



Office of the Planning Board

Incorporated December 15, 1727

**NEWMARKET PLANNING BOARD  
TUESDAY, JANUARY 25, 2022  
7:00 P.M. TOWN COUNCIL CHAMBERS  
7:00 PM**

**AGENDA**

- 1. Pledge of Allegiance**
- 2. Public Comments**
- 3. Review and Approval of Minutes**
  - a. Minutes**
- 4. Regular Business**
  - a.** b. Seacoast Pool Plastering LLC/Robert MacInnis - Public hearing for an application for Site Plan & Special Use Permit to permit the proposed construction of a 6,000 square foot building consisting of 1,000 sq. ft. of office space and 5,000 sq. ft. for an equipment/construction storage warehouse. Two existing lots will be combined and access will be from an existing paved driveway off Route 152 (Wadleigh Fall Road). The office/warehouse is expected to consist of three employees, proposed paved driveway extension and 8 paved parking spaces, a proposed septic system and leach field, well and water line, and approximately 78,000 sq. ft. of gravel parking for storage of truck trailers, containers and equipment. The applicant is requesting a Special Use Permit for a wetlands buffer disturbance for the proposed driveway extension for site access and minor grading near a small wetlands buffer area pursuant Section 32-155 (e) of the Zoning Ordinance. A portion of the proposed building and site and drainage improvements, including a bioretention area (rain garden) fall within the Town's Aquifer Protection Overlay District under Section 32-153 of the Zoning Ordinance. The lots are located at 446 & 451 Wadleigh Falls Road, Tax Map R6, Lots 50-7 & 50-8, B3 Zone. A continuance will be considered by the Board
  - b.** Discussion -- Rezoning North Main Street from B1 to M 2A
- 5. New/Old Business**
- 6. Chairman's Report**
- 7. Committee Reports**
- 8. Planner's Report**
- 9. Adjourn**



Town Hall  
186 Main Street  
Newmarket, NH 03857

Tel: (603) 659-3617  
Fax: (603) 659-8508

Founded December 15, 1727  
Chartered January 1, 1991

## TOWN OF NEWMARKET, NEW HAMPSHIRE

### **ATTACHMENTS:**

| Description | Upload Date | Type       |
|-------------|-------------|------------|
| 12/14/21    | 1/12/2022   | Cover Memo |



NEWMARKET PLANNING BOARD  
TUESDAY, DECEMBER 14, 2021  
TOWN COUNCIL CHAMBERS  
7:00 PM

**Members Present:** Eric Botterman (Chair), Valerie Shelton (Vice Chair), Diane Hardy (Town Planner), Bill Doucet, Jane Ford, Jeff Goldknopf, Timothy Rossignol, Scott Blackstone (Town Council ex officio), and Michal Zahorik (Alternate).

**Members Absent:** none

The Chair opened the meeting at 7:00 PM.

**1. Pledge of Allegiance**

**2. Public Comments**

The Chair opened public comment at 7:00 PM. Hearing none, he closed public comment at 7:01 PM.

**3. Review and Approval of Minutes**

a. November 9, 2021

**Motion:** Valerie Shelton made a motion to approve the draft minutes of November 9, 2021.

**Second:** Jane Ford

**Discussion:** None

**Vote:** Approved 4-0-4 (abstaining- E. Botterman, T. Rossignol, J. Goldknopf and M. Zahorik)

**4. Regular Business**

a. [Seacoast Materials LLC/Chris & Chad Bennett - public hearing for an application for renewal of an excavation permit for the property located at 421 Wadleigh Falls Road, Tax Map R6, Lot 2, B 3 Zone.](#)

The Chair asked the Town Planner for the status of the application. Ms. Hardy said that she has received all pertinent materials to make the application complete for review at this time.

**Motion #1:** Valerie Shelton made a motion to accept the application as complete for review this evening.

**Second:** Tim Rossignol

**Discussion:** None

**Vote:** Approved Unanimously

Chris and Chad Bennett are both present this evening to address the Board. Chad Bennett said they purchased the property in 2018. He updated the Board on the small amount of materials taken annually from the property. Since 2018, they have been reorganizing the materials left behind by the previous owner. The Chair was concerned that they had taken the Reclamation Progress Plan, originally prepared by Doucet Survey prior to the purchase in 2018, and altered it by adding their name, Seacoast Materials LLC, which is not permitted. They are not required to have the property completely resurveyed, but they could ask that someone walk the property refer to the Doucet Plan, and indicate in a report what has been moved. **Bill Doucet** asked about materials that were brought onto the property. Chris Bennett reported that that they brought 5,000-6,000 yards of loam from the excavation for the new school building over several years ago. The property is grandfathered from the requirements of the Aquifer Protection Ordinance.

The Chair asked for questions from the public and there were none.

**Bill Doucet** asked about the deadline for total reclamation of the sand pit **Diane Hardy** said that approximately 75-80% of the land has already been reclaimed. Chris Bennett said that of the 25 acre parcel, they are currently only using 5 acres. The other 20 acres have been reclaimed. **Valerie Shelton** read the regulations into the record. "Any excavated area of 5 contiguous acres or more which is depleted of materials or any excavation from which earth materials of a substantial amount or volume to be commercially useful have not been removed for a 2 year period' shall be reclaimed. Chris Bennett also mentioned that the Town holds a \$27, 000 bond in case they abandon the property. The Town may then come onto the property to use those funds to reclaim the land.

**Waiver Requests:**

**Motion #2:** **Bill Doucet** made a motion that the renewal excavation permit for [Seacoast Materials LLC/ Chris & Chad Bennett be increased from three years to five years for the property located at 421 Wadleigh Falls Road, Tax Map R6, Lot 2, B3 Zone.](#)

**Second:** Valerie Shelton

**Discussion:** None

**Vote:** Approved Unanimously

**Motion #3:** **Valerie Shelton** made a motion that the Planning Board grant the request for renewal for the excavation permit for the 24.4 acre property located at 421 Wadleigh Falls Road, Tax Map R6, Lot 2, B3 Zone subject to the nine conditions as noted in the memo from the Town Planner dated December 7, 2021. In addition there to, condition ten (#10) shall require that the applicant provide the Board with a replacement plan for the renewal application which meets the requirements of regulation #3.01A within 120 days of the expiration of the current permit.

**Second:** Tim Rossignol  
**Discussion:** None  
**Vote:** Approved Unanimously

**b. Seacoast Pool Plastering LLC/Robert MacInnis - Public hearing for an application for Site Plan & Special Use Permit to permit the proposed construction of a 6,000 square foot building consisting of 1,000 sq. ft. of office space and 5,000 sq. ft. for an equipment/construction storage warehouse. Two existing lots will be combined and access will be from an existing paved driveway off Route 152 (Wadleigh Falls Road). The office/warehouse is expected to consist of three employees, proposed paved driveway extension and 8 paved parking spaces, a proposed septic system and leach field, well and water line, and approximately 78,000 sq. ft. of gravel parking for storage of trucks, trailers, containers and equipment. The applicant is requesting a Special Use Permit for a wetlands buffer disturbance for the proposed driveway extension for site access and minor grading near a small wetlands buffer area pursuant Section 32-155 (e) of the Zoning Ordinance. A portion of the proposed building and site and drainage improvements, including a bioretention area (rain garden) fall within the Town's Aquifer Protection Overlay District under Section 32-153 of the Zoning Ordinance. The lots are located at 446 & 450 Wadleigh Falls Road, Tax Map R6, Lots 50-7 & 50-8, B3 Zone.**

**Bill Doucet** and **Jeff Goldknopf** recused themselves and the Chair appointed **Michal Zahorik** as a voting member.

The Planner was asked about the completeness of the application. **Diane Hardy** stated that she had reviewed the application with the applicant and found that it is substantially complete. However, she stated that there are two items that are missing and would like to inquire about their status: 1) The application needs a wetlands stamp and certification on the plan that shows the wetlands along with a detailed description of how this project will impact the wetland buffer; and 2) a note be added to the plan that all site improvements will be ADA compliant as was previously discussed with the applicant. Being satisfied with the responses from the applicant, the Town Planner recommends that the application is substantially complete and ready to undergo technical review.

**Motion #1:** **Tim Rossignol** made a motion to accept the application made by Seacoast Pool Plastering LLC as complete and ready for technical review.

**Second:** Jane Ford  
**Discussion:** None  
**Vote:** 6-0-0

Joining the meeting this evening is John Lorden, PE, Project Manager with Tighe & Bond, who is representing Robert MacInnis and his business partner, John Pacheco, who are both present as well. Mr. Lorden walked the Board through the project. They came before the Board last January for a concept design review. They continued with the plan to combine two vacant lots into a single 8.4 acre vacant lot for Seacoast Pool Plastering LLC/Robert MacInnis for proposed

construction of a 6,000 square foot building consisting of 1,000 sq. ft. of office space and 5,000 sq. ft. for an equipment/construction storage warehouse. The two existing lots will be combined and access will be from an existing paved driveway off Route 152 (Wadleigh Falls Road). The office/warehouse is expected to house three employees, proposed paved driveway extension and 8 paved parking spaces, a proposed septic system and leach field, well and water line, and approximately 78,000 sq. ft. of gravel parking for storage of trucks, trailers, containers and equipment. The applicant is requesting a Special Use Permit for a wetlands buffer disturbance for the proposed driveway extension for site access and minor grading near a small wetlands buffer area pursuant Section 32-155 (e) of the Zoning Ordinance. A portion of the proposed building and site and drainage improvements, including a bioretention area (rain garden) fall within the Town's Aquifer Protection Overlay District. They still need a DOT permit and are waiting for a reply. They have submitted an AOT permit from NHDES and have not heard back yet. They also need a septic permit from NHDES and have not heard back as yet. They propose preparing the gravel parking lot now to raise revenue by storing equipment. Mr. Lorden presented a check for the Technical Review fee. The Planner has already spoken with Underwood Engineers and they will be ready around January 15 to begin review.

**Tim Rossignol, Valerie Shelton, and Jane Ford** agreed to serve on the Technical Review Committee.

**Motion #2:** **Valerie Shelton** made a motion to continue this public hearing until the next Planning Board meeting on January 25, 2022 thereby giving the Technical Review Committee an opportunity to review the plan and waiver requests.

**Second:** **Jane Ford**

**Discussion:** None

**Vote:** **Unanimously Approved**

**Bill Doucet** and **Jeff Goldknopf** rejoined the meeting.

## **5. New/Old Business**

### **a. Updating Stormwater Regulations (under Site Plan and Subdivision Regulations) Worksession with Bill Arcieri, VHB Consultants.**

The Board welcomed Bill Arcieri, Senior Water Resource Specialist from VHB Consultants, and Town resident. Stormwater management is his specialization. Bill gave a brief overall description of the updated Stormwater Regulations under site plan and subdivision regulations. The MS-4 Permit came out in 2017 and regulates municipalities and urbanized areas. Communities must update their regulations to meet the 2012 model of the Southeast Watershed Alliance. Their mission is to establish a regional framework for Piscataqua coastal watershed communities, regional planning commissions, the state and other stakeholders, to collaborate on planning, and implementation measures to improve and protect water quality and more effectively address the challenges of meeting clean water standards. Bill explained the EPA Municipal Separate Storm Sewer System (MS-4) Program. More information may be found at: [Stormwater Discharges from Municipal Sources-Resources | US EPA](#) . There are at least 60

some communities in MA and NH that were targeted in the scope of the MS-4 program. This is a 5 year permit and will expire in 2023. **Diane Hardy** wanted to direct the viewers to the Town website where additional information on the MS-4 plan is posted: [MS4 Stormwater Program | Newmarket NH](#) .

**Diane Hardy** said that the map of all outfalls in the Town was completed last June. Bill said that the [Seacoast Stormwater Coalition – NH-MS4 Municipalities \(state.nh.us\)](#) ) is developing a guidance booklet on long-term operation and maintenance of stormwater systems. A subcommittee (TRC) of the Planning Board was set up to work on the Stormwater Regulations Update. The subcommittee is made up of **Eric Botterman, Valerie Shelton, and Jeff Goldknopf**.

The Board thanked Bill Arcieri for his generous help with the update!

**b. [Follow-up on November 8, 2021 correspondence from Town Council requesting Planning Board to review current Accessory Dwelling Unit regulations.](#)**

**Valerie Shelton** and **Diane Hardy** will work together to put together a spreadsheet showing a comparison of communities in the area and how they address Accessory Dwelling Units and to initiate the discussion of permitting detached ADU's. They plan to present their spreadsheet for discussion at the February meeting.

**c. [Discussion of Planning Board's review of Housing and Land Use Chapters of the Master Plan and possible zoning changes to permitted uses and density regulations in the Residential Districts and changes to current B-1 Zoning along North Main Street corridor in order to allow opportunities for mixed-use \(commercial/residential\) development.](#)**

**Valerie Shelton** recommends that the Planning Board hold off on addressing the broader housing issues until the SRPC completes its regional housing assessment. The Board agreed that rezoning of the northern Route 108 corridor from downtown to the Durham Town line initially should be evaluated for zoning changes from B-1 to M2-A zoning. Also, some of the requirements within the M2-A zone need to be re-visited. **Diane Hardy** will put together some draft language for the Planning Board to consider.

**6. Chairman's Report**

No report this meeting.

**7. Committee Reports**

No reports this meeting.

**8. Planner's Report**

No report this meeting.

**9. Adjourn**

1  
2 **Motion:**       **Jane Ford** made a motion to adjourn 8:45 PM  
3 **Second:**       **Tim Rossignol**  
4 **Discussion:**   None  
5 **Vote:**           **Unanimously Approved**  
6  
7 Respectfully submitted,  
8  
9 Sue Frick  
10 Recording Secretary



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## TOWN OF NEWMARKET, NEW HAMPSHIRE

### **ATTACHMENTS:**

| Description              | Upload Date | Type            |
|--------------------------|-------------|-----------------|
| Legal Notice             | 11/22/2021  | Cover Memo      |
| Cover Letter             | 11/22/2021  | Backup Material |
| Waiver Requests          | 11/22/2021  | Backup Material |
| Abutters List            | 11/22/2021  | Backup Material |
| Summary Drainsge Report  | 11/22/2021  | Backup Material |
| Drainsge Report          | 11/22/2021  | Backup Material |
| Stormwater Mgt Checklist | 11/22/2021  | Backup Material |
| Plans                    | 11/22/2021  | Backup Material |

FOUNDED DECEMBER 15, 1727

CHARTERED JANUARY 1, 1991



TOWN OF NEWMARKET, NEW HAMPSHIRE  
PLANNING OFFICE

**LEGAL NOTICE**

**NEWMARKET PLANNING BOARD**

**TUESDAY, DECEMBER 14, 2021  
7:00 P.M.**

**TOWN COUNCIL CHAMBERS**

There will be a public hearing for an application for Site Plan & Special Use Permit to permit the proposed construction of a 6,000 square foot building consisting of 1,000 sq. ft. of office space and 5,000 sq. ft. for an equipment/construction storage warehouse. Two existing lots will be combined and access will be from an existing paved driveway off Route 152 (Wadleigh Falls Road). The office/warehouse is expected to consist of three employees, proposed paved driveway extension and 8 paved parking spaces, a proposed septic system and leach field, well and water line, and approximately 78,000 sq. ft. of gravel parking for storage of truck trailers, containers and equipment, requested by Seacoast Pool Plastering LLC/Robert MacInnis. The applicant is requesting a Special Use Permit for a wetlands buffer disturbance for the proposed driveway extension for site access and minor grading near a small wetlands buffer area pursuant Section 32-155 (e) of the Zoning Ordinance and a portion of the proposed building and site and drainage improvements, including a bioretention area (rain garden) which fall within the Town's Aquifer Protection Overlay District under Section 32-153 of the Zoning Ordinance. The lots are located at 446 & 451 Wadleigh Falls Road, Tax Map R6, Lots 50-7 & 50-8, B3 Zone.



S5132-001  
November 18, 2021

Diane Hardy, Town Planner/Zoning Administrator  
Town of Newmarket, NH  
186 Main Street  
Newmarket, NH 03857

Re: **Proposed Office and Equipment Storage - Tax Map R6 Lots 50-7 & 50-8  
446 & 451 Wadleigh Falls Road, Newmarket, New Hampshire**

Dear Ms. Hardy:

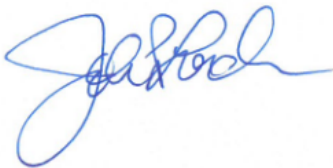
On behalf of our client, Rob MacInnis of Seacoast Pool Plastering, LLC, enclosed please find a submission for Major Site Review and a Special Use Permit for the above-referenced project. The following material are included in this submission:

- Abutters List (12 copies and 3 set of mailing labels);
- \$1063 Fee, payable to the Town of Newmarket;
- Plans "446 & 450 Wadleigh Falls Road, Newmarket, New Hampshire Proposed Office and Equipment Storage Permit Drawings", prepared by Tighe & Bond, dated November 12, 2021 (3 copies at 22"x34", 9 copies at 11"x17", and an electronic copy);
- Drainage Report (3 Full reports, 9 summary reports)
- PB Comprehensive Application Form & Owner's Authorization (12 copies);
- Stormwater Management Checklist (12 copies);
- Waiver Request letter (12 copies); and
- Special Use Permit Request (12 copies)

The project proposes to construct a 6,000 sf office/warehouse building with 8 paved parking spaces, utilities and stormwater practices. In addition, an area of approximately 78,000 sf of gravel space will be provided for equipment storage. The project proposes to combine lots 7 & 8 into one larger lot and utilize the existing entrance off Wadleigh Fall Road/Route 152 for access. A small portion of the 25' poorly drained buffer will be impacted for site access while avoiding impacts to the on-site wetlands. The disturbance to the 25' poorly drained buffer will require a Special Use Permit.

We look forward to reviewing this project with the Planning Board and respectfully request to be added to the December 14, 2021 Planning Board agenda.

Very truly yours,  
**TIGHE & BOND, INC.**



John Lorden, PE  
Project Manager

cc: Robert MacInnis - (emailed copy)



S-5132-001  
November 12, 2021

Diane Hardy, Town Planner/Zoning Administrator  
Town of Newmarket  
186 Main Street  
Newmarket, NH 03857

Re: **Proposed Office & Equipment Storage – Tax Map R6 Lots 7 & 8  
446 & 450 Wadleigh Falls Road, Newmarket, New Hampshire**

Dear Ms. Hardy and Members of the Planning Board:

On behalf of our client, Seacoast Pool Plastering, LLC, please allow this letter to be submitted as a request for waivers for the above-referenced project.

Based on our interpretation of the Town of Newmarket's Site Plan Regulations, we are requesting relief in the form of waivers from the following sections as part of the Site Plan Review submission:

Waiver Request #1

Requirement: Section 3.06 (A)(3)(a): In all districts except the M-1 and M-2 districts, either newly planted or existing trees shall be provided at the rate of one tree per 500 square feet of disturbed area.

Reason for Waiver: The existing street buffer is to remain as well as many existing trees on site are to remain throughout the site. Based on a disturbance of 191,427 sf, we are required to plant or maintain 383 trees. Counting the existing trees to remain would be a very large effort.

Waiver Request #2

Requirement: Section 4.08: A scale of 1" equals 20' shall be used in all cases.

Reason for Waiver: Matchlines would be necessary to achieve a scale of 1" equals 20' and can hinder the clarity of the proposed plans. Plans have been provided at a scale of 1" equals 40', which adequately represent the project area.

Waiver Request #3

Requirement: Section 4.10(C)(5): Proposed site plan showing pedestrian, bicycle and transit amenities.

Reason for Waiver: The overall use of the facility is expected to be for 3 office employees that will park on site in the dedicated spaces. The use of pedestrian sidewalks, dedicated bicycle lanes, and transit amenities are not expected to be necessary. Given the site is located outside of the downtown area these requirements would be in excess of the need for this particular development.



Waiver Request #4

Requirement: Section 4.10(D): Elevation view of the front of any building to be altered or constructed.

Reason for Waiver: The building size has been determined by the applicant and is expected to be a typical prefabricated metal building constructed on a concrete slab. The applicant requests that the review of the elevation be a condition of approval until the applicant determines the building to incorporate.

Waiver Request #5

Requirement: Section 3.02(A)1: Minimum number of parking spaces.

Reason for Waiver: Using the parking ratios for office and industrial for the proposed use, the total number of required parking spaces equals 14 spaces. For this commercial use the number of calculated required spaces is far beyond what will be expected for the proposed use of this space. The maximum expected use of the office is 3 employees and the proposed 8 spaces will more than adequately accommodate that expectation.

Waiver Request #6

Requirement: Section 4.10(C)7: Landscaping.

Reason for Waiver: The site is expected to be used by employees only and no customers are expected to visit the business location. A buffer is being maintained between the street and the building and parking areas in the form of existing trees and brush.

Waiver Request #7

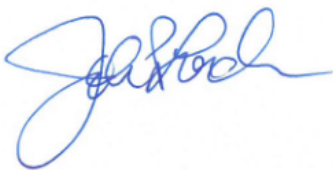
Requirement: Section 4.10(C)13: Outdoor lighting, including type, design, mounting height, shielding and other specifications as needed.

Reason for Waiver: Due to the nature of the business, absence of customers on site, and operating hours, lighting for the gravel area is not necessary.

We look forward to reviewing this project with the Planning Board on December 14, 2021.

Very truly yours,

**TIGHE & BOND, INC.**



John Lorden, PE  
Project Manager

cc: Robert MacInnis – via email

**ABUTTERS LIST**  
**Seacoast Pool Plastering, LLC**  
**446 & 450 Wadleigh Falls Road**  
**Newmarket, New Hampshire 03857**  
**November 15, 2021**

**R6-50-7/Locus/Applicant**  
Seacoast Pool Plastering, LLC  
90 Depot Road  
Greenland, NH 03840

**R6-50-8/Locus/Applicant**  
Same as R6-50-7

**R6-50**  
LGT Realty LLC  
51 Smith Garrison Road  
Newmarket, NH 03857

**R6-50-6**  
Aqua Tech Irrigation LLC  
199 Woodland Road  
Hampton, NH 03842

**R6-6**  
Paul R Lebeau  
443 Wadleigh Falls Road  
Newmarket, NH 03857

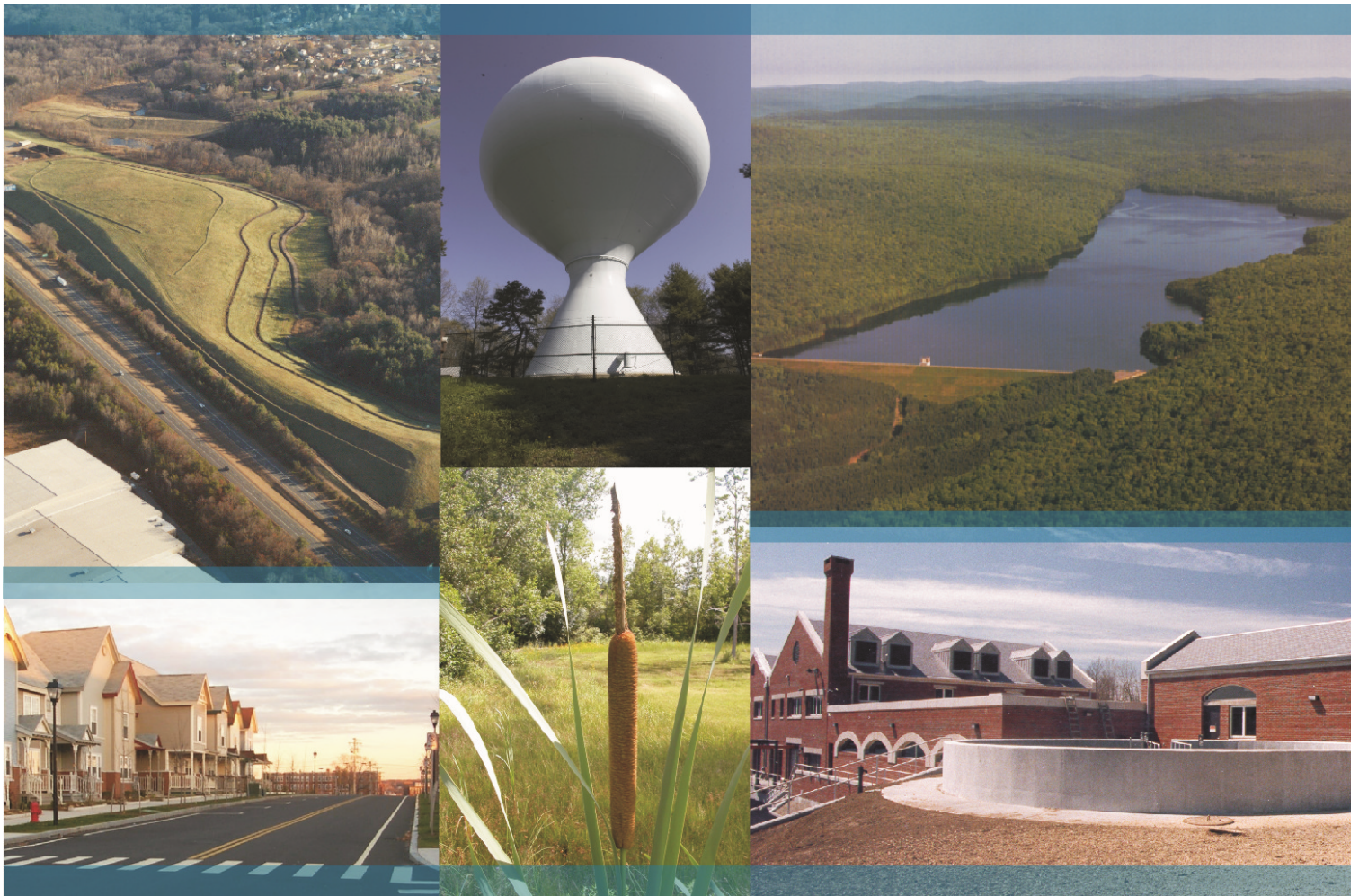
**R6-7**  
David L & Michelle L Silvia  
457 Wadleigh Falls Road  
Newmarket, NH 03857

**R6-8**  
Eudin & Aida L Aviles  
89 Mast Road  
Lee, NH 03861-6522

**R6-50B**  
Town of Newmarket  
186 Main Street  
Newmarket, NH 03857

**Applicant's Agent/Engineer/Wetland  
Scientist**  
Tighe & Bond  
177 Corporate Drive  
Portsmouth, New Hampshire 03801

**Applicant's Land Surveyor**  
Doucet Survey, LLC  
102 Kent Place  
Newmarket, NH 03857



**Tighe&Bond**

Proposed Office and Equipment  
Storage

## **Drainage Report**

Prepared For:

**Seacoast Pool Plastering  
90 Depot Road  
Greenland, NH 03824**

November 12, 2021



**Section 1 Narrative**

|     |                                               |     |
|-----|-----------------------------------------------|-----|
| 1.1 | On-Site Soil Description .....                | 1-1 |
| 1.2 | Pre- & Post-Development Flow Comparison ..... | 1-1 |
| 1.3 | Best Management Practices .....               | 1-2 |

**Section 2 BMP Worksheets****Section 3 Drainage Analysis**

|     |                                                                |     |
|-----|----------------------------------------------------------------|-----|
| 3.1 | Calculation Methods.....                                       | 3-1 |
| 3.2 | Pre-Development Conditions.....                                | 3-1 |
|     | 3.2.1 Pre-Development Watershed Plan .....                     | 3-2 |
|     | 3.2.2 Pre-Development Soil Plan .....                          | 3-2 |
|     | 3.2.3 Pre-Development Calculation .....                        | 3-2 |
| 3.3 | Post-Development Conditions .....                              | 3-3 |
|     | 3.3.1 Post-Development Watershed Plan .....                    | 3-3 |
|     | 3.3.2 Post-Development Soil Plan .....                         | 3-3 |
|     | 3.3.3 Post-Development Calculation.....                        | 3-3 |
| 3.4 | Peak Rate Comparisons.....                                     | 3-4 |
| 3.5 | Mitigation Description .....                                   | 3-4 |
|     | 3.5.1 Mitigation Calculations .....                            | 3-4 |
|     | 3.5.2 Pre-Treatment Methods for Protecting Water Quality ..... | 3-4 |
|     | 3.5.3 Treatment Methods for Protecting Water Quality .....     | 3-5 |

**Section 4 Rip Rap Apron Calculations****Section 5 Long-Term Operation & Maintenance Plan****Appendices**

|   |                              |
|---|------------------------------|
| A | Extreme Precipitation Tables |
|---|------------------------------|





# **Section 1**

## **Narrative**

The proposed project is located along Route 152 / Wadleigh Falls Road, in Newmarket, New Hampshire just prior to the turn for Ashswamp Road and is comprised of 2 lots. Lot 50-7 is 3.4 acres and lot 50-8 is 5.04 acres for a total project area of 8.44 acres. Currently, the lots are vacant mostly wooded lots and considered previously undeveloped except for a small portion of an existing access driveway on Lot 50-8. The driveway was constructed as part of a town approved private site development that was not fully executed. There are no building structures on either of the lots. The proposed project will consist of a 6,000-sf building, associated utilities, stormwater management, parking for a 1,000-sf office space within the proposed building, and a gravel area of approximately 78,000-sf for the storage of truck trailers, storage containers as well as construction equipment.

### **1.1 On-Site Soil Description**

The site consists of terrain that is generally slopping from the northwest corner of the lot to the southeast corner to a portion of a wetland system that consist of poorly, very poorly drained soils and a designated prime wetland along the eastern edge of the property. The existing property has an approximate high point of elevation 140 at the northwestern most corner.

A site-specific soils survey was conducted by Leonard Lord, PhD, CSS, CWS of Tighe & Bond, Inc on April 26, 2021 and can be found in Section 9 of this Report. Based on the soil survey, the runoff analyzed within these studies has been modeled using mostly Hydrologic Soil Group C soils and some portions of Hydrologic Soil Group B and a very small portion of D soils, as much of the site is comprised of Udorthents with two drainage classifications, moderately well drained soils, somewhat poorly drained and portions of poorly drained soils.

### **1.2 Pre- & Post-Development Flow Comparison**

For the purposes of this analysis, runoff generated by the site has been analyzed at three (3) distinct points of analysis (PA-1, PA-2 and PA-3). PA-1 was chosen to be able to compare the Pre and Post-development flows at a point along the eastern property line where the small on-site wetland (intermittent stream) combines to the larger wetland and prime wetland the southeastern portion of the wetland. PA-2 and PA-3 were chosen to analyze the Pre and Post-development flows along the Right of Way and what currently contributes to Wadleigh Falls Road and to determine if any additional runoff would be directed to these areas.

The peak discharge rates at these points of analysis were determined by analyzing Type III 24-hour storm events. The rainfall data for these storm events was obtained from the data published by the Northeast Regional Climate Center at Cornell University which can be found in Appendix A. Furthermore, the site is located within a Coastal and Great Bay Community, therefore an added factor of safety of 15% was included as required by Env-Wq 1503.08(l).

**Table 1.2****Comparison of Pre- and Post-Development Flows (CFS)**

|                                   | <b>1-Year<br/>Storm</b> | <b>2-Year<br/>Storm</b> | <b>10-Year<br/>Storm</b> | <b>25-Year<br/>Storm</b> | <b>50-Year<br/>Storm</b> |
|-----------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| <b>Pre-Development Watershed</b>  |                         |                         |                          |                          |                          |
| PA-1                              | 6.10                    | 9.40                    | 21.26                    | 31.55                    | 41.49                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |
| <b>Post-Development Watershed</b> |                         |                         |                          |                          |                          |
| PA-1                              | 3.25                    | 5.03                    | 13.05                    | 26.78                    | 37.10                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |

The Peak Runoff Control Requirements of Env-Wq 1507.06 are required to be met for the point of analysis. As shown in Table 1.2 the Post-development flows are decreased from the Pre-development flows for the point of analysis in PA-1 and are unchanged in PA-2 and PA-3.

The Channel Protection requirements of Env-Wq 1507.05 are met for point of analysis PA-1 and are as follows:

PA-1: The 2-year, 24-hour post-development peak flowrate (5.03 cfs) is less than or equal to the 1-year, 24-hour pre-development peak flowrate (6.10 cfs).

The Channel Protection requirements of Env-Wq 1507.05 are not being met for points of analysis PA-2 and PA-3. There is no change in land cover or change to the flow pattern as there is no work proposed in these areas.

### 1.3 Best Management Practices

All soil erosion and sediment control measures have been designed in accordance with the *NH Stormwater Manual, Volume 3: Erosion and Sediment Controls During Construction*. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and improve stormwater quality from the site. Best Management Practices for this project include:

- Temporary erosion and sediment control practices to be implemented during construction;
- Permanent stabilization practices to be implemented prior to the completion of construction; and
- Stormwater treatment practices including a sediment forebay and a rain garden/bio-retention basin.

## Section 3

# Drainage Analysis

### 3.1 Calculation Methods

The design storms analyzed in this study are the 2-year, 10-year, 25-year and 50-year 24-hour duration storm events. The stormwater modeling system, HydroCAD 10.0 was utilized to predict the peak runoff rates from these storm events. A Type III storm pattern was used in the model.

The time of concentration was computed using the TR-55 Method, which provides a means of determining the time for an entire watershed to contribute runoff to a specific location via sheet flows, shallow concentrated flow and channel flow. Runoff curve numbers were calculated by estimating the coverage areas and then summing the curve number for the coverage area as a percent of the entire watershed.

#### References:

1. HydroCAD Stormwater Modeling System, by HydroCAD Software Solutions LLC, Chocorua, New Hampshire.
2. New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices Selection and Design, December 2008.
3. "Extreme Precipitation in New York & New England." Extreme Precipitation in New York & New England by Northeast Regional Climate Center (NRCC), 26 June 2012.

### 3.2 Pre-Development Conditions

To analyze the pre-development condition, the site has been modeled utilizing three (3) distinct points of analysis (PA-1, PA-2 and PA-3). These points of analysis and watersheds are depicted on the plan entitled "Pre-Development Watershed Plan", Sheet C-801.

The points of analysis and their contributing watershed areas are described below:

#### **Point of Analysis One (PA-1)**

Point of analysis 1 is comprised of one subcatchment area (PRE-1.0). This area includes mostly wooded areas of the lot. Runoff from this area travels from the northwest corner of the lot over land to the southeast corner to small on-site wetlands which flows into a larger system of wetlands and to Point of Analysis 1.

#### **Point of Analysis One (PA-2)**

Point of analysis 2 is comprised of one subcatchment area (PRE-2.0). This area is comprised of the area adjacent to the roadway and including the on-site wetlands along the roadway. Two 12" RCPs are present and connect the roadside ditch and existing wetland areas. Runoff from this area travels to Point of Analysis 2.

#### **Point of Analysis One (PA-3)**

Point of analysis 3 is comprised of one subcatchment area (PRE-3.0). This area includes existing pavement at the entrance. Runoff from this area flows towards Wadleigh Falls Road and to Point of Analysis 3.

### 3.3 Post-Development Conditions

The post-development drainage conditions are characterized by three (3) watershed areas modeled at the same points of analysis as the pre-development condition. This point of analysis and subcatchments are depicted on the plan entitled "Post Development Watershed Plan", Sheets C-802.

The points of analysis and their contributing watershed areas are described below:

#### **Point of Analysis One (PA-1)**

Post-development subcatchment 1.0 (POST-1.0) is comprised of the area adjacent to the gravel area, a portion of proposed driveway and existing wetland areas and wooded areas. This area directs runoff towards the wetlands in the same general manner as in the Pre-Conditions.

Post-development subcatchment 1.1 (POST-1.1) is comprised of the largest area on site. Runoff from this area travels overland from the southwest corner of the property and flows over the proposed gravel surface and transitions from gravel to pavement and terminates at the on-site treatment practices.

#### **Point of Analysis Two (PA-2)**

Post-development subcatchment 2.0 (POST 2.0) is the same as Pre 2.0, this area is comprised of the area adjacent to the roadway and including the on-site wetlands along the roadway. Two 12" RCPs are present and connect the roadside ditch and existing wetland areas. Runoff from this area travels to Point of Analysis 2.

#### **Point of Analysis Three (PA-3)**

Post-development subcatchment 3.0 (POST 3.0) is the same as Pre 3.0, this area includes existing pavement at the entrance. Runoff from this area flows towards Wadleigh Falls Road and to Point of Analysis 3.

#### **3.3.1 Post-Development Watershed Plan**

#### **3.3.2 Post-Development Soil Plan**

#### **3.3.3 Post-Development Calculation**

### 3.4 Peak Rate Comparisons

The following table summarizes and compares the pre- and post-development peak runoff rates from the 2-year, 10-year, 25-year and 50-year storm events at each point of analysis.

**Table 3.4**

**Comparison of Pre- and Post-Development Flows (CFS)**

|                                   | <b>1-Year<br/>Storm</b> | <b>2-Year<br/>Storm</b> | <b>10-Year<br/>Storm</b> | <b>25-Year<br/>Storm</b> | <b>50-Year<br/>Storm</b> |
|-----------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| <b>Pre-Development Watershed</b>  |                         |                         |                          |                          |                          |
| PA-1                              | 6.10                    | 9.40                    | 21.26                    | 31.55                    | 41.49                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |
| <b>Post-Development Watershed</b> |                         |                         |                          |                          |                          |
| PA-1                              | 3.25                    | 5.03                    | 13.05                    | 26.78                    | 37.10                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |

The Peak Runoff Control Requirements of Env-Wq 1507.06 are required to be met for the point of analysis. As shown in Table 3.4 the Post-development flows are decreased from the Pre-development flows for the point of analysis in PA-1 and are unchanged in PA-2 and PA-3.

The Channel Protection requirements of Env-Wq 1507.05 are met for point of analysis PA-1 and are as follows:

PA-1: The 2-year, 24-hour post-development peak flowrate (5.03 cfs) is less than or equal to the 1-year, 24-hour pre-development peak flowrate (6.10 cfs).

The Channel Protection requirements of Env-Wq 1507.05 are not being met for points of analysis PA-2 and PA-3. There is no change in land cover or change to the flow pattern as there is no work proposed in these areas.

### 3.5 Mitigation Description

#### 3.5.1 Mitigation Calculations

The proposed project area has been evaluated to treat the required water quality flow (WQF) per the requirements of Env-Wq 1500. These calculations have been provided in Section 6 of this report (BMP Worksheets).

#### 3.5.2 Pre-Treatment Methods for Protecting Water Quality

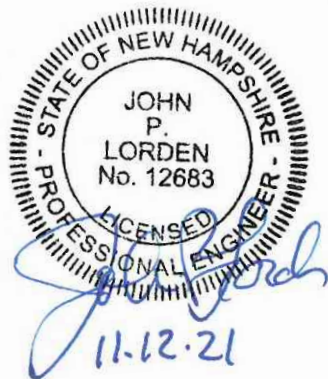
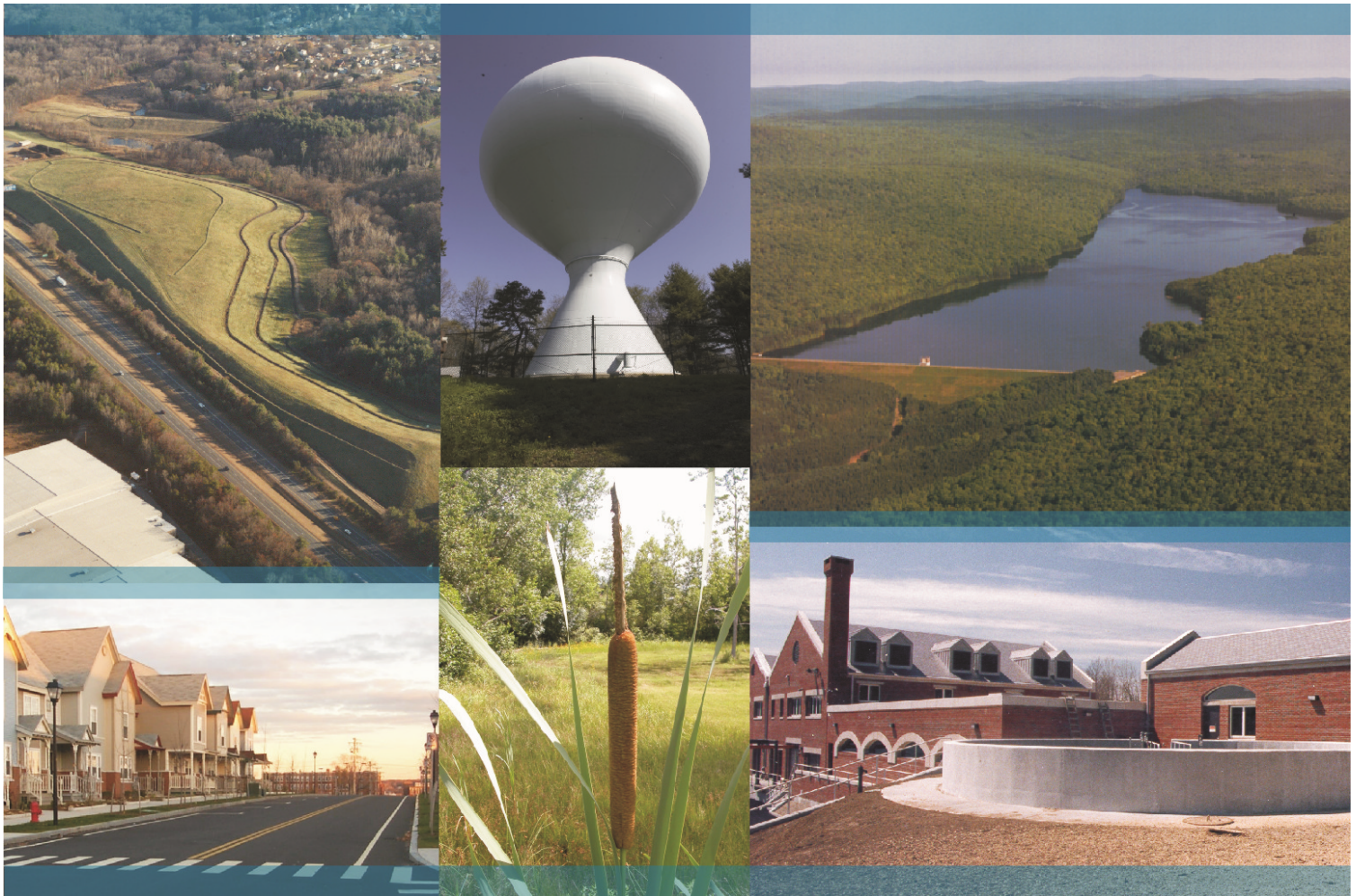
Pretreatment methods for protecting water quality on this site include a sediment forebay.

### **3.5.3 Treatment Methods for Protecting Water Quality**

Treatment for the site is included by means of a Rain Garden. The Rain Garden has been sized to contain the 50-year storm without overtopping, as well as treat a volume of runoff greater than the WQV. Due to poor infiltration rates of the surrounding soils, the bottom of the rain garden is proposed to be lined and outfitted with underdrains to convey treated runoff to the system's outlet structure.

The BMP Worksheets for this treatment practice have been included in Section 6 of this report.

The pollutant removal efficiencies for a Rain Garden for Total Suspended Solids, Total Nitrogen and Total Phosphorus are 90%, 65% and 65% respectively. Pollutant Removal efficiencies are taken from NH Stormwater Manual Volume 2, Appendix B.



**Tighe&Bond**

Proposed Office and Equipment  
Storage

## Drainage Report

Prepared For:

**Seacoast Pool Plastering  
90 Depot Road  
Greenland, NH 03824**

November 12, 2021





**Section 1 Narrative**

|     |                                               |     |
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| 1.2 | Pre- & Post-Development Flow Comparison ..... | 1-1 |
| 1.3 | Best Management Practices .....               | 1-2 |

**Section 2 BMP Worksheets****Section 3 Drainage Analysis**

|       |                                                          |     |
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| 3.2   | Pre-Development Conditions.....                          | 3-1 |
| 3.2.1 | Pre-Development Watershed Plan .....                     | 3-2 |
| 3.2.2 | Pre-Development Soil Plan .....                          | 3-2 |
| 3.2.3 | Pre-Development Calculation .....                        | 3-2 |
| 3.3   | Post-Development Conditions .....                        | 3-3 |
| 3.3.1 | Post-Development Watershed Plan .....                    | 3-3 |
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| 3.5.2 | Pre-Treatment Methods for Protecting Water Quality ..... | 3-4 |
| 3.5.3 | Treatment Methods for Protecting Water Quality .....     | 3-5 |

**Section 4 Rip Rap Apron Calculations****Section 5 Long-Term Operation & Maintenance Plan****Appendices**

|   |                              |  |
|---|------------------------------|--|
| A | Extreme Precipitation Tables |  |
|---|------------------------------|--|



# **Section 1**

## **Narrative**

The proposed project is located along Route 152 / Wadleigh Falls Road, in Newmarket, New Hampshire just prior to the turn for Ashswamp Road and is comprised of 2 lots. Lot 50-7 is 3.4 acres and lot 50-8 is 5.04 acres for a total project area of 8.44 acres. Currently, the lots are vacant mostly wooded lots and considered previously undeveloped except for a small portion of an existing access driveway on Lot 50-8. The driveway was constructed as part of a town approved private site development that was not fully executed. There are no building structures on either of the lots. The proposed project will consist of a 6,000-sf building, associated utilities, stormwater management, parking for a 1,000-sf office space within the proposed building, and a gravel area of approximately 78,000-sf for the storage of truck trailers, storage containers as well as construction equipment.

### **1.1 On-Site Soil Description**

The site consists of terrain that is generally slopping from the northwest corner of the lot to the southeast corner to a portion of a wetland system that consist of poorly, very poorly drained soils and a designated prime wetland along the eastern edge of the property. The existing property has an approximate high point of elevation 140 at the northwestern most corner.

A site-specific soils survey was conducted by Leonard Lord, PhD, CSS, CWS of Tighe & Bond, Inc on April 26, 2021 and can be found in Section 9 of this Report. Based on the soil survey, the runoff analyzed within these studies has been modeled using mostly Hydrologic Soil Group C soils and some portions of Hydrologic Soil Group B and a very small portion of D soils, as much of the site is comprised of Udorthents with two drainage classifications, moderately well drained soils, somewhat poorly drained and portions of poorly drained soils.

### **1.2 Pre- & Post-Development Flow Comparison**

For the purposes of this analysis, runoff generated by the site has been analyzed at three (3) distinct points of analysis (PA-1, PA-2 and PA-3). PA-1 was chosen to be able to compare the Pre and Post-development flows at a point along the eastern property line where the small on-site wetland (intermittent stream) combines to the larger wetland and prime wetland the southeastern portion of the wetland. PA-2 and PA-3 were chosen to analyze the Pre and Post-development flows along the Right of Way and what currently contributes to Wadleigh Falls Road and to determine if any additional runoff would be directed to these areas.

The peak discharge rates at these points of analysis were determined by analyzing Type III 24-hour storm events. The rainfall data for these storm events was obtained from the data published by the Northeast Regional Climate Center at Cornell University which can be found in Appendix A. Furthermore, the site is located within a Coastal and Great Bay Community, therefore an added factor of safety of 15% was included as required by Env-Wq 1503.08(l).

**Table 1.2****Comparison of Pre- and Post-Development Flows (CFS)**

|                                   | <b>1-Year<br/>Storm</b> | <b>2-Year<br/>Storm</b> | <b>10-Year<br/>Storm</b> | <b>25-Year<br/>Storm</b> | <b>50-Year<br/>Storm</b> |
|-----------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| <b>Pre-Development Watershed</b>  |                         |                         |                          |                          |                          |
| PA-1                              | 6.10                    | 9.40                    | 21.26                    | 31.55                    | 41.49                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |
| <b>Post-Development Watershed</b> |                         |                         |                          |                          |                          |
| PA-1                              | 3.25                    | 5.03                    | 13.05                    | 26.78                    | 37.10                    |
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The Peak Runoff Control Requirements of Env-Wq 1507.06 are required to be met for the point of analysis. As shown in Table 1.2 the Post-development flows are decreased from the Pre-development flows for the point of analysis in PA-1 and are unchanged in PA-2 and PA-3.

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The Channel Protection requirements of Env-Wq 1507.05 are not being met for points of analysis PA-2 and PA-3. There is no change in land cover or change to the flow pattern as there is no work proposed in these areas.

### 1.3 Best Management Practices

All soil erosion and sediment control measures have been designed in accordance with the *NH Stormwater Manual, Volume 3: Erosion and Sediment Controls During Construction*. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and improve stormwater quality from the site. Best Management Practices for this project include:

- Temporary erosion and sediment control practices to be implemented during construction;
- Permanent stabilization practices to be implemented prior to the completion of construction; and
- Stormwater treatment practices including a sediment forebay and a rain garden/bio-retention basin.

## **Section 2**

### **BMP Worksheets**

The calculations for water quality volume (WQV) are provided on the following Best Management Practice (BMP) worksheets. These calculations comply with the requirements of the NHDES Alteration of Terrain Bureau and have been developed for the proposed stormwater management system (i.e. rain gardens).



## FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name:

**Rain Garden**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

|                                                                         |          |                                                                                                      |                           |
|-------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------|---------------------------|
|                                                                         |          | Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).             |                           |
| 3.86                                                                    | ac       | A = Area draining to the practice                                                                    |                           |
| 2.03                                                                    | ac       | A <sub>I</sub> = Impervious area draining to the practice                                            |                           |
| 0.53                                                                    | decimal  | I = Percent impervious area draining to the practice, in decimal form                                |                           |
| 0.52                                                                    | unitless | R <sub>v</sub> = Runoff coefficient = 0.05 + (0.9 x I)                                               |                           |
| 2.02                                                                    | ac-in    | WQV = 1" x R <sub>v</sub> x A                                                                        |                           |
| 7,333                                                                   | cf       | WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")                                                      |                           |
| 1,833                                                                   | cf       | 25% x WQV (check calc for sediment forebay volume)                                                   |                           |
| 5,499                                                                   | cf       | 75% x WQV (check calc for surface sand filter volume)                                                |                           |
| Sed Forebay                                                             |          | Method of Pretreatment? (not required for clean or roof runoff)                                      |                           |
| 2,864                                                                   | cf       | V <sub>SED</sub> = Sediment forebay volume, if used for pretreatment                                 | ≥ 25%WQV                  |
| Calculate time to drain if system IS NOT underdrained:                  |          |                                                                                                      |                           |
|                                                                         | sf       | A <sub>SA</sub> = Surface area of the practice                                                       |                           |
|                                                                         | iph      | K <sub>sat</sub> <sub>DESIGN</sub> = Design infiltration rate <sup>1</sup>                           |                           |
|                                                                         |          | If K <sub>sat</sub> (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?      |                           |
| Yes                                                                     | Yes/No   | (Use the calculations below)                                                                         |                           |
| -                                                                       | hours    | T <sub>DRAIN</sub> = Drain time = V / (A <sub>SA</sub> * I <sub>DESIGN</sub> )                       | ≤ 72-hrs                  |
| Calculate time to drain if system IS underdrained:                      |          |                                                                                                      |                           |
| 98.12                                                                   | ft       | E <sub>WQV</sub> = Elevation of WQV (attach stage-storage table)                                     |                           |
| 0.91                                                                    | cfs      | Q <sub>WQV</sub> = Discharge at the E <sub>WQV</sub> (attach stage-discharge table)                  |                           |
| 4.48                                                                    | hours    | T <sub>DRAIN</sub> = Drain time = 2WQV/Q <sub>WQV</sub>                                              | ≤ 72-hrs                  |
| 95.00                                                                   | feet     | E <sub>FC</sub> = Elevation of the bottom of the filter course material <sup>2</sup>                 |                           |
| 93.92                                                                   | feet     | E <sub>UD</sub> = Invert elevation of the underdrain (UD), if applicable                             |                           |
| 91.75                                                                   | feet     | E <sub>SHWT</sub> = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)    |                           |
| 91.75                                                                   | feet     | E <sub>ROCK</sub> = Elevation of bedrock (if none found, enter the lowest elevation of the test pit) |                           |
| 1.08                                                                    | feet     | D <sub>FC to UD</sub> = Depth to UD from the bottom of the filter course                             | ≥ 1'                      |
| 3.25                                                                    | feet     | D <sub>FC to ROCK</sub> = Depth to bedrock from the bottom of the filter course                      | ≥ 1'                      |
| 3.25                                                                    | feet     | D <sub>FC to SHWT</sub> = Depth to SHWT from the bottom of the filter course                         | ≥ 1'                      |
| 101.23                                                                  | ft       | Peak elevation of the 50-year storm event (infiltration can be used in analysis)                     |                           |
| 102.25                                                                  | ft       | Elevation of the top of the practice                                                                 |                           |
| YES                                                                     |          | 50 peak elevation ≤ Elevation of the top of the practice                                             | ← yes                     |
| <b>If a surface sand filter or underground sand filter is proposed:</b> |          |                                                                                                      |                           |
| YES                                                                     | ac       | Drainage Area check.                                                                                 | < 10 ac                   |
| -                                                                       | cf       | V = Volume of storage <sup>3</sup> (attach a stage-storage table)                                    | ≥ 75%WQV                  |
| -                                                                       | inches   | D <sub>FC</sub> = Filter course thickness                                                            | 18", or 24" if within GPA |
| Sheet                                                                   |          | Note what sheet in the plan set contains the filter course specification.                            |                           |
| -                                                                       | Yes/No   | Access grate provided?                                                                               | ← yes                     |

|                                        |        |                                                                                                                        |                           |
|----------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------|---------------------------|
| YES                                    | ac     | Drainage Area no larger than 5 ac?                                                                                     | ← yes                     |
| 8,584                                  | cf     | V = Volume of storage <sup>3</sup> (attach a stage-storage table)                                                      | ≥ WQV                     |
| 24.0                                   | inches | D <sub>FC</sub> = Filter course thickness                                                                              | 18", or 24" if within GPA |
| Sheet                                  | C-503  | Note what sheet in the plan set contains the filter course specification                                               |                           |
| 3.0                                    | :1     | Pond side slopes                                                                                                       | ≥ 3:1                     |
| Sheet                                  | C-503  | Note what sheet in the plan set contains the planting plans and surface cover                                          |                           |
| <b>If porous pavement is proposed:</b> |        |                                                                                                                        |                           |
|                                        | acres  | Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)<br>A <sub>SA</sub> = Surface area of the pervious pavement |                           |
|                                        | :1     | Ratio of the contributing area to the pervious surface area                                                            | ≤ 5:1                     |
|                                        | inches | D <sub>FC</sub> = Filter course thickness                                                                              | 12", or 18" if within GPA |
| Sheet                                  |        | Note what sheet in the plan set contains the filter course spec.                                                       | mod. 304.1 (see spec)     |

1. Rate of the limiting layer (either the filter course or the underlying soil).  $K_{sat\_design}$  includes factor of safety. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet structure, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

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## Section 3

# Drainage Analysis

### 3.1 Calculation Methods

The design storms analyzed in this study are the 2-year, 10-year, 25-year and 50-year 24-hour duration storm events. The stormwater modeling system, HydroCAD 10.0 was utilized to predict the peak runoff rates from these storm events. A Type III storm pattern was used in the model.

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3. "Extreme Precipitation in New York & New England." Extreme Precipitation in New York & New England by Northeast Regional Climate Center (NRCC), 26 June 2012.

### 3.2 Pre-Development Conditions

To analyze the pre-development condition, the site has been modeled utilizing three (3) distinct points of analysis (PA-1, PA-2 and PA-3). These points of analysis and watersheds are depicted on the plan entitled "Pre-Development Watershed Plan", Sheet C-801.

The points of analysis and their contributing watershed areas are described below:

#### **Point of Analysis One (PA-1)**

Point of analysis 1 is comprised of one subcatchment area (PRE-1.0). This area includes mostly wooded areas of the lot. Runoff from this area travels from the northwest corner of the lot over land to the southeast corner to small on-site wetlands which flows into a larger system of wetlands and to Point of Analysis 1.

#### **Point of Analysis One (PA-2)**

Point of analysis 2 is comprised of one subcatchment area (PRE-2.0). This area is comprised of the area adjacent to the roadway and including the on-site wetlands along the roadway. Two 12" RCPs are present and connect the roadside ditch and existing wetland areas. Runoff from this area travels to Point of Analysis 2.

#### **Point of Analysis One (PA-3)**

Point of analysis 3 is comprised of one subcatchment area (PRE-3.0). This area includes existing pavement at the entrance. Runoff from this area flows towards Wadleigh Falls Road and to Point of Analysis 3.

**3.2.1 Pre-Development Watershed Plan**

**3.2.2 Pre-Development Soil Plan**

**3.2.3 Pre-Development Calculation**

LEGEND

4

SOIL NUMBER PER LEGEND

SITE SPECIFIC SOIL BOUNDARY

PRE-DEVELOPMENT WATERSHED BOUNDARY

→→→→→

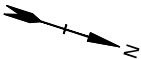
LONGEST FLOW PATH

PRE 1.0

PRE DEVELOPMENT WATERSHED AREA DESIGNATION

PA-1

POINT OF ANALYSIS



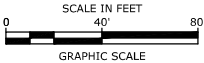
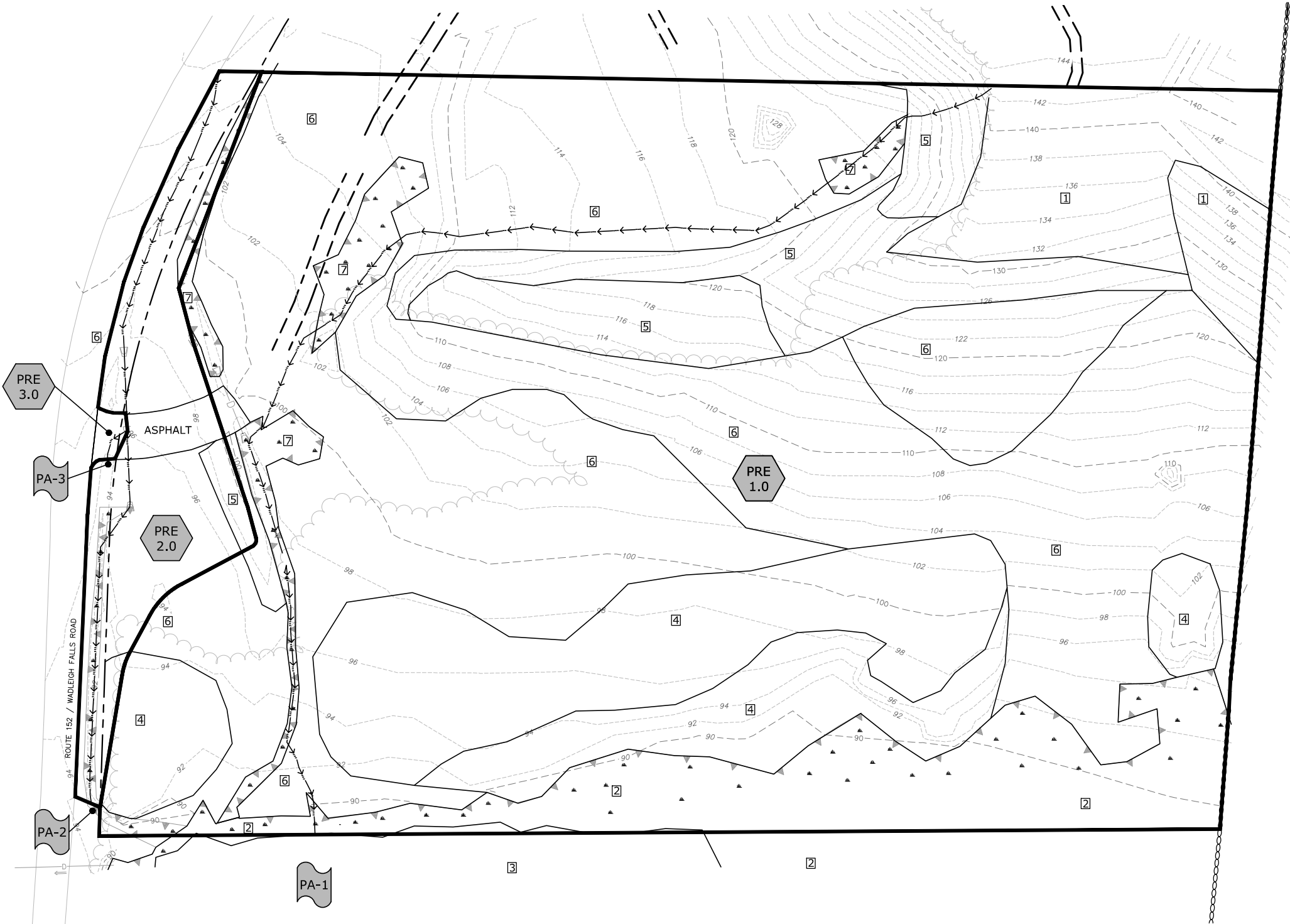
SITE SPECIFIC SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

| (SOIL #) MAP NUMBER*/DISTURBED SOIL NUMERATOR** | SOIL TYPE             | HSG |
|-------------------------------------------------|-----------------------|-----|
| (1) 29                                          | WOODBIDGE             | C   |
| (2) 33                                          | SCITICO               | C   |
| (3) 134                                         | MAYBID                | D   |
| (4) 299*/DFABB                                  | UDORTHERNTS, SMOOTHED | B   |
| (5) 500*/DCCCC                                  | UDORTHERNTS, LOAMY    | C   |
| (6) 500*/EFCCE                                  | UDORTHERNTS, LOAMY    | C   |
| (7) 600*/FFCCC                                  | ENDOAQUENTS, LOAMY    | C   |

\* INDICATES THE LOCATION OF THE SLOPE CLASS IDENTIFIER (A-F)  
\*\* SUPPLEMENTAL SYMBOLS ARE USED TO FURTHER CHARACTERIZE DISTURBED SOILS FOR ALTERATION OF TERRAIN PERMITS

NOTES:

- HYDROLOGIC SOIL GROUPS FOR DISTURBED SOILS WERE BASED ON MOST SIMILAR SOIL SERIES LISTED IN *KSAT VALUES FOR NH SOILS*, SSSNNE SPECIAL PUBLICATION NO. 5, 2009.
- FIELDWORK FOR THIS MAP WAS CONDUCTED BY LEONARD A. LORD, PHD, NHCSS #19 ON APRIL 26, 2021.
- THIS DETAILED SITE SPECIFIC SOIL MAP CONFORMS TO THE STANDARDS OF SSSNNE PUBLICATION NO. 3, AS AMENDED, *SITE SPECIFIC SOIL MAPPING STANDARDS FOR NH AND VT*.
- THIS MAP HAS BEEN PREPARED TO COMPLY WITH SOIL MAPPING REQUIREMENTS OF RSA 485 A:17 AND NHDES ENV-WQ, ALTERATION OF TERRAIN.
- SEE ACCOMPANYING NARRATIVE REPORT FOR METHODOLOGY, MAP SYMBOL LEGEND, AND INTERPRETATIONS.



PERMIT DRAWINGS

Proposed Office and Equipment Storage

Seacoast Pool Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 10/22/2021       |             |
| FILE:        | S5132_C-HYDR.dwg |             |
| DRAWN BY:    | JRW/BJL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

PRE-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-801





LEGEND

|             |                         |
|-------------|-------------------------|
| <div></div> | HYDROLOGIC SOIL GROUP A |
| <div></div> | HYDROLOGIC SOIL GROUP B |
| <div></div> | HYDROLOGIC SOIL GROUP C |
| <div></div> | HYDROLOGIC SOIL GROUP D |
| <div></div> | IMPERVIOUS AREA         |

SITE SPECIFIC SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

| (SOIL #) MAP NUMBER*/<br>DISTURBED SOIL NUMERATOR** | SOIL TYPE             | HSG |
|-----------------------------------------------------|-----------------------|-----|
| (1) 29                                              | WOODBIDGE             | C   |
| (2) 33                                              | SCITICO               | C   |
| (3) 134                                             | MAYBID                | B   |
| (4) 299*/DFABB                                      | UDORTHERNTS, SMOOTHED | B   |
| (5) 500*/DCCCC                                      | UDORTHERNTS, LOAMY    | C   |
| (6) 500*/EFCCC                                      | UDORTHERNTS, LOAMY    | C   |
| (7) 600*/FFCCC                                      | ENDOAQUENTS, LOAMY    | C   |

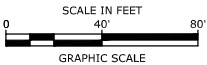
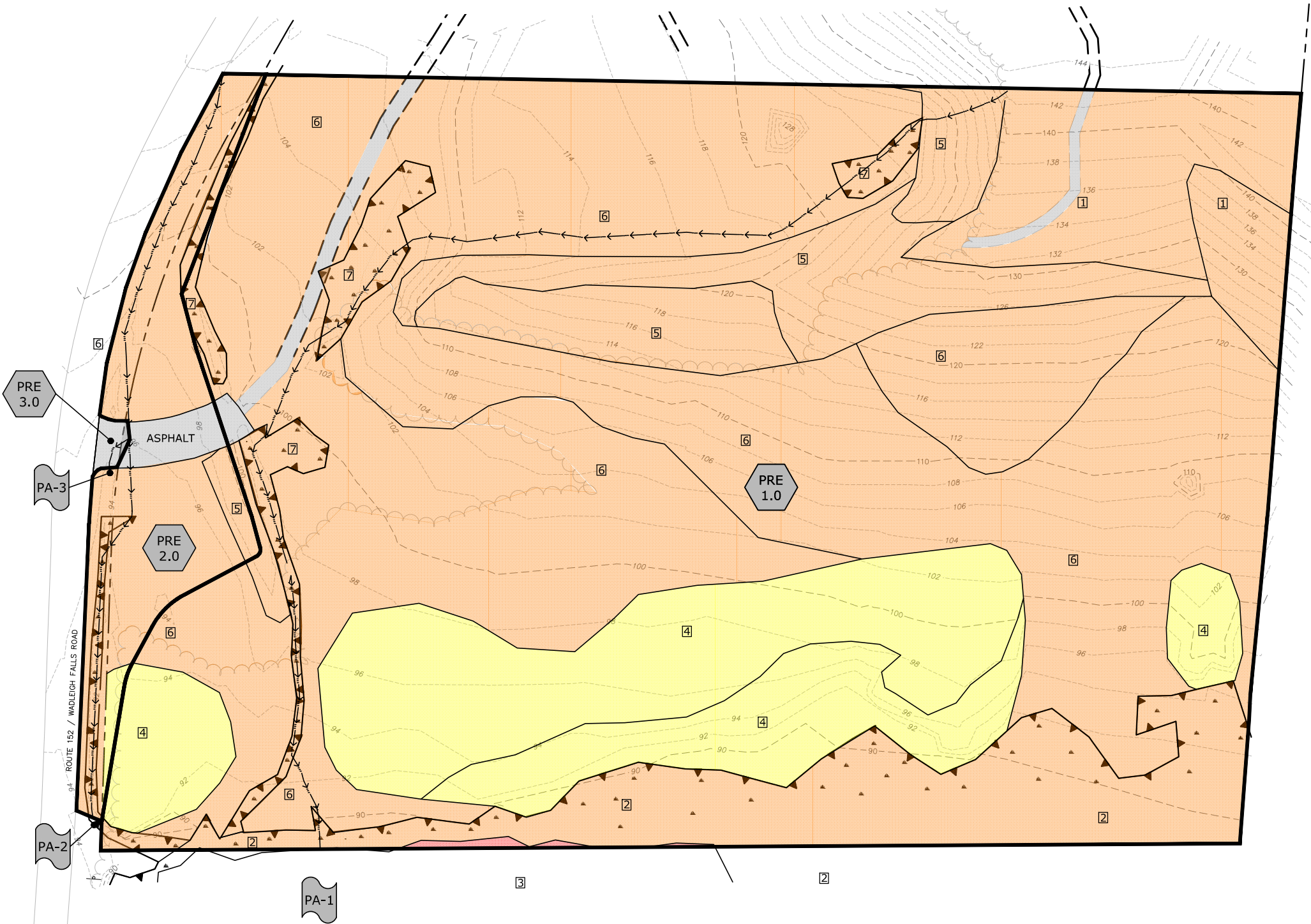
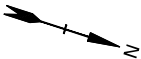
\* INDICATES THE LOCATION OF THE SLOPE CLASS IDENTIFIER (A-F)  
\*\* SUPPLEMENTAL SYMBOLS ARE USED TO FURTHER CHARACTERIZE DISTURBED SOILS FOR ALTERATION OF TERRAIN PERMITS

NOTES:

1. HYDROLOGIC SOIL GROUPS FOR DISTURBED SOILS WERE BASED ON MOST SIMILAR SOIL SERIES LISTED IN *KSAT VALUES FOR NH SOILS*, SSSNNE SPECIAL PUBLICATION NO. 5, 2009.
2. FIELDWORK FOR THIS MAP WAS CONDUCTED BY LEONARD A. LORD, PHD, NHCSS #19 ON APRIL 26, 2021.
3. THIS DETAILED SITE SPECIFIC SOIL MAP CONFORMS TO THE STANDARDS OF SSSNNE PUBLICATION NO. 3, AS AMENDED, *SITE SPECIFIC SOIL MAPPING STANDARDS FOR NH AND VT*.
4. THIS MAP HAS BEEN PREPARED TO COMPLY WITH SOIL MAPPING REQUIREMENTS OF RSA 485 A:17 AND NHDES ENV-WQ, ALTERATION OF TERRAIN.
5. SEE ACCOMPANYING NARRATIVE REPORT FOR METHODOLOGY, MAP SYMBOL LEGEND, AND INTERPRETATIONS.

LEGEND

|                    |                                            |
|--------------------|--------------------------------------------|
| <div></div>        | SOIL NUMBER PER LEGEND                     |
| <div></div>        | SITE SPECIFIC SOIL BOUNDARY                |
| <div></div>        | PRE-DEVELOPMENT WATERSHED BOUNDARY         |
| <div></div>        | LONGEST FLOW PATH                          |
| <div>PRE 1.0</div> | PRE DEVELOPMENT WATERSHED AREA DESIGNATION |
| <div>PA-1</div>    | POINT OF ANALYSIS                          |



PERMIT DRAWINGS

Proposed Office and Equipment Storage

Seacoast Pool Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

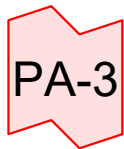
| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 10/22/2021       |             |
| FILE:        | S5132_C-HYDR.dwg |             |
| DRAWN BY:    | JRW/BJL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

PRE-DEVELOPMENT COLOR SOILS PLAN

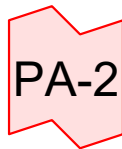
SCALE: AS SHOWN

C-803

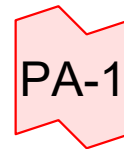




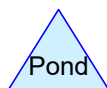
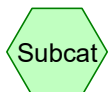
to Wadleigh Fall Rd



to Wetlands



to Wetlands



**Routing Diagram for S5132-001\_PRE**

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**S5132-001\_PRE**

Prepared by Tighe &amp; Bond

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Page 2

**Area Listing (selected nodes)**

| Area<br>(sq-ft) | CN        | Description<br>(subcatchment-numbers)              |
|-----------------|-----------|----------------------------------------------------|
| 632             | 69        | 50-75% Grass cover, Fair, HSG B (PRE 2.0)          |
| 123,579         | 79        | 50-75% Grass cover, Fair, HSG C (PRE 1.0, PRE 2.0) |
| 3,487           | 96        | Gravel surface, HSG C (PRE 1.0)                    |
| 3,001           | 98        | Paved parking, HSG C (PRE 1.0, PRE 2.0, PRE 3.0)   |
| 180,223         | 73        | Woods, Fair, HSG C (PRE 1.0, PRE 2.0)              |
| 617             | 79        | Woods, Fair, HSG D (PRE 1.0)                       |
| 64,381          | 55        | Woods, Good, HSG B (PRE 1.0)                       |
| <b>375,920</b>  | <b>72</b> | <b>TOTAL AREA</b>                                  |



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Page 3

**Soil Listing (selected nodes)**

| Area<br>(sq-ft) | Soil<br>Group | Subcatchment<br>Numbers   |
|-----------------|---------------|---------------------------|
| 0               | HSG A         |                           |
| 65,013          | HSG B         | PRE 1.0, PRE 2.0          |
| 310,290         | HSG C         | PRE 1.0, PRE 2.0, PRE 3.0 |
| 617             | HSG D         | PRE 1.0                   |
| 0               | Other         |                           |
| <b>375,920</b>  |               | <b>TOTAL AREA</b>         |

**S5132-001\_PRE**

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*Type III 24-hr 2 Year Rainfall=3.60"*

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentPRE 1.0:**

Runoff Area=350,736 sf 0.13% Impervious Runoff Depth>1.18"  
Flow Length=866' Tc=9.1 min CN=72 Runoff=9.40 cfs 34,619 cf

**SubcatchmentPRE 2.0:**

Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>1.71"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=0.99 cfs 3,508 cf

**SubcatchmentPRE 3.0:**

Runoff Area=612 sf 100.00% Impervious Runoff Depth>3.37"  
Flow Length=26' Slope=0.0780 ' / ' Tc=0.2 min CN=98 Runoff=0.06 cfs 172 cf

**Link PA-1: to Wetlands**

Inflow=9.40 cfs 34,619 cf  
Primary=9.40 cfs 34,619 cf

**Link PA-2: to Wetlands**

Inflow=0.99 cfs 3,508 cf  
Primary=0.99 cfs 3,508 cf

**Link PA-3: to Wadleigh Fall Rd**

Inflow=0.06 cfs 172 cf  
Primary=0.06 cfs 172 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 38,299 cf Average Runoff Depth = 1.22"**  
**99.20% Pervious = 372,919 sf 0.80% Impervious = 3,001 sf**

**S5132-001\_PRE**

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Type III 24-hr 10 Year Rainfall=5.47"

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Page 5

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentPRE 1.0:**

Runoff Area=350,736 sf 0.13% Impervious Runoff Depth>2.56"  
Flow Length=866' Tc=9.1 min CN=72 Runoff=21.26 cfs 74,865 cf

**SubcatchmentPRE 2.0:**

Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>3.30"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=1.91 cfs 6,761 cf

**SubcatchmentPRE 3.0:**

Runoff Area=612 sf 100.00% Impervious Runoff Depth>5.23"  
Flow Length=26' Slope=0.0780 '/' Tc=0.2 min CN=98 Runoff=0.09 cfs 267 cf

**Link PA-1: to Wetlands**

Inflow=21.26 cfs 74,865 cf  
Primary=21.26 cfs 74,865 cf

**Link PA-2: to Wetlands**

Inflow=1.91 cfs 6,761 cf  
Primary=1.91 cfs 6,761 cf

**Link PA-3: to Wadleigh Fall Rd**

Inflow=0.09 cfs 267 cf  
Primary=0.09 cfs 267 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 81,893 cf Average Runoff Depth = 2.61"**  
**99.20% Pervious = 372,919 sf 0.80% Impervious = 3,001 sf**

**Summary for Subcatchment PRE 1.0:**

Runoff = 21.26 cfs @ 12.14 hrs, Volume= 74,865 cf, Depth> 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

| Area (sf) | CN | Description                     |
|-----------|----|---------------------------------|
| 64,381    | 55 | Woods, Good, HSG B              |
| 179,969   | 73 | Woods, Fair, HSG C              |
| 101,810   | 79 | 50-75% Grass cover, Fair, HSG C |
| 3,487     | 96 | Gravel surface, HSG C           |
| 472       | 98 | Paved parking, HSG C            |
| 617       | 79 | Woods, Fair, HSG D              |
| 350,736   | 72 | Weighted Average                |
| 350,264   |    | 99.87% Pervious Area            |
| 472       |    | 0.13% Impervious Area           |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                               |
|----------|---------------|---------------|-------------------|----------------|-----------------------------------------------------------|
| 2.8      | 60            | 0.3500        | 0.35              |                | <b>Sheet Flow,</b><br>Grass: Dense n= 0.240 P2= 3.60"     |
| 0.3      | 69            | 0.0510        | 3.64              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps |
| 1.3      | 255           | 0.0420        | 3.30              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps |
| 0.1      | 40            | 0.1250        | 5.69              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps |
| 0.5      | 89            | 0.0330        | 2.92              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps |
| 0.9      | 161           | 0.0310        | 2.83              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps |
| 3.2      | 192           | 0.0410        | 1.01              |                | <b>Shallow Concentrated Flow,</b><br>Woodland Kv= 5.0 fps |
| 9.1      | 866           | Total         |                   |                |                                                           |

**Summary for Subcatchment PRE 2.0:**

Runoff = 1.91 cfs @ 12.13 hrs, Volume= 6,761 cf, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

| Area (sf) | CN | Description                     |
|-----------|----|---------------------------------|
| 632       | 69 | 50-75% Grass cover, Fair, HSG B |
| 21,769    | 79 | 50-75% Grass cover, Fair, HSG C |
| 1,917     | 98 | Paved parking, HSG C            |
| 254       | 73 | Woods, Fair, HSG C              |
| 24,572    | 80 | Weighted Average                |
| 22,655    |    | 92.20% Pervious Area            |
| 1,917     |    | 7.80% Impervious Area           |

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Type III 24-hr 10 Year Rainfall=5.47"

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description                                                                                               |
|-------------|------------------|------------------|----------------------|-------------------|-----------------------------------------------------------------------------------------------------------|
| 6.6         | 50               | 0.0300           | 0.13                 |                   | <b>Sheet Flow,</b><br>Grass: Dense n= 0.240 P2= 3.60"                                                     |
| 0.6         | 150              | 0.0670           | 4.17                 |                   | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps                                                 |
| 0.3         | 97               | 0.0110           | 5.15                 | 4.05              | <b>Pipe Channel,</b><br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.012 Concrete pipe, finished |
| 1.9         | 201              | 0.0120           | 1.76                 |                   | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps                                                 |
| 9.4         | 498              | Total            |                      |                   |                                                                                                           |

**Summary for Subcatchment PRE 3.0:**

[49] Hint: Tc&lt;2dt may require smaller dt

Runoff = 0.09 cfs @ 12.00 hrs, Volume= 267 cf, Depth&gt; 5.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| 612       | 98 | Paved parking, HSG C    |
| 612       |    | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description                                              |
|-------------|------------------|------------------|----------------------|-------------------|----------------------------------------------------------|
| 0.2         | 26               | 0.0780           | 1.92                 |                   | <b>Sheet Flow,</b><br>Smooth surfaces n= 0.011 P2= 3.60" |

**Summary for Link PA-1: to Wetlands**

Inflow Area = 350,736 sf, 0.13% Impervious, Inflow Depth &gt; 2.56" for 10 Year event

Inflow = 21.26 cfs @ 12.14 hrs, Volume= 74,865 cf

Primary = 21.26 cfs @ 12.14 hrs, Volume= 74,865 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Summary for Link PA-2: to Wetlands**

Inflow Area = 24,572 sf, 7.80% Impervious, Inflow Depth &gt; 3.30" for 10 Year event

Inflow = 1.91 cfs @ 12.13 hrs, Volume= 6,761 cf

Primary = 1.91 cfs @ 12.13 hrs, Volume= 6,761 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Summary for Link PA-3: to Wadleigh Fall Rd**

Inflow Area = 612 sf, 100.00% Impervious, Inflow Depth > 5.23" for 10 Year event  
Inflow = 0.09 cfs @ 12.00 hrs, Volume= 267 cf  
Primary = 0.09 cfs @ 12.00 hrs, Volume= 267 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**S5132-001\_PRE**

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*Type III 24-hr 25 Year Rainfall=6.95"*

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentPRE 1.0:** Runoff Area=350,736 sf 0.13% Impervious Runoff Depth>3.78"  
Flow Length=866' Tc=9.1 min CN=72 Runoff=31.55 cfs 110,500 cf

**SubcatchmentPRE 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>4.64"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=2.67 cfs 9,505 cf

**SubcatchmentPRE 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>6.71"  
Flow Length=26' Slope=0.0780 '/' Tc=0.2 min CN=98 Runoff=0.11 cfs 342 cf

**Link PA-1: to Wetlands** Inflow=31.55 cfs 110,500 cf  
Primary=31.55 cfs 110,500 cf

**Link PA-2: to Wetlands** Inflow=2.67 cfs 9,505 cf  
Primary=2.67 cfs 9,505 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.11 cfs 342 cf  
Primary=0.11 cfs 342 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 120,347 cf Average Runoff Depth = 3.84"**  
**99.20% Pervious = 372,919 sf 0.80% Impervious = 3,001 sf**

**S5132-001\_PRE**

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Type III 24-hr 50 Year Rainfall=8.33"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**SubcatchmentPRE 1.0:** Runoff Area=350,736 sf 0.13% Impervious Runoff Depth>4.98"  
Flow Length=866' Tc=9.1 min CN=72 Runoff=41.49 cfs 145,493 cf

**SubcatchmentPRE 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>5.93"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=3.38 cfs 12,136 cf

**SubcatchmentPRE 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>8.09"  
Flow Length=26' Slope=0.0780 '/' Tc=0.2 min CN=98 Runoff=0.13 cfs 413 cf

**Link PA-1: to Wetlands** Inflow=41.49 cfs 145,493 cf  
Primary=41.49 cfs 145,493 cf

**Link PA-2: to Wetlands** Inflow=3.38 cfs 12,136 cf  
Primary=3.38 cfs 12,136 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.13 cfs 413 cf  
Primary=0.13 cfs 413 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 158,042 cf Average Runoff Depth = 5.04"**  
**99.20% Pervious = 372,919 sf 0.80% Impervious = 3,001 sf**



### 3.3 Post-Development Conditions

The post-development drainage conditions are characterized by three (3) watershed areas modeled at the same points of analysis as the pre-development condition. This point of analysis and subcatchments are depicted on the plan entitled "Post Development Watershed Plan", Sheets C-802.

The points of analysis and their contributing watershed areas are described below:

#### **Point of Analysis One (PA-1)**

Post-development subcatchment 1.0 (POST-1.0) is comprised of the area adjacent to the gravel area, a portion of proposed driveway and existing wetland areas and wooded areas. This area directs runoff towards the wetlands in the same general manner as in the Pre-Conditions.

Post-development subcatchment 1.1 (POST-1.1) is comprised of the largest area on site. Runoff from this area travels overland from the southwest corner of the property and flows over the proposed gravel surface and transitions from gravel to pavement and terminates at the on-site treatment practices.

#### **Point of Analysis Two (PA-2)**

Post-development subcatchment 2.0 (POST 2.0) is the same as Pre 2.0, this area is comprised of the area adjacent to the roadway and including the on-site wetlands along the roadway. Two 12" RCPs are present and connect the roadside ditch and existing wetland areas. Runoff from this area travels to Point of Analysis 2.

#### **Point of Analysis Three (PA-3)**

Post-development subcatchment 3.0 (POST 3.0) is the same as Pre 3.0, this area includes existing pavement at the entrance. Runoff from this area flows towards Wadleigh Falls Road and to Point of Analysis 3.

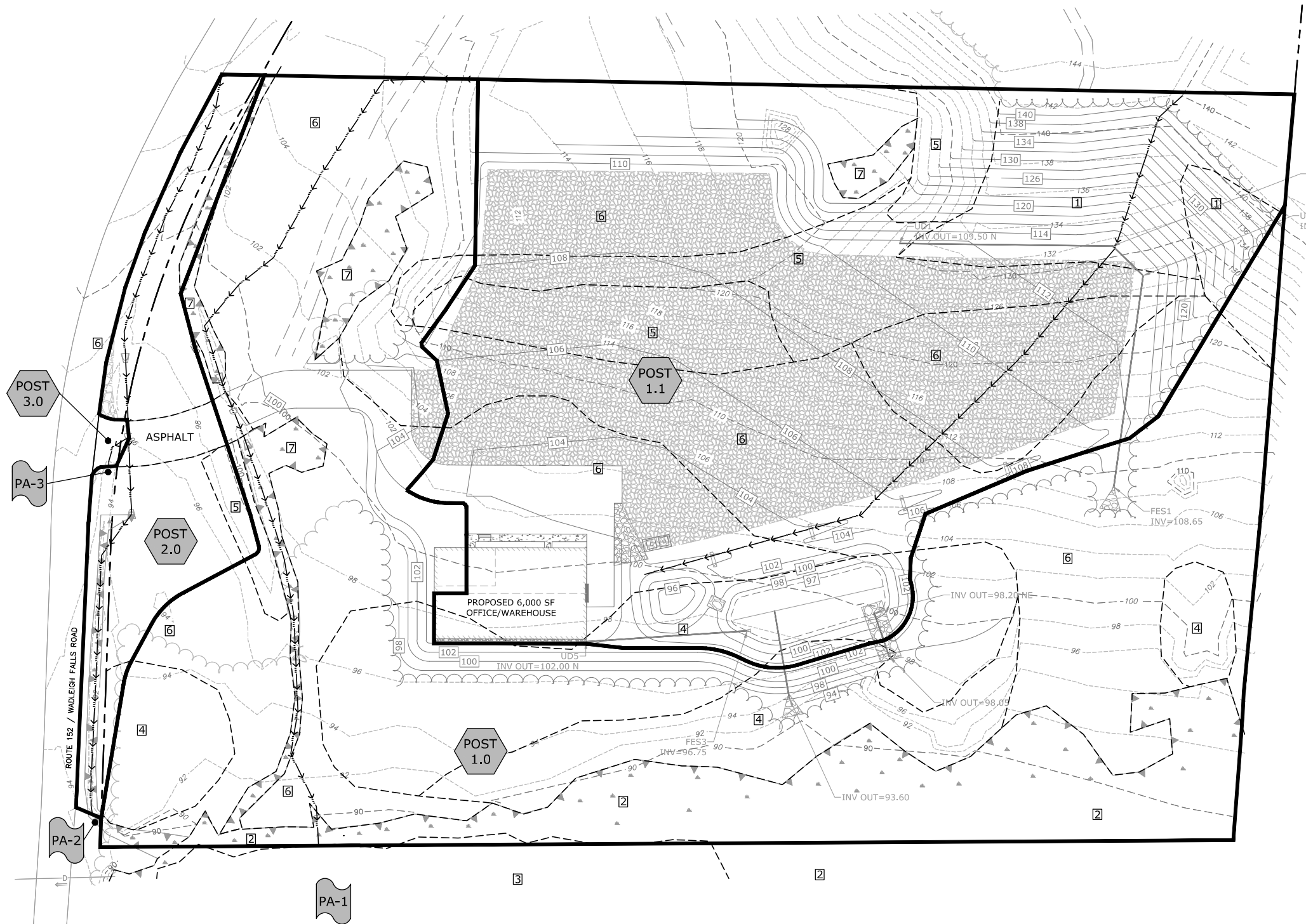
#### **3.3.1 Post-Development Watershed Plan**

#### **3.3.2 Post-Development Soil Plan**

#### **3.3.3 Post-Development Calculation**



Last Saved: 10/14/2021  
Plotted On: Oct 14, 2021 1:22pm By: Winston  
Tighe & Bond 21352122 Seacoast Pool Plastering, LLC 001 446 & 450 Wadleigh Falls Rd Drawings\_Figures/AutoCAD/Sheet/S5132\_C-HYDR.dwg



**SITE SPECIFIC SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND**

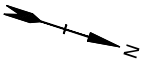
| (SOIL #) MAP NUMBER*/<br>DISTURBED SOIL NUMERATOR** | SOIL TYPE            | HSG |
|-----------------------------------------------------|----------------------|-----|
| (1) 29                                              | WOODBIDGE            | C   |
| (2) 33                                              | SCITTICO             | C   |
| (3) 134                                             | MAYBID               | D   |
| (4) 299*/DFABB                                      | UDORTHENTS, SMOOTHED | B   |
| (5) 500*/DCCCC                                      | UDORTHENTS, LOAMY    | C   |
| (6) 500*/EFCCC                                      | UDORTHENTS, LOAMY    | C   |
| (7) 600*/FFCCC                                      | ENDOAQUENTS, LOAMY   | C   |

\* INDICATES THE LOCATION OF THE SLOPE CLASS IDENTIFIER (A-F)  
\*\* SUPPLEMENTAL SYMBOLS ARE USED TO FURTHER CHARACTERIZE DISTURBED SOILS FOR ALTERATION OF TERRAIN PERMITS

- NOTES:**
1. HYDROLOGIC SOIL GROUPS FOR DISTURBED SOILS WERE BASED ON MOST SIMILAR SOIL SERIES LISTED IN *KSAT VALUES FOR NH SOILS*, SSSNNE SPECIAL PUBLICATION NO. 5, 2009.
  2. FIELDWORK FOR THIS MAP WAS CONDUCTED BY LEONARD A. LORD, PHD, NHCSS #19 ON APRIL 26, 2021.
  3. THIS DETAILED SITE SPECIFIC SOIL MAP CONFORMS TO THE STANDARDS OF SSSNNE PUBLICATION NO. 3, AS AMENDED, *SITE SPECIFIC SOIL MAPPING STANDARDS FOR NH AND VT*.
  4. THIS MAP HAS BEEN PREPARED TO COMPLY WITH SOIL MAPPING REQUIREMENTS OF RSA 485 A:17 AND NHDES ENV-WQ, ALTERATION OF TERRAIN.
  5. SEE ACCOMPANYING NARRATIVE REPORT FOR METHODOLOGY, MAP SYMBOL LEGEND, AND INTERPRETATIONS.

**LEGEND**

|  |                                            |
|--|--------------------------------------------|
|  | SOIL NUMBER PER LEGEND                     |
|  | SITE SPECIFIC SOIL BOUNDARY                |
|  | POST-DEVELOPMENT WATERSHED BOUNDARY        |
|  | LONGEST FLOW PATH                          |
|  | PRE DEVELOPMENT WATERSHED AREA DESIGNATION |
|  | POST-DEVELOPMENT POND DESIGNATION          |
|  | POINT OF ANALYSIS                          |



**Tighe&Bond**

**PERMIT  
DRAWINGS**

**Proposed Office  
and Equipment  
Storage**

Seacoast Pool  
Plastering, LLC

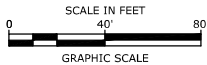
446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 10/22/2021       |             |
| FILE:        | S5132_C-HYDR.dwg |             |
| DRAWN BY:    | JRW/BJL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

**POST-DEVELOPMENT  
WATERSHED PLAN**

SCALE: AS SHOWN

C-802







LEGEND

HYDROLOGIC SOIL GROUP A

HYDROLOGIC SOIL GROUP B

HYDROLOGIC SOIL GROUP C

HYDROLOGIC SOIL GROUP D

IMPERVIOUS AREA

SITE SPECIFIC SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

| (SOIL #) MAP NUMBER*/<br>DISTURBED SOIL NUMERATOR** | SOIL TYPE            | HSG |
|-----------------------------------------------------|----------------------|-----|
| (1) 29                                              | WOODBIDGE            | C   |
| (2) 33                                              | SCITTICO             | C   |
| (3) 134                                             | MAYBID               | D   |
| (4) 299*/DFABB                                      | UDORTHERTS, SMOOTHED | B   |
| (5) 500*/DCCCC                                      | UDORTHERTS, LOAMY    | C   |
| (6) 500*/EFCCC                                      | UDORTHERTS, LOAMY    | C   |
| (7) 600*/FFCCC                                      | ENDOQUENTS, LOAMY    | C   |

\* INDICATES THE LOCATION OF THE SLOPE CLASS IDENTIFIER (A-F)  
\*\* SUPPLEMENTAL SYMBOLS ARE USED TO FURTHER CHARACTERIZE DISTURBED SOILS FOR ALTERATION OF TERRAIN PERMITS

- NOTES:
1. HYDROLOGIC SOIL GROUPS FOR DISTURBED SOILS WERE BASED ON MOST SIMILAR SOIL SERIES LISTED IN *KSAT VALUES FOR NH SOILS*, SSSNNE SPECIAL PUBLICATION NO. 5, 2009.
  2. FIELDWORK FOR THIS MAP WAS CONDUCTED BY LEONARD A. LORD, PHD, NHCSS #19 ON APRIL 26, 2021.
  3. THIS DETAILED SITE SPECIFIC SOIL MAP CONFORMS TO THE STANDARDS OF SSSNNE PUBLICATION NO. 3, AS AMENDED, *SITE SPECIFIC SOIL MAPPING STANDARDS FOR NH AND VT*.
  4. THIS MAP HAS BEEN PREPARED TO COMPLY WITH SOIL MAPPING REQUIREMENTS OF RSA 485 A:17 AND NHDES ENV-WQ, ALTERATION OF TERRAIN.
  5. SEE ACCOMPANYING NARRATIVE REPORT FOR METHODOLOGY, MAP SYMBOL LEGEND, AND INTERPRETATIONS.

LEGEND

4

SOIL NUMBER PER LEGEND

SITE SPECIFIC SOIL BOUNDARY

POST-DEVELOPMENT WATERSHED BOUNDARY

LONGEST FLOW PATH

POST 1.0

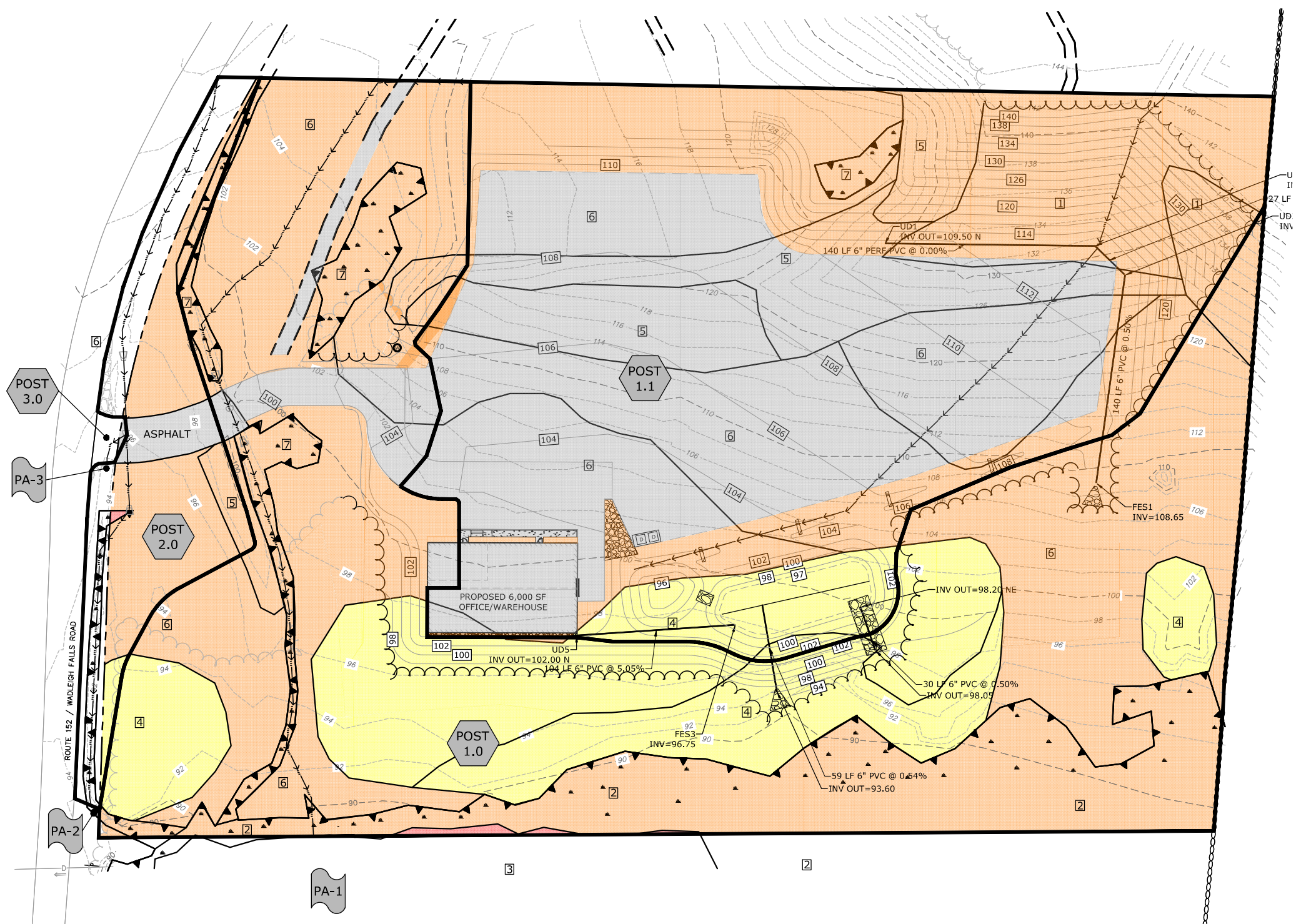
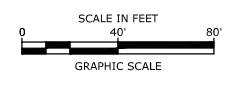
PRE DEVELOPMENT WATERSHED AREA DESIGNATION

POST POND 1

POST-DEVELOPMENT POND DESIGNATION

PA-1

POINT OF ANALYSIS



PERMIT DRAWINGS

Proposed Office and Equipment Storage

Seacoast Pool Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 10/22/2021       |             |
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| DRAWN BY:    | JRW/BJL          |             |
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| APPROVED BY: | BLM              |             |

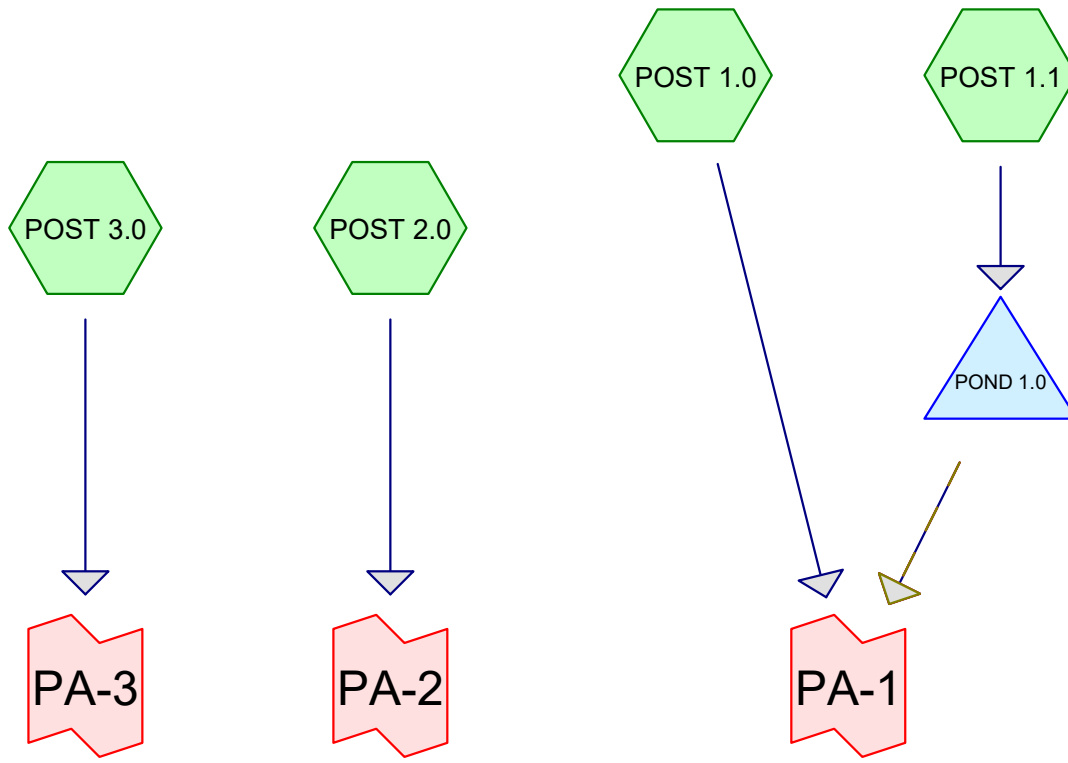
POST-DEVELOPMENT COLOR SOILS PLAN

SCALE: AS SHOWN

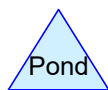
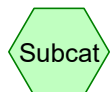
C-804

Last Saved: 10/14/2021 1:22pm By: J. Winston  
Plotted On: Oct 14, 2021 1:22pm  
File: S5132\_C-HYDR.dwg  
Page: 1 of 1  
Project: Seacoast Pool Plastering, LLC, 446 & 450 Wadleigh Falls Rd, Newmarket, NH 03854  
Drawing: Figures/Autocad/Sheet/S5132\_C-HYDR.dwg





to Wadleigh Fall Rd    to Wetlands



**S5132-001\_POST**

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**Area Listing (selected nodes)**

| Area<br>(sq-ft) | CN        | Description<br>(subcatchment-numbers)                         |
|-----------------|-----------|---------------------------------------------------------------|
| 632             | 69        | 50-75% Grass cover, Fair, HSG B (POST 2.0)                    |
| 21,383          | 79        | 50-75% Grass cover, Fair, HSG C (POST 2.0)                    |
| 20,622          | 61        | >75% Grass cover, Good, HSG B (POST 1.0, POST 1.1)            |
| 107,420         | 74        | >75% Grass cover, Good, HSG C (POST 1.0, POST 1.1)            |
| 386             | 89        | Gravel roads, HSG C (POST 2.0)                                |
| 1,273           | 96        | Gravel surface, HSG B (POST 1.0, POST 1.1)                    |
| 78,517          | 96        | Gravel surface, HSG C (POST 1.0, POST 1.1)                    |
| 13,365          | 98        | Paved parking, HSG C (POST 1.0, POST 1.1, POST 2.0, POST 3.0) |
| 536             | 98        | Unconnected roofs, HSG B (POST 1.1)                           |
| 5,898           | 98        | Unconnected roofs, HSG C (POST 1.0, POST 1.1)                 |
| 41,950          | 60        | Woods, Fair, HSG B (POST 1.0)                                 |
| 83,321          | 73        | Woods, Fair, HSG C (POST 1.0, POST 1.1, POST 2.0)             |
| 617             | 79        | Woods, Fair, HSG D (POST 1.0)                                 |
| <b>375,920</b>  | <b>78</b> | <b>TOTAL AREA</b>                                             |



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**Soil Listing (selected nodes)**

| Area<br>(sq-ft) | Soil<br>Group | Subcatchment<br>Numbers                |
|-----------------|---------------|----------------------------------------|
| 0               | HSG A         |                                        |
| 65,013          | HSG B         | POST 1.0, POST 1.1, POST 2.0           |
| 310,290         | HSG C         | POST 1.0, POST 1.1, POST 2.0, POST 3.0 |
| 617             | HSG D         | POST 1.0                               |
| 0               | Other         |                                        |
| <b>375,920</b>  |               | <b>TOTAL AREA</b>                      |

**S5132-001\_POST**

Type III 24-hr 1 Year Rainfall=3.00"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment POST 1.0:** Runoff Area=187,704 sf 2.83% Impervious Runoff Depth>0.76"  
Flow Length=618' Tc=18.0 min CN=71 Runoff=2.37 cfs 11,835 cf

**Subcatchment POST 1.1:** Runoff Area=163,032 sf 7.34% Impervious Runoff Depth>1.59"  
Flow Length=498' Tc=7.0 min CN=85 Runoff=6.65 cfs 21,553 cf

**Subcatchment POST 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>1.25"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=0.71 cfs 2,555 cf

**Subcatchment POST 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>2.77"  
Flow Length=26' Slope=0.0780 '/' Tc=5.0 min CN=98 Runoff=0.04 cfs 141 cf

**Pond POND 1.0:** Peak Elev=98.37' Storage=8,069 cf Inflow=6.65 cfs 21,553 cf  
Primary=0.95 cfs 21,189 cf Secondary=0.00 cfs 0 cf Tertiary=0.06 cfs 108 cf Outflow=1.01 cfs 21,298 cf

**Link PA-1:** Inflow=3.25 cfs 33,133 cf  
Primary=3.25 cfs 33,133 cf

**Link PA-2: to Wetlands** Inflow=0.71 cfs 2,555 cf  
Primary=0.71 cfs 2,555 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.04 cfs 141 cf  
Primary=0.04 cfs 141 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 36,084 cf Average Runoff Depth = 1.15"**  
**94.73% Pervious = 356,121 sf 5.27% Impervious = 19,799 sf**

**S5132-001\_POST***Type III 24-hr 2 Year Rainfall=3.60"*

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment POST 1.0:** Runoff Area=187,704 sf 2.83% Impervious Runoff Depth>1.12"  
Flow Length=618' Tc=18.0 min CN=71 Runoff=3.73 cfs 17,562 cf

**Subcatchment POST 1.1:** Runoff Area=163,032 sf 7.34% Impervious Runoff Depth>2.10"  
Flow Length=498' Tc=7.0 min CN=85 Runoff=8.80 cfs 28,551 cf

**Subcatchment POST 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>1.71"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=0.99 cfs 3,508 cf

**Subcatchment POST 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>3.36"  
Flow Length=26' Slope=0.0780 '/' Tc=5.0 min CN=98 Runoff=0.05 cfs 172 cf

**Pond POND 1.0:** Peak Elev=98.98' Storage=10,718 cf Inflow=8.80 cfs 28,551 cf  
Primary=1.07 cfs 25,963 cf Secondary=0.00 cfs 0 cf Tertiary=0.52 cfs 2,300 cf Outflow=1.59 cfs 28,263 cf

**Link PA-1:** Inflow=5.03 cfs 45,825 cf  
Primary=5.03 cfs 45,825 cf

**Link PA-2: to Wetlands** Inflow=0.99 cfs 3,508 cf  
Primary=0.99 cfs 3,508 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.05 cfs 172 cf  
Primary=0.05 cfs 172 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 49,792 cf Average Runoff Depth = 1.59"**  
**94.73% Pervious = 356,121 sf 5.27% Impervious = 19,799 sf**

**S5132-001\_POST**

Type III 24-hr 10 Year Rainfall=5.47"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment POST 1.0:** Runoff Area=187,704 sf 2.83% Impervious Runoff Depth>2.47"  
Flow Length=618' Tc=18.0 min CN=71 Runoff=8.69 cfs 38,613 cf

**Subcatchment POST 1.1:** Runoff Area=163,032 sf 7.34% Impervious Runoff Depth>3.80"  
Flow Length=498' Tc=7.0 min CN=85 Runoff=15.69 cfs 51,644 cf

**Subcatchment POST 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>3.30"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=1.91 cfs 6,761 cf

**Subcatchment POST 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>5.23"  
Flow Length=26' Slope=0.0780 '/' Tc=5.0 min CN=98 Runoff=0.08 cfs 267 cf

**Pond POND 1.0:** Peak Elev=100.44' Storage=18,394 cf Inflow=15.69 cfs 51,644 cf  
Primary=1.37 cfs 38,206 cf Secondary=3.10 cfs 3,256 cf Tertiary=1.10 cfs 9,807 cf Outflow=5.57 cfs 51,270 cf

**Link PA-1:** Inflow=13.05 cfs 89,883 cf  
Primary=13.05 cfs 89,883 cf

**Link PA-2: to Wetlands** Inflow=1.91 cfs 6,761 cf  
Primary=1.91 cfs 6,761 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.08 cfs 267 cf  
Primary=0.08 cfs 267 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 97,284 cf Average Runoff Depth = 3.11"**  
**94.73% Pervious = 356,121 sf 5.27% Impervious = 19,799 sf**

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Type III 24-hr 10 Year Rainfall=5.47"

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**Summary for Subcatchment POST 1.0:**

Runoff = 8.69 cfs @ 12.26 hrs, Volume= 38,613 cf, Depth&gt; 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 41,950    | 60 | Woods, Fair, HSG B            |
| 77,925    | 73 | Woods, Fair, HSG C            |
| 1,117     | 96 | Gravel surface, HSG B         |
| 2,020     | 96 | Gravel surface, HSG C         |
| 4,678     | 98 | Paved parking, HSG C          |
| 11,804    | 61 | >75% Grass cover, Good, HSG B |
| 46,963    | 74 | >75% Grass cover, Good, HSG C |
| 630       | 98 | Unconnected roofs, HSG C      |
| 617       | 79 | Woods, Fair, HSG D            |
| 187,704   | 71 | Weighted Average              |
| 182,396   |    | 97.17% Pervious Area          |
| 5,308     |    | 2.83% Impervious Area         |
| 630       |    | 11.87% Unconnected            |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                                                                        |
|----------|---------------|---------------|-------------------|----------------|----------------------------------------------------------------------------------------------------|
| 10.4     | 50            | 0.1050        | 0.08              |                | <b>Sheet Flow,</b><br>Woods: Dense underbrush n= 0.800 P2= 3.60"                                   |
| 1.3      | 246           | 0.0390        | 3.18              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps                                          |
| 0.9      | 54            | 0.0019        | 1.03              | 0.81           | <b>Pipe Channel,</b><br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.025 Corrugated metal |
| 2.2      | 77            | 0.0013        | 0.58              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps                                          |
| 3.2      | 191           | 0.0400        | 1.00              |                | <b>Shallow Concentrated Flow,</b><br>Woodland Kv= 5.0 fps                                          |
| 18.0     | 618           | Total         |                   |                |                                                                                                    |

**Summary for Subcatchment POST 1.1:**

Runoff = 15.69 cfs @ 12.10 hrs, Volume= 51,644 cf, Depth&gt; 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

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Type III 24-hr 10 Year Rainfall=5.47"

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| Area (sf) | CN | Description                   |
|-----------|----|-------------------------------|
| 8,818     | 61 | >75% Grass cover, Good, HSG B |
| 60,457    | 74 | >75% Grass cover, Good, HSG C |
| 536       | 98 | Unconnected roofs, HSG B      |
| 5,268     | 98 | Unconnected roofs, HSG C      |
| 5,142     | 73 | Woods, Fair, HSG C            |
| 156       | 96 | Gravel surface, HSG B         |
| 76,497    | 96 | Gravel surface, HSG C         |
| 6,158     | 98 | Paved parking, HSG C          |
| 163,032   | 85 | Weighted Average              |
| 151,070   |    | 92.66% Pervious Area          |
| 11,962    |    | 7.34% Impervious Area         |
| 5,804     |    | 48.52% Unconnected            |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                                        |
|----------|---------------|---------------|-------------------|----------------|--------------------------------------------------------------------|
| 4.5      | 50            | 0.2300        | 0.19              |                | <b>Sheet Flow,</b><br>Grass: Bermuda n= 0.410 P2= 3.60"            |
| 0.2      | 71            | 0.2200        | 7.55              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps          |
| 1.3      | 210           | 0.0300        | 2.79              |                | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps          |
| 1.0      | 167           | 0.0360        | 2.85              |                | <b>Shallow Concentrated Flow,</b><br>Grassed Waterway Kv= 15.0 fps |
| 7.0      | 498           | Total         |                   |                |                                                                    |

**Summary for Subcatchment POST 2.0:**

Runoff = 1.91 cfs @ 12.13 hrs, Volume= 6,761 cf, Depth&gt; 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

| Area (sf) | CN | Description                     |
|-----------|----|---------------------------------|
| 1,917     | 98 | Paved parking, HSG C            |
| 254       | 73 | Woods, Fair, HSG C              |
| 386       | 89 | Gravel roads, HSG C             |
| 632       | 69 | 50-75% Grass cover, Fair, HSG B |
| 21,383    | 79 | 50-75% Grass cover, Fair, HSG C |
| 24,572    | 80 | Weighted Average                |
| 22,655    |    | 92.20% Pervious Area            |
| 1,917     |    | 7.80% Impervious Area           |

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Type III 24-hr 10 Year Rainfall=5.47"

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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description                                                                                               |
|-------------|------------------|------------------|----------------------|-------------------|-----------------------------------------------------------------------------------------------------------|
| 6.6         | 50               | 0.0300           | 0.13                 |                   | <b>Sheet Flow,</b><br>Grass: Dense n= 0.240 P2= 3.60"                                                     |
| 0.6         | 150              | 0.0670           | 3.88                 |                   | <b>Shallow Concentrated Flow,</b><br>Grassed Waterway Kv= 15.0 fps                                        |
| 0.3         | 97               | 0.0110           | 5.15                 | 4.05              | <b>Pipe Channel,</b><br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.012 Concrete pipe, finished |
| 1.9         | 201              | 0.0120           | 1.76                 |                   | <b>Shallow Concentrated Flow,</b><br>Unpaved Kv= 16.1 fps                                                 |
| 9.4         | 498              | Total            |                      |                   |                                                                                                           |

**Summary for Subcatchment POST 3.0:**

[49] Hint: Tc&lt;2dt may require smaller dt

Runoff = 0.08 cfs @ 12.07 hrs, Volume= 267 cf, Depth&gt; 5.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year Rainfall=5.47"

| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| 612       | 98 | Paved parking, HSG C    |
| 612       |    | 100.00% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft)                         | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description                                              |
|-------------|------------------|------------------------------------------|----------------------|-------------------|----------------------------------------------------------|
| 0.2         | 26               | 0.0780                                   | 1.92                 |                   | <b>Sheet Flow,</b><br>Smooth surfaces n= 0.011 P2= 3.60" |
| 0.2         | 26               | Total, Increased to minimum Tc = 5.0 min |                      |                   |                                                          |

**Summary for Pond POND 1.0:**

Inflow Area = 163,032 sf, 7.34% Impervious, Inflow Depth > 3.80" for 10 Year event  
 Inflow = 15.69 cfs @ 12.10 hrs, Volume= 51,644 cf  
 Outflow = 5.57 cfs @ 12.40 hrs, Volume= 51,270 cf, Atten= 65%, Lag= 18.1 min  
 Primary = 1.37 cfs @ 12.40 hrs, Volume= 38,206 cf  
 Secondary = 3.10 cfs @ 12.40 hrs, Volume= 3,256 cf  
 Tertiary = 1.10 cfs @ 12.40 hrs, Volume= 9,807 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 100.44' @ 12.40 hrs Surf.Area= 5,903 sf Storage= 18,394 cf  
 Flood Elev= 102.25' Surf.Area= 7,415 sf Storage= 28,745 cf

Plug-Flow detention time= 90.5 min calculated for 51,163 cf (99% of inflow)  
 Center-of-Mass det. time= 85.9 min ( 890.3 - 804.4 )

**S5132-001\_POST**

Type III 24-hr 10 Year Rainfall=5.47"

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| Volume | Invert | Avail.Storage | Storage Description                                        |
|--------|--------|---------------|------------------------------------------------------------|
| #1     | 93.92' | 28,745 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Voids<br>(%) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|------------------|--------------|---------------------------|---------------------------|---------------------|
| 93.92               | 3,064                | 249.0            | 0.0          | 0                         | 0                         | 3,064               |
| 95.00               | 3,064                | 249.0            | 40.0         | 1,324                     | 1,324                     | 3,333               |
| 97.00               | 3,064                | 249.0            | 30.0         | 1,838                     | 3,162                     | 3,831               |
| 98.00               | 3,821                | 262.0            | 100.0        | 3,436                     | 6,598                     | 4,418               |
| 100.00              | 5,505                | 300.0            | 100.0        | 9,275                     | 15,872                    | 6,208               |
| 102.00              | 7,415                | 337.0            | 100.0        | 12,873                    | 28,745                    | 8,189               |

| Device | Routing   | Invert  | Outlet Devices                                                                                                                                                  |
|--------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary   | 93.92'  | <b>6.0" Round Culvert</b> L= 59.0' Ke= 0.500<br>Inlet / Outlet Invert= 93.92' / 93.60' S= 0.0054 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.20 sf                  |
| #2     | Device 1  | 93.92'  | <b>10.000 in/hr Exfiltration over Surface area</b>                                                                                                              |
| #3     | Secondary | 100.20' | <b>8.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)                                                                                            |
| #4     | Tertiary  | 98.20'  | <b>6.0" Round Culvert-Through Spillway</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 98.20' / 98.05' S= 0.0050 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.20 sf |

**Primary OutFlow** Max=1.37 cfs @ 12.40 hrs HW=100.44' TW=0.00' (Dynamic Tailwater)↑ **1=Culvert** (Passes 1.37 cfs of 1.60 cfs potential flow)↑ **2=Exfiltration** (Exfiltration Controls 1.37 cfs)**Secondary OutFlow** Max=3.09 cfs @ 12.40 hrs HW=100.44' TW=0.00' (Dynamic Tailwater)↑ **3=Sharp-Crested Rectangular Weir** (Weir Controls 3.09 cfs @ 1.61 fps)**Tertiary OutFlow** Max=1.10 cfs @ 12.40 hrs HW=100.44' TW=0.00' (Dynamic Tailwater)↑ **4=Culvert-Through Spillway** (Barrel Controls 1.10 cfs @ 5.61 fps)**Summary for Link PA-1:**

Inflow Area = 350,736 sf, 4.92% Impervious, Inflow Depth > 3.08" for 10 Year event  
 Inflow = 13.05 cfs @ 12.35 hrs, Volume= 89,883 cf  
 Primary = 13.05 cfs @ 12.35 hrs, Volume= 89,883 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Summary for Link PA-2: to Wetlands**

Inflow Area = 24,572 sf, 7.80% Impervious, Inflow Depth > 3.30" for 10 Year event  
 Inflow = 1.91 cfs @ 12.13 hrs, Volume= 6,761 cf  
 Primary = 1.91 cfs @ 12.13 hrs, Volume= 6,761 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



**Summary for Link PA-3: to Wadleigh Fall Rd**

Inflow Area = 612 sf, 100.00% Impervious, Inflow Depth > 5.23" for 10 Year event  
Inflow = 0.08 cfs @ 12.07 hrs, Volume= 267 cf  
Primary = 0.08 cfs @ 12.07 hrs, Volume= 267 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

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Type III 24-hr 25 Year Rainfall=6.95"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment POST 1.0:** Runoff Area=187,704 sf 2.83% Impervious Runoff Depth>3.67"  
Flow Length=618' Tc=18.0 min CN=71 Runoff=13.03 cfs 57,383 cf

**Subcatchment POST 1.1:** Runoff Area=163,032 sf 7.34% Impervious Runoff Depth>5.20"  
Flow Length=498' Tc=7.0 min CN=85 Runoff=21.18 cfs 70,648 cf

**Subcatchment POST 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>4.64"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=2.67 cfs 9,505 cf

**Subcatchment POST 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>6.71"  
Flow Length=26' Slope=0.0780 '/' Tc=5.0 min CN=98 Runoff=0.10 cfs 342 cf

**Pond POND 1.0:** Peak Elev=100.78' Storage=20,432 cf Inflow=21.18 cfs 70,648 cf  
Primary=1.44 cfs 44,650 cf Secondary=11.33 cfs 13,171 cf Tertiary=1.20 cfs 12,391 cf Outflow=13.96 cfs 70,212 cf

**Link PA-1:** Inflow=26.78 cfs 127,595 cf  
Primary=26.78 cfs 127,595 cf

**Link PA-2: to Wetlands** Inflow=2.67 cfs 9,505 cf  
Primary=2.67 cfs 9,505 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.10 cfs 342 cf  
Primary=0.10 cfs 342 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 137,878 cf Average Runoff Depth = 4.40"**  
**94.73% Pervious = 356,121 sf 5.27% Impervious = 19,799 sf**

**S5132-001\_POST**

Prepared by Tighe &amp; Bond

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*Type III 24-hr 50 Year Rainfall=8.33"*

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment POST 1.0:** Runoff Area=187,704 sf 2.83% Impervious Runoff Depth>4.85"  
Flow Length=618' Tc=18.0 min CN=71 Runoff=17.25 cfs 75,880 cf

**Subcatchment POST 1.1:** Runoff Area=163,032 sf 7.34% Impervious Runoff Depth>6.53"  
Flow Length=498' Tc=7.0 min CN=85 Runoff=26.28 cfs 88,666 cf

**Subcatchment POST 2.0:** Runoff Area=24,572 sf 7.80% Impervious Runoff Depth>5.93"  
Flow Length=498' Tc=9.4 min CN=80 Runoff=3.38 cfs 12,136 cf

**Subcatchment POST 3.0:** Runoff Area=612 sf 100.00% Impervious Runoff Depth>8.09"  
Flow Length=26' Slope=0.0780 '/' Tc=5.0 min CN=98 Runoff=0.12 cfs 412 cf

**Pond POND 1.0:** Peak Elev=101.02' Storage=21,986 cf Inflow=26.28 cfs 88,666 cf  
Primary=1.49 cfs 50,042 cf Secondary=19.14 cfs 23,292 cf Tertiary=1.26 cfs 14,829 cf Outflow=21.89 cfs 88,163 cf

**Link PA-1:** Inflow=37.10 cfs 164,044 cf  
Primary=37.10 cfs 164,044 cf

**Link PA-2: to Wetlands** Inflow=3.38 cfs 12,136 cf  
Primary=3.38 cfs 12,136 cf

**Link PA-3: to Wadleigh Fall Rd** Inflow=0.12 cfs 412 cf  
Primary=0.12 cfs 412 cf

**Total Runoff Area = 375,920 sf Runoff Volume = 177,095 cf Average Runoff Depth = 5.65"**  
**94.73% Pervious = 356,121 sf 5.27% Impervious = 19,799 sf**

### 3.4 Peak Rate Comparisons

The following table summarizes and compares the pre- and post-development peak runoff rates from the 2-year, 10-year, 25-year and 50-year storm events at each point of analysis.

**Table 3.4**

**Comparison of Pre- and Post-Development Flows (CFS)**

|                                   | <b>1-Year<br/>Storm</b> | <b>2-Year<br/>Storm</b> | <b>10-Year<br/>Storm</b> | <b>25-Year<br/>Storm</b> | <b>50-Year<br/>Storm</b> |
|-----------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| <b>Pre-Development Watershed</b>  |                         |                         |                          |                          |                          |
| PA-1                              | 6.10                    | 9.40                    | 21.26                    | 31.55                    | 41.49                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |
| <b>Post-Development Watershed</b> |                         |                         |                          |                          |                          |
| PA-1                              | 3.25                    | 5.03                    | 13.05                    | 26.78                    | 37.10                    |
| PA-2                              | 0.71                    | 0.99                    | 1.91                     | 2.67                     | 3.38                     |
| PA-3                              | 0.04                    | 0.05                    | 0.08                     | 0.10                     | 0.12                     |

The Peak Runoff Control Requirements of Env-Wq 1507.06 are required to be met for the point of analysis. As shown in Table 3.4 the Post-development flows are decreased from the Pre-development flows for the point of analysis in PA-1 and are unchanged in PA-2 and PA-3.

The Channel Protection requirements of Env-Wq 1507.05 are met for point of analysis PA-1 and are as follows:

PA-1: The 2-year, 24-hour post-development peak flowrate (5.03 cfs) is less than or equal to the 1-year, 24-hour pre-development peak flowrate (6.10 cfs).

The Channel Protection requirements of Env-Wq 1507.05 are not being met for points of analysis PA-2 and PA-3. There is no change in land cover or change to the flow pattern as there is no work proposed in these areas.

### 3.5 Mitigation Description

#### 3.5.1 Mitigation Calculations

The proposed project area has been evaluated to treat the required water quality flow (WQF) per the requirements of Env-Wq 1500. These calculations have been provided in Section 6 of this report (BMP Worksheets).

#### 3.5.2 Pre-Treatment Methods for Protecting Water Quality

Pretreatment methods for protecting water quality on this site include a sediment forebay.

### 3.5.3 Treatment Methods for Protecting Water Quality

Treatment for the site is included by means of a Rain Garden. The Rain Garden has been sized to contain the 50-year storm without overtopping, as well as treat a volume of runoff greater than the WQV. Due to poor infiltration rates of the surrounding soils, the bottom of the rain garden is proposed to be lined and outfitted with underdrains to convey treated runoff to the system's outlet structure.

The BMP Worksheets for this treatment practice have been included in Section 6 of this report.

The pollutant removal efficiencies for a Rain Garden for Total Suspended Solids, Total Nitrogen and Total Phosphorus are 90%, 65% and 65% respectively. Pollutant Removal efficiencies are taken from NH Stormwater Manual Volume 2, Appendix B.



## **Section 4**

# **Rip Rap Apron Calculations**

(see following sheets)

In order to determine an accurate size of the Rip-Rap at FES 1, the contributing 6" underdrain pipe was evaluated for the maximum flow that can be expected when flowing at maximum capacity.





# Tighe&Bond

Engineers | Environmental Specialists

Project: Seacoast Pool Plastering  
 Location: Newmarket, NH  
 T&B #: S5132-001  
 Calculations By: JRW  
 Checked By: JPL  
 Date: 10/14/2021

## APRON DESIGN

**Terms:** Rip-Rap Apron 1

length of apron (ft.)  $L_a$   
 discharge from pipe (cfs)  $Q$  (25 YR STORM EVENT)  
 pipe dia. or channel width (ft.)  $Do$   
 tailwater depth (ft.)  $T_w$   
 width of apron (at outlet)(ft)  $W1$   
 width of apron (downstream)(ft)  $W2$   
 median stone diameter (ft.)  $d_{50}$

### Equations Used:

Length of Apron ( $L_a$ )  
 when  $T_w < .5 * Do$   $L_a = \frac{1.8(Q)}{Do^{(3/2)}} + 7Do$   
 when  $T_w \geq .5 * Do$   $L_a = \frac{3(Q)}{Do^{(3/2)}} + 7Do$   
 Width of Apron ( $W1$ )  
 $W1 = 3Do$   
 Width of Apron ( $W2$ )  
 when  $T_w < .5 * Do$   $W2 = 3Do + La$   
 when  $T_w \geq .5 * Do$   $W2 = 3Do + 0.4La$   
 Median Diameter  $d_{50} = \frac{0.02 * Q^{(1.3)}}{(T_w * Do)}$

| Input:                    |      |     |
|---------------------------|------|-----|
| Q (cfs)                   | 0.52 | cfs |
| Do (ft.)                  | 0.50 | ft  |
| $T_w$ (ft.)               | 0.20 | ft  |
| Output:                   |      |     |
| Width of Apron ( $W1$ )   | 2    | ft. |
| Width of Apron ( $W2$ )   | 8    | ft. |
| Length of Apron ( $L_a$ ) | 6    | ft. |
| Median Diameter           | 0.50 | ft. |
| Riprap min. depth         | 1.13 | ft. |



# Tighe&Bond

Engineers | Environmental Specialists

Project: Seacoast Pool Plastering  
 Location: Newmarket, NH  
 T&B #: S5132-001  
 Calculations By: JRW  
 Checked By: JPL  
 Date: 10/15/2021

## APRON DESIGN

**Terms:** Rip-Rap Apron

length of apron (ft.)  $L_a$   
 discharge from pipe (cfs)  $Q$  (25 YR STORM EVENT)  
 pipe dia. or channel width (ft.)  $Do$   
 tailwater depth (ft.)  $T_w$   
 width of apron (at outlet)(ft)  $W1$   
 width of apron (downstream)(ft)  $W2$   
 median stone diameter (ft.)  $d_{50}$

### Equations Used:

Length of Apron ( $L_a$ )  
 when  $T_w < .5 * Do$   $L_a = \frac{1.8(Q)}{Do^{(3/2)}} + 7Do$   
 when  $T_w \geq .5 * Do$   $L_a = \frac{3(Q)}{Do^{(3/2)}} + 7Do$   
 Width of Apron ( $W1$ )  
 $W1 = 3Do$   
 Width of Apron ( $W2$ )  
 when  $T_w < .5 * Do$   $W2 = 3Do + La$   
 when  $T_w \geq .5 * Do$   $W2 = 3Do + 0.4La$   
 Median Diameter  $d_{50} = \frac{0.02 * Q^{(1.3)}}{(T_w * Do)}$

| <u>Input:</u>             |      |     |
|---------------------------|------|-----|
| Q (cfs)                   | 1.44 | cfs |
| Do (ft.)                  | 0.50 | ft  |
| $T_w$ (ft.)               | 0.20 | ft  |
| <u>Output:</u>            |      |     |
| Width of Apron ( $W1$ )   | 2    | ft. |
| Width of Apron ( $W2$ )   | 12   | ft. |
| Length of Apron ( $L_a$ ) | 11   | ft. |
| Median Diameter           | 0.50 | ft. |
| Riprap min. depth         | 1.13 | ft. |



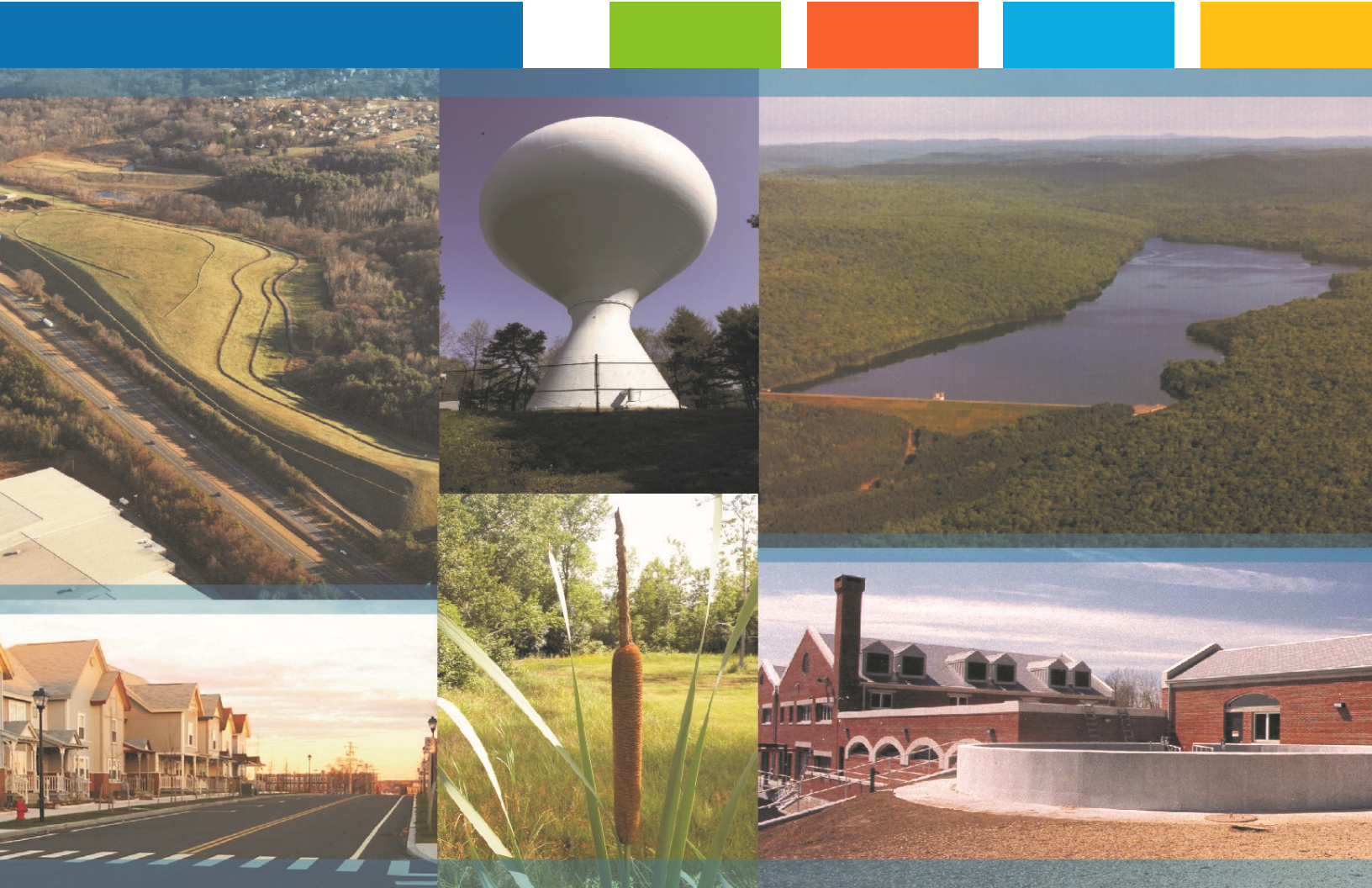
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## **Section 5**

# **Long-Term Operation & Maintenance Plan**

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Proposed Office and Equipment Storage

Town of Newmarket, NH

# Operation and Maintenance Manual

Prepared For:

**Seacoast Pool Plastering, LLC**

**90 Depot Road**

**Greenland, New Hampshire 03824**

November, 2021





**Executive Summary****Section 1 Long Term Operation & Maintenance Plan**

|     |                                                              |     |
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| 1.1 | Contact/Responsible Party .....                              | 1-1 |
| 1.2 | Maintenance Items .....                                      | 1-1 |
| 1.3 | Overall Site Operation & Maintenance Schedule .....          | 1-2 |
|     | 1.3.1 Disposal Requirements.....                             | 1-2 |
| 1.4 | Rain Garden Maintenance Requirements .....                   | 1-2 |
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| 1.6 | Snow & Ice Management for Standard Asphalt and Walkways..... | 1-3 |

**Section 2 Invasive Species****Section 3 Annual Updates and Log Requirements**



# **Section 1**

## **Long Term Operation & Maintenance Plan**

It is the intent of this Operation and Maintenance Plan to identify the areas of this site that need special attention and consideration, as well as implementing a plan to assure routine maintenance. By identifying the areas of concern as well as implementing a frequent and routine maintenance schedule the site will maintain a high-quality stormwater runoff.

### **1.1 Contact/Responsible Party**

Seacoast Pool Plastering LLC  
90 Depot Road  
Greenland, NH 03824

(Note: The contact information for the Contact/Responsible Party shall be kept current. If ownership changes, the Operation and Maintenance Plan must be transferred to the new party.)

### **1.2 Maintenance Items**

Maintenance of the following items shall be recorded:

- Litter/Debris Removal
- Landscaping
- Pavement Sweeping
- Rain Garden
- Rip Rap Outlets

The following maintenance items and schedule represent the minimum action required. Periodic site inspections shall be conducted, and all measures must be maintained in effective operating condition. The following items shall be observed during site inspection and maintenance:

- Inspect vegetated areas, particularly slopes and embankments for areas of erosion. Replant and restore as necessary
- Inspect site for trash and debris

### 1.3 Overall Site Operation & Maintenance Schedule

| Maintenance Item                                                                                   | Frequency of Maintenance                                                             | Location           |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------|
| Litter/Debris Removal                                                                              | Weekly                                                                               | Lot                |
| Pavement Sweeping<br>- Sweep impervious areas to remove sand and litter.                           | Annually                                                                             | Map R-6, Lot 7 & 8 |
| Rain Garden<br>- Trash and debris to be removed.<br>- Any required maintenance shall be addressed. | Two (2) times annually and after any rainfall event exceeding 2.5" in a 24-hr period | Map R-6, Lot 7 & 8 |

#### 1.3.1 Disposal Requirements

Disposal of debris, trash, sediment and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

### 1.4 Rain Garden Maintenance Requirements

| Rain Garden Inspection/Maintenance Requirements                                                  |                                                                                      |                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inspection/ Maintenance                                                                          | Frequency                                                                            | Action                                                                                                                                                                                                   |
| Monitor to ensure that Rain Gardens function effectively after storms                            | Two (2) times annually and after any rainfall event exceeding 2.5" in a 24-hr period | - Trash and debris to be removed<br>- Any required maintenance shall be addressed                                                                                                                        |
| Inspect Vegetation                                                                               | Annually                                                                             | - Inspect the condition of all Rain Garden vegetation<br>- Prune back overgrowth<br>- Replace dead vegetation<br>- Remove any invasive species                                                           |
| Inspect Drawdown Time<br>- The system shall drawdown within 48-hours following a rainfall event. | Annually                                                                             | - Assess the condition of the facility to determine measures required to restore the filtration function, including but not limited to removal of accumulated sediments or reconstruction of the filter. |

## 1.5 Rip Rap Maintenance Requirements

| Rip Rap Inspection/Maintenance Requirements |           |                                                                                                                                      |
|---------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------|
| Inspection/<br>Maintenance                  | Frequency | Action                                                                                                                               |
| Visual Inspection                           | Annually  | <ul style="list-style-type: none"><li>- Visually inspect for damage and deterioration</li><li>- Repair damages immediately</li></ul> |

## 1.6 Snow & Ice Management for Standard Asphalt and Walkways

Snow storage areas shall be located such that no direct untreated discharges are possible to receiving waters from the storage site (snow storage areas have been shown on the Site Plan). The property manager will be responsible for timely snow removal from all private sidewalks, driveways, and parking areas. Snow removal will be hauled off-site and legally disposed of when snowbanks exceed 6 feet in height. Salt storage areas shall be covered or located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt and sand shall be used to the minimum extent practical (refer to the attached for de-icing application rate guideline from the New Hampshire Stormwater Management Manual, Volume 2).

**Deicing Application Rate Guidelines**

24' of pavement (typical two-lane road)

These rates are not fixed values, but rather the middle of a range to be selected and adjusted by an agency according to its local conditions and experience.

| Pavement Temp. (°F) and Trend (↑↓) | Weather Condition     | Maintenance Actions                           | Pounds per two-lane mile                    |                                               |                 |                                    |
|------------------------------------|-----------------------|-----------------------------------------------|---------------------------------------------|-----------------------------------------------|-----------------|------------------------------------|
|                                    |                       |                                               | Salt Prewetted / Pretreated with Salt Brine | Salt Prewetted / Pretreated with Other Blends | Dry Salt*       | Winter Sand (abrasives)            |
| > 30° ↑                            | Snow                  | Plow, treat intersections only                | 80                                          | 70                                            | 100*            | Not recommended                    |
|                                    | Freezing Rain         | Apply Chemical                                | 80 - 160                                    | 70 - 140                                      | 100 - 200*      | Not recommended                    |
| 30° ↓                              | Snow                  | Plow and apply chemical                       | 80 - 160                                    | 70 - 140                                      | 100 - 200*      | Not recommended                    |
|                                    | Freezing Rain         | Apply Chemical                                | 150 - 200                                   | 130 - 180                                     | 180 - 240*      | Not recommended                    |
| 25° - 30° ↑                        | Snow                  | Plow and apply chemical                       | 120 - 160                                   | 100 - 140                                     | 150 - 200*      | Not recommended                    |
|                                    | Freezing Rain         | Apply Chemical                                | 150 - 200                                   | 130 - 180                                     | 180 - 240*      | Not recommended                    |
| 25° - 30° ↓                        | Snow                  | Plow and apply chemical                       | 120 - 160                                   | 100 - 140                                     | 150 - 200*      | Not recommended                    |
|                                    | Freezing Rain         | Apply Chemical                                | 160 - 240                                   | 140 - 210                                     | 200 - 300*      | 400                                |
| 20° - 25° ↑                        | Snow or Freezing Rain | Plow and apply chemical                       | 160 - 240                                   | 140 - 210                                     | 200 - 300*      | 400                                |
| 20° - 25° ↓                        | Snow                  | Plow and apply chemical                       | 200 - 280                                   | 175 - 250                                     | 250 - 350*      | Not recommended                    |
|                                    | Freezing Rain         | Apply Chemical                                | 240 - 320                                   | 210 - 280                                     | 300 - 400*      | 400                                |
| 15° - 20° ↑                        | Snow                  | Plow and apply chemical                       | 200 - 280                                   | 175 - 250                                     | 250 - 350*      | Not recommended                    |
|                                    | Freezing Rain         | Apply Chemical                                | 240 - 320                                   | 210 - 280                                     | 300 - 400*      | 400                                |
| 15° - 20° ↓                        | Snow or Freezing Rain | Plow and apply chemical                       | 240 - 320                                   | 210 - 280                                     | 300 - 400*      | 500 for freezing rain              |
| 0° - 15° ↑↓                        | Snow                  | Plow, treat with blends, sand hazardous areas | Not recommended                             | 300 - 400                                     | Not recommended | 500 - 750 spot treatment as needed |
| < 0°                               | Snow                  | Plow, treat with blends, sand hazardous areas | Not recommended                             | 400 - 600**                                   | Not recommended | 500 - 750 spot treatment as needed |

\* Dry salt is not recommended. It is likely to blow off the road before it melts ice.

\*\* A blend of 6 - 8 gal/ton  $MgCl_2$  or  $CaCl_2$  added to  $NaCl$  can melt ice as low as -10°.

| Anti-icing Route Data Form             |                      |                   |           |     |
|----------------------------------------|----------------------|-------------------|-----------|-----|
| Truck Station:                         |                      |                   |           |     |
| Date:                                  |                      |                   |           |     |
| Air Temperature                        | Pavement Temperature | Relative Humidity | Dew Point | Sky |
| Reason for applying:                   |                      |                   |           |     |
| Route:                                 |                      |                   |           |     |
| Chemical:                              |                      |                   |           |     |
| Application Time:                      |                      |                   |           |     |
| Application Amount:                    |                      |                   |           |     |
| Observation (first day):               |                      |                   |           |     |
| Observation (after event):             |                      |                   |           |     |
| Observation (before next application): |                      |                   |           |     |
| Name:                                  |                      |                   |           |     |





## **Section 2**

# **Invasive Species**

With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem is classified as an invasive species. Refer to the following fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plants for recommended methods to dispose of invasive plant species.





## Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



**Tatarian honeysuckle**

*Lonicera tatarica*

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit [www.nhinvasives.org](http://www.nhinvasives.org) or contact your UNH Cooperative Extension office.

### New Hampshire Regulations

Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

## How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag “head first” at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

**Burning:** Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can’t be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn’t be burned as the seeds may disperse by the hot air created by the fire.

**Bagging (solarization):** Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

**Tarping and Drying:** Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

**Chipping:** Use this method for woody plants that don’t reproduce vegetatively.

**Burying:** This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

**Drowning:** Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn’t used often. Be prepared for an awful stink!

**Composting:** Invasive plants can take root in compost. Don’t compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.



**Japanese knotweed**  
*Polygonum cuspidatum*  
USDA-NRCS PLANTS Database /  
Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

**Be diligent looking for seedlings for years in areas where removal and disposal took place.**

## Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

| Woody Plants                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Method of Reproducing                                                                                                        | Methods of Disposal                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Norway maple<br><i>(Acer platanoides)</i><br>European barberry<br><i>(Berberis vulgaris)</i><br>Japanese barberry<br><i>(Berberis thunbergii)</i><br>autumn olive<br><i>(Elaeagnus umbellata)</i><br>burning bush<br><i>(Euonymus alatus)</i><br>Morrow's honeysuckle<br><i>(Lonicera morrowii)</i><br>Tatarian honeysuckle<br><i>(Lonicera tatarica)</i><br>showy bush honeysuckle<br><i>(Lonicera x bella)</i><br>common buckthorn<br><i>(Rhamnus cathartica)</i><br>glossy buckthorn<br><i>(Frangula alnus)</i> | <b>Fruit and Seeds</b><br>                 | <b>Prior to fruit/seed ripening</b><br>Seedlings and small plants <ul style="list-style-type: none"> <li>▪ Pull or cut and leave on site with roots exposed. No special care needed.</li> </ul> Larger plants <ul style="list-style-type: none"> <li>▪ Use as firewood.</li> <li>▪ Make a brush pile.</li> <li>▪ Chip.</li> <li>▪ Burn.</li> </ul> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                              | <b>After fruit/seed is ripe</b><br>Don't remove from site. <ul style="list-style-type: none"> <li>▪ Burn.</li> <li>▪ Make a covered brush pile.</li> <li>▪ Chip once all fruit has dropped from branches.</li> <li>▪ Leave resulting chips on site and monitor.</li> </ul>                                                                         |
| oriental bittersweet<br><i>(Celastrus orbiculatus)</i><br>multiflora rose<br><i>(Rosa multiflora)</i>                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Fruits, Seeds, Plant Fragments</b><br> | <b>Prior to fruit/seed ripening</b><br>Seedlings and small plants <ul style="list-style-type: none"> <li>▪ Pull or cut and leave on site with roots exposed. No special care needed.</li> </ul> Larger plants <ul style="list-style-type: none"> <li>▪ Make a brush pile.</li> <li>▪ Burn.</li> </ul>                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                              | <b>After fruit/seed is ripe</b><br>Don't remove from site. <ul style="list-style-type: none"> <li>▪ Burn.</li> <li>▪ Make a covered brush pile.</li> <li>▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</li> </ul>                                      |

| Non-Woody Plants                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Method of Reproducing                                                                                                                                                                                                                                                                   | Methods of Disposal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>garlic mustard<br/>(<i>Alliaria petiolata</i>)</p> <p>spotted knapweed<br/>(<i>Centaurea maculosa</i>)</p> <ul style="list-style-type: none"> <li>▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.</li> </ul> <p>black swallow-wort<br/>(<i>Cynanchum nigrum</i>)</p> <ul style="list-style-type: none"> <li>▪ May cause skin rash. Wear gloves and long sleeves when handling.</li> </ul> <p>pale swallow-wort<br/>(<i>Cynanchum rossicum</i>)</p> <p>giant hogweed<br/>(<i>Heracleum mantegazzianum</i>)</p> <ul style="list-style-type: none"> <li>▪ Can cause major skin rash. Wear gloves and long sleeves when handling.</li> </ul> <p>dame's rocket<br/>(<i>Hesperis matronalis</i>)</p> <p>perennial pepperweed<br/>(<i>Lepidium latifolium</i>)</p> <p>purple loosestrife<br/>(<i>Lythrum salicaria</i>)</p> <p>Japanese stilt grass<br/>(<i>Microstegium vimineum</i>)</p> <p>mile-a-minute weed<br/>(<i>Polygonum perfoliatum</i>)</p> | <p><b>Fruits and Seeds</b></p>                                                                                                                                                                        | <p><b>Prior to flowering</b></p> <p>Depends on scale of infestation</p> <p>Small infestation</p> <ul style="list-style-type: none"> <li>▪ Pull or cut plant and leave on site with roots exposed.</li> </ul> <p>Large infestation</p> <ul style="list-style-type: none"> <li>▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).</li> <li>▪ Monitor. Remove any re-sprouting material.</li> </ul> <hr/> <p><b>During and following flowering</b></p> <p>Do nothing until the following year or remove flowering heads and bag and let rot.</p> <p>Small infestation</p> <ul style="list-style-type: none"> <li>▪ Pull or cut plant and leave on site with roots exposed.</li> </ul> <p>Large infestation</p> <ul style="list-style-type: none"> <li>▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).</li> <li>▪ Monitor. Remove any re-sprouting material.</li> </ul> |
| <p>common reed<br/>(<i>Phragmites australis</i>)</p> <p>Japanese knotweed<br/>(<i>Polygonum cuspidatum</i>)</p> <p>Bohemian knotweed<br/>(<i>Polygonum x bohemicum</i>)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p><b>Fruits, Seeds, Plant Fragments</b></p> <p>Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.</p> | <p><b>Small infestation</b></p> <ul style="list-style-type: none"> <li>▪ Bag all plant material and let rot.</li> <li>▪ Never pile and use resulting material as compost.</li> <li>▪ Burn.</li> </ul> <p><b>Large infestation</b></p> <ul style="list-style-type: none"> <li>▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.</li> <li>▪ Monitor and remove any sprouting material.</li> <li>▪ Pile, let dry, and burn.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

January 2010

# Managing Invasive Plants

## Methods of Control

by Christopher Mattrick

### They're out there. The problem of invasive plants is as close as your own backyard.

Maybe a favorite dogwood tree is struggling in the clutches of an Oriental bittersweet vine. Clawlike canes of multiflora rose are scratching at the side of your house. That handsome burning bush you planted few years ago has become a whole clump in practically no time ... but what happened to the azalea that used to grow right next to it?

If you think controlling or managing invasive plants on your property is a daunting task, you're not alone. Though this topic is getting lots of attention from federal, state, and local government agencies, as well as the media, the basic question for most homeowners is simply, "How do I get rid of the invasive plants in my own landscape?" Fortunately, the best place to begin to tackle this complex issue is in our own backyards and on local conservation lands. We hope the information provided here will help you take back your yard. We won't kid you—there's some work involved, but the payoff in beauty, wildlife habitat, and peace of mind makes it all worthwhile.

### PLAN OF ATTACK

Three broad categories cover most invasive plant control: mechanical, chemical, and biological. Mechanical control means physically removing plants from the environment



Spraying chemicals to control invasive plants.

through cutting or pulling. Chemical control uses herbicides to kill plants and inhibit regrowth. Techniques and chemicals used will vary depending on the species. Biological controls use plant diseases or insect predators, typically from the targeted species' home range. Several techniques may be effective in controlling a single species, but there is usually one preferred method—the one that is most resource efficient with minimal impact on non-target species and the environment.

### MECHANICAL CONTROL METHODS

Mechanical treatments are usually the first ones to look at when evaluating an invasive plant removal project. These procedures do not require special licensing or introduce chemicals into the environment. They do require permits in some situations, such as wetland zones. [See sidebar on page 23.] Mechanical removal is highly labor intensive and creates a significant amount of site disturbance, which can lead to rapid reinvasion if not handled properly.

#### Pulling and digging

Many herbaceous plants and some woody species (up to about one inch in diameter), if present in limited quantities, can be pulled out or dug up. It's important to remove as much of the root system as possible; even a small portion can restart the infestation. Pull plants by hand or use a digging fork, as shovels can shear off portions of the root system, allowing for regrowth. To remove larger woody stems (up to about three inches in diameter), use a Weed Wrench™, Root Jack, or Root Talon. These tools, available from several manufacturers, are designed to remove the aboveground portion of the plant as well as the entire root system. It's easiest to undertake this type of control in the spring or early summer when soils are moist and plants come out more easily.



Using tools to remove woody stems.





Volunteers hand pulling invasive plants.

### Suffocation

Try suffocating small seedlings and herbaceous plants. Place double or triple layers of thick UV-stabilized plastic sheeting, either clear or black (personally I like clear), over the infestation and secure the plastic with stakes or weights. Make sure the plastic extends at least five feet past the edge of infestation on all sides. Leave the plastic in place for at least two years. This technique will kill everything beneath the plastic—invasive and non-invasive plants alike. Once the plastic is removed, sow a cover crop such as annual rye to prevent new invasions.

### Cutting or mowing

This technique is best suited for locations you can visit and treat often. To be effective, you will need to mow or cut infested areas three or four times a year for up to five years. The goal is to interrupt the plant's ability to photosynthesize by removing as much leafy material as possible. Cut the plants at ground level and remove all resulting debris from the site. With this treatment, the infestation may actually appear to get worse at first, so you will need to be as persistent as the invasive plants themselves. Each time you cut the plants back, the root system gets slightly larger, but must also rely on its energy reserves to push up new growth. Eventually, you will exhaust these reserves and the plants will die. This may take many years, so you have to remain committed to this process once you start; otherwise the treatment can backfire, making the problem worse.

## CHEMICAL CONTROL METHODS

Herbicides are among the most effective and resource-efficient tools to treat invasive species. Most of the commonly known invasive plants can be treated using only two herbicides—glyphosate (the active ingredient in Roundup™ and Rodeo™) and triclopyr (the active ingredient in Brush-B-Gone™ and Garlon™). Glyphosate is non-selective, meaning it kills everything it contacts. Triclopyr is selective and does not injure monocots (grasses, orchids, lilies, etc.). Please read labels and follow directions precisely for both environmental and personal safety. These are relatively benign herbicides, but improperly used they can still cause both short- and long-term health and environmental problems. Special aquatic formulations are required when working in wetland zones. You are required to have a state-issued pesticide applicator license when applying these chemicals on land you do not own. To learn more about the pesticide regulations in your state, visit or call your state's pesticide control division, usually part of the state's Department of Agriculture. In wetland areas, additional permits are usually required by the Wetlands Protection Act. [See sidebar on page 23.]

### Foliar applications

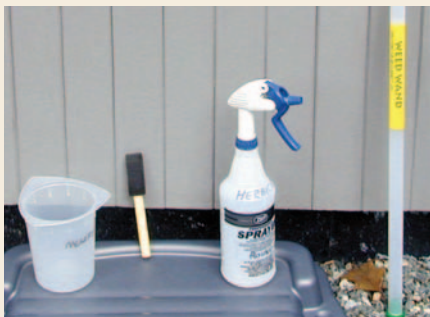
When problems are on a small scale, this type of treatment is usually applied with a backpack sprayer or even a small handheld spray bottle. It is an excellent way to treat large monocultures of herbaceous plants, or to spot-treat individual plants that are difficult to remove mechanically, such as goutweed, swallowwort, or purple loosestrife. It is also an effective treatment for some woody species, such as Japanese barberry, multiflora rose, Japanese honeysuckle, and Oriental bittersweet that grow in dense masses or large numbers over many acres. The herbicide mixture should contain no more than five percent of the active ingredient, but it is important to follow the instructions on the product label. This treatment is most effective when the plants are actively growing, ideally when they are flowering or beginning to form fruit. It has been shown that plants are often more susceptible to this type of treatment if the existing stems are cut off and the regrowth is treated. This is especially true for Japanese knotweed. The target plants should be thoroughly wetted with the herbicide on a day when there is no rain in the forecast for the next 24 to 48 hours.



## Cut stem treatments

There are several different types of cut stem treatments, but here we will review only the one most commonly used. All treatments of this type require a higher concentration of the active ingredient than is used in foliar applications. A 25 to 35 percent solution of the active ingredient should be used for cut stem treatments, but read and follow all label instructions. In most cases, the appropriate herbicide is glyphosate, except for Oriental bittersweet, on which triclopyr should be used. This treatment can be used on all woody stems, as well as phragmites and Japanese knotweed.

For woody stems, treatments are most effective when applied in the late summer and autumn—between late August and November. Stems should be cut close to the ground, but not so close that you will lose track of them. Apply herbicide directly to the cut surface as soon as possible after cutting. Delaying the application will reduce the effectiveness of the treatment. The herbicide can be applied with a sponge, paintbrush, or spray bottle.



Cut stem treatment tools.

For phragmites and Japanese knotweed, treatment is the same, but the timing and equipment are different. Plants should be treated anytime from mid-July through September, but the hottest, most humid days of the summer are best

for this method. Cut the stems halfway between two leaf nodes at a comfortable height. Inject (or squirt) herbicide into the exposed hollow stem. All stems in an infestation should be treated. A wash bottle is the most effective application tool, but you can also use an eyedropper, spray bottle, or one of the recently developed high-tech injection systems.

It is helpful to mix a dye in with the herbicide solution. The dye will stain the treated surface and mark the areas that have been treated, preventing unnecessary reapplication. You can buy a specially formulated herbicide dye, or use food coloring or laundry dye.

There is not enough space in this article to describe all the possible ways to control invasive plants. You can find other treatments, along with more details on the above-described methods, and species-specific recommendations on The Nature Conservancy Web site ([tncweeds.ucdavis.edu](http://tncweeds.ucdavis.edu)). An upcoming posting on the Invasive Plant Atlas of New England ([www.ipane.org](http://www.ipane.org)) and the New England Wild Flower Society ([www.newfs.org](http://www.newfs.org)) Web sites will also provide further details.



Hollow stem injection tools.

## Biological controls—still on the horizon

Biological controls are moving into the forefront of control methodology, but currently the only widely available and applied biocontrol relates to purple loosestrife. More information on purple loosestrife and other biological control projects can be found at [www.invasiveplants.net](http://www.invasiveplants.net).

## DISPOSAL OF INVASIVE PLANTS

Proper disposal of removed invasive plant material is critical to the control process. Leftover plant material can cause new infestations or reinfest the existing project area. There are many appropriate ways to dispose of invasive plant debris. I've listed them here in order of preference.

- 1. Burn it**—Make a brush pile and burn the material following local safety regulations and restrictions, or haul it to your town's landfill and place it in their burn pile.
- 2. Pile it**—Make a pile of the woody debris. This technique will provide shelter for wildlife as well.
- 3. Compost it**—Place all your herbaceous invasive plant debris in a pile and process as compost. Watch the pile closely for resprouts and remove as necessary. Do not use the resulting compost in your garden. The pile is for invasive plants only.



Injecting herbicide into the hollow stem of phragmites.



**4. Dry it/cook it**—Place woody debris out on your driveway or any asphalt surface and let it dry out for a month. Place herbaceous material in a doubled-up black trash bag and let it cook in the sun for one month. At the end of the month, the material should be non-viable and you can dump it or dispose of it with the trash. The method assumes there is no viable seed mixed in with the removed material.

*Care should be taken in the disposal of all invasive plants, but several species need extra attention. These are the ones that have the ability to sprout vigorously from plant fragments and should ideally be burned or dried prior to disposal: Oriental bittersweet, multiflora rose, Japanese honeysuckle, phragmites, and Japanese knotweed.*

Christopher Mattrick is the former Senior Conservation Programs Manager for New England Wild Flower Society, where he managed conservation volunteer and invasive and rare plant management programs. Today, Chris and his family work and play in the White Mountains of New Hampshire, where he is the Forest Botanist and Invasive Species Coordinator for the White Mountain National Forest.



## Controlling Invasive Plants in Wetlands

Special concerns; special precautions

Control of invasive plants in or around wetlands or bodies of water requires a unique set of considerations. Removal projects in wetland zones can be legal and effective if handled appropriately. In many cases, herbicides may be the least disruptive tools with which to remove invasive plants. You will need a state-issued pesticide license to apply herbicide on someone else's property, but all projects in wetland or aquatic systems fall under the jurisdiction of the Wetlands Protection Act and therefore require a permit. ***Yes, even hand-pulling that colony of glossy buckthorn plants from your own swampland requires a permit.*** Getting a permit for legal removal is fairly painless if you plan your project carefully.

1. Investigate and understand the required permits and learn how to obtain them. The entity charged with the enforcement of the Wetlands Protection Act varies from state to state. For more information in your state, contact:

**ME:** Department of Environmental Protection  
[www.state.me.us/dep/blwq/docstand/nrpapage.htm](http://www.state.me.us/dep/blwq/docstand/nrpapage.htm)

**NH:** Department of Environmental Services  
[www.des.state.nh.us/wetlands/](http://www.des.state.nh.us/wetlands/)

**VT:** Department of Environmental Conservation  
[www.anr.state.vt.us/dec/waterq/permits/htm/pm\\_cud.htm](http://www.anr.state.vt.us/dec/waterq/permits/htm/pm_cud.htm)

**MA:** Consult your local town conservation commission

**RI:** Department of Environmental Management  
[www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm](http://www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm)

**CT:** Consult your local town Inland Wetland and Conservation Commission

2. Consult an individual or organization with experience in this area. Firsthand experience in conducting projects in wetland zones and navigating the permitting process is priceless. Most states have wetland scientist societies whose members are experienced in working in wetlands and navigating the regulations affecting them. A simple Web search will reveal the contact point for these societies. Additionally, most environmental consulting firms and some nonprofit organizations have skills in this area.
3. Develop a well-written and thorough project plan. You are more likely to be successful in obtaining a permit for your project if you submit a project plan along with your permit application. The plan should include the reasons for the project, your objectives in completing the project, how you plan to reach those objectives, and how you will monitor the outcome.
4. Ensure that the herbicides you plan to use are approved for aquatic use. Experts consider most herbicides harmful to water quality or aquatic organisms, but rate some formulations as safe for aquatic use. Do the research and select an approved herbicide, and then closely follow the instructions on the label.
5. If you are unsure—research, study, and most of all, ask for help. Follow the rules. The damage caused to aquatic systems by the use of an inappropriate herbicide or the misapplication of an appropriate herbicide not only damages the environment, but also may reduce public support for safe, well-planned projects.

## **Section 3**

# **Annual Updates and Log Requirements**

The Owner and/or Contact/Responsible Party shall review this Operation and Maintenance Plan once per year for its effectiveness and adjust the plan and deed as necessary.

A log of all preventative and corrective measures for the stormwater system shall be kept on-site and be made available upon request by any public entity with administrative, health environmental or safety authority over the site including NHDES.

Copies of the Stormwater Maintenance report shall be submitted to the City of Portsmouth on an annual basis.



| Stormwater Management Report |                    |                              |                                                          |                                     |                           |              |
|------------------------------|--------------------|------------------------------|----------------------------------------------------------|-------------------------------------|---------------------------|--------------|
|                              |                    | Seacoast Pool Plastering LLC |                                                          |                                     |                           |              |
| BMP Description              | Date of Inspection | Inspector                    | BMP Installed and Operating Properly?                    | Cleaning / Corrective Action Needed | Date of Cleaning / Repair | Performed By |
| Rain Garden                  |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |
|                              |                    |                              | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                     |                           |              |



**APPENDIX A**





# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

|                  |                                 |
|------------------|---------------------------------|
| <b>Smoothing</b> | Yes                             |
| <b>State</b>     | New Hampshire                   |
| <b>Location</b>  |                                 |
| <b>Longitude</b> | 70.985 degrees West             |
| <b>Latitude</b>  | 43.081 degrees North            |
| <b>Elevation</b> | 0 feet                          |
| <b>Date/Time</b> | Wed, 11 Nov 2020 12:26:17 -0500 |

2 yr=3.60"

5 yr=4.57"

10 yr=5.47"

25 yr=6.95"

50 yr=8.33"

100 yr=9.98"

add 15% for coastal community

## Extreme Precipitation Estimates

|              | 5min | 10min | 15min | 30min | 60min | 120min |              | 1hr  | 2hr  | 3hr  | 6hr  | 12hr  | 24hr  | 48hr  |              | 1day  | 2day  | 4day  | 7day  | 10day |              |
|--------------|------|-------|-------|-------|-------|--------|--------------|------|------|------|------|-------|-------|-------|--------------|-------|-------|-------|-------|-------|--------------|
| <b>1yr</b>   | 0.26 | 0.40  | 0.50  | 0.65  | 0.82  | 1.04   | <b>1yr</b>   | 0.70 | 0.98 | 1.21 | 1.55 | 2.01  | 2.61  | 2.82  | <b>1yr</b>   | 2.31  | 2.72  | 3.12  | 3.84  | 4.43  | <b>1yr</b>   |
| <b>2yr</b>   | 0.32 | 0.49  | 0.61  | 0.81  | 1.02  | 1.29   | <b>2yr</b>   | 0.88 | 1.17 | 1.50 | 1.91 | 2.44  | 3.13  | 3.47  | <b>2yr</b>   | 2.77  | 3.33  | 3.84  | 4.56  | 5.19  | <b>2yr</b>   |
| <b>5yr</b>   | 0.37 | 0.57  | 0.72  | 0.97  | 1.23  | 1.59   | <b>5yr</b>   | 1.07 | 1.45 | 1.86 | 2.39 | 3.08  | 3.97  | 4.45  | <b>5yr</b>   | 3.52  | 4.28  | 4.89  | 5.79  | 6.56  | <b>5yr</b>   |
| <b>10yr</b>  | 0.41 | 0.64  | 0.81  | 1.10  | 1.43  | 1.86   | <b>10yr</b>  | 1.23 | 1.70 | 2.20 | 2.84 | 3.67  | 4.76  | 5.38  | <b>10yr</b>  | 4.21  | 5.17  | 5.88  | 6.95  | 7.82  | <b>10yr</b>  |
| <b>25yr</b>  | 0.47 | 0.75  | 0.95  | 1.31  | 1.74  | 2.29   | <b>25yr</b>  | 1.50 | 2.11 | 2.72 | 3.56 | 4.64  | 6.04  | 6.91  | <b>25yr</b>  | 5.34  | 6.65  | 7.50  | 8.84  | 9.89  | <b>25yr</b>  |
| <b>50yr</b>  | 0.52 | 0.84  | 1.08  | 1.50  | 2.03  | 2.70   | <b>50yr</b>  | 1.75 | 2.48 | 3.22 | 4.24 | 5.55  | 7.24  | 8.36  | <b>50yr</b>  | 6.41  | 8.04  | 9.02  | 10.61 | 11.81 | <b>50yr</b>  |
| <b>100yr</b> | 0.59 | 0.95  | 1.23  | 1.74  | 2.36  | 3.17   | <b>100yr</b> | 2.04 | 2.92 | 3.80 | 5.03 | 6.61  | 8.68  | 10.12 | <b>100yr</b> | 7.68  | 9.73  | 10.86 | 12.74 | 14.11 | <b>100yr</b> |
| <b>200yr</b> | 0.66 | 1.07  | 1.39  | 1.99  | 2.75  | 3.74   | <b>200yr</b> | 2.37 | 3.44 | 4.51 | 5.99 | 7.91  | 10.41 | 12.25 | <b>200yr</b> | 9.21  | 11.78 | 13.06 | 15.31 | 16.87 | <b>200yr</b> |
| <b>500yr</b> | 0.77 | 1.27  | 1.66  | 2.41  | 3.38  | 4.64   | <b>500yr</b> | 2.91 | 4.28 | 5.61 | 7.52 | 10.01 | 13.24 | 15.77 | <b>500yr</b> | 11.72 | 15.16 | 16.69 | 19.54 | 21.38 | <b>500yr</b> |

## Lower Confidence Limits

|              | 5min | 10min | 15min | 30min | 60min | 120min |              | 1hr  | 2hr  | 3hr  | 6hr  | 12hr | 24hr | 48hr  |              | 1day | 2day  | 4day  | 7day  | 10day |              |
|--------------|------|-------|-------|-------|-------|--------|--------------|------|------|------|------|------|------|-------|--------------|------|-------|-------|-------|-------|--------------|
| <b>1yr</b>   | 0.24 | 0.37  | 0.45  | 0.60  | 0.74  | 0.90   | <b>1yr</b>   | 0.64 | 0.88 | 0.94 | 1.26 | 1.54 | 2.04 | 2.51  | <b>1yr</b>   | 1.81 | 2.41  | 2.90  | 3.37  | 3.96  | <b>1yr</b>   |
| <b>2yr</b>   | 0.32 | 0.49  | 0.60  | 0.81  | 1.00  | 1.18   | <b>2yr</b>   | 0.86 | 1.16 | 1.36 | 1.82 | 2.34 | 3.03 | 3.36  | <b>2yr</b>   | 2.68 | 3.23  | 3.72  | 4.42  | 5.00  | <b>2yr</b>   |
| <b>5yr</b>   | 0.35 | 0.54  | 0.67  | 0.92  | 1.17  | 1.40   | <b>5yr</b>   | 1.01 | 1.37 | 1.61 | 2.14 | 2.76 | 3.68 | 4.07  | <b>5yr</b>   | 3.25 | 3.92  | 4.50  | 5.44  | 6.07  | <b>5yr</b>   |
| <b>10yr</b>  | 0.39 | 0.59  | 0.74  | 1.03  | 1.33  | 1.61   | <b>10yr</b>  | 1.15 | 1.57 | 1.82 | 2.43 | 3.11 | 4.21 | 4.71  | <b>10yr</b>  | 3.73 | 4.53  | 5.20  | 6.33  | 6.93  | <b>10yr</b>  |
| <b>25yr</b>  | 0.44 | 0.67  | 0.84  | 1.20  | 1.57  | 1.92   | <b>25yr</b>  | 1.36 | 1.87 | 2.11 | 2.83 | 3.64 | 4.88 | 5.67  | <b>25yr</b>  | 4.32 | 5.46  | 6.29  | 7.74  | 8.61  | <b>25yr</b>  |
| <b>50yr</b>  | 0.49 | 0.74  | 0.93  | 1.33  | 1.79  | 2.20   | <b>50yr</b>  | 1.55 | 2.15 | 2.36 | 3.19 | 4.09 | 5.54 | 6.51  | <b>50yr</b>  | 4.90 | 6.26  | 7.25  | 9.02  | 9.95  | <b>50yr</b>  |
| <b>100yr</b> | 0.55 | 0.83  | 1.04  | 1.50  | 2.05  | 2.52   | <b>100yr</b> | 1.77 | 2.46 | 2.65 | 3.58 | 4.59 | 6.28 | 7.47  | <b>100yr</b> | 5.56 | 7.18  | 8.38  | 10.51 | 11.46 | <b>100yr</b> |
| <b>200yr</b> | 0.61 | 0.92  | 1.16  | 1.68  | 2.35  | 2.88   | <b>200yr</b> | 2.02 | 2.82 | 2.95 | 4.01 | 5.14 | 7.10 | 9.30  | <b>200yr</b> | 6.29 | 8.94  | 9.68  | 12.25 | 13.23 | <b>200yr</b> |
| <b>500yr</b> | 0.71 | 1.06  | 1.36  | 1.98  | 2.82  | 3.47   | <b>500yr</b> | 2.43 | 3.39 | 3.43 | 4.66 | 6.01 | 8.33 | 11.36 | <b>500yr</b> | 7.37 | 10.93 | 11.73 | 15.02 | 15.95 | <b>500yr</b> |

## Upper Confidence Limits

|              | 5min | 10min | 15min | 30min | 60min | 120min |              | 1hr  | 2hr  | 3hr  | 6hr  | 12hr  | 24hr  | 48hr  |              | 1day  | 2day  | 4day  | 7day  | 10day |              |
|--------------|------|-------|-------|-------|-------|--------|--------------|------|------|------|------|-------|-------|-------|--------------|-------|-------|-------|-------|-------|--------------|
| <b>1yr</b>   | 0.28 | 0.44  | 0.53  | 0.71  | 0.88  | 1.08   | <b>1yr</b>   | 0.76 | 1.05 | 1.24 | 1.72 | 2.19  | 2.85  | 3.08  | <b>1yr</b>   | 2.52  | 2.97  | 3.44  | 4.14  | 4.83  | <b>1yr</b>   |
| <b>2yr</b>   | 0.33 | 0.51  | 0.62  | 0.85  | 1.04  | 1.25   | <b>2yr</b>   | 0.90 | 1.22 | 1.47 | 1.94 | 2.49  | 3.28  | 3.59  | <b>2yr</b>   | 2.90  | 3.45  | 3.97  | 4.73  | 5.45  | <b>2yr</b>   |
| <b>5yr</b>   | 0.40 | 0.61  | 0.76  | 1.04  | 1.32  | 1.59   | <b>5yr</b>   | 1.14 | 1.55 | 1.85 | 2.48 | 3.16  | 4.27  | 4.84  | <b>5yr</b>   | 3.78  | 4.65  | 5.30  | 6.16  | 7.05  | <b>5yr</b>   |
| <b>10yr</b>  | 0.46 | 0.71  | 0.88  | 1.23  | 1.59  | 1.93   | <b>10yr</b>  | 1.37 | 1.89 | 2.23 | 3.01 | 3.80  | 5.30  | 6.08  | <b>10yr</b>  | 4.69  | 5.84  | 6.61  | 7.58  | 8.68  | <b>10yr</b>  |
| <b>25yr</b>  | 0.57 | 0.86  | 1.07  | 1.53  | 2.01  | 2.49   | <b>25yr</b>  | 1.74 | 2.43 | 2.88 | 3.91 | 4.86  | 7.20  | 8.24  | <b>25yr</b>  | 6.37  | 7.92  | 8.85  | 10.00 | 11.08 | <b>25yr</b>  |
| <b>50yr</b>  | 0.66 | 1.00  | 1.25  | 1.79  | 2.41  | 3.01   | <b>50yr</b>  | 2.08 | 2.95 | 3.49 | 4.75 | 5.87  | 8.95  | 10.40 | <b>50yr</b>  | 7.92  | 10.00 | 11.05 | 12.33 | 13.57 | <b>50yr</b>  |
| <b>100yr</b> | 0.77 | 1.16  | 1.46  | 2.11  | 2.89  | 3.65   | <b>100yr</b> | 2.49 | 3.57 | 4.24 | 5.80 | 7.10  | 11.14 | 13.12 | <b>100yr</b> | 9.86  | 12.61 | 13.78 | 15.22 | 16.64 | <b>100yr</b> |
| <b>200yr</b> | 0.90 | 1.35  | 1.71  | 2.48  | 3.45  | 4.43   | <b>200yr</b> | 2.98 | 4.33 | 5.16 | 7.08 | 8.58  | 13.92 | 15.42 | <b>200yr</b> | 12.32 | 14.83 | 17.20 | 18.76 | 20.44 | <b>200yr</b> |
| <b>500yr</b> | 1.10 | 1.64  | 2.12  | 3.07  | 4.37  | 5.70   | <b>500yr</b> | 3.77 | 5.58 | 6.68 | 9.23 | 11.03 | 18.70 | 20.70 | <b>500yr</b> | 16.55 | 19.91 | 23.06 | 24.79 | 26.85 | <b>500yr</b> |

## [Sec. 6.01.] - Stormwater management checklist.

## Stormwater Management Checklist

Please use the following checklist as a guide to assess whether the various stormwater management components as required by Site Plan Regulations have been completed and are included in the site design and application materials. Please check each box as it applies consistent with the regulations. If certain items could not be completed or are not included in the site design, please provide separate written explanations as to why these items could not be completed or be included in the site design process due to site conditions.

| Project Contact Information                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Project Name <u>Proposed Office and Equipment Storage</u>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| Project Street Address <u>446 &amp; 450 Wadleigh Falls Road</u>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| Applicant's Name <u>Seacoast Pool Plastering, LLC</u><br><u>Robert P. MacInnis</u> | Phone No.<br><u>617-504-2833</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Email<br><u>rmacinnis@myfairpoint.net</u> |
| Engineer's Name /Company<br><u>John P. Lorden / Tighe &amp; Bond</u>               | Phone No.<br><u>603-433-8818</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Email<br><u>jlorden@tighebond.com</u>     |
| Property Owner (if different)                                                      | Phone No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Email                                     |
| Architect                                                                          | Phone No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Email                                     |
| Basic Project Information and Type of Development                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| <input checked="" type="checkbox"/>                                                | Completed Site Plan Review Application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Date of Submittal <u>11/18/ 2021</u>      |
| <input checked="" type="checkbox"/>                                                | New Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Redevelopment    |
| <input checked="" type="checkbox"/>                                                | Describe Type of Development <u>The proposed project is for the construction of a 1,000 SF office and 5,000 SF proposed equipment/construction storage warehouse area. The existing vacant lots are proposed to be combined and the access will be maintained from the existing paved driveway segment that was previously constructed. The 6,000-sf office/warehouse is expected to consist of 3 employees, 14 paved parking spaces and approximately 80,000 sf of gravel parking for storage of truck trailers, containers and equipment.</u> |                                           |
| <input checked="" type="checkbox"/>                                                | Total Area of Site <u>8.44</u> acres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |
| <input checked="" type="checkbox"/>                                                | Describe Existing Use/Land Cover of Property<br><u>The existing lots are currently vacant wooded lots previously used as gravel pits. A small portion of a 30' wide paved driveway off of Route 152 / Wadleigh Falls Road will be maintained. Along the frontage of the property there exists a small wetland that flows to a larger wetland along the western property line. A portion of the site is within the Aquifer Protection Overlay District</u>                                                                                       |                                           |
| <input checked="" type="checkbox"/>                                                | List Adjacent Receiving Water Bodies <u>unnamed wetland</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                           |
| <input checked="" type="checkbox"/>                                                | Onsite and Adjacent Wetland Areas have been Delineated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |
| Thresholds for Requiring a Stormwater Management and Erosion Control Report        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| Total Area of Proposed Disturbance                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Square Feet                               |
| <input type="checkbox"/>                                                           | < 20,000 square feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Not Required                              |
| <input type="checkbox"/>                                                           | > 20,000 square feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Required                                  |
| OR                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| Total Amount of new impervious area added                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Square Feet                               |
| <input type="checkbox"/>                                                           | < 5,000 square feet impervious area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Not Required                              |
| <input checked="" type="checkbox"/>                                                | > 5,000 square feet impervious area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Required                                  |
| Stormwater Management and Erosion Report Contents                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| <input checked="" type="checkbox"/>                                                | Existing Conditions Plans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Section 3.07 (B) (1)                      |
| <input checked="" type="checkbox"/>                                                | Title Block, Scale, Legend, Datum, Locus Plan, Professional Stamp(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |
| <input checked="" type="checkbox"/>                                                | Topographic Contours and Benchmarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                           |
| <input checked="" type="checkbox"/>                                                | Pre-development Watershed Boundaries, Drainage Patterns, Channelized Flow Areas                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| <input checked="" type="checkbox"/>                                                | Conveyance Structures, Location where runoff exits the site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                           |
| <input checked="" type="checkbox"/>                                                | Buffer and Setback limits as required by Town Ordinances and State Regulations                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                           |
| <input checked="" type="checkbox"/>                                                | Buildings, Structures, Wells, Septic systems, Utilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                           |
| <input checked="" type="checkbox"/>                                                | Water Bodies, Wetlands, Hydrologic Features, Soils Codes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                           |

|                                                                                                                                                                   |                                                                                                                                                                                                |                                                               |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------|
| <input checked="" type="checkbox"/>                                                                                                                               | Areas of Existing vegetation and mature trees shown                                                                                                                                            |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | <b>Proposed Conditions Plans</b>                                                                                                                                                               |                                                               | <i>Section 3.07 (B) (2)</i> |
| <input checked="" type="checkbox"/>                                                                                                                               | Title Block, Scale, Legend, Datum, Locus Plan, Professional Stamp(s)                                                                                                                           |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Topographic Contours and Benchmarks                                                                                                                                                            |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Post-development Watershed boundaries, drainage patterns, channelized flow areas                                                                                                               |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Proposed areas of disturbance                                                                                                                                                                  |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Proposed impervious areas                                                                                                                                                                      |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Temporary stock pile areas                                                                                                                                                                     |                                                               |                             |
| <input type="checkbox"/>                                                                                                                                          | Construction refueling areas                                                                                                                                                                   |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Temporary and permanent stormwater treatment BMP location and details are shown                                                                                                                |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Erosion Control Measure locations and details are shown on plans                                                                                                                               |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Stormwater outlet locations                                                                                                                                                                    |                                                               |                             |
| <input type="checkbox"/>                                                                                                                                          | Drainage and Access Maintenance Easements                                                                                                                                                      |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Name of Receiving Waters                                                                                                                                                                       |                                                               |                             |
| <input type="checkbox"/>                                                                                                                                          | Connection to municipal stormwater drainage facilities                                                                                                                                         |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | <b>Drainage Analysis Completed</b>                                                                                                                                                             |                                                               | <i>Section 3.07 B (3)</i>   |
|                                                                                                                                                                   | <b>24 – Hour Storm Event</b>                                                                                                                                                                   | <b>Runoff</b>                                                 | <b>Pre-development</b>      |
|                                                                                                                                                                   | 2-Year                                                                                                                                                                                         | Rate                                                          | (CFS)                       |
|                                                                                                                                                                   | 2-Year                                                                                                                                                                                         | Volume                                                        | (CF)                        |
|                                                                                                                                                                   | 10-Year                                                                                                                                                                                        | Rate                                                          | (CFS)                       |
|                                                                                                                                                                   | 10-Year                                                                                                                                                                                        | Volume                                                        | (CF)                        |
|                                                                                                                                                                   | 25-Year <a href="#">see attached</a>                                                                                                                                                           | Rate                                                          | (CFS)                       |
|                                                                                                                                                                   | 25-Year                                                                                                                                                                                        | Volume                                                        | (CF)                        |
|                                                                                                                                                                   | 50-Year                                                                                                                                                                                        | Rate                                                          | (CFS)                       |
|                                                                                                                                                                   | 50-Year                                                                                                                                                                                        | Volume                                                        | (CF)                        |
|                                                                                                                                                                   | 100-Year                                                                                                                                                                                       | Rate                                                          | (CFS)                       |
|                                                                                                                                                                   | 100-Year                                                                                                                                                                                       | Volume                                                        | (CF)                        |
| <b>Stormwater BMP Design</b>                                                                                                                                      |                                                                                                                                                                                                |                                                               |                             |
| Have Low Impact Development measures been included in Design <input checked="" type="checkbox"/> Yes, list below; <input type="checkbox"/> No, Explain separately |                                                                                                                                                                                                |                                                               |                             |
| List LID Measures included: <a href="#">Bioretention and preserving the wooded buffer to the maximum extent practicable</a>                                       |                                                                                                                                                                                                |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Have the stormwater BMP and erosion control measures been designed and sized in accordance with NHDES Stormwater Manual Design Guidance as required by Site Plan Regulations 3.07 (B) 6        |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Percentage of Impervious Area Treated <a href="#">87%</a>                                                                                                                                      | Type of BMP treatment:<br><a href="#">Bioretention System</a> |                             |
| <input type="checkbox"/>                                                                                                                                          | Landscaping plans and details of planting areas have been included and specify planting species that are native, non-invasive and appropriate for site conditions. <i>Section 3.07 (B) (7)</i> |                                                               |                             |
| <input type="checkbox"/>                                                                                                                                          | Covenants and deed restrictions for access prepared for filing with the Register of Deeds. <i>Section 3.07 (B) (9)</i>                                                                         |                                                               |                             |
| <input type="checkbox"/>                                                                                                                                          | <b>Other Permits or Plans Required by US EPA or NH DES (as applicable) <i>Section 3.07 (B) (10)</i></b>                                                                                        |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | US EPA Notice of Intent                                                                                                                                                                        |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | NHDES Alteration of Terrain Permit                                                                                                                                                             |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | Other (Please list) <a href="#">NH DES Individual Sewage Disposal System</a>                                                                                                                   |                                                               |                             |
| <input checked="" type="checkbox"/>                                                                                                                               | <b>Operations and Maintenance Plan <i>Section 3.07 (B) (8)</i></b>                                                                                                                             |                                                               |                             |
|                                                                                                                                                                   | <b>Responsible Party for Future Maintenance</b> <a href="#">Robert P. MacInnis</a>                                                                                                             |                                                               |                             |
| <input type="checkbox"/>                                                                                                                                          | Need for 3rd Party Review                                                                                                                                                                      | Yes                                                           | No                          |

[Sec. 6.02.] - Application completeness checklist for minor review.

[Sec. 6.03.] - Application completeness checklist for major review.

## Newmarket Site Plan Review Regulations

### Major Review

### Application Completeness Checklist

| Applicable Section of<br>Site Plan Regulations:                         | (PB Application Checklists.xls)                               | Provided?                           |    |      | Waiver<br>Req.                      |
|-------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|----|------|-------------------------------------|
|                                                                         |                                                               | YES                                 | NO | N.A. |                                     |
| <b>Application Form:</b>                                                |                                                               |                                     |    |      |                                     |
| 2.04 (A)(1)                                                             | correctly completed                                           | <input checked="" type="checkbox"/> |    |      |                                     |
| 2.04 (A)(1)                                                             | signed by owner(s)                                            | <input checked="" type="checkbox"/> |    |      |                                     |
| <b>Abutters List:</b>                                                   |                                                               |                                     |    |      |                                     |
| 2.04 (A)(2)                                                             | includes all abutters                                         | <input checked="" type="checkbox"/> |    |      |                                     |
| RSA 676:4 I, (b)                                                        | includes owner(s)                                             | <input checked="" type="checkbox"/> |    |      |                                     |
| RSA 676:4 I, (d)                                                        | includes authorized representative                            | <input checked="" type="checkbox"/> |    |      |                                     |
| 2.10                                                                    | includes towns/regions for regional notice if required        | <input checked="" type="checkbox"/> |    |      |                                     |
| 2.04 (A)(2)                                                             | includes 3 sets of mailing labels: 1" X 2.75"                 | <input checked="" type="checkbox"/> |    |      |                                     |
| 2.04 (A)(2)                                                             | signed and dated by preparer                                  | <input checked="" type="checkbox"/> |    |      |                                     |
| RSA 676:4 I, (b)                                                        | dated within 5 days of submittal of application               | <input checked="" type="checkbox"/> |    |      |                                     |
| <b>Fees: <a href="#">Site Plan Review + Special Use Permit fees</a></b> |                                                               |                                     |    |      |                                     |
| 2.04 (A)(3)                                                             | amount for administration: \$ <u>850</u>                      |                                     |    |      |                                     |
| 2.04 (A)(3)                                                             | amount for public notice: \$ <u>150 + \$63 (abutter fees)</u> |                                     |    |      |                                     |
|                                                                         | total amount paid: \$ <u>1063.00</u>                          |                                     |    |      |                                     |
|                                                                         | correct amount paid                                           | <input checked="" type="checkbox"/> |    |      |                                     |
| <b>Site Plan:</b>                                                       |                                                               |                                     |    |      |                                     |
| 2.04 (A)(4)                                                             | three paper copies submitted                                  | <input checked="" type="checkbox"/> |    |      |                                     |
| 4.01                                                                    | correct size: 22" X 34"                                       | <input checked="" type="checkbox"/> |    |      |                                     |
| <b>title block:</b>                                                     |                                                               |                                     |    |      |                                     |
| 4.03 (A)(1)                                                             | title of sheet/name of project                                | <input checked="" type="checkbox"/> |    |      |                                     |
| 4.03 (A)(2)                                                             | name of owner                                                 | <input checked="" type="checkbox"/> |    |      |                                     |
| 4.03 (A)(4)                                                             | tax map & parcel number                                       | <input checked="" type="checkbox"/> |    |      |                                     |
| 4.03 (A)(5)                                                             | name and address of preparer                                  | <input checked="" type="checkbox"/> |    |      |                                     |
| <b>scale:</b>                                                           |                                                               |                                     |    |      |                                     |
| 4.03 (B)                                                                | given in text and graphic form                                | <input checked="" type="checkbox"/> |    |      |                                     |
| 4.08                                                                    | correct: 1" = 20'                                             |                                     |    |      | <input checked="" type="checkbox"/> |
| 4.03 (C)                                                                | north arrow                                                   | <input checked="" type="checkbox"/> |    |      |                                     |

|                |                                                       | Y | N | N/A | WAIVER |
|----------------|-------------------------------------------------------|---|---|-----|--------|
|                | dates:                                                |   |   |     |        |
| 4.03 (D)       | original preparation                                  | X |   |     |        |
| 4.03 (D)       | updates, with description of changes                  | X |   |     |        |
|                | approval sheet:                                       |   |   |     |        |
| 4.06 (A)       | 2" X 4" approval block for Board                      | X |   |     |        |
| 4.06 (B)       | supplemental plat note w/names & dates                | X |   |     |        |
| 4.06 (C)       | locus map                                             | X |   |     |        |
| 4.07           | match lines for multiple sheets                       |   |   | X   |        |
|                | area of coverage:                                     |   |   |     |        |
| 4.09           | correctly determined                                  | X |   |     |        |
| 4.09           | supplemental location drawing                         | X |   |     |        |
| 4.04           | LLS stamp and signature where needed                  | X |   |     |        |
| 4.05           | PE stamp and signature where needed                   | X |   |     |        |
|                | boundary survey:                                      |   |   |     |        |
| 4.10 (A)       | prepared by LLS                                       | X |   |     |        |
| 4.10 (A)(1)    | complete boundary survey documentation                | X |   |     |        |
| 4.10 (A)(2)    | names, addresses and map/parcel of abutters           | X |   |     |        |
| 4.10 (A)(3)    | roads, ROWs, intersections & driveways within 50'     | X |   |     |        |
|                | existing conditions on the site:                      |   |   |     |        |
| 4.10 (B)(1)    | contours at 2' intervals, with elevation benchmark    | X |   |     |        |
| 4.10 (B)(2)    | soil types                                            | X |   |     |        |
| 4.10 (B)(3)    | buildings in plan view, w/sizes and uses              |   |   | X   |        |
| 4.10 (B)(4)    | approx. location of buildings within 50' of site      |   |   | X   |        |
| 4.10 (B)(5)    | details of existing site improvements                 | X |   |     |        |
| 4.10 (B)(6)    | surface waters, stone walls & other resources         | X |   |     |        |
| 4.10 (B)(7)(a) | notes re: easements, deed restrictions, covenants     | X |   |     |        |
| 4.10 (B)(7)(b) | notes re: base and overlay zoning districts           | X |   |     |        |
| 4.10 (B)(7)(c) | notes re: area of lot and length of road frontage     | X |   |     |        |
| 4.10 (B)(8)    | municipal and zoning district boundaries              | X |   |     |        |
| 4.10 (B)(9)    | setbacks                                              | X |   |     |        |
| 4.10 (B)(10)   | elevation contour of the 100 year floodplain          |   |   | X   |        |
| 4.10 (B)(10)   | first floor elevations of buildings within floodplain |   |   | X   |        |
|                | proposed site plan:                                   |   |   |     |        |
| 4.05           | stamped and signed by a PE                            | X |   |     |        |
| 4.10 (C)(1)    | contours at 2' intervals                              | X |   |     |        |

|                                |                                                         | Y | N | N/A | WAIVER |
|--------------------------------|---------------------------------------------------------|---|---|-----|--------|
| 4.10 (C)(2)                    | buildings in plan view, w/sizes and uses                | X |   |     |        |
| 4.10 (C)(3)                    | design of new or modified site improvements             | X |   |     |        |
| 4.10 (C)(4)                    | parking calculations                                    | X |   |     |        |
| 4.10 (C)(4)                    | accessible parking spaces                               | X |   |     |        |
| 4.10 (C)(5)                    | pedestrian and bicycle facilities                       |   |   |     | X      |
| 4.10 (C)(6)                    | snow storage areas                                      | X |   |     |        |
| 4.10 (C)(10)                   | wheelchair access                                       | X |   |     |        |
| 4.10 (C)(7)                    | landscaping                                             |   |   |     | X      |
| 4.10 (C)(8)                    | drainage facilities and paths of drainage flow          | X |   |     |        |
| 4.10 (C)(9)                    | location of utilities, water and sewage disposal        | X |   |     |        |
| 4.10 (C)(12)                   | solid waste and recycling facilities                    |   |   | X   |        |
| 4.10 (C)(13)                   | outdoor lighting                                        |   |   |     | X      |
| 4.10 (C)(11)                   | elevation contour of the 100 year floodplain            |   |   | X   |        |
| 4.10 (C)(11)                   | first floor elevations of buildings within floodplain   |   |   | X   |        |
| 4.10 (C)(14)(a)                | notes re: easements, deed restrictions, covenants       |   |   |     |        |
| 4.10 (C)(14)(b)                | notes re: base and overlay zoning districts             | X |   |     |        |
| 4.10 (C)(14)(c)                | notes re: area of lot and length of road frontage       | X |   |     |        |
| 4.10 (C)(14)(d)                | notes re: calculation of impervious area                | X |   |     |        |
| 4.10 (C)(14)(e)                | notes re: plan for snow removal                         | X |   |     |        |
| 4.10 (C)(14)(f)                | notes re: list of waivers and substitutions             | X |   |     |        |
| 4.10 (C)(15)                   | other as needed                                         |   |   |     |        |
| 4.10 (D)                       | elevation view of the front of proposed/alterd building |   |   |     | X      |
| Other Documentation:           |                                                         |   |   |     |        |
| 2.04 (A)(5)(a)                 | letter to Police Chief                                  | X |   |     |        |
| 2.04 (A)(5)(a)                 | letter to Fire Chief                                    | X |   |     |        |
| 2.04 (A)(5)(a)                 | letter to Code Enforcement Officer re: compliance       | X |   |     |        |
| 2.04 (A)(5)(a)                 | letter to Public Works Director                         | X |   |     |        |
| application for State permits: |                                                         |   |   |     |        |
| 2.04 (A)(5)(b)                 | septic                                                  | X |   |     |        |
| 2.04 (A)(5)(b)                 | driveway                                                | X |   |     |        |
| 2.04 (A)(5)(b)                 | wetlands                                                |   |   | X   |        |
| 2.04 (A)(5)(b)                 | site specific                                           | X |   |     |        |
| 2.04 (A)(5)(b)                 | underground storage tank                                |   |   | X   |        |
| 2.04 (A)(5)(b)                 | other: _____                                            |   |   |     |        |

Stormwater Management Checklist Attachment

|      |      | Rate (cfs) |        | Volume (cf) |        | Rate (cfs) |         | Volume (cf) |         | Rate (cfs) |         | Volume (cf) |  | Rate (cfs) |  | Volume (cf) |  |
|------|------|------------|--------|-------------|--------|------------|---------|-------------|---------|------------|---------|-------------|--|------------|--|-------------|--|
| PA-1 |      | 2 yr       |        | 10 yr       |        | 25 yr      |         | 50 yr       |         | 100 yr     |         |             |  |            |  |             |  |
|      | Pre  | 9.40       | 34,619 | 21.26       | 74,865 | 31.55      | 110,500 | 41.49       | 145,493 | 53.57      | 188,799 |             |  |            |  |             |  |
|      | Post | 5.03       | 45,825 | 13.05       | 89,883 | 26.78      | 127,595 | 37.10       | 164,044 | 48.32      | 208,374 |             |  |            |  |             |  |
| PA-2 |      | 2 yr       |        | 10 yr       |        | 25 yr      |         | 50 yr       |         | 100 yr     |         |             |  |            |  |             |  |
|      | Pre  | 0.99       | 3,508  | 1.91        | 6,761  | 2.67       | 9,505   | 3.38        | 12,136  | 4.23       | 15,341  |             |  |            |  |             |  |
|      | Post | 0.99       | 3,508  | 1.91        | 6,761  | 2.67       | 9,505   | 3.38        | 12,136  | 4.23       | 15,341  |             |  |            |  |             |  |
| PA-3 |      | 2 yr       |        | 10 yr       |        | 25 yr      |         | 50 yr       |         | 100 yr     |         |             |  |            |  |             |  |
|      | Pre  | 0.05       | 172    | 0.08        | 267    | 0.10       | 342     | 0.12        | 412     | 0.14       | 496     |             |  |            |  |             |  |
|      | Post | 0.05       | 172    | 0.08        | 267    | 0.10       | 342     | 0.12        | 412     | 0.14       | 496     |             |  |            |  |             |  |



446 & 450 WADLEIGH FALLS ROAD

NEWMARKET, NEW HAMPSHIRE

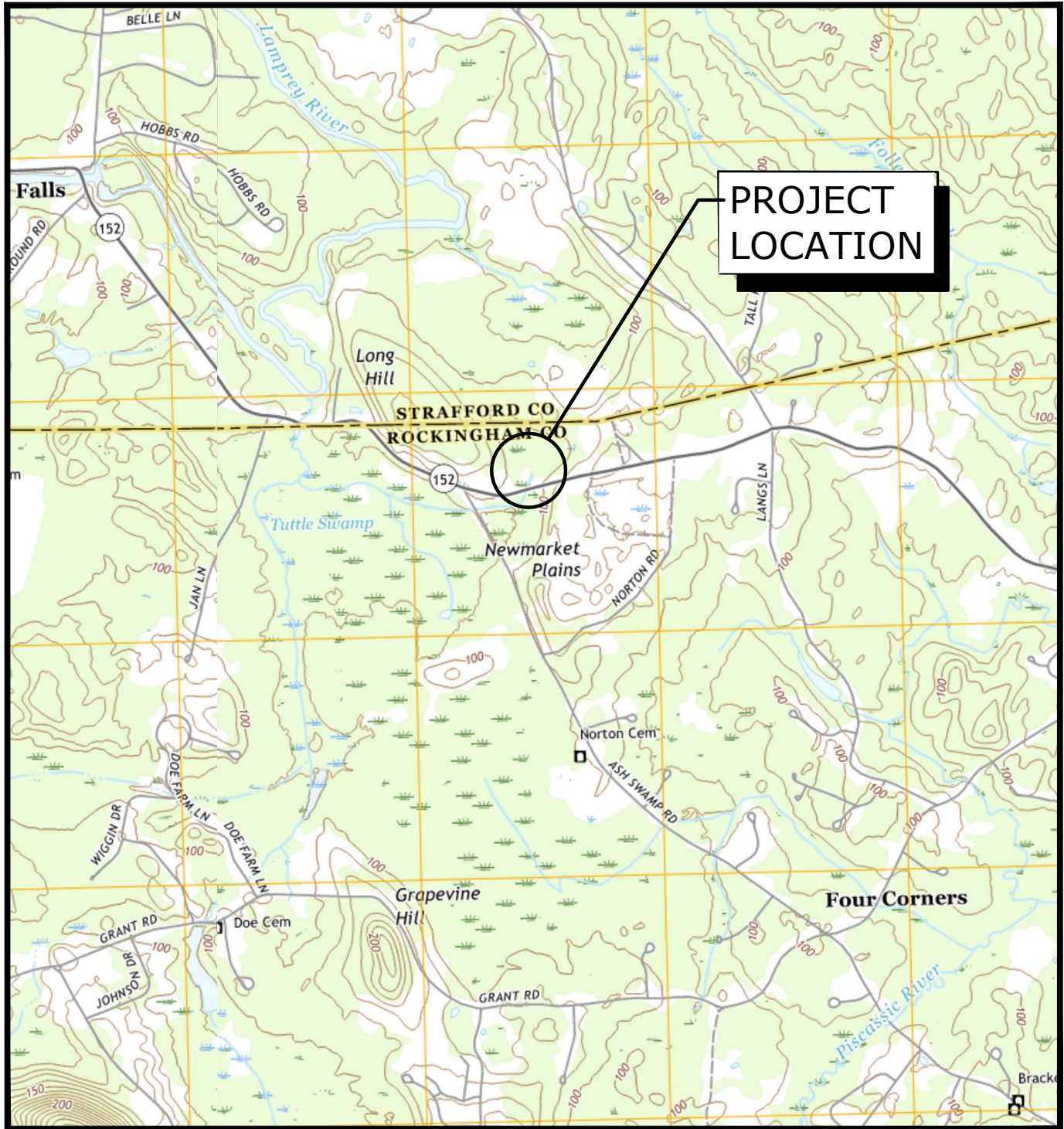
PROPOSED OFFICE AND EQUIPMENT STORAGE

PERMIT DRAWINGS

NOVEMBER 12, 2021

| LIST OF DRAWINGS |                                             |
|------------------|---------------------------------------------|
| SHEET NO.        | SHEET TITLE                                 |
|                  | COVER                                       |
| 1 OF 1           | EXISTING CONDITIONS PLAN (BY DOUCET SURVEY) |
| C-101            | EXISTING & DEMOLITION PLAN                  |
| C-102            | SITE PLAN                                   |
| C-103            | GRADING, DRAINAGE, AND EROSION CONTROL PLAN |
| C-104            | UTILITY PLAN                                |
| C-105            | PHASING PLAN                                |
| C-501            | EROSION CONTROL NOTES                       |
| C-502            | DETAILS                                     |
| C-503            | DETAILS                                     |
| C-504            | DETAILS                                     |

| LIST OF PERMITS                                              |                   |
|--------------------------------------------------------------|-------------------|
| PERMIT                                                       | STATUS            |
| SITE PLAN REVIEW/SPECIAL USE PERMIT (WETLAND BUFFER IMPACTS) | SUBMITTED         |
| NHDOT - DRIVEWAY PERMIT                                      | SUBMITTED         |
| NHDES - ALTERATION OF TERRAIN PERMIT                         | SUBMITTED         |
| NHDES - INDIVIDUAL SEWAGE DISPOSAL SYSTEM                    | SUBMITTED         |
| USEPA - NOTICE OF INTENT                                     | PENDING SUBMITTAL |



LOCATION MAP  
SCALE: 1" = 2000'

PREPARED BY:  
**Tighe&Bond**  
Engineers | Environmental Specialists

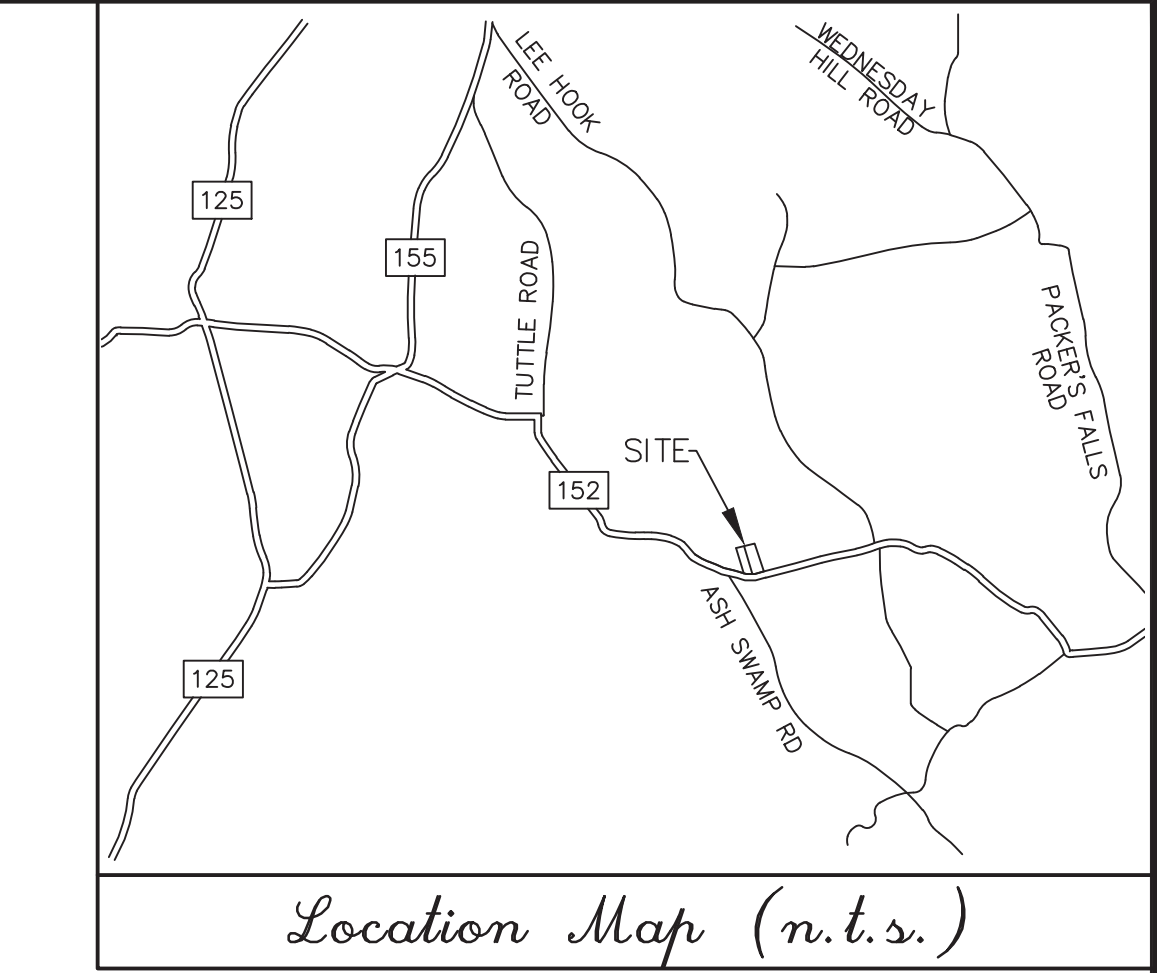


PREPARED FOR:  
SEACOAST POOL PLASTERING, LLC  
ROBERT P. MACINNIS  
90 DEPOT ROAD  
GREENLAND, NEW HAMPSHIRE 03840

PREPARED WITH:  
DOUCET SURVEY LLC  
102 KENT PLACE  
NEWMARKET, NEW HAMPSHIRE 03857

Last Saved: 11/10/2021 3:55pm By: J.Winston  
Plotted On: Nov 10, 2021 3:55pm  
File & Print: S:\S132 Seacoast Pool Plastering LLC\001 446 & 450 Wadleigh Falls Rd\Drawings Figures\AutoCAD\Sheet\S5132 C-COV.Rdw



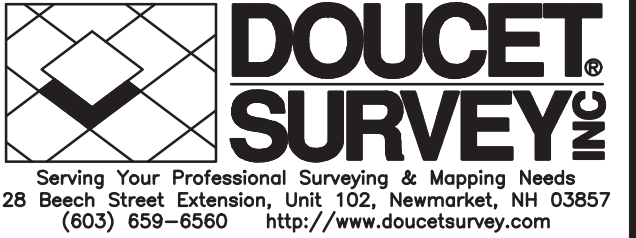


## REFERENCE PLANS:

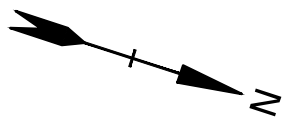
1. "SUBDIVISION PLAN FOR GREYSTONE OF MAINE, WADLEIGH FALLS ROAD (ROUTE 1520 NEWMARKET, NH)," BY DOUCET SURVEY, INC., DATED NOVEMBER 3, 1999.
2. "SUBDIVISION PLAN FOR LEO P. LAROCHELLE IN NEWMARKET, N.H." BY BRUCE L. POHOPEK, DATED MARCH 12, 1982. R.C.R.D. PLAN # D-10780.
3. "PLAN OF LAND SHOWING PROPOSED SUBDIVISION FOR JOHN W. CLARK IN NEWMARKET, N.H." BY BRUCE L. POHOPEK DATED MAY 17, 1977. R.C.R.D. PLAN # C-6943
4. "SUBDIVISION OF LAND FOR LLOYD WALKER IN NEWMARKET, N.H." BY BRUCE L. POHOPEK DATED MAY 17, 1977. R.C.R.D. PLAN # D-7311.
5. "PLAN OF SUBDIVISION FOR HERBERT RICHMOND, ROUTE 152, WADLEIGH FALLS ROAD, LEE & NEWMARKET, NEW HAMPSHIRE" BY K.E. MOORE & B.G. STAPLES, DATED MAY 1978. S.C.R.D. PLAN #170-68.
6. "SUBDIVISION OF LAND OF HERBERT RICHMOND, ROUTE 152, LEE, N.H." BY ERNEST J. COTE, DATED JUNE 2, 1979. S.C.R.D. PLAN #19A-23.
7. "PLAN OF LAND OF HERBERT RICHMOND, OFF ROUTE 152, LEE, N.H." BY ERNEST J. COTE, DATED SEPTEMBER 1981, S.C.R.D. PLAN # 22A-15.
8. "LOT LINE AMENDMENTS FOR RUSSELL RICHMOND & PATRICIA KUCHARSKI IN LEE, N.H." BY BRUCE L. POHOPEK, DATED FEBRUARY 17, 1986. S.C.R.D. PLAN #29-61.
9. "PLAN OF LAND FOR CHICK TRUCKING INC., ROUTE 152, NEWMARKET, N.H." BY DOUCET SURVEY, INC. DATED FEBRUARY 21, 1996.
10. "PLAN OF BOUNDARY LINE AGREEMENT BETWEEN LEBEAU, LUNDGREN & CLARK, WADLEIGH FALLS ROAD, NEWMARKET, N.H." BY DOUCET SURVEY, INC. DATED APRIL 20, 1998.

EXISTING CONDITIONS PLAN  
FOR  
PROULX NORTH INVESTMENTS  
ROUTE 152 (WADLEIGH FALLS ROAD)  
NEWMARKET, NEW HAMPSHIRE

|                    |                     |
|--------------------|---------------------|
| DRAWN BY: M.W.F.   | DATE: NOV. 12, 2003 |
| CHECKED BY: S.V.M. | DRAWING NO.: 1677A  |
| JOB NO.: 1677      | SHEET 1 OF 1        |







EXISTING CONDITIONS PLAN NOTES:

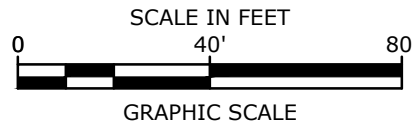
- EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY DOUCET SURVEY, LLC, DATED 2004 AND UPDATED CONDITIONS IN OCTOBER 2020.
- JURISDICTIONAL WETLANDS WERE DELINEATED SEPTEMBER 23, 2020 BY LEONARD A. LORD, PHD, NHCWS #14, NHCSS #19 OF TIGHE & BOND. WETLAND CRITERIA USED INCLUDES: CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY 1987), REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTHCENTRAL AND NORTHEAST REGION (JANUARY 2012), FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4 (2018), U.S. ARMY CORPS OF ENGINEERS NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST (LICHVAR ET AL., 2016), AND NHDES WETLANDS BUREAU ADMINISTRATIVE RULES (2020), AND FIELD LOCATED BY DOUCET, SURVEY, LLC.
- HORIZONTAL DATUM IS ASSUMED AND BASED ON WORK PREVIOUSLY COMPLETED BY DOUCET SURVEY, LLC ON THIS SITE. MORE SPECIFICALLY, NEW WORK WAS COORDINATED TO MONUMENTATION FOUND ON SITE AT TIME OF SURVEY AS ALL OTHER SURVEY CONTROL HAS BEEN DESTROYED.
- VERTICAL DATUM IS APPROXIMATELY BASED ON THE ELEVATION PREVIOUSLY MEASURED AT THE SOUTH END OF THE STONE BOX CULVERT ON THE EAST END OF THE PROJECT AS SHOWN HEREON. ALL OTHER SURVEY CONTROL HAS BEEN DESTROYED AND ALL OTHER CULVERTS WITHIN THE AREA OF SURVEY HAVE BEEN RECONSTRUCTED.
- THIS IS NOT A BOUNDARY SURVEY AND SHALL NOT BE USED AS SUCH. APPROXIMATE LOT LINES ARE BASED ON SURVEY COMPLETED BY DOUCET SURVEY, LLC IN 2004 AND HAVE NOT BEEN VERIFIED.

DEMOLITION NOTES:

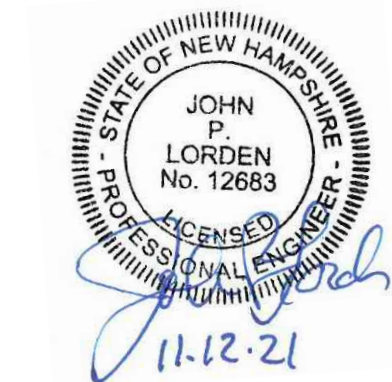
- THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
- THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
- ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
- COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
- ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- SAW CUT AND REMOVE PAVEMENT ONE (1) FOOT OFF PROPOSED EDGE OF PAVEMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
- COORDINATE ALL WORK WITHIN THE PUBLIC RIGHT OF WAYS WITH THE TOWN OF NEWMARKET AND NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
- REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. ALL STUMPS WITHIN WETLAND BUFFERS SHALL REMAIN IN PLACE.
- CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.
- PROVIDE INLET PROTECTION BARRIERS. INLET PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN EVENT OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED OR SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER.
- EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
- THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

LEGEND

|     |                                             |
|-----|---------------------------------------------|
| TBR | TO BE REMOVED                               |
| TYP | TYPICAL                                     |
| DYL | DOUBLE YELLOW LINE                          |
| SWL | SINGLE WHITE LINE                           |
| W   | EXISTING MONITORING WELL                    |
| U   | EXISTING UTILITY POLE                       |
| G   | EXISTING GUY POLE                           |
| B   | EXISTING BOULDER                            |
| F   | EXISTING FLARED END SECTION                 |
| P   | PERCOLATION TEST                            |
| TP  | TEST PIT                                    |
| --- | APPROXIMATE LIMIT OF PROPOSED SAW CUT       |
| --- | LIMIT OF WORK                               |
| --- | PROPERTY LINE                               |
| --- | PROPERTY LINE TO BE ELIMINATED              |
| --- | EDGE OF PRIME WETLAND                       |
| --- | EDGE OF PRIME WETLAND/POORLY DRAINED SOILS  |
| --- | EDGE OF AQUIFER PROTECTION OVERLAY DISTRICT |
| --- | 125' SEPTIC SETBACK FROM PRIME              |
| --- | 100' STRUCTURE SETBACK FROM PRIME           |
| --- | 75' PRIME WETLAND BUFFER                    |
| --- | 25' POORLY DRAINED BUFFER                   |
| --- | 50' VERY POORLY DRAINED BUFFER              |
| --- | EDGE OF EXISTING GRAVEL PATH                |
| --- | MAJOR CONTOUR LINE                          |
| --- | MINOR CONTOUR LINE                          |
| --- | EXISTING TREELINE                           |
| --- | EXISTING TREELINE TO BE REMOVED             |
| --- | PROPOSED TREELINE                           |
| --- | EDGE OF WETLAND                             |
| --- | SILT SOCK                                   |
| --- | DOUBLE ROW OF SILT SOCK                     |
| --- | STONE WALL                                  |
| --- | EXISTING DRAIN LINE/FLOW PATH               |
| --- | APPROX. CENTERLINE OF INTERMITTENT STREAM   |
| --- | SETBACK LINE                                |
| --- | EXISTING GUARDRAIL                          |
| --- | WETLANDS                                    |



Tighe & Bond



PERMIT DRAWINGS

Proposed Office and Equipment Storage

Seacoast Pool Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 11/12/2021       |             |
| FILE:        | S5132_C-DSGN.dwg |             |
| DRAWN BY:    | JRW/BIL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

EXISTING & DEMOLITION PLAN

SCALE: AS SHOWN

C-101

Last Saved: 11/10/2021 3:39pm By: Winston  
Printed On: Nov 15, 2021 3:39pm  
Tighe & Bond 21525212 Seacoast Pool Plastering, LLC 001 446 & 450 Wadleigh Falls Rd Drawings Figures AutoCAD Sheet S5132\_C-DSGN.dwg





1. STRIPE PARKING AREAS AS SHOWN, INCLUDING PARKING SPACES, ADA SYMBOLS, AND PAINTED ISLANDS SHALL BE FAST DRYING TRAFFIC PAINT. (ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT. CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F").
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS FOR PARKING STALL MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
5. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
6. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
7. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
8. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAY WITH THE TOWN OF NEWMARKET AND NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
9. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
10. SEE BUILDING DRAWINGS FOR CONCRETE PAD.
11. ALL WORK SHALL CONFORM TO THE TOWN OF NEWMARKET DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITIONS.
12. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
13. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

LOCATION: TAX MAP R-6, LOT 50-7 & 50-8  
446 & 450 WADLEIGH FALLS ROAD  
NEWMARKET, NEW HAMPSHIRE

|                                  |                 |                                    |
|----------------------------------|-----------------|------------------------------------|
| <u>DIMENSIONAL REQUIREMENTS:</u> | <u>REQUIRED</u> | <u>PROPOSED</u>                    |
| MINIMUM LOT SIZE :               | 2 ACRES         | 8.44 ACRES<br>(LOT 7 & 8 COMBINED) |

|                   |       |        |
|-------------------|-------|--------|
| MINIMUM SETBACKS: |       |        |
| • FRONT:          | 75 FT | >75 FT |
| • SIDE:           | 20 FT | >20 FT |
| • REAR:           | 20 FT | >20 FT |

|                       |          |          |
|-----------------------|----------|----------|
| PARKING STALL LAYOUT: |          |          |
| • STANDARD 90°        | 9' X 18' | 9' X 20' |
| • ACCESSIBLE 90°      | 8' X 20' | 8' X 20' |

\* WAIVER REQUESTED

|                                                                                       |                                          |
|---------------------------------------------------------------------------------------|------------------------------------------|
| •                                                                                     | PROPOSED BOLLARD                         |
| TYP                                                                                   | TYPICAL                                  |
| 15' R                                                                                 | PROPOSED CURB RADIUS                     |
| VGC                                                                                   | PROPOSED VERTICAL GRANITE CURB           |
|  | PROPOSED ACCESSIBLE PARKING SPACE        |
|  | PROPERTY LINE                            |
|  | EDGE OF POORLY DRAINED SOILS             |
|  | EDGE OF WETLAND                          |
|  | FRONT/SIDE/REAR YARD SETBACKS            |
|  | AQUIFER PROTECTION AREA OVERLAY DISTRICT |
|  | PROPOSED EDGE OF PAVEMENT                |
|  | PROPOSED CURB                            |
|  | 125' SEPTIC SETBACK FROM PRIME           |
|  | 100' STRUCTURE SETBACK FROM PRIME        |
|  | 75' PRIME WETLAND BUFFER                 |
|  | 25' POORLY DRAINED BUFFER                |
|  | 50' VERY POORLY DRAINED BUFFER           |
|  | EXISTING TREELINE                        |
|  | PROPOSED TREELINE                        |
|  | PROPOSED BUILDING                        |
|  | PROPOSED PAVEMENT                        |
|  | PROPOSED CONCRETE SIDEWALK               |
|  | PROPOSED GRAVEL PARKING AREA             |
|  | PROPOSED PAVEMENT PAINT                  |
|  | WETLANDS                                 |
|  | PROPOSED SNOW STORAGE AREA               |

**DATE:** \_\_\_\_\_

A horizontal scale bar with alternating black and white segments. It is labeled "SCALE IN FEET" at the top and "GRAPHIC SCALE" at the bottom. Numerical markers are placed at 0, 40', and 80' along the top.

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

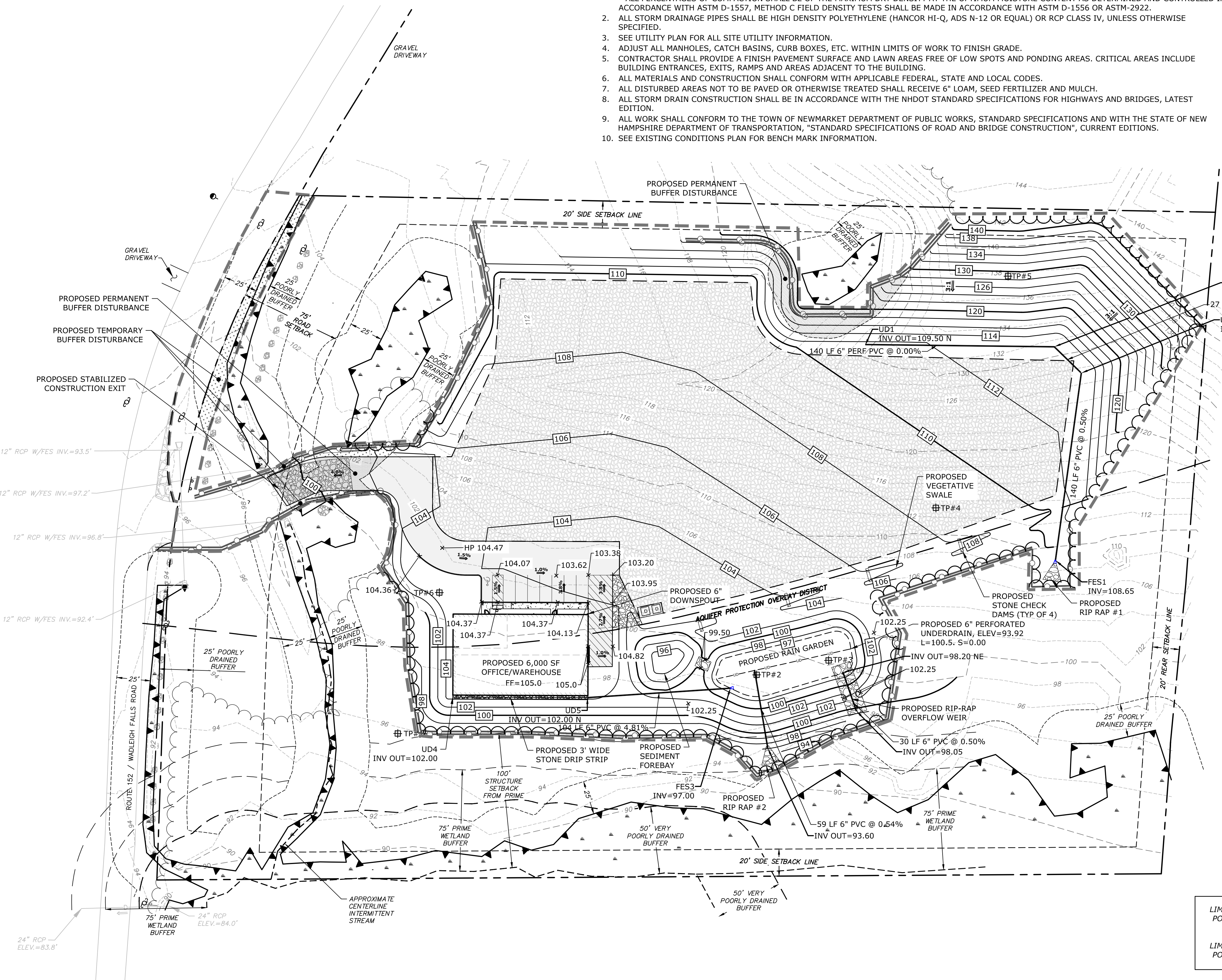
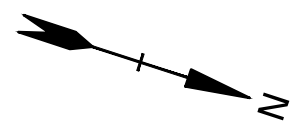
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| PROJECT NO:  |      | S5132-001        |
| DATE:        |      | 11/12/2021       |
| FILE:        |      | S5132_C-DSGN.dwg |
| DRAWN BY:    |      | JRW/BJL          |
| CHECKED BY:  |      | JPL              |
| APPROVED BY: |      | BLM              |

## C-102



Last Saved: 11/15/2021 3:55pm By: JWINSTON  
Plotted On: Nov 15, 2021 3:55pm  
Title & Content: S5132 Seacoast Pool Plastering LLC 001 446 & 450 Wadleigh Falls Rd Drawings Figures AutoCAD Sheet S5132 C-DSGN.dwg



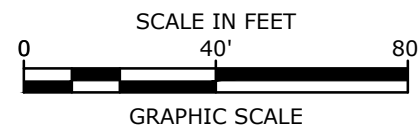
- GRADING AND DRAINAGE NOTES:**
1. COMPACTION REQUIREMENTS:  
BELOW PAVED OR CONCRETE AREAS 95%  
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL 90%  
BELOW LOAM AND SEED AREAS 90%  
\* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.
  2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) OR RCP CLASS IV, UNLESS OTHERWISE SPECIFIED.
  3. SEE UTILITY PLAN FOR ALL SITE UTILITY INFORMATION.
  4. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
  5. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCES, EXITS, RAMPS AND AREAS ADJACENT TO THE BUILDING.
  6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
  7. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
  8. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
  9. ALL WORK SHALL CONFORM TO THE TOWN OF NEWMARKET DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITIONS.
  10. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.

- EROSION CONTROL NOTES:**
1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
  2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
  3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. MAINTAIN FOR THE DURATION OF THE PROJECT.
  4. INSTALL STABILIZED CONSTRUCTION EXIT.
  5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
  6. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
  7. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
  8. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
  9. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
  10. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
  11. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED WITH PERIMETER CONTROLS AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
  12. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.

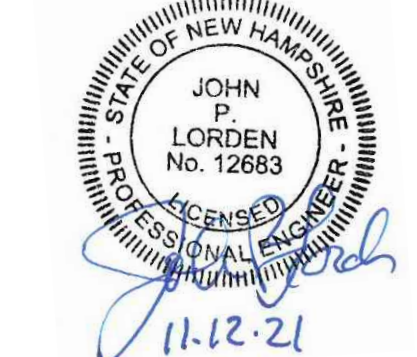
**LEGEND**

|  |                             |
|--|-----------------------------|
|  | PROPOSED MAJOR CONTOUR LINE |
|  | PROPOSED MINOR CONTOUR LINE |
|  | PROPOSED DRAIN LINE (TYP)   |
|  | PROPOSED SILT SOCK          |
|  | FLARED END SECTION          |
|  | FINISHED FLOOR ELEVATION    |
|  | ELEVATION                   |
|  | INVERT                      |
|  | LENGTH                      |
|  | OUTLET CONTROL STRUCTURE    |
|  | PERFORATED                  |
|  | POLYVINYL CHLORIDE          |
|  | SLOPE                       |
|  | UNDERDRAIN                  |

|  |                                                                              |
|--|------------------------------------------------------------------------------|
|  | LIMITS OF TEMPORARY DISTURBANCE:<br>POORLY DRAINED WETLAND BUFFER = 2,847 SF |
|  | LIMITS OF PERMANENT DISTURBANCE:<br>POORLY DRAINED WETLAND BUFFER = 3,993 SF |



**Tighe&Bond**



**PERMIT DRAWINGS**

**Proposed Office and Equipment Storage**

Seacoast Pool Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
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| PROJECT NO:  | S5132-001        |             |
| DATE:        | 11/12/2021       |             |
| FILE:        | S5132_C-DSGN.dwg |             |
| DRAWN BY:    | JRW/BJL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

**GRADING, DRAINAGE, AND EROSION CONTROL PLAN**

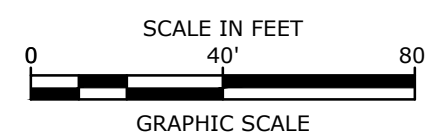
SCALE: AS SHOWN





1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
  - NATURAL GAS - PRIVATE
  - WATER - PRIVATE
  - SEWER - PRIVATE
  - ELECTRIC - EVERSOURCE
  - COMMUNICATIONS - CONSOLIDATED COMMUNICATIONS
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
5. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE TOWN OF NEWMARKET AND THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
6. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
7. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
8. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
9. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
10. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
11. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
12. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
13. COORDINATE PROPANE TANK SIZE AND THE EXACT LOCATION WITH UTILITY COMPANY TO ENSURE ALL MINIMUM SEPARATIONS ARE MET.

|                                                                                     |                            |
|-------------------------------------------------------------------------------------|----------------------------|
| BLDG                                                                                | BUILDING                   |
| TYP                                                                                 | TYPICAL                    |
|  | PROPOSED CATCHBASIN        |
|  | PROPOSED DRAIN MANHOLE     |
|  | PROPOSED WELL              |
|  | EXISTING OVERHEAD UTILITY  |
|  | PROPOSED STORM DRAIN       |
|  | PROPOSED FORCE MAIN        |
|  | PROPOSED WATER             |
|  | PROPOSED GAS               |
|  | PROPOSED OVERHEAD ELECTRIC |



## Proposed Office and Equipment Storage

Seacoast Pool  
Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

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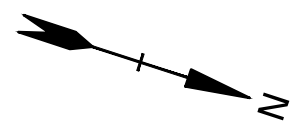
## UTILITY PLAN

SCALE: AS SHOWN

C-104



Last Saved: 10/22/2021 11:02:21 AM  
Plotted On: Nov 10, 2021 11:02:21 AM  
Tighe & Bond 21 US5132 Seacoast Pool Plastering LLC 001 446 & 450 Wadleigh Falls Rd Drawings Figures AutoCAD Sheet S5132 C-DSGN.dwg



GRAVEL DRIVEWAY

GRAVEL DRIVEWAY

ROUTE 152 / WADLEIGH FALLS ROAD

PE&C

PE&C

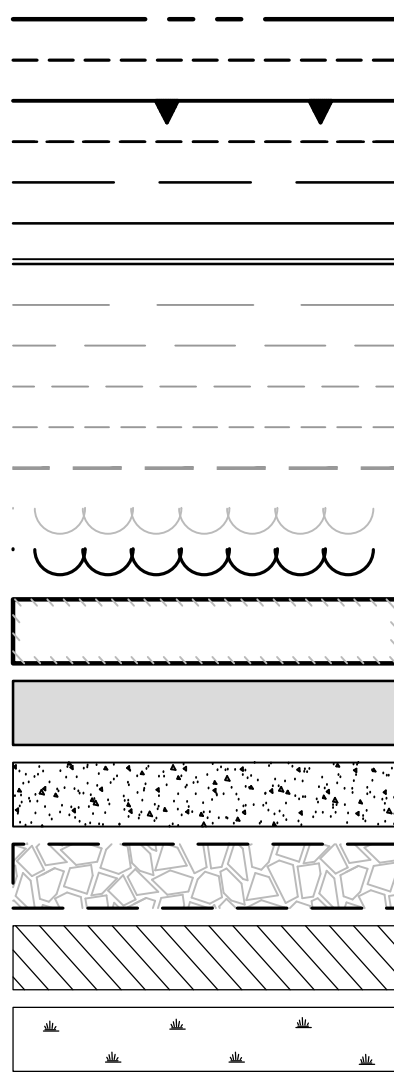
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PHASE 1

PHASE 2

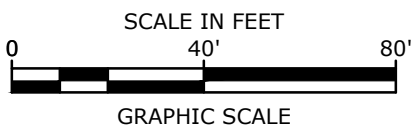
AQUIFER PROTECTION OVERLAY DISTRICT

•  
TYP  
15'R  
VGC

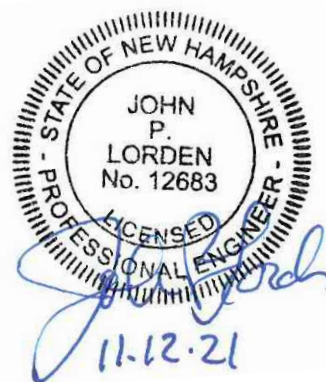
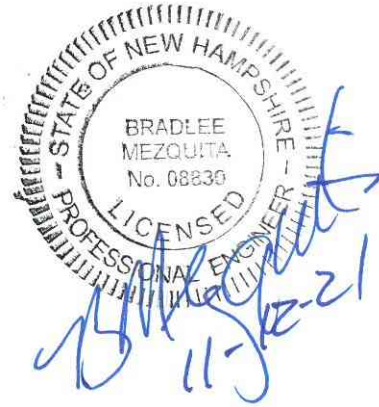


LEGEND  
PROPOSED BOLLARD  
TYPICAL  
PROPOSED CURB RADIUS  
PROPOSED VERTICAL GRANITE CURB  
PROPOSED ACCESSIBLE PARKING SPACE  
PROPERTY LINE  
EDGE OF POORLY DRAINED SOILS  
EDGE OF WETLAND  
FRONT/SIDE/REAR YARD SETBACKS  
AQUIFER PROTECTION AREA OVERLAY DISTRICT  
PROPOSED EDGE OF PAVEMENT  
PROPOSED CURB  
125' SEPTIC SETBACK FROM PRIME  
100' STRUCTURE SETBACK FROM PRIME  
75' PRIME WETLAND BUFFER  
25' POORLY DRAINED BUFFER  
50' VERY POORLY DRAINED BUFFER  
EXISTING TREELINE  
PROPOSED TREELINE

PROPOSED BUILDING  
PROPOSED PAVEMENT  
PROPOSED BITUMINOUS SIDEWALK  
PROPOSED GRAVEL PARKING AREA  
PROPOSED PAVEMENT PAINT  
WETLANDS



Tighe&Bond



PERMIT  
DRAWINGS

Proposed Office  
and Equipment  
Storage

Seacoast Pool  
Plastering, LLC

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
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| PROJECT NO:  | S5132-001        |             |
| DATE:        | 11/12/2021       |             |
| FILE:        | S5132_C-DSGN.dwg |             |
| DRAWN BY:    | JRW/BJL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

PHASING PLAN

SCALE: AS SHOWN

C-105



Last Saved: 11/10/2021 11:40:06pm By: J.Winston  
 Plotted On: Nov 10, 2021 11:40:06pm  
 File & Window: S5132\_C-DTLS.dwg Seacoast Pool Plastering LLC 001\_446 & 450 Wadleigh Falls Rd Drawings Figures AutocAD Sheet S5132\_C-DTLS.dwg

GENERAL PROJECT INFORMATION

PROJECT OWNER: SEACOAST POOL PLASTERING, LLC  
 90 DEPOT ROAD  
 GREENLAND, NH 03840  
 PROJECT NAME: PROPOSED OFFICE AND EQUIPMENT STORAGE  
 PROJECT ADDRESS: 446 & 450 WADLEIGH FALLS ROAD  
 NEWMARKET, NEW HAMPSHIRE  
 PROJECT MAP / LOT: MAP R-6/ LOT 50-7 & 8  
 PROJECT LATITUDE: 43.079640 N  
 PROJECT LONGITUDE: -70.985217 W

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF DEVELOPING A VACANT LOT WITH AN OFFICE AND EQUIPMENT STORAGE FACILITY ON A GRAVEL PAD AREA FOR TRUCK TRAILERS, STORAGE CONTAINERS AND EQUIPMENT VEHICLES.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 4.75 ACRES.

SOIL CHARACTERISTICS

A SITE SPECIFIC SOIL SURVEY WAS CONDUCTED BY TIGHE & BOND ON APRIL 26, 2021. THE SOILS ON SITE CONSIST OF WOODBRIDGE, SCITICO, MAYBID, UDORTHENS, AND ENDOAQUENT SOILS WHICH ARE WELL DRAINED, POORLY DRAINED, VERY POORLY DRAINED, MODERATELY WELL DRAINED, SOMEWHAT POORLY DRAINED & POORLY DRAINED SOILS WITH HYDROLOGIC SOIL GROUP RATINGS OF B, C, D. REFER TO SITE SPECIFIC SOIL SURVEY REPORT FOR FULL DESCRIPTIONS.

NAME OF RECEIVING WATERS

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA OVERLAND FLOW TO SURROUNDING UNNAMED WETLANDS AND ULTIMATELY FLOWS TO THE LAMPREY RIVER.

CONSTRUCTION SEQUENCE OF MAJOR ACTIVITIES:

- CUT AND CLEAR TREES.
- CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT, EROSION AND DETENTION CONTROL FACILITIES. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF SUCH AS:
  - NEW CONSTRUCTION
  - DEVELOPMENT OF BORROW PIT AREAS
  - DISPOSAL OF SEDIMENT SPOIL, STUMP AND OTHER SOLID WASTE
  - EXCAVATION WORK
  - STREAM CHANNEL MODIFICATIONS
  - CONTROL OF DUST
  - CONSTRUCTION OF ACCESS ROAD AND PARKING AREAS
  - NEARNESS OF CONSTRUCTION SITE TO RECEIVING WATERS
  - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
- ALL PERMANENT DITCHES, SWALES, DETENTION, RETENTION AND SEDIMENTATION BASINS TO BE STABILIZED USING THE VEGETATIVE AND NON-STRUCTURAL BMPS PRIOR TO DIRECTING RUNOFF TO THEM.
- CLEAR AND DISPOSE OF DEBRIS.
- CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
- GRADE AND GRAVEL ROADWAYS AND PARKING AREAS - ALL ROADS AND PARKING AREA SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, PERIMETER EROSION CONTROL MEASURES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
- SEDIMENT TRAPS AND/OR BASINS SHALL BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.
- FINISH PAVING DRIVEWAY AND PARKING LOT.
- INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
- COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- REMOVE TRAPPED SEDIMENTS FROM COLLECTOR DEVICES AS APPROPRIATE AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

SPECIAL CONSTRUCTION NOTES:

- THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.
- THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

EROSION CONTROL NOTES:

- ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3: EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY THE NHDES.
- PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES AS REQUIRED IN THE PROJECT MANUAL.
- CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING HAY BALES, SILT FENCES, MULCH BERMS, SILT SACKS AND SILT SOCKS AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
- SILT SACK INLET PROTECTION SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AND BE MAINTAINED FOR THE DURATION OF THE PROJECT.
- PERIMETER CONTROLS INCLUDING SILT FENCES, MULCH BERM, SILT SOCK, AND/OR HAY BALE BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL NON-PAVED AREAS HAVE BEEN STABILIZED.
- THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
- ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 6" LOAM, SEED AND FERTILIZER.
- INSPECT ALL INLET PROTECTION AND PERIMETER CONTROLS WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
- CONSTRUCT EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1.

STABILIZATION:

- AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
  - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.;
  - IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2 HAVE BEEN INSTALLED.
- WINTER STABILIZATION PRACTICES:
  - ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
  - ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
  - AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;
- STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS,

- WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
- TEMPORARY SEEDING;
  - MULCHING.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
  - WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
  - DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT FENCES, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

DUST CONTROL:

- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
- DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
- DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

STOCKPILES:

- LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
- ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
- PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
- PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

OFF SITE VEHICLE TRACKING:

- THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

VEGETATION:

- TEMPORARY GRASS COVER:
  - SEEDBED PREPARATION:
    - APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE;
  - SEEDING:
    - UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS/ACRE;
    - WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED;
    - APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDINGS, WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING;
  - MAINTENANCE:
    - TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).
- PERMANENT MEASURES AND PLANTINGS:
  - LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF THREE (3) TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5;
  - FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 800 POUNDS PER ACRE OF 10-20-20 FERTILIZER;
  - SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4-1/2 POUNDS AND 5-1/2 POUNDS PER INCH OF WIDTH;
  - SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH;
  - HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AS INDICATED ABOVE;
  - THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDD, AND ALL NOXIOUS WEEDS REMOVED;
  - THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED;
  - A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE APPLIED AT THE INDICATED RATE:

|                       |                  |
|-----------------------|------------------|
| SEED MIX              | APPLICATION RATE |
| RED FESCUE (CREEPING) | 50 LBS/ACRE      |
| KENTUCKY BLUEGRASS    | 100 LBS/ACRE     |
| PERENNIAL RYE GRASS   | 50 LBS/ACRE      |
- DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL):
  - FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.

ALLOWABLE NON-STORMWATER DISCHARGES:

- FIRE-FIGHTING ACTIVITIES;
- FIRE HYDRANT FLUSHING;
- WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
- WATER USED TO CONTROL DUST;
- POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
- ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
- PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
- UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
- UNCONTAMINATED GROUND WATER OR SPRING WATER;
- FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
- UNCONTAMINATED EXCAVATION DEWATERING;
- LANDSCAPE IRRIGATION.

WASTE DISPOSAL:

- WASTE MATERIAL:
  - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
  - NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;

- ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
- HAZARDOUS WASTE:
    - ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
    - SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
  - SANITARY WASTE:
    - ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION:

- CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
- THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
  - GOOD HOUSEKEEPING - THE FOLLOWING GOOD HOUSEKEEPING PRACTICE SHALL BE FOLLOWED ON SITE DURING CONSTRUCTION:
    - ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE;
    - ALL REGULATED MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE, ON AN IMPERVIOUS SURFACE;
    - MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED;
    - THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS;
    - SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
    - WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
    - THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
  - HAZARDOUS PRODUCTS - THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
    - PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
    - ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION;
    - SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
  - PRODUCT SPECIFIC PRACTICES - THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
    - PETROLEUM PRODUCTS:
      - ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE;
      - PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
      - SECURE FUEL STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
      - INSPECT FUEL STORAGE AREAS WEEKLY;
      - WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 100 FEET FROM PUBLIC WELLS;
      - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
      - SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
      - THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
        - EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED;
        - PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
        - HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
        - USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES;
        - PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
    - FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT SHALL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT, OR ITS SUCCESSOR DOCUMENT.  
<https://www.des.nh.gov/ORGANIZATION/COMMISSIONER/PIF/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF>
    - FERTILIZERS:
      - FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS;
      - ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER;
      - STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
      - PAINTS:
        - ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE;
        - EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM;
        - EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
    - SPILL CONTROL PRACTICES - IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
      - MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES;
      - MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE;
      - ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY;
      - THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE;
      - SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED;
      - THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
  - VEHICLE FUELING AND MAINTENANCE PRACTICE:
    - CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPMENT/VEHICLE FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY;
    - CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY;
      - IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED;
      - CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA;
      - CONTRACTOR SHALL REGULARLY INSPECT VEHICLES FOR LEAKS AND DAMAGE;
      - CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

- THIS PROJECT DOES EXCEED ONE (1) ACRE OF DISTURBANCE AND THUS DOES REQUIRE A SWPPP. THE SWPPP SHALL BE PREPARED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.
- THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
  - OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER;
  - AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
  - A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
  - IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

BLASTING NOTES:

- CONTRACTOR SHALL CONTACT THE NHDES PRIOR TO COMMENCING ANY BLASTING ACTIVITIES
- FOR ANY PROJECT FOR WHICH BLASTING OF BEDROCK IS ANTICIPATED, THE APPLICANT SHALL SUBMIT:
  - A BLASTING PLAN THAT IDENTIFIES:
    - WHERE THE BLASTING ACTIVITIES ARE ANTICIPATED TO OCCUR;
    - THE ESTIMATED QUANTITY OF BLAST ROCK IN CUBIC YARDS; AND
    - SITE-SPECIFIC BLASTING BEST MANAGEMENT PRACTICES.
  - IF MORE THAN 5000 CUBIC YARDS OF BLAST ROCK WILL BE GENERATED AND THERE ARE ONE OR MORE PUBLIC DRINKING WATER WELLS WITHIN 2000 FEET OF THE BLASTING ACTIVITIES, A PLAN TO MONITOR GROUNDWATER TO DETECT ANY CONTAMINATION IN SUFFICIENT TIME TO PROTECT THE WATER SUPPLY WELLS SHALL BE PROVIDED TO THE NHDES. THE GROUNDWATER MONITORING PLAN SHALL INCLUDE:
    - MONITORING FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA:
      - THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY THE NHDES.
    - THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
      - LOADING PRACTICES - THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
        - DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS;
        - EXPLOSIVE PRODUCTS SHALL BE MANAGED ON-SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL;
        - SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL;
        - LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED;
        - LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT;
        - EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
      - EXPLOSIVE SELECTION - THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
        - EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION;
        - EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER
      - PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
      - MUCK PILES MANAGEMENT - MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
        - REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE;
        - MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
    - SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT DURING BLASTING OPERATIONS. THE MEASURES TO PREVENT SUCH RELEASES SHALL BE DETAILED IN THE GROUNDWATER MONITORING REPORT AND COMPLY WITH THE MEASURES AND BEST MANAGEMENT PRACTICES LISTED ON THIS SHEET.

Tighe&Bond



PERMIT DRAWINGS

Proposed Office and Equipment Storage

Seacoast Pool Plastering, LLC

446 & 450  
 Wadleigh Falls Road  
 Newmarket,  
 New Hampshire

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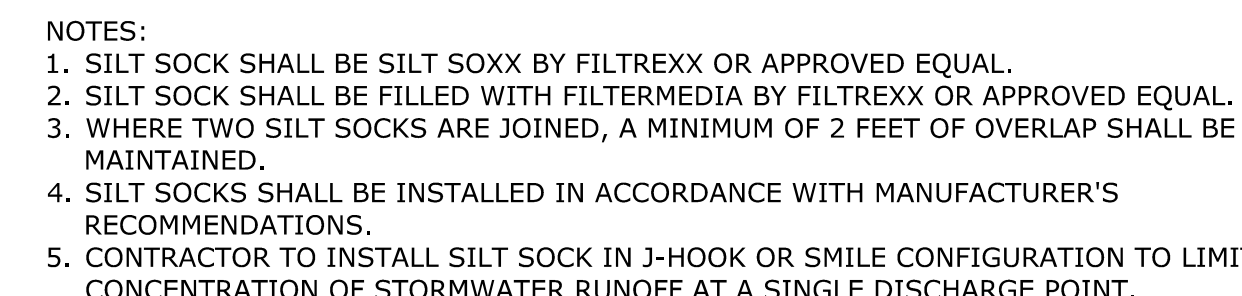
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| DATE:        | 11/12/2021       |             |
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| DRAWN BY:    | JRW/BIL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

EROSION CONTROL NOTES

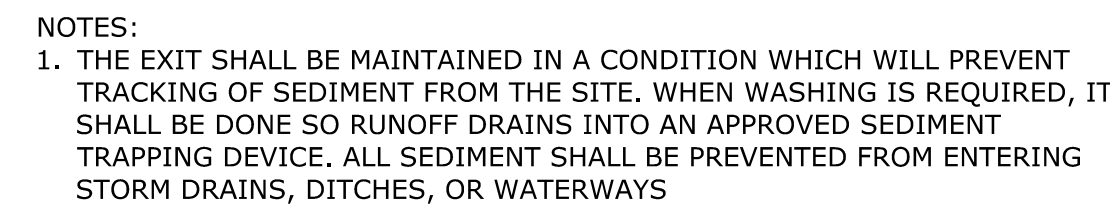
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C-501

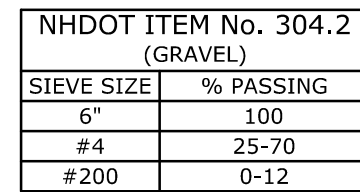




**SILT SOCK**  
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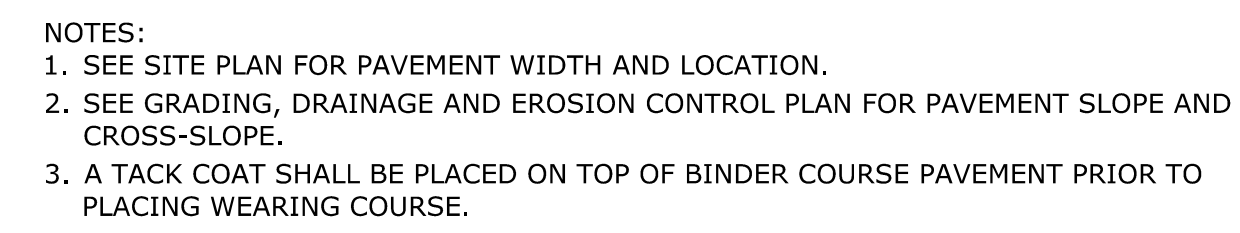


**STABILIZED CONSTRUCTION EXIT**  
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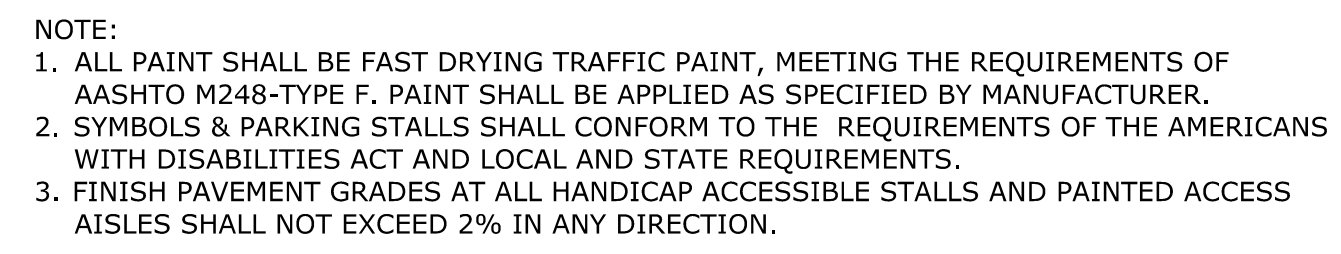


**GRAVEL BASE AREA**  
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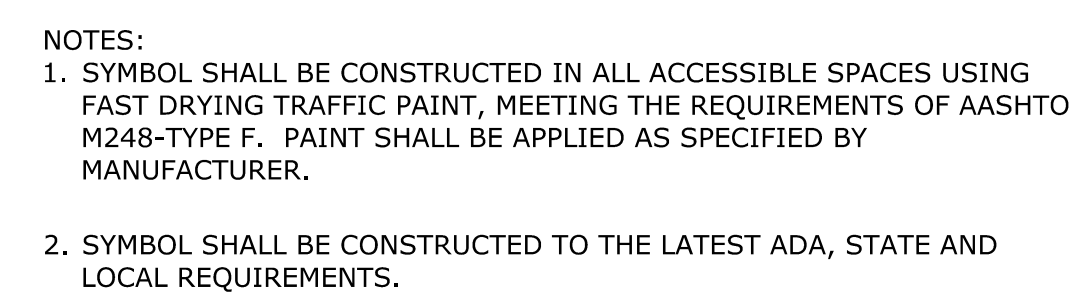
| NHDOT ITEM No. 304.3<br>(CRUSHED GRAVEL) |           |
|------------------------------------------|-----------|
| SIEVE SIZE                               | % PASSING |
| 3"                                       | 100       |
| 2"                                       | 95-100    |
| 1"                                       | 55-85     |
| #4                                       | 27-52     |
| #200                                     | 0-12      |



**PAVEMENT SECTION**  
NO SCALE



**STALL STRIPING - SINGLE STRIPE**  
NO SCALE



### ACCESSIBLE SYMBOL

Seacoast Pool  
Plastering, LLC

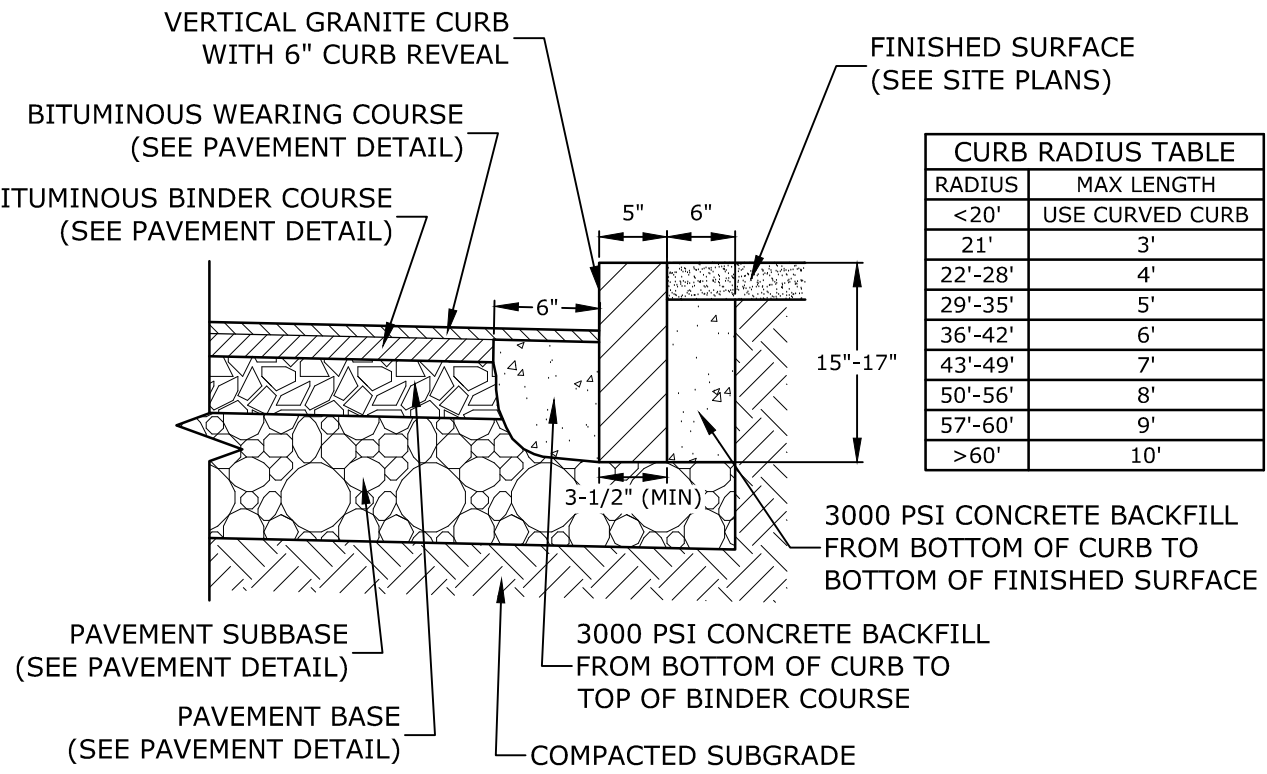
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| APPROVED BY: |      | BJL              |

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C-502

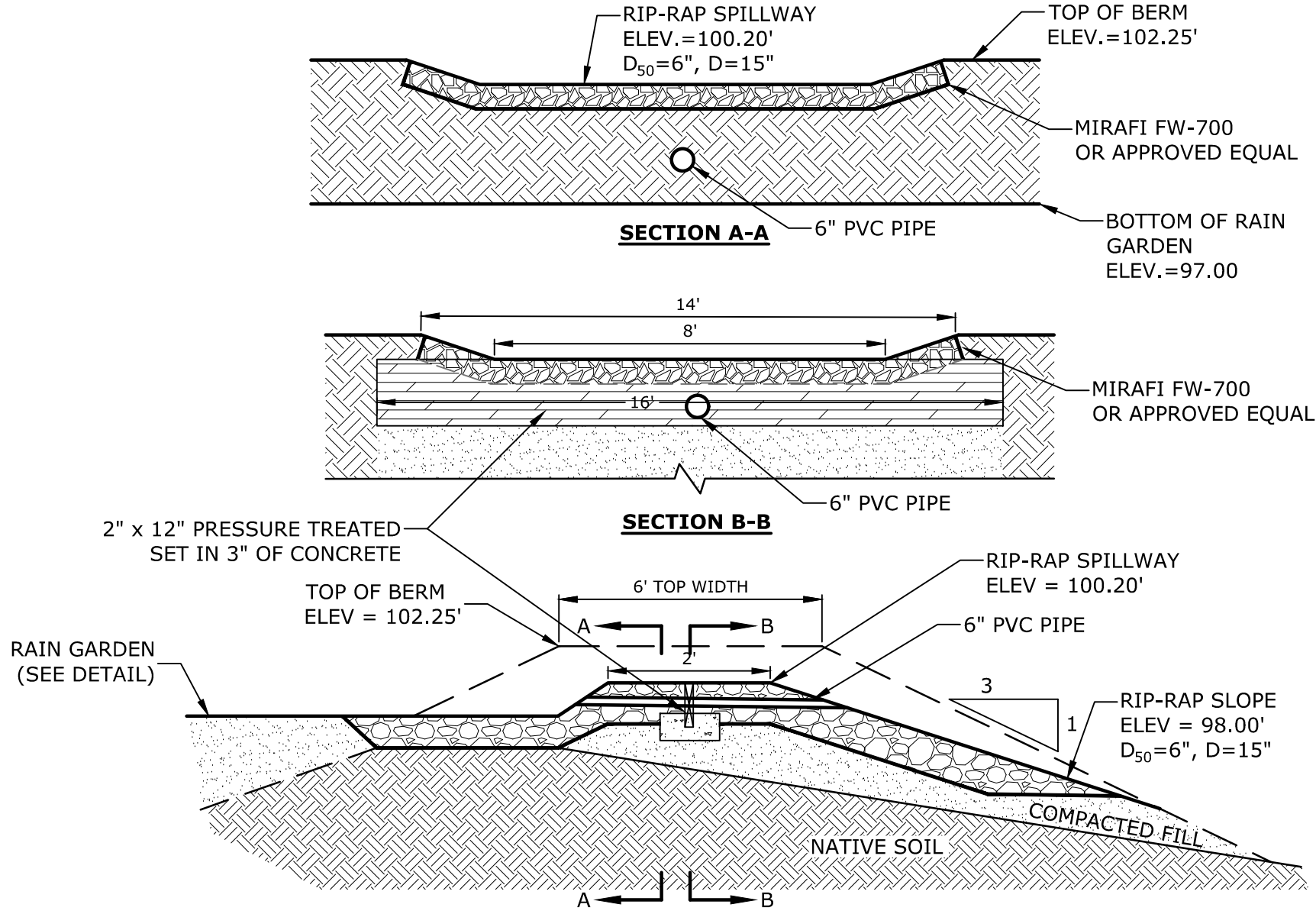


Last Saved: 11/17/2021 2:15pm By: J. Winston  
Plotted On: Nov 17, 2021 2:15pm  
Title & Content: 11-12-21 Seacoast Pool Plastering LLC 001 446 & 450 Wadleigh Falls Rd Drawings - Figures AUC-2-D Sheet S5132 - C-DTLS.dwg



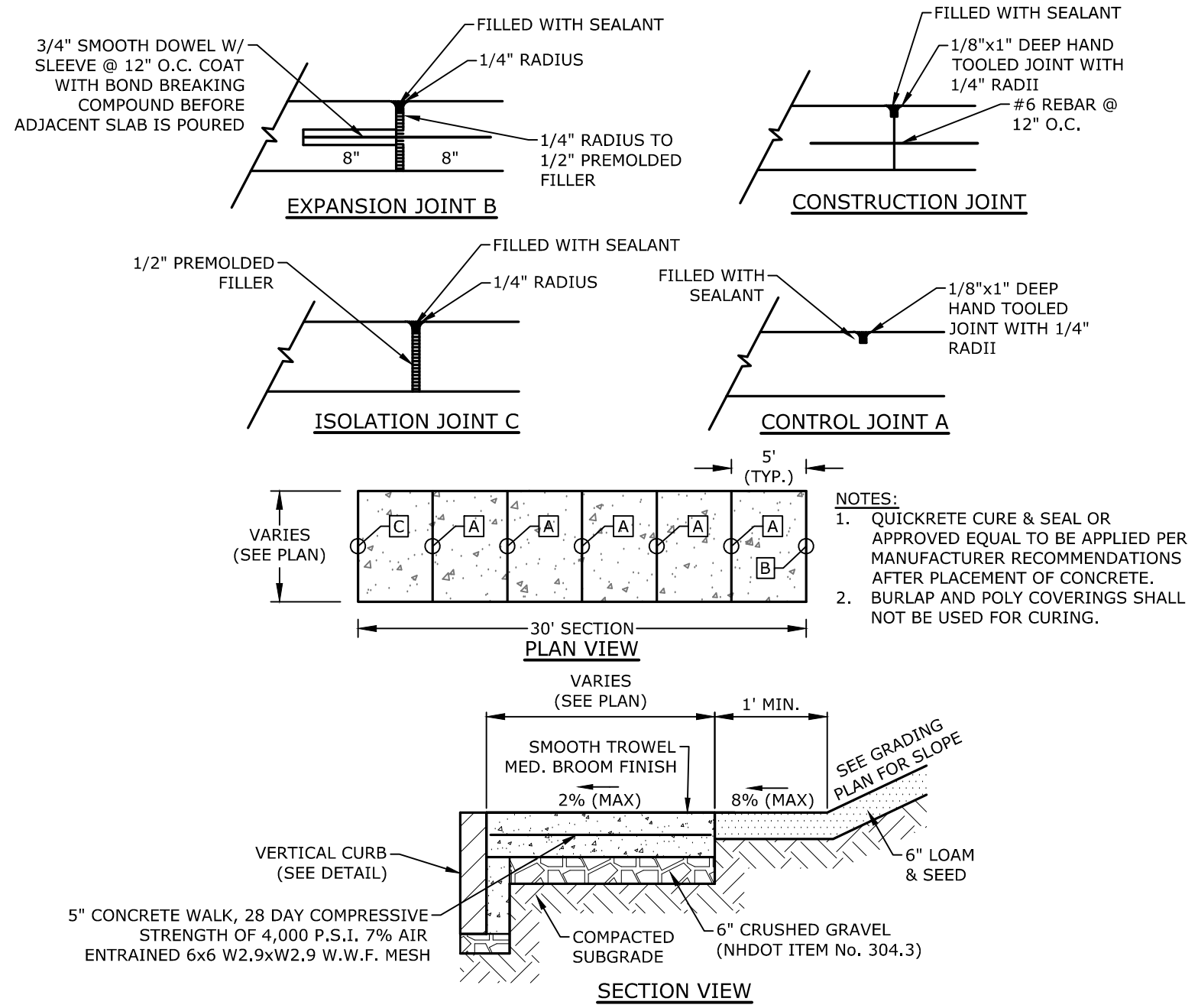
- NOTES:
1. SEE SITE PLAN FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
  2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
  3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
  4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
  5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE TABLE).
  6. ALL RADII 20 FEET AND SMALLER SHALL BE CONSTRUCTED USING CURVED SECTIONS.
  7. JOINTS BETWEEN STONES SHALL HAVE A MAXIMUM SPACING OF 1/2" AND SHALL BE MORTARED.

**VERTICAL GRANITE CURB**  
NO SCALE

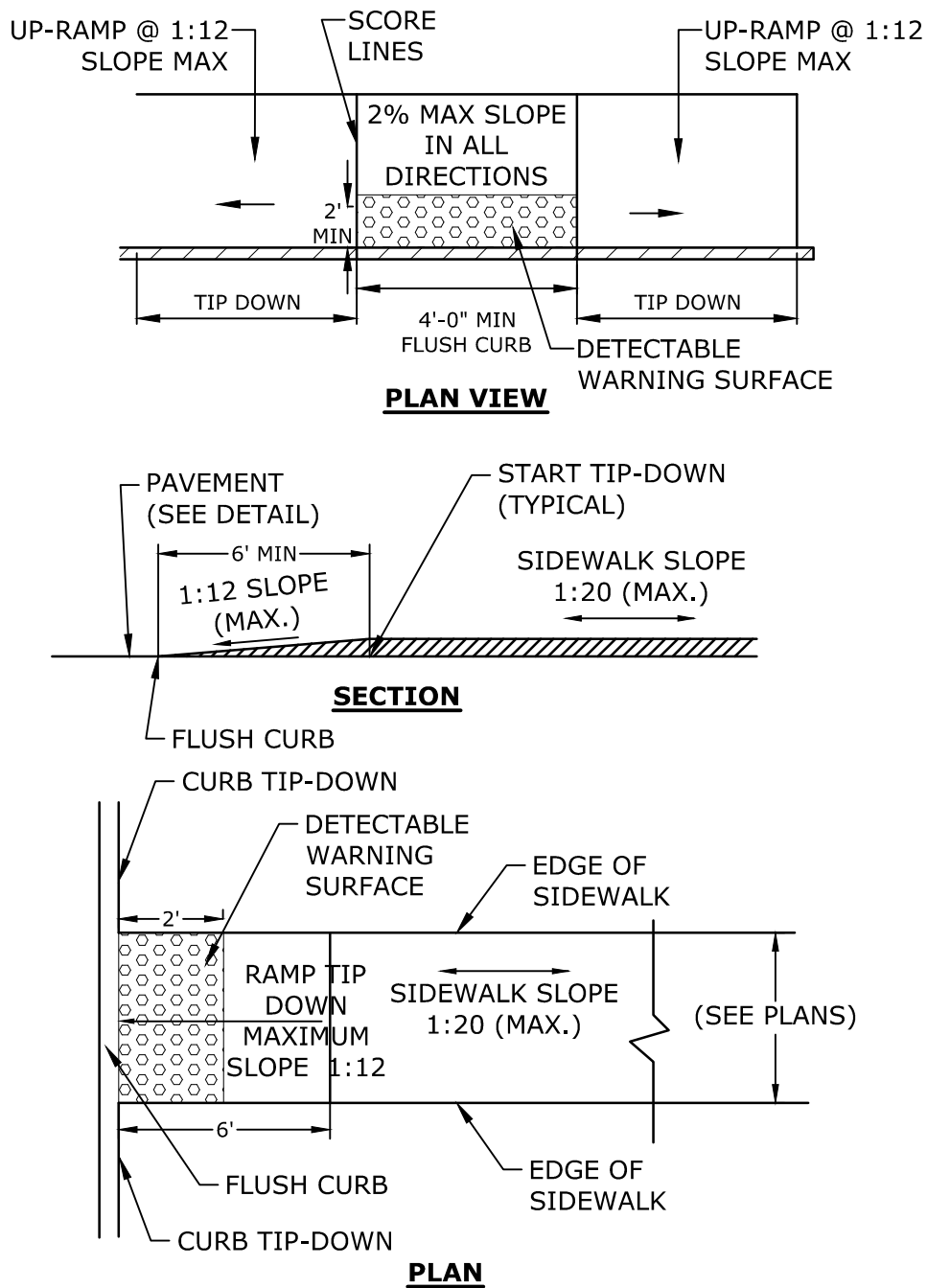


- NOTES:
1. SEE GRADING, DRAINAGE & EROSION CONTROL PLANS, SHEET C-103, FOR LOCATIONS AND ELEVATIONS.
  2. THE FOUNDATION AREA OF THE SPILLWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE SPILLWAY.
  3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED SPILLWAY.
  4. RIP-RAP SHALL BE PLACED IN THE SPILLWAY PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW OVER THE WEIR.
  5. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING PLACEMENT OF THE ROCK RIPRAP BY PLACING A CUSHION OF SAND OVER THE FABRIC. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
  6. A WELL GRADED MIXTURE OF ROCK SIZES SHALL BE USED FOR THE STONE. FIFTY PERCENT BY WEIGHT OF THE STONE MIXTURE SHALL BE SMALLER THAN THE MEDIAN SIZE STONE (d50). THE LARGEST STONE SIZE IN THE MIXTURE SHALL BE 1.5 TIMES THE d50 SIZE.
  7. STONES FOR RIPRAP SHALL BE ANGULAR OR SUBANGULAR. THE STONES SHALL BE SHAPED SO THAT THE LEAST DIMENSION OF THE STONE FRAGMENT SHALL BE NOT LESS THAN ONE-THIRD OF THE GREATEST DIMENSION OF THE FRAGMENT. FLAT ROCKS SHALL NOT BE USED FOR RIPRAP.
  8. STONE FOR THE RIPRAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE UNDERLYING MATERIALS. HAND PLACEMENT MAY BE REQUIRED TO PREVENT DAMAGE TO ANY PERMANENT STRUCTURES.
  9. VOIDS IN THE ROCK RIPRAP SHOULD BE FILLED WITH SPALLS AND SMALLER ROCKS.
  10. RIPRAP CHANNELS SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO SEE THAT ROCK IS STILL IN PLACE. IF ROCK HAS BEEN DISPLACED OR UNDERMINED, THE DAMAGED AREAS SHALL BE REPAIRED IMMEDIATELY.
  11. WOODY VEGETATION SHALL NOT BE ALLOWED TO BECOME ESTABLISHED IN THE ROCK RIPRAP, AND DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE IN THE CHANNEL.

**RIP-RAP OVERFLOW WEIR**  
NO SCALE

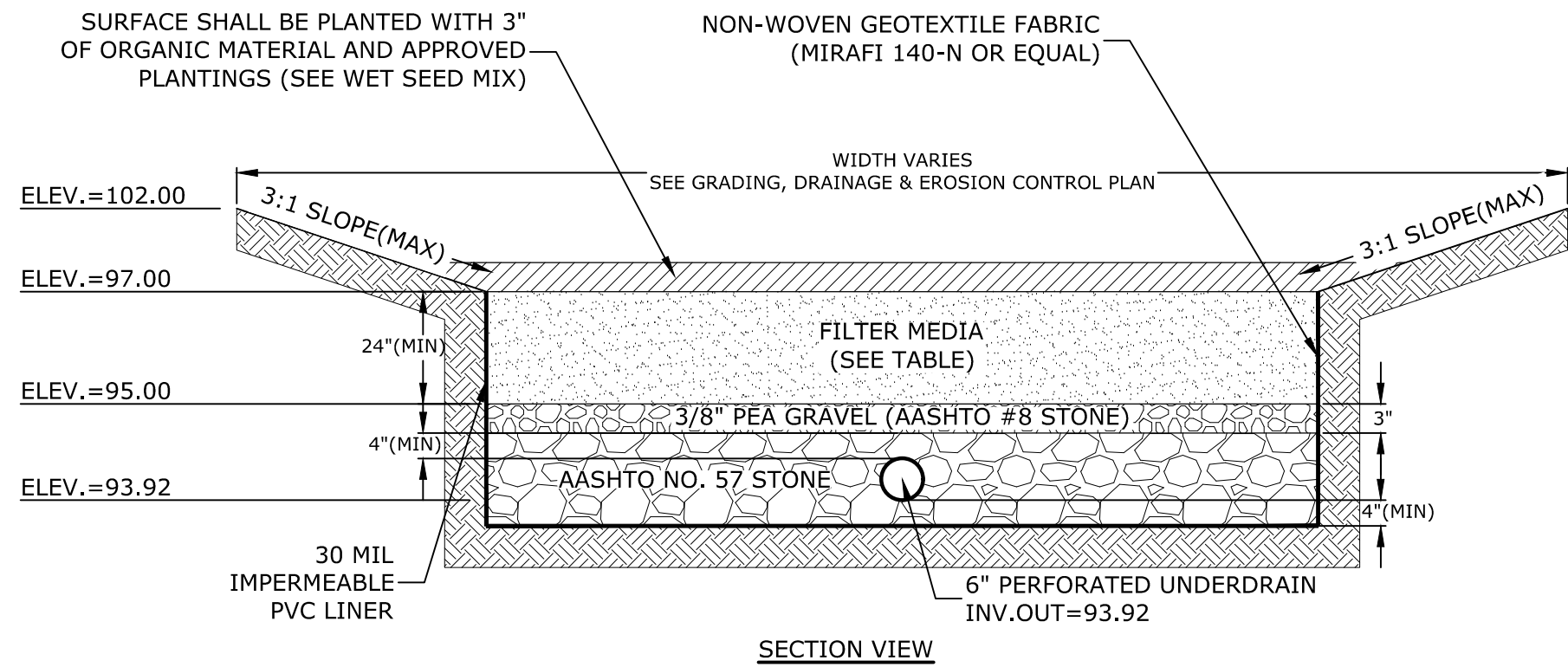


**CONCRETE SIDEWALK**  
NO SCALE



- NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
  2. A 9" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
  3. DETECTABLE WARNING PANEL SHALL BE CAST IRON WITH BLACK COATING

**CONCRETE SIDEWALK TIP-DOWN  
RAMPS WITH DETECTABLE WARNING PANEL**  
NO SCALE



**WET SEED MIX**  
50% NEW ENGLAND WETLAND PLANTS-NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS & MOIST SITES

50% NEW ENGLAND PLANTS-NEW ENGLAND CONSERVATION WILDLIFE MIX

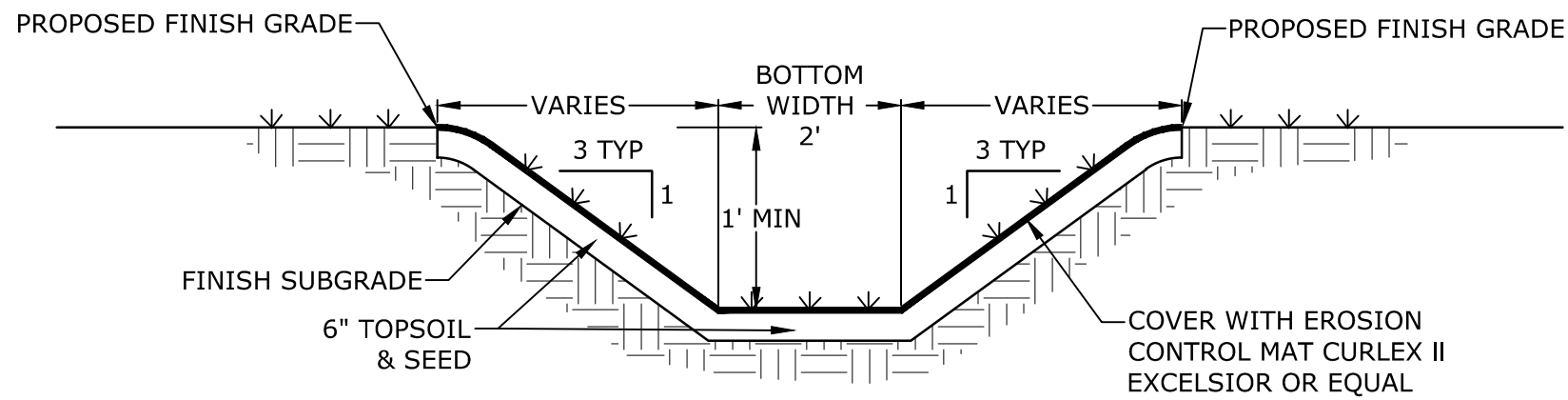
| FILTER MEDIA COMPOSITION:                         |                              |                                 |                 |
|---------------------------------------------------|------------------------------|---------------------------------|-----------------|
| COMPONENT MATERIAL                                | PERCENT OF MIXTURE BY VOLUME | GRADATION OF MATERIAL SIEVE NO. | PERCENT PASSING |
| ASTM C-33 CONCRETE SAND                           | 50-55                        | SEE NOTE #5                     |                 |
| LOAMY SAND TOPSOIL                                | 20-30                        | 200                             | 15-25           |
| MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH | 20-30                        | 200                             | 5 MAX           |

- NOTES:
1. RAIN GARDENS SHALL NOT BE PLACED INTO SERVICE UNTIL THE PRACTICE HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
  2. DO NOT TRAFFIC EXPOSED SOIL SURFACES WITH CONSTRUCTION EQUIPMENT. CONTRACTOR SHALL KEEP ALL EXCAVATION EQUIPMENT OUTSIDE OF THE LIMIT OF THE RAIN GARDEN.
  3. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR LOCATIONS, LAYOUTS, AND ELEVATIONS.
  4. THE SAND PORTION OF THE FILTER MEDIA SHALL MEET THE FOLLOWING GRADATION (ASTM C-33):

| SIEVE SIZE | PERCENT PASSING | AASHTO #8 STONE (#8 to 3/8") | AASHTO #57 STONE (#4 to 1") |
|------------|-----------------|------------------------------|-----------------------------|
| 3/8"       | 100             |                              |                             |
| #4         | 95-100          |                              |                             |
| #8         | 80-100          |                              |                             |
| #16        | 50-85           |                              |                             |
| #30        | 25-60           |                              |                             |
| #50        | 5-30            |                              |                             |
| #100       | 0-10            |                              |                             |

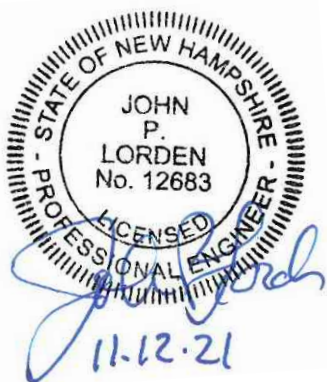
| SIEVE SIZE | % PASSING | SIEVE SIZE | % PASSING |
|------------|-----------|------------|-----------|
| 1/2"       | 100       | 1-1/2"     | 100       |
| 3/8"       | 85-100    | 1"         | 95-100    |
| #4         | 10-30     | 1/2"       | 25-50     |
| #8         | 0-10      | #4         | 0-10      |
| #16        | 0-5       | #8         | 0-5       |

**RAIN GARDEN**  
NO SCALE



**GRASS-LINED SWALE**  
NO SCALE

**Tighe&Bond**



**PERMIT  
DRAWINGS**

**Proposed Office  
and Equipment  
Storage**

**Seacoast Pool  
Plastering, LLC**

**446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire**

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| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 11/12/2021       |             |
| FILE:        | S5132_C-DTLS.dwg |             |
| DRAWN BY:    | JRW/BIL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

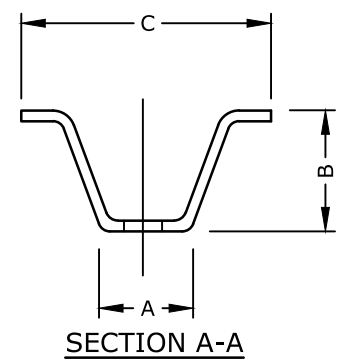
DETAILS

SCALE: AS SHOWN

C-503



Last Saved: 11/10/2021 4:06pm By: J.Winston  
Plotted On: Nov 10, 2021 3:37pm  
Title & Content: S5132 Seacoast Pool Plastering, LLC001 446 & 450 Wadleigh Falls Rd Drawings - Figures AutoCAD Sheet S5132 - C-DTLS.dwg



R7-8  
12"x18"  
GREEN ON WHITE  
W/WHITE ON BLUE  
ACCESSIBLE SYMBOL



R7-8A  
12"x6"  
WHITE ON BLUE

NOTES:

1. STEEL FOR POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499-81 GRADE 60 AND TO THE CHEMICAL REQUIREMENTS OF ASTM A1-76 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT OF 91 LBS. OR GREATER PER LINEAR YARD.
2. AFTER FABRICATION, ALL STEEL POSTS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A 123.
3. ALL SIGN POSTS SHALL HAVE "BREAKAWAY" FEATURES THAT MEET AASHTO REQUIREMENTS CONTAINED IN "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS-1985." THE "BREAKAWAY" FEATURES SHALL BE STRUCTURALLY ADEQUATE TO CARRY THE SIGNS SHOWN IN THE PLANS AT 60 MPH WIND LOADINGS. INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. TYPE A POSTS - 3 LB/FT TYPE B POSTS - 4 LB/FT.
5. ALL SIGNS TO BE CONSTRUCTED PER THE LATEST EDITION OF THE FHWA STANDARD HIGHWAY SIGNS MANUAL AND INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
6. MEET REQUIREMENTS OF SECTION 615 SIGNS OF NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010 EDITION, AS AMENDED.

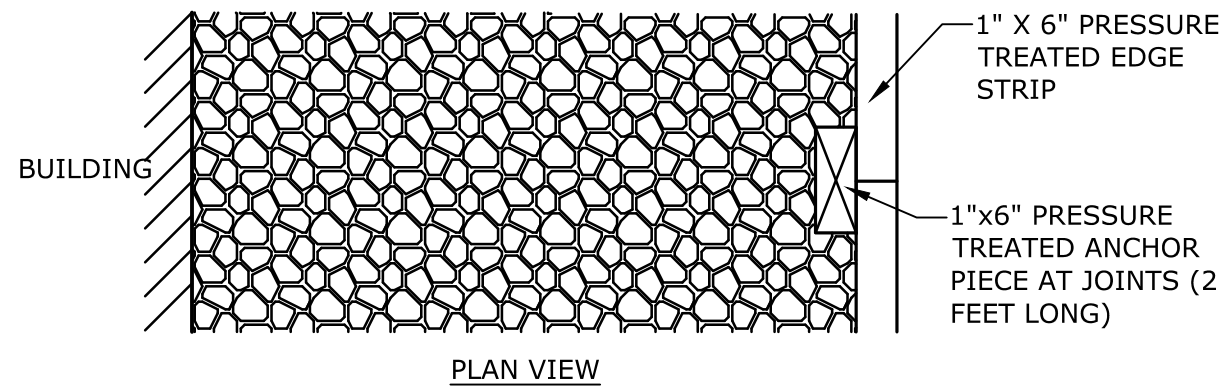
\* IN LEDGE DRILL & GROUT TO A MIN OF 2'

| WT.   | A                | B                | C      |
|-------|------------------|------------------|--------|
| 3 LBS | 1 3/8" OR 1 3/8" | 1 3/8" OR 1 3/8" | 3 1/4" |
| 4 LBS | 1 3/8"           | 1 3/4"           | 3 1/4" |

SIGN POST TO COMPLY WITH ALL ASPECTS OF NHDOT SECTION 615.

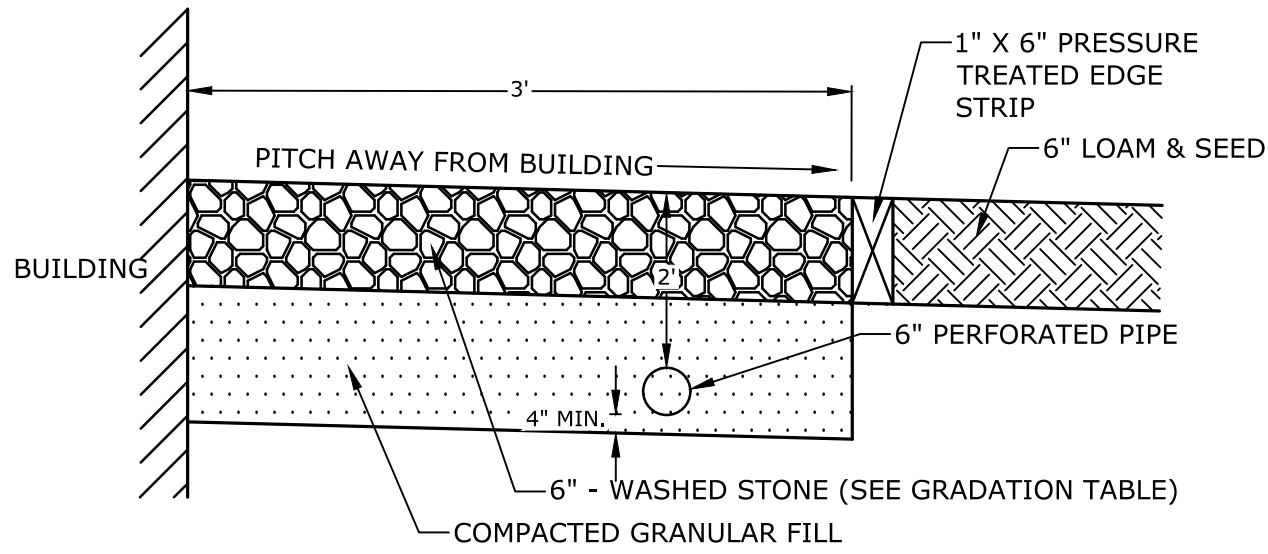
LENGTH: AS REQUIRED  
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)  
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH  
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASSTMA-576 (GRADE 1070 - 1080)  
FINISH: SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

**SIGN LEGEND & SIGN POST**  
NO SCALE



PLAN VIEW

| WASHED STONE |                   |
|--------------|-------------------|
| SIEVE SIZE   | % FINER BY WEIGHT |
| 1"           | 100               |
| 3/4"         | 90-100            |
| 3/8"         | 20-55             |
| #4           | 0                 |



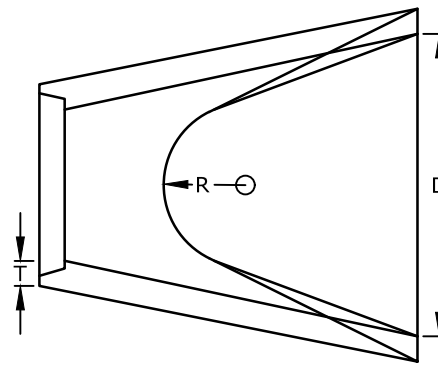
CROSS-SECTION

NOTES:

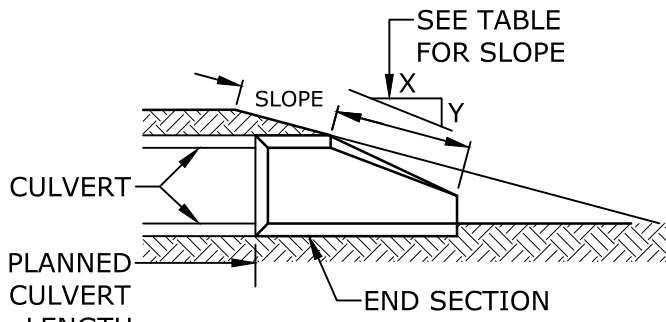
1. SEE SITE PLAN FOR LIMITS OF DRIP STRIP.
2. IN BUILDING CORNERS THE DRIP STRIP SHALL BE 5' OFF THE EDGE OF BUILDING.

**DRIP STRIP**  
NO SCALE

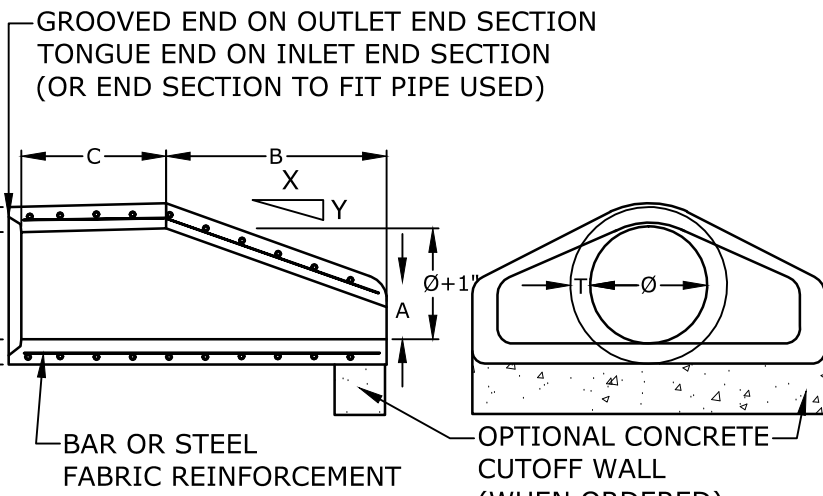
| PIPE Ø | APPROX. SLOPE X to Y | A      | B       | C       | D   | R   | T      |
|--------|----------------------|--------|---------|---------|-----|-----|--------|
| 12"    | 3 to 1               | 4"     | 24"     | 48-7/8" | 24" | 9"  | 2"     |
| 15"    | 3 to 1               | 6"     | 27"     | 46"     | 30" | 11" | 2-1/4" |
| 18"    | 3 to 1               | 9"     | 27"     | 46"     | 36" | 12" | 2-1/2" |
| 24"    | 3 to 1               | 9-1/2" | 43-1/2" | 30"     | 48" | 14" | 3"     |
| 30"    | 3 to 1               | 12"    | 54"     | 19-3/4" | 60" | 15" | 3-1/2" |
| 36"    | 3 to 1               | 15"    | 63"     | 33"     | 72" | 20" | 4"     |
| 42"    | 3 to 1               | 21"    | 63"     | 33"     | 78" | 22" | 4-1/2" |
| 48"    | 3 to 1               | 24"    | 72"     | 24"     | 84" | 22" | 5"     |



PLAN VIEW



SLOPE DETAIL

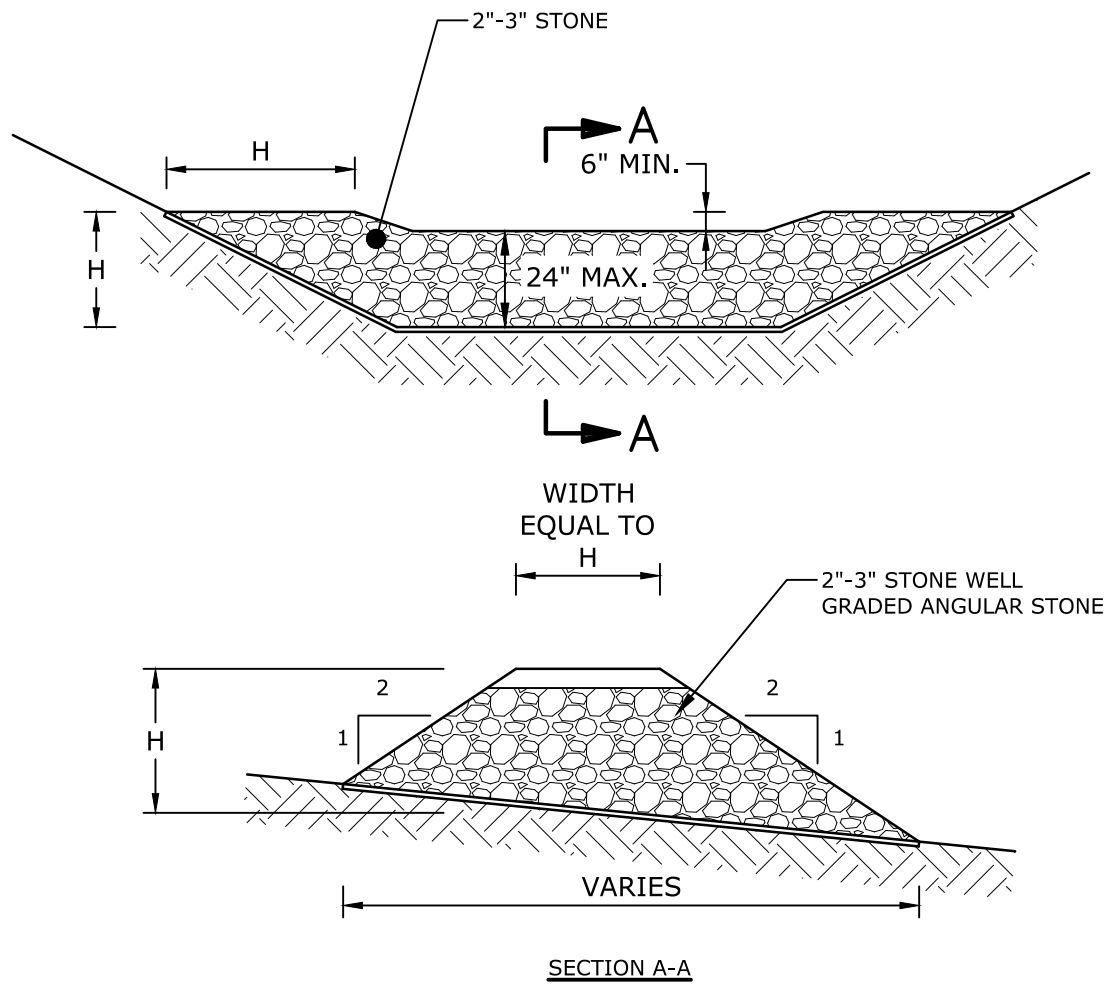


LONGITUDINAL SECTION

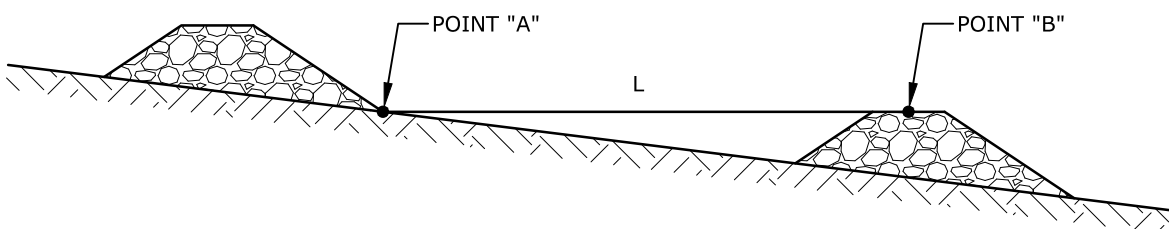
NOTES:

1. DESIGN OF END SECTION SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE.
2. CUT OFF WALL TO BE POURED IN FIELD, IF NECESSARY, AS DIRECTED BY THE ENGINEER.

**CONCRETE END SECTION**  
NO SCALE



SECTION A-A



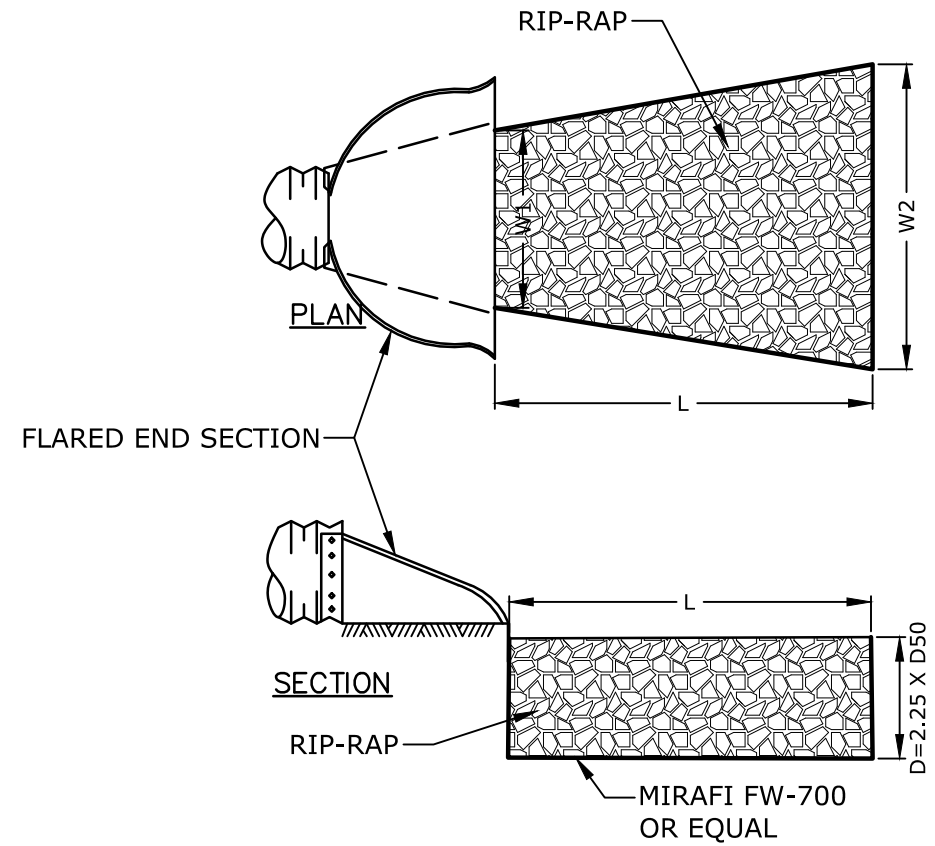
L = THE DISTANCE WHERE THE ELEVATION OF POINT "A" EQUALS THE ELEVATION OF POINT "B"

STONE CHECK DAM SPACING

NOTES:

1. CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE DAM SHOULD BE LESS THAN ONE ACRE.
3. THE CHECK DAM SHOULD NOT BE USED IN A FLOWING STREAM.
4. CHECK DAMS SHOWN ON THE DRAWINGS SHALL BE LEFT IN PLACE PERMANENTLY.
5. CHECK DAMS INSTALLED AS PART OF TEMPORARY EROSION CONTROL MEASURE SHALL BE REMOVED ONCE THE SWALE OR DITCH HAS BEEN STABILIZED:
  - a. IN TEMPORARY DITCHES AND SWALES, CHECK DAMS SHOULD BE REMOVED AND THE DITCH FILLED IN WHEN IT IS NO LONGER NEEDED
  - b. IN PERMANENT STRUCTURES, CHECK DAMS SHOULD BE REMOVED WHEN PERMANENT LINING HAS BEEN ESTABLISHED. IF THE PERMANENT LINING IS VEGETATION, THEN THE CHECK DAM SHOULD BE RETAINED UNTIL THE GRASS HAS MATURED TO PROTECT THE DITCH OR SWALE. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL.

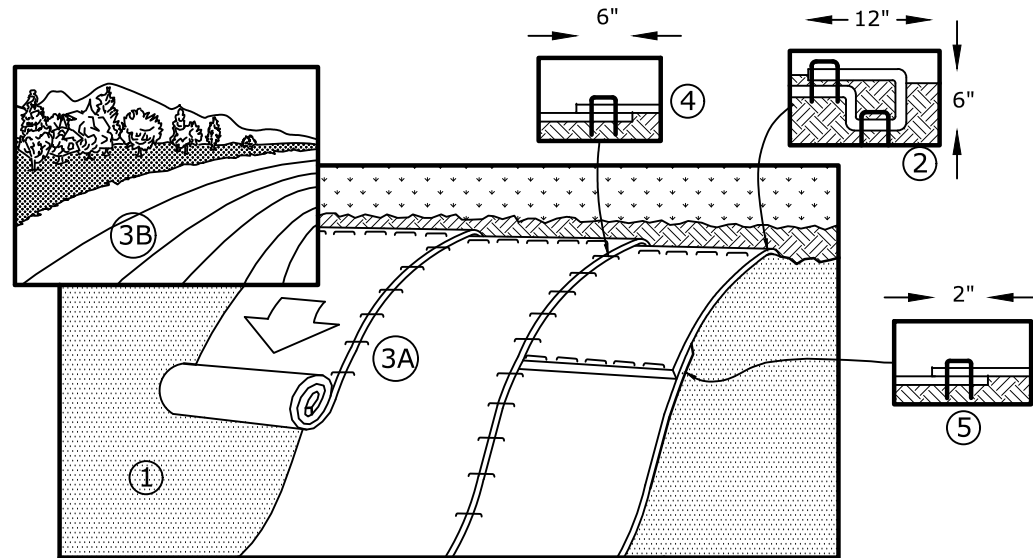
**STONE CHECK DAM**  
NO SCALE



NOTES:

1. STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

**RIP-RAP APRON DETAIL**  
NO SCALE

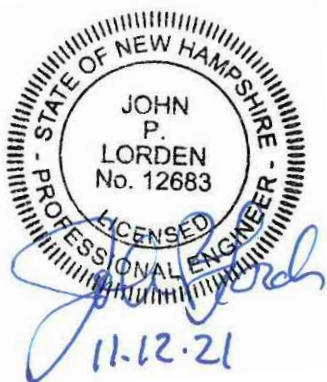


NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE, 36" OVER THE GRADE BREAK, BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS SHOWN ON THE STAPLE PATTERN GUIDE.
4. STAPLE LENGTHS SHALL BE A MINIMUM OF 8 INCHES.
5. EROSION CONTROL BLANKET SHALL BE INSTALLED WHERE SHOWN ON PLANS AND WHERE SLOPES EXCEED 3:1.

**EROSION CONTROL BLANKET FOR SLOPE PROTECTION**  
NO SCALE

**Tighe&Bond**



**PERMIT DRAWINGS**

**Proposed Office and Equipment Storage**

**Seacoast Pool Plastering, LLC**

446 & 450  
Wadleigh Falls Road  
Newmarket,  
New Hampshire

| MARK         | DATE             | DESCRIPTION |
|--------------|------------------|-------------|
| PROJECT NO:  | S5132-001        |             |
| DATE:        | 11/12/2021       |             |
| FILE:        | S5132_C-DTLS.dwg |             |
| DRAWN BY:    | JRW/BIL          |             |
| CHECKED BY:  | JPL              |             |
| APPROVED BY: | BLM              |             |

DETAILS

SCALE: AS SHOWN

C-504



Town Hall  
186 Main Street  
Newmarket, NH 03857

Tel: (603) 659-3617  
Fax: (603) 659-8508

Founded December 15, 1727  
Chartered January 1, 1991

## TOWN OF NEWMARKET, NEW HAMPSHIRE

### **ATTACHMENTS:**

| Description                    | Upload Date | Type            |
|--------------------------------|-------------|-----------------|
| Zoning Ordinance Modifications | 1/25/2022   | Backup Material |
| Permitted Uses                 | 1/25/2022   | Backup Material |
| Dimensions Table               | 1/25/2022   | Backup Material |
| Route 108 Corridor             | 1/25/2022   | Backup Material |

## **Changes to Chapter 32 Zoning Ordinance, adopted February 14, 1996, revised June 21, 2017**

(Redline version of the proposed changes to Section 32.9 Special Use Permits, Section 32-46. M-2 District, Section 32-46. M-2A, Sec 32-56 Table of Permitted Uses, and Sec 32-89 Table of Dimension, Section 32-160 Downtown Commercial Overlay District, and Section 32-233. Mixed Use Development)

### **Sec. 32-9. Special use permits.**

- (a) Pursuant to RSA 674:21, I(i), a provision which permits flexible and discretionary zoning among other innovative land use controls, the town offers certain discretionary authority to the planning board in limited cases where generally stated standards appear inappropriate. Special use permits are provided in the following sections: section 32-45(b)(2) for optional uses in the mills; section 32-45(b)(2)(A) for multifamily residential uses as part of a mixed-use mill redevelopment; section 32-46(b)(2) and 32-46-A(b)(1) for mixed-use development with three or greater residential units; section 32-45(b)(2)a for self-storage facilities within existing buildings in the mills; section 32-48(b)(2) for optional uses related to the golf course or outdoor recreation; section 32-159(b)(3) for siting telecommunications facilities; and section 32-232(2) for permitting large home-based businesses.
- (b) Multi-family Housing and drive-thru facilities in the M-2 and M-2A District pursuant to Section 32.46- M-2 District and Section 46. M-2A district (b). A Special Use Permit shall be granted only if the Planning Board determines that the proposal conforms to all of the following Special Use criteria:
  - (1) Site suitability.
    - (A) Site shall have appropriate utilities (water, sewer, stormwater) available to service the project and shall not have a negative impact on environmental resources (wetlands, flood plain).
    - (B) Adequate off-street parking and loading is provided and ingress/egress is so designed as to cause minimum interference with traffic on abutting streets.
  - (2) External Impacts. The proposed project shall not materially impact adjacent properties due to traffic, noise, odors, vibrations, lighting or hours of operation; shall not have an adverse impact on the appropriate and orderly development of the surrounding properties; and will not cause a significant decline in property values of adjacent properties.
  - (3) Fiscal Impacts. The Planning Board shall grant the special use permit upon finding that the proposal is consistent with the purposes of this chapter and meet the standards as set forth herein. Specific criteria may be specified in the text of this chapter. In addition to these, if specified, the board shall review the general purpose of the chapter as well as the purpose of the specific section of the chapter to make its decision.

**Sec. 32-11. Definitions.**

Add the following:

*Drive-Through Facility* means a service facility designed for the convenience of the motoring public that is intended to enable the customer to transact business with a person located within a structure or a machine without exiting the motor vehicle.

**Sec. 32-46. M-2 district.**

(a) *Purpose.* The purpose of this district shall be to protect, enhance and expand the commercial, social, civic and residential functions of the downtown village area. It is recognized that the downtown is an important place of business and of social interaction. Controls are intended to enhance the downtown by providing for relatively high density, a mix of uses, public access to the Lamprey River, and design compatible with the pedestrian scale and historic nature of the downtown.

(b) *Permitted uses.*

- (1) Uses permitted by right are listed in the Table of Permitted uses in Section 32-56.
- (2) The following additional uses may be permitted by Special Use Permit granted by the Planning Board, in accordance with the standards as set forth in Section 32-9 (b) and the conditions below:

(A) *Multifamily residential with three or greater residential units.*

1. Review and acceptance by the Planning Board of a fiscal impact study, which, analyzes the financial impacts on municipal services and schools; and
2. Review and acceptance by the Planning Board of a market analysis, which demonstrates the feasibility of the proposed development sufficiently ensures a reasonable expectation of ongoing occupancy of the units to support the fiscal impact study and the maintenance and upkeep of the property.

The above studies shall be completed by a qualified entity approved by the Town and paid for by the Applicant.

- (c) Multi-family residential use, with no commercial use within the building, shall be limited to no greater than four (4) residential units within a single building.
- (d) Waivers to road setback, side/rear setback, and structure height. Reduction in these dimensional controls may be permitted by Special Use Permit issued by the Planning Board. The granting of such permit shall require the Planning Board to find that the proposed use is consistent with the purpose of the district, is suitable for the location proposed and would not cause significant adverse impacts to adjacent lots.

(Ord. of 2-14-1996, § 2.02)



**32-46A. M-2A DISTRICT.** (Editorial note: Section adopted 08/07/13)

(a) Purpose. The purpose of this district shall be to protect, enhance, and expand the commercial, social, civic and residential functions of the adjacent downtown village area. It is recognized that the downtown is an important place of business and of social interaction and that complementary gateways will contribute to the Town's downtown area. Controls are intended to enhance the village by providing for relatively high density, a mix of uses, public access to the Lamprey River, and design compatible with the pedestrian scale and historic nature of the downtown.

(b) Permitted Uses.

(1) Uses permitted by right are listed in the Table of Permitted Uses in Section 32-56.

(2) The following additional use may be permitted by Special Use Permit granted by the Planning Board, provided the standards as set forth in Section 32-9 (b) are met and the conditions set forth below:

A. Multi-family residential with three or greater residential units. (Editorial note: Amended 08/07/13)

1. Review and approval by the Planning Board of a fiscal impact statement which analyzes the financial impacts on municipal services and schools.
2. Review and acceptance by the Planning Board of a market analysis which demonstrates the feasibility that the proposed development sufficiently ensures a reasonable expectation of ongoing occupancy of the units to support the fiscal impact study and the maintenance and upkeep of the property.

The above studies shall be completed by a qualified entity approved by the Town and paid for by the Applicant.

(c) Multi-family residential use, with no commercial use within the building, shall be limited to no greater than four (4) residential units within a single building.

(d) Waivers to road setback, side/rear setback, and structure height. Reduction in these dimensional controls may be permitted by Special Use Permit issued by the Planning Board. The granting of such permit shall require the Planning Board to find that the proposed use is consistent with the purpose of the district, is suitable for the location proposed and, would not cause significant adverse impacts to adjacent lot

(The language below to be moved to Appendix B Site Plan?)

(e) Multi-family residential condominium unit in this zone shall not exceed 1,200 square feet

and not have more than 2 bedrooms. Residential apartments in this zone shall not exceed 1,000 square feet and not have more than 2 bedrooms.

(Ord. of 2-14-1996, § 5.08)

**Sect 32-160 Downtown Commercial Overlay District-** Delete in its entirety.

**Sec 32-233. Mixed Use Development** – Delete Paragraph C in its entirety.

**Sec. 32-233. Mixed-use development.**

- (a) *Nonresidential only.* Mixing of multiple nonresidential uses on a lot shall be permitted.
- (b) *Mix of residential and nonresidential uses on one lot.* In certain instances, it is appropriate to have a mix of permitted uses on a single lot. Residential use may be permitted in combination with nonresidential uses on a single lot or in a single structure, provided the following conditions are met:
  - (1) Permitted only in the M-1, M-2, M-3, M-2A and M-4 districts, and developments within the M-1 district are subject to the special use permit requirements as set forth in section 32-45(b)(2)b. (Editorial Note: Amended 11/18/09)
  - (2) Site plan review approval shall be required for the entire property to ensure that the site is suitable for the proposed mix of use.

**Changes to Appendix B Site Plans**

Section 3.02 - Parking

(A) *Number of Spaces.*

- (1) In all Zoning Districts except the M-1, M-2 districts and M2-A, each site shall provide at least the minimum number of parking spaces for the site, determined as the sum of the following for each use on the site:
  - (a) Residential: 2 spaces per unit; except 1 space per unit for elderly housing accessory dwelling unit ..
  - (b) Retail: 1 space per 200 square feet of gross floor area.
  - (c) Office/Business Service: 1 space per 250 square feet of gross floor area.
  - (d) Personal Service: 1 space per 200 square feet of gross floor area.
  - (e) Restaurant: 1 space per 3 seats.
  - (f) Lounge: 1 space per 2 seats.
  - (g) Lodging: 1 space per overnight room.
  - (h) Meeting Rooms: 1 space per 4 seats.
  - (i) Industrial: 1 space per 500 square feet of gross floor area.

- (j) Automotive Service Station: 4 spaces per service bay.
- (k) Hospital/Nursing Home: 1 space per 2 beds.
- (l) Mall: 1 space per 200 square feet of gross floor area.
- (c) *Design standards.* The following design standards shall apply in M-1, M-2 and M-2A districts and are intended to enhance the pedestrian environment and to protect and enhance overall character of the districts:
  - (1) *Building orientation.* To ensure that the village area retains its pedestrian orientation, all new buildings shall face the primary street on which the lots fronts. Further, the primary pedestrian access shall be located on the front of the building.
  - (2) *Outdoor seating.* Restaurants, with or without lounge use, may have outdoor seating. Site plan review approval shall indicate the total number of seats permitted for the use, and shall designate the area in which seats can be located outdoors. This outdoor seating option is not available to lounge-only uses or to social clubs.
  - (3) *Outdoor merchandise display and sales.* Outdoor display and sales of merchandise is permitted in areas designated on an approved site plan.
  - (4) *Awnings.* Awnings over doors and windows along streets are encouraged to enhance the pedestrian environment. A minimum clearance of seven feet shall be required where the awning projects over a public sidewalk, and awnings shall not be subject to the setback requirements and may have ten percent of their area covered with a commercial message.
  - (5) *Drive-through facilities.* Drive-through facilities may be permitted provided the location and operation does not discourage pedestrian-oriented design of the building.
  - (6) *On-site parking.* On-site parking shall not be allowed between the front of the primary structure and the street.
  - (7) No residential units or structured parking shall be located in the front of the street level space of a building facing North Main Street, Main Street, South Main Street, or Exeter Road. The intent of this criteria is to have the street side of the building be developed as commercial space.

## Section 32-56 Table of Permitted Uses

| TABLE OF PERMITTED USES – Uses checked are permitted by right |     |    |       |    |    |    |    |    |    |    |    |    |
|---------------------------------------------------------------|-----|----|-------|----|----|----|----|----|----|----|----|----|
| USE                                                           | M1  | M2 | M2A   | M3 | M4 | B1 | B2 | B3 | R1 | R2 | R3 | R4 |
| Single family res. including manufactured housing             |     |    |       |    |    |    |    |    | X  | X  | X  | X  |
| Single family residential excluding manufactured housing      |     | X8 | X     | X  | X  |    |    |    |    |    |    |    |
| Duplex residential                                            |     | X8 | X     |    |    |    |    |    |    |    | X  | X  |
| Multi-family residential                                      | X 3 |    | X6,7  |    |    |    |    |    |    |    | X  |    |
| Mixed use development                                         | X7  | X7 | X6, 7 | X7 | X7 |    |    |    |    |    |    |    |
| Age-restricted housing (elderly)                              | X   | X8 | X     | X  |    |    |    |    | 1  | 1  | 1  |    |
| Residential home care facility                                |     |    |       | X  |    |    |    |    |    |    |    |    |
| Nursing home                                                  |     | X  | X     |    |    |    |    |    |    | X  | X  |    |
| Day care (any size)                                           | X   | X  | X     | X  | X  | X  |    |    |    |    |    |    |
| Family group child day care                                   |     |    |       |    |    |    |    |    | X  |    |    |    |
| Family child day care                                         |     |    |       |    |    |    |    |    |    | X  | X  |    |
| Bed & breakfast                                               |     | X  | X     | X  | X  |    |    |    | X  | X  | X  | X  |
| Hotel                                                         | X   | X  | X     |    | X  | X  | X  | X  |    |    |    |    |
| Conference center                                             | X   |    |       |    | X  |    | X  | X  |    |    |    |    |
| Indoor and/or outdoor recreation facility                     |     | X  | X     |    | X  | X  | X  | X  | X  |    |    |    |
| Golf course                                                   |     |    |       |    | X  |    |    |    | X  |    |    |    |
| Country club                                                  |     |    |       |    | X  |    | X  |    | X  |    |    |    |
| Health club                                                   | X   | X  | X     |    |    | X  | X  | X  |    |    |    |    |
| Marina                                                        | X   | X  | X     |    |    |    |    |    |    |    |    |    |
| Retail                                                        | X   | X  | X     |    |    | X  | X  | X  |    |    |    |    |
| Office                                                        | X   | X  | X     |    |    | X  | X  |    |    |    |    |    |
| Studio                                                        | X   | X  | X     | X  | X  | X  |    |    |    |    |    |    |
| Service                                                       | X   | X  | X     |    |    | X  |    |    |    |    |    |    |
| Restaurant                                                    | X 4 | X  | X     |    | X  | X  |    |    |    |    |    |    |
| Lounge                                                        | X   | X  | X     |    | X  | X  |    |    |    |    |    |    |
| Wholesale                                                     | X   | X  | X     |    |    | X  | X  | X  |    |    |    |    |
| Warehouse                                                     | X   |    |       |    |    |    | X  | X  |    |    |    |    |
| Light manufacturing                                           | X 5 | X  | X     |    |    | X  | X  | X  |    |    |    |    |
| Manufacturing                                                 |     |    |       |    |    |    | X  | X  |    |    |    |    |
| Research & development                                        | X 5 | X  | X     |    |    | X  | X  | X  |    |    |    |    |
| Automotive repair                                             |     |    | X     |    |    | X  |    |    |    |    |    |    |
| Commercial amusement                                          |     | X  | X     |    |    | X  |    |    |    |    |    |    |
| Civic use                                                     | X   | X  | X     |    |    | X  |    |    |    |    |    |    |
| Cultural use                                                  | X   | X  | X     |    |    | X  |    |    |    |    |    |    |

| USE                                                | M1 | M2 | M2A | M3 | M4 | B1 | B2 | B3 | R1 | R2 | R3 | R4 |
|----------------------------------------------------|----|----|-----|----|----|----|----|----|----|----|----|----|
| Place of assembly                                  | X  | X  | X   |    |    | X  |    |    |    |    |    |    |
| Education facility                                 | X  | X  | X   |    |    | X  |    | X  |    |    |    |    |
| Commercial excavation                              |    |    |     |    |    |    | X  |    | X  | X  | X  |    |
| Forestry & agriculture, including animal husbandry |    |    |     |    |    |    |    |    | X  | X  |    |    |
| Forestry & agriculture, excluding animal husbandry |    |    |     | X  | X  | X  |    |    |    |    | X  |    |
| Fraternal organization                             |    | X  | X   |    |    | X  |    | X  |    |    |    |    |
| Flexible use development                           |    |    |     |    |    |    |    | 2  |    |    |    |    |
| Office complex                                     |    | X  | X   |    |    | X  |    | X  |    |    |    |    |

1. See section 32-236 Affordable Elderly Housing for individual district limitations and requirements.
2. See B3 district for requirements for conditional use permit. (Editorial note: Amended: 03/03/04).
3. See M-1 district for requirements for special use permit allowing multi-family residential use only as part of a mixed use mill redevelopment, 32-45(B)(2).
4. No drive-through restaurants are allowed.
5. Only light manufacturing and research and development uses, limiting the hours of operation to between 7 a.m. and 7 p.m.
6. See M-2A district requirements for special use permit allowing multi-family residential and mixed-use development involving three or greater residential units in section 32-46A M-2A District (B)(2).
7. See section 32-233 for requirements.
8. Prohibited in any street level space fronting on Main Street.

Editorial note: Amended 05/07/97      Added “self-service storage facility” to B1  
 Added “outdoor recreational facility” to R1

Editorial note: Amended 05/06/98      Removed “forestry & agriculture, including animal husbandry” from B2  
 Added “forestry & agriculture, including animal husbandry” to R2  
 Added “indoor and/or outdoor recreational facility”, “health club”, “retail” to B2

Editorial note: Amended 08/02/00      Removed “commercial excavation” from B1  
 Removed “self-service storage facilities” from B1

Editorial note: Amended 05/07/03      Added column for B3 District to include permitted uses “office complex”, “hotel”, “conference center”, “indoor/outdoor recreational facility”, “health club”, “retail”, “wholesale”, “warehouse”, “light manufacturing”, “manufacturing”, “research & development”, “education facility”, “fraternal organization”, “flexible use development”



|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Editorial note: Amended 03/03/04  | <p>Removed “campground” from all districts</p> <p>Added “golf course” to R1</p> <p>Added “country club” to R1</p> <p>Removed “excavation” from M4</p> <p>Added “health club” to B2</p> <p>Added “recreation facility” to B2</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Editorial note: Amended 11/19/08  | <p>Added “multi-family use” to M1 &amp; Footnote 3</p> <p>Removed “student housing” from M1</p> <p>Removed “nursing home” from M1</p> <p>Removed “commercial amusement” from M1</p> <p>Added Footnote 4</p> <p>Added Footnote 5</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Editorial note: Amended 08/07/13  | <p>Added column for the M2A District and included all the permitted uses allowed in the M2 District</p> <p>Added “research &amp; development” to M2A</p> <p>Added “civic use” to B1</p> <p>Added “fraternal organization” to M2A &amp; B1</p> <p>Added “office complex” to M2A &amp; B1</p> <p>Made “multi-family residential” a use permitted by Special Use Permit in M2A, pursuant to Section 2.03(B)(2)</p> <p>Removed “student housing” from the Table</p> <p>Added “commercial amusement” to B1</p> <p>Added “automotive repair” to M2A</p> <p>Added “mixed use development” to the Table, permitted in M1, M2, M2A, M3 &amp; M4</p> <p>Added Footnote 6 &amp; 7</p> |
| Editorial note: Amended 1/19/2022 | Added “Research and Development” to M2 Zone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (Proposed)                        | Added “Fraternal Organization” to M2 Zone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                   | Added “Office Complex” to the M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Sec. 32-89. Dimensions table.**

The following dimensional requirements shall apply

**Dimensions Table**

The following dimensional requirements shall apply

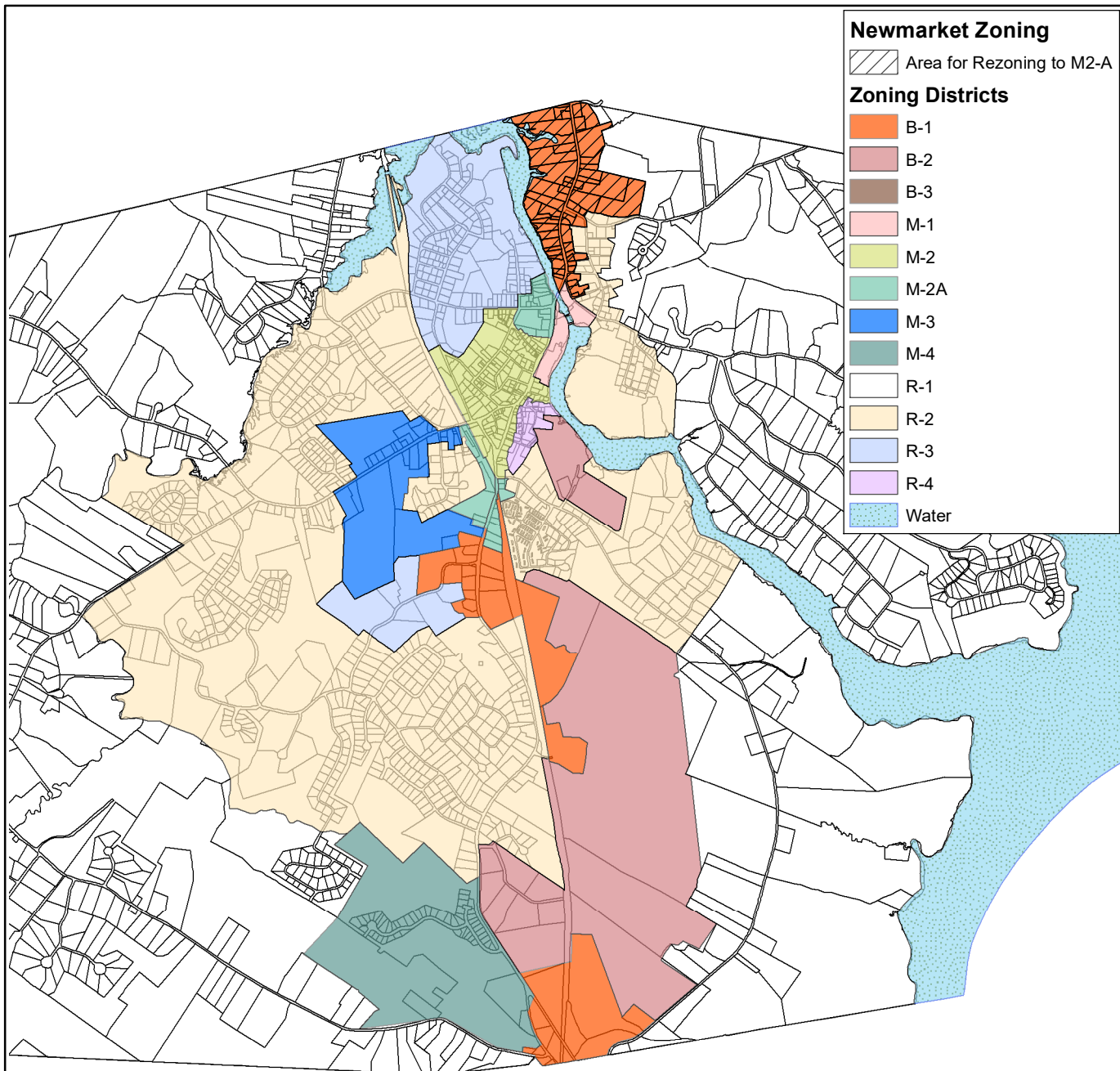
| Requirement                 | Measure    | M-1 | M-2 | M-2A | M-3 | M-4 | B-1 | B-2 | B-3 | R-1 | R-2 | R-3 | R-4 |
|-----------------------------|------------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Minimum Road Frontage       | feet       | 75  | 50  | 50   | 75  | 150 | 150 | 150 | 150 | 200 | 100 | 100 | 50  |
| Minimum Lot Size            | acres      | ¼   | ¼   | ¼    | ½   | 1   | ½   | 1   | 2   | 2   | ½   | ½   | ¼   |
| Maximum Residential Density | units/acre | 20  | 6   | 6    | 2   | 1   | 2   | 1   | -   | ½   | 2   | 2   | 4   |
| Minimum Road Setback        | feet       | 10  | 5   | 5    | 20  | 20  | 15  | 25  | 75  | 40  | 25  | 25  | 5   |
| Maximum Road Setback        | feet       | n/a | 10  | 10   | 50  | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Minimum Side/Rear Setback   | feet       | 10  | 10  | 10   | 20  | 25  | 25  | 30  | 20* | 25  | 15  | 15  | 10  |
| Maximum structure Height    | feet       | 50  | 50  | 35   | 35  | 35  | 35  | 35  | 35  | 35  | 35  | 35  | 35  |
| Minimum Structure Height    | feet       | n/a | 24  | 24   | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

(Editorial note: B3 column added 05/07/03  
M2-A column added 08/07/13)

**Note: B-3 District additional Setbacks:**

| B-3 District Side/Rear Setbacks    | Feet |
|------------------------------------|------|
| To Residential District Boundaries | 75   |
| To Residential Uses                | 50   |

1. The maximum residential density for multi-family residential housing in the M-1 district is as stated in section 32-45(B)(2)(b)(6)  
(Editorial note: Amended 11/19/08)
2. The planning board may waive the road setbacks, side and rear setbacks and height restrictions within the M-2 and M-2A districts through the issuance of a Special Use Permit pursuant to Section 32-46(d) and Section 32-46A (d) (Editorial note: Amended 8/07/13)



# Route 108 Corridor Newmarket, NH

Town of Newmarket  
Planning Department  
186 Main Street  
Newmarket, NH 03857

0 4,000 Feet

