUMBER 3055.02

APPENDIX D
Miscellaneous Calculations

Infiltration Basin- Drawdown Calculations

Design Engineer:	Atlantic Design Engineers, Inc.	Job No.:	3055.02
Project Name:	Weweantic Circle Definitive Subdivision	Calc'd By:	RJT
Location:	Wareham, MA	Date:	12/2/2021

Time Drawdown (Tdd)=Rv/[(K)(A)]

Rv = Storage Volume
K = Saturated Hydraulic Conductivity
A = Bottom Area of Basin

Rv calculated in HydroCAD based on 100yr design storm

Infiltration Basin	Infiltration Rate	0.27	in/hr			
	Bottom Area =	14,090	sq ft			
	Storage Volume (Rv)=	21,867				
	Time to Drawdown (Tdd)=	22323/ [(0.27 / 12) (14090)]				
	Time to Drawdown (Tdd)=	69	**hours**	**<**	**72 hrs - Requirement Met**	

Premier Jeep
518 - 556 Yarmouth Road
Hyannis, MA
Job #2479.11

Forebay Sizing Calculation Sheet

Design Engineer:	Atlantic Design Engineers, Inc.	Job No.:	3055.02
Project Name:	Weweantic Circle Definitive Subdivision	Calc'd By:	RJT
Location:	Wareham, MA	Date:	12/3/2021

Forebay is sized for the required water quality treatment volume, calculated as follows:

Vwq = (Dwq)*(Aimp)
Vwq =Required Water Quality Volume
Dwq =Water Quality Depth * 1.0"
Aimp=Area of Impervious (pavement and sidwalk)

Total Impervious Area for the Subcatchment=	10,257	sf			
Water Quality Volume Required (Vwq)=	10,257	* 1" * (1/12)=	854.8	cf	
Volume Provided=			938	cf	In Sediment Forebay up to 70.1
Volume Required=	854.8	<	938	cf	Requirement Met

Required Recharge Volume

Design Engineer:	Atlantic Design Engineers, Inc.	Job No.:	3055.02
Project Name:	Weweantic Circle Definive Subdivision	Calc'd By:	RJT
Location:	Wareham, MA	Date:	12/2/2021

The groundwater recharge volume is required for the proposed **impervious** surfaces - pavement and sidewalk.

Rv = (F) (Aimp)
Rv = Required Recharge Volume
Aimp= Impervious Area on site
F = Target Depth Factor: 0.25 inch for C soils

Total proposed impervious area =	10,257 sf		
Required Recharge Volume (Rv) =	10,257 * 0.25" * (1/12)=	214	cf
Recharge Volume Provided			
Infiltration Basin up to Elevation 70.5		21,776	cf

Total Required Recharge Volume on Site= 214 cf

Total Recharge Volume Provided on the Site= 21,776 cf **REQUIREMENT MET**

TSS REMOVAL CALCULATION SHEET

Design Engineer:	Atlantic Design Engineers, Inc.	Job No.:	3055.02
Project Name:	Weweantic Circle Definitive Subdivision	Calc'd By:	RJT
Location:	Wareham, Massachusetts	Date:	12/2/2021

BMP	Removal Rate	Starting TSS Load	TSS Removed	Remaining Load
Sediment Forebay	25%	100%	25.0%	75.0%
Infiltration Basin	80%	75.0%	60.0%	15.0%
Total Removed			**85.0%**	

APPENDIX E

Long Term Stormwater Operation and Maintenance Plan

Weweantic Circle Definitive Subdivision, Wareham, MA

Post-Construction

Long Term Stormwater Operation & Maintenance Plan

December 2, 2021

A. GENERAL NOTES

1. Upon completion of construction, the operation and maintenance of all components of the stormwater management system will be the responsibility (financially and otherwise) of the system owner (responsible party):

Wareham MA 3, LLC.
100 Summit Lake Drive, Suite 210
(978) 888-4088

_____ _____

Signature **Date**

2. The responsible party shall file an inspection report with the Town of Wareham Planning Board following each site inspection as recommended in the Operation & Maintenance (O&M) Schedule. The inspection report shall identify the date of inspection, name, and contact number of responsible party, specific structures inspected, specific maintenance and/or repairs required and general observations. Any deficiencies noted in the inspection report shall be corrected to the Town of Wareham Planning Board's satisfaction.

3. Disposal of accumulated sediment and hydrocarbons to be in accordance with the applicable local, state, and federal guidelines and regulations.

4. There shall be no illicit discharge of any waste or waste water into the stormwater management system. The maintenance of the facility shall be undertaken in such a manner as to prevent any discharge of waste or waste water into the stormwater management system. Any waste oil or other waste products generated during the maintenance shall be properly disposed of offsite in accordance with applicable local, state, and federal guidelines and regulations.

5. The Town will be notified of changes in project ownership or assignment of operation and maintenance financial responsibility.

6. The maintenance schedule in this operation and maintenance (O&M) Plan will only be amended by mutual agreement of the Town and the responsible party. Amendments will be made in writing and signed by the responsible party.

B. STORMWATER SYSTEM/BMPs

Erosion Control Barriers:

Until the site is fully stabilized, erosion control barriers (sediment log, straw wattles, silt fence, etc.) should be inspected immediately after major storm events (2" or greater). Sediment deposits must be removed when the level of deposition reaches approximately one-half the height of the barrier. Repair/replace any sections of erosion control barriers that are damaged and install additional rows of barriers if needed.

Sediment Forebay:

Inspect after major storm events (2" or greater) and twice per year to ensure proper stabilization and function. Check for tree growth, erosion, trash, or accumulation of sediment. Repair and re-seed eroded or barren spots immediately after inspection. Accumulated sediment shall be removed at least once a year or before it exceeds 0.5" in depth, whichever occurs first. The forebay's upper stage, side slopes, and embankment shall be mowed twice a year during the growing season. Clippings to be removed from the forebay and areas immediately up-gradient and properly disposed of.

Infiltration Basin

Inspect after major storm events (2" or greater) and twice per year during wet weather to ensure the system is draining properly. Check for tree growth, erosion, clogging, trash, accumulation of sediment, and ponding of water. If ponding water is visible inside the basin for several days after a storm event, notify the engineer for possible remedial measures. Remove organic matter, trash and debris, as necessary. Repair and re-seed eroded or barren spots immediately after inspection. Remove sediment as necessary while the system is dry, and at least every 5 years after construction. The basin's upper stage, side slopes, and embankment shall be mowed twice a year during the growing season. Clippings to be removed from the basin and areas immediately up-gradient and properly disposed of.

C. ESTIMATED ANNUAL BUDGET

The estimated annual budget for the activities required in this Long-Term Stormwater Operation and Maintenance Plan is $1,000.00.

D. SAMPLE OPERATION AND MAINTENANCE LOG

(Next Page)

SAMPLE OPERATION AND MAINTENANCE LOG

WEWEANTIC CIRCLE DEFINITIVE SUBDIVISION

WAREHAM, MASSACHUSETTS

LONG TERM STORMWATER OPERATION & MAINTENANCE PLAN

Date: _____ **Personnel Present:** _____

_____

Inspectors Name: _____

Inspectors Contact Information: _____

_____

_____

Signature: _____

O&M ITEM:	**COMMENTS, CORRECTIVE ACTION NEEDED, AND NOTES:**
Erosion Control Barriers	
Sediment Forebay	
Infiltration Basin	
Other	
Other	
Other	

APPENDIX F

NRCS Soil Survey Maps and Soil Group Descriptions

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Plymouth County, Massachusetts

April 6, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

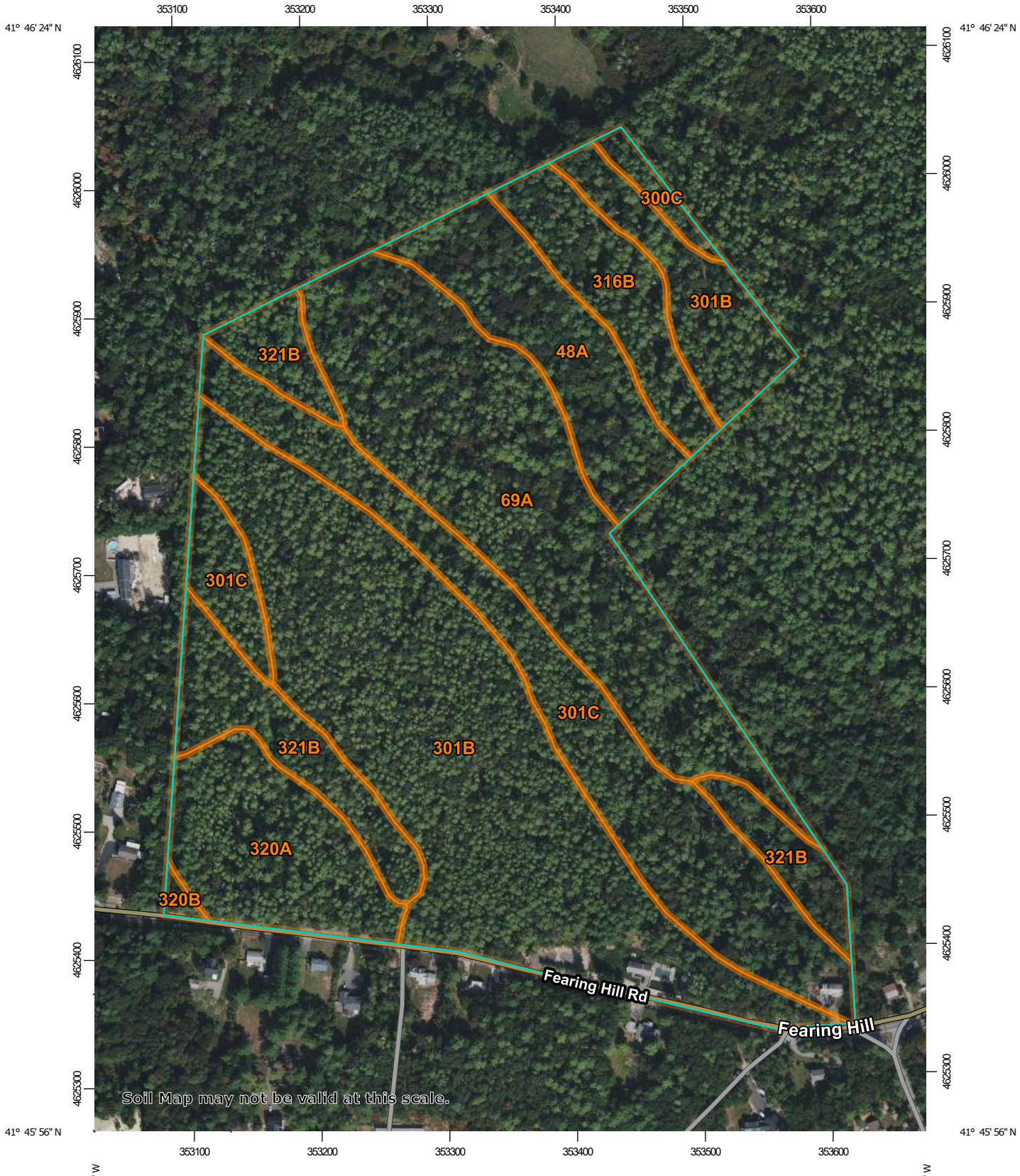
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,200 if printed on A portrait (8.5" x 11") 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 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 1:12,000.

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: Plymouth County, Massachusetts
Survey Area Data: Version 13, 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: Sep 25, 2020—Oct 9, 2020

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
48A	Brockton sandy loam, 0 to 3 percent slopes, extremely stony	4.8	7.7%
69A	Mattapoisett loamy sand, 0 to 3 percent slopes, extremely stony	12.5	19.9%
300C	Montauk fine sandy loam, 8 to 15 percent slopes	0.6	0.9%
301B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	20.9	33.3%
301C	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	10.2	16.2%
316B	Scituate gravelly sandy loam, 3 to 8 percent slopes, very stony	3.2	5.0%
320A	Birchwood sand, 0 to 3 percent slopes	4.9	7.7%
320B	Birchwood sand, 3 to 8 percent slopes	0.2	0.3%
321B	Birchwood sand, 3 to 8 percent slopes, very stony	5.6	8.9%
Totals for Area of Interest		**62.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Plymouth County, Massachusetts

48A—Brockton sandy loam, 0 to 3 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: bqt8
Elevation: 0 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Brockton, extremely stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brockton, Extremely Stony

Setting

Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy lodgment till

Typical profile

Oe - 0 to 5 inches: moderately decomposed plant material
A - 5 to 14 inches: sandy loam
Cg - 14 to 20 inches: gravelly loamy sand
Cdg - 20 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 14 to 28 inches to densic material
Drainage class: Very poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 4 percent

Landform: Bogs, swamps, marshes, depressions, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mattapoisett, extremely stony
Percent of map unit: 4 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Norwell, extremely stony
Percent of map unit: 4 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, extremely stony
Percent of map unit: 4 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ridgebury, extremely stony
Percent of map unit: 4 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

69A—Mattapoisett loamy sand, 0 to 3 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: bcxg
Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Mattapoisett, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mattapoisett, Extremely Stony

Setting

Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy eolian deposits and/or sandy glaciofluvial deposits over coarse-loamy lodgment till

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Oa - 1 to 3 inches: highly decomposed plant material
A - 3 to 7 inches: loamy sand
Eg1 - 7 to 10 inches: loamy sand
Eg2 - 10 to 14 inches: loamy coarse sand
Bh - 14 to 18 inches: loamy coarse sand
Bhsm - 18 to 23 inches: loamy coarse sand
Bsm - 23 to 31 inches: loamy coarse sand
2Cd - 31 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 11 to 20 inches to ortstein; 31 to 53 inches to densic material
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water capacity: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Birchwood, very stony

Percent of map unit: 7 percent
Landform: Drumlins, ground moraines, till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: No

Brockton, extremely stony

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Norwell, extremely stony

Percent of map unit: 3 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

300C—Montauk fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w80p
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Montauk and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk

Setting

Landform: Drumlins, hills, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 26 inches: fine sandy loam
Bw2 - 26 to 34 inches: sandy loam

2Cd - 34 to 72 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate

Percent of map unit: 6 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Canton

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury

Percent of map unit: 4 percent
Landform: Depressions, drainageways, hills, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

301B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w80v
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Drumlins, hills, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony
Percent of map unit: 6 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, footslope, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony
Percent of map unit: 4 percent
Landform: Depressions, drainageways, hills, ground moraines
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

301C—Montauk fine sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting
National map unit symbol: 2w80w
Elevation: 0 to 1,120 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Hills, drumlins, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 6 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear

Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Hills, ground moraines, depressions, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

316B—Scituate gravelly sandy loam, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: bczw
Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Scituate, very stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate, Very Stony

Setting

Landform: Ridges, drumlins
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy eolian deposits over sandy lodgment till

Typical profile

Ap - 0 to 11 inches: gravelly sandy loam
Bw1 - 11 to 15 inches: gravelly sandy loam
Bw2 - 15 to 20 inches: sandy loam
BC1 - 20 to 25 inches: gravelly sandy loam
BC2 - 25 to 35 inches: sandy loam
Cd1 - 35 to 46 inches: loamy coarse sand
Cd2 - 46 to 60 inches: loamy coarse sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 20 to 35 inches to densic material
Drainage class: Moderately well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 15 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony

Percent of map unit: 5 percent
Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Montauk, very stony

Percent of map unit: 5 percent
Landform: Till plains, drumlins, ground moraines
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Birchwood, very stony

Percent of map unit: 5 percent
Landform: Drumlins, ground moraines, till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Norwell, extremely stony

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

320A—Birchwood sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9y45
Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Birchwood and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birchwood

Setting

Landform: Ground moraines, till plains, drumlins
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy eolian deposits and/or sandy glaciofluvial deposits over coarse-loamy lodgment till

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 3 inches: moderately decomposed plant material
Oa - 3 to 4 inches: highly decomposed plant material
E - 4 to 5 inches: sand
Ap - 5 to 8 inches: loamy sand
Bs - 8 to 13 inches: loamy sand
Bw1 - 13 to 19 inches: loamy sand
Bw2 - 19 to 29 inches: loamy sand
BC - 29 to 40 inches: sand
Cd1 - 40 to 55 inches: gravelly sandy loam
Cd2 - 55 to 75 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 35 to 59 inches to densic material
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 12 to 29 inches
Frequency of flooding: None
Frequency of ponding: None

Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Poquonock

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Mattapoisett

Percent of map unit: 6 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scituate

Percent of map unit: 5 percent
Landform: Drumlins, ridges
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Newfields

Percent of map unit: 3 percent
Landform: Moraines, till plains, hills
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

320B—Birchwood sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9y42

Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Birchwood and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birchwood

Setting

Landform: Drumlins, ground moraines, till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy eolian deposits and/or sandy glaciofluvial deposits over coarse-loamy lodgment till

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 3 inches: moderately decomposed plant material
Oa - 3 to 4 inches: highly decomposed plant material
E - 4 to 5 inches: sand
Ap - 5 to 8 inches: loamy sand
Bs - 8 to 13 inches: loamy sand
Bw1 - 13 to 19 inches: loamy sand
Bw2 - 19 to 29 inches: loamy sand
BC - 29 to 40 inches: sand
Cd1 - 40 to 55 inches: gravelly sandy loam
Cd2 - 55 to 75 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 35 to 59 inches to densic material
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 12 to 29 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Poquonock

Percent of map unit: 6 percent
Landform: Till plains, drumlins, ground moraines
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Mattapoisett

Percent of map unit: 6 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scituate

Percent of map unit: 5 percent
Landform: Drumlins, ridges
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Newfields

Percent of map unit: 3 percent
Landform: Moraines, till plains, hills
Landform position (two-dimensional): Footslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

321B—Birchwood sand, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9y47
Elevation: 0 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Birchwood, very stony, and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birchwood, Very Stony

Setting

Landform: Ground moraines, till plains, drumlins
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy eolian deposits and/or sandy glaciofluvial deposits over coarse-loamy lodgment till

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 3 inches: moderately decomposed plant material
Oa - 3 to 4 inches: highly decomposed plant material
E - 4 to 5 inches: sand
Ap - 5 to 8 inches: loamy sand
Bs - 8 to 13 inches: loamy sand
Bw1 - 13 to 19 inches: loamy sand
Bw2 - 19 to 29 inches: loamy sand
BC - 29 to 40 inches: sand
Cd1 - 40 to 55 inches: gravelly sandy loam
Cd2 - 55 to 75 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: 35 to 59 inches to densic material
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 12 to 29 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Poquonock, very stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Mattapoisett, extremely stony

Percent of map unit: 6 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scituate, very stony

Percent of map unit: 5 percent
Landform: Ridges, drumlins
Landform position (two-dimensional): Footslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Newfields, extremely stony

Percent of map unit: 3 percent
Landform: Moraines, hills, till plains
Landform position (two-dimensional): Footslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

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PLANNING BOARD
TAX VERIFICATION FORM

This verifies that Wareham MA 3, LLC (name of applicant) is up-to-date on the taxes for the property(ies) he/she owns in Wareham. If the applicant is not the current owner of the property that the application addresses, the current owner Ninety six Realty, LLC (name of property owner) is up-to-date on taxes and on all properties he/she owns in the Town of Wareham.

Kathy King
John Foster, Tax Collector

Per agreement with Collector

TOWN OF WAREHAM ABUTTERS				
MAP 74 LOT 1007 300'				
OWNER NINETY SIX REALTY LLC				
MAP & LOT	**OWNERS**	**STREET ADDRESS**	**TOWN & STATE**	**ZIP CODE**
74-0-1005	JACKSON PHILIP R, JACKSON JULIA E	94 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1006	DEMELLO LEWIS A,	95 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1007	NINETY SIX REALTY LLC, C/O JOE CRESPI	PO BOX 454,	TAUNTON, MA	02780
75-0-1/A	GLYNN CHARLES DAVID,	82 FEARING HILL RD,	W WAREHAM, MA	02576
75-0-1006	YUEN GORDEN L, YUEN THERESA M	37 STEARNS LN,	SUDBURY, MA	01776
86-0-1000	TOWN OF WAREHAM,	54 MARION RD,	WAREHAM, MA	02571
91-0-1008	CURLEY TIMOTHY R,	DRAWER 1111,	MARION, MA	02738
91-0-1008/C	PAPPALARDO KATHLEEN M & MCHALE NANCY L	81 FEARING HILL RD,	W WAREHAM, MA	02576
91-0-1008/B	GUAMAN LUIS,	68 SHERIDAN ST,	BROCKTON, MA	02302
74-0-1009-3	PHIPPS MICHAEL, PHIPPS DANIELLE	5 BLACKMORE POND RD,	W WAREHAM, MA	02576
74-0-1009-2	ELKALLASSI VERONICA T, DEBONISE ERNEST	4 SQUIRREL ISLAND RD,	W WAREHAM, MA	02576
74-0-1009-1	GOMES RYAN,	88 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1009-9	ALEXANDER ADAM V, ALEXANDER ERIN K	6 SQUIRREL ISLAND RD	W WAREHAM, MA	02576
CEERTIFIED ABUTTERS AS THEY				
APPEAR ON OUR TAX ROLLS				
AS OF 11/22/2021				
M. Renee Akers				
ASSESSORS OFFICE				
REQUESTED BY				
REBECCA PEDUZZI				
508 888-9282				
RPADUZZI@ATLANTICCOMPANIES.COM				


COUNTY ROAD
PAPER MILL ROAD
MAIN STREET
TOBEY ROAD
INTERSTATE 195
FARMER'S LANE
COUNTY ROAD
STATION STREET
MAIN STREET
INTERSTATE 195
COUNTY ROAD
INTERSTATE 195
28
25
28
6
MA Places
Fire Station
Police Station
Town Hall
Public Library
School
Buildings
Parcels
Town Boundary
MA Highways
Interstate
US Highway Numbered Routes
Streets
Bathymetry
0-5 ft
5-10 ft
10-15 ft
15-20 ft
20-30 ft
30-40 ft
40-50 ft
50-60 ft
60-70 ft
70+ ft
Abutting Town Labels
Abutting Towns
The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.
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2500
5000 ft
Printed on 11/22/2021 at 08:57 AM
MapsOnline by PeopleGIS

TOWN OF WAREHAM ABUTTERS

MAP 91 LOT 1000 300'

OWNER NINETY SIX REALTY LLC

MAP & LOT	OWNERS	STREET ADDRESS	TOWN & STATE	ZIP CODE
62-0-1010	ASHLEY HERBERT W, ASHLEY PATRICIA I TRUSTEES	142 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1	RODERICK MELANIE F,	116 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1002	LEARY KATHLEEN	106 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1003.B	CONNELL MAXINE A, CONNELL HAROLD R JR	7 GLAD ST,	ASSONET, MA	02702
74-0-1005	JACKSON PHILIP R, JACKSON JULIA E	94 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1006	DEMELLO LEWIS A,	95 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1011	FITZGERALD JILL CHRISTINE, FITZGERALD RYAN P	110 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1013	COMM OF MASS, EXEC OFFICE OF TRANS & CONST	MULTI-MODEL RAIL UNIT, 10 PARK PLAZA RM 3170	BOSTON, MA	02116
74-0-2	MALONE DANIEL S, MALONE MARGARET E	PO BOX 252,	W WAREHAM, MA	02576
74-0-3	DUFFY ALICE,	PO BOX 213,	W WAREHAM, MA	02576
74-0-4	DIAS MICHAEL J,	1 HOWLETT DR,	W WAREHAM`, MA	02576
86-0-1000	TOWN OF WAREHAM,	54 MARION RD,	WAREHAM, MA	02571
91-0-1000	NINETY SIX REALTY LLC, C/O JOE CRESPI	PO BOX 454,	TAUNTON, MA	02780
91-0-1001	BAY BANK MERCHANTS TR ER ALS, C/O JUDY GALAVOTTI	8 SEAMEADOW LN,	WAREHAM, MA	02571
91-0-1002	HAMER RUTH, C/O ALFRED HAMER	461 COUNTY RD,	W WAREHAM, MA	02576
91-0-1003	HAYES ANNE K,	52 FARMER'S LN,	W WAREHAM, MA	02576
91-0-1008	CURLEY TIMOTHY R,	DRAWER 1111,	MARION, MA	02738
91-0-1008.A	SMITH ROBERT A, SMITH DEBBRA L	81 FEARING HILL RD,	W WAREHAM, MA	02576
91-0-1008.B	GUAMAN LUIS,	68 SHERIDAN ST,	BROCKTON, MA	02302
91-0-1008.C	PAPPALARDO KATHLEEN M, MCHALE NANCY L	87 FEARING HILL RD,	W WAREHAM, MA	02576
93-0-1017.A	DANDREA LOUIS ALAN,	3 OLD FEARING HILL RD,	W WAREHAM, MA	02576-1489
93-0-1017.B	KASPAR PAUL F, KASPAR JUDITH M	121 FEARING HILL RD,	W WAREHAM, MA	02576
93-0-W10	DOWNING MICHAEL S,	PO BOX 282,	W WAREHAM, MA	02576
93-0-W4	MORETTI DAVID T, MORETTI BARBARA J	20 HELEN ST,	W WAREHAM, MA	02576
93-0-W5	HOGAN CHRISTOPHER J, HOGAN JANET L	22 HELEN ST,	W WAREHAM, MA	02576
93-0-W6	CAMPBELL CRISTA LYN,	24 HELEN ST,	W WAREHAM, MA	02576
93-0-W7	FONTAINE CRAIG T,	26 HELEN ST,	W WAREHAM, MA	02576
93-0-W8	NAULT DARREN, NAULT WENDY A	28 HELEN ST,	W WAREHAM, MA	02576
93-0-W9	JOHNSON RICHARD B, JOHNSON LOUISE A	17 LAURA LN,	FAIRHAVEN, MA	02719
74-0-1009-2	ELKALLASSI VERONICA T, DEBONISE ERNEST	4 SQUIRREL ISLAND RD,	W WAREHAM, MA	02576
74-0-1009-1	GOMES RYAN,	88 FEARING HILL RD,	W WAREHAM, MA	02576
74-0-1009-9	ALEXANDER ADAM V, ALEXANDER ERIN K	6 SQUIRREL ISLAND RD	W WAREHAM, MA	02576

CERTIFIED ABUTTERS AS THEY

APPEAR ON OUR TAX ROLLS

AS OF 11/22/2021

M. Rose Atkins

ASSESSORS OFFICE

REQUESTED BY

REBECCA PADUZZI

508 888-9282

RPADUZZI@ATLANTICCOMPANIES.COM


COUNTY ROAD
PAPER MILL ROAD
MAIN STREET
FARMER'S LANE
COUNTY ROAD
COUNTY ROAD
TOBEY ROAD
STATION STREET
INTERSTATE 195
INTERSTATE 195
INTERSTATE 195
MAIN STREET
28
28
495
195
195
6
P
MA Places
Fire Station
Police Station
Town Hall
Public Library
School
Buildings
Parcels
Town Boundary
MA Highways
Interstate
US Highway Numbered Routes
Streets
Bathymetry
0-5 ft
5-10 ft
10-15 ft
15-20 ft
20-30 ft
30-40 ft
40-50 ft
50-60 ft
60-70 ft
70+ ft
Abutting Town Labels
Abutting Towns
The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.
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2500
5000 ft
Printed on 11/22/2021 at 09:52 AM
MapsOnline by PeopleGIS

FORM C/DEFINITIVE PLAN CHECKLIST (Weweantic Circle)

The Definitive Plan shall be prepared by a registered engineer or land surveyor and shall be clearly and legibly drawn in black ink upon mylar suitable for registering at the Plymouth County Registry of Deeds (24" x 36"). The plan shall be at a scale of one inch equals 40 feet (1" = 40') or such other scale that the Board may accept, to show details in a clear and adequate fashion. In addition, 10 copies of reduced plans on ledger-size paper (11" x 17") shall accompany the Definitive Plan submission. At a minimum, the plan shall contain the following information:

1. ___X___ The title, "Subdivision Plan of (name of subdivision)";

2. ___X___ Date, scale and North arrow, Assessor's Map(s) and Lot(s) number(s) and a legend to explain any graphic representation or symbols on the plan;

3. ___X___ The names, addresses and telephone numbers of the owner(s) of record and applicant(s);

4. ___X___ The names of the designer, engineer and/or surveyor who prepared the plan;

5. ___X___ The names of all abutters, as determined from the most recent local tax list, including property owners on the opposite side of any street abutting the subdivision;

6. ___X___ Book and page deed references of the property to be subdivided;

7. ___X___ A note referring to which lots will be served by either Town Water Supply, private wells, municipal sewer or private septic systems and the location of the nearest existing public water and sewer utility services;

8. ___X___ A locus map at 1" = 2,000', exhibiting the boundaries of the proposed subdivision, location of proposed streets and relation to adjoining properties within a radius of one quarter mile and an aerial map exhibiting the general area surrounding the subject property (approximately ½ mile surrounding the site);

9. ___X___ The zoning district, including any overlay district of the land shown on the plan;

10. ___X___ The location of all wetlands protected under CMR 10.00 Wetlands

Protection. If protected wetlands are to be filled or altered, an approval from the Wareham Conservation Commission must accompany this definitive application;

11. X — Sufficient data to readily determine the location, direction and length of every street, way, easement, lot and boundary line and to establish those lines on the ground. The areas of all lots shall be shown and all lots shall be numbered. All bearings are to be referred to Massachusetts Prime Meridian if reference points are within a reasonable distance;

12. X — The location and present widths of streets bounding, approaching or within a reasonable proximity of the subdivision (500');

13. X — The location of all permanent monuments, properly identified as to whether existing or proposed; location of temporary stakes to enable the Planning Board to find and appraise features of the subdivision plan;

14. X — Proposed street names with approval of the Town's 911 system;

15. N/A — Any public or common areas within the subdivision;

16. N/A — The location of all abutting land owned by the applicant not presently being subdivided;

17. X — A suitable block to record the action and signatures of the Planning Board;

18. X — A suitable block for the Town Clerk's signature along with the statement "I hereby certify that 20 days have elapsed since the notice of approval from the Planning Board was received and recorded, and no notice of appeal has been filed in this office";

19. (Letter) — A listing of all requested waivers from the literal requirements of these Rules and Regulations;

20. X — A contour plan showing existing and proposed topography at 2' intervals Related to an existing permanent benchmark;

21. X — Utility plan showing in plan and profile, but not limited to, the size and location of existing and proposed water and sewer lines, hydrants, electric lines, telephone lines, gas lines, fire alarm systems, cable television lines, storm drains and any easements pertinent thereto;

22. X — A drainage plan shall be prepared showing existing and proposed streets,

lots, 2' contours and other pertinent data; the drainage limits and acreage of the area tributary to each stormwater inlet and culvert; location and type of inlets proposed; location, size, length, invert elevations, slope of proposed drains and culverts; structural details of inlets, manholes, pipe, headwalls and all other drainage structures required to complete the plan; an estimate of the present rate and volume of run-off, as well as an estimate of the rate and volume of run-off that would occur after completion of the proposed subdivision, shall both be submitted along with supporting data. In calculating the run-off and drainage requirements, consideration shall be given to the impact of septic systems on the ability of the soil to absorb any additional stormwater, as well as any upgradient run-off which may impact the subdivision;

23. __X_____ Street plans and profiles at a horizontal scale of one inch equals forty feet (1" = 40') and a vertical scale as the Planning Board may approve. The following information shall be included:
    a. exterior lines of the right of way with sufficient data to determine their location, direction and length;
    b. existing centerline profile to be shown as a fine continuous line. Existing centerline profile for intersecting streets to be shown for at least 10', each side of the intersection on street centerlines. Proposed right sideline shall be shown as a dashed black line, left sideline is black dots. Evaluations shall be based on USGS datum;
    c. proposed centerline profile to be a heavy continuous line with elevations based on USGS datum shown every 50', every 25' on vertical curves;
    d. road centerline stationing.

24. __X_____ A typical section showing proposed roadway construction at a scale of one inch equals ten feet (1" = 10') shall be provided with the profile plan (see typical section in appendix);

25. On Plan & Profile Sheet Street lights and tree planting plan shall be provided for the area within the proposed street right of way. The plan shall be superimposed on the contour plan and shall show the following:
    a. existing trees to be preserved within the right of way;
    b. any proposed street trees;
    c. existing and proposed street lights.

26. On Plan & Profile Sheet If the Planning Board determines that erosion due to development activity will be excessive or significant to wetlands, streams, ponds or other water bodies, the developer shall submit a soil erosion and sediment control plan. This plan shall consist of a drawing certified by a

registered civil engineer, identifying the appropriate control measures and their locations;

27. None Identified in Preliminary Plan Approval — If necessary, to determine compliance with these rules and regulations, the Board may require further engineering or environmental analysis to be prepared at the expense of the applicant, employing professionals approved by the Board.

This application constitutes the applicant's willingness to work under the Town of Wareham's Subdivision Rules and Regulations. Any errors or omissions from this checklist of the Subdivision Regulations may result in the application not being placed on a Planning Board agenda or a denial of this Definitive Plan.

*** Electronic Recording ***
Doc#: 00033742
Bk: 54648 Pg: 68 Page: 1 of 2
Recorded: 03/24/2021 02:23 PM
ATTEST: John R. Buckley, Jr. Register
Plymouth County Registry of Deeds

****
MASSACHUSETTS EXCISE TAX
Plymouth District ROD #11 001
Date: 03/24/2021 02:23 PM
Ctrl# 144339 31123
Fee: $369.36 Cons: $80,781.25
****

DEED

I, Michael G. O'Neil, Jr, Esq., of Quincy, Massachusetts, duly appointed Commissioner to Sell Real Estate in Matter of Petition for Partition per Plymouth Probate and Family Court Docket#: PL18E0033PP by Power conferred by said Court and Decree dated February 4, 2021and every other power, and for consideration paid of EIGHTY THOUSAND SEVEN HUNDRED EIGHTY-ONE and 25/100 Dollars ($80,781.25), which represents a set-off of 11.45833333% of the total parcel and not a sale of the total parcel, grant to: Ninety-Six Realty, LLC, a Massachusetts Limited Liability Company, having its usual place of business at 246 South Meadow Road, Gate 4, Hanger NW8, Plymouth, MA 02360

, *with quitclaim covenants,*

A certain parcel of land situated on the north side of Fearing Hill Road in the Town of Wareham, I the County of Plymouth, Commonwealth of Massachusetts, which is currently identified as Lot 1000 on Wareham Assessor Map 91, and which according to the said Assessors Map consists of 44.05 acres, more or less. Said parcel is believed to be identified as the "Grove Lot" in Article 3 of the Will of Elbridge G. Fearing, who died July 16, 1884, Plymouth County Probate Docket#: 1518.

Containing, according to said plan, 44.05 acres of land.

Property Address: 101 Fearing Hill Road, Wareham, MA 02571.

Being shown as Parcel 1 on Deed recorded with said Deeds at Book 33797, Page 254. See also Deed at Book 28301, Page 255 and Deeds and Instruments at Book 33140 Page 103 et seq.

Property Address: 101 Fearing Hill Road, Wareham, MA

Witness my hand and seal this 24th day of March, 2021.

Michael G. O'Neil, Jr., Esq., Commissioner

COMMONWEALTH OF MASSACHUSETTS

Norfolk, SS.

On this 24th day of March, 2021, before me, the undersigned notary public, personally appeared, Michael G. O'Neil, Jr., and proved to me through satisfactory evidence of identification, which was MA Driver License, to be the person(s) whose names is(are) signed on the preceding or attached document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her/their knowledge and belief and acknowledged he/she/they signed the foregoing document voluntarily, as his/her/their free act(s) and deed(s), as Commissioner.

GERARD S. McAULIFFE
Notary Public, Commonwealth of Massachusetts
My Commission Expires Dec. 24, 2021

Gerard S. McAuliffe, Notary Public:
My Commission Expires:

Bk: 40960 Pg: 290

2012 00011963
Bk: 40960 Pg: 290 Page: 1 of 2
Recorded: 02/10/2012 11:10 AM
ATTEST: John R. Buckley, Jr. Register
Plymouth County Registry of Deeds

CONFIRMATORY DEED

I, ROBERT B. AHEARN of Plymouth, Plymouth County, Massachusetts

in consideration of One and no\100's ($1.00) dollar PAID

grant and release to Ninety Six Realty, LLC, a duly organized and validly existing Massachusetts limited liability company of 246 South Meadow St., Gate 4, Hangar NW8, Plymouth, Plymouth County, Massachusetts and those claiming title thereunder

All of my right, title and interest in and to the parcels described on Exhibit A hereto.

The within confirmatory deed is given to confirm and correct the deed dated October 5, 2006 and recorded in Book 33797 Page 254 wherein the name of the grantee was improperly recited and there were scrivenor and typographical errors in the Exhibit A attached. No new consideration is paid herein.

Witness my hand and seal this 9th day of February, 2012

ROBERT B. AHEARN

THE COMMONWEALTH OF MASSACHUSETTS

PLYMOUTH, SS. February 9, **2012**

On this 9 day of February, 2012 before me, the undersigned notary public, personally appeared **ROBERT B. AHEARN** proved to me through satisfactory evidence of identification, which was drivers license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

INGRID A. MUIRHEAD
MY COMMISSION EXPIRES FEBRUARY 13, 2015
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS

Notary Public
My Commission Expires: Feb 13, 2015

Return to:
Atty. Louis J. Caccavaro, Jr.
Doggan + Caccavaro
84 Access Rd, Unit A
Norwood MA 02062

Parcels addresses: Forging Hill Rd: 12-34 Blueberry Pond Rd; Blueberry Pond Rd; RT 6 Marion Rd; 33 Farmers Lane, 33 Blackmore Pond Rd;

EXHIBIT A

All rights, title and interest in the following seven (7) parcels of land in the Town of Wareham, Plymouth County, Massachusetts, and described on the Wareham Assessor's Maps as hereinafter set forth:

Parcel 1
Being Lot 1000 on Wareham Assessor's Map 91. Fearing Hill Road by Blackmore Pond Road, and containing 44.05 acres of land, more or less, according to said Wareham Assessor's Map.

Parcel 2
Being Lot 1003 on Wareham Assessor's Map 75, 12-34 Blackmore Pond Road, and containing 7.56 acres of land, more or less, according to said Wareham Assessor's Map. See also Plymouth Deeds Book 301 Page 1 and Book 415 Page 275.

Parcel 3
Being Lot 1004 on Wareham Assessor's Map 75, Blackmore Pond Road, and containing 19.03 acres of land, more or less, according to said Wareham Assessor's Map.

Parcel 4
Being Lot 1000 on Wareham Assessor's Map 53, Route 6 Marion Road, and containing 2.60 acres of land, more or less, according to said Wareham Assessor's Map. See also lymouth Deeds Book 562 Page 473.

Parcel 5
Being Lot 1018 on Wareham Assessor's Map 93, 33 Farmers Lane and containing 6.5 acres of land, more or less, according to said Wareham Assessor's Map.See also Plymouth Deeds Book 504 Page 154.

Parcel 6
Being Lot 1009 on Wareham Assessor's Map 74, 33 Blackmore Pond Road, and containing 37.62 acres of land, more or less, according to said Wareham Assessor's Map. See also Plymouth Deeds Book 301 Page 1 and Book 415 Page 275.

Parcel 7
Being Lot 1007 on Wareham Assessor's Map 74, Fearing Hill Road and containing 13,504 square feet of land, more or less, according to said Wareham Assessor's Map .See also Plymouth Deeds Book 301 Page 1 and Book 415 Page 275.

Address of properties: Lot 1000, Map 91 Fearing Hill Road by Blackmore Pond Road; Lot 1003, Map 75, 12-34 Blackmore Pond Road; Lot 1004, Map 75, Blackmore Pond Road; Lot 1000, Map 53, Route 6 Marion Road; Lot 1018, Map 93, 33 Farmers Lane; Lot 1009, Map 74, 33 Blackmore Pond Road; Lot 1007, Map 74, Fearing Hill Road, all Wareham, Plymouth County, Massachusetts.

Atlantic
DESIGN ENGINEERS, INC.

December 2, 2021

Town of Wareham
Board of Health
54 Marion Road
Wareham, MA 02571

Re: ***Definitive Subdivision Plan***
Weweantic Circle Definitive Subdivision
91 & 101 Fearing Hill Road Wareham, MA (Parcel ID: 91-1000 & 74-1007)
Atlantic Job #3055.02

Dear Members of the Board of Health:

On behalf of the applicant, Wareham MA 3, LLC, we respectfully submit the following relative to a Definitive Subdivision of the above-mentioned property:

- One copy of a properly executed Form C – Application for Approval of Definitive Subdivision Plan.
- One copy of the above-referenced Definitive Subdivision Plan.

This filing is pursuant to the Town of Wareham's Rules and Regulations Governing the Subdivision of Land as well as the requirements of M.G.L. Chapter 41, Sections 81 O, T and U.

Accordingly, the Form C application and plans have also been submitted to the Town Clerk and Planning Board.

If you have questions, please feel free to reach out to us at (508) 888-9282.

Very truly yours,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President

cc: Wareham MA 3, LLC

Atlantic
DESIGN ENGINEERS, INC.

December 2, 2021

Michele Bissonnette, Town Clerk
Town of Wareham
54 Marion Road
Wareham, MA 02571

Re: ***Definitive Subdivision Plan***
Weweantic Circle Definitive Subdivision
91 & 101 Fearing Hill Road Wareham, MA (Parcel ID: 91-1000 & 74-1007)
Atlantic Job #3055.02

Dear Ms. Bissonnette:

On behalf of the applicant, Wareham MA 3, LLC, we respectfully give notice and submit the following relative to a Definitive Subdivision of the above-mentioned property:

- One properly executed Form C – Application for Approval of Definitive Subdivision Plan.
- One copy of the above-referenced Definitive Subdivision Plan.

This filing is pursuant to the Town of Wareham's Rules and Regulations Governing the Subdivision of Land as well as the requirements of M.G.L. Chapter 41, Sections 81 O, T and U.

Accordingly, the Form C application and plans have also been submitted to the Board of Health and Planning Board.

If you have questions, please feel free to reach out to us at (508) 888-9282.

Very truly yours,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President

cc: Wareham MA 3, LLC
(1) Additional copy sent via USPS Certified Mail

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

Wareham, MA 02571 OFFICIAL USE

Certified Mail Fee	$3.75	0563 06
Extra Services & Fees (check box, add fee as appropriate)		
☐ Return Receipt (hardcopy)	$3.05	
☐ Return Receipt (electronic)	$0.00	Postmark Here
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$7.95	12/02/2021
Total Postage and Fees	$14.75	

Sent To: Town of Wareham / Town Clerk
Street and Apt. No., or PO Box No.: 54 Marion Rd.
City, State, ZIP+4®: Wareham, MA 02571 (3055.02)

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for instructions

7018 2290 0000 9436 7488

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

Wareham, MA 02571 OFFICIAL USE

Certified Mail Fee	$3.75	0563 06
Extra Services & Fees (check box, add fee as appropriate)		
☐ Return Receipt (hardcopy)	$3.05	
☐ Return Receipt (electronic)	$0.00	Postmark Here
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$9.30	12/02/2021
Total Postage and Fees	$16.10	

Sent To: Town of Wareham / Planning Board
Street and Apt. No., or PO Box No.: 54 Marion Rd.
City, State, ZIP+4®: Wareham, MA 02571 (3055.02)

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for instructions

7018 2290 0000 9436 7495

POSTAL SERVICE.

SANDWICH
69 ROUTE 6A
SANDWICH, MA 02563-9998
(800)275-8777

12/02/2021 01:51 PM

Product	Qty	Unit Price	Price
Priority Mail® 1-Day 1			$9.30
Wareham, MA 02571			
Weight: 2 lb 7.60 oz			
Expected Delivery Date			
Fri 12/03/2021			
Certified Mail®			$3.75
Tracking #:			
70182290000094367495			
Return Receipt			$3.05
Tracking #:			
9590 9402 4336 8190 4779 69			
Total			$16.10
Priority Mail® 1-Day 1			$7.95
Wareham, MA 02571			
Weight: 0 lb 15.00 oz			
Expected Delivery Date			
Fri 12/03/2021			
Certified Mail®			$3.75
Tracking #:			
70182290000094367488			
Return Receipt			$3.05
Tracking #:			
9590 9402 4336 8190 4779 45			
Total			$14.75
Grand Total:			$30.85
Cash			$31.00
Change			-$0.15

****
USPS is experiencing unprecedented volume increases and limited employee availability due to the impacts of COVID-19. We appreciate your patience.
****

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

Save this receipt as evidence of insurance. For information on filing an insurance claim go to https://www.usps.com/help/claims.htm

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Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

Earn rewards on your business account purchases of Priority Mail labels with the USPS Loyalty program by using Click and Ship. Visit www.usps.com/smallbizloyalty for more info.

All sales final on stamps and postage.
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Thank you for your business.

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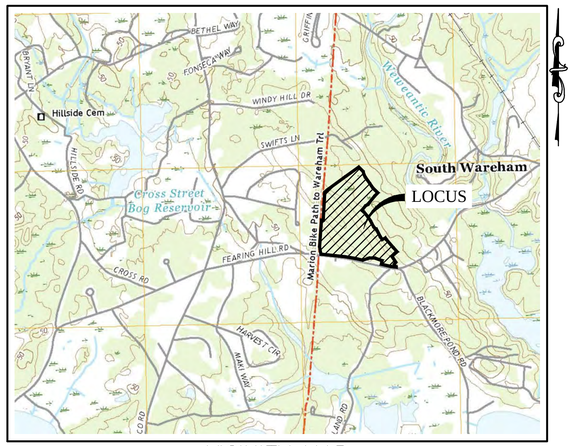
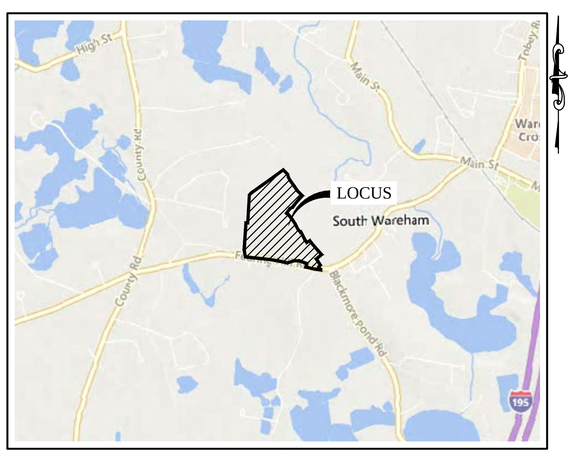
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

DEFINITIVE SUBDIVISION PLAN
OF
WEWEANTIC CIRCLE

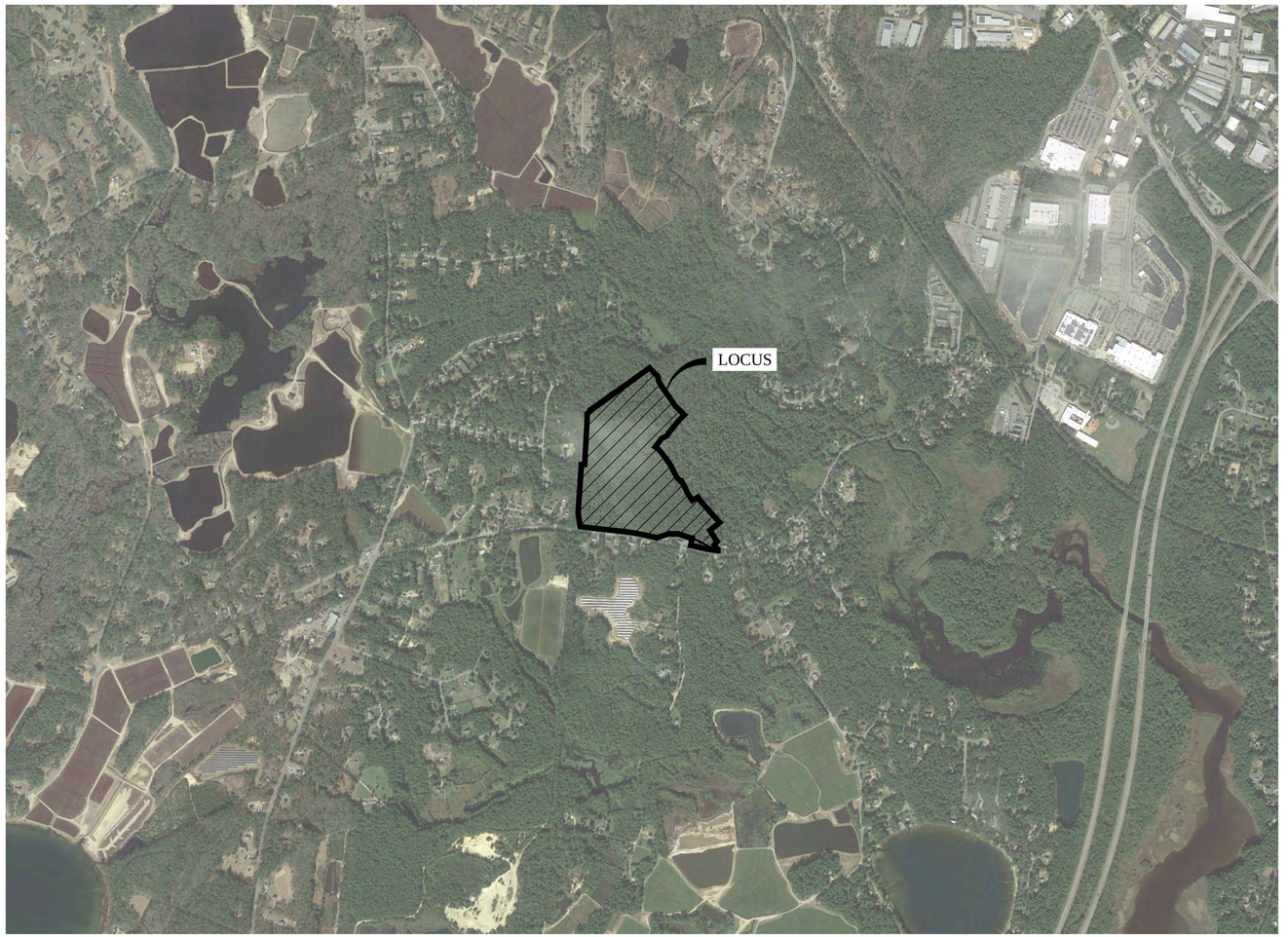
91 AND 101 FEARING HILL ROAD
WAREHAM, MASSACHUSETTS 02578
DATE: DECEMBER 2, 2021



VICINITY MAP
1" = 1,500'



LOCUS MAP
1" = 1,500'



AERIAL OVERVIEW
SCALE: 1" = 800'

INDEX OF PLANS		
SHEET NO.	TITLE	SCALE
1	COVER SHEET	1" = 800'
2	DEFINITIVE SUBDIVISION PLAN	1" = 100'
3	DEFINITIVE SUBDIVISION PLAN	1" = 40'
4	DEFINITIVE SUBDIVISION PLAN	1" = 40'
5	DEFINITIVE SUBDIVISION PLAN	1" = 40'
6	DEFINITIVE SUBDIVISION PLAN	1" = 40'
7	PLAN AND PROFILE	40'H/4'V
8	OVERALL TOPOGRAPHY PLAN	1" = 100'
9	DETAIL SHEET	NTS

MASS STATE PLANE

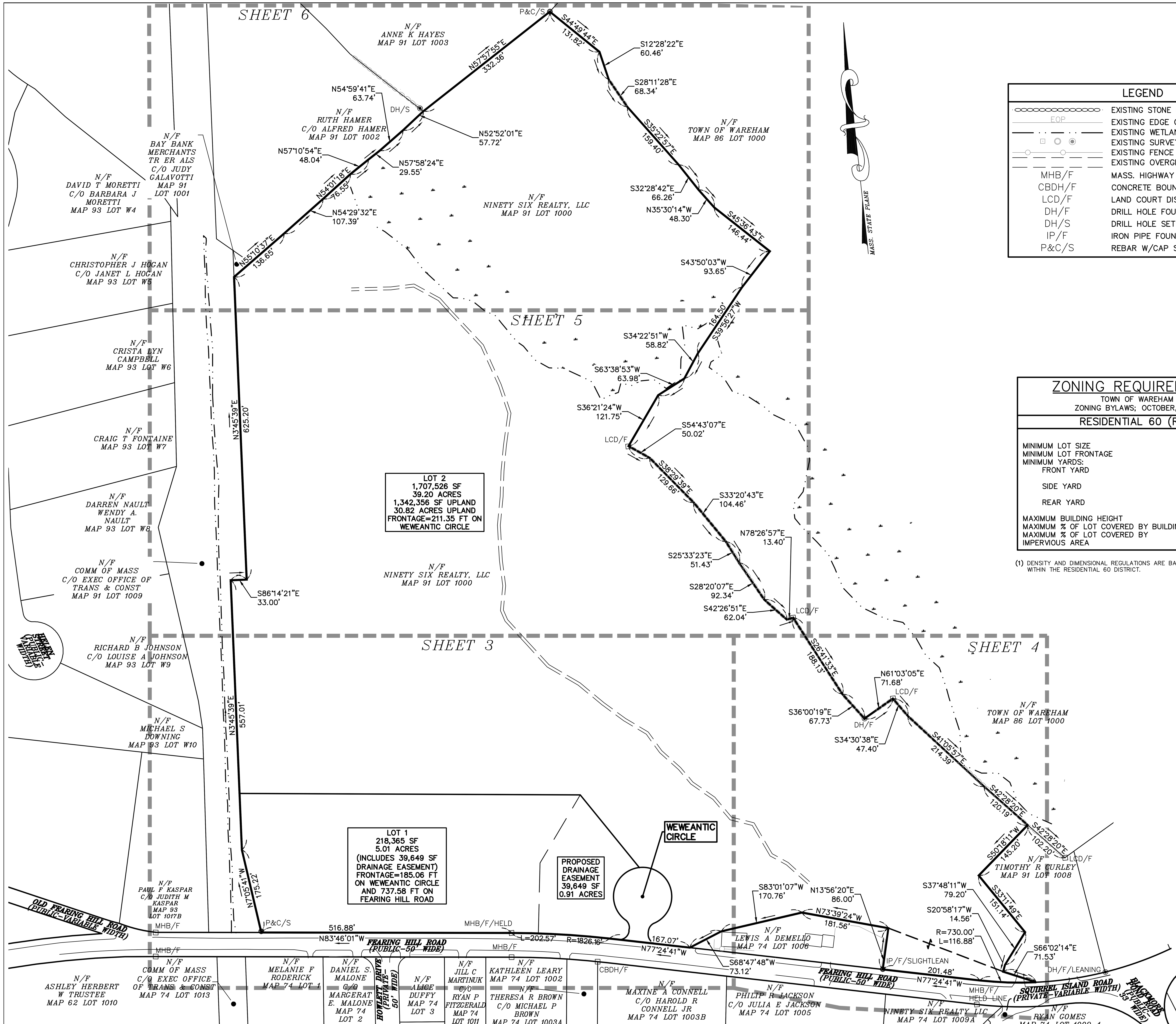
OWNER:
NINETY SIX REALTY, LLC
246 SOUTH MEADOW ROAD,
GATE 4, HANGER NW8
PLYMOUTH, MA 02360
BOOK 54648 PAGE 68
BOOK 40960 PAGE 290
(508) 802–5887

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
(978) 888–4088

ENGINEER:
Atlantic®
DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563
PHONE NUMBER: (508) 888–9282

FILE: 3055.02–DEF

Sheet	of
1	9
JOB NUMBER	
3055.02	



LEGEND

(symbol)	EXISTING STONE RETAINING WALL
EOP	EXISTING EDGE OF PAVEMENT
(symbol)	EXISTING WETLAND LINE
(symbol)	EXISTING SURVEY MONUMENTS
(symbol)	EXISTING FENCE
(symbol)	EXISTING OVERGROWN PATH
MHB/F	MASS. HIGHWAY BOUND FOUND
CBDH/F	CONCRETE BOUND W/DRILL HOLE FOUND
LCD/F	LAND COURT DISK FOUND
DH/F	DRILL HOLE FOUND
DH/S	DRILL HOLE SET
IP/F	IRON PIPE FOUND
P&C/S	REBAR W/CAP SET

ZONING REQUIREMENTS

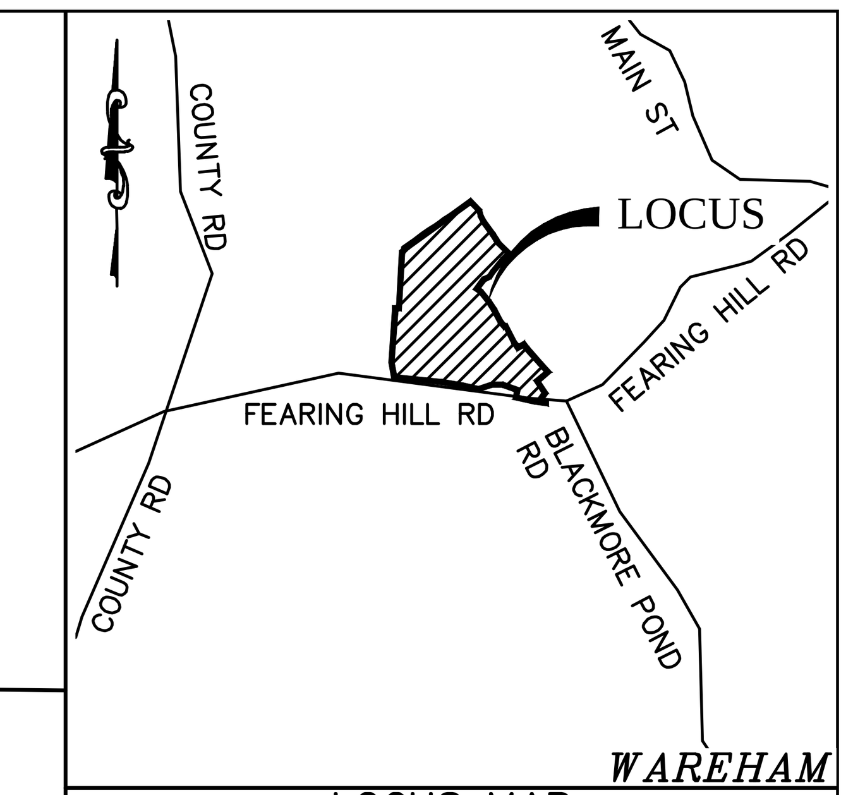
TOWN OF WAREHAM
ZONING BYLAWS; OCTOBER, 2019

RESIDENTIAL 60 (R60)

	REQUIRED(1)
MINIMUM LOT SIZE	60,000 SF
MINIMUM LOT FRONTAGE	180 FEET
MINIMUM YARDS:	
FRONT YARD	60 FEET(1)
SIDE YARD	20 FEET(1)
REAR YARD	20 FEET(1)
MAXIMUM BUILDING HEIGHT	35 FEET
MAXIMUM % OF LOT COVERED BY BUILDINGS	NR
MAXIMUM % OF LOT COVERED BY IMPERVIOUS AREA	NR

(1) DENSITY AND DIMENSIONAL REGULATIONS ARE BASED OFF RESIDENTIAL USE WITHIN THE RESIDENTIAL 60 DISTRICT.

FOR REGISTRY USE ONLY



LOCUS MAP
1" = 2,000'

GENERAL NOTES:

1. OWNER OF RECORD:

   NINETY SIX REALTY, LLC
   246 SOUTH MEADOW ROAD, GATE 4, HANGER NW8,
   PLYMOUTH, MA 02360
   BOOK 54648 PAGE 68
   BOOK 40960 PAGE 290
   (508) 802-5887

2. THE SUBJECT PROPERTIES ARE IDENTIFIED AS LOTS 1000 & 1007, ON THE TOWN OF WAREHAM ASSESSOR MAP 91 & 74, RESPECTIVELY. TOTAL LAND AREA IS 44.51± ACRES.
3. BASED UPON A REVIEW OF THE TOWN OF WAREHAM ZONING MAP AND PROPERTY CARDS, THE SUBJECT PROPERTIES LIE WITHIN AN RESIDENTIAL-60 (R-60) DISTRICT AND DOES NOT LIE WITHIN ANY OVERLAY DISTRICTS.
4. THE PROPERTY LINES SHOWN HEREON, ARE BASED ON PLANS AND DEEDS OF RECORD AND A FIELD SURVEY BY ATLANTIC DESIGN ENGINEERS AND ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD83).
5. EXISTING CONDITIONS DEPICTED HEREON ARE BASED FIELD SURVEY BY ATLANTIC DESIGN ENGINEERS IN MARCH 2021.
6. THE PROPERTY LIES WITHIN A FLOOD ZONE X (AREA OF MINIMAL FLOOD HAZARD) BASED UPON A REVIEW OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 25023C0469J, DATED JULY 17, 2012.
7. WETLAND RESOURCE AREAS SHOWN HEREON ARE BASED UPON DELINEATION BY GODDARD CONSULTING IN MARCH AND AUGUST 2021 AND FIELD LOCATED BY ATLANTIC DESIGN ENGINEERS IN MARCH AND SEPTEMBER 2021.
8. THE PROPERTY IS NOT LOCATED WITHIN A ZONE II OR AN INTERIM WELLHEAD PROTECTION AREA BASED UPON A REVIEW OF THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM AND TOWN ZONING MAP.
9. THE SITE IS NOT LOCATED WITHIN AN ESTIMATED HABITAT OF RARE WILDLIFE AND/OR A PRIORITY HABITAT OF RARE SPECIES BASED UPON A REVIEW OF THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM MAPS OBSERVED ON THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM.
10. THE PROPERTY DOES NOT LIE WITHIN AN AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC) BASED UPON A REVIEW OF THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM.
11. THE LOCATION TO THE NEAREST PUBLIC SEWER IS APPROXIMATELY 1 MILE AWAY ON MAIN ST (WAREHAM). THE NEAREST PUBLIC WATER SUPPLY IS ON FEARING HILL ROAD, DIRECTLY IN FRONT OF THE SITE.
12. LOTS 1 AND 2 ARE TO BE SERVED BY TOWN WATER AND PRIVATE INDIVIDUAL SEPTIC SYSTEMS.

TOWN OF
WAREHAM PLANNING BOARD

APPROVED UNDER THE
SUBDIVISION CONTROL LAW

DATE APPROVED:__________
DATE ENDORSED:__________

NO DETERMINATION AS TO COMPLIANCE WITH THE ZONING REGULATIONS HAS BEEN MADE OR IS INTENDED BY THE ABOVE ENDORSEMENT.

I HEREBY CERTIFY THAT TWENTY DAYS HAVE ELAPSED SINCE THE NOTICE OF THE APPROVAL FROM THE PLANNING BOARDS WAS RECEIVED AND RECORDED, AND THAT NO NOTICE OF APPEAL HAS BEEN FILED IN THIS OFFICE.

WAREHAM TOWN CLERK

DATE:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

TIMOTHY R. CALLAHAN, PLS. LIC. # 35022

FILE: 3055.02-DEF

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 100'
0 25 50 100 200

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978-888-4088

DEFINITIVE SUBDIVISION PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 2 of 9
JOB NUMBER 3055.02

SEE SHEET 5

SEE SHEET 2 FOR LEGEND AND GENERAL NOTES

N/F
RICHARD B JOHNSON
C/O LOUISE A JOHNSON
MAP 93 LOT W8

N/F
MICHAEL S DOWNING
MAP 93 LOT W10

N/F
PAUL F KASPAR
C/O JUDITH M KASPAR
MAP 93 LOT 1017B

N/F
COMM OF MASS
C/O EXEC OFFICE
OF TRANS & CONST
MAP 91 LOT 1009

N3°45'39"E
440.33'

N3°45'39"E
116.68'

N7°50'14"W
175.22'

180' DIA. CIRCLE

LOT 2
1,707,526 SF
39.20 ACRES
1,342,356 SF UPLAND
30.82 ACRES UPLAND
FRONTAGE=211.35 FT ON
WEWEANTIC CIRCLE

N/F
NINETY SIX REALTY, LLC
MAP 91 LOT 1000

MASS. STATE PLANE

S83°36'33"E 703.66'

LOT 1
218,365 SF
5.01 ACRES
(INCLUDES 39,649 SF
DRAINAGE EASEMENT)
FRONTAGE=185.06 FT
ON WEWEANTIC CIRCLE
AND 737.58 FT ON
FEARING HILL ROAD

180' DIA. CIRCLE

N56°42'16"E
16.20'

S33°00'24"E
193.63'

PROPOSED
DRAINAGE
EASEMENT
39,649 SF
0.91 ACRES

N7°34'46"E
145.35'

1+76.92

L=314.16'
R=60.00'
L=170.22'

WEWEANTIC CIRCLE

1+00

L=143.94'

R=20.00'
L=20.94'

N12°35'19"E
4.47'

R=20.00'
L=31.42'

40.0'

R=20.00'
L=20.94'

S12°35'19"W
4.47'

R=20.00'
L=31.42'

80.00'

N77°24'41"W 167.07'

68.94'

73.12'
S68°47'48"W

18.13'

0+00

MHB/F

516.88'
N83°46'01"W

P&C/S

MHB/F/HELD

L=55.18'

L=147.39'
L=202.57'
R=1826.16'

FEARING HILL ROAD
(PUBLIC-50' WIDE)

MHB/F

MHB/F

CBDH/F

N/F
ASHLEY HERBERT W
TRUSTEE
MAP 62 LOT 1010

N/F
COMM OF MASS
C/O EXEC
OFFICE OF
TRANS & CONST
MAP 74 LOT 1013

N/F
MELANIE F RODERICK
MAP 74 LOT 1

N/F
DANIEL S. MALONE
C/O MARGERAT E. MALONE
MAP 74 LOT 2

HOWLETT DRIVE
(PRIVATE-50' WIDE)

N/F
ALICE DUFFY
MAP 74 LOT 3

N/F
JILL C MARTINUK
C/O
RYAN P
FITZGERALD
MAP 74 LOT 1

N/F
KATHLEEN LEARY
MAP 74 LOT 1002

N/F
THERESA R
BROWN
C/O MICHAEL P
BROWN
MAP 74 LOT 1003A

N/F
MAXINE A CONNELL
C/O HAROLD R CONNELL JR
MAP 74 LOT 1003B

SEE SHEET 4

FOR REGISTRY USE ONLY

TOWN OF
WAREHAM PLANNING BOARD

APPROVED UNDER THE
SUBDIVISION CONTROL LAW

DATE APPROVED: _____

DATE ENDORSED: _____

NO DETERMINATION AS TO COMPLIANCE WITH THE ZONING REGULATIONS HAS BEEN MADE OR IS INTENDED BY THE ABOVE ENDORSEMENT.

I HEREBY CERTIFY THAT TWENTY DAYS HAVE ELAPSED SINCE THE NOTICE OF THE APPROVAL FROM THE PLANNING BOARDS WAS RECEIVED AND RECORDED, AND THAT NO NOTICE OF APPEAL HAS BEEN FILED IN THIS OFFICE.

WAREHAM TOWN CLERK

DATE: _____

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY R. CALLAHAN
NO. 35022
REGISTERED
PROFESSIONAL LAND SURVEYOR

TIMOTHY R. CALLAHAN, PLS. LIC. # 35022

FILE: 3055.02-DEF

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE
SCALE 1" = 40'
0 10 20 40 80

DATE

NO.	BY	DATE	REVISION

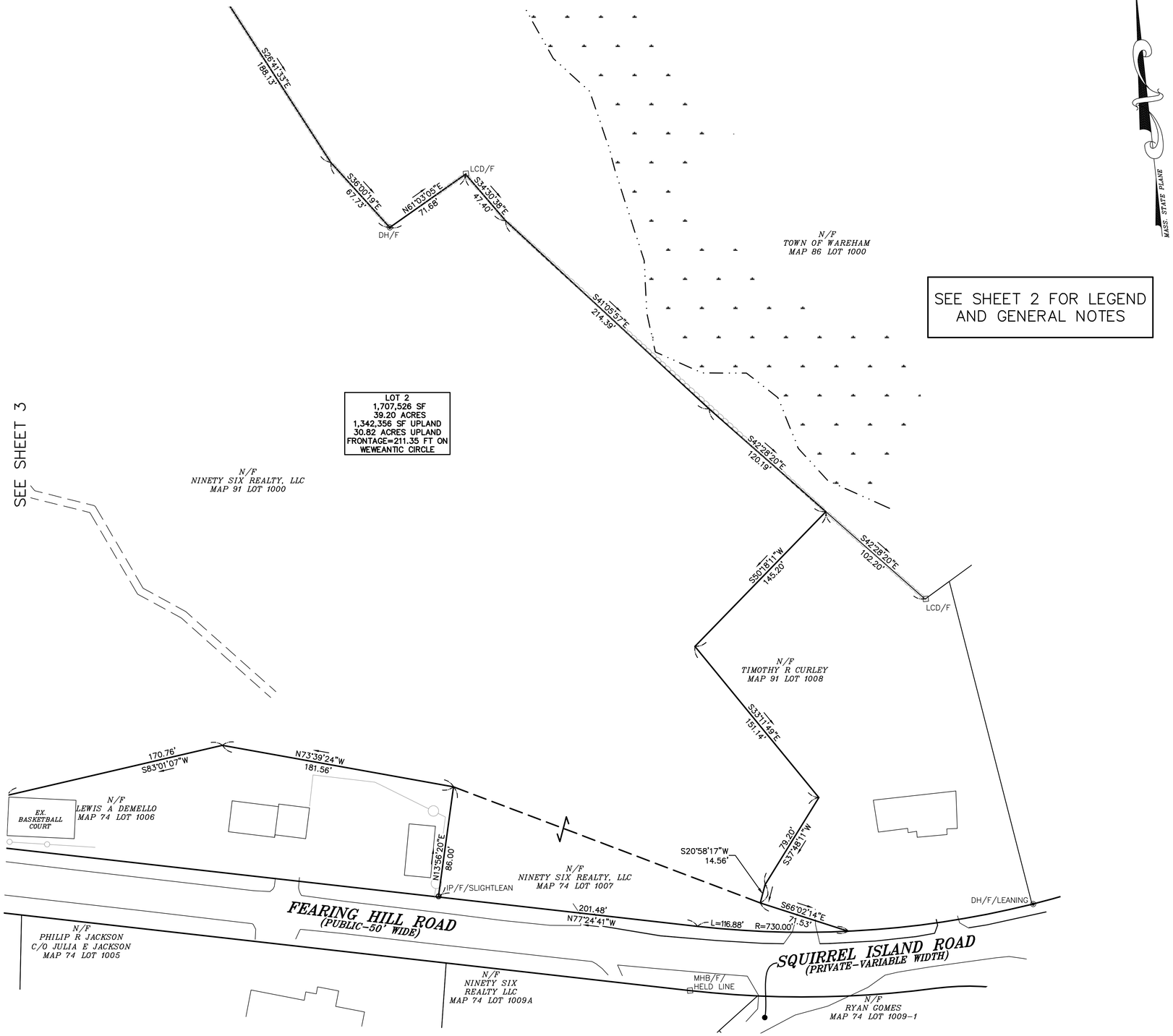
APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978-888-4088

DEFINITIVE SUBDIVISION PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 3 of 9

JOB NUMBER 3055.02

SEE SHEET 5



SEE SHEET 2 FOR LEGEND AND GENERAL NOTES

FOR REGISTRY USE ONLY

TOWN OF
WAREHAM PLANNING BOARD

APPROVED UNDER THE
SUBDIVISION CONTROL LAW

DATE APPROVED: _____

DATE ENDORSED: _____

NO DETERMINATION AS TO COMPLIANCE WITH THE ZONING REGULATIONS HAS BEEN MADE OR IS INTENDED BY THE ABOVE ENDORSEMENT.

I HEREBY CERTIFY THAT TWENTY DAYS HAVE ELAPSED SINCE THE NOTICE OF THE APPROVAL FROM THE PLANNING BOARDS WAS RECEIVED AND RECORDED, AND THAT NO NOTICE OF APPEAL HAS BEEN FILED IN THIS OFFICE.

WAREHAM TOWN CLERK

DATE: _____

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

TIMOTHY R. CALLAHAN, PLS. LIC. # 35022

FILE: 3055.02-DEF

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE
SCALE 1" = 40'
0 10 20 40 80

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978-888-4088

DEFINITIVE SUBDIVISION PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 4 of 9

JOB NUMBER 3055.02

SEE SHEET 6

FOR REGISTRY USE ONLY

N/F
CRISTA LYN CAMPBELL
MAP 93 LOT W6

N/F
CRAIG T FONTAINE
MAP 93 LOT W7

N/F
DARREN NAULT
MAP 93 LOT W8

N/F
COMM OF MASS
C/O STATE OFFICE
OF TAXES & TRUST
MAP 91 LOT 1009

N/F
RICHARD B JOHNSON
C/O LOUISE A JOHNSON
MAP 93 LOT W8

N3°45'39"E
625.20'

S86°14'21"E
33.00'

N3°45'39"E
557.01'

LOT 2
1,707,526 SF
39.20 ACRES
1,342,356 SF UPLAND
30.82 ACRES UPLAND
FRONTAGE=211.35 FT ON
WEWEANTIC CIRCLE

N/F
NINETY SIX REALTY, LLC
MAP 91 LOT 1000

S33°56'27"W
164.50'

S34°22'51"W
58.82'

S63°38'53"W
63.98'

S36°21'24"W
121.75'

MASS. STATE PLANE

S54°43'07"E
50.02'

LCD/F

N/F
TOWN OF WAREHAM
MAP 86 LOT 1000

S38°29'59"E
129.65'

S33°20'43"E
104.46'

N78°26'57"E
13.40'

S25°33'23"E
51.43'

S28°20'07"E
92.34'

S42°26'51"E
62.04'

LCD/F

S26°41'35"E
188.13'

SEE SHEET 3

SEE SHEET 4

SEE SHEET 2 FOR LEGEND AND GENERAL NOTES

TOWN OF
WAREHAM PLANNING BOARD

APPROVED UNDER THE
SUBDIVISION CONTROL LAW

DATE APPROVED: _____

DATE ENDORSED: _____

NO DETERMINATION AS TO COMPLIANCE WITH THE ZONING REGULATIONS HAS BEEN MADE OR IS INTENDED BY THE ABOVE ENDORSEMENT.

I HEREBY CERTIFY THAT TWENTY DAYS HAVE ELAPSED SINCE THE NOTICE OF THE APPROVAL FROM THE PLANNING BOARDS WAS RECEIVED AND RECORDED, AND THAT NO NOTICE OF APPEAL HAS BEEN FILED IN THIS OFFICE.

WAREHAM TOWN CLERK

DATE: _____

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY R. CALLAHAN
NO. 35022
REGISTERED
PROFESSIONAL LAND SURVEYOR

TIMOTHY R. CALLAHAN, PLS. LIC. # 35022

FILE: 3055.02-DEF

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE
SCALE 1" = 40'
0 10 20 40 80

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978-888-4088

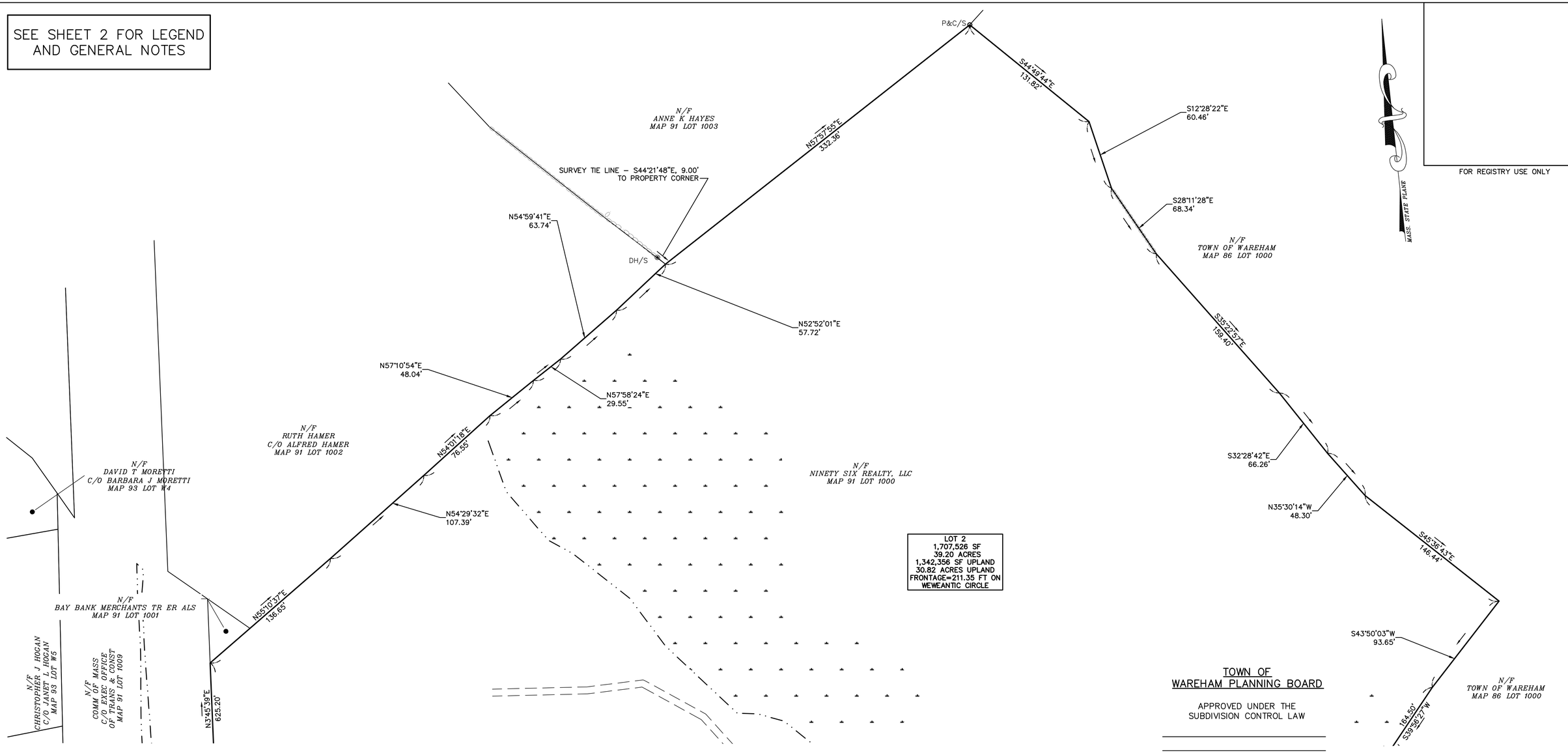
DEFINITIVE SUBDIVISION PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 5 of 9

JOB NUMBER 3055.02

SEE SHEET 2 FOR LEGEND AND GENERAL NOTES

FOR REGISTRY USE ONLY



SEE SHEET 5

TOWN OF
WAREHAM PLANNING BOARD

APPROVED UNDER THE
SUBDIVISION CONTROL LAW

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WAREHAM TOWN CLERK

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COMMONWEALTH OF MASSACHUSETTS
TIMOTHY R. CALLAHAN NO. 35022 REGISTERED PROFESSIONAL LAND SURVEYOR

TIMOTHY R. CALLAHAN, PLS. LIC. # 35022

FILE: 3055.02-DEF

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE
SCALE 1" = 40'
0 10 20 40 80

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978-888-4088

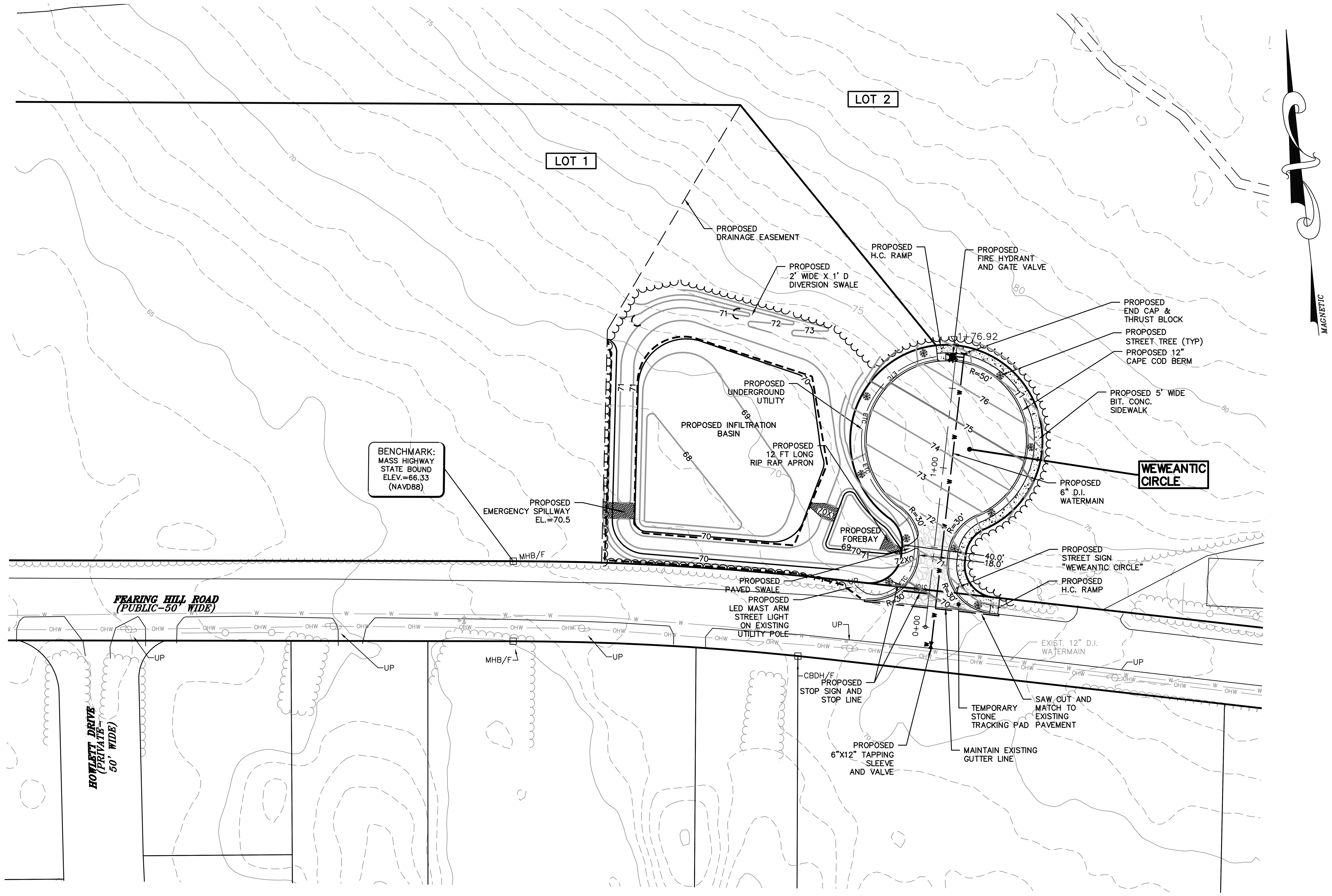
DEFINITIVE SUBDIVISION PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 6 of 9
JOB NUMBER 3055.02

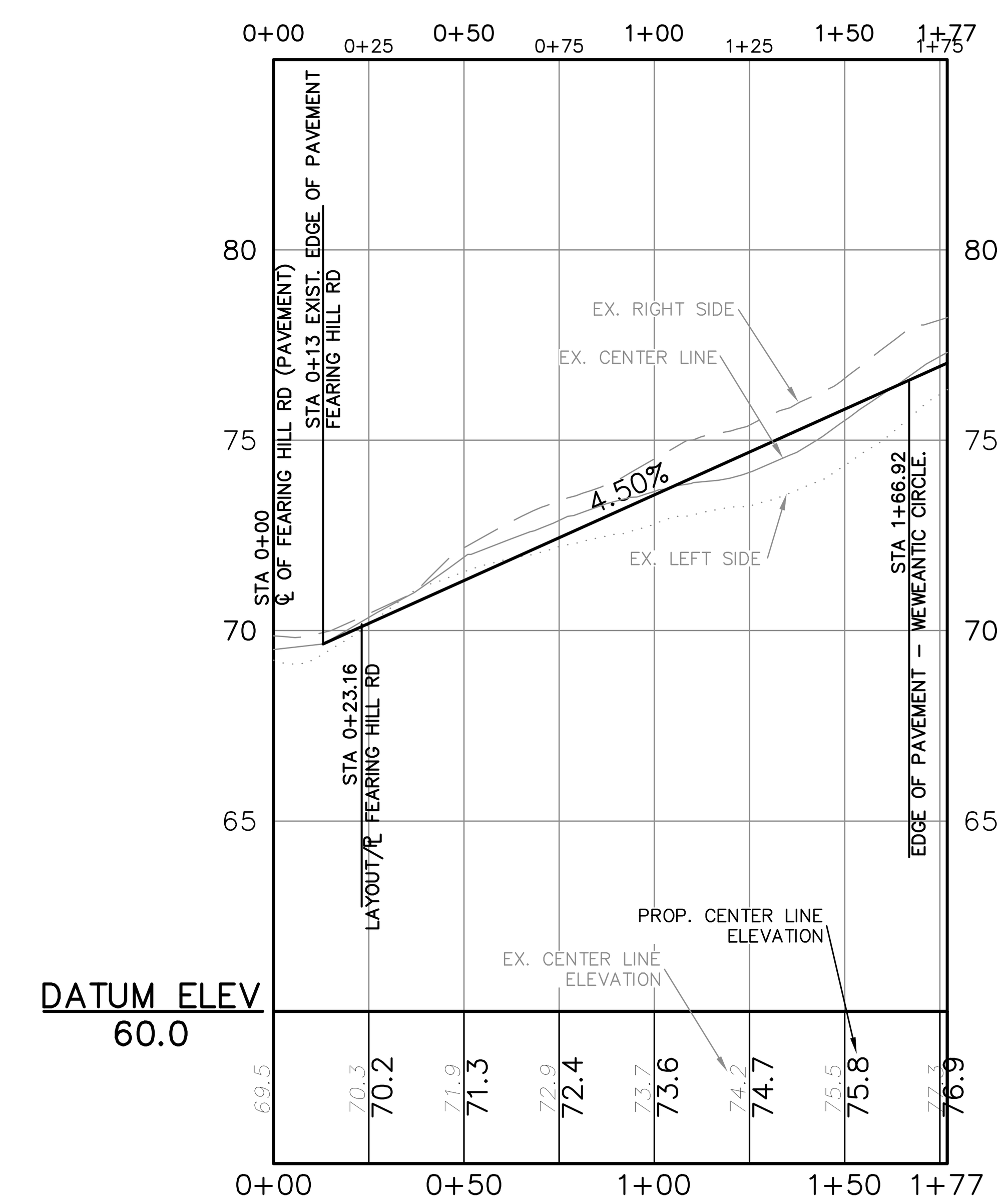
SHEET 9 FOR NOTES

LEGEND

EOP	EXISTING EDGE OF PAVEMENT
	EXISTING WETLAND LINE
	EXISTING TREE LINE
	EXISTING TREE
	EXISTING MAILBOX
	EXISTING UTILITY POLE
	EXISTING SURVEY MONUMENTS
	EXISTING FENCE
	EXISTING OVERGROWN PATH
100	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED LIMIT OF TREE CLEARING
	PROPOSED EROSION CONTROL
	PROPOSED UTILITY POLE
	PROPOSED SIGN
	PROPOSED TREE
	PROPOSED RIP RAP
	PROPOSED CAPE COD BERM
ETC	PROPOSED UNDERGROUND ELECTRIC



PLAN
1" = 40'



PROFILE
HORIZ. 1" = 40'
VERT. 1" = 4'

TOWN OF
WAREHAM PLANNING BOARD

APPROVED UNDER THE
SUBDIVISION CONTROL LAW

DATE APPROVED:
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WAREHAM TOWN CLERK

DATE:

FILE: 3055.02-PROFILES

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 40'
0 10 20 40 80

DATE

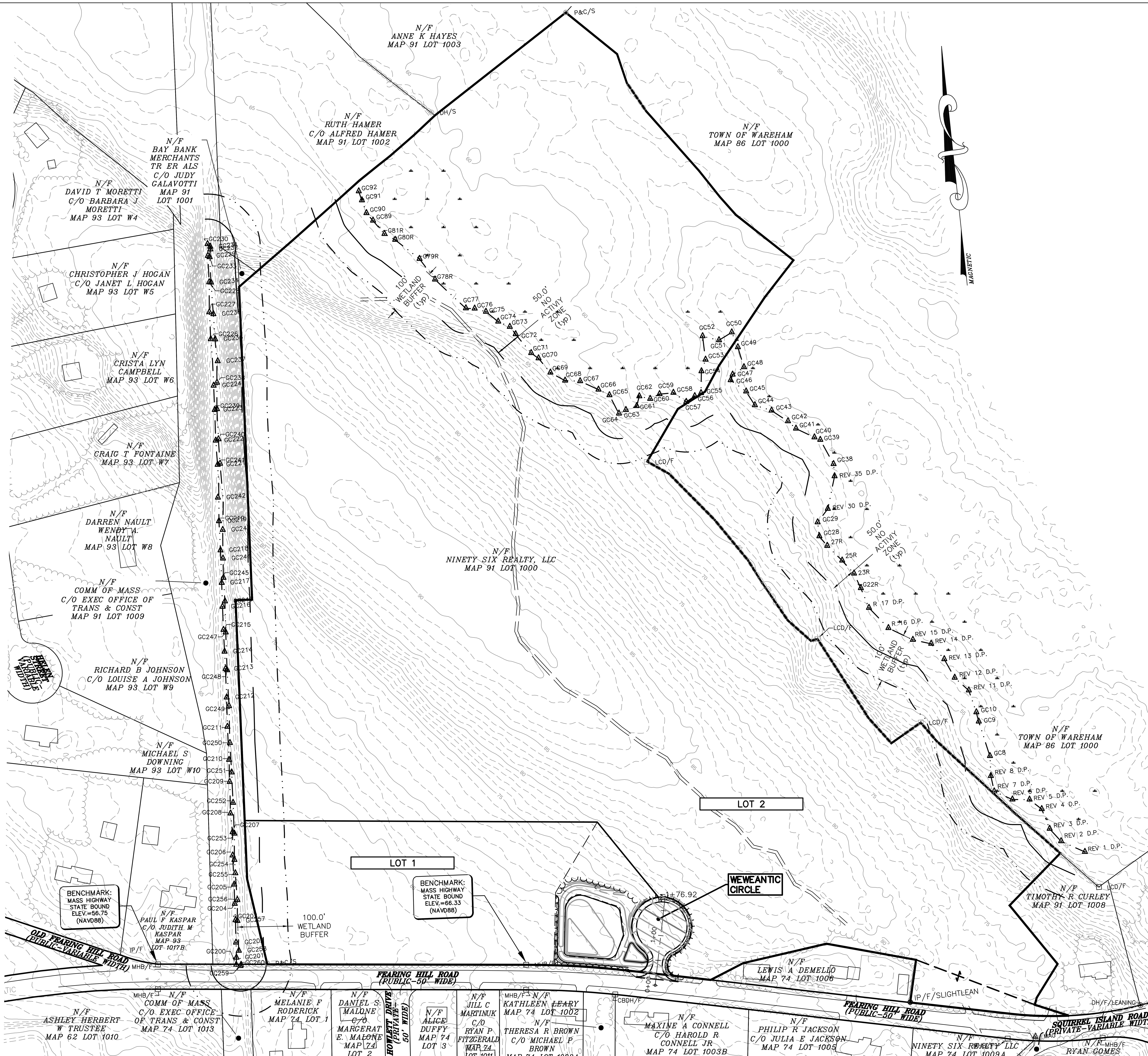
NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978-888-4088

PLAN AND PROFILE PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 7 of 9
JOB NUMBER
3055.02

SEE SHEET 7 FOR LEGEND AND SHEET 9 FOR NOTES


N/F
ANNE K HAYES
MAP 91 LOT 1003
N/F
RUTH HAMER
C/O ALFRED HAMER
MAP 91 LOT 1002
N/F
TOWN OF WAREHAM
MAP 86 LOT 1000
N/F
BAY BANK
MERCHANTS
TR ER ALS
C/O JUDY
GALAVOTTI
MAP 91
LOT 1001
N/F
DAVID T MORETTI
C/O BARBARA J
MORETTI
MAP 93 LOT W4
N/F
CHRISTOPHER J HOGAN
C/O JANET L HOGAN
MAP 93 LOT W5
N/F
CRISTA LYN
CAMPBELL
MAP 93 LOT W6
N/F
CRAIG T FONTAINE
MAP 93 LOT W7
N/F
DARREN NAULT
WENDY A.
NAULT
MAP 93 LOT W8
N/F
COMM OF MASS
C/O EXEC OFFICE OF
TRANS & CONST
MAP 91 LOT 1009
N/F
RICHARD B JOHNSON
C/O LOUISE A JOHNSON
MAP 93 LOT W9
N/F
MICHAEL S
DOWNING
MAP 93 LOT W10
N/F
NINETY SIX REALTY, LLC
MAP 91 LOT 1000
100' WETLAND BUFFER (typ)
50.0' NO ACTIVIY ZONE (typ)
LOT 1
LOT 2
N/F
TOWN OF WAREHAM
MAP 86 LOT 1000
N/F
TIMOTHY R CURLEY
MAP 91 LOT 1008
BENCHMARK:
MASS HIGHWAY
STATE BOUND
ELEV.=56.75
(NAVD88)
BENCHMARK:
MASS HIGHWAY
STATE BOUND
ELEV.=66.33
(NAVD88)
WEWEANTIC
CIRCLE
100.0'
WETLAND
BUFFER
N/F
PAUL F KASPAR
C/O JUDITH M
KASPAR
MAP 93
LOT 1017B
OLD FEARING HILL ROAD
(PUBLIC-VARIABLE WIDTH)
FEARING HILL ROAD
(PUBLIC-50' WIDE)
N/F
LEWIS A DEMELLO
MAP 74 LOT 1006
SQUIRREL ISLAND ROAD
(PRIVATE-VARIABLE WIDTH)
N/F
ASHLEY HERBERT
W TRUSTEE
MAP 62 LOT 1010
N/F
COMM OF MASS
C/O EXEC OFFICE
OF TRANS & CONST
MAP 74 LOT 1013
N/F
MELANIE F
RODERICK
MAP 74 LOT 1
N/F
DANIEL S
MALONE
C/O
MARGERAT
E. MALONE
MAP 74
LOT 2
HOWLETT DRIVE
(PRIVATE-50' WIDE)
N/F
ALICE
DUFFY
MAP 74
LOT 3
N/F
JILL C
MARTINUK
C/O
RYAN P
FITZGERALD
MAP 74
LOT 1011
N/F
KATHLEEN LEARY
MAP 74 LOT 1002
N/F
THERESA R BROWN
C/O MICHAEL P
BROWN
MAP 74 LOT 1003A
N/F
MAXINE A CONNELL
C/O HAROLD R
CONNELL JR
MAP 74 LOT 1003B
N/F
PHILIP R JACKSON
C/O JULIA E JACKSON
MAP 74 LOT 1005
N/F
NINETY SIX REALTY LLC
MAP 74 LOT 1009A
N/F
RYAN GOMES
MAP 74 LOT 1009-1
MAGNETIC

TOWN OF WAREHAM PLANNING BOARD

APPROVED UNDER THE SUBDIVISION CONTROL LAW

DATE APPROVED: ____________

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WAREHAM TOWN CLERK

DATE: ________

FILE: 3055.02–PROFILES

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 40'
0 10 20 40 80

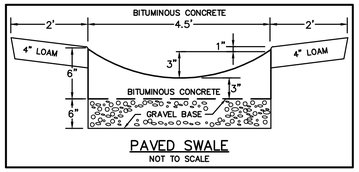
DATE

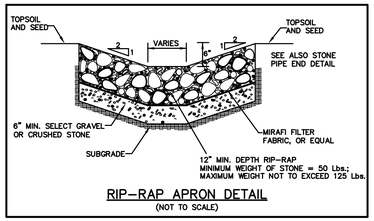
NO.	BY	DATE	REVISION

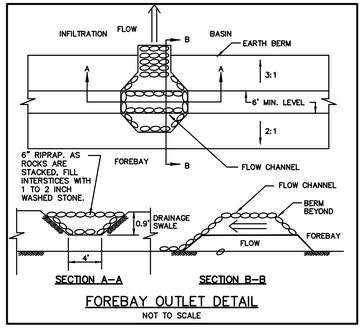
APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978–888–4088

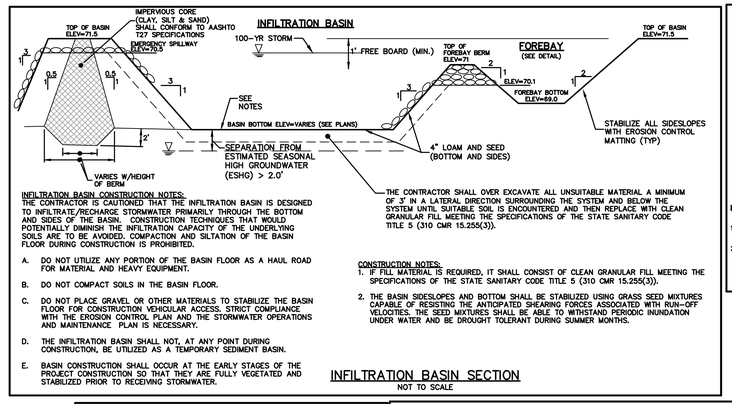
OVERALL TOPOGRAPHY PLAN
OF
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

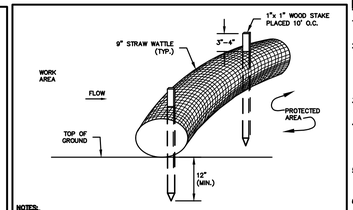
Sheet 8 of 9
JOB NUMBER 3055.02

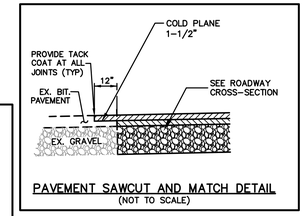


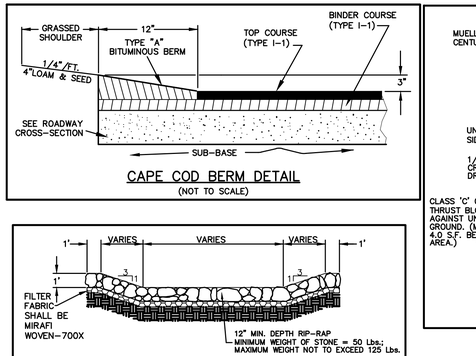


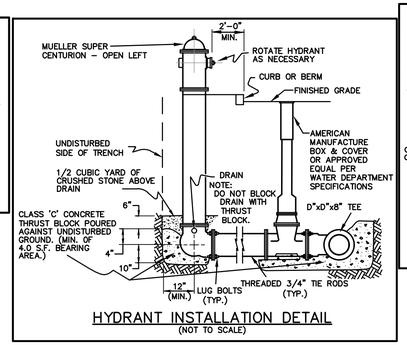


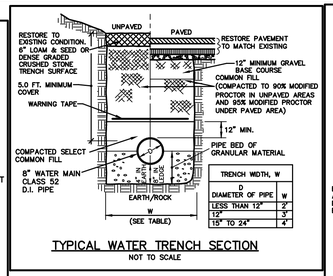


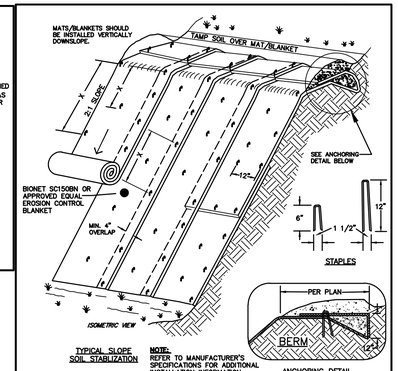


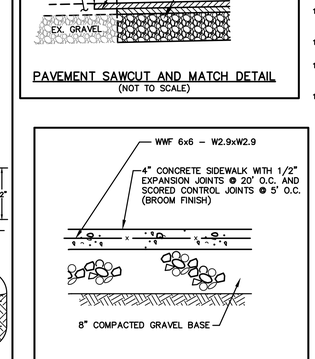


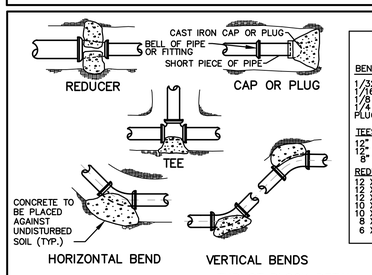


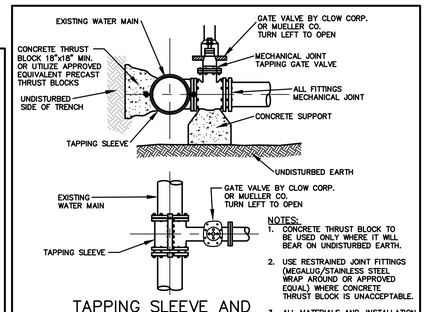


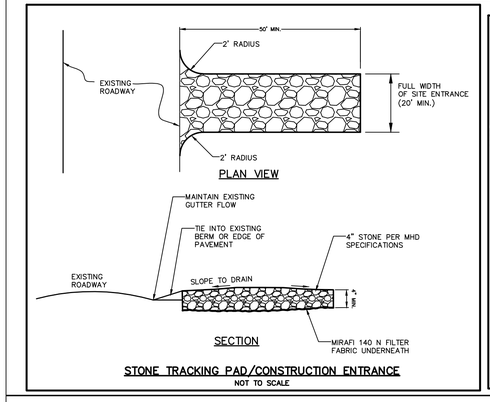


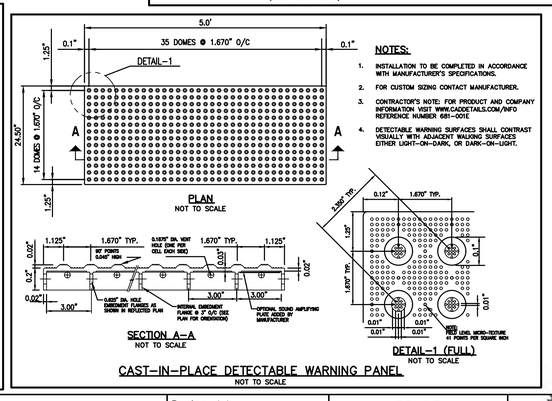


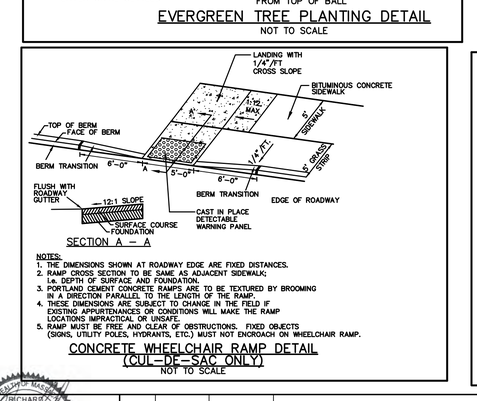


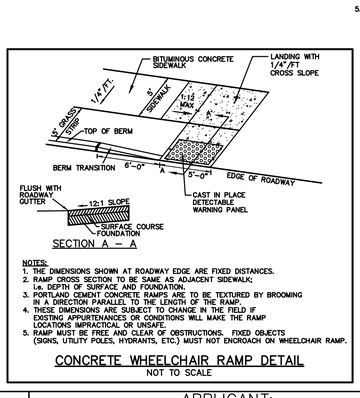












PAVED SWALE
NOT TO SCALE

RIP-RAP APRON DETAIL
(NOT TO SCALE)

FOREBAY OUTLET DETAIL
NOT TO SCALE

THE CONTRACTOR SHALL OVER EXCAVATE ALL UNSUITABLE MATERIAL A MINIMUM OF 3' IN A LATERAL DIRECTION SURROUNDING THE SYSTEM AND BELOW THE SYSTEM UNTIL SUITABLE SOIL IS ENCOUNTERED AND THEN REPLACE WITH CLEAN GRANULAR FILL MEETING THE SPECIFICATIONS OF THE STATE SANITARY CODE TITLE 5 (310 CMR 15.255(3)).

INFILTRATION BASIN CONSTRUCTION NOTES:

THE CONTRACTOR IS CAUTIONED THAT THE INFILTRATION BASIN IS DESIGNED TO INFILTRATE/RECHARGE STORMWATER PRIMARILY THROUGH THE BOTTOM AND SIDES OF THE BASIN. CONSTRUCTION TECHNIQUES THAT WOULD POTENTIALLY DIMINISH THE INFILTRATION CAPACITY OF THE UNDERLYING SOILS ARE TO BE AVOIDED. COMPACTION AND SILTATION OF THE BASIN FLOOR DURING CONSTRUCTION IS PROHIBITED.

A. DO NOT UTILIZE ANY PORTION OF THE BASIN FLOOR AS A HAUL ROAD FOR MATERIAL AND HEAVY EQUIPMENT.

B. DO NOT COMPACT SOILS IN THE BASIN FLOOR.

C. DO NOT PLACE GRAVEL OR OTHER MATERIALS TO STABILIZE THE BASIN FLOOR FOR CONSTRUCTION VEHICULAR ACCESS. STRICT COMPLIANCE WITH THE EROSION CONTROL PLAN AND THE STORMWATER OPERATIONS AND MAINTENANCE PLAN IS NECESSARY.

D. THE INFILTRATION BASIN SHALL NOT, AT ANY POINT DURING CONSTRUCTION, BE UTILIZED AS A TEMPORARY SEDIMENT BASIN.

E. BASIN CONSTRUCTION SHALL OCCUR AT THE EARLY STAGES OF THE PROJECT CONSTRUCTION SO THAT THEY ARE FULLY VEGETATED AND STABILIZED PRIOR TO RECEIVING STORMWATER.

CONSTRUCTION NOTES:

1. IF FILL MATERIAL IS REQUIRED, IT SHALL CONSIST OF CLEAN GRANULAR FILL MEETING THE SPECIFICATIONS OF THE STATE SANITARY CODE TITLE 5 (310 CMR 15.255(3)).
2. THE BASIN SIDESLOPES AND BOTTOM SHALL BE STABILIZED USING GRASS SEED MIXTURES CAPABLE OF RESISTING THE ANTICIPATED SHEARING FORCES ASSOCIATED WITH RUN–OFF VELOCITIES. THE SEED MIXTURES SHALL BE ABLE TO WITHSTAND PERIODIC INUNDATION UNDER WATER AND BE DROUGHT TOLERANT DURING SUMMER MONTHS.

INFILTRATION BASIN SECTION
NOT TO SCALE

NOTES:

1. WATTLE SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
2. SEE MANUFACTURERS RECOMMENDATIONS FOR SOCK SIZE AND INSTALLATION REQUIREMENTS.

STRAW WATTLE – EROSION CONTROL DETAIL
(NOT TO SCALE)

PAVEMENT SAWCUT AND MATCH DETAIL
(NOT TO SCALE)

CAPE COD BERM DETAIL
(NOT TO SCALE)

HYDRANT INSTALLATION DETAIL
(NOT TO SCALE)

TRENCH WIDTH, W	
D DIAMETER OF PIPE	W
LESS THAN 12"	2'
12"	3'
15" TO 24"	4'

TYPICAL WATER TRENCH SECTION
NOT TO SCALE

NOTE: REFER TO MANUFACTURER'S SPECIFICATIONS FOR ADDITIONAL INSTALLATION INFORMATION.

EROSION CONTROL BLANKET INSTALLATION DETAIL
NOT TO SCALE

CONCRETE WHEELCHAIR RAMP SECTION
NOT TO SCALE

TYPICAL EMERGENCY SPILLWAY
NOT TO SCALE

THRUST BLOCK AREA TABLES

BENDS	4" PIPE	6" PIPE	8" PIPE	10" PIPE
1/32 (11.25°)	1 S.F.	2 S.F.	2 S.F.	2 S.F.
1/16 (22.5°)	1 S.F.	2 S.F.	2 S.F.	4 S.F.
1/8 (45°)	1 S.F.	2 S.F.	3 S.F.	7 S.F.
1/4 (90°)	2 S.F.	3 S.F.	5 S.F.	10 S.F.
PLUG OF CAP	2 S.F.	3 S.F.	4 S.F.	8 S.F.
TEES				
12" X 12"	8 S.F.	8 S.F.	10" X 10"	
12" X 10"	6 S.F.	6 S.F.	10" X 8"	
8" X 8"	4 S.F.	4 S.F.	10" X 6"	
REDUCERS				
12 X 10	3 S.F.			
12 X 8	4 S.F.			
12 X 6	6 S.F.			
10 X 8	2 S.F.			
10 X 6	4 S.F.			
8 X 6	2 S.F.			
6 X 4	1 S.F.			

THRUST BLOCK DETAIL
(NOT TO SCALE)

NOTES:

1. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
2. USE RESTRAINED JOINT FITTINGS (MEGALUG/STAINLESS STEEL WRAP AROUND OR APPROVED EQUAL) WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
3. ALL MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH WAREHAM WATER DEPARTMENT SPECIFICATIONS.

TAPPING SLEEVE AND GATE VALVE DETAIL
(NOT TO SCALE)

NOTES:

1. ANY PLANTINGS THAT DO NOT SURVIVE ONE GROWING SEASON SHALL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER OR TOWN.
2. GROUND LINE TO BE AS EXISTED AT NURSERY

EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

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DATE: ________

STONE TRACKING PAD/CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. FOR CUSTOM SIZING CONTACT MANUFACTURER.
3. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT WWW.CADDETAILS.COM/INFO REFERENCE NUMBER 681–001E
4. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT–ON–DARK, OR DARK–ON–LIGHT.

CAST–IN–PLACE DETECTABLE WARNING PANEL
NOT TO SCALE

NOTES:

1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK; i.e. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.
5. RAMP MUST BE FREE AND CLEAR OF OBSTRUCTIONS. FIXED OBJECTS (SIGNS, UTILITY POLES, HYDRANTS, ETC.) MUST NOT ENCROACH ON WHEELCHAIR RAMP.

CONCRETE WHEELCHAIR RAMP DETAIL (CUL–DE–SAC ONLY)
NOT TO SCALE

NOTES:

1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK; i.e. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.
5. RAMP MUST BE FREE AND CLEAR OF OBSTRUCTIONS. FIXED OBJECTS (SIGNS, UTILITY POLES, HYDRANTS, ETC.) MUST NOT ENCROACH ON WHEELCHAIR RAMP.

CONCRETE WHEELCHAIR RAMP DETAIL
NOT TO SCALE

EROSION CONTROL NOTES:

1. PRIOR TO COMMENCING SITE WORK OR EARTHWORK OPERATIONS, INSTALL EROSION CONTROL BARRIERS AND MAINTAIN THROUGHOUT CONSTRUCTION.
2. ALL EROSION CONTROL MEASURES SHALL MEET ALL FEDERAL STATE AND LOCAL REQUIREMENTS. SPECIFICALLY THE 2017 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR DISCHARGES FROM CONSTRUCTION ACTIVITIES (2017 CONSTRUCTION GENERAL PERMIT) AND THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT CONTROL GUIDELINES.
3. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
4. ALL MATERIALS AND STOCKPILES SHALL BE STORED ON LEVEL AREAS OUTSIDE OF ANY FLOOD ZONES, WETLANDS OR BUFFER ZONE AREAS. ALL STOCKPILES SHALL BE SURROUNDED BY HAY BALES, SHALL HAVE SIDE SLOPES NO GREATER THAN 30% AND SHALL BE SEEDED OR STABILIZED IF LEFT UNDISTURBED FOR TWO WEEKS OR MORE.
5. SEDIMENTATION CONTROL DEVICES AND EROSION CONTROL BARRIERS SHALL BE INSPECTED WEEKLY AND MAINTAINED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION AND PROMPTLY AFTER EACH RAINFALL.
6. ANY SLOPE STEEPER AND 3:1 SHALL BE EQUIPPED WITH SLOPE STABILIZATION FABRIC OR EROSION CONTROL MATTING.
7. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTITUTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER AND/OR THE TOWN.
8. THE CONTRACTOR MUST REPAIR OR RE–SEED ANY AREAS THAT DO NOT DEVELOP WITHIN A PERIOD OF ONE YEAR AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. MATERIAL STOCKPILES SHALL NOT BE LOCATED WITHIN THE PATH OF EXISTING OR PROPOSED WATERCOURSES (BOTH TEMPORARY OR PERMANENT) OR THOSE AREAS SUBJECT TO STORM WATER FLOW.
10. SEDIMENT CONTROL DEVICES AND EROSION CONTROL BARRIERS MAY BE REMOVED ONLY AFTER THE SITE HAS BEEN STABILIZED AND RE–VEGETATED PER ESTABLISHED STANDARDS.
11. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION, WHICH REMAIN DISTURBED BUT INACTIVE FOR AT LEAST THIRTY DAYS, SHALL RECEIVE TEMPORARY SEEDING IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES. IN ALL CASES, STABILIZATION MEASURES SHALL BE IMPLEMENTED AS SOON AS POSSIBLE IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES.
12. EARTHWORK ACTIVITY ON THE SITE SHALL BE DONE IN A MANNER SUCH THAT RUNOFF IS DIRECTED AWAY FROM ABUTTING STRUCTURES, PROPERTY, ETC.
13. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL HAY BALES AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEERS OR THE PLANNING BOARD TO MITIGATE ANY EMERGENCY CONTROL.
14. REFER TO CONSTRUCTION DETAILS FOR ADDITIONAL EROSION CONTROL MEASURES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITING, RELOCATION AND AUGMENTATION OF EROSION CONTROL DEVICES AS THE PROJECT PROGRESSES AND THE SITE DRAINAGE CONDITIONS CHANGE.
16. THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBED SOIL. EFFORTS SHALL BE MADE TO LIMIT THE TIME OF EXPOSURE OF DISTURBED AREAS.

CONSTRUCTION PERIOD STORMWATER OPERATION AND MAINTENANCE

SCHEDULE:

EROSION CONTROL BARRIERS:

EROSION CONTROL BARRIERS SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RUN–OFF PRODUCING RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS.

SEDIMENT FOREBAY:

INSPECT MONTHLY AT A MINIMUM, OR AFTER MAJOR STORM EVENTS (2" OR GREATER) DURING AND AFTER CONSTRUCTION FOR EROSION, EXCESSIVE ACCUMULATION OF SEDIMENT AND TRASH. REPAIR ERODED SPOTS IMMEDIATELY AFTER INSPECTION. ACCUMULATED SEDIMENT SHALL BE REMOVED AT LEAST FOUR TIMES A YEAR OR BEFORE IT EXCEEDS 0.5' IN DEPTH, WHICHEVER OCCURS FIRST. SEDIMENT SHALL BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS.

INFILTRATION BASIN:

INSPECT AT LEAST TWICE PER YEAR DURING WET WEATHER, OR AFTER ANY STORM EVENT GREATER THAN 2" TO ENSURE THE SYSTEM IS DRAINING PROPERLY. CHECK FOR ACCUMULATION OF SEDIMENT AND PONDING OF WATER. REMOVE SEDIMENT, TRASH AND DEBRIS (USING LIGHT MACHINERY SO AS TO NOT COMPACT THE UNDERLYING SOIL) AS NECESSARY OR AT LEAST EVERY 5 YEARS. MOW SIDE SLOPES AND BERM AT LEAST TWICE PER YEAR. OBSERVATION WELLS PROVIDED FOR INSPECTION. IF PONDING WATER IS VISIBLE INSIDE THE BASIN FOR SEVER DAYS AFTER A STORM EVENT, NOTIFY THE ENGINEER FOR POSSIBLE REMEDIAL MEASURES. (POSSIBLE REMEDIAL MEASURES INCLUDE BUT ARE NOT LIMITED TO REGRADING BOTTOM, AERATING BOTTOM OR REPLACEMENT OR REPLACEMENT OF BOTTOM SUBSTRATE).

AT LEAST 2 TIMES DURING THE GROWING SEASON, MOW UPPER–STAGE, SIDE SLOPES AND EMBANKMENT. THE GRASS SHOULD NOT BE CUT LOWER THAN 4". REMOVE TRASH, GRASS CLIPPINGS, ORGANIC MATTER AND DEBRIS.

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL FACILITIES UNTIL THE PROJECT CONSTRUCTION IS COMPLETED. ALL WEEKLY AND YEARLY INSPECTION REPORTS ARE TO BE SUBMITTED TO THE TOWN FOR REVIEW AND FILING.
2. UPON COMPLETION OF CONSTRUCTION, THE OPERATION AND MAINTENANCE OF SITE WILL BE THE RESPONSIBILITY OF THE SYSTEM OWNER:

WAREHAM MA 3, LLC
100 SUMMIT LAKE FRIVE, SUITE 210
VALHALLA, NY 10595
978–888–4088

3. DISPOSAL OF ACCUMULATED SEDIMENT AND HYDROCARBONS TO BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES AND REGULATIONS.
4. THERE SHALL BE NO ILLICIT DISCHARGE OF ANY WASTE OR WASTE WATER. ANY WASTE OIL OR OTHER WASTE PRODUCTS GENERATED DURING MAINTENANCE SHALL BE PROPERLY DISPOSED OF OFF SITE.
5. ALL GRASSED AREAS MUST BE MOWED A MINIMUM OF TWO TIMES PER YEAR (SPRING AND FALL) TO REDUCE WEED GROWTH. INSPECT GRASSED AREAS ON A REGULAR BASIS TO EVALUATE THE NEED FOR ADDITIONAL PERIODS OF MOWING TO PREVENT BRUSH FIRES. IF AREAS BECOME BARE, THEY MUST BE RESEEDED TO SUSTAIN VEGETATIVE COVER.

CONSTRUCTION NOTES:

1. THE PROPERTY LINES SHOWN HEREON, ARE PARTLY BASED ON FIELD SURVEY BY ATLANTIC DESIGN ENGINEERS, RECORDED PLANS AND DEEDS, AND ARE SUPPLEMENTED BY MASSACHUSETTS GIS INFORMATION AND ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD83).
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS SHOWN AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT MAY BE FOUND IN THE PLAN.
3. CONTRACTOR SHALL VERIFY ALL CRITICAL ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
4. WHERE AN EXISTING PUBLIC UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED AND THE INFORMATION FURNISHED TO THE UTILITY COMPANY AND OWNER FOR RESOLUTION OF THE CONFLICT.
5. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS SITE.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY DIGSAFE, THE TOWN OF WAREHAM DEPARTMENT OF PUBLIC WORKS, AND ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION ACTIVITIES FOR LOCATION OF ALL UNDERGROUND UTILITIES AND UTILITY COMPANY APPROVALS.
7. ALL BUILDINGS, SURFACE, AND SUBSURFACE IMPROVEMENTS ON AREAS ADJACENT TO THE SITE ARE NOT NECESSARILY SHOWN HEREON.
8. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND RIM AND INVERTS BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
9. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENTS OF ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES WITH THE UTILITY COMPANY, IF NECESSARY. IF ANY INTERRUPTIONS IN SERVICE ARE NECESSARY TO ABUTTING PROPERTY OWNERS, A MINIMUM OF 48 HOURS NOTICE SHALL BE GIVEN.
10. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND MASSACHUSETTS HIGHWAY DEPARTMENT REQUIREMENTS FOR ALL WORK WITHIN PUBLIC STREETS.
11. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY COMPANIES ARE COMPLETED PRIOR TO INSTALLATION, BACKFILLING, ANNOUNCED BUILDING POSSESSION, AND THE FINAL CONNECTION OF SERVICES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SURVEY CONTROL POINTS AND BENCHMARKS NECESSARY FOR THE PROPOSED WORK.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED.
15. THE CONTRACTOR SHALL INSTITUTE AND MAINTAIN ALL SAFETY MEASURES NECESSARY TO PROTECT THE PUBLIC DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO BARRICADES, SIGNS, FENCES, FLAGGERS, LIGHTING, POLICE DETAIL, AND ANY OTHER MEANS AS DIRECTED BY THE TOWN. NO TRENCHES ARE TO REMAIN OPEN OVERNIGHT.
16. THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL AND OTHER DEBRIS RESULTING FROM THE WORK. AT THE END OF CONSTRUCTION THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED AND REMOVED FROM THE SITE.
17. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPROVED PERMITS AND WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES AND REGULATIONS.
18. CONTRACTOR SHALL ADHERE TO REQUIREMENTS SET FORTH WITHIN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY ATLANTIC DESIGN ENGINEERS, INC.

GENERAL O AND M NOTES:

1. THE OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER FACILITIES UNTIL THE PROJECT CONSTRUCTION IS COMPLETED. SUBSEQUENT TO THAT, THE FACILITY MANAGEMENT COMPANY WILL BE RESPONSIBLE.
2. THE OWNER/CONTRACTOR/FACILITY MANAGER SHALL FILE AN INSPECTION REPORT TO THE ENGINEER FOLLOWING EACH SITE INSPECTION AS RECOMMENDED ABOVE. THE INSPECTION REPORT SHALL IDENTIFY THE DATE OF INSPECTION, NAME AND CONTACT NUMBER OF RESPONSIBLE PARTY, SPECIFIC STRUCTURES INSPECTED, SPECIFIC MAINTENANCE AND/OR REPAIRS REQUIRED AND GENERAL OBSERVATIONS. ANY DEFICIENCIES NOTED IN THE INSPECTION REPORT SHALL BE CORRECTED TO THE SATISFACTION OF THE TOWN
3. DISPOSAL OF ACCUMULATED SEDIMENT AND HYDROCARBONS TO BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES AND REGULATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ALL COMPONENTS OF THE STORMWATER MANAGEMENT SYSTEM AND SWEEPING ALL PAVED AREAS.

TOWN OF WAREHAM PLANNING BOARD

APPROVED UNDER THE SUBDIVISION CONTROL LAW

____
____
____
____
____
____

DATE APPROVED: ____________

DATE ENDORSED: ____________

NO DETERMINATION AS TO COMPLIANCE WITH THE ZONING REGULATIONS HAS BEEN MADE OR IS INTENDED BY THE ABOVE ENDORSEMENT.

TYPICAL SUBDIVISION ROAD CROSS SECTION (RESIDENTIAL MINOR STREET)
NOT TO SCALE

FILE: 3055.02–DET

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : ________
Drawn by : ________
Checked by : ________
Survey chk. by : ________
Approved by : ________

SCALE
AS NOTED

RICHARD J. TABACZYNSKI CIVIL No. 33746

DATE

NO.	BY	DATE	REVISION

APPLICANT:
WAREHAM MA 3, LLC
100 SUMMIT LAKE DRIVE, SUITE 210
VALHALLA, NY 10595
978–888–4088

DETAIL SHEET
FOR
WEWEANTIC CIRCLE
WAREHAM, MASSACHUSETTS 02576
DECEMBER 2, 2021

Sheet 9 of 9
JOB NUMBER
3055.02