



City of Keene Planning Board

AGENDA

Monday, June 27, 2022

6:30 PM

City Hall, 2nd Floor Council Chambers

I. **Call to Order** – Roll Call

II. **Minutes of Previous Meeting** – May 23, 2022

III. **Extension Request:**

CLSS-CUP-01-21 – Congregate Living & Social Service Conditional Use Permit – Monadnock Area Peer Support Agency, 32-34 Washington St #Rear – Applicant and owner Monadnock Area Peer Support Agency proposes to operate a Large Group Home as a second principal use on the property located at 32-34 Washington St #Rear (TMP 568-058-000-000-000). The site is 0.28-ac in size and is located in the Downtown Core District.

IV. **Earth Excavation Permit – Determination of Application Completeness**

EXP-01-22 & CUHP-01-22 – Earth Excavation Permit & Hillside Protection Conditional Use Permit – 0 Rt 9 – Applicant TFMoran Inc., on behalf of owner G2 Holdings LLC, proposes to operate a gravel pit on the undeveloped property located at 0 Rt 9 (TMP# 215-007-000-000-000). A Hillside Protection Conditional Use Permit is requested for impacts to steep slopes. Waivers are requested from the following sections of Article 24 of the Land Development Code: 24.3.1.A (200' public ROW setback), 24.3.1.C (150' access driveway setback), 24.3.1.D (surface water resource setbacks), 24.3.4 & 24.3.5 (Groundwater Quantity & Quality Baseline Measurements), 24.3.13 (Maximum Excavation Area), and 24.3.15.D (Annual Noise Monitoring). The site is 84.71 acres in size and is located in the Rural District.

V. **Public Hearings**

S-04-22 – Conservation Residential Development Subdivision & SPR-04-22 – Site Plan – 0 Drummer Road – Applicant and owner Christopher Farris proposes to subdivide the 13.1-ac parcel located at 0 Drummer Rd (TMP #515-015-000-000-000) into 6 lots and construct 5 multi-family buildings. Four of the lots are proposed to be developed into 5-unit multifamily residences, one lot is proposed to be developed as a 6-unit multifamily residence, and the remaining lot would be conserved as open space. The developable lots are proposed to have access from Timberlane Dr via a shared private driveway and vary in size from 0.3 to 1.2 acres. The open space lot is 9.5 acres. Waivers are requested from Section 25.10.8.B.2 of the Land Development Code regarding the requirement to prepare a survey that shows all metes and bounds of the revised parcels, Section 20.14.3.D regarding the requirement that all off-street parking be located to the side or rear of buildings, and Section 19.3.5.A.3.a regarding the requirement that all structures be accessed from interior streets. The site is in the Low Density District.

VI. **Updates to the Planning Board Rules of Procedure**

VII. **Staff Updates**

VIII. **New Business**

IX. **Upcoming Dates of Interest – July 2022**

- Joint Committee of the Planning Board and PLD – July 11, 6:30 PM
- Planning Board Steering Committee – July 12, 11:00 AM
- Planning Board Site Visit – July 20, 8:00 AM – To Be Confirmed
- Planning Board Meeting – July 25, 6:30 PM

1 **City of Keene**
2 **New Hampshire**

3
4
5 **PLANNING BOARD**
6 **MEETING MINUTES**
7

8 **Monday, May 23, 2022**

6:30 PM

**Council Chambers,
City Hall**

Members Present:

Pamela Russell Slack, Chair
David Orgaz, Vice Chair
Mayor George S. Hansel
Councilor Michael Remy
Emily Lavigne-Bernier
Armando Rangel
Harold Farrington

Staff Present:

Mari Brunner, Senior Planner

Members Not Present:

Roberta Mastrogiovanni
Gail Somers, Alternate
Tammy Adams, Alternate
Kenneth Kost, Alternate

9
10 **I) Call to Order**
11

12 Chair Russell-Slack called the meeting to order at 6:30 PM and a roll call was taken.
13

14 **II) Minutes of Previous Meeting – April 25, 2022**
15

16 A motion was made by Mayor George Hansel that the Planning Board approve the April 25, 2022
17 meeting minutes. The motion was seconded by Councilor Michael Remy and was unanimously
18 approved.
19

20 **III) Extension Request:**
21

22 **SPR-01-18, Modification #1 – Site Plan – 809 Court St** – Owner and Applicant,
23 Hillsborough Capital LLC, is requesting a one-year extension of the timeframe for
24 achieving active and substantial development of the site plan for 809 Court Street for the
25 demolition of the existing 19,943 sf building and the construction of a 28,800 square foot
26 (sf) indoor athletic facility in its place. This is the third extension request for this site plan.
27 The applicant is also requesting to continue to occupy the existing building as an athletic
28 facility until the new building is constructed. The parcel is TMP# 219-005-000-000-000
29 and is located in the Commerce District.
30

31 A. Public Hearing

32 Steve Holland explained that he started his business, Summit Athletic Center, in Marlboro, NH in
33 2015 and received his initial site plan approval from the Planning Board in April 2018. In
34 December 2018, the Planning Board approved the first modification to the site plan. When Mr.
35 Holland got into the detailed planning phase, he realized that the project was going to cost more
36 than anticipated. This brought Summit Athletic Center back before the Board for another
37 modification to the approved site plan that would allow for a phased implementation of the project
38 with a grand opening set for November 2019.

39
40 Due to the pandemic, Summit Athletic Center was shut down for nearly three months, which
41 caused financial hardship. Mr. Holland explained that this is the reason for requesting another
42 extension. He added that they are also dealing with issues such as staffing, inflation, etc.

43
44 Mr. Farrington asked what their biggest stumbling block has been. Mr. Holland stated that it has
45 been a combination of many things. He explained that when they opened in 2020, they had to do
46 so with reduced capacity and the cost to operate the building was high. They also had challenges
47 moving forward with a phased plan. Mr. Farrington asked whether a year would be sufficient. Mr.
48 Holland stated that he was not sure and noted that they might have to come back for a modification
49 to their site plan for a smaller-scale project.

50
51 Staff comments were next. Mari Brunner, Senior Planner, stated that this is the third and final
52 extension request that can be submitted for this site plan application. She explained that the Board
53 allows for a maximum of three extensions. Ms. Brunner referred to the following language as it
54 pertains to extensions from Section 25.12.12.C.3.a of the Land Development Code, which states
55 the following:

56
57 *“Prior to expiration of the second extension period, an applicant may request a third*
58 *extension.*

59 *a. Such extension shall only be granted by the respective decision-making authority*
60 *where an applicant can demonstrate that there are extraordinary circumstances*
61 *that warrant a third extension of the deadline.”*

62
63 Ms. Brunner noted that the key phrase here is “extraordinary circumstances.” The Board should
64 evaluate whether or not they consider some of the items mentioned by the Applicant, such as the
65 pandemic and the resulting issues to be “extraordinary circumstances”. Ms. Brunner further stated
66 that the applicant is also requesting to continue their operation out of the existing building for the
67 time being while working toward the ultimate goal of constructing a new facility on site. She
68 indicated that staff has discussed the option of a site plan modification with the Applicant and this
69 extension would give them time to consider all of their options.

70
71 Ms. Brunner noted that this extension is just for one year. Chair Russell-Slack asked staff to explain
72 what happens at the end of the one year timeframe. Ms. Brunner explained that if the Board
73 approves a one year extension it will push the date by which Summit Athletic Center has to achieve
74 active and substantial development out to June 2023. If active and substantial development
75 (including starting construction on the building, laying of a foundation, etc.) has not been achieved

76 by that time, Summit Athletic Center will lose their site plan approval and the site will revert back
77 to its original use, which was as an office building.

78
79 Mayor Hansel felt that the timing of this issue is unfortunate and wished the applicant the best. He
80 stated that he felt this was a good business model and something that is needed for this community.
81 Chair Russell-Slack concurred.

82
83 A motion was made by Mayor George Hansel that the Planning Board extend the deadline for
84 achieving active and substantial development of the site plan, SPR-01-2018, for 809 Court Street
85 (TMP# 219-005-000-000-000) for the demolition of the existing 19,943 sf building and the
86 construction of a 28,800 square foot (sf) indoor athletic facility to June 17, 2023, and to permit the
87 applicant to continue to occupying the existing building as an athletic facility until the new building
88 is constructed.

89
90 The motion was seconded by Councilor Michael Remy and was unanimously approved.

91
92 **IV) Public Hearings:**

93
94 **S-04-22 – Conservation Residential Development Subdivision & SPR-04-22 – Site**
95 **Plan – 0 Drummer Road** – Applicant and owner Christopher Farris proposes to subdivide
96 the 13.1-ac parcel located at 0 Drummer Rd (TMP #515-015-000-000-000) into 6 lots with
97 a shared private driveway and construct 5 multi-family buildings. Four of the lots are
98 proposed to be developed into 5-unit multifamily residences, one lot is proposed to be
99 developed as a 6-unit multifamily residence, and the remaining lot would be conserved as
100 open space. The developable lots vary in size from 0.3 to 1.2 acres, and the open space lot
101 is 9.5 acres. Waivers are requested from Section 25.10.8.B.2 of the Land Development
102 Code regarding the requirement to prepare a survey that shows all metes and bounds of the
103 revised parcels and Section 20.14.3.D regarding the requirement that all off-street parking
104 be located to the side or rear of buildings. The site is in the Low Density District.

105
106 Chair Russell-Slack stated the Planning Board will not be opening the public hearing for this
107 project, as the application is considered “incomplete” and, so it will need to be re-noticed. She
108 stated that the Board would not be accepting public comment during this meeting. She noted that
109 abutters will be re-noticed for the next public hearing, which is scheduled for Monday, June 27th
110 at 6:30 pm.

111
112 **V. Staff Updates**

113
114 Ms. Brunner stated that staff is still working on updating the Rules of Procedure, which are
115 currently being reviewed by the City Attorney. This item will be brought to the Planning Board
116 for its next meeting, depending on how busy the schedule is.

117
118 **VI. New Business**

119
120 There was no new business; however, the Chair urged the Board to visit the Drummer Hill site
121 prior to the June meeting.

122

123 **VII. Upcoming Dates of Interest** – April 2022

- 124 • Joint Committee of the Planning Board and PLD – June 13, 6:30 PM
125 • Planning Board Steering Committee – June 14, 11:00 AM
126 • Planning Board Site Visit – June 22, 8:00 AM – To Be Confirmed
127 • Planning Board Meeting – June 27, 6:30 PM

128

129 There being no further business, Chair Russell Slack adjourned the meeting at 6:46 PM.

130

131 Respectfully submitted by,
132 Krishni Pahl, Minute Taker

133

134 Reviewed and edited by,
135 Megan Fortson, Planning Technician

From: [Mari Brunner](#)
To: lisa@monadnockpsa.org
Cc: "[Christine Allen](#)"; cmarcou@keene.nh.gov; [Megan Fortson](#)
Subject: RE: Contains JavaScript: RE: CUP Responses MPS
Date: Tuesday, May 31, 2022 4:35:01 PM

Hi Lisa,

Thank you for the update, we will put this extension request on the agenda for the June 27 Planning Board meeting. For the first extension request, all we need from you is an update on the project and its status. You can provide this update either in person at the meeting or in writing (preferably in the form of a letter addressed to the Planning Board Chair, Pamela Russell-Slack). Also, just so you are aware, the extension will be for 180 days / 6 months. Please let me know if you have any questions.

Best,

[Mari Brunner](#)

Senior Planner, City of Keene

Community Development Dept.

3 Washington St., Keene, NH 03431

(603) 352-5440

From: lisa@monadnockpsa.org
Sent: Tuesday, May 31, 2022 4:12 PM
To: Mari Brunner
Cc: 'Christine Allen' ; cmarcou@keene.nh.gov
Subject: Contains JavaScript: RE: CUP Responses MPS

Hi Mari!

Our Licensing application deadline has been extended to 7/1 because we still have a little construction to button up. Corinne and I discussed the situation and determined that it is best to have the licensing inspections completed when the work is complete. This means that we will be unable to meet the 7/24 deadline stated in the CUP since the licensing board does not meet until 7/26. Therefore, we would like to request an extension of our compliance deadline. We are aware that there is a \$25 fee for the extension and I will deliver a check to the planning board this week. Thank you and the board for its consideration.

Lisa Steadman | Director of Agency Relations
Monadnock Area Peer Support Agency (MPS)

Main: (603) 352-5093 | Cell: (603) 903-4212

Lisa@MonadnockPSA.org

32 Washington Street #REAR | PO BOX 258 | Keene, NH 03431

www.MonadnockPSA.org

"Together we can change the world"

Confidentiality Note:

This email is intended only for the person or entity to which it is addressed and may contain information that is privileged, confidential or otherwise protected from disclosure. Dissemination, distribution or copying of this email or the information herein by anyone other than the intended recipient, or an employee or agent responsible for delivering the message to the intended recipient, is prohibited. If you have received this email in error, please destroy the original message and all copies and contact our office.

From: Mari Brunner <mbrunner@keenenh.gov>

Sent: Tuesday, January 25, 2022 1:17 PM

CITY OF KEENE
NEW HAMPSHIRE

M E M O R A N D U M

TO: Planning Board

FROM: Mari Brunner, Senior Planner

DATE: June 13, 2022

SUBJECT: **EXP-01-22 & CUHP-01-22 – Earth Excavation Permit & Hillside Protection Conditional Use Permit – 0 Rt 9** – Applicant TFMoran Inc., on behalf of owner G2 Holdings LLC, proposes to operate a gravel pit on the undeveloped property located at 0 Rt 9 (TMP# 215-007-000-000-000). A Hillside Protection Conditional Use Permit is requested for impacts to steep slopes. Waivers are requested from the following sections of Article 24 of the Land Development Code: 24.3.1.A (200' public ROW setback), 24.3.1.C (150' access driveway setback), 24.3.1.D (surface water resource setbacks), 24.3.4 & 24.3.5 (Groundwater Quantity & Quality Baseline Measurements), 24.3.13 (Maximum Excavation Area), and 24.3.15.D (Annual Noise Monitoring). The site is 84.71 acres in size and is located in the Rural District.

Recommendation:

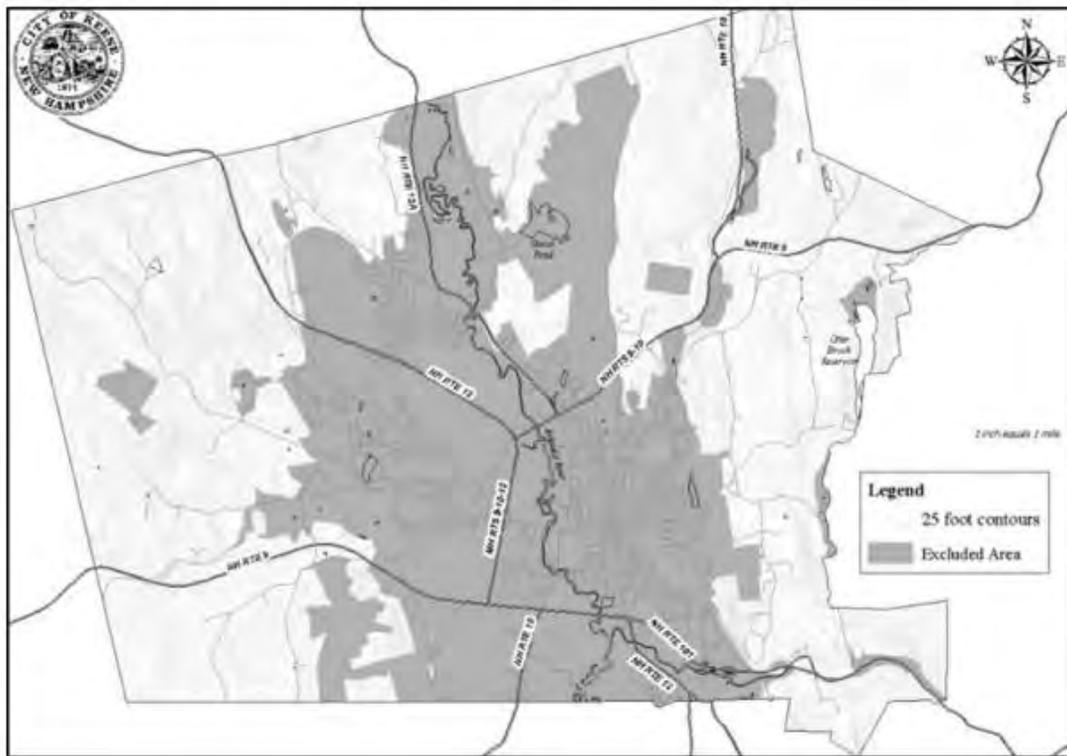
A recommendation on application completeness will be provided by the Planning Board's third party consultant, Fieldstone Land Consultants LLC. Once the application is accepted as "complete," the application will be referred to the Keene Conservation Commission for review and comment, and a public hearing date will be set for the next regular Planning Board meeting.

Background:

The excavation of earthen material for commercial sale ("gravel pits") is regulated by RSA 155-E at the state level. Enacted in 1979, RSA 155-E grants municipalities the authority to regulate earth excavation operations within their communities. The statute also enables municipalities to enact more stringent standards than those in RSA 155-E itself. The City of Keene regulates Earth Excavation activities under Articles 24 and Article 25, Section 25.19 of the Land Development Code.

Section 24 of the Land Development Code defines its purpose to *"Provide reasonable opportunities for the excavation of earth materials from land situated within the City; Minimize safety hazards created by excavation activities; Safeguard the public health and welfare; Preserve and protect natural resources and the aesthetic quality of areas located near excavation sites; Prevent land, air, and water pollution; and, Promote soil stabilization."* The Section identifies areas of the City in which a Gravel Pit is permitted in Figure 24-1 (see next page).

Figure 24-1 Earth Excavation Excluded Areas and Access Routes



The City's regulations specify that *“Upon receipt of a completed Earth Excavation Permit application, the Planning Board shall retain a consultant, at the expense of the applicant, for the purpose of reviewing the application for completeness and compliance with NH RSA 155-E and the Earth Excavation Regulations in Article 24 of this LDC. This consultant shall review all aspects of the submittal.”*

In accordance with the section above, staff retained the services of Fieldstone Land Consultants, LLC on behalf of the Board to review the submitted application materials for completeness and compliance with all applicable standards. After receiving comments from the consultant, the Applicant met with staff and the consultant to discuss revisions to the application. Revised application materials were submitted on Monday, June 13, 2022. The Board's consultant is still in the process of reviewing these materials. A recommendation will be provided to the Planning Board at the June 27 meeting regarding application completeness.

Once the Board accepts the application as complete, per Section 25.19.7.F of the LDC, “the application and any associated materials shall be forwarded to the City of Keene Conservation Commission for review and comment. The Conservation Commission may provide written comment to the Planning Board prior to the closing of the public hearing on the application.”

In addition, within 30 days of a determination of completeness, the Planning Board shall hold a public hearing in accordance with RSA 155-E-7. Within 20 days following the closing of the public hearing, the Planning Board must render a decision on the application (approve, approve with conditions, or disapprove).

City of Keene, NH

Earth Excavation Permit Application



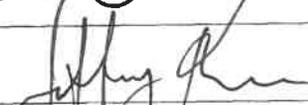
If you have questions about how to complete this form, please call: (603) 352-5440 or email: communitydevelopment@keenenh.gov

SECTION 1: PROJECT INFORMATION

PROJECT NAME: Proposed Gravel Pit

PROJECT ADDRESS(ES): 0 Route 9

SECTION 2: CONTACT INFORMATION

OWNER		APPLICANT	
NAME/COMPANY: G2 Holdings LLC	NAME/COMPANY: SAME AS OWNER		
MAILING ADDRESS: 250 North Street, Jaffrey, NH 03452	MAILING ADDRESS:		
PHONE: (603) 532-7397	PHONE:		
EMAIL: gordonservices@ymail.com	EMAIL:		
SIGNATURE: 	SIGNATURE:		
PRINTED NAME: Cody Gordon	PRINTED NAME:		
AUTHORIZED AGENT (if different than Owner/Applicant)		FOR OFFICE USE ONLY:	
NAME/COMPANY: TFMoran, Inc. - Jeff Kevan	TAX MAP PARCEL #(s): 215 007000 000 000		
MAILING ADDRESS: 48 Constitution Drive, Bedford, NH 03110			
PHONE: (603) 472-4488	PARCEL SIZE: 84.71ac	DATE STAMP:	
EMAIL: jkevan@tfmoran.com	ZONING DISTRICT: Rural		
SIGNATURE: 			
PRINTED NAME: JEFFREY KEVAN	PROJECT #: EXP 01-223 CUTP 01-22		

SECTION 3: APPLICATION SUBMISSION REQUIREMENTS

A COMPLETE APPLICATION MUST INCLUDE THE FOLLOWING ITEMS AND MUST BE SUBMITTED BY ONE OF THE OPTIONS BELOW:

- **Email:** communitydevelopment@keeneh.gov, with "Planning Board Application" in the subject line
- **Mail / Hand Deliver:** Community Development (4th Floor), Keene City Hall, 3 Washington St, Keene, NH 03431

The submittal requirements for Earth Excavation Permit applications are outlined further in **Article 24** and **Article 25.19** of the [Land Development Code \(LDC\)](#). You may request an exemption from providing any of the items below, except the application fee, notice list, narrative, and mailing labels. The Community Development Director may grant an exemption, if it is determined that the scope of the project does not warrant the submittal.

Note: Additional information may be requested by the respective decision-making authority during the review process.

GENERAL SUBMITTAL REQUIREMENTS

CERTIFIED NOTICE LIST (See **Attachment A** for more information.)

2 SETS OF MAILING LABELS (See **Attachment A** for more information.)

PROJECT NARRATIVE (See **Attachment B** for more information.)

FEES: Fill in the information below to calculate the total fee.

\$50 base fee + \$62 legal ad fee + (_____ current USPS certified mailing rate x _____ abutters) = _____ (Total Fee)

NOTE: Please call the Community Development Department for the current certified mailing rate. Checks should be made payable to the *City of Keene*. Credit card payments are accepted in-person or by calling 603-352-5440.

WAIVERS & EXCEPTIONS (See **Attachment C** for additional information.)

WAIVER(S) / EXCEPTION(S) REQUESTED

NO WAIVER(S) / EXCEPTION(S) REQUESTED

THE NAME & CONTACT INFORMATION OF THE PERSON OR ENTITY THAT WILL BE PERFORMING THE EXCAVATION.

PHOTOGRAPHS OF THE EXCAVATION SITE (See **Attachment D** for more information.)

PLAN SETS (See Attachment D for additional information.)	SUBMITTED	EXEMPTION REQUESTED
LOCUS MAP	X	
PHASING PLAN	X	
CONTEXT MAP	X	
EXISTING CONDITIONS MAP	X	
EXCAVATION SITE MAP	X	
EROSION CONTROL, SEDIMENTATION, AND DRAINAGE MANAGEMENT PLAN SET	X	
IMPACT CONTROL & MONITORING PLAN	X	
RECLAMATION PLAN	X	
TECHNICAL REPORTS (See Attachment D for additional information.)	SUBMITTED	EXEMPTION REQUESTED
SOILS ANALYSIS	X	
HYDROLOGIC / GEOLOGIC ANALYSIS	N/A	
TRAFFIC ANALYSIS	X	
VIEW PRESERVATION ANALYSIS	N/A	
ANALYSIS OF IMPORTANT HABITAT	X	
MISCELLANEOUS INFORMATION	X	

CONSULTANT FEE

Per **Article 25.19.7.A** of the [LDC](#), upon receipt of an Earth Excavation Permit application, the Planning Board shall retain a consultant, at the expense of the applicant, for the purpose of reviewing the application for completeness and compliance with NH RSA 155-E and the Earth Excavation Regulations in Article 24 of the LDC. This consultant shall review all aspects of the submittal. **Failure to comply with submitting application materials, including payment for the hiring of a consultant, will deem an application "incomplete."**

CITY OF KEENE - PLANNING BOARD

Dept File# _____

Hillsides Protection Conditional Use Permit (HSP CUP) Application

To be used with Site Plan Review per article XII of Keene's Municipal Code:

<http://www.ci.keene.nh.us/government/city-code>

Please fill out entire application

Section One: Project

Date 3/18/22 Tax Map Parcel # 215 - 7 - - - - Existing Zoning: Rural

Project:

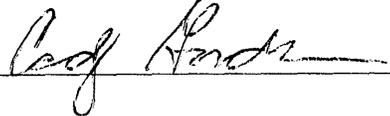
Name Excavation Site

Address 0 Route 9

Section Two: Contact Information

Owner:

Name G2 Holdings LLC

Signature 

Name _____

Signature _____

Address 250 North Street, Jaffrey, NH 03452

Phone (day) (603)532-7397

Email Address: gordonservices@ymail.com

Applicant/Agent:

Name SAME AS OWNER

Signature _____

Address _____

Phone: (day) () _____

Email Address: _____

Surveyor/Planner/Engineer:

Name TFMoran, Inc. c/o Jeff Kevan

Signature 

Address 48 Constitution Drive, Bedford, NH 03110

Phone: (day) (603) 432-4800

Email Address: jkevan@tfmoran.com



Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

REVISED June 13, 2022
~~REVISED June 6, 2022~~
 March 18, 2022

Keene Planning Board
 City Hall, 4th Floor
 Keene, NH 03431

**Re: Proposed Gravel Pit
 Route 9, Keene, NH
 Application for Excavation Permit & Hillside Protection CUP**

Dear Members of the Board,

Enclosed you will find an Excavation Permit application for a proposed gravel pit prepared on behalf of our client, G2 Holdings, LLC. Due to slopes on the property, a Hillside Protection Conditional Use Permit is also sought. This document constitutes both a waiver request and project narrative statement.

Introduction:

The subject property is located on Route 9, on Map 215 Lot 7. The parcel is 84.71± acres in size. The property currently has a gravel access road with some existing cleared areas and trails. The applicant proposes to expand gravel pit operations to an 8± acre portion of the parcel. The proposed gravel pit expansion is located in an area of minimal flood hazard, per FIRM panel 33005C0280E.

The property slopes generally upward from Route 9 to the northern property boundary and is mostly wooded. The existing access point, a gravel drive off Route 9, will be improved for use in the proposed expanded gravel pit operations. Natural vegetation will be preserved to the maximum extent possible between the proposed expanded gravel pit and Route 9. As illustrated by the enclosed photographs from the public right of way, the vegetation and upward slope in this area provide a substantial buffer.

Waiver Requests

The applicant respectfully requests the following waivers and exceptions, in accordance with the process outlined in Article 25.19.13:

1. Which requirement:

Article 24.3.1A - 200' Setback to Public Right of Way (ROW) – The excavation perimeter shall be at least 200 feet from any public right of way, unless such excavation is a highway excavation.

Why the waiver/exemption is needed:

The proposed bottom of the excavation area is 54 feet higher than Route 9 at the access drive intersection, so the vertical separation increases the effect of the horizontal setback provided. The

existing forested buffer between the access drive and the ROW is steeply sloped. Part of the 200' buffer was previously cleared of trees as part of the sites previous logging history. Also the ROW is approximately 78-feet back from the Route 9 edge of pavement line, because Route 9 has a 160' wide (wider than normal) ROW along most of the project's frontage, which pushes the 200' buffer further back into the site. Also the best soils and deepest soils above the seasonal highwater table on-site are located near that 200' ROW setback line. Not excavating into the 200' ROW setback would result in a tall soil berm being left in between the ROW and the excavation area, which would be deleterious to future reuse of the property following reclamation.

Alternative Standard:

The proposed excavation limits (not counting the access drive) are set 135'+ back from the ROW line.

Not in violation:

Granting of this waiver/exemption shall not cause a violation of NH RSA 155-E. The closest requirement to the 150' ROW setback is found in 155.E:4-a.I which states that "No excavation shall be permitted below road level within 50 feet of the right of way of any public highway." This project complies with this State requirement. Granting of this waiver/exemption shall not cause a violation of the spirit and intent of Article 24 as demonstrated above.

Adverse Impacts:

This will not increase potential adverse impacts because the proposed excavation limits (not counting the access drive) are setback 135'+ horizontally from the ROW line, and 210' horizontally and 50 feet vertically from the Route 9 edge of pavement line. Much of the existing forested buffer along the Route 9 frontage is maintained.

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 in that reusing the existing driveway and improving it in place, tree clearing and earthwork within the 200' ROW setback are minimized.

Not Unduly Injurious:

By lowering and flattening the bottom of the excavation area, its redevelopment potential is improved, thereby increasing the value of the property, and potentially increasing its taxation value for the public welfare. Granting this request will not be unduly injurious to environmental welfare because much of the existing forested buffer along the Route 9 frontage is maintained.

Unique Site Characteristics:

The unique site characteristics such as its remote location, higher elevation above the highway, large forested buffers to the east and west of the excavation area, and wider than normal ROW width help mitigate any impacts of the reduced ROW setback.

2. *Which requirement:*

Article 24.3.1C – 150’ Access Driveway Setback – The access driveway shall be at least 150’ from the boundary line of any public ROW, except where the driveway intersects the public ROW.

Why the waiver/exemption is needed:

The existing driveway is being improved in place, within the 150’ buffer. Improvements included widening by 2 to 4 feet and addition of a 14 foot wide armored riprap swale on the uphill side to convey any stormwater runoff downhill, minimizing erosion. The proposed bottom of the excavation area is 54 feet higher than Route 9 at the access drive intersection. The existing forested buffer between the access drive and the ROW is steeply sloped, varying from 3:1 to 1.5:1. An access drive that did not angle across the steeply sloped and forested frontage of the property would require a vast excavation and mass of new tree clearing to construct, which in turn would impact the groundwater table of the site.

Alternative Standard:

The improved driveway angles away from the ROW line, varying from 0’ at the intersection to 120’ at the upper end where it turns into the excavation area.

Not in violation:

Granting of this waiver/exemption shall not cause a violation of NH RSA 155-E. The closest requirement to the 150’ ROW setback is found in 155.E:4-a.I which states that “No excavation shall be permitted below road level within 50 feet of the right of way of any public highway.” This project complies with this State requirement. Granting of this waiver/exemption shall not cause a violation of the spirit and intent of Article 24 as demonstrated above.

Adverse Impacts:

By granting this waiver to reuse and improve the existing driveway, tree clearing in the 150’ frontage buffer, and associated adverse impacts are minimized. Trees help reduce flooding by absorbing stormwater in the leaves and roots. Trees help reduce erosion and sedimentation by locking soil in place with their root systems. Minimizing tree clearing minimizes adverse impacts.

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 in that reusing the existing driveway and improving it in place, tree clearing and earthwork within the 150’ frontage buffer are minimized.

Not Unduly Injurious:

Granting this waiver will not be unduly injurious to public interest or because the existing driveway has been safely used for logging operations in the past, and this waiver maintains this demonstrated history of safe use. Minimization of tree clearing obviously is good for environmental welfare, as well as public view-scape interests.

Unique Site Characteristics:

The unique site characteristics such as the steeply sloping front buffer area and steeply sloping water table make the angle/location of the existing driveway inevitable. Also the existing driveway thread between 2 existing wetlands on either side. Also the ROW is approximately 78-foot back the Route 9 edge of pavement line, because Route 9 has a wider than normal ROW, which pushes the 150' buffer further back into the site. The combination of these site characteristics mean that the existing driveway is in the best location any driveway could be to access this site, from the perspective of minimizing earthwork and associated forested buffer maintenance.

3. *Which requirement:*

Article 24.3.1.D –Surface Water Resource Setback – The excavation perimeter shall be setback at least 250 feet, and the access drive shall be setback at least 150 feet from any surface water resource.

Why the waiver/exemption is needed:

There is an existing wetland water resource in the Route 9 ROW, between the driveway and Route 9. There is a second existing wetland tracing down the hillside just above the existing drive intersection with Route 9. The two wetlands are 363 feet apart at their closest proximity. The existing access road must pass thru the 150' buffers of these two wetlands to reach the excavation area. The existing access drive needs to be improved by widening and resurfacing for trucking safety and by adding an armored ditch to convey channelized stormwater basin overflows down the hill without causing erosion. These improvements slightly further encroach into surface water resource setbacks.

There is an existing forested wetland 127.7 feet east of the excavation perimeter. There is another hillside wetland 75' west of the excavation perimeter. These two wetlands are 801 feet apart at their closest proximity. The 250' setbacks from these 2 wetland areas represents an unwarranted taking of a huge portion of the excavatable material located here. The Keene ZBA on March 7, 2022 approved the earth excavation use at this location, in full knowledge of these setback encroachments.

Alternative Standard:

The improved access road is over 115.6 feet from the Route 9 wetland and 47.8 feet (measuring from the retaining wall) to the hillside wetland. As discussed above, construction of a different access drive would require substantial new earthwork, tree clearing and new impacts to the 150' buffers.

The proposed earth excavation area is 127.7 feet from the forested low-lying wetland to the east. A 2- to 11-foot-high earthen berm is proposed to separate the excavation area from this wetland. The proposed earth excavation area is 75+ feet from the forested wetland tracing down the hillside to the west. An existing 8 to 16 foot high (on the wetland side) existing earthen berm/ridge is proposed to be maintained to separate the existing wetland from the proposed excavation area. After reclamation, this berm/ridge will be 30 to 35 feet high on its excavation side.

Not in violation:

Granting of this waiver shall not cause a violation of NH RSA 155-E because the State regulation does not establish a buffer for forested wetlands less than 5 acres, and this site's wetlands are smaller than 2 acres. Granting of this waiver/exemption shall not cause a violation to the intent of Keene's Article 24 as demonstrated herein.

Adverse Impacts:

Reduction of the access drive setback will not increase potential adverse impacts because the access drive is existing and being improved in place. The majority of the slope impacts stemming from improvement of the access drive are for construction of the armored swale adjacent to the driveway. The purpose of the armored swale is to protect downstream wetland resources by minimizing erosion and reduce any potential transport of sedimentation downstream.

Reduction of the excavation area setback will not cause adverse impacts because both wetland to the east and west of the excavation area are separated from the excavation by existing/proposed earthen berms and perimeter erosion controls. Much of the wetland to the west of the excavation area is higher than the excavation.

Potential adverse impacts of the project are further mitigated thru the use a cutoff swale above (north of) the excavation area, which keeps 'clean' runoff from the forested slope uphill of the proposed excavation area flowing toward the wetland to the east, as in the existing conditions.

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 in that reusing the existing driveway minimizes earthwork and tree clearing, thus protecting wetlands from erosion and sedimentation that would otherwise be risked from new construction.

Not Unduly Injurious:

Granting this request will not be unduly injurious to public or environmental welfare because protection to wetlands is maximized by minimizing earthwork and tree clearing within the 150 buffer. Construction of the armored swale alongside the access road further protects wetlands as noted.

Unique Site Characteristics:

The unique site characteristics, such as having only 363 feet between existing wetlands located near the road frontage, plus adjacent steep slopes mean the existing driveway is in the best location any conceivable access to the site could be located.

The unique site characteristics, such as having only 801 feet between existing wetlands located east and west of the excavation area, plus adjacent steep slopes in the ROW setback area south of the excavation area, and shallow groundwater table (1.5' below ground at monitoring well SLR-12) on the north side of the excavation area mean the proposed excavation area is in the best location it could be.

4. *Which requirement:*

Article 24.3.4 - Groundwater Quantity Baseline Measurement – Baseline water depth or elevation for all public and private wells within ½ miles of the site, and all surface water bodies, and wetlands within 300-ft of the excavation perimeter. Over the life of the excavation permit and any renewal thereof, the applicant shall monitor ground water levels and surface water levels on a monthly basis.

Why the waiver/exemption is needed:

Article 24.3.4 clearly states “When the applicant proposes excavation below the seasonal high ground water table, the applicant shall complete a hydro-geologic analysis to demonstrate that the excavation activities will not affect ground water levels so as to adversely impact public or private wells, surface water levels, or wetlands. This analysis shall include pre-excavation ground water level measurements, a constant discharge pump test, and ongoing ground water level monitoring.” Since this project does not propose to excavate below the seasonal high water table we shouldn’t need this waiver/exception. However, in case the City decides to use a different definition of ‘seasonal high water table’ other than the definition establish for the project by the SLR Limited Hydrogeologic Report dated 3/25/2022, we are requesting this waiver as a safeguard to prevent any permitting delays related to re-advertising the public hearing.

The project as proposed uses all appropriate measures to protect groundwater and wetlands, including but not limited to armored cutoff swales, separation berms, buffer setbacks, stormwater basin with infiltration sump, and sedimentation ponds.

Alternative Standard:

No monitoring of well water surface elevations. No monitoring of surface waterbody elevations.

Not in violation:

Granting of this waiver shall not cause a violation of NH RSA 155-E because it does not have any similar groundwater or surface water monitoring requirements. Granting of this waiver shall not cause a violation of Keene's Article 24 because the project intends to be compliance with Article 24 by not excavating lower than 6-feet above the seasonal highwater table.

Adverse Impacts:

This waiver will not increase potential adverse impacts because the proposed gravel pit maintains existing runoff patterns to adjacent wetlands and employs BMP's including sedimentation traps and a stormwater basin with infiltration sump that will increase percolation of rain runoff into the groundwater table as demonstrated by the HydroCAD modeling in the project Stormwater Management Report.

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 in that excavating lower than 6-feet above the seasonal highwater table is not proposed, therefore there is no reasonable expectation of impact to groundwater resources, so monitoring requirements are not called for.

Not Unduly Injurious:

Granting this request will not be unduly injurious to public or environmental welfare because intruding on the privacy of residences within ½ miles of the excavation area to conduct well testing is not warranted.

Unique Site Characteristics:

The unique site characteristics make such as the proposed stormwater basin with infiltration sump, which helps mitigate impacts.

5. *Which requirement:*

Article 24.3.5 - Groundwater Quality Baseline Measurement – Baseline water depth or elevation for all public and private wells within ½ miles of the excavation perimeter. Ongoing monitoring shall be conducted semi-annually throughout the term of the permit and any renewal thereof, and for a period of not less than 2-years following the cessation of excavation activities and reclamation of the excavation site.

Why the waiver/exemption is needed:

Article 24.3.4 clearly states “When the proposed operation includes the excavation of bedrock materials, the applicant shall collect and analyze pre- and post-excavation water quality data, as

set forth below...” Since this project no longer proposes to excavate into bedrock we shouldn’t need this waiver/exception. We are requesting this waiver as a safeguard to prevent any permitting delays related to re-advertising the public hearing. If the Board concurs that this waiver is not needed, then this request can be disregarded.

The project as proposed uses all appropriate measures to protect groundwater and wetlands, including but not limited to armored cutoff swales, separation berms, buffer setbacks, stormwater basin with infiltration sump, and sedimentation ponds.

Alternative Standard:

No monitoring of nearby well water quality.

Not in violation:

Granting of this waiver shall not cause a violation of NH RSA 155-E because it does not have any similar groundwater quality monitoring requirements. Granting of this waiver shall not cause a violation of Keene’s Article 24 because the project intends to be compliance with Article 24 by not blasting or excavating into ledge by other means.

Adverse Impacts:

This will not increase potential adverse impacts because the proposed gravel pit maintains existing runoff patterns to adjacent wetlands and employs an infiltration basin BMP that will increase percolation of rain runoff into the groundwater table as demonstrated by the HydroCAD modeling in the project Stormwater Management Report.

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 in that excavating lower than 6-feet above the seasonal highwater table is not proposed, therefore there is no reasonable expectation of impact to groundwater resources, so monitoring requirements are not called for.

Not Unduly Injurious:

Granting this request will not be unduly injurious to public or environmental welfare because intruding on the privacy of residences within ½ miles of the excavation area to conduct well testing is not warranted. It should be noted that the 2 wells closest to the excavation area (as shown on plans) are on Lot 215-8 which is now owned by the applicant, and at US Army Corp of Engineers Otter Brook Lake recreational area, which has public day use recreational and sanitary facilities.

Unique Site Characteristics:

The unique site characteristics make such as the proposed stormwater basin with infiltration sump, which helps mitigate impacts.

6. *Which requirement:*

Article 24.3.13 - Maximum Excavation Area – The total combination of any unreclaimed, inactive and active excavation area shall not exceed 5-acres at any time.

Why the waiver/exemption is needed:

It is the applicant intent to minimize open excavation area at all times, in order to minimize maintenance work for dust control and perimeter erosion controls. However, a 5-acre limit is not practical at all times for the site because of the need to have access areas for truck maneuvering and equipment placement, stockpiles, the steep slopes in parts of the site enlarge the excavation area due to chasing the slope uphill. It takes time to prepare an area for reclamation, since hydroseed subcontractors are not located on on-site. Sediment traps and swales, and basins take up significant land area within the excavation, and often cannot be stabilized immediately due to wet weather conditions (need 2 weeks of sunshine to dry out area, spread loam, hydroseed) in order to stabilize. Multiple stockpiles on site each require significant open land area; stockpile of loam for reclamation purposes, the need to stockpile excavated product for export, the need to stockpile boulders for process where on a site like this the mobile crusher will only be in use for a maximum of 1 day per week.

Alternative Standard:

We recommend a maximum of 7.0 acres of unreclaimed, inactive and active excavation area at any time.

Not in violation:

RSA 155-E:5-a requires Incremental Reclamation stating “Except for excavation sites of operating stationary manufacturing plants, any excavated area of 5 contiguous acres or more, which is depleted of commercial earth materials, excluding bedrock, or any excavation from which earth materials of sufficient weight or volume to be commercially useful have not been removed for a 2-year period, shall be reclaimed in accordance with RSA 155-E:5” So the State regulation varies slightly from Keene’s ordinance, by not including active excavation area within the 5 acre limitation. If the project stays under 7 acres including active excavation area, it will easily stay under 5 acres not including active excavation area. Therefore, granting this waiver will not cause violation of RSA 155-E. Granting of this waiver shall not cause a violation of Keene’s Article 24 as indicated above.

Adverse Impacts:

This waiver will not increase potential adverse impacts because the BMP’s onsite are designed to handle flow from the entire 8-acre excavation area.

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 because the BMP’s onsite are designed to handle flow from the entire 8-acre excavation area.

Not Unduly Injurious:

Granting this request will not be unduly injurious to public or environmental welfare because impacts because the BMP's onsite are designed to handle flow from the entire 8-acre excavation area.

Unique Site Characteristics:

As noted above, the unique site characteristics such as steep slopes and number of stockpiles needed, make this request necessary. The high percolation rate of the existing site soils help make sediment traps and the proposed stormwater basin more effective, thus helping mitigate impacts.

7. *Which requirement:*

Article 24.3.15.D – Annual Noise Monitoring – The applicant proposes to complete a single 20-day noise study as soon as possible after commencement of full operations on-site, in compliance with 24.3.15.A to C. The applicant requests a waiver of subsequent annual 20-day studies.

Why the waiver/exemption is needed:

Continuous noise monitoring for the life of the project is not needed because there are basically no neighbors within 1800' of the excavation area. The closest residence to the excavation is approximately 3800 feet northwest on Sullivan Road, on the other side of the hill. The closest residence within Otter Brook Valley is 4300 feet east on Houghton Ledge Road. The closest commercial building is 720' from the excavation and is owned by the applicant. The next closest commercial use is Granite Gorge ski Area, which is closed – the closest ski trail is 2000 feet from the excavation area. The entrance to Otter Brook recreation area is 660 sf away, but the picnic grounds are the closest amenity within the park at over 1800 feet from the excavation area.

The project has eliminated blasting from the proposal, so the loudest sound producer has been eliminated. The second loudest sound producer at a gravel pit is typically the stone crusher. This project only plans to run the crusher 1 day per week, at most.

Alternative Standard:

We recommend the Board require a single 20-day noise study as soon as possible after commencement of full operations on-site, in compliance with 24.3.15.A to C. We request a waiver of the requirement for an ongoing annual 20-day noise/sound monitoring study as required by 24.3.15.D, unless the City receives significant noise complaints. Background noise levels and typical operating noise levels can be established with the initial 20-day sound study. There is no need to repeat the sound study annually for the life of the project, given the dearth of immediate and residential neighbors and the elimination of blasting from the project.

Preliminary noise monitoring locations and standards are shown on the Impact Monitoring Plan (Sheet 6) subject to final review by the project sound sub-consultant and Keene Community Development Staff.

Not in violation:

Granting of this waiver shall not cause a violation of NH RSA 155-E because the State Regulation does not include a requirement for sound monitoring. Granting of this waiver shall not cause a violation of Article 24 because it is within the Boards discretion to waive the requirements of Article 24, given the reduced noise levels on site and the dearth of close residential neighbors.

Adverse Impacts:

The waiver request does not increase the risk of adverse impacts because noise complaints can still be lodged with the City, and dealt with using the process outlined in Article 24.3.13.D

Purpose and Intent:

This request is consistent with the purpose and intent of Article 24 since a single 20-day sound study gives the City the tools needed to deal with noise complaints, if any.

Not Unduly Injurious:

Granting this request will not be unduly injurious to public or environmental welfare because A single 20-day sound study gives the City the tools needed to deal with noise complaints, if any. Given the reduced noise levels on site and the dearth of close residential neighbors, annual re-study

Unique Site Characteristics:

The unique site characteristics make such as its remote location, dearth of residential neighbors as described above, and the substantial forest buffers help mitigate impacts. Also, the hill to the north is expected to block sound traveling in that direction.

Earth Removal Development Standards

Per the application requirements for the Earth Excavation Permit, below are brief narrative descriptions of how each development standard in Article 25.19.4.B of the Land Development Code has been addressed:

1. The location, boundaries and zoning district

Portions of the 84.7 acres subject parcel are located in the Towns Sullivan and Roxbury and the City of Keene. The subject parcel is in Cheshire County. The project is entirely located in Keene, including the access drive, within the Rural zoning district.

2. Types of materials to be excavated and means

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MSC a division of TFMoran, Inc.
170 Commerce Way – Suite 102, Portsmouth, NH 03801
T(603) 431-2222 F(603) 431-0910 www.msceengineers.com

Excavation methods will generally consist of removing topsoil, and excavating overburden gravels, and crushing any boulders encountered to generate mixed gravels on site. Blasting for ledge excavation has been eliminated from the proposal due to City of Keene requirements to stay 6 feet above the groundwater table. Mobile screeners will be used onsite to process bank run and crushed gravels, sand, and loams for export/sale via over-road trucking.

3. Project duration and phasing

The entire excavation project is expected to span 2-4 years of operation in a single phase. When operations are permanently ceased at this location, the applicant proposes to utilize the stabilized, reclaimed site as a solar field.

4. The number of acres impacted in the current permit phase

8 Acres+/-

5. Volume of earth material to be removed per year

The entire excavation project is expected to span 2-4 years of operation, with approximately 115,000 cubic yards of excavated material (15,000 c.y. to 29,000 c.y. per year). The enclosed plan set includes grading and drainage sheets a single phase of excavation.

6. Description of maximum breadth depth, and slope

The excavation area is roughly 800 x 500 feet at maximum. The finish grades proposed in the enclosed plan set create a 1% slope the lower elevation of the excavation area. The perimeter is then graded upwards at a rate between 2:1 and 4:1 to reach the existing upland elevations. The only 2:1 proposed slope contains a 10' wide bench area at mid-slope.

7. The location of the access and perimeter visual barriers

The existing site access drive will be improved in place. Perimeter mature forested visual buffers will be maintained in place, as shown on plans.

No glare or odor impacts are expected to result from the gravel pit use. Mitigation plans will be in place during gravel pit operations to prevent noise and vibrations from adversely impacting the surrounding area. Both naturally occurring and proposed constructed earth berms will contribute to noise mitigation. The project is located in a remote area with significant distance to any occupied buildings, with the majority of that distance being woodlands. The gravel pit area itself observes appropriate setbacks from lot lines. The nearest property lines of parcels not owned by the applicant are located at the following approximate distances:

- North: 2,350 l.f.
- South: 300 l.f.
- East: 1,650 l.f.
- West: 600 l.f.

Note that the closest property to the south (300 l.f. across Route 9) is dominated by Otter Brook alongside Route 9, so its another 180'+/- (480' in total) to undeveloped land south of Otter Brook that might be consider buildable.

8. Elevation of estimated highest annual average groundwater table

Measurements of the estimated seasonal high groundwater table are enclosed within the stormwater management showing results subsurface investigations:

- The SLR Limited Hydrogeologic Report dated 3/25/2022
- The TFS (Thomas Sokoloski) Site Specific Soil Report dated 3/5/2022
- The TFM Test Pit Report dated 9/10/2020
- Milone & MacBroom Proposed Gravel Pit Initial Explorations dated October 7, 2020
- NCRS soil report.

Seasonal high water table has been estimated using the method outlined in the Limited Geohydrologic Investigation by SLR International Corporation, dated March 25, 2022 which incorporates the surrounding topography/hydrologic features with observed water in strategically placed monitoring wells. The investigation identifies seasonal high water table at three borings because those were the locations of the monitoring wells. This method was recommended by the geotechnical engineer, who chose the location of the monitoring wells.

The applicant proposes excavation 6' above the seasonal high groundwater table only. Observation wells have been placed on site and the complete results are provided. In general, the groundwater surface slopes down towards route 9 and varies from above elevation 885 to below 820 within the excavation area, as shown on the plans. Based on existing topography and borings, proposed excavation is planned to range between 5 and 30 feet below the existing ground surface and ranging from 6 feet to 35 feet above the ground table surface.

The project complies with Article 24.3.3 which states that “Excavation shall not be permitted lower than 6-feet above the seasonal highwater table, as indicated by borings or test pits, without the issuance of an exception.” The project establishes the seasonal high ground water elevation thru use of monitoring wells (# SLR10 to SLR12). Numerous test pits on site have also been performed and detailed results have been provided to the City of Keene in the Stormwater Management Report, as noted above. Seasonal highwater estimates from test pits are often based on redoximorphic features such as mottling, and not on the actual presence of water in the test hole. All of the Milone and MacBroom test pits (Test pits 1 thru 16) recorded “No Groundwater encountered” but 5 of those 16 testpits noted redoximorphic mottling features at varying elevations. All of the 11 TFMoran test pits recorded a lack of groundwater “Seeps: None Observed” but all 11 also recorded redoximorphic concentrations at depths varying from 20 inches to 6 feet. These redoximorphic features are believed to represent either locally perched groundwater pockets, or relics of bygone geological conditions, and have been disregarded. The

project complies with Article 24.3.3 by staying more than 6’ above the actual groundwater table, as identified by the SLR Limited Hydrogeologic Report dated 3/25/2022.

9. Proposed methods of disposal of boulders stumps, vegetation and other debris.

Legal disposal methods will be utilized for any boulders, stumps, vegetation and debris. On Sheet 11 of the plans, Earth Excavation note 11 prohibits storage and disposal of such material within forested buffers on-site. Boulders will typically be stored, crushed, and processed on site into marketable construction material. Stumps, vegetation, and leaf debris will be stored, ground and processed into mulch for use in perimeter erosion control measures, or surface composted on site for use in enriching loam for site reclamation.

10. Proposed methods for controlling storm water, drainage, erosion, and sedimentation

Drainage and erosion control improvements will be constructed. These will include terraced grading along the outer edges of the proposed pit area, stormwater swales, and a stormwater pond. Drainage calculations to support the sizing of the stormwater pond and culverts are enclosed. Silt sock and silt fence are also proposed as perimeter control methods. The site will include a stabilized construction entrance and paved driveway apron to minimize material tracking into the public roadway.

The gravel pit area has been graded to drain towards a stormwater pond, which outlets to a riprap swale along the access drive. A pipe culvert is proposed at the base of the driveway to allow water to discharge to the wet area adjacent to the roadway, to match the existing drainage pattern. A cut-off swale has been added to ensure that runoff from the forested area uphill of the proposed excavation area will not surface flow into the excavation and will continue to flow to the wetland east of the project, as in the existing condition. Enclosed calculations show that the flow and volume of stormwater to each discharge point is the same or reduced between the pre-development and post-development conditions. Stormwater discharges from the proposed excavation operations will not adversely affect any abutting properties.

The proposed excavation area has been designed to control stormwater and capture sedimentation in runoff through a system of swales and a stormwater pond. An existing natural earthen berm to the west and proposed constructed earthen berm to the east provide a barrier between excavation operations and adjacent wetlands.

11. Means to avoid and/or mitigate adverse impacts caused by dust, noise, and traffic

The proposed operations are not expected to negatively impact air quality. Dust control measures will be applied as necessary. The excavation area is roughly 50 feet+ higher than Route 9 and screened by substantial existing forest vegetation (to remain) on site provide substantial screening from the public right of way. The existing driveway will be utilized, and vegetation preserved to the maximum extent possible between the driveway and Route 9. The enclosed photo sheets illustrate the visibility into the site from the road is minimal. The side and rear lot lines are all forested. Over-Winter site stabilization methods are detailed on Sheet 9 of the plans including stone mulch, hay mulch, erosion blankets, and seeding as needed.

Per dust control notes on Sheet 6 of the plans:

- a. Stabilization with loam and seed, erosion control blankets, and riprap shall be used to minimize erosion and dust on site.
- b. Dust control will be accomplished using a truck-mounted water tank and spray system as needed.

Per sound monitoring notes on Sheet 6 of the plans:

- a. Vegetated buffers as shown on the plan are to be maintained as visual and sound buffers.
- b. Per the requirements of section 24.3.15 of the Keene land development code, ambient sound levels shall be measured prior to commencement of excavation operations, by a consultant hired by the planning board at the expense of the applicant. The monitoring locations shall be selected by the community development director or their designee. Proposed locations are shown on the plan
- c. After the commencement of excavation operations, the applicant shall monitor noise levels and document such monitoring per the requirements of section 24.3.15 of the Keene Land Development Code.
- d. Noise levels from the excavation activities shall not exceed the background ambient "a" weighted sound pressure level, exceeded 90% of the time during the sound level sampling period, by more than 10 db(a) and in any event shall not exceed 55 db(a).
- e. Complaints regarding the level of noise generated from excavation operations shall be resolved per the procedures outlined in section 24.3.15 of the Keene Land Development Code.

Traffic; An onsite speed limit of 15 mph has been established via signage. A stop sign has been added at the exit from the site, onto Route 9. As established in the TFMoran Traffic Memorandum submitted to the City of Keene on 2/18/2022, the proposed excavation is located on a State Highway operations are not expected to negatively impact traffic conditions – 40 trucks per day represents less than a 1% increase compared to the 2019 AADT of 9,707 vehicles.

12. Precautions to be taken by the applicant to protect the safety and welfare of persons on site

The excavation work will be conducted by trained personnel, in accordance with OSHA work site safety standards. A gate on the access drive is proposed to secure the site, after business hours.

13. The proposed method for handling, transporting, and disposing of fuel and/or chemicals on the site

Spill Response, Good House Keeping Practices, Specific Hazardous Material Practices, and Spill Control measures are detailed on sheets 6 and 7 of the plans, too voluminous to reproduce here.

14. The means by which earth materials are proposed to be transported from the excavation site, and the proposed load limits and maximum number of vehicle trips per day

Earth material shall be removed from the site via commercial trucking, in conformance with State standards and subject to State of NH maximum load limits. Typically, tri-axle dump truck will be used. As established in the TFMoan Traffic Memorandum submitted to the City of Keene on 2/18/2022, the maximum peak traffic load is expected to be 40 truck per day.

15. Extent of blasting and the name and classification of any explosives

Blasting has been eliminated from the proposal.

16. Any other descriptive information

See above and below.

Per the application requirements for the Hillside Protection Conditional Use Permit, below are brief narrative descriptions of how each development standard in Article 20 of the Land Development Code has been addressed:

1. Drainage & Stormwater Management

The gravel pit area has been graded to drain towards a stormwater pond, which outlets to a riprap swale along the access drive. A pipe culvert is proposed at the base of the driveway to allow water to discharge to the wet area adjacent to the roadway, to match the existing drainage pattern. A cut-off swale has been added to ensure that runoff from the forested area uphill of the proposed excavation area will not surface flow into the excavation, and will continue to flow to the wetland east of the project, as in the existing condition. Enclosed calculations show that the flow and volume of stormwater to each discharge point is the same or reduced between the pre-development and post-development conditions. Stormwater discharges from the proposed excavation operations will not adversely affect any abutting properties.

2. Sediment & Erosion Control

The proposed excavation area has been designed to control stormwater and capture sedimentation in runoff through a system of swales and a stormwater pond. An existing natural earthen berm to the west and proposed constructed earthen berm to the east provide a barrier between excavation operations and adjacent wetlands. Proposed silt fence and sock will be utilized as perimeter controls.

3. Snow Storage & Removal

There is ample area on site to store snow as needed. Location will vary according to excavation operations.

4. Landscaping

The Applicant plans to preserve naturally occurring vegetation wherever possible. Such vegetation provides ample screening between the excavation site and the public way. When excavation operations conclude, the site will be stabilized with loam and seed.

5. Screening

The elevations and vegetation on site provide substantial screening from the public right of way. The existing driveway will be utilized, and vegetation preserved to the maximum extent possible between the driveway and Route 9. The enclosed photo sheets illustrate the visibility into the site from the road is minimal. The side and rear lot lines are all forested.

6. Lighting

No site lighting is proposed.

7. Sewer & Water

No utility connections are proposed.

8. Traffic & Access Management

The proposed excavation has direct access to Route 9, in an area with minimal traffic. Operations are not expected to negatively impact traffic conditions. The proposed excavation will utilize an existing gravel driveway, which will be improved to support excavation operations and gated outside hours of operation to prevent unauthorized access. The Applicant has provided a traffic analysis to illustrate the minimal impacts.

9. Filling & Excavation

The applicant will pursue an Excavation Permit for this project; please see enclosed materials pertaining to the Excavation Permit application.

10. Surface Waters & Wetlands

Wetlands have been delineated by a Certified Wetlands Scientist whose flags have been survey located. The project layout has incorporated wetlands setbacks for excavation. As part of this application the applicant is requesting a waiver to reduce wetlands setback in one area of the site. Wetlands are well protected in all areas of the site, including with a reduced setback, owing to proposed silt fence and sock along the excavation perimeter, drainage swales, a stormwater pond, and both naturally occurring and proposed constructed earthen berms.

11. Hazardous & Toxic Materials

Hazardous and toxic materials used on site will be handled in a safe and legal manner. When not in use, any such materials will be secured in an appropriate container. Explosives used for blasting will be handled according to the blasting best management practices outlined in the enclosed plan set.

12. Noise

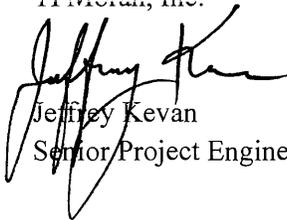
Given the distance from the excavation area to any inhabited structures, noise is not expected to create an impact. The proposed excavation layout incorporates significant vegetated buffers from each property line which will mitigate noise from the site.

13. Architecture & Visual Appearance

No buildings are proposed.

Please contact me at (603) 472-448 or jkevan@tfmoran.com should you require additional information.

Sincerely,
TFMoran, Inc.



Jeffrey Kevan
Senior Project Engineer



REFERENCE PLANS

1. BOUNDARY SURVEY: LAND OF SEAFIELD PINES HOSPITAL CORPORATION; KEENE, SULLIVAN & ROXBURY; COUNTY OF CHESHIRE; STATE OF NEW HAMPSHIRE; DATED JUNE, 1989; SCALE 1" = 300'; PREPARED BY C.T. MALE ASSOCIATES, P.C.

NOTES

- OWNER OF RECORD OF MAP 215 LOT 7: G2 HOLDINGS, LLC., 250 NORTH ST., JAFFREY, NH 03452. DEED REFERENCE TO PARCEL IS BK. 3079 PG. 273. AREA OF PARCEL = 84.71 ACRES±.
- [215-7] INDICATES TAX MAP AND LOT NUMBER.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE APPROXIMATE EXISTING CONDITIONS ON MAP 215, LOT 7.
- CURRENT ZONING IS RURAL.
 - MIN. LOT SIZE 5 ACRES
 - MIN. LOT FRONTAGE 50'
 - MIN. WIDTH 200' AT BUILDING LINE
 - MIN. BUILDING SETBACKS ARE 50' FRONT, 50' SIDE AND 50' REAR
- EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR CHESHIRE COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33005, EFFECTIVE DATE 5/23/2006, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
- TOPOGRAPHIC INFORMATION ON THIS PLAN WAS TAKEN FROM CITY OF KEENE, NH GIS PLANS, LIDAR TOPOGRAPHY FROM NH GRANT, AND AN ON THE GROUND LIMITED BOUNDARY SURVEY BY THIS OFFICE. BOUNDARY INFORMATION SHOWN IS FROM A LIMITED FIELD SURVEY BY TFMORAN, INC. IN MARCH OF 2021.
- EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE CHESHIRE COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
- THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.

[215-4] SAMUEL & JACLYN GUINANE
177 WIPER HILL RD
COLEBROOK, NH 03576
B. 3212 P. 1203

[215-7] G2 HOLDINGS LLC
250 NORTH STREET
JAFFREY, NH 03452
B. 3079 P. 283

[215-8] G2 HOLDINGS LLC
250 NORTH STREET
JAFFREY, NH 03452

[216-1] GRANITE GORGE LLC
PO BOX 545
KEENE, NH 03431
B. 1898 P. 368

[216-2] STATE OF NH
172 PEMBRROKE ROAD
CONCORD, NH 03301
B. 719 P. 455

WETLAND CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON FEBRUARY 8, 2021 BY CHRIS DANFORTH, CWS NO. 77. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.



TAX MAP 215 LOT 7
EXISTING CONDITIONS
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE: 1" = 200' MARCH 18, 2022

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REV	DATE	DESCRIPTION	BY	CHK
3	6/6/2022	UPDATE PER PEER REVIEW COMMENTS	JMR	JK
2	4/29/2022	UPDATE FOR AOT SUBMISSION	MCK	JK
1	4/8/2022	GENERAL DESIGN UPDATES	SRP	JK
				DR

TFM Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
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CK JK CADFILE 82549-00 SITE

SHEET 2 OF 11

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REFERENCES PLANS

BOUNDARY SURVEY: LAND OF SEAFIELD PINES HOSPITAL CORPORATION; KEENE, SULLIVAN & ROXBURY; COUNTY OF CHESHIRE, STATE OF NEW HAMPSHIRE, DATED JUNE, 1989; SCALE 1" = 300'; PREPARED BY C.T. MALE ASSOCIATES, P.C.

NOTES

- OWNER OF RECORD OF MAP 215 LOT 7: G2 HOLDINGS, LLC., 250 NORTH ST., JAFFREY, NH 03452. DEED REFERENCE TO PARCEL IS BK. 3079 PG. 273. AREA OF PARCEL = 84.71 ACRES±
- 215-7 INDICATES TAX MAP AND LOT NUMBER.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON MAP 215, LOT 7.
- CURRENT ZONING IS RURAL. MIN. LOT SIZE 5 ACRES. MIN. LOT FRONTAGE 50'. MIN. WIDTH 200' AT BUILDING LINE. MIN. BUILDING SETBACKS ARE 50' FRONT, 50' SIDE AND 50' REAR.
- SOILS SHOWN WERE DELINEATED BY THOMAS E SOKILOSKI, CERTIFIED SOIL SCIENTIST #063 OF TES ENVIRONMENTAL CONSULTANTS, LLC ON DECEMBER 2, 2021.
- EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR CHESHIRE COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33005, EFFECTIVE DATE 5/23/2006, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
- TOPOGRAPHIC INFORMATION ON THIS PLAN WAS TAKEN FROM CITY OF KEENE, NH GIS PLANS, LIDAR TOPOGRAPHY FROM NH GRANIT, AND AN ON THE GROUND LIMITED BOUNDARY SURVEY BY THIS OFFICE. BOUNDARY INFORMATION SHOWN IS FROM A LIMITED FIELD SURVEY BY TFMORAN, INC. IN MARCH OF 2021.
- WETLANDS SHOWN ON THIS PLAN WERE DELINEATED BY CHRIS DANFORTH, CWS #77 ON 2/8/2021.
- EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE CHESHIRE COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
- THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	DRAINAGE	HSG
73B	BERKSHIRE FINE SANDY LOAM, V. STONY	0-8%	WELL	B
73C	BERKSHIRE FINE SANDY LOAM, V. STONY	8-15%	WELL	B
73D	BERKSHIRE FINE SANDY LOAM, V. STONY	15-25%	WELL	B
73E	BERKSHIRE FINE SANDY LOAM, V. STONY	25%+	WELL	B
73F	BERKSHIRE FINE SANDY LOAM, V. STONY	0-8%	WELL	C
73G	BERKSHIRE FINE SANDY LOAM, V. STONY	8-15%	WELL	C
73H	BERKSHIRE FINE SANDY LOAM, V. STONY	15-25%	WELL	C
73I	BERKSHIRE FINE SANDY LOAM, V. STONY	25%+	WELL	C
169B	SUNAPEE FINE SANDY LOAM, V. STONY	0-8%	MOD. WELL	B
169C	SUNAPEE FINE SANDY LOAM, V. STONY	8-15%	MOD. WELL	B
169D	SUNAPEE FINE SANDY LOAM, V. STONY	15-25%	MOD. WELL	B
379B	DIXFIELD FINE SANDY LOAM, V. STONY	0-8%	MOD. WELL	C
379C	DIXFIELD FINE SANDY LOAM, V. STONY	8-15%	MOD. WELL	C
379D	DIXFIELD FINE SANDY LOAM, V. STONY	15-25%	MOD. WELL	C
500B/ccabb	UDORTHENTS, LOAMY	0-8%	WELL	B
500B/ccabb	UDORTHENTS, LOAMY	0-8%	WELL	C
500B/ccabb	URBAN LAND	8-15%	WELL	C

TAX MAP 215 LOT 7
PARTIAL EXISTING CONDITIONS PLAN
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
 OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE: 1" = 50' MARCH 18, 2022

WETLAND CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON FEBRUARY 8, 2021 BY CHRIS DANFORTH, CWS NO. 77. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

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REV	DATE	DESCRIPTION	DR	CK
3	6/6/2022	UPDATE PER PEER REVIEW COMMENTS	JMR	JK
2	4/29/2022	UPDATE FOR AOT SUBMISSION	MCK	JK
1	4/8/2022	GENERAL DESIGN UPDATES	SRP	JK

TFM Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists

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OTTER BROOK LAKE
PUBLIC FLOOD CONTROL
PUBLIC WATER SYSTEM
PWS ID 1247030

OTTER BROOK CENTER
PUBLIC WATER SYSTEM
PWS ID 1242010
SITE #200010011



TAX MAP 215 LOT 7
EXISTING CONDITIONS - EXCAVATION OVERLAY
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
OWNED BY/PREPARED FOR
G2 HOLDINGS LLC
SCALE: 1" = 500' **MARCH 18, 2022**

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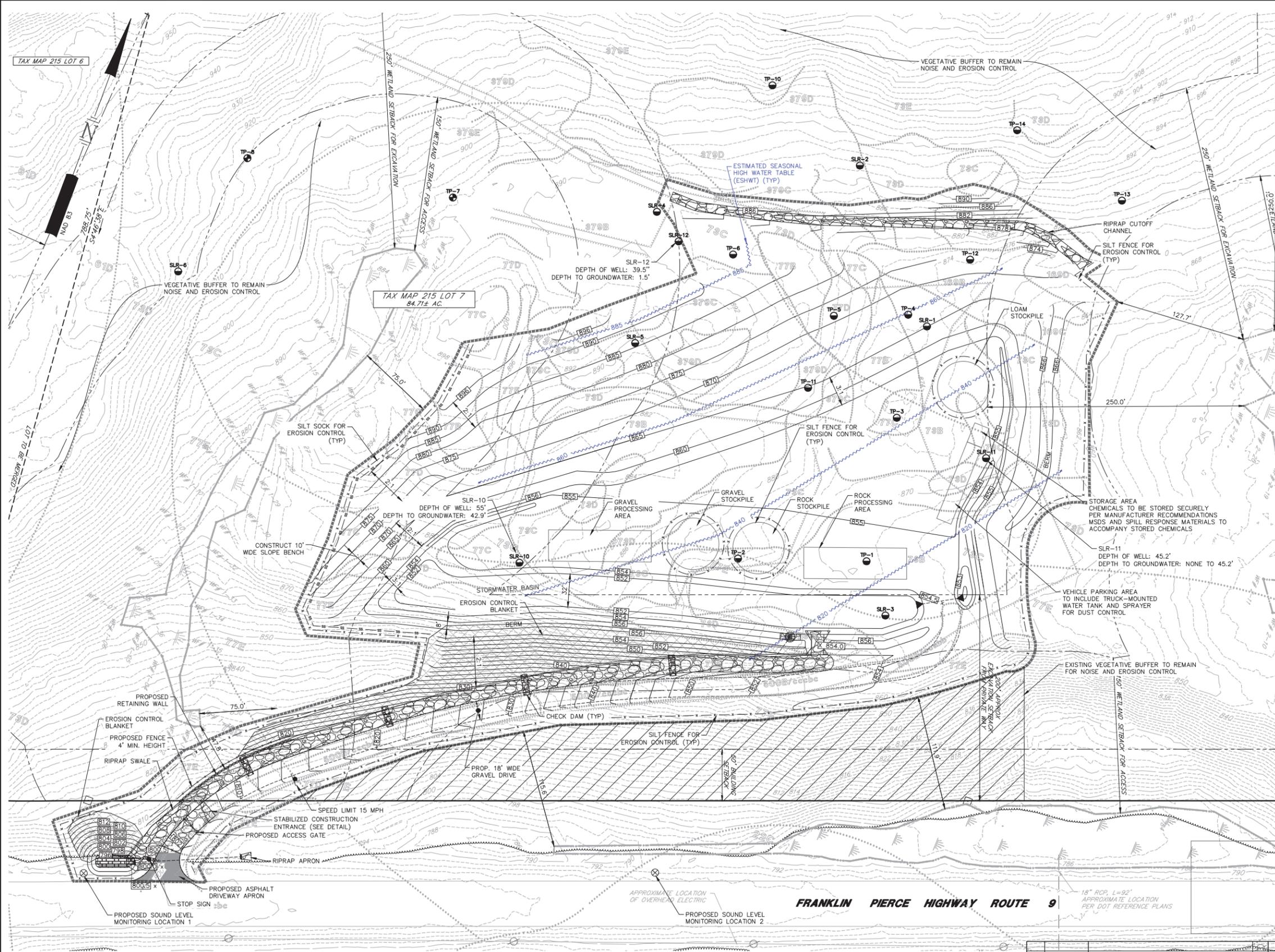
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DR FB
CK CADFILE



SOUND MONITORING NOTES

1. VEGETATED BUFFERS AS SHOWN ON THE PLAN ARE TO BE MAINTAINED AS VISUAL AND SOUND BUFFERS.
2. PER THE REQUIREMENTS OF SECTION 24.3.15 OF THE KEENE LAND DEVELOPMENT CODE, AMBIENT SOUND LEVELS SHALL BE MEASURED PRIOR TO COMMENCEMENT OF EXCAVATION OPERATIONS, BY A CONSULTANT HIRED BY THE PLANNING BOARD AT THE EXPENSE OF THE APPLICANT. THE MONITORING LOCATIONS SHALL BE SELECTED BY THE COMMUNITY DEVELOPMENT DIRECTOR OR THEIR DESIGNEE. PROPOSED LOCATIONS ARE SHOWN ON THE PLAN
3. AFTER THE COMMENCEMENT OF EXCAVATION OPERATIONS, THE APPLICANT SHALL MONITOR NOISE LEVELS AND DOCUMENT SUCH MONITORING PER THE REQUIREMENTS OF SECTION 24.3.15 OF THE KEENE LAND DEVELOPMENT CODE.
4. NOISE LEVELS FROM THE EXCAVATION ACTIVITIES SHALL NOT EXCEED THE BACKGROUND AMBIENT "A" WEIGHTED SOUND PRESSURE LEVEL, EXCEEDED 90% OF THE TIME DURING THE SOUND LEVEL SAMPLING PERIOD, BY MORE THAN 10 DB(A) AND IN ANY EVENT SHALL NOT EXCEED 55 DB(A).
5. COMPLAINTS REGARDING THE LEVEL OF NOISE GENERATED FROM EXCAVATION OPERATIONS SHALL BE RESOLVED PER THE PROCEDURES OUTLINED IN SECTION 24.3.15 OF THE KEENE LAND DEVELOPMENT CODE.

DUST CONTROL NOTES

1. STABILIZATION WITH LOAM AND SEED, EROSION CONTROL BLANKETS, AND RIPRAP SHALL BE USED TO MINIMIZE EROSION AND DUST ON SITE.
2. DUST CONTROL WILL BE ACCOMPLISHED USING A TRUCK-MOUNTED WATER TANK AND SPRAY SYSTEM AS NEEDED.

GROUNDWATER MONITORING NOTES

1. LOCATION, DEPTH, AND DEPTH TO GROUNDWATER AT THREE MONITORING WELLS ARE SHOWN ON THE PLAN AND IN THE LIMITED HYDROGEOLOGIC INVESTIGATION REPORT BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.
2. APPROXIMATE SEASONAL HIGH GROUNDWATER CONTOURS ARE SHOWN ON THE PLAN PER THE LIMITED HYDROGEOLOGIC INVESTIGATION REPORT BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.
3. THE INTENT OF THE APPLICANT IS TO NOT EXCAVATE BELOW SEASONAL HIGH GROUNDWATER LEVEL.

SPILL RESPONSE NOTES

1. CHEMICALS USED ON SITE WILL VARY THROUGHOUT THE EXCAVATION OPERATION. SUCH SUBSTANCES SHALL BE STORED SECURELY PER MANUFACTURER RECOMMENDATIONS AND ACCOMPANIED BY MATERIAL SAFETY DATA SHEETS AS WELL AS SPILL RESPONSE MATERIALS.
2. CARE SHALL BE TAKEN WHEN FUELING EQUIPMENT ON SITE TO AVOID SPILLS AND OVER-FILLING.
3. SPILL CONTROL PRACTICES ARE DETAILED ON THE STORMWATER MANAGEMENT PLAN (SHEET 8) OF THIS PLAN SET.



TAX MAP 215 LOT 7
IMPACT CONTROL & MONITORING PLAN
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
 OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE: 1" = 50' MARCH 18, 2022

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CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA), AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.
2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO EXCAVATE GRAVEL ON THE SITE
2. TOTAL SITE AREA: 84.71± AC
TOTAL AREA OF DISTURBANCE: 9.7± AC
3. SOILS SHOWN ARE FROM THE SOIL SURVEY OF CHESHIRE COUNTY, NH, EASTERN PART, PREPARED BY USDA-SCS CONSERVATION SERVICES:
73C BERKSHIRE FINE SANDY LOAM, 8-15% SLOPES, VERY STONY
73D BERKSHIRE FINE SANDY LOAM, 15-25% SLOPES, VERY STONY
77E MARLOW FINE SANDY LOAM, 25-50% SLOPES, VERY STONY
4. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.32
IMPERVIOUS SURFACE AREA: 1.2± AC
5. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:
TEMPORARY STABILIZATION - DISTURBED SLOPES STEEPER THAN 6:1 SHALL BE PROTECTED DAILY AS NEEDED USING VEGETATION SERVICES.
TO REDUCE RUNOFF VELOCITIES, IN ACCORDANCE WITH NHDOT GUIDELINES FOR TEMPORARY EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, PAGE 19, TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE EARTH REMOVAL OPERATIONS REACH THE PROPOSED FINISHED GRADES SHOWN OR OTHERWISE PERMANENTLY CEASE, SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE. THE PERMANENT SEED MIX SHALL BE AS SPECIFIED BY THE LANDSCAPE PLAN NOTES OR MAY OTHERWISE CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFLOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

6. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL
SILT FENCE - WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORKING PERPENDICULAR TO THE PROPOSED CONTOURS, TO REDUCE RUNOFF VELOCITIES, IN ACCORDANCE WITH NHDOT GUIDELINES FOR TEMPORARY EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, PAGE 19. TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

SILT SOCK - WILL BE CONSTRUCTED AS A SECOND LAYER OF EROSION CONTROL ADJACENT TO WETLAND AREAS AS SHOWN ON THE PLANS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE - WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE SITE TO HELP REDUCE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL EXCAVATION OPERATIONS HAVE PERMANENTLY CEASED AND SITE RECLAMATION IS COMPLETE. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEEPED ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARP/AULIN.

BLANKET SLOPE PROTECTION - SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH, BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

STONE CHECK DAMS - WILL BE INSTALLED IN EXISTING AND PROPOSED SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

7. STORM WATER MANAGEMENT
STORM WATER RUNOFF FROM THE EXCAVATION AREA WILL BE COLLECTED IN AN OPEN DRAINAGE SYSTEM AND DIRECTED TO A STORMWATER POND BY SWALES. APPROXIMATELY 74 ACRES OF THE 84.71± ACRE LOT WILL REMAIN UNTOUCHED AND IN ITS NATURAL STATE. SWALES AND PIPE OUTLETS ON SITE WILL BE STABILIZED BY RIP RAP.

8. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

9. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A

LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
- NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
- WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
- MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

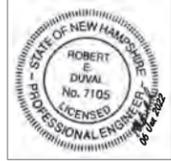
CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.25" OR GREATER. INSPECTION REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.

TAX MAP 215 LOT 7
STORMWATER MANAGEMENT PLAN
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
OWNED BY/PREPARED FOR
G2 HOLDINGS LLC



SCALE: 1" = 60' MARCH 18, 2022

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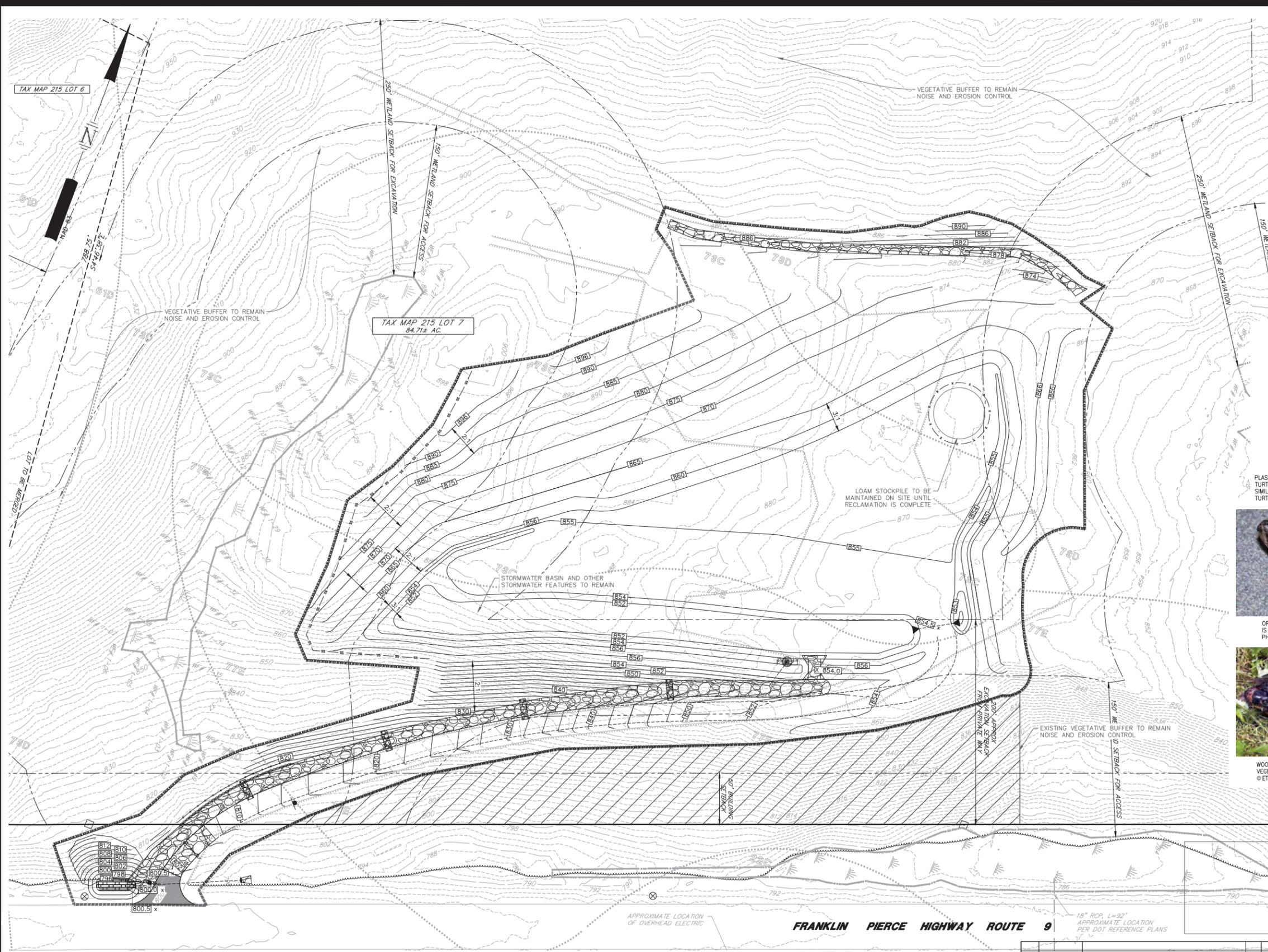


REV	DATE	DESCRIPTION	DR	CK
3	6/6/2022	UPDATE PER PEER REVIEW COMMENTS	JMR	JK
2	4/29/2022	UPDATE FOR AOT SUBMISSION	MCK	JK
1	4/8/2022	GENERAL DESIGN UPDATES	SRP	JK

82549.00	DR	SRP	FB		
	CK	JK	CADFILE	82549-00 SITE	SHEET 7 OF 11

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RECLAMATION NOTES

1. ANY EXCAVATED AREA OF 5 CONTIGUOUS ACRES OR MORE THAT IS DEPLETED OF COMMERCIAL EARTH MATERIALS (EXCLUDING BEDROCK) OR ANY EXCAVATION FROM WHICH EARTH MATERIALS GREATER THAN 1,000 CUBIC YARDS HAVE NOT BEEN REMOVED FOR A 2-YEAR PERIOD, SHALL BE RECLAIMED WITHIN 12 MONTHS FOLLOWING SUCH DEPLETION OR NON-USE.
2. AT THE TIME OF RECLAMATION ALL LANDS THAT ARE NO LONGER BEING USED FOR EXCAVATION ACTIVITIES, INCLUDING EXCAVATION AREAS, PROCESSING AREAS, STOCKPILING AREAS, AND STORMWATER MANAGEMENT AREAS, EXCEPT FOR EXPOSED LEDGE, SHALL BE RECLAIMED.
3. AREAS TO BE RECLAIMED SHALL BE GRADDED TO A NATURAL REPOSE FOR THE TYPE OF SOIL OF WHICH THEY ARE COMPOSED.
4. ONCE RECLAIMED, CHANGES OF SLOPE, EXCEPT FOR EXPOSED LEDGE, SHALL BE SMOOTH AND GRADUATED.
5. WATER DRAINING FROM THE SITE SHALL LEAVE THE PROPERTY AT THE ORIGINAL NATURAL DRAINAGE POINTS AND IN THE NATURAL PROPORTIONS OF FLOW.
6. EXCEPT FOR EXPOSED ROCK LEDGE, ALL AREAS TO BE RECLAIMED SHALL BE SPREAD WITH NATIVE TOPSOIL TO A DEPTH OF NOT LESS THAN 4" AND SEED APPLIED. SEE EROSION CONTROL NOTES ON SHEET 10 FOR SEED MIX.
7. TOPSOIL OF AT LEAST THE MINIMUM AMOUNT NEEDED TO RESTORE THE SITE SHALL BE STOCKPILED ON THE SITE UNTIL RECLAMATION.
8. TOPSOIL AND OVERBURDEN STOCKPILING AREAS SHALL BE STABILIZED.
9. ALL EXCAVATION SITES WHERE RECLAMATION HAS BEEN COMPLETED SHALL BE MONITORED ANNUALLY OVER A PERIOD OF TWO YEARS FOLLOWING THE COMPLETION DATE TO ENSURE EFFECTIVENESS AND SURVIVAL OF PLANTED VEGETATION. VEGETATION THAT HAS NOT SURVIVED DURING THIS PERIOD SHALL BE REPLACED.
10. THE PROPERTY OWNER SHALL USE BEST EFFORTS TO REMOVE NON-NATIVE AND INVASIVE SPECIES, AS DEFINED BY THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES, THAT BECOME ESTABLISHED DURING THE MONITORING PERIOD IN THE RECLAIMED AREAS.
11. STORMWATER MANAGEMENT FEATURES SHALL REMAIN IN PLACE FOLLOWING RECLAMATION.
12. APPROXIMATE COST ESTIMATE:
45,555 SY 4" LOAM AND SEED + MULCH AT \$4/SY = \$182,220
3,500 LF SILT FENCE AT \$3/LF = \$10,500

PROTECTED SPECIES INFORMATION

WOOD TURTLE (GLYPTEMYS INSCULPTA)

NH CONSERVATION STATUS: SPECIES OF SPECIAL CONCERN, WILDLIFE ACTION PLAN SPECIES IN GREATEST NEED OF CONSERVATION, LEGALLY PROTECTED IN NEW HAMPSHIRE: POSSESSION, SALE, IMPORT, AND TAKE (HARM, HARASS, INJURING, KILLING) IS ILLEGAL.

STATE RANK STATUS: VULNERABLE TO EXTIRPATION AND EXTINCTION.

DISTRIBUTION: THROUGHOUT NH EXCEPT REGIONS OF HIGH ELEVATION.

DESCRIPTION: A 5-8 INCH TURTLE CHARACTERIZED BY ITS HIGHLY SCULPTURED SHELL WHERE EACH LARGE SCUTE TAKES AN IRREGULAR PYRAMIDAL SHAPE. THE NECK AND FORELIMBS ARE ORANGE.

COMMONLY CONFUSED SPECIES: JUVENILE SNAPPING TURTLES.

HABITAT: FOUND IN SLOW-MOVING STREAMS AND CHANNELS WITH SANDY BOTTOMS. EXTENSIVE USE OF TERRESTRIAL HABITATS DURING SUMMER, INCLUDING FLOODPLAINS, MEADOWS, WOODLANDS, FIELDS, AS WELL AS WETLANDS.

LIFE HISTORY: LAY 4-12 EGGS IN SHALLOW DEPRESSIONS IN SANDY, WELL-DRAINING SOILS. NEST SITES ARE USUALLY NEAR STREAMS BUT MAY ALSO BE IN CLEARINGS, AGRICULTURAL FIELDS, OR OTHER DISTURBED AREAS. HIBERNATE IN SLOW-MOVING STREAMS AND RIVERS UNDER RIVERBANKS, ROOT MASSES, OR WOODY DEBRIS.

CONSERVATION THREATS: ROAD MORTALITY, HABITAT LOSS AND FRAGMENTATION, STREAM ALTERATION, HUMAN COLLECTION, AND INCREASED ABUNDANCE OF SUBSIDIZED PREDATORS.

SOURCE: NEW HAMPSHIRE FISH AND GAME DEPARTMENT © [HTTPS://WILDLIFE.STATE.NH.US/WILDLIFE/PROFILES/WOOD-TURTLE.HTML](https://wildlife.state.nh.us/wildlife/profiles/wood-turtle.html)



PLASTRON (LOWER SHELL) OF WOOD TURTLE. PLASTRON MARKINGS ARE SIMILAR FOR SPOTTED AND BLANDING'S TURTLES. PHOTO © ETHAN NEDEAU



ORANGE ON THE NECK AND LIMBS IS USUALLY QUITE OBVIOUS. PHOTO © MIKE MARCHAND



WOOD TURTLE LAYING LOW IN THE VEGETATION AFTER SOME RAIN. PHOTO © ETHAN NEDEAU



WOOD TURTLES HAVE A SCULPTURED SHELL. © MIKE MARCHAND PHOTO

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TAX MAP 215 LOT 7
RECLAMATION PLAN
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE: 1" = 50'
MARCH 18, 2022

TFM Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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FILE: 82549.00 DR SRP FB
CK JK CADFILE
82549-00 SITE

SHEET 8 OF 11

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CONSTRUCTION SEQUENCE NOTES

- CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
- CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES PRIOR TO ANY EARTH MOVING OPERATION.
- TEMPORARY WATER DIVERSION (SWALES, BASINS, SEDIMENT TRAPS, ETC.) SHALL BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED. PONDS AND SWALES SHALL BE INSTALLED BEFORE EARTH REMOVAL OPERATIONS BEGIN IN THAT PORTION OF THE SITE.
- ROUGH GRADE SITE OR PHASED WORK AREA. DISTURBED PORTIONS OF THE SITE WHERE EARTH REMOVAL OPERATIONS REACH THE PROPOSED FINISHED GRADES SHOWN, OR OTHERWISE PERMANENTLY CEASE, SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 72 HOURS AFTER THE LAST CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE. ALL DISTURBED AREAS SHALL BE MULCHED OR STABILIZED NO LATER THAN 72 HOURS IF EARTH REMOVAL OPERATIONS ACTIVITY CEASE SEASONALLY, OR PERMANENTLY. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- AN AREA SHALL BE CONSIDERED STABILIZED IF:
 - A MINIMUM OF 85% VEGETATED GROWTH (TEMPORARY OR PERMANENT) HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- THE CONTRACTOR SHALL INSTALL STONE CHECK DAMS OR STABILIZE ALL DRAINAGE DITCHES, AND SWALES PRIOR TO DIRECTING FLOW TO THEM.
- INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND AFTER EVERY HALF-INCH OR GREATER RAINFALL EVENT.
- COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE RECLAIMED WITH A SUITABLE STAND OF VEGETATION.

GENERAL NOTES

- THE OPERATOR SHALL MAINTAIN EMERGENCY ACCESS TO THE WORK ZONE WHENEVER WORKERS ARE PRESENT AT THE SITE.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
- REFER TO THE CITY STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

- INSTALLATION OF SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
- EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
- THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
- ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

TYPICAL LAWN MIX (MIN. 200 LBS/ACRE):
 33% CREEPING RED FESCUE (MIN. 66 LBS/ACRE)
 42% PERENNIAL RYEGRASS (MIN. 84 LBS/ACRE)
 21% KENTUCKY BLUEGRASS (MIN. 42 LBS/ACRE)
 4% REDTOP (MIN. 8 LBS/ACRE)

TEMPORARY LAWN MIX (MIN. 47 LBS/ACRE):
 100% ANNUAL RYE

GENERAL SLOPE (NHDDOT TYPE 44) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):
 44% CREEPING RED FESCUE (MIN. 70 LBS/ACRE)
 38% PERENNIAL RYEGRASS (MIN. 60 LBS/ACRE)
 6% REDTOP (MIN. 10 LBS/ACRE)
 6% ALSIKE CLOVER (MIN. 10 LBS/ACRE)
 6% BIRDSFOOT TREFLOIL (MIN. 10 LBS/ACRE)

- PLACING LOAM ON SITE
 - ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
 - PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
 - ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.
- SEED BED PREPARATION
 - AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDDED SHALL BE LOOSENEED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.

LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.

HAY MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDDED AREAS ARE NOT MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.

WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

- WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 5 ACRES OF THE SITE IS UNRECLAIMED IN ACCORDANCE WITH NOTES 1 AND 2 ON SHEET 8.
- AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED WITHIN ONE DAY.
- TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT.

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WINTER CONSTRUCTION (CONT.)

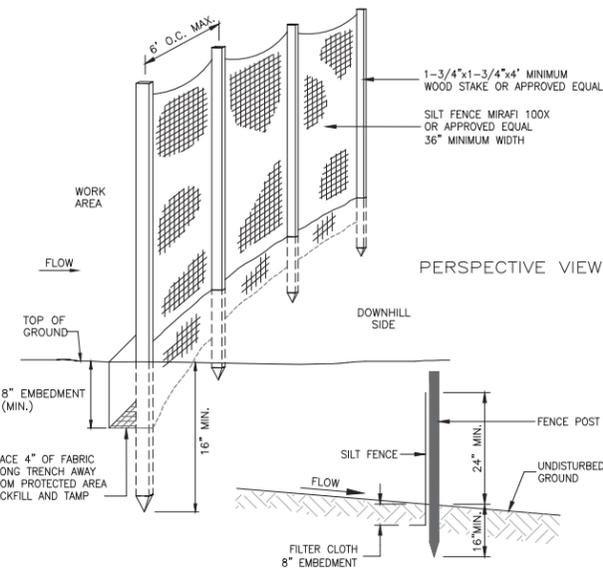
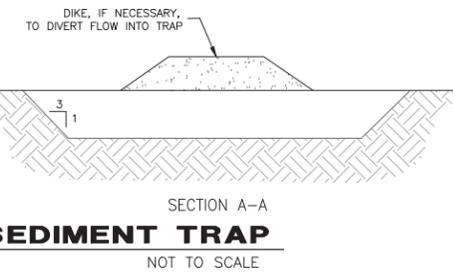
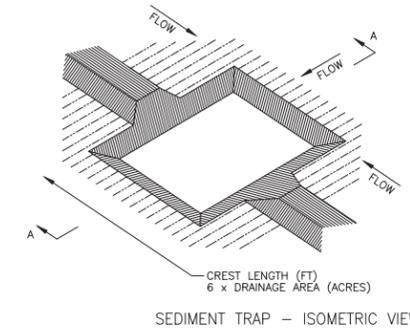
- IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDDED AND MULCHED.
- LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
- A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.

OVERWINTER STABILIZATION

- PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
- 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 NHDDOT ITEM 304.3, OR TEMPORARY ANNUAL RYE GRASS SEED MIXTURE.
- DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH ITEM 304.3, OR TEMPORARY ANNUAL RYE GRASS SEED MIXTURE.
- APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
- USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
- INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
- SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

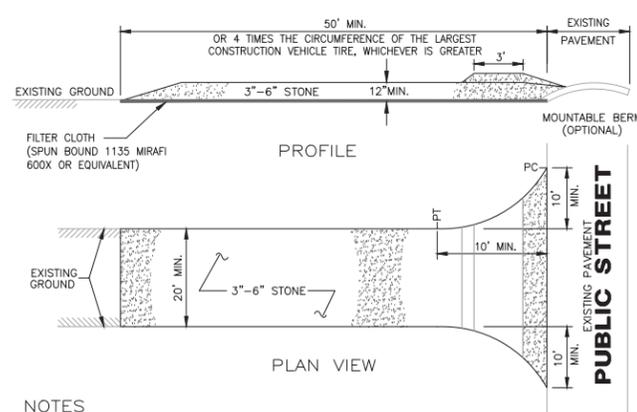
NOTES

- SEDIMENT TRAP TO BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED. IF IT IS DETERMINED THAT CONSTRUCTION OF A SEDIMENT TRAP IS WARRANTED, CONSULT WITH ENGINEER TO DETERMINE APPROPRIATE NUMBER AND DIMENSIONS.



SILT FENCE

NOT TO SCALE



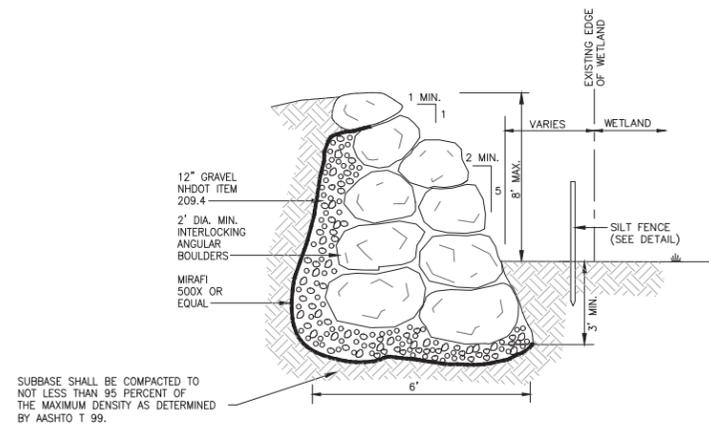
NOTES

- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
- WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

USDA - SCS STABILIZED CONSTRUCTION ENTRANCE

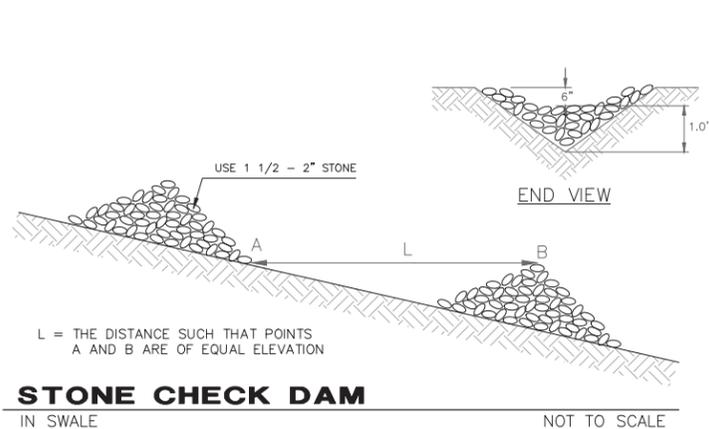
SEE PLAN FOR PROPOSED LOCATION

NOT TO SCALE



STONE CHECK DAM

IN SWALE

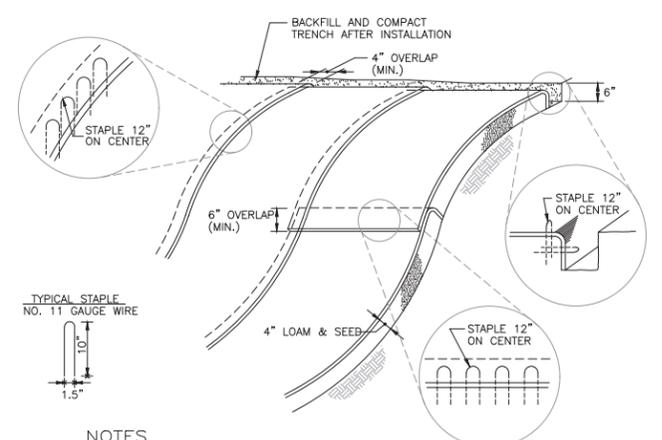


L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

STONE CHECK DAM

IN SWALE

REV	DATE	DESCRIPTION	BY	CHK
3	6/6/2022	UPDATE PER PEER REVIEW COMMENTS	JMR	JK
2	4/29/2022	UPDATE FOR AOT SUBMISSION	MCK	JK
1	4/8/2022	GENERAL DESIGN UPDATES	SRP	JK
			DR	CK



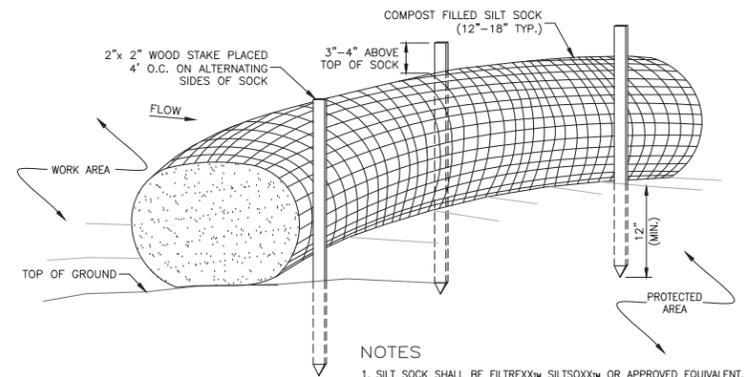
NOTES

- BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
- ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
- THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
- WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
- BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.

BLANKET SLOPE PROTECTION

FOR EROSION CONTROL

NOT TO SCALE



NOTES

- SILT SOCK SHALL BE FILTERXXX SILTSXXX OR APPROVED EQUIVALENT.
- SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
- SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
- COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK

NOT TO SCALE

TAX MAP 215 LOT 7
DETAIL SHEET
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
 OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE:

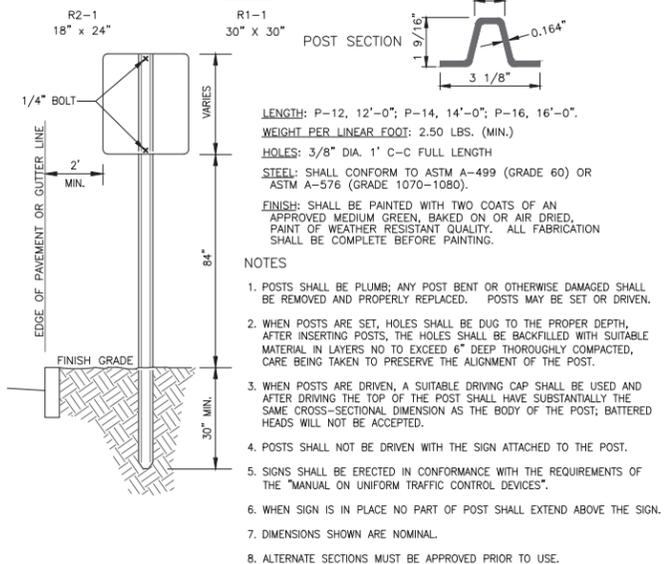
MARCH 18, 2022



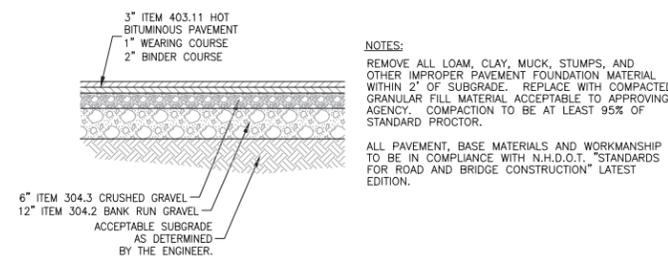
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 Structural Engineers
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 Land Surveyors
 Landscape Architects
 Scientists

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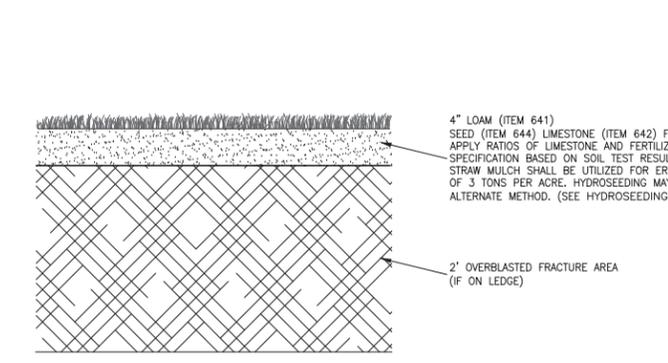
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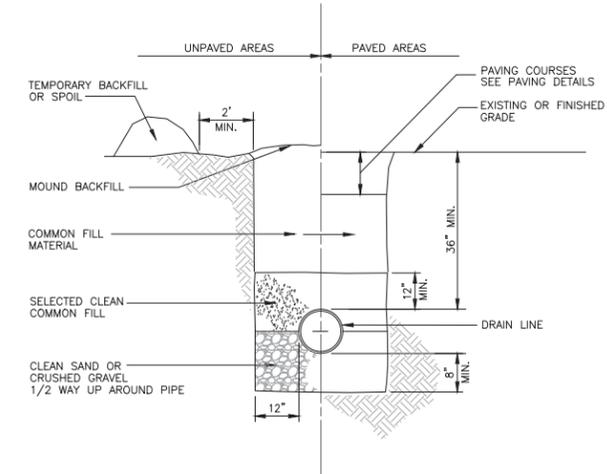
TRAFFIC SIGN POST IN GRADE
NOT TO SCALE



DRIVEWAY APRON SECTION
NOT TO SCALE



LOAM & SEED
NOT TO SCALE



DRAINAGE LINE TRENCH
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

PREPARE BEDDING:
 BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE. PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION. EXCAVATE AN AREA IN THE BEDDING WHERE THE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

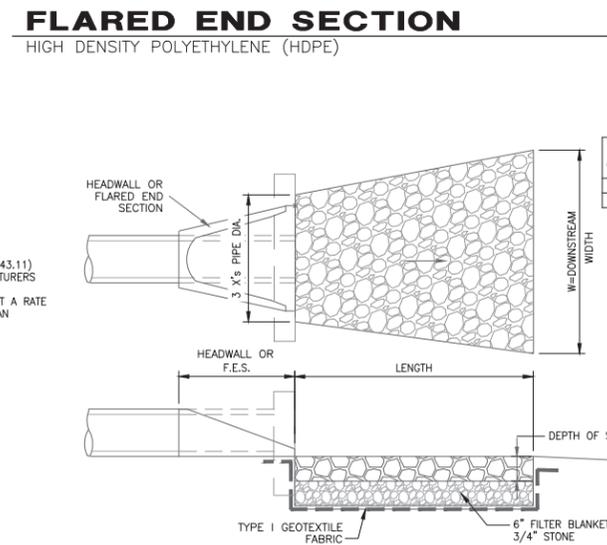
PLACE END SECTION OF PIPE:
 OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:
 SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TROUGH:
 TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:
 SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.

FLARED END SECTION
 HIGH DENSITY POLYETHYLENE (HDPE)

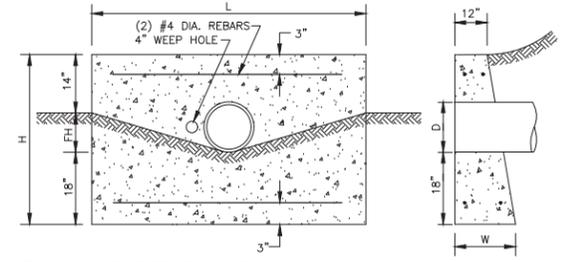


CONSTRUCTION SPECIFICATIONS:

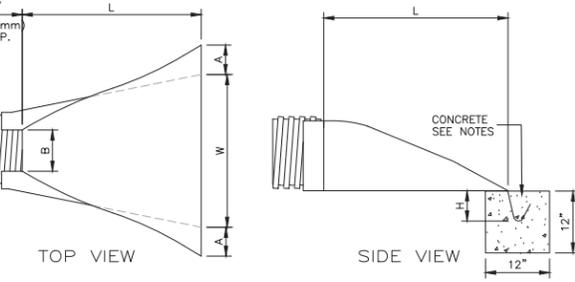
- THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- THE ROCK USED FOR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS 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.
- STONE FOR THE RIP-RAP SHALL BE PLACED BY EQUIPMENT IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

RIPRAP APRON
NOT TO SCALE

NOMINAL PIPE SIZE D	LENGTH OF BARS L	H	FH	W	
12	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	4'-2"	4'-6"	3'-9"	1'-1"	1'-11.25"
18	5'-2"	5'-6"	4'-0"	1'-4"	2'-0"
24	7'-2"	7'-6"	4'-6"	1'-10"	2'-1.5"
30	9'-2"	9'-6"	5'-0"	2'-4"	2'-3"
36	11'-2"	11'-6"	5'-6"	2'-10"	2'-4.5"
42	13'-2"	13'-6"	6'-0"	3'-4"	2'-6"
48	15'-2"	15'-6"	6'-6"	3'-10"	2'-7.5"

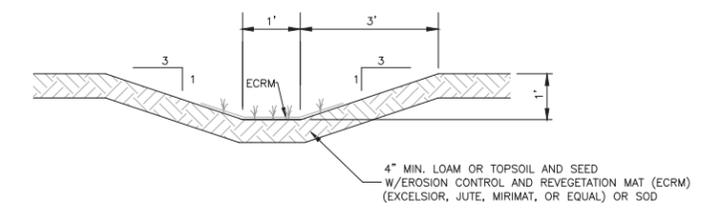


CONCRETE HEADWALL
SINGLE PIPE SYSTEM NOT TO SCALE

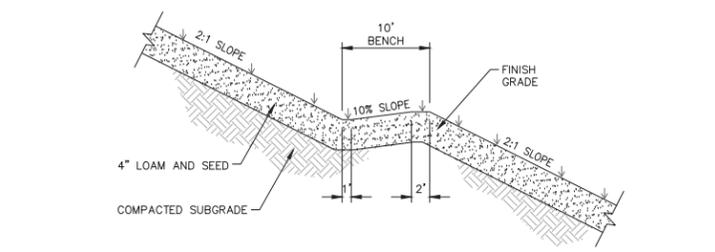


PIPE DIAMETER	PART NO.	DIMENSIONS, INCHES (mm)					
		A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)	
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)	
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (166)	32 (812)	35 (890)	
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)	
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)	
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)	

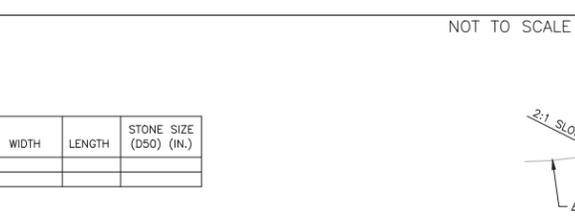
GRASS LINED SWALE
NOT TO SCALE



GRASS LINED SWALE
NOT TO SCALE



SLOPE BENCH
FOR STORMWATER RUN-OFF NOT TO SCALE



GRAVEL ACCESS ROAD
18' WIDE NOT TO SCALE

OUTLET	WIDTH	LENGTH	STONE SIZE (D50) (IN.)



TAX MAP 215 LOT 7
DETAIL SHEET
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
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SCALE: AS SHOWN **MARCH 18, 2022**

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 REV DATE

82549.00 DR SRP FB
 CK JK CADFILE 82549-00 COVER-DETAILS SHEET 10 OF 11

Jun 06, 2022 - 2:28pm
 F:\TFM\Projects\82549-Gordon - Route 9 - Keene, Sullivan, NH\82549-00-Gordon - Route 9 - Keene, Sullivan, NH - Feasibility\82549-00_C3D\Design\Production Drawings\82549-00 Cover-Details.dwg

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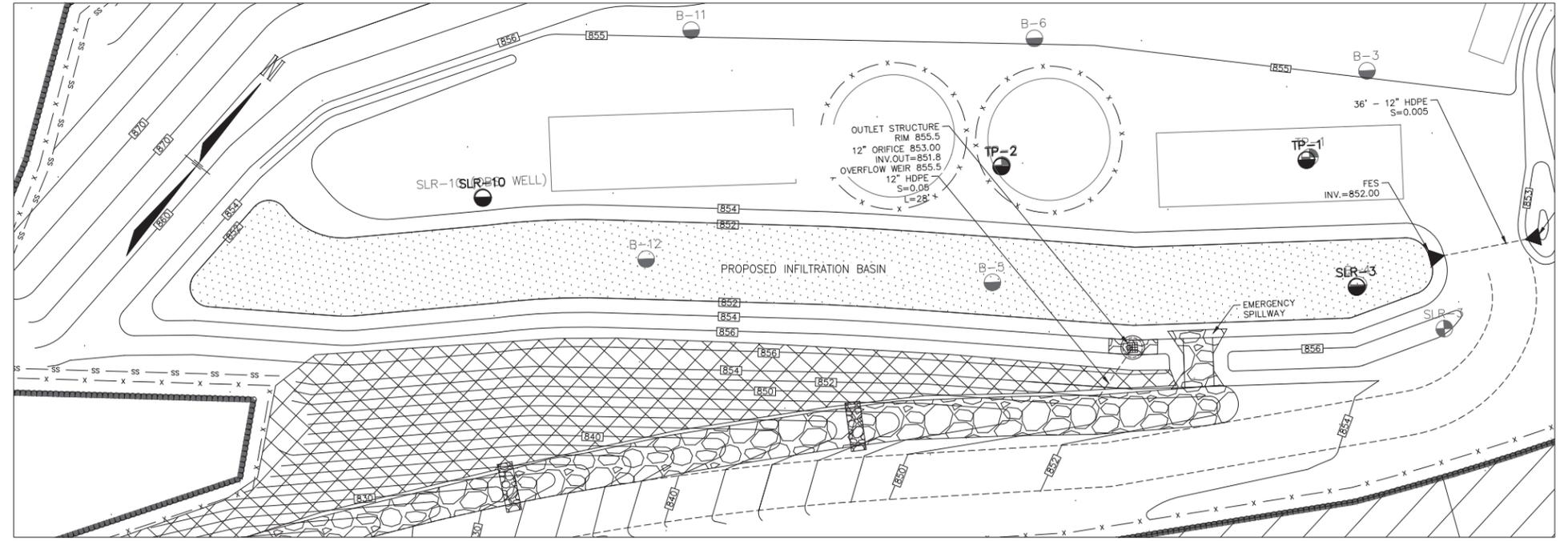
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DIG SAFE

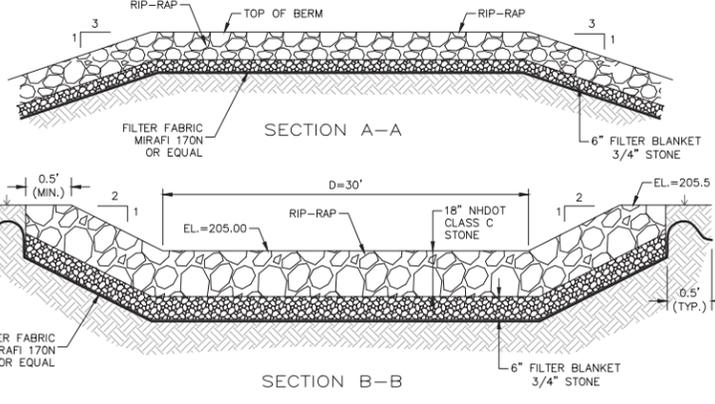
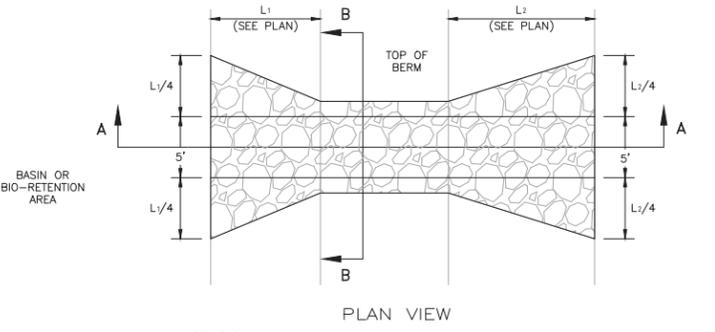
CONTACT US AT LEAST 72 HOURS PRIOR TO CONSTRUCTION

BLASTING BMP's

- IDENTIFY DRINKING WATER WELLS LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR 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 PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.
- THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
 - LOADING PRACTICES. THE FOLLOWING BASTHOLE 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 SECURED 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 BASTHOLES 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 BMP'S 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 PILE 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 MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
 - THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
 - STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE;
 - SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
 - LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY;
 - INSPECT STORAGE AREAS WEEKLY;
 - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
 - 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 400 FEET FROM PUBLIC WELLS; AND
 - 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 SPOIGTS, VALVES, AND PUMPS;
 - HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
 - USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES; AND
 - PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
 - 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.
 - FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NOTE 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. (SEE [HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/PIP/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF](http://des.nh.gov/organization/commissioner/PIP/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF))

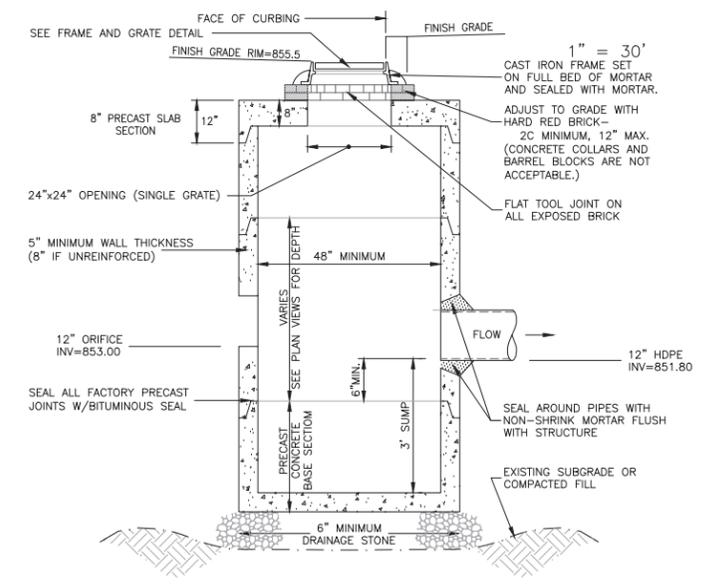


INFILTRATION BASIN



EMERGENCY SPILLWAY

NOT TO SCALE



NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478

OUTLET STRUCTURE

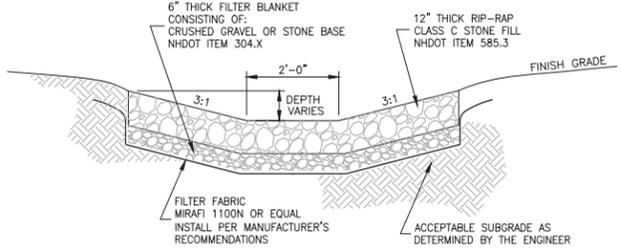
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

- THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC OR RIP-RAP SHALL BE CLEARED AND GROUND TO REMOVE ALL ROOTS, VEGETATION, AND DEBRIS AND PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM ROCK RIP-RAP BY PLACING A CUSHION OF SAND AND GRAVEL OVER THE FABRIC. PUNCTURE OR TEARING DURING PLACEMENT OF THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF THE FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING FABRIC SHALL BE A MINIMUM OF 12 INCHES.
- RIE-RAP MAY BE PLACED BY EQUIPMENT TO THE FULL LAYER THICKNESS IN ONE OPERATION IF HANDLED IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE UNDERLYING MATERIALS. HAND PLACEMENT MAY BE REQUIRED WHERE NECESSARY TO PREVENT DAMAGE TO ANY PERMANENT STRUCTURES OR UNDERLYING MATERIALS.
- STONES FOR RIP-RAP SHALL BE ANGULAR OR SUBANGULAR. THE STONES SHOULD 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 AS RIP-RAP.
- VOIDS IN THE ROCK RIP-RAP SHALL BE FILLED WITH SPALLS AND SMALLER ROCKS MEETING SPECIFIED GRADATION.

MAINTENANCE

- ROCK RIP-RAP SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM TO SEE IF THE RIP-RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED.
- WOODY VEGETATION SHOULD BE REMOVED FROM THE ROCK RIP-RAP ANNUALLY.
- IF THE RIP-RAP IS ON A CHANNEL BANK, THE STREAM SHOULD BE KEPT CLEAR OF OBSTRUCTIONS.
- REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE RIP-RAP.



CUTOFF SWALE

NOT TO SCALE

Earth Excavation Notes

- BUFFER MANAGEMENT STANDARDS: BUFFERS AROUND THE EXCAVATION PERIMETER SHALL BE SUFFICIENTLY VEGETATED TO PROVIDE FULL, OPAQUE, AND YEAR ROUND SCREENING OF THE EXCAVATION PERIMETER FROM ADJACENT RIGHTS OF WAY OR ADJUTING PROPERTIES. THE INTENT OF THIS STANDARD IS TO AVOID ADVERSE VISUAL AND NOISE IMPACTS FROM EXCAVATION OPERATIONS.
- IF BUFFERS ARE NOT SUFFICIENTLY VEGETATED TO PROVIDE ADEQUATE VISUAL AND NOISE SCREENING, THE APPLICANT SHALL PROVIDE ADEQUATE SCREENING BY OTHER MEANS, INCLUDING PLANTING ADDITIONAL VEGETATION AND/OR CONSTRUCTING A BERM. TO THE EXTENT THAT A BERM IS CONSTRUCTED, SAID BERM SHALL BE LOCATED WITHIN THE EXCAVATION PERIMETER.
 - ALL BUFFER AREAS CREATED BY SETBACK STANDARDS SHALL REMAIN IN A NATURAL VEGETATED CONDITION, EXCEPT WHEN ADDITIONAL PLANTINGS ARE APPROVED AS PART OF THE APPLICATION. NO CUTTING OR REMOVAL OF LIVING VEGETATION SHALL BE PERMITTED OVER THE LIFE OF THE OPERATION, EXCEPT FOR CONTROL AND MANAGEMENT OF NON-NATIVE AND INVASIVE SPECIES FOLLOWING BEST MANAGEMENT PRACTICES AS DEFINED BY NHDES.
 - THE BOUNDARY BETWEEN THE EXCAVATION PERIMETER AND THE BUFFER AREAS SHALL BE CLEARLY MARKED ON THE SITE TO AVOID ENCROACHMENT INTO THE BUFFER. THE BOUNDARY OF APPROVED SETBACKS FROM WATER RESOURCES WITHIN THE EXCAVATION PERIMETER SHALL ALSO BE CLEARLY MARKED ON THE SITE TO AVOID ENCROACHMENT.
 - BUFFER AREAS SHALL NOT BE USED FOR STORAGE OR DISPOSAL OF STUMPS, BOULDERS, EARTH MATERIALS, AND/OR OTHER DEBRIS INCLUDING, BUT NOT LIMITED TO CARELESSLY DISCARDED RUBBISH, REFUSE, TRASH, GARBAGE, DEAD ANIMALS AND/OR OTHER DISCARDED MATERIALS OF EVERY KIND AND DESCRIPTION. EXCAVATION BELOW WATER TABLE: EXCAVATION SHALL NOT BE PERMITTED LOWER THAN SIX (6) FEET ABOVE THE SEASONAL HIGH WATER TABLE, AS INDICATED BY BORINGS OR TEST PITS, WITHOUT THE ISSUANCE OF AN EXCEPTION.



TAX MAP 215 LOT 7
DETAIL SHEET
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
 OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE: AS SHOWN MARCH 18, 2022

REV	DATE	DESCRIPTION	BY	CHK
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Jun 09, 2022 - 10:40am \\TFM-BEDFORD\Projects\Civil-Survey\TFM Projects\2549-Gordon - Route 9 - Keene, Sullivan, NH\2549-00 Gordon - Route 9 - Keene, Sullivan, NH\2549-00 Truck Turning Exhibit.dwg



TAX MAP 215 LOT 7
FIRE TRUCK TURNING EXHIBIT
EXCAVATION SITE
RTE. 9, KEENE/SULLIVAN/ROXBURY, NH
 OWNED BY/PREPARED FOR
G2 HOLDINGS LLC

SCALE: 1" = 50' **JUNE 3, 2022**

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REV	DATE	DESCRIPTION	DR	CK

TFM	Civil Engineers	48 Constitution Drive Bedford, NH 03110 Phone (603) 472-4488 Fax (603) 472-9747 www.tfmoran.com
	Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists	
82549.00	DR SRP FB CK JK CADFILE2549-00 TRUCK TURNING EXHIBIT	SHEET T1



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

PHOTOSHEET

Proposed Gravel Pit – Route 9, Keene, NH



Photo 1. Looking towards Route 9.



Photo 2. Looking down Route 9.

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MSC a division of TFMoran, Inc.
170 Commerce Way – Suite 102, Portsmouth, NH 03801
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Photo 3. Looking roughly west on existing path – proposed uses in the area include excavation, processing, and stockpiling.



Photo 4. Looking roughly west on existing path – proposed uses in the area include excavation, processing, and stockpiling.

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Photos from right of way obtained via Google Steet View:



Photo 5. Existing entrance drive.



Photo 6. Approximately 1,000 feet west of entrance drive (site to the right in photograph).



Photo 7. Approximately 500 feet west on entrance drive (site to right in photograph).

TES ENVIRONMENTAL CONSULTANTS, L.L.C.

*Environmental Planning and Permitting
Soil and Wetlands Investigation*

SITE-SPECIFIC
SOIL SURVEY REPORT

performed at

Gordon Excavation Site
Tax Map 215, Lot 7
Route 9, Keene, NH

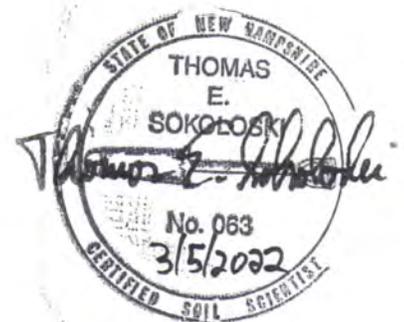
prepared for

T.F. Moran, Inc.
48 Constitution Drive
Bedford, NH 03110

TES Project # 21-0094

1494 Route 3A, Unit 1
Bow, NH 03304
(603) 856-8925

tom@tesenviro.comcastbiz.net



March 5, 2022

Ms. Maureen Kelly, Civil Project Engineer
T.F. Moran, Inc.
48 Constitution Drive
Bedford, NH 03110

RE: Site Specific Soil Map
Gordon Excavation Site; Tax Map 215, Lot 7; Route 9, Keene, NH

Dear Ms. Kelly:

On December 7, 2021 I performed field work on the above-referenced property on Route 9 in Keene, New Hampshire for a Site Specific Soil Survey as you requested. The Soil Survey encompassed approximately 9 acres of the overall 84.7-acre property, within a roughly square area depicted on a base Boring and Test Pit Plan dated October 14, 2021 that was provided by your office. This plan had a scale of 1" = 50', with a 2-foot contour interval, and depicted undisturbed conditions on the site.

Prior to my site investigation, essentially the entire mapping area was altered by excavation and regrading, with piles of soil and stone material scattered across the site (Figure 1). After discussing the disturbed site conditions with you, it was decided that this soil mapping effort should be an attempt to depict the undisturbed, pre-existing conditions on the site, since those conditions would serve as the baseline for developing a stormwater management plan. In that way, this soil mapping effort, prepared to support an after-the-fact New Hampshire Alteration of Terrain permit application, differs from Site Specific Soil Mapping Standards for New Hampshire and Vermont, Version 7.0, March 2021 (SSSNNE Special Publication No. 3), but is otherwise similar to the typical product prepared to those standards. The soil legend used for this soil map conforms to the New Hampshire State-Wide Numerical Soils Legend, Issue #10, January 2011 established and maintained by the Natural Resources Conservation Service.

Field work for this survey included traversing the site and examining undisturbed adjacent soils and cuts (Figure 2) via hand dug test pits and auger borings. Logs from eleven (11) test pits witnessed by a representative from your office on September 10, 2020 within and nearby the soil mapping area were reviewed for information on the soils that existed prior to site alteration. Also, a report dated October 29, 2020 that was prepared by a geotechnical engineer from Milone and McBroom was also reviewed. This report did not include actual test pit descriptions, rather it was a general report on soils observed within 3 test pits along with laboratory soil gradation (particle size analysis in laboratory tests) analyses of soil samples taken from three (3) test pits. The report mentions that probable bedrock was encountered within each of the three test pits, but does not indicate the depths at which the probable bedrock was encountered.

The NRCS Soil Survey of Cheshire County, New Hampshire, was also reviewed via Web Soil Survey for reference. This NRCS mapping indicates that site soils originally consisted mostly of Berkshire fine sandy loam, very stony (73C and 73D), with an area of Marlow fine sandy loam, very stony (77E) along the Route 9 frontage. Inclusions of moderately well drained catena

associates of these soils may be expected within such well drained soil map units, as TF Moran test pit data and my field observations indicate.

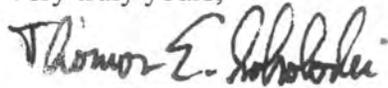
No New Hampshire Wetlands Bureau jurisdictional wetlands were found within the soil mapping area by your firm's certified wetland scientist who performed a wetland site investigation prior to the site alteration. I observed one area in the northeast quadrant of the mapping area that appeared to have been excavated that had surface water on December 9, 2021. I mapped this area as a moderately well drained soil (169, Sunapee fine sandy loam, very stony) since the excavation appeared to have not been more than 40 inches below adjacent undisturbed soils.

Ground control for this soil survey consisted of tree cut lines, a gravel access road, flagged wetland boundaries located outside but adjacent to the soil mapping area, and adjacent topographic features. Mapped soil slopes reflect former topography as depicted on the base map.

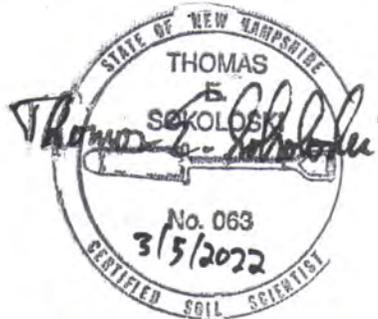
The following sections of this report include a Site Specific Soil Map Key with Hydrologic Soil Groups, attached soil map unit descriptions, and soil profile descriptions from the TF Moran test pit investigation. The general soil conditions on the site consisted of moderately to steeply sloping soils formed in loose and dense glacial till deposits.

If you have any questions regarding the soils on this site and the accompanying report, please contact our office.

Very truly yours,



Thomas E. Sokoloski
Certified Soil Scientist #063



TEST PIT REPORT

for
Gordon Services

Route 9
Keene, NH

PREPARED FOR

Cody Gordon
82549.00

PREPARED BY

TFMoran, Inc.
48 Constitution Drive
Bedford, NH 03110

September 10, 2020



Test Pit #1 9/10/2020

0-5' Fill Sandy Loam, Massive, Friable
5-15' Fine Sandy Loam, Cobbles/angular rock Fragments
 Compact till-hardpan, Coarse, Platy, Firm

ESHWT: Obs @ 6' 7.5YR 5/8 Redox Concentrations
 Few, Distinct

Seeps: None observed at 15'
No Refusal @ 15' Restrictive, compact till

Test Pit #2 9/10/2020

0-6' Sandy Loam, gravelly, Granular, Friable
6-15' Fine Sandy Loam, Cobbles/angular rock Fragments
 Compact till-hardpan, Coarse, Platy, Firm

ESHWT: Obs @ 6' 7.5YR 5/8 Redox Concentrations
 Few, Distinct

Seeps: None observed at 15'
No Refusal @ 15' Restrictive, compact till

Test Pit #3 9/10/2020

0-3' Sandy Loam, Gravelly, Granular, Friable
3-5' Fine Sandy Loam, Cobbles/angular rock Fragments
 Fine, Platy, Firm
5-14' Fine Sandy Loam, Coarse Platy, Firm, Hardpan

ESHWT: Obs @ 5' 7.5YR 5/8 Redox Concentrations
 Common, Distinct

Seeps: None observed at 14'
No Refusal @ 14' Restrictive, compact till

Test Pit #4 9/10/2020

0-4' Sandy Loam, Massive, Friable
4-15' Fine Sandy Loam, Cobbles/angular rock Fragments
 Compact till-hardpan, Coarse, Platy, Firm with small inclusion
 Medium sand, single grain loose.

ESHWT: Obs @ 4' 7.5YR 5/8 Redox Concentrations
 common, Distinct

Seeps: None observed at 13'
No Refusal @ 15' Restrictive, compact till

Test Pit #5 9/10/2020

0-3' Sandy Loam, Massive, Friable
3-13' Fine Sandy Loam, Cobbles/angular rock Fragments
 Compact till-hardpan, Coarse, Platy, Firm

ESHWT: Obs @ 4' 7.5YR 5/8 Redox Concentrations
 common, Distinct

Seeps: None observed at 13'
No Refusal @ 13' Restrictive, compact till

Test Pit #6 9/10/2020

0-3' Sandy Loam, gravelly, Friable
3-14' Fine Sandy Loam, Cobbles/angular rock Fragments
 Compact till-hardpan, Coarse, Platy, Firm

ESHWT: Obs @ 3' 7.5YR 5/8 Redox Concentrations
 common, Distinct

Seeps: None observed at 14'
No Refusal @ 14' Restrictive, compact till

Phase 1: Threatened and Endangered Wildlife and Habitat Assessment

Keene Gravel Excavation

Route 9
Keene, NH

Prepared for:
TF Moran, Inc.
48 Constitution Drive
Bedford, NH 03101

Prepared by:
Pond View Wetland Consultants, L.L.C.
237 Beauty Hill Road
Center Barnstead, NH 03225

June 21, 2021

PHASE I THREATENED AND ENDANGERED WILDLIFE AND HABITAT ASSESSMENT

PART 1: SUMMARY AND FINDINGS

Jim Fougere	NHB21-0316
Pond View Wetland Consultants LLC	Keene Sand and Gravel
237 Beauty Hill Rd, Ctr Barnstead NH	Keene, NH
jimfougere@gmail.com	TF Moran
603-520-6120	

PROPOSED PROJECT:

The Keene Excavation project refers to a gravel excavation operation off Route 9 in Keene, just west of the Roxbury town line and south of the Sullivan town line. This excavation is planned in the southwest corner of the property. This project location is illustrated on the Existing Conditions Plan included in Part 2 of this report.

Most of the excavation site was previously logged and cleared prior to the site visit for this report. Significant areas of undeveloped Hemlock-hardwood-pine forest occurs to the north and east of this property. Two small wetland areas occur in the footprint of the excavation site; however, a 250-foot excavation setback occurs at each of these sites. No wetland impacts are associated with this project.

Surrounding land use is limited to a multibuilding facility, immediately to the east. Other development is generally limited in the area to scattered residential properties. The west-flowing Otter Brook is also an important land feature in the surrounding area with a US Army Corps of Engineers recreation site and Otter Brook State Park, located at Otter Brook Lake, southwest of the gravel pit area across Route 9. Granite Gorge Ski Area is located about a ½ mile to the southeast as well. Access to the excavation site is off Route 9.

The forested component of the parcel would be described as a Hemlock-hardwood-pine forest with Eastern hemlock (*Tsuga canadensis*), white pine (*Pinus strobus*), black birch (*Betula pennsylvanica*), sugar maple (*Acer saccharum*) and beech (*Fagus grandifolia*) and oaks (*Quercus* spp.). The understory is dominated by similar species but also includes bracken fern (*Pteridium aquilinum*).

PHASE 1: Threatened and Endangered Wildlife Assessment Findings

Check One

- X No threatened and endangered wildlife and habitat present, no threatened or endangered wildlife, habitat, or wildlife corridors likely to be impacted by project activities.

Threatened and endangered wildlife habitat present; HOWEVER NO threatened or endangered wildlife, habitat, or wildlife corridors likely to be impacted by project activities. No conservation measures are proposed.

Threatened and endangered wildlife and habitat present or wildlife corridors present. Proposed actions have the potential for impacts. Conservation measures incorporated into the proposed project or project design.

THREATENED AND ENDANGERED WILDLIFE AND HABITAT

- **NHB21-0316**

Threatened or Endangered Species identified in the NHB Datacheck report include:

Spotted Turtle (*Clemmys guttata*) – State threatened

Wood Turtle (*Glyptemys insculpta*) – NH Species of Concern

Northern long-eared bat (*Myotis septentrionalis*) – State endangered, Federal threatened
Not listed on NHB report but typically on US Fish and Wildlife Service, IPac

On-site Habitats

The habitats associated with the Keene Excavation project include:

- The dominant upland forest associated with the excavation area is Hemlock-hardwood-pine forest. This upland habitat includes hemlock, sugar maple, white pine, and beech.
- The understory is composed of similar species plus bracken fern and several other upland plants.
- The excavation area is generally cleared of trees and other woody vegetation.
- As a gravel pit, the property has numerous areas of ongoing disturbance including stockpiles and access roads.
- Otter Brook, a high-quality stream occurs on the south side of Route 9. Flowing from east to west, the stream flows into the large Otter Brook Lake, within the Otter Brook State Park.
- Several small wetlands occur adjacent to the excavation parcel with one occurring in the southeast corner of the site plus a second, west of the western edge of the excavation area. All proposed excavation areas occur at least 250-feet from these wetlands.
- Neither of these sites appeared to be capable of providing vernal pool habitat, although the timing of the site visit was not ideal for this determination.
- Large areas of woodlands and limited development occur on the east side of the Keene, as well as, to the north and south of the Excavation site.
- Based on the presence of moose scat and deer tracks, it is likely the area is currently used by a variety of wildlife to access other habitats, most likely outside normal operating hours for the excavation site.

Potential Endangered and Threatened Species

The excavation pit has potential habitat values in the form of accessing offsite habitats including the off-site Otter Brook which combine to provide potential habitat values for some species in

the form of a travel corridor along the stream as well as in the adjacent riparian areas. This corridor could potentially provide habitat to:

Spotted turtles are consistently reported to prefer large intact landscapes with a diversity of wetlands, but they only tolerate limited development. The Keene gravel excavation site is clearly a well-developed area of intense industrial activity, namely mineral extraction, with the associated trucking activity. The Otter Brook habitat is a diverse community which could encourage species such as the spotted turtle to travel along the stream corridor to the various ponds up and downstream areas. Otter Brook is also dammed below the site as part of a U.S. Army Corps of Engineers project and Otter Brook State Park. There is a little significant wetland habitat located in the vicinity of the excavation project which could provide a suitable habitat for spotted turtles.

Northern long-eared bat and other bats species may utilize forested habitats on the site, on a seasonal basis. Extensive areas of this forested habitat are located outside the footprint of this project. The excavation site was logged and cleared previously so minimal tree clearing is expected to be necessary for the excavation project. Any additional tree clearing should be conducted outside the pup-rearing season, April through August.

Other Species of Special Concern or SGCN: The NH Wildlife Action Plan identifies Species of Concern that may occur in Keene. Of these species, the following are identified in the NHB Datacheck Report for the Keene gravel excavation parcel.

Wood turtles (*Glyptemys insculpta*) also cover a lot of territory in their travels. They reportedly need a mosaic of rivers and streams, plus forests and dense shrubs and bare sandy substrate. Most activity is reported to be within 300 meters of streams and rivers. DeGraff (1986) reports special habitat requirements of wood turtles to include wooded riverbanks and open sandy nesting areas. The disturbed condition of the excavation area could potentially be used by wood turtles for nesting due to its proximity to the brook; however, the limited on-site wetlands and general site disturbance is likely to limit overall values of the site.

As noted, **Moose** (*Alces alces*) scat was noted on the excavation site. Most likely, they were crossing the site to access habitat to the north or south.

PROPOSED CONSERVATION MEASURES

The proposed conservation measures for the Keene gravel excavation site primarily focus on the avoidance of impacts to the on-site wetlands and their excavation setback, as well as any adjacent boundary setbacks. Long-term, the excavation area may be reclaimed which could potentially provide areas of additional habitat.

Measures incorporated in the project design that are intended to minimize impacts to these species and other potential species utilizing the site, include the following, which is typically referenced by NH Fish and Game and include:

- Avoid the use of welded plastic or “biodegradable plastic” netting or thread in erosion control matting, due to issues with snakes and wildlife being trapped and killed.

- The use of erosion control berm, white Filtrexx Degradable Woven Silt Sock, or several “wildlife friendly” options such as woven organic material (e.g., coco or jute matting such as North American green SC150BN or equivalent) are considered suitable alternatives.
- Drainage at this site is strictly surface flow, limiting potential impacts to species in the form of drainage structures, and curbing.

PART 1: SUMMARY AND FINDINGS

Jim Fougere

6/21/2021

NAME

DATE

James Fougere

SIGNATURE

Check Applicable Requested Action

Request for NHFG Concurrence with Findings in compliance with Env. Wq. 1503.19(h)(1)a

- X Request for NHFG Concurrence with Findings and Proposed Conservation Measures in compliance with Env. Wq. 1503.19(h)(1)b***

Requests further coordination with NHFG to discuss proposed conservation measures and/or, potential focused survey needs (Phase II)*

***New Hampshire Fish and Game’s review and recommendations are based on the information provided in the assessment. Changes to project scope may affect NHFG and/or NHDES determination on potential impacts and whether conservation measures and project design modifications proposed are still applicable or sufficient.**



Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

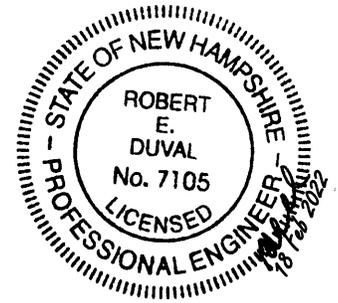
TRAFFIC MEMORANDUM

Date: February 18, 2022

To: City of Keene
 3 Washington Street
 Keene, NH 03431

From: Robert Duval, PE

Re: **Proposed Gravel Pit**
Route 9, Keene, NH
 TFM Project No. 82549-00



INTRODUCTION

TFMoran has prepared this traffic memo on behalf of G2 Holdings, LLC to describe trip generation and the existing roadway network associated with a proposed gravel pit in Keene, NH. The site (Map 215 Lot 7) is located within the Rural Zoning District on the north side of Franklin Pierce Highway (NH 9).

The parcel currently has a gravel access drive into a small clearing. G2 Holdings, LLC is currently using the clearing as a laydown area for their landscape and sitework business. The remaining site consists of woods, steep slopes, and wetlands.

PROPOSAL

G2 Holdings, LLC is proposing to construct and operate a 10 +/- acre gravel pit located on The initial phase of the operation will be approximately 5 acres. The gravel driveway will be widened and brush trimmed as necessary to accommodate two-way traffic with adequate sight distance in both directions to support the operation.

DESCRIPTION OF ROADWAYS AND INTERSECTIONS

Franklin Pierce Highway (NH 9)

- Classification. Franklin Pierce Highway is a State-maintained principal arterial that provides east-west travel across the state from Vermont to Maine.
- Lane widths and usage. In the project vicinity, the roadway provides one 12' travel lane in each direction, with 7-8' paved shoulders.
- Pedestrian facilities. There are no sidewalks in the study area.
- Signage and markings. The posted speed limit is 55 mph. Adjacent to the existing driveway is an intersection warning sign. The road has white shoulder markings on both sides. An

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eastbound passing zone begins about 300' to the west and extends about 600' east of the driveway, followed by a two-way passing zone.

- Lighting. No roadway lighting is provided in the study area.
- Sight Distance: The existing driveway is located on a straight segment of Franklin Pierce Highway with a gentle curve right approximately 250' west of the site and remains straight approximately 2,000' to the east. The alignment is relatively flat and provides sufficient sight distance in both directions.
- Road conditions. The roadway has moderate grade change, open drainage, and normal crown. The pavement is in good condition with minimal to no cracking, little or no ruts, soft spots, potholes, or other structural defects evident.
- There are minimal other developments in the area. Adjacent uses and driveways consist of:
 - Approximately 350' to the west on the opposite side of the road is the entrance to Otter Brook Beach State Park. No other driveways are present until Sullivan Road, approximately 4,350' from the existing site driveway.
 - Approximately 2100' to the east is a driveway to small commercial home/office development. Another 1500' east of the office development is the entrance to Granite Gorge Ski Area.
- There are no other intersections in the study area.

TRIP GENERATION

Trip generation was calculated based on the applicant's anticipated pit operation schedule. Site operations will be 7am-5pm Monday through Friday, with Saturday operations 7am-12pm. The site will be occupied by 3 employees. All employees will arrive prior to AM peak hours (7-9am) and leave during PM peak hours (4-6pm).

Trucking operations are expected at 40 trucks per day or less, with arrivals on average at fifteen minute intervals. While one truck is arriving, the previous will be leaving. The last load out will typically leave around 330pm (1130am on Saturday). Employees will leave after site cleanup and equipment shutdown.

Employee & Truck Schedule

Time	Employee In	Employee Out	Truck In	Truck Out	Total Trips
Before 7 AM	3				3
7 AM – 8 AM			4	3	7
8 AM – 9:AM			4	4	8
9 AM – 10 AM			4	4	8
10 AM – 11 AM			4	4	8
11 AM – 12 PM			4	4	8
12 PM – 1 PM			4	4	8
1 PM – 2 PM			4	4	8
2 PM – 3 PM			4	4	8
3 PM – 4 PM			2	3	5
After 4 PM		3			3
Total Peak Hour Trips (Adjacent Street)			Trips In	Trips Out	Total Trips
Weekday AM (7-9am)			4	4	8
Weekday PM (4-6pm)			0	3	3
SAT (11am-1pm)			2	3	5

CONCLUSION

Based on the minimal scale of operations described above, traffic impacts associated with the project will be negligible. The traffic from this development will add 8 trips or less during all peak hours. Total weekday trips are expected to be on the order of 80 to 90 trips per day (40 - 50 on a Saturday). Most of these trips occur outside peak travel times.

The AADT of NH 9 in 2019 was 9,707 vehicles. Thus the percentage increase is less than 1%, with typically 15 minutes between successive arrivals and departures. The roadway alignment and wide shoulders will facilitate safe access and egress from the site.

We therefore find the traffic associated with this proposal can be safely accommodated by the adjacent roadway without need for improvements. Please let me know if you have any questions in regard to these items.

TFMORAN, INC.

A handwritten signature in black ink, appearing to read 'R. Duval', written over a circular stamp or mark.

Robert Duval, PE
Chief Engineer

Stormwater Management Report

Excavation Site

**Tax Map 215 Lot 7
0 Route 9
Keene, NH**

Date:
April 8, 2022
Rev. 2: 6/6/22

Prepared for:
**G2 Holdings LLC
c/o Cody Gordon**
250 North Street
Jaffrey, NH 03452

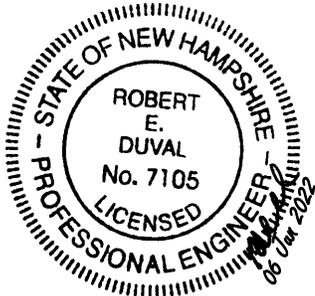
TFM #: 82549-00

Prepared by:



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Tel: (603) 472-4488 Fax: (603) 472-9747
www.tfmoran.com



Executive Summary

- The Applicant proposes to operate a gravel pit on a 10± acre portion of the 84± acre parcel on Route 9 in Keene, NH.
- The excavation area stormwater runoff will be directed to a stormwater pond, which outlets to a riprap swale along the access drive and discharges to an existing discharge point along the southern lot line.
- Significant vegetated buffers and earthen berms, in addition to installed erosion and sedimentation controls, will serve to protect natural resources and prevent adverse impacts to abutters. The site is in a rural and sparsely developed area.
- The Applicant proposes excavation only above the seasonal high water table. Ongoing geohydrological investigation will inform excavation planning.
- Upon completion of the excavation project, the site will be stabilized and reclaimed.

Description of Project

G2 Holdings LLC proposes to operate a gravel pit on 10± acres of the 84± acre parcel. The excavation plan includes cutoff swales to direct stormwater runoff into a drainage pond on the southern end of the excavation area. The drainage pond outlets to a swale that runs along the access drive, and eventually outlets at an existing discharge point along the southern property line by Route 9.

Storm Water Methodology

Pre-Development Conditions

The existing site is primarily wooded, with a gravel access drive and some trails throughout the property. The terrain is hilly and there are some wetland areas to the west, east, and south of the project area. The ground elevation generally climbs upwards towards the north of the property.

Natural vegetated and earthen screening exists between the public right of way and the majority of the access drive. There is also an existing earthen berm to the west of the project area. To the west, north, and east, the site is surrounded by significant woodland buffers. This site is located in a rural, remote area with minimal development on the adjacent properties. Multiple abutting properties are owned by the Applicant.

Existing discharge points are A) wetland area east of the project site, and B) wetland area along the southern lot line adjacent to Route 9. There are currently no drainage improvements on the site.

Rainfall Intensity

The NHDES AoT program requires applicants to obtain rainfall data from the Northeast Regional Climate Center (NRCC). The below table lists the rainfall data used to model storms in HydroCAD.

24-Hour Rainfall Intensity

	Northeast Regional Climate Center
2-year	2.76 inches
10-year	4.02 inches
25-year	4.98 inches
50-year	5.86 inches

Post-Development Conditions

The Applicant proposes to operate a gravel pit on 10± acres of the 84± acre property. The excavation area is proposed to be located in one of the naturally least sloped areas of the lot. The existing access drive will be improved to support the excavation operations and drainage improvements will be installed to manage stormwater runoff.

Proposed cutoff swales will intercept stormwater runoff from uphill of the excavation area and prevent it from entering the excavation area and provide an alternate stabilized flow path to reach the same wetland at discharge point (A) where it currently flows. The drainage pond (HydroCAD pond node P1) will outlet to a swale (Reach R2) that runs along the access drive. A small riprap sedimentation basin (Pond P2) node west of the access drive combines site runoff with flow from the route 9 ditchline. From there, runoff flows thru a proposed culvert under the access drive, into an existing roadside ditch (Reach R3) and discharges into the existing wetland (modeled as Discharge Point B) along the southern lot line at Route 9. The remaining wooded areas will discharge in the same manner as in the pre-development condition, with one discharge point (A) just east of the access drive and the other (B) at the wetland east of the project area.

The main drainage pond is an infiltration basin which serves to improve groundwater table recharge in-site and minimize stormwater runoff volumes from the site.

All three discharge points have been analyzed in both pre- and post-development conditions. The final stormwater management design will produce no increase in flow to any discharge point and will have no adverse impact on abutters.

Erosion Control Measures

Erosion Control Measures are found on the Storm Water Management Plan within the plan set. The erosion control notes and construction sequence notes on the Detail Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

- Silt Fence
- Silt Sock
- Double rows of erosion control adjacent to wetlands

Permanent Erosion Control Measures

- Rip rap at pipe outlets
- Rip rap along swales as needed for slope and velocity
- Stabilized vegetative growth along mildly sloped/low-velocity swales.

Flood Protection

Examination of the following Flood Insurance Rate Map indicates that no portion of the project area is located within a flood hazard area:

- FIRM, Cheshire County, New Hampshire (All Jurisdictions), Map Number 33005, Effective Date May 23, 2006.

Conclusion

Peak Rate Flows

The peak rates of runoff will be mitigated at locations where stormwater leaves the project area in post-development conditions to not create an adverse drainage impact on existing off-site infrastructure and natural drainage conveyances.

Discharge Point	Pre-development cfs				Post-development cfs			
	2-yr	10-yr	25-yr	50-yr	2-yr	10-yr	25-yr	50-yr
A	1.3	5.9	10.7	15.7	1.1	5.0	9.1	13.4
B	4.4	14.2	23.5	33.0	3.1	10.1	15.9	21.9

Runoff Volumes

The 2 year design storm runoff volumes will be reduced at locations where stormwater leaves the project area in post-development conditions, to ensure an improvement to groundwater recharge.

Discharge Point	Pre-development cf	Post-development cfs
	2-yr	2-yr
A	13,159	10,931
B	35,057	26,343

**S-04-22 – CONSERVATION RESIDENTIAL DEVELOPMENT & SPR-04-22 – SITE PLAN –
Timberlane Woods – 0 Drummer Road**

Request: Applicant and owner Christopher Farris proposes to subdivide the 13.1-ac parcel located at 0 Drummer Rd (TMP #515-015-000-000-000) into 6 lots and construct 5 multi-family buildings. Four of the lots are proposed to be developed into 5-unit multifamily residences, one lot is proposed to be developed as a 6-unit multifamily residence, and the remaining lot would be conserved as open space. The developable lots are proposed to have access from Timberlane Dr via a shared private driveway and vary in size from 0.3 to 1.2 acres. The open space lot is 9.5 acres. Waivers are requested from Section 25.10.8.B.2 of the Land Development Code regarding the requirement to prepare a survey that shows all metes and bounds of the revised parcels, Section 20.14.3.D regarding the requirement that all off-street parking be located to the side or rear of buildings, and Section 19.3.5.A.3.a regarding the requirement that all structures be accessed from interior streets. The site is in the Low Density District.

Background:

The 13.1-acre tract of land that is the subject of this proposal is located between Drummer Road and Timberlane Drive, with about 818 feet of frontage along Timberlane Drive and 160 feet of frontage on Drummer Road. The site is currently forested and undeveloped, although logging has taken place on the eastern end of the property near Timberlane Drive. The property is located in the Low Density District.

There are forested wetlands located on the west side of the property in the area that is proposed to be conserved as open space. In addition, there are steep slopes in the area of the site that is proposed to be developed, which are shown on the Existing Conditions Plan. However, due to

the fact that no slopes greater than 25% grade (prohibitive slopes) will be impacted by development, and less than 20,000 sf of slopes that are between 15% and 25% grade (precautionary slopes) would be impacted by development on any individual lot, a Hillside Protection Conditional Use Permit is not required.

The applicant proposes a Conservation Residential Development (CRD) subdivision, which is permitted in the Low Density District on lots that are at least 5 acres in size. The parent parcel is proposed to be subdivided into six lots, five of which are proposed to be developed and would vary in size from 0.326 to 1.208 acres. The remaining 9.5-acre lot would be conserved as open space via a conservation easement. The proposed development includes four multifamily buildings with five units and one multifamily building with six units, for a total of 26 units. The

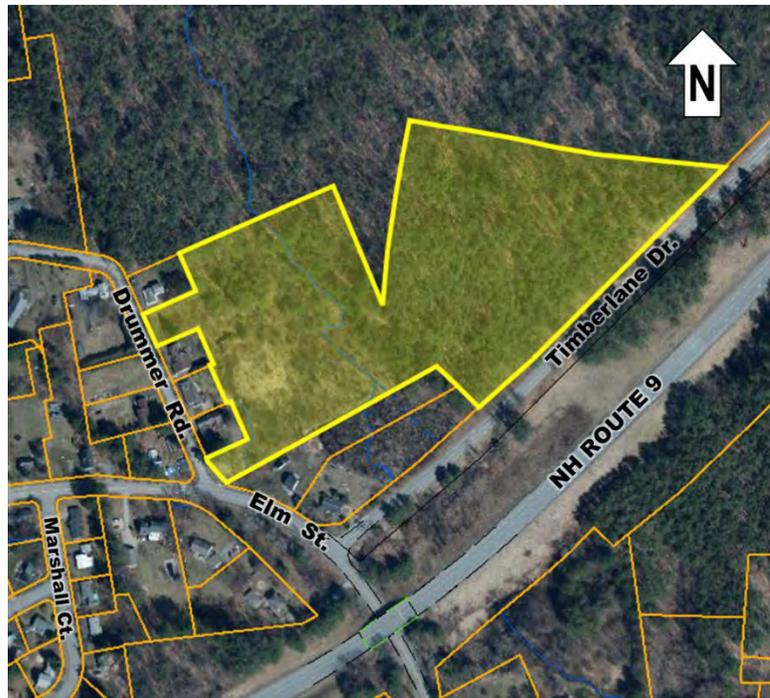


Figure 1. Aerial image of the property located at 0 Drummer Rd (parcel shaded in yellow).

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multifamily structures are proposed to be townhouse-style building with parking on the first level and living space above. The Applicant proposes to construct a private shared driveway to provide access for the multi-family buildings from Timberlane Drive in lieu of an internal road. Waivers are requested from Section 25.10.8.B.2 of the Land Development Code regarding the requirement to prepare a survey that shows all metes and bounds of the revised parcels, Section 20.14.3.D regarding the requirement that all off-street parking be located to the side or rear of buildings, and Section 19.3.5.A.3.a regarding the requirement that all structures be accessed from interior streets.

Completeness:

The Applicant requests exemptions from submitting an Overview Plan, a Yield Analysis Plan, and a subdivision plan that shows the boundaries and acreage of the existing lot(s) subject to review. The Applicant submitted a written request for each exemption, which is included as an attachment to this staff report. After reviewing each request, staff recommend that the Board grant the requested exemptions as they have no bearing on the merits of the application.

Departmental Comments:

Most of the comments and questions from city departments were addressed by the Applicant. Included below are comments from city engineering staff that are either relevant to the Board's review of the application, or may require follow-up by the applicant:

Engineering:

- The applicant is proposing to construct public infrastructure which will be turned over to the City for operation and maintenance in perpetuity. Approval of the application should be conditioned upon acceptance of these public utilities by the Keene City Council.
- Since the applicant is proposing shared driveways, cross-easements should be recorded which define the rights and responsibilities of each property owner with respect to access, maintenance, costs, etc.
- All of the structures will be given Timberlane Drive addresses. Developer should contact DPW for address assignment once foundations are installed.
- To date, the Department has not received the DES connection permit.
- The proposed design will require drainage easements between the parcels. The cross easements should stipulate the rights and responsibilities of each parcel. In particular, the Department is concerned that Lot 3 will receive runoff from all 5 parcels and discharge said runoff directly to a delineated wetland. Failure to maintain the proposed swales, forebay, and detention basin may result in discharge of sediment laden stormwater to the wetlands area.

Application Analysis – CRD Subdivision Regulations:

19.3.2 Dimensional Standards

The CRD Dimensional requirements for the Low Density District are shown in Table 1 in the "Required" column, and the proposed dimensions of the tract and new lots are shown in the "Proposed" column. The tract of land that is the subject of this proposal and all of the proposed new lots appear to meet the minimum dimensional requirements.

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The maximum number of dwelling units allowed within the CRD subdivision is determined by dividing the total area of the tract by the density factor per dwelling unit, which is 10,000 sf for the Low Density District. Based on this calculation, the maximum number of dwelling units that could be permitted for this property is 57 units (570,000 sf/10,000 sf = 57). The Applicant proposes a total of 26 dwelling units.

With respect to open space, the applicant proposes to permanently reserve 9.54 contiguous acres as open space, or 72.3% of the tract (50% required). In the project narrative, the applicant notes that the open space lot will be placed into a conservation easement to ensure it remains permanently reserved as open space.

Table 1. Dimensional requirements for CRD subdivision applications for the Low Density District.

		Required	Proposed
Tract	Min tract size	5 acres	13.1 acres
	Min tract frontage	50 ft	160 ft
	Perimeter From external roads	30 ft	30 ft
	building setback From other tract boundaries	20 ft	20 ft
Lot	Min. Lot Area	6,000 sf	14,203 - 415,000 sf
	Min Road Frontage	40 ft	60 - 174.5 ft
	Min Lot Width at Building Line	60 ft	60 - 246.54 ft
	Min Front Setback	15 ft	30 ft
	Min Rear Setback	15 ft	20 ft
	Min Side Setback	10 ft	20 ft
	Max Building Coverage	45%	4.1% - 15.2%
	Max Impervious Coverage	60%	9.1% - 42%

19.3.3. Permitted Uses

The CRD Subdivision regulations allow single-family, Two-Family, and Multifamily Dwellings (maximum of 6 dwelling units per structure) in the Low Density District. The applicant proposes to construct five multifamily buildings. The Applicant notes in the project narrative that the parcel reserved as open space will be used for conservation land and possibly for passive recreation. Allowed open space uses include conservation, agriculture, forestry, and passive recreation.

19.3.5 Design Criteria

A. General Criteria. This section states that all development shall be located outside of primary conservation areas, and shall minimize impact to any identified secondary conservation areas. All of the identified primary conservation areas for this property are located on the proposed open space lot, and the applicant notes that the location of proposed development was chosen to minimize impact to secondary conservation areas, such as slopes between 15% and 25% grade.

In addition, this standard states that all structures shall be accessed from interior streets, rather than from roads bordering the perimeter of the tract. In addition, this section states “*in the event that a waiver of this standard is granted, shared driveways shall be incorporated*”

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where feasible.” The Applicant requests a waiver from this standard and proposes to construct shared driveways in lieu of an internal road. The written waiver request is included as an attachment to this staff report. In making a determination whether or not to grant this waiver, the Board should find by a majority vote that the criteria outlined in Section 25.10.14 of the LDC have been met:

- “1. Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations; and,*
- 2. Granting the waiver will not increase the potential for creating adverse impacts to abutters, the community or the environment; and,*
- 3. Consideration will also be given as to whether strict conformity with the regulations would pose an unnecessary hardship to the applicant.”*

- B. Open Space Standards. These standards state that the area of land designated as open space shall not be used to site individual lots, construction of buildings, facilities for accessory uses, roads and other areas for vehicular traffic. This section further states that the open space reserve should not be fragmented, should be located adjacent to other open space or protected lands when possible, and should be reasonably accessible from each proposed lot. The applicant notes that no development is proposed on the open space reserve. In addition, the open space parcel is one contiguous area that abuts existing conservation land, and can be accessed directly from Lots 3 and 4. Residents from Lots 1, 2, and 5 would access the open space lot from Timberlane Drive.
- C. Open Space Ownership & Maintenance. This section requires that all land designated as open space shall not be further subdivided, and shall remain as open space in perpetuity. In addition, all designated open space must be permanently protected by covenants or easements, shall be deeded to and maintained by a Homeowners Association, a non-profit organization, or some other entity *as approved by the Planning Board or its designee*, and shall be held, managed and maintained by the developer until such time as they are transferred to the designated entity.

The applicant proposes to place the open space into a conservation easement. In response to staff comments, the Applicant stated that the owner would like to deed the open space to the City of Keene; however, staff are not aware of any conversations between the City and the owner or applicant regarding this proposal. The Board should ask the Applicant what entity will be responsible for maintaining the open space lot if the City of Keene is not willing to maintain the property.

In accordance with Section 25.10.9.C of the Land Development Code, the applicant will be required to submit written documentation of any legal instruments required for the management of the designated Open Space land, and such documents will be subject to the review and approval of the City Attorney prior to signature by the Planning Board Chair. Staff have included this as a condition of approval in the recommended motion.

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Application Analysis – Site Development Standards: The following is a review of the Site Development standards relevant to this application.

20.2 **Drainage & Stormwater Management:** Currently, runoff from the site flows west into the existing wetlands or south into the drainage system on Timberlane Drive. In order to mitigate and treat runoff associated with the new development, the Applicant proposes to construct a stormwater management system consisting of ditches lined with rip-rap and stone check dams and four driveway culverts that will direct stormwater to a sediment forebay or conveyance swale and into a detention basin. Overflow will be conveyed via a swale to a level spreader. For large events, there is an emergency spillway that outlets into the wetland buffer to prevent runoff from being directed onto Timberlane Drive.

The Applicant submitted a Storm Water Management Report prepared by a licensed engineer and dated March 18, 2022 which concludes that the proposed development will not increase the peak rates of runoff leaving the site. Due to the fact that the stormwater management system for the development is proposed to be located largely on Lots 3 and partially on Lots 2 and 1, staff recommend that the submittal of cross-easements for the stormwater management system be required as a condition of approval for this project.

20.3 **Sediment & Erosion Control:** During construction, the applicant proposes to install perimeter controls including silt fencing downslope of any disturbed areas. In addition, a stabilized construction entrance will be installed to prevent sediment tracking onto Timberlane Drive. Post-construction, all disturbed areas will be stabilized and loamed and seeded. Further erosion control details are provided on Sheet DT-1 of the plan set. Staff recommend that a security for erosion control be included as a condition of approval.

20.4 **Snow Storage & Removal:** The applicant proposes snow storage areas on the edge of the shared driveway as indicated on the proposed site plan. These areas are located away from wetland areas or other environmentally sensitive areas. The project narrative states that during large snow events, a bucket loader can be used to dump snow over the guardrail at the end of the shared driveway. From this location, snowmelt would drain into the proposed sediment forebay and detention basin before entering the wetland area. This standard appears to be met.

20.5 **Landscaping:** The Applicant proposes to install four red maple trees, four Bigfruit Hawthorn (a large shrub/small tree), and a mix of 23 shrubs including 10 rhododendrons, 8 winterberry, 2 nannyberry viburnum, and 3 dwarf alberta spruce. A total of 26 surface parking spaces are proposed; however, there are fewer than 10 surface parking spaces proposed on each individual lot. Staff recommend that a security for landscaping be included as a condition of approval to ensure the plantings survive in good health for at least one year.

20.6 **Screening:** This standard states that “Screening in the form of landscaping or other treatment (e.g. berms, walls, fences) shall be used to ... form a buffer between single-family and multifamily dwellings, which are different in height, form or material than the adjacent single-family dwellings” The proposed 9.5-acre open space parcel would form a forested buffer between the proposed development and adjacent residential uses. The site plan proposes to maintain trees along the perimeter of the development area and along the frontage of Timberlane Drive. Staff recommend that a 30-foot no-cut buffer be placed over the vegetated area along Timberlane Drive to ensure that the screening between this development and the road remains in perpetuity.

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The applicant's narrative states that HVAC equipment will either be mounted on the roof of each building or placed behind the buildings. In addition, the applicant included a note on the Utility Plan (Sheet UT-1, Note 20) which states "*All HVAC equipment shall meet the screening standards of the L.D.C.: Roof mounted equipment shall be setback 10' from edge. Ground-mounted equipment to be located so as not to be visible from the public way – screen if visible.*" The transformer will be screened from the public right of way with the installation of three evergreen shrubs.

- 20.7 Lighting: The Applicant proposes to install 26 wall-mounted LED light sconces. The proposed fixtures have been identified as "Ryler LED 3000K 12" Wall Light Brushed Aluminum." Light fixture cut sheets were not provided; however, these fixtures do not appear to be full cut-off light fixtures. Staff recommend that the submittal of light fixture cut sheets be included as a condition of approval to ensure that the proposed light fixtures meet the the Board's standards for lighting.
- 20.8 Sewer & Water: The Applicant proposes to connect to City sewer and water, and proposes to install two hydrants at the end of the shared driveways for safety, testing, and maintenance purposes. All of the buildings will have sprinklers for fire protection. Due to the fact that the water connection is proposed to be on the high-pressure side of the Timberlane Drive pressure zone, each service connection will require a pressure-reducing valve (PRV). The Applicant added a note to the utility plan (Sheet UT-1) to indicate that PRVs will be required for all building service connections. The Applicant also submitted a sewer flow analysis on June 3rd which demonstrates that there is sufficient capacity in the sewer system for the proposed project.

Per Section 22.1.4.G of the LDC, "*Any infrastructure that serves 2 or more residential parcels shall be public. Services shall be the only lines serving individual residential parcels.*" In addition, Section 22.1.4.H states that "*All public infrastructure shall be located in city streets or public rights-of-way or easements. The City shall be responsible for maintaining all public infrastructure.*" The Applicant is aware that the water and sewer utilities will need to be accepted by the Keene City Council, and proposes an access and utility easement (shown in the cross-hatched area on the plan). Staff recommend that approval of the application should be conditioned upon acceptance of the water and sewer infrastructure as public utilities by the Keene City Council. In addition, staff recommend that the submittal of written documentation for the utility and access easement be included as a condition of approval.

- 20.9 Traffic & Access Management: The Applicant submitted a traffic assessment on June 3rd which concludes that the proposed development would increase traffic volume along Court Street north of Elm Street by 5 to 6 vehicles per hour, and along Court Street south of Elm Street by 5 to 7 vehicles per hour. In total, the development is estimated to generate 176 site trips per day on a weekday (88 enter and 88 exit), 10 trips during the weekday AM peak hour (2 enter and 8 exit), and 13 trips during the weekday PM peak hour (8 enter and 5 exit). The estimated site trips for Saturday is 120 (60 enter and 60 exit), with a peak hour of 11 trips (6 enter and 5 exit). The traffic assessment concludes that these traffic volumes would have a negligible impact on the adjacent roadway system.

With respect to access management, the Applicant proposes to utilize a shared driveway in lieu of an internal road. As noted previously in this staff report, a waiver is requested from the requirement that all structures shall be accessed from interior streets, rather than

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from roads bordering the perimeter of the tract. Staff recommend that the submittal of cross-easements for the shared driveway be included as a condition of approval.

In order to accommodate pedestrians and bicyclists on the site, the Applicant proposes to install a bicycle rack at each building, proposes wide shoulders along the shared driveway, and proposes a 3-foot wide gravel pedestrian path that would connect from the shared driveway near the building on Lot 2 to the sidewalk on Timberlane Drive.

- 20.10 Filling & Excavation: A significant portion of the development area contains precautionary slopes of 15%-25% and significant earthwork will be required. The applicant's narrative states that excavation and backfilling will be required for the proposed building foundations and driveways. The project will require cut grading activities within the northern lots and fill grading activities within the western lots. Grading will also be required to install the stormwater detention basins and swales. Based on the required cut and fill activities, the majority of disturbed earth material appears to be intended to remain on site. Since fewer than 50 trucks are expected to remove or deliver material to the site, it appears that this standard has been met. The applicant included a table on the subdivision plan that demonstrates that less than 20,000 square feet of precautionary slope area will be disturbed on each individual lot (excluding the area of the shared driveway). Staff is aware that tree removal operations took place on the parent parcel prior to the submittal of this application. However, this activity was considered to be forestry/logging as no stumps were removed, and as such this activity is exempt from the Hillside Conditional Use Permit requirements.
- 20.11 Surface Waters & Wetlands: Existing wetland systems have been delineated on the site and identified as primary conservation areas. Nearly all of the wetlands on the parent parcel will be captured within the new conservation lot. A waiver has been submitted to seek relief from performing a complete wetland delineation on the new conservation lot. The required 30 foot wetland buffer for these wetlands is shown on the plan. No development is proposed within the wetland buffer area. Silt fencing is proposed to be installed in order to provide protection to the buffer area and wetlands. In some instances the proposed grading for buildings, such as the proposed northwesterly most garage and stormwater structures, such as the southwesterly emergency spillway, comes within 1 foot of the wetland buffer. Staff recommends that the wetland buffer in the development area be flagged and inspected prior to the installation of silt fencing to ensure that the buffer remains undisturbed during construction. Encroachment into this buffer during construction activities would require a Conditional Use Permit pursuant to Section 11.6 of the LDC.
- 20.12 Hazardous or Toxic Materials: There are no known hazardous or toxic materials present on the site. This standard is not applicable.
- 20.13 Noise: The project narrative states "Little additional noise is expected to be generated by the subdivision and there are no residential homes within close proximity to the proposed homes." This standard appears to be met.
- 20.14 Architecture & Visual Appearance: The purpose of this standard is to "ensure that new and redeveloped buildings and structures blend aesthetically with the City's historic character, are consistent with the prevailing scale, orientation, and design of the City, and do not detract from viewsheds and view corridors."

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The applicant states in their narrative that *“the architecture will be a townhouse design with variation of depth along the front façade to break up the expanse of the building structure. The three-story building will have balcony decks on some units to provide further architectural interest while also enhancing the outdoor living space for residents.”* The siding and trim will consist of three different colors, as shown in Figure 2.

The maximum building height on the three-story side of the building is proposed to be 31 feet above finish grade. However, structures in the Low Density District are required to be a maximum of two stories per zoning. At the time of this staff report, staff did not have enough information to determine whether the parking level would be considered a “Story Above Grade” or a basement. Basements and attics are not counted as stories. Submittal of revised building elevations that demonstrate compliance with the dimensional requirements for the Low Density District will be required either as a condition of approval, or prior to Planning Board approval of this application.

The Applicant requests a waiver from Section 20.14.3.D regarding the requirement that all off-street parking be located to the side or rear of buildings, specifically for Lot 3 where the proposed parking area is located between the building and Timberlane Drive. The written waiver request is included as an attachment to this staff report. In making a determination whether or not to grant the waiver request, the Board should find by a majority vote that the criteria outlined in Section 25.10.14 of the LDC have been met:

- “1. Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations; and,*
- 2. Granting the waiver will not increase the potential for creating adverse impacts to abutters, the community or the environment; and,*
- 3. Consideration will also be given as to whether strict conformity with the regulations would pose an unnecessary hardship to the applicant.”*



Figure 2. Rendering of proposed townhouse design.

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Recommended Motion:

If the Board is inclined to approve this application, the following language is recommended for a motion:

“Approve S-04-22 for a 6-lot Conservation Residential Subdivision, **Grant a waiver** from Section 19.3.5.A.3.a of the Planning Board Subdivision Regulations, **Approve SPR-04-22** for the construction of five multi-family buildings, and **Grant a waiver** from Section 20.14.3.D of the Planning Board Development Standards, as presented on the plan set identified as “Conservation Residential Development Subdivision, Tax Map 515, Lot 15, Timberlane Woods” prepared by Fieldstone Land Consultants, LLC, dated March 18, 2022 and last revised on June 13, 2022, and as presented on the building elevations received by the Community Development Department on March 18, 2022, with the following conditions:

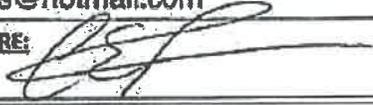
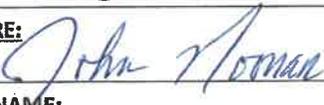
1. Prior to signature by the Planning Board chair:
 - A. Submittal of revised building elevations that demonstrate compliance with the height requirements for the Low Density District in Section 3.3.4 of the Land Development Code.
 - B. Submittal of written documentation for the access and utility easement, which shall be subject to review and approval by the Community Development Director.
 - C. Submittal of written documentation of a cross-easement for the stormwater management and drainage system, which shall be subject to review and approval by the Community Development Director.
 - D. Submittal of written documentation of any legal instruments required for the management of the designated Open Space land, which shall be subject to review and approval by the City Attorney.
 - E. Submittal of written documentation for the acceptance of all proposed public utilities by the Keene City Council.
 - F. Submittal of a revised plan set which displays a “No Cut Buffer” over the 30-foot perimeter buffer along Timberlane Drive.
 - G. Submittal of a security for landscaping, erosion control, and as-built plans in a form and amount acceptable to the Community Development Director and City Engineer.
 - H. Submittal of light fixture cut sheets to demonstrate compliance with the Planning Board’s Lighting standards.
2. Prior to the installation of sedimentation and erosion control measures, City staff shall inspect the wetland buffer in the development area to ensure it is flagged.”

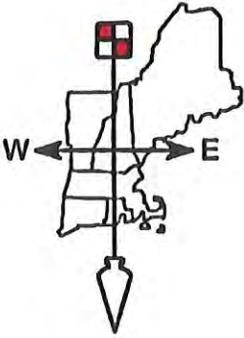


City of Keene, NH Conservation Residential Development (CRD) Subdivision Application

Conservation Residential Development (CRD) subdivisions are those consisting of 3 or more proposed lots and the layout and construction of a new road, where the existing parcel to be subdivided is located in either the Rural, Low Density, or Low Density-1 zoning districts, and meets the minimum lot size requirements specified in Article 19 of the Land Development Code (LDC).

If you have questions about how to complete this form, please call: (603) 352-5440 or email: communitydevelopment@keenenh.gov

SECTION 1: PROJECT INFORMATION		
PROJECT NAME: Timberlane Woods CRD Subdivision	NUMBER OF LOTS PROPOSED: 6	
PROJECT ADDRESS(ES): Drummer Road & Timberlane Drive		
SECTION 2: CONTACT INFORMATION		
OWNER	APPLICANT	
NAME/COMPANY: Christopher E. Farris	NAME/COMPANY: Christopher E. Farris	
MAILING ADDRESS: 34 Rollins Road, Epping, NH 03042	MAILING ADDRESS: 34 Rollins Road, Epping, NH 03042	
PHONE: (603)-365-1820	PHONE: (603)-365-1820	
EMAIL: E_farris@hotmail.com	EMAIL: E_farris@hotmail.com	
SIGNATURE: 	SIGNATURE: 	
PRINTED NAME: Christopher E. Farris	PRINTED NAME: Christopher E. Farris	
AUTHORIZED AGENT (if different than Owner/Applicant)	FOR OFFICE USE ONLY:	
NAME/COMPANY: John Noonan - Fieldstone Land Consultants, PLLC	TAX MAP PARCEL #(s): 515 019 000 000 000	
MAILING ADDRESS: 206 Elm Street, Milford, NH 03055	-----	
PHONE: (603)-672-5456	TRACT SIZE: B.1-ac	DATE STAMP: 
EMAIL: JENoonan@FieldstoneLandConsultants.com	ZONING DISTRICT: Low Density	
SIGNATURE: 	PROJECT #: S-04-22	
PRINTED NAME: John E. Noonan		



FIELDSTONE

LAND CONSULTANTS, PLLC

Surveying ♦ Engineering
Land Planning ♦ Septic Designs

206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456
www.FieldstoneLandConsultants.com

March 15, 2022

City of Keene Planning Board
3 Washington Street
Keene, NH 03431

RE: **Letter of Authorization:**
Christopher E. Farris (Owner/Applicant)
Tax Map Parcel 515-15
34 Rollins Road
Epping, NH 03042

To Whom It May Concern:

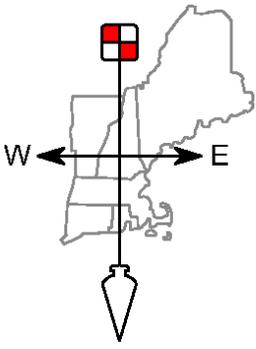
The undersigned being the landowner and the applicant of the above referenced lot hereby authorizes Fieldstone Land Consultants, PLLC to act as their Agent in filing and seeking all necessary approvals from local, state and federal approvals for permitting. This authorization is for the development of Tax Map Parcel 515-15 on Timberlane Drive in Keene NH.

Very truly yours,

Tax Map Parcel 515-015 (Owner/Applicant)
Christopher E. Farris

Signature: 

Print: Christopher E. Farris Date 3/15/2022



FIELDSTONE

Surveying ♦ Engineering
Land Planning ♦ Septic Designs

LAND CONSULTANTS, PLLC

206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456
www.FieldstoneLandConsultants.com

Conservation Residential Development Subdivision Narrative TIMBERLANE WOODS

Farris Development, LLC
Tax Map Parcel 515, Lot 15
Drummer Road & Timberlane Drive
Keene, New Hampshire

May 16, 2022

Project Narrative:

Fieldstone Land Consultants, on behalf of Farris Development, LLC, are submitting these applications for Planning Board approval. The two applications submitted are the Subdivision Application and Major Site Plan Application. The proposal consists of subdividing existing Tax Map Lot 515-15 into six lots as a Conservation Residential Development (CRD) Subdivision. Five of the lots will be residential building lots and the sixth lot will be placed into a conservation easement.

The existing Tax Map Lot 515-15 has 570,000 square feet or 13.1+/- acres with 817.88 feet of frontage along Timberlane Drive, and an additional 160 +/- feet along Drummer Road. The lot is located in the Low Density District per the Zoning Map and the use of Multi-Family Dwelling is permitted in this district with the caveat of a maximum of 6 Dwelling Units per building structure. The parcel is currently undeveloped and entirely wooded with forested wetlands towards the Drummer Road side of the property.

The proposed Open Space lot that will be placed into a conservation easement is 9.54 Acres in size. The minimal requirement for CRD open space lots is 50% of the original tract size. The proposed 9.54 Acres is 72.8% Open Space of the existing lot size of 13.1 Acres. The five residential lots will make up the remaining 3.6 Acres of the subdivision. The Open Space lot is located to provide a buffer between the residential use and the current Drummer Hill Conservation Area. The Open Space lot will be a good addition to this abutting conservation land.

The proposed building lots will have frontage along Timberlane Drive and will all have more than 60 feet of frontage, which is the standard requirement for the Low-Density zoning district (CRD frontage requirement is 40 feet). Access to the proposed building lots will be from Timberlane Drive and utilize a private driveway that is built to City standards. From the main private driveway there will be two separate private driveways (22 feet in width) that provide access to the northern two lots. All three of these driveways will be under the 300 feet length requirement, allowing for wider widths. The driveway ownership will fall under a Homeowner's Association with an easement 50 feet in width following the centerline of the driveways. The centerline of the main driveway will be the limit of the property boundaries for each lot, and have the overlaying easement. The Homeowner's Association

Timberlane Woods Rev A
Tax Map Parcel 515-15
Keene, NH

will cover the use and maintenance of the shared driveways. The driveways are wide enough for emergency vehicle access, and fire trucks can turnaround at the intersection of the driveways.

The proposed buildings will contain multiple two-bedroom units. Four of the buildings will have five (5) dwelling units and one building will have six (6) dwelling units. The buildings will have three building floors with the lowest level (basement) being a single-car garage with storage. The garages will provide one parking space and outside of each unit is another parking space for each unit. This will allow for a minimum of two parking spaces per building unit; each bedroom will have a parking space.

The building development will be serviced by the municipal water and sanitary sewer infrastructure that is located along Timberlane Drive. The stormwater management will be constructed on site and maintained by the proposed Homeowner's Association.

The development standards for both applications are outlined below with descriptions on how the standards are met in this submission.

CRD Development Standards:

19.3.2 Dimensional Standards:

A. Min. Dimensional Requirements : The existing tract is 13.1 Acres in size, has 817.88 feet of frontage on Timberlane Drive and 160 feet on Drummer Road. All five proposed lots are greater than 6,000 SF in size.

B. Perimeter Building Setbacks : All proposed lots have over 40 feet of frontage on Timberlane Drive, and have building setbacks of 15 feet front/rear and 10 feet side setbacks. The perimeter track setback is 30 feet from Timberlane Drive, and the perimeter setback of the original tract is 20 feet.

C. Density: 13.1 Acres/10,000 SF/Unit = 57 Dwelling Units. There are 26 Dwelling Units Proposed with 52 Bedrooms.

D. Open Space Reserve: Required 50% (13.1 Ac) = 6.55 Ac. Open Space = 9.54 Acres (72.8%)

19.3.3 Permitted Uses:

A. Residential Uses: Multifamily Dwelling is permitted with 6 dwelling units per structure maximum. Proposed is four – 5 Unit buildings, and one – 6 Unit building.

B. Open Space Uses: The Open Space will be used mostly for Conservation and possibly Passive Recreation as the residents may hike through the Open Space to access the Drummer Hill trails.

19.3.4 Primary & Secondary Conservation Areas:

A. Primary: The Open Space conservation areas will all be considered Primary conservation, as all of the wetlands on the property are within the conservation lot.

B. Secondary: The Open Space conservation area contains items listed as in the secondary criteria, such as woodlands, stonewalls, and slopes of 15%. There are no proposed improvements within the Open Space lot, such as recreational trails. The proposed development location for residences was chosen to provide a large contiguous tract for conservation that would directly abut the Drummer Hill Conservation Area.

Subdivision Development Standards:

1. **Drainage** – The site will be designed to convey the drainage away from the buildings and off the paved driveways. The stormwater will be managed to provide treatment and retention of runoff waters. The systems have been designed to match or reduce the stormwater runoff that exists on the undeveloped site.
2. **Sedimentation/Erosion Control** – Temporary erosion control measures consisting of haybales, catch basin silt-socks, silt fencing, and a stabilized construction entrance will be used during the construction process. The permanent erosion control measures will consist of stone rip-rap, stone check dams, established vegetation, erosion control matting, and asphalt pavement.
3. **Hillside Protection** – There is no hillside protection required for this project. The house lots have been designed to terrace with the natural slopes and maintain the perimeter forested buffers. There are Pre-Cautious slopes within the development area; however the impact per lot is under 20,000 Square Feet of impact. The largest impact is on Lot 3, with 14,955 Square Feet of impact to the Pre-Cautious slopes.
4. **Snow Storage and Removal** – Snow storage locations are shown on the plans and consist of along the driveway edges and end of the paved areas. During large events, excess snow can be dumped over the guardrail at the end of the main driveway by the use of a bucket-loader.
5. **Flooding** – The subject lot is not within the 100-year floodplain and rainfall events will be handled by the proposed drainage systems.
6. **Landscaping** – Landscaping is outlined in the plan set. There will be trees and shrubs planted to meet the LDC requirements. The majority of the landscaping is around the front of each building. The existing trees will remain around the perimeter of the development to provide a natural buffer.
7. **Noise** – Little additional noise is expected to be generated by the subdivision and there are no residential homes within close proximity to the proposed homes. The Open Space lot provides a large wooded buffer between the abutting lots.
8. **Screening** – The perimeter of the site will have trees maintained for natural screening from the public way. The HVAC equipment for the buildings will be roof mounted or placed behind the buildings. The transformer for the development will be screened by evergreen shrubs.
9. **Air Quality** – The proposed subdivision and residential use will have no impacts on air quality.
10. **Lighting** – Lighting for the site will be provided by building mounted lights near the garages of each unit. The buildings will have minimal light provided at the parking spaces only. All fixtures are full cutoff, LED controlled by photocells. The lights will not glare onto abutting properties or public roadways. There is no proposed lighting that cross onto abutting properties or roadways.
11. **Sewer and Water** – The proposed buildings will be serviced by municipal water and sewer. The water services will provide both domestic and fire suppression water. The end of the proposed water main will have a fire hydrant for safety, testing, and maintenance purposes. The water connection will be made uphill of the pump station, which will ensure proper pressure and demand flows. Sewer flow data has been collected and a report will be submitted, as requested by the City Engineer. This is to validate that the sewer downstream of the development has adequate capacity, as the municipal line downsizes from 8" to 6" pipe size on Elm Street.
12. **Traffic** – The proposed subdivision will add some vehicle trips to the adjoining City streets. The

intersection of the shared driveway and Timberlane Drive will have safe sight distance in both directions. The City street was improved recently and can handle the additional traffic load. A traffic report will be submitting, as directed by the City Engineer.

- 13. Driveways** – Each building lot will share a central driveway and two individual driveways will provide access to the northern two lots. The grade of these shared driveways shall meet all driveway regulations for the City of Keene and are just under 300 feet in length.
- 14. Hazardous and Toxic Materials** – No hazardous or toxic material is associated with the project.
- 15. Filling/Excavation** – Excavation and back-filling will be required for the proposed building foundations and driveways. The topography of the site varies and is steep in areas. The lots to the north will be in cut grading, and the two western lots will be in fill grading. Any excavation associated with the municipal utilities will be covered in the Excavation Permit with Keene Public Works.
- 16. Wetlands** – Jurisdictional wetlands were delineated as a result of a field investigation by Kenneth M. Robinson, C.W.S, in accordance with the “Corps. Of Engineers Wetland Delineation Manual, Technical Report Y-87-1, dated January 1987”. There are wetlands located to the west of the proposed development, on the subject lot. These wetland areas will be protected by the Open Space easement in perpetuity. The thirty-foot (30’) wetland buffer will not be impacted or encroached upon by the development.
- 17. Surface Waters** – There are no surface waters in close proximity to the project and the Ashuelot River is 0.75 miles from the site.
- 18. Stump Dumps** – This project requires tree removal, however, any stumps that result from the development will be removed and disposed of properly.
- 19. Architectural and Visual Appearance** – This project proposes to construct five (5) multi-unit buildings, having three levels where the ground level includes a single car garage. Four of the buildings will be 5-Unit structures, and one building will be a 6-Unit structure. The architecture will be a townhouse design with variation of depth along the front façade to break up the expanse of the building structure. The three-story building will have balcony decks on some units to provide further architectural interest while also enhancing the outdoor living space for residents. The siding and trim will consist of three different colors to balance the visual appearance and fit in with the residential theme of the neighborhood. The maximum building height on the three-story side of the building is 31 feet above finish grade.

Site Development Standards (Article 20 of the LDC):

20.2. Drainage & Stormwater: The site will be designed to convey the drainage away from the buildings and off the paved driveways. The stormwater will be managed to provide treatment and retention of runoff waters. The systems have been designed to match or reduce the stormwater runoff that exists on the undeveloped site for the 2, 10, and 50 year storm events.

20.3 Sediment & Erosion Control: Temporary erosion control measures consisting of catch basin silt-socks, silt fencing, and a stabilized construction entrance will be used during the construction process. The permanent erosion control measures will consist of stone rip-rap, stone check dams, established vegetation, erosion control matting, and asphalt pavement

20.4 Snow Storage & Removal: Snow will be stored on site.

20.5 Landscaping: Landscaping will meet the City LDC standards and is provided around the

Timberlane Woods Rev A
Tax Map Parcel 515-15
Keene, NH

buildings.

20.6 Screening: The perimeter of the site will have trees maintained for natural screening from the public way. The HVAC equipment for the buildings will be roof mounted or placed behind the buildings. The transformer for the development will be screened by evergreen shrubs

20.7 Lighting: All lighting will meet the City LDC standards and will not impact the public.

20.8 Sewer & Water: Sewer and water will be municipal services, which includes fire protection water to each building.

20.9 Traffic & Access Management: Traffic increases are outlined and access will be off Timberlane Drive with shared driveways, built to City standards.

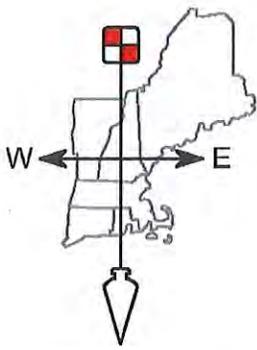
20.10 Filling & Excavation: The proposed grading will require filling in some areas and excavation in other areas. The materials these grade changes are mostly on site. Select gravels for construction will need to be hauled to the site. Any excavations within the City right-of-way will be outlined in the Excavation Permit with Keene Public Works.

20.11 Surface Waters & Wetlands: There are no impacts to surface waters or wetlands on the site. The future quality of these resources will be protected by the Open Space conservation easement.

20.12 Hazardous & Toxic Materials: There are none associated with this project.

20.13 Noise: Noise increase will be minimal and the project is buffered from the nearest residential home.

20.14 Architecture & Visual Appearance: The architecture will be town-house style that is 3 stories in height. The colors will be natural tones and fit with the nearby neighborhoods in the City.



FIELDSTONE

Surveying ♦ Engineering
Land Planning ♦ Septic Designs

LAND CONSULTANTS, PLLC

206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456
www.FieldstoneLandConsultants.com

May 9, 2022

City of Keene Planning Board

Attn: Mari Brunner, Senior Planner
City Hall - 4th Floor
3 Washington Street-
Keene, NH 0343

**RE: S-04-22 and SPR-04-22
Timberlane Woods CRD Subdivision
Waiver Request**

Dear Planning Board,

Fieldstone Land Consultants, on behalf of Christopher E. Farris, is submitting this waiver request for Planning Board approval. The proposed project consists of subdividing existing Tax Map Lot 515-015 as a CRD Subdivision to create five building lots and one conservation lot. Based on the Community Development review letter, dated April 6, 2022, we are hereby seeking waivers for following standards in the Land Development Code (LDC).

Waiver 1:

§ 25.10.8.B.2 Metes and Bounds: *States that an updated survey showing all metes and bounds of the revised parcels shall be prepared by the applicant.* Based on the overall size of the property and no development within close proximity of the boundaries not surveyed, we are requesting a waiver for this requirement, as allowed per Section Article 25.10.14.A. The area where the development is proposed had the boundary surveyed, along with the physical features of the property including wetlands, field topography, utilities, roadways, and forested areas.

A. Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations; The spirit and intent of the ordinance will be met by approving the waiver for this section. The information required will be shown on the plans in the area to be developed. The area that will be placed into an Open Space conservation easement will remain unaltered and is not in close proximity to the proposed development area.

B. Granting the waiver will not increase the potential for creating adverse impacts to abutters, the community or the environment; The granting of this waiver will not create any adverse impacts to the abutters, community or environment. There is no proposed land

development or property line changes in the area of the property that does not show surveyed metes and bounds.

C. Consideration will also be given as to whether strict conformity with the regulations would pose an unnecessary hardship to the applicant. If the applicant is required to adhere to this section of the regulations, it will impose an unnecessary hardship. The survey work required to gather this information will add significant time and cost to the project. The additional time to gather this information is the true hardship as the applicant needs to construct the buildings this summer season and be able to sell units as soon as possible. The hardship is unjust as the information will not add any value to the proposed subdivision or have any impacts on the community or environment.

Waiver 2 (Exemption to include 2 plans):

Article 25 § 25.10.C Overview Plan (C.1) and Yield Analysis Plan (C.3): *States that a conservation residential development subdivision shall include... 1. An Overview Plan and 3. A Yield Analysis Plan:* We are requesting a waiver of these two sections of the LDC that require an Overview Plan and Yield Analysis Plan. The Existing Conditions Plan and Subdivision Plan include the pertinent information that is outlined in the Overview Plan; specifically on the subject tract of land. These areas show the precautionary & prohibitive slopes, wetlands, wetland buffers, public roads, and the abutting conservation land. A large portion of the property will be placed into conservation as Open Space. The Yield Analysis plan is simply a conventional subdivision plan that is not used. This subject lot could easily fit more conventional lots on it if designed to the Zoning Requirement of 10,000 Square Feet Minimum Lot size and 60 feet of frontage. The CRD Subdivision proposed is only 5 lots, all of which are larger than the conventional lot size of 10,000 square feet. Below are the criteria for the waiver requests for both the Overview Plan and Yield Analysis Plan.

A. Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations; The proposed CRD Subdivision with five (5) building lots meets the Zoning Requirements for the Low-Density district as outlined on the Existing Conditions, Subdivision Plan and Site Plan for the development. The spirit and intent of the regulation is to prove that the existing lot could be subdivided in a conventional manner, and meet the criteria for protecting surface waters and hillside protection areas. If the waiver is granted, the spirit and intent of the regulations will be met, as the proposed development has less lots than if designed as a conventional subdivision, and it adds the value of Open Space conservation land that directly abuts the Drummer Hill Conservation Area.

B. Granting the waiver will not increase the potential for creating adverse impacts to abutters, the community or the environment; If the waiver is granted, there will not be any adverse impacts to the abutters, community or environment. The proposed Open Space will enhance the value of the existing Drummer Hill Conservation Area, and ensure the protection of the surface waters by placing a large portion of the property into a perpetual conservation easement.

Timberlane Drive – CRD Sub.
Lot 515-015 – Waiver Request

Page 3 of 3

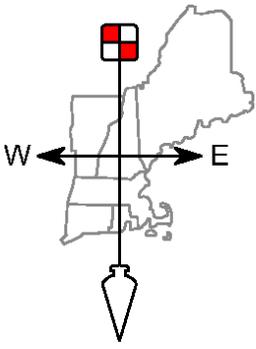
C. Consideration will also be given as to whether strict conformity with the regulations would pose an unnecessary hardship to the applicant: If the waiver is not granted and strict conformity with regulations is imposed, this will put an unnecessary hardship on the applicant. The additional plans will require more design work and cost by a surveyor/engineer and will increase the time frame to obtain approvals, thus impacting the sales of the housing units.

Thank you for your consideration in granting the waivers outlined above.

Best Regards,
FIELDSTONE LAND CONSULTANTS, PLLC



John Noonan
Project Engineer



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LAND CONSULTANTS, PLLC

206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456

www.FieldstoneLandConsultants.com

May 16, 2022

City of Keene Planning Board

Attn: Mari Brunner, Senior Planner
City Hall - 4th Floor
3 Washington Street-
Keene, NH 0343

**RE: S-04-22 and SPR-04-22
Timberlane Woods CRD Subdivision
Waiver Request – Letter 2**

Dear Planning Board,

Fieldstone Land Consultants, on behalf of Christopher E. Farris, is submitting these additional waiver requests for Planning Board approval. Based on the Community Development review, we are hereby seeking waivers for the following standards in the Land Development Code (LDC).

Waiver 3 (Parking to the Side/Rear of Buildings); previously submitted via email:

§ 20.14.3.D Site Design and Relationship to Surrounding Community: *States All required off-street parking shall be to the side or rear of buildings....* We are requesting the waiver from the LDC Section 20.14.3.D for the requirement that parking be located to the side or rear of a building. The CRD Subdivision that was submitted has all proposed lots with frontage off Timberlane Drive. Based on the orientation of Building 3, on Proposed Lot #3, the parking is in front of the building. The building directly across the driveway on Proposed Lot #2, will block the view of the parking spaces at Building 3. The view of this building and associated parking is also screened from view of the public way, by the land topography, vegetation and other proposed buildings.

A. Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations; The spirit and intent of the ordinance will be met as the proposed parking will not be visible from a public way. The topography, vegetation, and adjacent building will block this parking from the Timberlane Drive road frontage. Technically this parking will be located to the rear of Building 2.

B. Granting the waiver will not increase the potential for creating adverse impacts to abutters, the community or the environment; The granting of this waiver will not create any adverse impacts to the abutters, community or environment. The parking will be located in a manner that reduces disturbance to the land and spaces face the garages of each building unit. This will eliminate the possibility of headlights shining toward abutting properties, and the parking spaces will not be visible from the public street, Timberlane Drive.

C. Consideration will also be given as to whether strict conformity with the regulations would pose an unnecessary hardship to the applicant; If the regulation was enforced with strict conformity, the applicant would have an unnecessary hardship placed upon them. The hardship would be in the form of re-design, a longer timeframe for approvals, construction scheduling, and disturbing more land to rotate the building and parking to face away from Timberlane Drive.

Waiver 4 (Shared driveways):

§ 19.3.5.A.3.a Design Criteria: *States that all structures shall be accessed from interior streets, rather than from roads bordering the perimeter of the tract; In the event that a waiver is granted, shared driveways shall be incorporated where feasible:* We are requesting a waiver of this section of the LDC that requires interior streets and with the granting of said waiver, will provide shared driveways for the access to the building structures.

A. Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations; The spirit and intent of the CRD Subdivision regulations will be carried out, as the proposed shared driveways will provide access to the building structures. The interior paved driveways are not streets, however, they will provide the same level of access to the building structures as a City street.

B. Granting the waiver will not increase the potential for creating adverse impacts to abutters, the community or the environment; If the waiver is granted, there will not be any adverse impacts to the abutters, community or environment. The proposed shared driveways will be 24 feet in width at the intersection with Timberlane Drive. The shared driveways will provide safe access on and off Timberlane Drive, similar to a City Road. The maintenance of the shared driveways will be covered by the development and not burden the City with maintenance of the driveways.

C. Consideration will also be given as to whether strict conformity with the regulations would pose an unnecessary hardship to the applicant: If the waiver is not granted and strict conformity with regulations is imposed, this will put an unnecessary hardship on the applicant. If the interior access is required to be a “street” it would decrease the available building area, due to the requirement of having a right of way and front setbacks from the right-of-way. The overall density and compact design of the development would be reduced, and likely require the building lots to be larger. If the building lots were larger, the Open Space area would be less than what is proposed.

Thank you for your consideration in granting the waivers outlined above.

Best Regards,
FIELDSTONE LAND CONSULTANTS, PLLC



John Noonan
Project Engineer

CONSERVATION RESIDENTIAL DEVELOPMENT SUBDIVISION

- TAX MAP 515, LOT 15 -

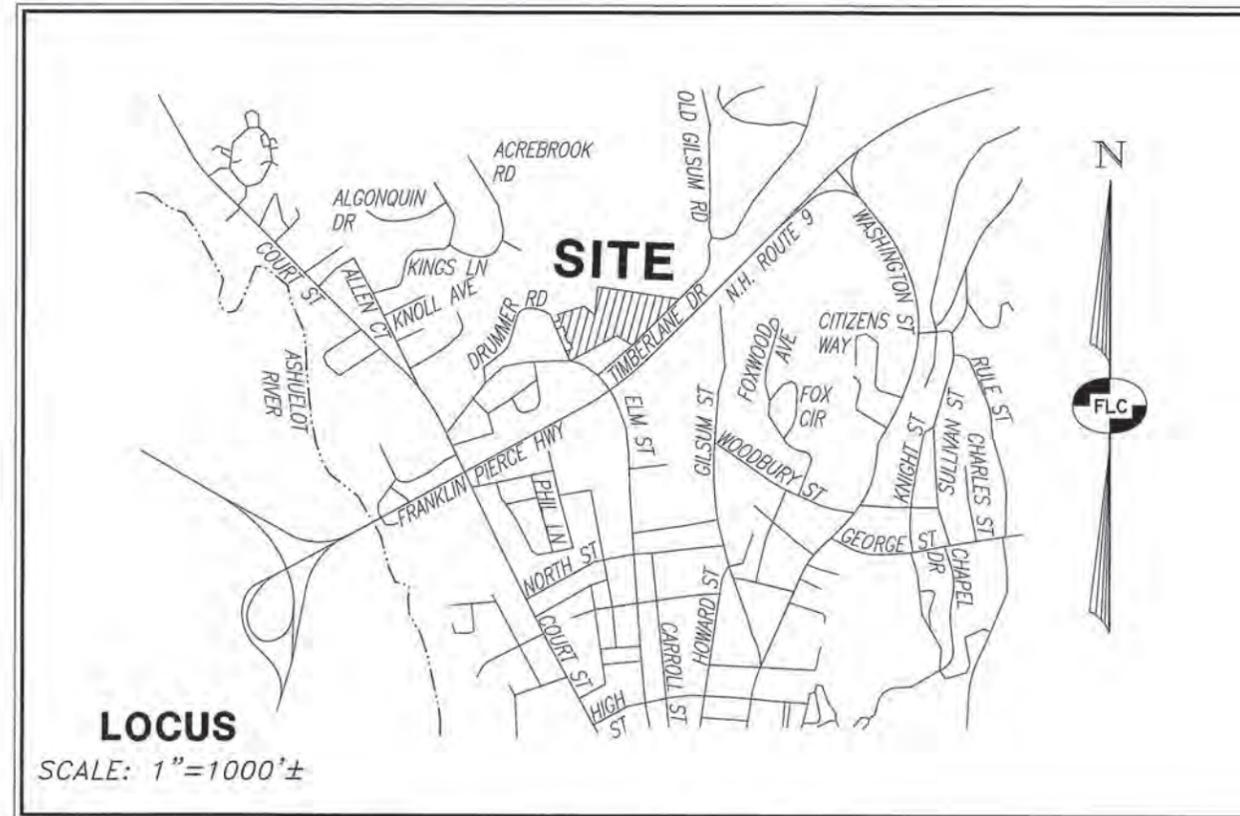
TIMBERLANE WOODS

DRUMMER ROAD & TIMBERLANE DRIVE

KEENE, NH 03431

MARCH 18, 2022

LAST REVISED: JUNE 13, 2022



SHEET INDEX		
PAGE	SHEET	TITLE
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2	EX-1	EXISTING CONDITIONS PLAN
3	SB-1	CRD SUBDIVISION PLAN
4	SP-1	SITE PLAN
5	GR-1	GRADING & DRAINAGE PLAN
6	UT-1	UTILITY PLAN
7	LS-1	LANDSCAPING PLAN
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10	DT-2	CONSTRUCTION DETAILS
11	DT-3	CONSTRUCTION DETAILS
12	DT-4	SEWER DETAILS
13	DT-5	WATER & DRAINAGE DETAILS
14	EH-1	EXHIBIT PLAN - SLOPES
15	EH-2	EXHIBIT PLAN - FIRE ACCESS

APPLICANT AND OWNER:
CHRISTOPHER E. FARRIS
34 ROLLINS ROAD, EPPING, NH 03042

1. THE LOCATION OF THE UTILITIES SHOWN ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PRESERVE ALL UTILITY SERVICES.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL UTILITY COMPANIES AND JURISDICTIONAL AGENCIES PRIOR TO AND DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND PROPOSED WORK PRIOR TO CONSTRUCTION.

CONTACT DIG SAFE
72 HOURS PRIOR
TO CONSTRUCTION
DIGSAFE.COM
811

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FIELDSTONE
LAND CONSULTANTS, PLLC

206 Elm Street, Milford, NH 03055
Phone: (603)-672-5456 Fax: (603)-413-5456
www.FieldstoneLandConsultants.com



LAND-OWNER SIGNATURE

OWNER: _____ DATE: _____

APPROVED BY THE KEENE PLANNING BOARD

ON: _____ CERTIFIED BY _____ AND _____
CHAIRMAN: _____ SECRETARY: _____

REV.	DATE	DESCRIPTION	C/O	DR	CK
B	6/13/22	REVISIONS PER CITY STAFF COMMENTS		JEN	CEB
A	5/9/22	REVISIONS PER CITY STAFF COMMENTS		JEN	CEB

FILE: 3145CV00B.dwg PRD. NO. 3145.00 SHEET: CV-1 PAGE NO. 00 of 123 OF 15

ABUTTERS:

- TAX MAP 102 LOT 1
CITY OF KEENE
3 WASHINGTON STREET
KEENE, NH 03431
(COLD GILSUM ROAD)
(CONSERVATION LAND)
- TAX MAP 103 LOT 1
LEO P. & BONNIE SUE ECHAVARRIA
PMB 417, 83 EMERALD STREET
KEENE, NH 03431
VOL.2424 PG.899 3/30/07
(459 ELM STREET)
- TAX MAP 515 LOT 14
LISA RUSS
JOSEPH DARBY
18 DRUMMER ROAD
KEENE, NH 03431
VOL.1829 PG.780 1/1/84
(19 DRUMMER ROAD)
- TAX MAP 515 LOT 18
RYON H. & CATHILIN R. CLARKE
13 DRUMMER ROAD
KEENE, NH 03431
VOL.3074 PG.505 6/21/19
(11 DRUMMER ROAD)
- TAX MAP 515 LOT 17
DONALD J. DOODY JR.
MARGARET E. ELLIS
11 DRUMMER ROAD
KEENE, NH 03431
VOL.1166 PG.505 11/1/88
(11 DRUMMER ROAD)
- TAX MAP 515 LOT 18
BRIAN D. QUIGLEY
9 DRUMMER ROAD
KEENE, NH 03431
VOL.2828 PG.784 3/26/10
(9 DRUMMER ROAD)
- TAX MAP 102 LOT 41
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302
(OFF ROUTE 9)
- TAX MAP 515-22
ZONE LINE
- 515-14
(SEE REF. PLAN #3)
- 515-15
13.1+/- ACRES
570,000± SQ.FT.
(PER TAX CARD)
- 515-16
(SEE REF. PLAN #3)
- 515-17
(SEE REF. PLAN #3)
- 515-18
(SEE REF. PLAN #3)
- 515-19
- 515-20
- 515-21
- 515-28
- 515-29
- 521-5
- 521-6
- 521-4

- TAX MAP 515 LOT 19
DAVID W. PLOPPERT
10 DRUMMER ROAD
KEENE, NH 03431
VOL.888 PG.57 5/22/75
(10 DRUMMER ROAD)
- TAX MAP 515 LOT 20
JENNIFER J. BROWN, LLC
40 BAINE ROAD
MARLOW, NH 03456
VOL.3085 PG.553 5/21/19
(14 DRUMMER ROAD)
- TAX MAP 515 LOT 21
LIBBY S. LYNN REV. TRUST
22 DRUMMER ROAD
KEENE, NH 03431
VOL.2450 PG.232 8/26/07
(22 DRUMMER ROAD)
- TAX MAP 515 LOT 22
MARTHA M. LANDRY REV. TRUST
51 GREEN ACRES ROAD
KEENE, NH 03431
VOL.2698 PG.290 3/13/15
(51 GREEN ACRES ROAD)
- TAX MAP 515 LOT 28
LUCIA A. BERGERON
479 ELM STREET
KEENE, NH 03431
VOL.2898 PG.735 9/6/15
(479 ELM STREET)
- TAX MAP 515 LOT 29
JUDY A. LEACH
37 MIDDLE STREET
KEENE, NH 03431
VOL.3046 PG.121 11/5/18
(471 ELM STREET)
- TAX MAP 520 LOT 4
MICHELLE C. YOUNG
431 ELM STREET
KEENE, NH 03431
VOL.2128 PG.775 4/16/04
(431 ELM STREET)
- TAX MAP 520 LOT 18
CATHERINE E. WEBSTER
PO BOX 34
CHARLESTOWN, NH 03803
VOL.798 PG.198
(GILSUM STREET)

- TAX MAP 515 LOT 30
SARAH A. PARENTEAU
483 ELM STREET
KEENE, NH 03431
VOL.3045 PG.126 10/31/18
(483 ELM STREET)
- TAX MAP 521 LOT 4
PAUL CHESTER DUBERSKE
GAIL MARIE DUBERSKE
454 ELM STREET
KEENE, NH 03431
VOL.2234 PG.53 4/11/05
(454 ELM STREET)
- TAX MAP 521 LOT 5
SARAH D. VEZZANI
464 ELM STREET
KEENE, NH 03431
VOL.2455 PG.749 8/7/07
(464 ELM STREET)
- TAX MAP 521 LOT 6
FREDERICK H. HAAS III
PO BOX 664
KEENE, NH 03431
VOL.2831 PG.125 7/26/13
(470 ELM STREET)
- TAX MAP 103 LOT 4
URSULA COLE
272 GILSUM STREET
KEENE, NH 03431
VOL.1571 PG.830 8/1/98
(272 GILSUM STREET)
- TAX MAP 103 LOT 5
MAGICHEVA FAMILY TRUST
MARINA V. MAGICHEVA,
TRUSTEE
274 GILSUM STREET
KEENE, NH 03431
VOL.2859 PG.406 9/13/13
(274 GILSUM STREET)

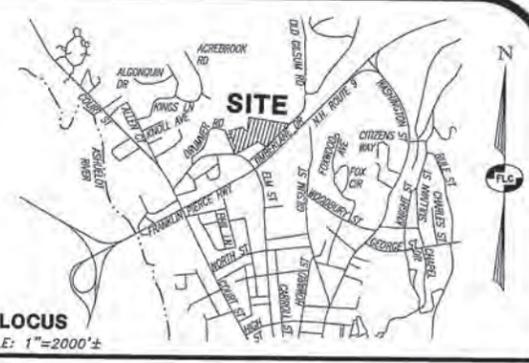
NRCS SOILS LEGEND:
SOURCE: USDA NRCS WEB SOIL SURVEY

15	SEARSPORT MUCKY PEAT
26B	WINDSOR LOAMY SAND 3 TO 8% SLOPES
61C	TURNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX 8 TO 15% SLOPES
61D	TURNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX 15 TO 25% SLOPES
495	OSSEPEE MUCKY PEAT

102-1
(DRUMMER HILL CONSERVATION AREA)

CERTIFICATION:
I HEREBY CERTIFY THAT THE EXISTING IMPROVEMENTS SHOWN ARE THE RESULT OF AN ON-SITE FIELD SURVEY PERFORMED BY FIELDSTONE LAND CONSULTANTS, PLLC DURING THE MONTH OF DECEMBER, 2021.

6/13/22
MICHAEL PLOFF
No. 946
PLANNING ENGINEER



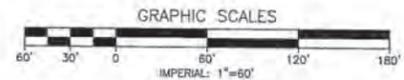
- NOTES:**
- THE OWNER OF RECORD OF TAX MAP 515 PARCEL 15 IS CHRISTOPHER E. FARRIS - 34 ROLLINS ROAD, EPPING, NH 03042. DEED REFERENCE TO THE PARCEL IS VOL.3192 PG.736 DATED SEPTEMBER 17, 2021 IN THE C.C.R.D.
 - THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS FOR TAX MAP 515 PARCEL 15.
 - THE TOTAL AREA OF TAX MAP 515 PARCEL 15 IS 13.1± ACRES OR 570,000 SQ.FT. WITH 817.88 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE AND 160± FT. OF FRONTAGE ALONG DRUMMER ROAD.
 - THE SURFACE FEATURES, SITE TOPOGRAPHY, & BOUNDARY INFORMATION SHOWN ARE THE RESULT OF AN ON-SITE FIELD SURVEY BY THIS OFFICE DURING THE MONTH OF DECEMBER, 2021 TOGETHER WITH REFERENCE PLANS AND DEED CITED HEREON.
 - HORIZONTAL ORIENTATION IS BASED ON THE NH STATE PLANE COORDINATE SYSTEM. VERTICAL DATUM IS NAVD83. BOTH ORIENTATION & DATUM WERE ESTABLISHED BY UPLOADING GPS OBSERVATION TO THE NOAA ONLINE POSITIONING USER SERVICE (OPUS).
 - ZONING FOR THE SITE IS LD - LOW DENSITY. MINIMUM ZONING REQUIREMENTS ARE:
MIN. LOT AREA: 10,000 SQ.FT.
MIN. FRONTAGE: 60 FT.
MIN. FRONT SETBACK: 15 FT.
MIN. REAR SETBACK: 20 FT.
MIN. SIDE SETBACK: 10 FT.
MAX. IMPERVIOUS COVER: 45%
MAX. BUILDING COVERAGE: 35%
 - THE LOCATION OF UTILITIES SHOWN HAVE BEEN COMPILED IN PART FROM PLANS OF RECORD AND FIELD LOCATION. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES.
 - THE SITE IS CURRENTLY VACANT AND SERVICED BY UNDERGROUND ELECTRICITY.
 - THE SUBJECT PARCEL IS NOT LOCATED IN A FLOOD HAZARD AREA AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), HILLSBOROUGH COUNTY, CITY OF KEENE, COMMUNITY NO. 330023, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBERS: 33005C0258E & 33005C0259E, DATED: MAY 23, 2006.
 - THE SITE LIES IN THE SURFACE WATER PROTECTION OVERLAY DISTRICT - A 30 FT. BUFFER SHALL BE MAINTAINED FROM ALL DELINEATED WETLANDS.
 - THE SITE DOES NOT LIE WITHIN THE AQUIFER PROTECTION OVERLAY ZONE PER THE "GROUND-WATER RESOURCES OF THE ASHELOT RIVER BASIN, SOUTHWESTERN, NEW HAMPSHIRE," PREPARED BY HAROLD A. WHITCOMB IN COOPERATION WITH THE NEW HAMPSHIRE WATER RESOURCES BOARD.
 - LOT 515-15 IS SUBJECT TO A SLOPE & DRAINAGE EASEMENT AS DESCRIBED IN VOL.928 PG.819 DATED MARCH 28, 1977 IN THE C.C.R.D. SEE REFERENCE PLAN #4.
 - LOT 515-15 IS SUBJECT TO CURRENT USE TAX AS RECORDED IN BK.3151 PG.1346 DATED 2/7/21 IN THE C.C.R.D.

- REFERENCE PLANS:**
- PLANS OF PROPOSED - FEDERAL AID CONSOLIDATED PRIMARY PROJECT - E-012-1(C) - CONTRACT 1 - N.H. PROJECT NO. P-2962-B - CONTRACT 1 - ROUTE 9 BY-PASS, SCALE: 1"=50', DATED: SEPTEMBER, 1975, PREPARED BY: STATE OF NEW HAMPSHIRE - DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, SHEETS 46 & 47.
 - TWO LOT SUBDIVISION PLAN - PREPARED FOR - KENNETH R. CASTOR, SR. & MARGUERITE L. CASTOR - OF PROPERTY LOCATED IN CITY OF KEENE - COUNTY OF CHESHIRE, STATE OF NEW HAMPSHIRE, SCALE: 1"=50', DATED: MARCH 27, 1995, LAST REVISED: JUNE 9, 1998, PREPARED BY: SVE ASSOCIATES & RECORDED IN PLAN CABINET 12, DRAWER 3, NUMBER 74 IN THE C.C.R.D.
 - UNTITLED PLAN OF CATHERINE E. WEBSTER PROPERTY, SCALE: 1"=40', RECORDED IN PLAN BOOK 20, PAGE 15A IN THE C.C.R.D.
 - PLAN OF LAND OF - CATHERINE E. WEBSTER - IN - KEENE, N.H., SCALE: 1"=50', DATED: MARCH 28, 1977, PREPARED BY: THE STATE OF NEW HAMPSHIRE, AND RECORDED IN PLAN BOOK 38, PAGE 87 IN THE C.C.R.D.

LEGEND:

---	RIGHT-OF-WAY LINE	○ (PIN)	IRON PIN FOUND
---	BOUNDARY LINE	○ (PIN) (F)	PN & CAP FOUND
---	ABUTTING LOT LINE	○ (PIN) (S)	PN & CAP SET
---	BUILDING SETBACK LINE	□ (N.H.C.B.) (F)	NH CONCRETE BOUND FOUND
---	EDGE OF PAVED ROAD	○ (PIN) (F)	IRON PIPE FOUND
---	ASPHALT CURB	○ (PIN) (S)	DRILL HOLE SET
---	10' CONTOUR INTERVAL	● (PIN) (T)	IRON PIN TO BE SET
---	2' CONTOUR INTERVAL	□	CATCH BASIN
---	CHAIN-LINK FENCE	○	DRAIN MANHOLE
---	ZONE LINE	○	SEWER MANHOLE
---	DELINEATED WETLANDS	○	MANHOLE
---	WETLAND BUFFER	○	BOLLARD
---	STONE WALL	○	WATER HYDRANT
---	WATER LINE	○	WATER VALVE
---	SEWER LINE	○	WATER SHUT-OFF
---	ELECTRIC/CABLE PEDESTAL	○	WATER SHUT-OFF
---	TRANSFORMER	○	AREA OF PROHIBITIVE SLOPES (15-20%)
---	SINGLE POST SIGN	○	AREA OF PROHIBITIVE SLOPES (>20%)
---	TEST PIT LOCATION	○	EXISTING BUILDING
---	EXISTING TREE LINE	○	
---	FENCE GATE	○	
---	DRAIN LINE	○	

CERTIFICATION:
WETLANDS WERE DELINEATED IN ACCORDANCE WITH THE US ARMY CORPS OF ENGINEERS 1987 WETLAND DELINEATION MANUAL Y-B-7-1 AND REGIONAL SUPPLEMENTS FOR NORTHEAST AND NORTHCENTRAL REGION AND FIELD INDICATORS FOR HYDRIC SOILS IN NEW ENGLAND BY CHRISTOPHER A. GLUDA, C.W.S. IN NOVEMBER OF 2021.



B	6/13/22	SHEET NUMBER CHANGED	DEB	CEB
A	5/9/22	REVISED PER STAFF COMMENTS OF APRIL 5, 2022	KFB	DEB
REV.	DATE	DESCRIPTION	C/D	DR

EXISTING CONDITIONS PLAN
TAX MAP 515 PARCEL 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE
PREPARED FOR AND LAND OF:
CHRISTOPHER E. FARRIS
34 ROLLINS ROAD EPPING, NH 03042

SCALE: 1" = 60' MARCH 18, 2022

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

206 Elm Street, Milford, NH 03055
Phone: (603) 672-5456 Fax: (603) 413-5456
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FILE: 3145EX00A.dwg PROJ. NO. 3145.00 SHEET: EX-1 PAGE NO. 2 OF 15

ZONING REQUIREMENT CHARTS								
L-D ZONE, CONVENTIONAL	REQUIRED	EXIST. 515-15	NEW 515-15	NEW LOT-1	NEW LOT-2	NEW LOT-3	NEW LOT-4	NEW LOT-5
MIN LOT AREA	10,000 SF	570,000± SF	415,000± SF	14,203 SF	21,018 SF	52,638 SF	40,389 SF	32,302 SF
MIN LOT WIDTH	70 FT	80± FT	80± FT	73.14 FT	100.00 FT	84.92 FT	60.00 FT	246.54 FT
MIN LOT FRONTAGE	60 FT	174.51 FT	174.51 FT	113.15 FT	100.00 FT	117.89 FT	60.00 FT	168.75 FT
MIN FRONT SETBACK	15 FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT
MIN SIDE SETBACK	10 FT	(10) FT	(10) FT	(10) FT	(10) FT	(10) FT	(10) FT	(10) FT
MIN REAR SETBACK	15 FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT
MAX. BUILDING HEIGHT	35 FT	NONE	NONE	31'	31'	31'	31'	31'
MAX. BUILDING COVERAGE	35%	NA	0%	15.2%	10.3%	4.1%	6.4%	6.7%
MIN. OPEN SPACE	55%	100%	100%	56.0%	78.5%	90.9%	79.7%	70.3%
MAX. IMPERVIOUS COVER	45%	0%	0%	42.0%	21.5%	9.1%	20.3%	29.7%

L-D ZONE, CRD SUBDIVISION	REQUIRED	EXIST. 515-15	NEW 515-15	NEW LOT-1	NEW LOT-2	NEW LOT-3	NEW LOT-4	NEW LOT-5
MIN LOT AREA	6,000 SF	570,000± SF	415,000± SF	14,203 SF	21,018 SF	52,638 SF	40,389 SF	32,302 SF
MIN LOT WIDTH	60 FT	80± FT	80± FT	73.14 FT	100.00 FT	84.92 FT	60.00 FT	246.54 FT
MIN LOT FRONTAGE	40 FT	174.51 FT	174.51 FT	113.15 FT	100.00 FT	117.89 FT	60.00 FT	168.75 FT
MIN FRONT SETBACK	30 FT	(30) FT	(30) FT	(30) FT	(30) FT	(30) FT	(30) FT	(30) FT
MIN SIDE SETBACK	20 FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT
MIN REAR SETBACK	20 FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT
MAX. BUILDING COVERAGE	45%	NA	NA	15.2%	10.3%	4.1%	6.4%	6.7%
MAX. IMPERVIOUS COVER	60%	0%	0%	42.0%	21.5%	9.1%	20.3%	29.7%
PRECAUTIONARY SLOPE IMPACT	20,000 SF	NONE	NONE	1100 SF	4235 SF	14955 SF	8365 SF	3485 SF

REFERENCE PLANS:

- PLANS OF PROPOSED - FEDERAL AID CONSOLIDATED PRIMARY PROJECT - F-012-1(3) - CONTRACT 1 - N.H. PROJECT NO. P-2082-3 - CONTRACT 1 - ROUTE 8 BY-PASS, SCALE: 1"=50', DATED: SEPTEMBER, 1975, PREPARED BY: STATE OF NEW HAMPSHIRE - DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, SHEETS 46 & 47.
- TWO LOT SUBDIVISION PLAN - PREPARED FOR - KENNETH R. CASTOR, SR. & - MARGUERITE L. CASTOR - OF PROPERTY LOCATED IN - CITY OF KEENE - COUNTY OF CHESHIRE, STATE OF NEW HAMPSHIRE, SCALE: 1"=50', DATED: MARCH 27, 1998, LAST REVISED: JUNE 9, 1998, PREPARED BY: SVC ASSOCIATES & RECORDED IN PLAN CABINET 12, DRAWER 3, NUMBER 74 IN THE C.C.R.D.
- UNTITLED PLAN OF CATHERINE E. WEBSTER PROPERTY, SCALE: 1"=40', RECORDED IN PLAN BOOK 20, PAGE 15A IN THE C.C.R.D.
- PLAN OF LAND OF - CATHERINE E. WEBSTER - IN - KEENE, N.H., SCALE: 1"=50', DATED: MARCH 28, 1977, PREPARED BY: THE STATE OF NEW HAMPSHIRE, AND RECORDED IN PLAN BOOK 38, PAGE 87 IN THE C.C.R.D.

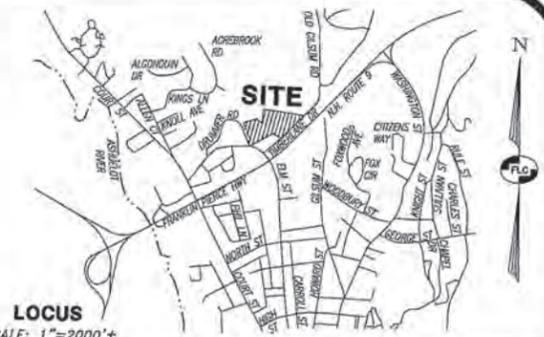
102-1
(DRUMMER HILL CONSERVATION AREA)

CERTIFICATION:

I HEREBY CERTIFY THAT NORTH EASTERLY PORTION OF TAX MAP 515 PARCEL 15 IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND PER THE PRECISION AND ACCURACY STANDARDS FOR AN URBAN CLASSIFICATION SURVEY AS SPECIFIED IN THE NEW HAMPSHIRE LAND SURVEYOR'S ADMINISTRATIVE RULES (LAN 503.04) AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND (1:10,000) ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.



6/13/22



LOCUS
SCALE: 1"=2000±

NOTES:

- THE OWNER OF RECORD OF TAX MAP 515 PARCEL 15 IS CHRISTOPHER E. FARRIS - 34 ROLLINS ROAD, EPPING, NH 03042. DEED REFERENCE TO THE PARCEL IS VOL.3192 PG.736 DATED SEPTEMBER 17, 2021 IN THE C.C.R.D.
- THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED 5-LOT CONSERVATION RESIDENTIAL DEVELOPMENT FOR TAX MAP 515 PARCEL 15.
- THE TOTAL AREA OF EXISTING TAX MAP PARCEL 515-15 IS 13.1± ACRES OR 570,000± SQ.FT. WITH 817.88 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE AND 160± FT. OF FRONTAGE ALONG DRUMMER ROAD. THE PROPOSED AREA OF OPEN SPACE LOT 515-15 IS 9.5± ACRES, OR 415,000± SQ.FT. WITH 180.30 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE. THE PROPOSED AREA OF LOT 1 IS 0.326 ACRES, OR 14,203 SQ.FT. WITH 113.15 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE. THE PROPOSED AREA OF LOT 2 IS 0.483 ACRES, OR 21,018 SQ.FT. WITH 100.00 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE. THE PROPOSED AREA OF LOT 3 IS 1.208 ACRES, OR 52,638 SQ.FT. WITH 117.89 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE. THE PROPOSED AREA OF LOT 4 IS 0.927 ACRES, OR 40,389 SQ.FT. WITH 60.00 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE. THE PROPOSED AREA OF LOT 5 IS 0.616 ACRES, OR 26,821 SQ.FT. WITH 246.54 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE.
- THE SURFACE FEATURES, SITE TOPOGRAPHY, & BOUNDARY INFORMATION SHOWN ARE THE RESULT OF AN ON-SITE FIELD SURVEY BY THIS OFFICE DURING THE MONTH OF DECEMBER, 2021 TOGETHER WITH REFERENCE PLANS AND DEED CITED HEREON AND LIDAR TOPOGRAPHY PROVIDED BY NH GRANIT.
- HORIZONTAL ORIENTATION IS BASED ON THE NH STATE PLANE COORDINATE SYSTEM. VERTICAL DATUM IS NAVD83. BOTH ORIENTATION & DATUM WERE ESTABLISHED BY UPLOADING GPS OBSERVATION TO THE NOAA ONLINE POSITIONING USER SERVICE (OPUS).
- ZONING FOR THE SITE IS LD - LOW DENSITY. SEE THE MINIMUM ZONING REQUIREMENTS CHARTS ON THIS SHEET.
- THE LOCATION OF UTILITIES SHOWN HAVE BEEN COMPILED IN PART FROM PLANS OF RECORD AND FIELD LOCATION. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES.
- THE SITE IS CURRENTLY VACANT AND SERVED BY UNDERGROUND ELECTRICITY.
- THE SUBJECT PARCEL IS NOT LOCATED IN A FLOOD HAZARD AREA AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), HILLSBOROUGH COUNTY, CITY OF KEENE, COMMUNITY NO. 330023, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBERS: 3300502586 & 3300502596, DATED: MAY 23, 2006.
- THE SITE LIES IN THE SURFACE WATER PROTECTION OVERLAY DISTRICT - A 30 FT. BUFFER SHALL BE MAINTAINED FROM ALL DELINEATED WETLANDS.
- THE SITE DOES NOT LIE WITHIN THE AQUIFER PROTECTION OVERLAY ZONE PER THE "GROUND-WATER RESOURCES OF THE ASHUELOT RIVER BASIN, SOUTHWESTERN, NEW HAMPSHIRE," PREPARED BY HAROLD A. WHITCOMB IN COOPERATION WITH THE NEW HAMPSHIRE WATER RESOURCES BOARD.
- EXISTING LOT 515-15 IS SUBJECT TO A SLOPE & DRAINAGE EASEMENT AS DESCRIBED IN VOL.928 PG.818 DATED MARCH 28, 1977 IN THE C.C.R.D. SEE REFERENCE PLAN #4.
- LOT 515-15 IS SUBJECT TO CURRENT USE TAX AS RECORDED IN BK.3151 PG.1346 DATED 2/7/21 IN THE C.C.R.D.



LEGEND:

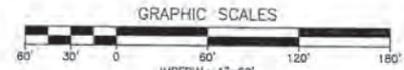
- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- ABUTTING LOT LINE
- BUILDING SETBACK LINE
- EDGE OF PAVED ROAD
- ASPHALT CURB
- 10' CONTOUR INTERVAL
- 2' CONTOUR INTERVAL
- CHAIN-LINK FENCE
- ZONE LINE
- DELINEATED WETLANDS
- WETLAND BUFFER
- STONE WALL
- WATER LINE
- SEWER LINE
- ELECTRIC/CABLE FEDESTAL
- TRANSFORMER
- SINGLE POST SIGN
- FENCE GATE
- DRAIN LINE
- TAX MAP & LOT NUMBER
- IRON PIN FOUND
- FIN & CAP FOUND
- FIN & CAP SET
- N.H.C.B. FOUND
- N.H.C.B. SET
- IRON PIPE FOUND
- DRILL HOLE SET
- IRON PIN TO BE SET
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- MANHOLE
- BOLLARD
- WATER HYDRANT
- WATER VALVE
- WATER SHUT-OFF
- PRIMARY CONSERVATION AREA
- SECONDARY CONSERVATION AREA
- PROPOSED ACCESS & UTILITY EASEMENT
- EXISTING BUILDING

CERTIFICATION:

WETLANDS WERE DELINEATED IN ACCORDANCE WITH THE US ARMY CORPS OF ENGINEERS 1987 WETLAND DELINEATION MANUAL Y-87-1 AND REGIONAL SUPPLEMENTS FOR NORTHEAST AND NORTH-CENTRAL REGION AND FIELD INDICATORS FOR HYDRIC SOILS IN NEW ENGLAND BY CHRISTOPHER A. GUIDA, C.W.S. IN NOVEMBER OF 2021.



DATE: 6/13/22



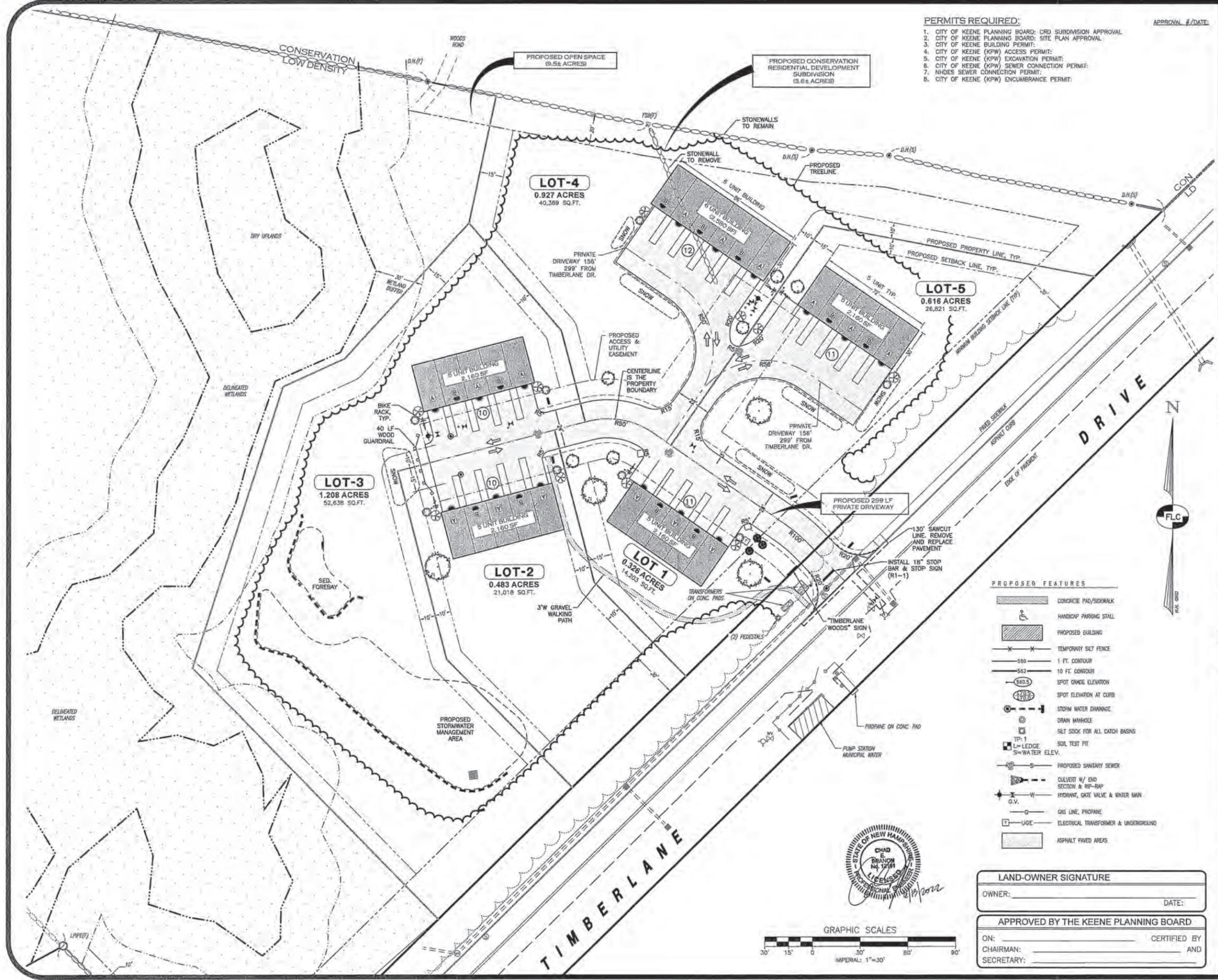
REV.	DATE	DESCRIPTION	C/O	DR	CK
B	6/13/22	PLAN SHEET NUMBER CHANGED		JEN	CEB
A	5/9/22	REVISED PER STAFF COMMENTS OF APRIL 5, 2022	KPB	DEB	CEB

SUBDIVISION PLAN
TAX MAP 515 PARCEL 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE
 PREPARED FOR AND LAND OF:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

SCALE: 1" = 60' MARCH 18, 2022

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

FIELDSTONE
LAND CONSULTANTS, PLLC
 206 Elm Street, Milford, NH 03055
 Phone: (603) 672-5456 Fax: (603) 413-5456
 www.FieldstoneLandConsultants.com



PERMITS REQUIRED:

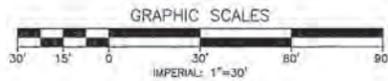
1. CITY OF KEENE PLANNING BOARD: CRD SUBDIVISION APPROVAL
2. CITY OF KEENE PLANNING BOARD: SITE PLAN APPROVAL
3. CITY OF KEENE: BUILDING PERMIT
4. CITY OF KEENE (KPW) ACCESS PERMIT
5. CITY OF KEENE (KPW) EXCAVATION PERMIT
6. CITY OF KEENE (KPW) SEWER CONNECTION PERMIT
7. NHDES SEWER CONNECTION PERMIT
8. CITY OF KEENE (KPW) ENCUMBRANCE PERMIT

APPROVAL #/DATE:

NOTES:

1. THE OWNER OF RECORD OF TAX MAP 515 PARCEL 15 IS CHRISTOPHER E. FARRIS - 34 ROLLINS ROAD, EPPING, NH 03042, DEED REFERENCE TO THE PARCEL IS VOL.3192 PG.736 DATED SEPTEMBER 17, 2021 IN THE C.C.R.D.
2. THE PURPOSE OF THIS PLAN IS TO DEPICT A CONSERVATION RESIDENTIAL DEVELOPMENT SUBDIVISION TO PROVIDE FOR MULTI-FAMILY DWELLING UNITS, KNOWN AS "TIMBERLANE WOODS".
3. THE TOTAL AREA OF TAX MAP 515 PARCEL 15 IS 13.1± ACRES OR 570,000 SQ.FT. WITH 817.89 FT. OF FRONTAGE ALONG TIMBERLANE DRIVE AND 180± FT. OF FRONTAGE ALONG DRUMMER ROAD.
4. THE SURFACE FEATURES, SITE TOPOGRAPHY, & BOUNDARY INFORMATION SHOWN ARE THE RESULT OF AN ONSITE FIELD SURVEY BY THIS OFFICE DURING THE MONTH OF DECEMBER, 2021 TOGETHER WITH REFERENCE PLANS AND DEED CITED HEREON.
5. HORIZONTAL ORIENTATION IS BASED ON THE NH STATE PLANE COORDINATE SYSTEM. VERTICAL DATUM IS NAVD83. BOTH ORIENTATION & DATUM WERE ESTABLISHED BY UPLOADING GPS OBSERVATION TO THE NOAA ONLINE POSITIONING USER SERVICE (OPUS).
6. ZONING FOR THE SITE IS LD - LOW DENSITY. MINIMUM ZONING REQUIREMENTS ARE:
 MIN. LOT AREA: 10,000 SF
 MIN. FRONTAGE: 60 FT
 MIN. FRONT SETBACK: 15 FT
 MIN. REAR SETBACK: 20 FT
 MIN. SIDE SETBACK: 10 FT
 MAX. IMPERVIOUS COVER: 45%
 MAX. BUILDING COVERAGE: 35%
 DIMENSIONAL REQUIREMENTS FOR CONSERVATION RESIDENTIAL DEVELOPMENT SUBDIVISION (LOW DENSITY DISTRICT):
 MIN. TRACT SIZE = 5 ACRES (13.1 ACRES BEFORE SUBDIVISION)
 MIN. TRACT FRONTAGE = 50 FT. (977.88 FT DRUMMER & TIMBERLANE)
 PERIMETER BLDG. SETBACK FROM EXTERNAL ROADS = 30 FT
 PERM. BLDG. SETBACK FROM TRACT BOUNDARIES = 20FT
 MIN. LOT AREA = 6,000 SQ.FT.
 MIN. ROAD FRONTAGE = 40 FT.
 MIN. WIDTH AT BUILDING LINE = 60 FT.
 FRONT SETBACK = 15 FT.
 REAR SETBACK = 15 FT.
 SIDE SETBACK = 10 FT.
 MAXIMUM BUILDING COVERAGE = 45% (11,220/156,816 = 7.2%)
 MAXIMUM IMPERVIOUS COVERAGE (INCLUDING STRUCTURES) = 60% (31,444/156816 = 20.0%)
7. THE LOCATION OF UTILITIES SHOWN HAVE BEEN COMPILED IN PART FROM PLANS OF RECORD AND FIELD LOCATION. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES.
8. THE SITE IS CURRENTLY VACANT AND SERVICED BY UNDERGROUND ELECTRICITY.
9. THE SUBJECT PARCEL IS NOT LOCATED IN A FLOOD HAZARD AREA AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), HILLSBOROUGH COUNTY, CITY OF KEENE, COMMUNITY NO. 330023, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBERS: 33005C0258E & 33005C0259E, DATED: MAY 23, 2008.
10. THE SITE LIES IN THE SURFACE WATER PROTECTION OVERLAY DISTRICT - A 30 FT. BUFFER SHALL BE MAINTAINED FROM ALL DELINEATED WETLANDS.
11. THE SITE DOES NOT LIE WITHIN THE AQUIFER PROTECTION OVERLAY ZONE PER THE "GROUND-WATER RESOURCES OF THE ASHUELOT RIVER BASIN, SOUTHWESTERN, NEW HAMPSHIRE," PREPARED BY HAROLD A. WHITCOMB IN COOPERATION WITH THE NEW HAMPSHIRE WATER RESOURCES BOARD.
12. LOT 515-15 IS SUBJECT TO A SLOPE & DRAINAGE EASEMENT AS DESCRIBED IN VOL.928 PG.819 DATED MARCH 28, 1977 IN THE C.C.R.D. SEE REFERENCE PLAN #4.
13. LOT 515-15 IS SUBJECT TO CURRENT USE TAX AS RECORDED IN BK.3151 PG.1346 DATED 2/7/21 IN THE C.C.R.D.
14. DENSITY CALCULATION (PER TABLE 19-2): (EXIST. TRACT 13.1 AC) / 10,000 SF/UNIT = 57 DWELLING UNITS (26 UNITS, 52 BEDROOMS PROPOSED)
15. PARKING CALCULATION:
 2 SPACES / UNIT (MULTIFAMILY) X 26 UNITS = 52 SPACES REQUIRED
 TOTAL SPACES PROPOSED = 54 (26 OUTDOOR + 26 GARAGE)
16. MINIMUM OPEN SPACE FOR A CONSERVATION RESIDENTIAL DEVELOPMENT SUBDIVISION IS 50%. THE PROVIDED OPEN SPACES IS 72.8% (9.54± ACRES).
17. STUMP DUMPS ARE NOT ALLOWED AS PART OF THE DEVELOPMENT. ALL STUMPS AND DEBRIS MUST BE REMOVED AND DISPOSED OF PROPERLY.
18. THE ADDRESSES OF EACH BUILDING WILL PROVIDED BY PUBLIC WORKS; NOTIFY THE CITY PUBLIC WORKS STAFF ONCE FOUNDATIONS ARE POURED.

- PROPOSED FEATURES**
- CONCRETE PAD/SIDEWALK
 - HANDICAP PARKING STALL
 - PROPOSED BUILDING
 - TEMPORARY SILT FENCE
 - 1 FT. CONTOUR
 - 10 FT. CONTOUR
 - SPOT GRADE ELEVATION
 - SPOT ELEVATION AT CURB
 - STORM WATER DRAINAGE
 - DRAIN MANHOLE
 - SILT SOCK FOR ALL CATCH BASINS
 - SOIL TEST PIT
 - L=LEDGE S=WATER ELEV.
 - PROPOSED SANITARY SEWER
 - CULVERT W/ END SECTION & RP-RAP
 - HYDRANT, GATE VALVE & WATER MAIN
 - GAS LINE, PROPANE
 - ELECTRICAL TRANSFORMER & UNDERGROUND
 - ASPHALT PAVED AREAS



LAND-OWNER SIGNATURE

OWNER: _____ DATE: _____

APPROVED BY THE KEENE PLANNING BOARD

ON: _____ CERTIFIED BY _____ AND _____

CHAIRMAN: _____ SECRETARY: _____

B	6/13/22	REVS PER CITY STAFF COMMENTS	JEN	CEB	
A	5/9/22	REVS PER CITY STAFF COMMENTS	JEN	CEB	
REV.	DATE	DESCRIPTION	C/O	DR	CK

SITE PLAN
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE

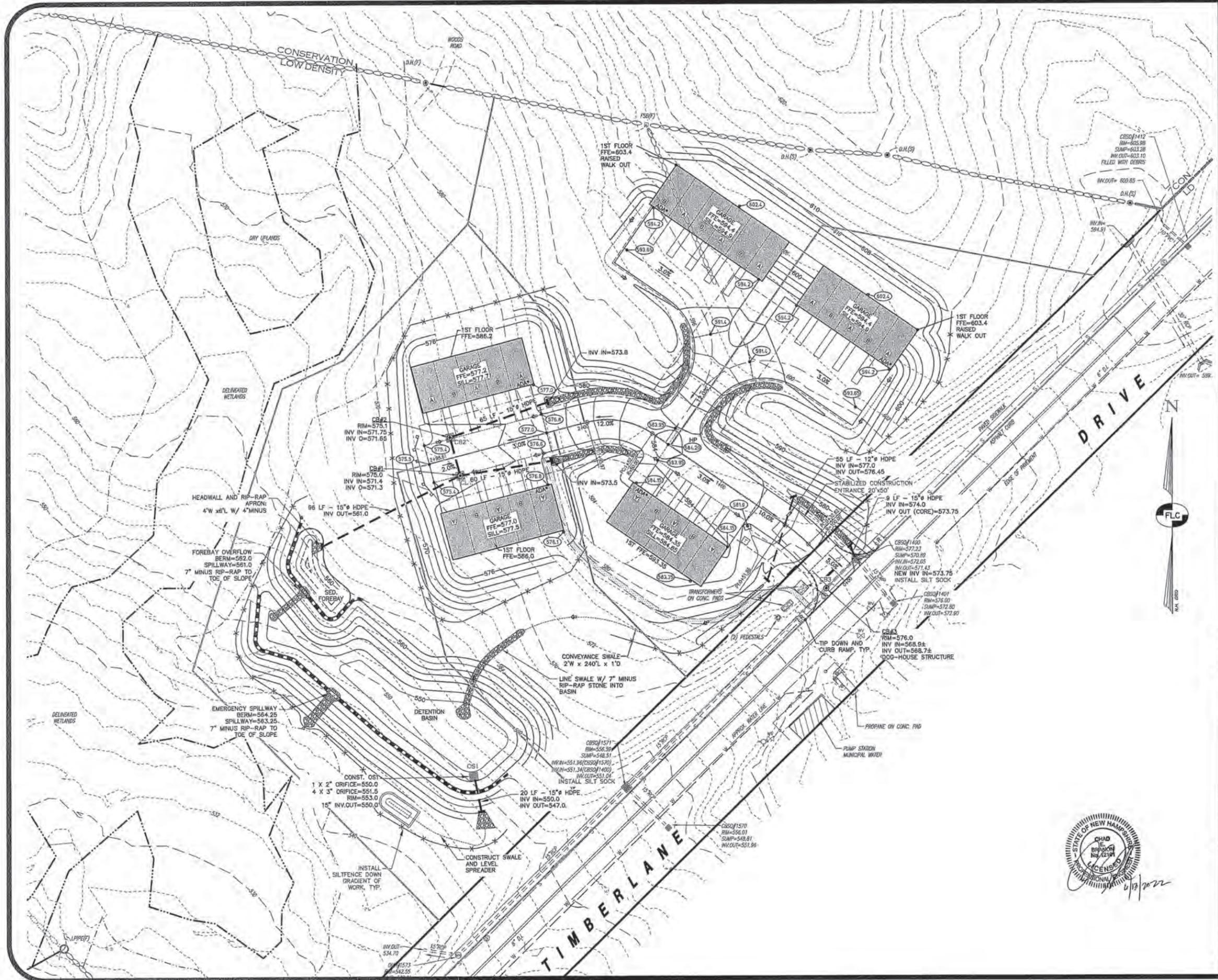
PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

LAND OF:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

SCALE: 1" = 30' MARCH 18, 2022

Surveying + Engineering + Land Planning + Permitting + Septic Designs

206 Elm Street, Milford, NH 03055
 Phone: (603) 672-5456 Fax: (603) 413-5456
 www.FieldstoneLandConsultants.com



- GRADING & DRAINAGE NOTES:**
1. THE PROPOSED DRIVEWAYS ARE PRIVATE, SHARED DRIVEWAYS. CITY STREETS ARE MAX 7% GRADE. RURAL STREETS ARE 9% MAX GRADE.
 2. DRIVEWAY MAXIMUM GRADES ARE 15% PER CITY REGS. TWO SECTIONS OF THE DRIVEWAYS ARE DESIGNED AT 12% MAX GRADE, AND 10% GRADE.
 3. ALL ROAD DITCHES OVER 5% GRADE SHALL HAVE STONE CHECK DAMS AND LINED WITH 4" MINUS RIP RAP STONE.
 4. DUE TO THE CLOSE PROXIMITY OF THE WETLANDS TO THE SITE, THE WETLAND BUFFER MUST BE FLAGGED PRIOR TO INSTALLING SILT FENCE AND STARTING THE SITE GRADING.
 5. UNITS WITH THE DESIGNATION (*ADA) ARE ADA COMPLIANT UNITS WHERE THE EXTERIOR GRADES MEET ADA REGULATIONS.



REV.	DATE	DESCRIPTION	C/O	DR	CK
A	5/9/22	REVS PER CITY STAFF COMMENTS		JEN	CER

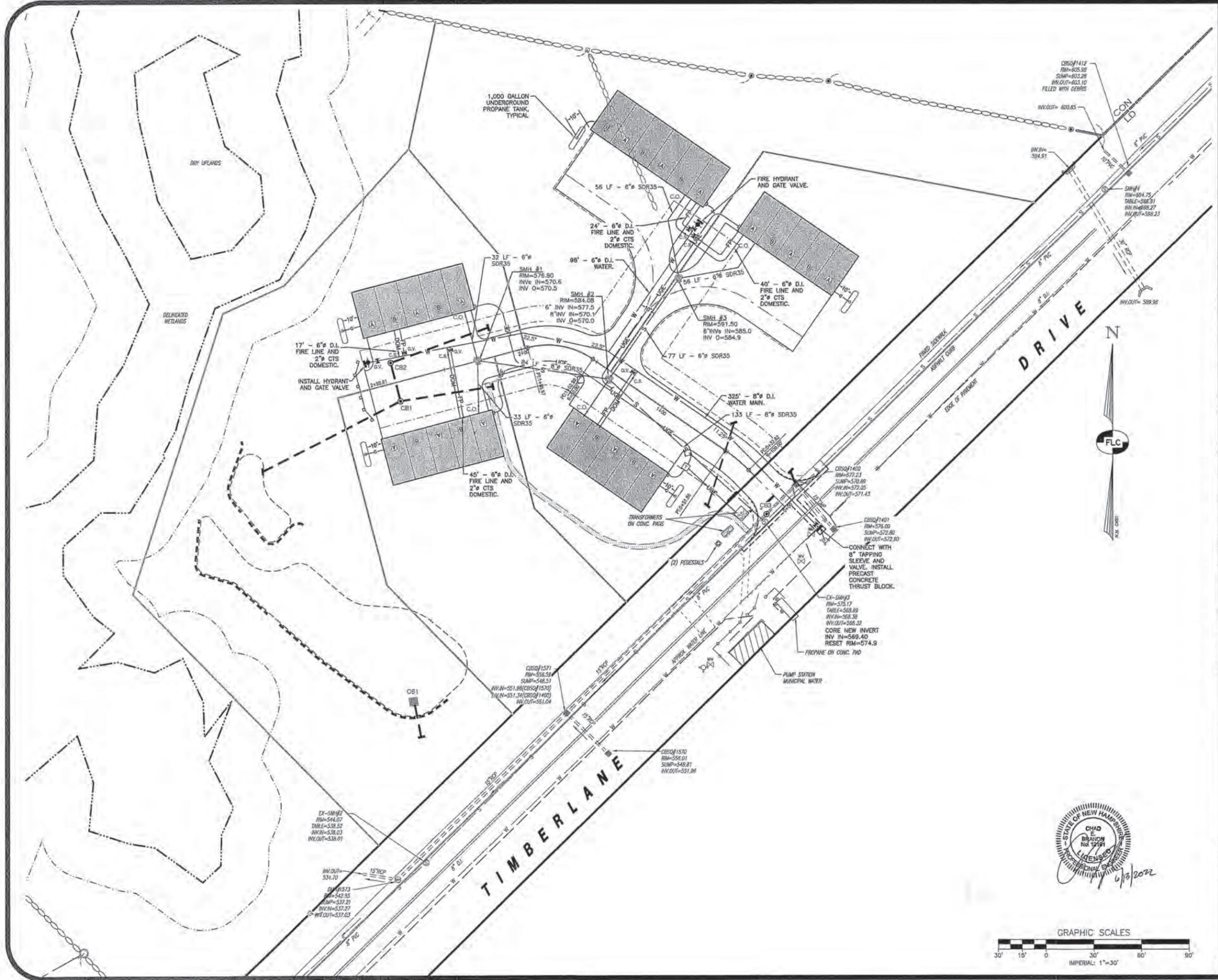
GRADING & DRAINAGE PLAN
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE
 PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042
 LAND OF:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

SCALE: 1" = 30' MARCH 18, 2022

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- UTILITY NOTES:**
- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF KEENE AND SHALL BE BUILT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE CITY OF KEENE DEPARTMENT OF PUBLIC WORKS SPECIFICATIONS FOR ROAD CONSTRUCTION AND SEWERS AND DRAINS AND THE NHDOT STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION APPROVED AND ADOPTED 2010 ARE HEREBY INCORPORATED BY REFERENCE.
 - ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND THE SPECIFICATIONS NOTED ABOVE. ANY ALTERATION OF THIS DESIGN OR CHANGE DURING CONSTRUCTION MAY REQUIRE APPROVAL OF VARIOUS CITY BOARDS OR AGENCIES AND SHALL BE DISCUSSED WITH THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS AND SHALL VERIFY THAT ALL THE INFORMATION SHOWN HEREON IS CONSISTENT, COMPLETE, ACCURATE, AND CAN BE CONSTRUCTED PRIOR TO AND/OR DURING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES, ERRORS, OMISSIONS, OR EXISTING UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION SO THAT REMEDIAL ACTION MAY BE TAKEN BEFORE PROCEEDING WITH THE WORK.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACT "DIGSAFE" AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION (1-888-344-7233)
 - THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE TOWN DEPARTMENTS PRIOR TO CONSTRUCTION TO ARRANGE FOR NECESSARY INSPECTIONS. THE WATER AND SEWER CONNECTIONS IN TIMBERLANE DRIVE WILL REQUIRE AN EXCAVATION PERMIT AND COORDINATION WITH KEENE PUBLIC WORKS.
 - BLASTING, IF REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF KEENE FIRE DEPARTMENT REGULATIONS.
 - ALL DISTURBED NON-PAVED AREAS SHALL BE LOAMED AND SEEDING IMMEDIATELY UPON BEING CONSTRUCTED. THE RETAINING WALLS SHOWN SHALL BE DESIGNED BY OTHERS UNLESS OTHERWISE NOTED.
 - ALL TRAFFIC SIGNS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
 - EXISTING PAVEMENT SHALL BE SAW-CUT AS NECESSARY. THE CONTRACTOR SHALL ENSURE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW PAVEMENT.
 - ALL POWER WORK SHALL CONFORM TO EVERSOURCE STANDARDS. THE POWER SERVICE SIZES SHALL BE VERIFIED BY AN ELECTRICAL ENGINEER AND EVERSOURCE.
 - ALL TELEPHONE WORK SHALL CONFORM TO CONSOLIDATED COMMUNICATIONS SPECIFICATIONS.
 - ALL PROPANE GAS WORK SHALL CONFORM TO THE SUPPLIER'S GAS SPECIFICATIONS. PROVIDE SHUTOFF VALVE AND REGULATOR FOR EACH BUILDING. THE PROPANE TANKS SHALL BE INSTALLED BELOW GRADE.
 - WATER AND SEWER SERVICES TO TIE INTO THE KEENE MUNICIPAL SERVICE. WATER CAPACITY ABOVE THE PUMP STATION IS ADEQUATE FOR FIRE SUPPRESSION, AS VERIFIED BY THE CITY ENGINEER. SEWER CAPACITY ON TIMBERLANE DRIVE IS ADEQUATE, AS VERIFIED BY THE CITY ENGINEER.
 - SEWER SERVICES AT EACH UNIT SHALL HAVE INDIVIDUAL CLEAN-OUTS INSIDE THE BUILDING.
 - CONTRACTOR TO COORDINATE WITH CITY DPW ON SEWER TIE-INS ON TIMBERLANE DRIVE. THE EXISTING SEWER FLOW MUST BE MAINTAINED AND PUMP AROUND MANHOLE DURING TIE IN.
 - CONTRACTOR SHALL OBTAIN STRUCTURAL DESIGN PLANS, DETAILS AND SPECIFICATIONS FOR ANY RETAINING WALLS SHOWN ON THIS PLAN PRIOR TO CONSTRUCTION.
 - ANY MUNICIPAL SERVICES SHALL HAVE AN EASEMENT GRANTED TO THE CITY OF KEENE FOR FUTURE MAINTENANCE OF THE UTILITIES.
 - ALL BUILDINGS WILL HAVE FIRE SUPPRESSION SPRINKLER SYSTEMS AND TWO FIRE HYDRANTS HAVE BEEN PROVIDED (WITHIN 500' OF ALL BUILDINGS). FIRE HOUSE CAN REACH 150' AROUND EACH BUILDING FROM THE DRIVEWAY.
 - ALL BUILDING SERVICE CONNECTIONS SHALL HAVE A PRESSURE REDUCING VALVE (PRV) INSTALLED, AS WATER STREET PRESSURE WILL BE 100 PSI ±.
 - ALL HVAC EQUIPMENT SHALL MEET THE SCREENING STANDARDS OF THE L.D.C.: ROOF MOUNTED EQUIPMENT SHALL BE SETBACK 10' FROM EDGE. GROUND-MOUNTED EQUIPMENT TO BE LOCATED SO AS NOT TO BE VISIBLE FROM THE PUBLIC WAY - SCREEN IF VISIBLE.
- SANITARY SEWER CALCULATIONS:**
- THE SEWER DAILY FLOW RATE: 120 GPD/BEDROOM X 52 BEDROOMS = 6,240 GPD
 - INFILTRATION: 156 LF 6" SDR 35 + 341 LF 8" SDR 35 [(6"x0.030 MI) + (8"x0.065 MI)] x 300 CPD/INCH-MILE = 210 GPD
 - AVERAGE DAILY FLOW: 6240 + 210 = 6,450 GPD
 - PEAK DESIGN FLOW: PEAKING FACTOR = 6 (< 100,000 GPD) 6 x 6450 GPD = 38,700 GPD

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UTILITY PLAN
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE
 PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042
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SCALE: 1" = 30' MARCH 18, 2022

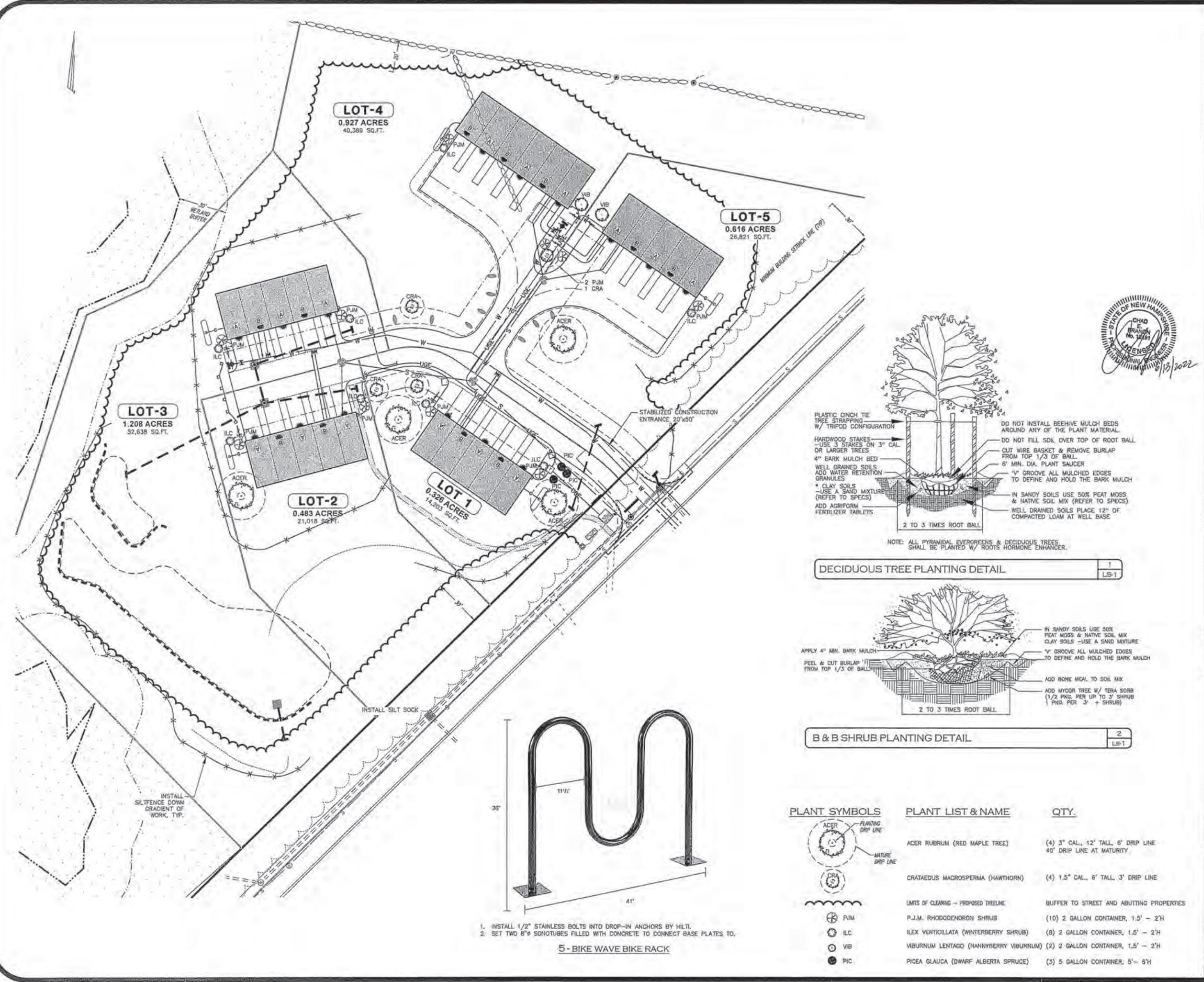
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CHAD E. BRANNON
 LICENSE NO. 12191
 STATE OF NEW HAMPSHIRE
 PROFESSIONAL ENGINEER
 6/13/2022

GRAPHIC SCALES
 30' 15' 0' 30' 60' 90'
 IMPERIAL: 1"=30'



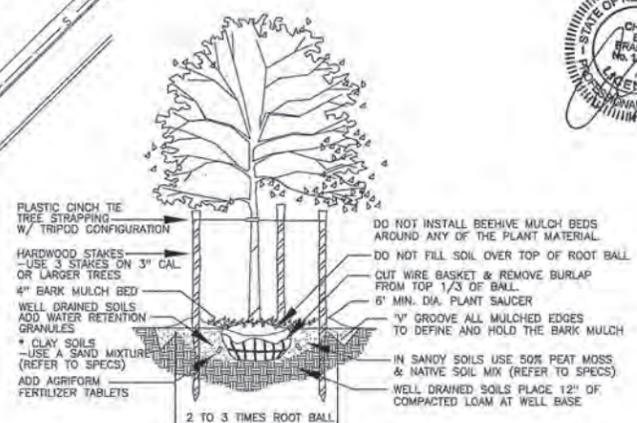
DESIGN NOTES:

1. LANDSCAPING REQUIREMENTS:

	REQUIRED	PROPOSED
TREES	4 TREES	4 TREES
1/10 PARKING SPACE (32 SP)	N/A	4 TREES
PARKING PERIMETER TREES	N/A	2:1-10 TREES 4
ORNAMENTAL TREES		
SHRUBS:		
EVERGREENS	SCREENING	3 (TRANSFORMER)
NON-EVERGREEN	N/A	20
PERIMETER LANDSCAPING:		
PARKING DR PERIMETER	N/A	N/A
FLOWERS & PLANTS	60% AREA	0%

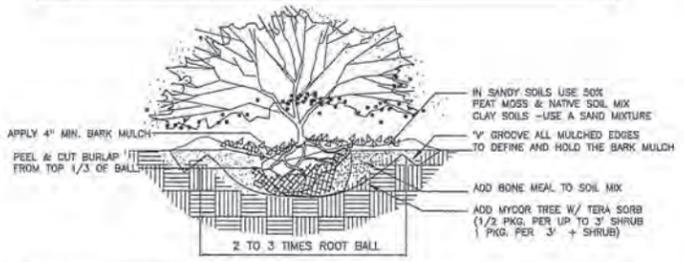
*THERE IS NO PROPOSED PERIMETER PARKING, AS SPACES ALIGN WITH THE GARAGES, SHRUBS ARE PROPOSED BETWEEN THE UNIT DRIVEWAYS.

- LANDSCAPING NOTES:**
- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG-SAFE AND FOR VERIFICATION OF ALL UTILITIES AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICTS PRIOR TO COMMENCING.
 - EXISTING TREES TO REMAIN SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. TEMPORARY FENCING SHALL BE INSTALLED PRIOR TO THE START OF SITE WORK TO PROTECT ROOT MASS.
 - EXISTING TREES THAT ARE TO BE REMOVED, SHALL BE REMOVED ENTIRELY FROM THE SITE, INCLUDING STUMPS. NO STUMP-DUMPS ARE ALLOWED ON SITE.
 - UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED WITHIN THE IMMEDIATE AREA NO PLANT MATERIAL SHALL BE INSTALLED.
 - UNLESS OTHERWISE NOTED OR APPROVED, ALL TREES MUST BE BALLED AND BURLAPPED.
 - ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF "THE AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERMEN.
 - ANY PROPOSED PLANT MATERIAL SUBSTITUTIONS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
 - ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE INSTALLER FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE, ANY PLANT MATERIAL THAT IS SIGNIFICANTLY DAMAGED, MISSING, DISEASE RIDDEN, OR DEAD SHALL BE ABATED WITHIN 1-YEAR OR BEFORE THE END OF THE FOLLOWING PLANTING SEASON, WHICHEVER OCCURS FIRST.
 - IN AREAS OF STONE MULCH LAY 6 MIL SHEETS OF "VISQUEEN" TYPE POLYETHYLENE ON COMPACTED SUBGRADE BEFORE PLACING STONE, MINIMUM 6" OVERLAP. PERFORATE SHEETING IN PLANTING BEDS BEFORE PLACING STONE.
 - UNLESS OTHERWISE NOTED LOAM AND SEED ALL DISTURBED AREAS WITH A MINIMUM 4" OF SUITABLE LOAM. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. SEE SITE PLAN.
 - WHERE APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
 - PLANTS SHALL BE INSTALLED WITHIN ONE YEAR OF COMMENCEMENT OF CONSTRUCTION.
 - ALL LANDSCAPING SHALL BE LOCATED AND MAINTAINED SO AS NOT TO IMPACT THE LINES OF SIGHT AT THE ENTRANCE AND INTERNAL INTERSECTIONS TO PROVIDE SAFE PASSAGE OF PEDESTRIANS, BICYCLISTS, AND MOTORISTS.
 - ALL LANDSCAPED AREAS WILL BE MAINTAINED TO HAVE A SUFFICIENT AMOUNT OF WATER TO MAINTAIN VIABILITY EITHER BY IRRIGATION OR BY OTHER MEANS.
 - PROPOSED PLANTINGS SHALL NOT CONFLICT WITH SNOW STORAGE AREAS, LIGHT FIXTURES OR UNDERGROUND UTILITIES.
 - ALL LANDSCAPING APPROVED AS PART OF THE SITE PLAN SHALL BE CONSIDERED AS ELEMENTS OF THE SITE, IN THE SAME MANNER AS PARKING, BUILDING MATERIALS, AND OTHER SITE DETAILS. ANY CHANGES WILL REQUIRE APPROVAL BY THE OWNER AND CITY COMMUNITY DEVELOPMENT DIRECTOR.
 - BIKE RACKS ARE PROPOSED AT EACH BUILDING AND EACH UNIT HAS A GARAGE TO ALLOW FOR STORAGE.
 - ALL HVAC EQUIPMENT SHALL BE ROOF MOUNTED OR NOT BE VISIBLE FROM THE PUBLIC RIGHT OF WAY.

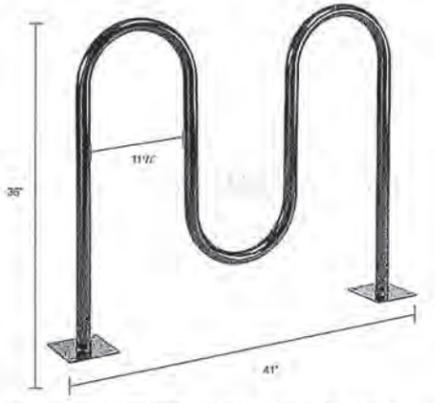


NOTE: ALL PYRAMIDAL EVERGREENS & DECIDUOUS TREES SHALL BE PLANTED W/ ROOTS HORMONE ENHANCER.

DECIDUOUS TREE PLANTING DETAIL 1 LS-1



B & B SHRUB PLANTING DETAIL 2 LS-1



- INSTALL 1/2" STAINLESS BOLTS INTO DROP-IN ANCHORS BY HILT.
 - SET TWO 8" SONOTUBES FILLED WITH CONCRETE TO CONNECT BASE PLATES TO.
- 5 - BIKE WAVE BIKE RACK**

PLANT SYMBOLS

ACER - PLANTING DRIP LINE

ACER - MATURE DRIP LINE

CRA

PJM

ILC

VIB

PIC

PLANT LIST & NAME

ACER RUBRUM (RED MAPLE TREE) (4) 3" CAL., 12' TALL, 6" DRIP LINE 40" DRIP LINE AT MATURITY

CRATAEGUS MACROSPERMA (HAWTHORN) (4) 1.5" CAL., 6' TALL, 3" DRIP LINE

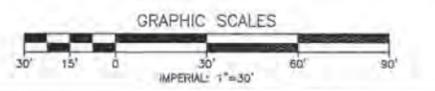
LIMITS OF CLEARING - PROPOSED TREELINE BUFFER TO STREET AND ADJUTING PROPERTIES

P.J.M. RHODODENDRON SHRUB (10) 2 GALLON CONTAINER, 1.5' - 2'H

ILEX VERTICILLATA (WINTERBERRY SHRUB) (8) 2 GALLON CONTAINER, 1.5' - 2'H

VIBURNUM LENTAGO (HANNYBERRY VIBURNUM) (2) 2 GALLON CONTAINER, 1.5' - 2'H

PICEA GLAUCA (DWARF ALBERTA SPRUCE) (3) 5 GALLON CONTAINER, 5' - 6'H



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LANDSCAPING PLAN
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE

PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

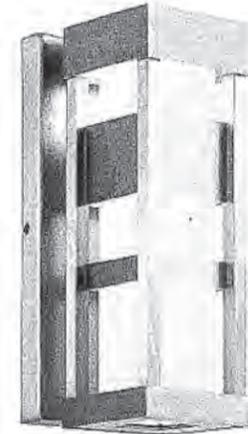
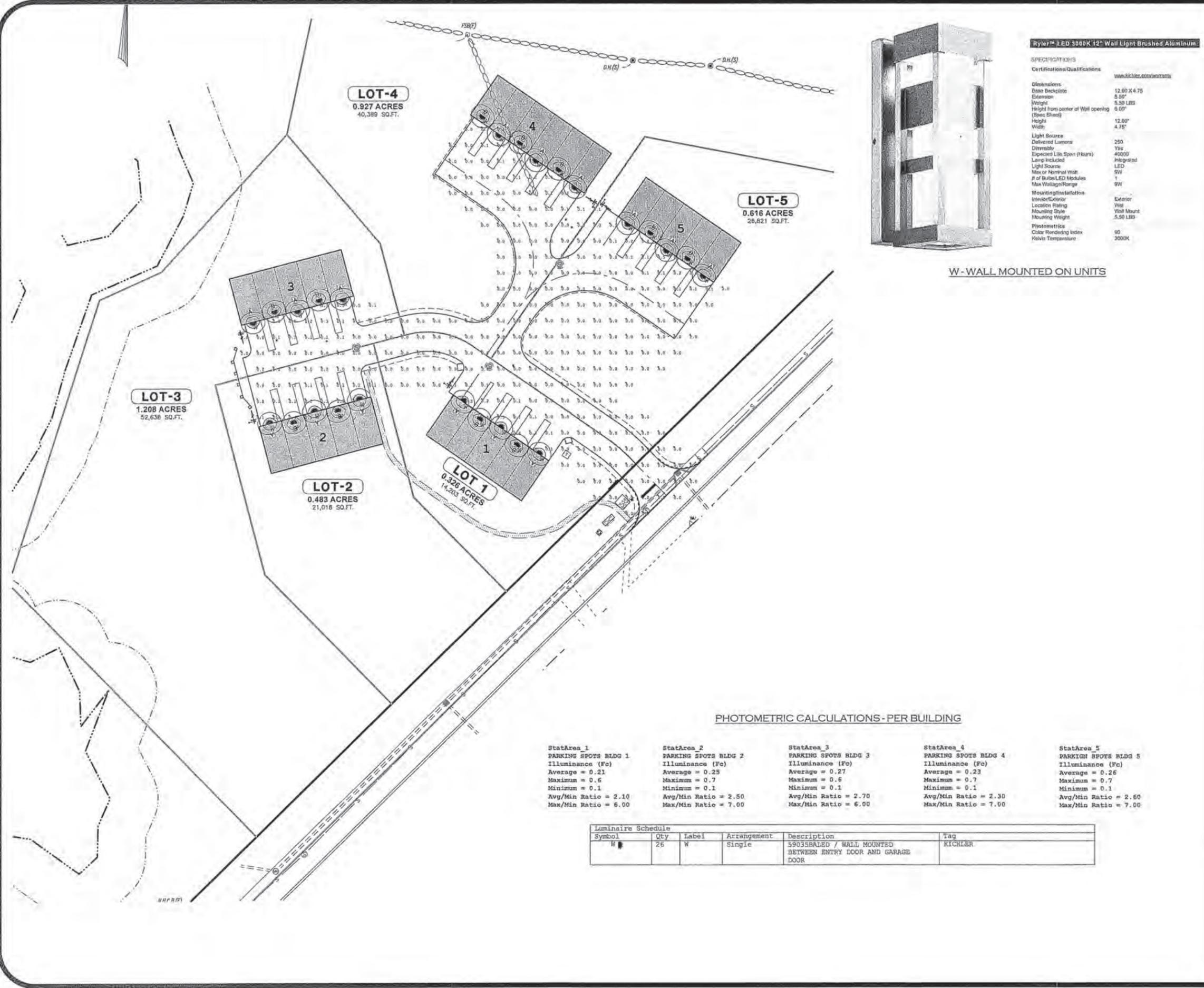
LAND OF:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

SCALE: 1" = 30' MARCH 18, 2022

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Ryler™ LED 3000K 12" Wall Light Brushed Aluminum

SPECIFICATIONS

Certifications/Qualifications: www.kichler.com/entrav

Dimensions: 12.00" X 4.75"
 Base Depth: 5.50"
 Extension: 5.50 LBS
 Weight: 5.50 LBS
 Height from center of Wall opening: 6.00"
 (Spec Sizes)
 Height: 12.00"
 Width: 4.75"

Light Source: 250
 Delivered Lumens: Yes
 Dimmable: 40000
 Expected Life Span (Hours): Integrated
 Lamp Included: LED
 Light Source: 9W
 Max or Nominal Watt: 1
 # of Bulb/LED Modules: 9W
 Max Wallage/Range

Mounting/Installation: Exterior
 Interior/Exterior: Wall Mount
 Location Rating: 5.50 LBS
 Mounting Style: 5.50 LBS
 Mounting Weight

Photometrics: 90
 Color Rendering Index: 3000K
 Kelvin Temperature

W - WALL MOUNTED ON UNITS

PHOTOMETRIC CALCULATIONS - PER BUILDING

StatArea_1	StatArea_2	StatArea_3	StatArea_4	StatArea_5
PARKING SPOTS BLDG 1	PARKING SPOTS BLDG 2	PARKING SPOTS BLDG 3	PARKING SPOTS BLDG 4	PARKING SPOTS BLDG 5
Illuminance (Fc)				
Average = 0.21	Average = 0.25	Average = 0.27	Average = 0.23	Average = 0.26
Maximum = 0.6	Maximum = 0.7	Maximum = 0.6	Maximum = 0.7	Maximum = 0.7
Minimum = 0.1				
Avg/Min Ratio = 2.10	Avg/Min Ratio = 2.50	Avg/Min Ratio = 2.70	Avg/Min Ratio = 2.30	Avg/Min Ratio = 2.60
Max/Min Ratio = 6.00	Max/Min Ratio = 7.00	Max/Min Ratio = 6.00	Max/Min Ratio = 7.00	Max/Min Ratio = 7.00

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	Tag
W	26	W	Single	59035BALED / WALL MOUNTED BETWEEN ENTRY DOOR AND GARAGE DOOR	KICHLER

DESIGN NOTES:

- LIGHTING REQUIREMENTS:

PARKING LOTS	REQUIRED	PROPOSED
AVERAGE	3.5 Fc MAX	0.25 Fc AVG.
MINIMUM	0.33 Fc	0.1 Fc
U. RATIO (AVG/MIN)	5:1	2.5-2.7
MAX AT PROP. LINE	0.1 Fc	0.0 Fc
MAX AT "R.O.W."	1.0 Fc	0.0 Fc
- ALL PROPOSED LIGHTING MUST BE 70 OR GREATER (CRI) COLOR RENDERING INDEX.
- ALL PROPOSED LIGHTING MUST BE 3000 KELVIN COLOR-TEMPERATURE TO MATCH.

LIGHTING NOTES:

- LIGHTING SHALL BE INSTALLED AND ARRANGED SO AS NOT TO REFLECT OR CAUSE GLARE UPON ABUTTING LAND, HIGHWAYS AND ROADS.
- ALL FIXTURES ARE FULL CUTOFF, LED FIXTURES, FLOOD LIGHTING AND UP-LIGHTING ARE PROHIBITED.
- NO SIDEWALKS ARE PROPOSED, ONLY BUILDING MOUNTED LIGHTS ARE PROPOSED.
- MOUNTING HEIGHT OF ALL PROPOSED WALL MOUNT LIGHTING FIXTURES SHALL BE 8 FEET ABOVE FINISH GRADE ON THE BUILDINGS, LOCATED UNDER THE BUILDING OVERHANG.
- ALL LIGHTS ARE TO BE SETUP ON PHOTOCELLS TO AUTOMATICALLY TURN OFF DURING DAYLIGHT HOURS, RESIDENTS WILL CONTROL THE OPERATING HOURS OF THE LIGHTS.
- ALL FIXTURES AND HARDWARE ARE TO BE BRUSHED ALUMINUM IN COLOR TO MATCH.
- LIGHT FIXTURES ARE AVAILABLE THROUGH CHARRON LIGHTING. ANY CHANGE IN FIXTURE MUST BE APPROVED BY THE OWNER AND DESIGN ENGINEER.

CHAD E. BRANNON
 No. 1225
 LICENSED PROFESSIONAL ENGINEER
 STATE OF NEW HAMPSHIRE
 8/18/2022

GRAPHIC SCALES
 30' 15' 0' 30' 60' 90'
 IMPERIAL: 1"=30'

REV.	DATE	DESCRIPTION	C/O	DR	CK

LIGHTING PLAN
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE

PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

LAND OF:
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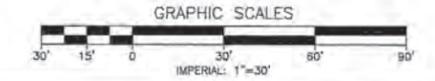
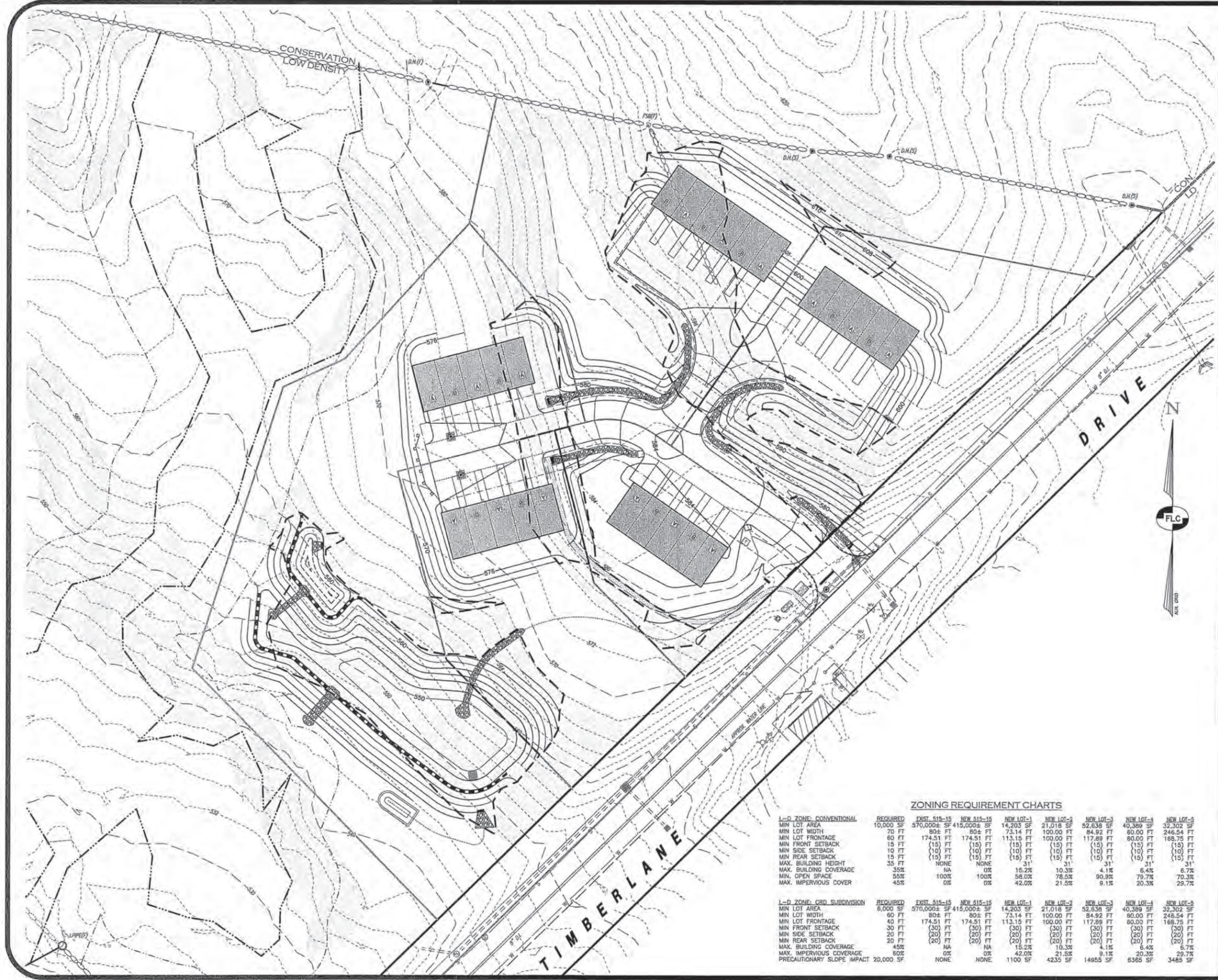
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FILE: 31455PODE.dwg PROJ. NO.: 3145.00 SHEET: LT-1 PAGE NO.: 8 OF 15



REV.	DATE	DESCRIPTION	C/O	DR	CK

EXHIBIT PLAN - SLOPES
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE
 PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042
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SCALE: 1" = 30' JUNE 13, 2022

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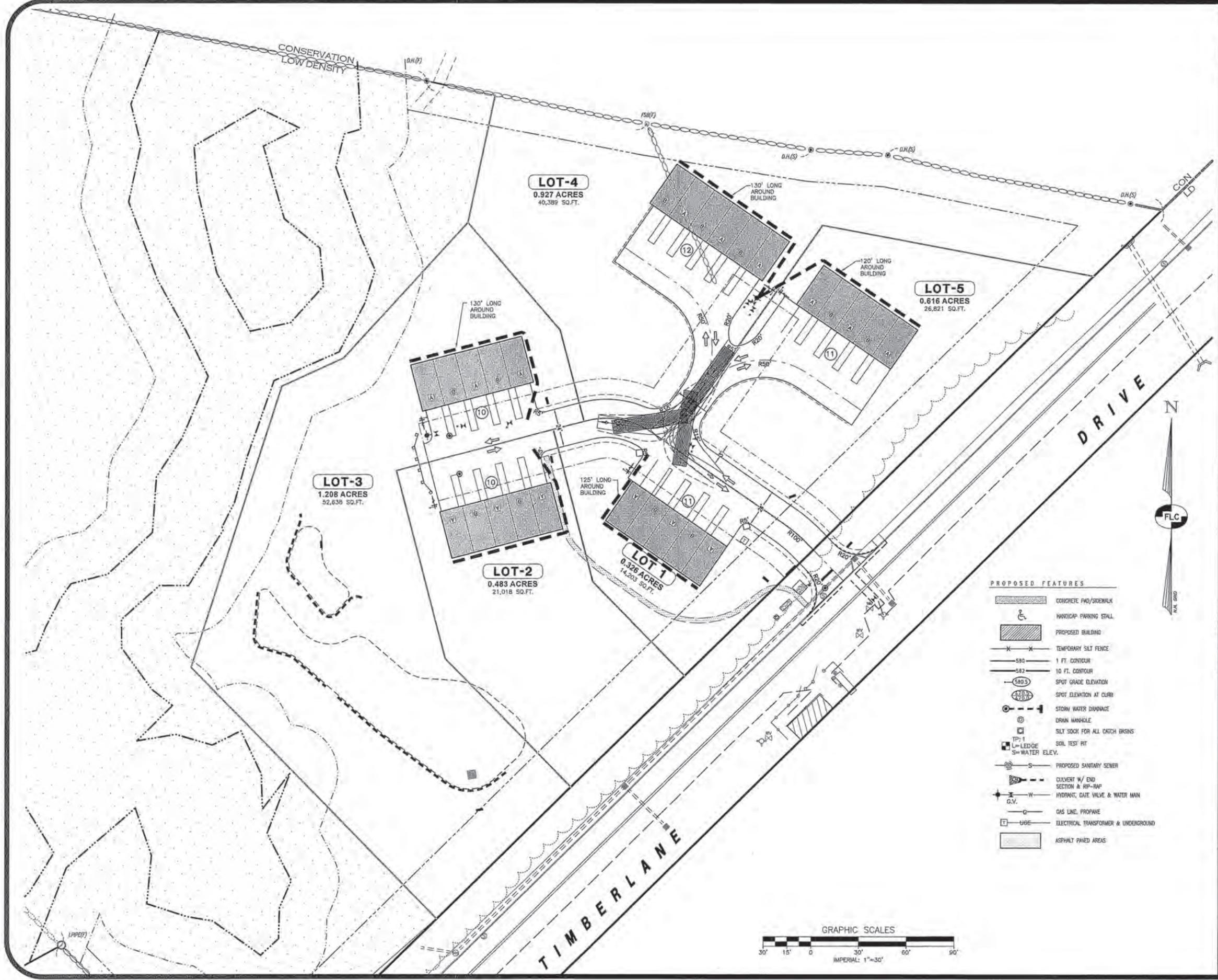
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ZONING REQUIREMENT CHARTS

	REQUIRED	EXIST. 515-15	NEW 515-15	NEW LOT-1	NEW LOT-2	NEW LOT-3	NEW LOT-4	NEW LOT-5
L-D ZONE CONVENTIONAL								
MIN LOT AREA	10,000 SF	570,000± SF	415,000± SF	14,203 SF	21,018 SF	52,638 SF	40,389 SF	32,302 SF
MIN LOT WIDTH	70 FT	80± FT	80± FT	73.14 FT	100.00 FT	84.92 FT	80.00 FT	246.54 FT
MIN LOT FRONTAGE	60 FT	174.51 FT	174.51 FT	113.15 FT	100.00 FT	117.89 FT	80.00 FT	168.75 FT
MIN FRONT SETBACK	15 FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT
MIN SIDE SETBACK	10 FT	(10) FT	(10) FT	(10) FT	(10) FT	(10) FT	(10) FT	(10) FT
MIN REAR SETBACK	15 FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT	(15) FT
MAX. BUILDING HEIGHT	35 FT	NONE	NONE	31'	31'	31'	31'	31'
MAX. BUILDING COVERAGE	35%	NA	0%	15.2%	10.3%	4.1%	6.4%	6.7%
MIN. OPEN SPACE	55%	100%	100%	58.0%	78.5%	90.9%	79.7%	70.3%
MAX. IMPERVIOUS COVER	45%	0%	0%	42.0%	21.5%	9.1%	20.3%	29.7%
L-D ZONE ORD SUBDIVISION								
MIN LOT AREA	6,000 SF	570,000± SF	415,000± SF	14,203 SF	21,018 SF	52,638 SF	40,389 SF	32,302 SF
MIN LOT WIDTH	60 FT	80± FT	80± FT	73.14 FT	100.00 FT	84.92 FT	80.00 FT	246.54 FT
MIN LOT FRONTAGE	40 FT	174.51 FT	174.51 FT	113.15 FT	100.00 FT	117.89 FT	80.00 FT	168.75 FT
MIN FRONT SETBACK	30 FT	(30) FT	(30) FT	(30) FT	(30) FT	(30) FT	(30) FT	(30) FT
MIN SIDE SETBACK	20 FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT
MIN REAR SETBACK	20 FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT	(20) FT
MAX. BUILDING COVERAGE	45%	NA	NA	15.2%	10.3%	4.1%	6.4%	6.7%
MAX. IMPERVIOUS COVERAGE	60%	0%	0%	42.0%	21.5%	9.1%	20.3%	29.7%
PRECAUTIONARY SLOPE IMPACT 20,000 SF		NONE	NONE	1100 SF	4235 SF	14955 SF	8365 SF	3485 SF



- FIRE ACCESS NOTES:**
1. THE FIRE TRUCK SHOWN IS BASED ON DIMENSIONS OF THE KEENE LADDER TRUCK, TOWER 1 AS PROVIDED BY THE KEENE FIRE DEPARTMENT. TRUCKS WILL BE ABLE TO TURN AROUND AT THE INTERSECTION OF THE TWO DRIVEWAYS, AS DEPICTED.
 2. THE DISTANCE OF 150 FEET IS SHOWN AROUND THE BUILDINGS, AS REQUIRED BY KEENE FIRE DEPARTMENT, AS A HOSE WOULD BE LAID OUT.
 3. THE DRIVEWAYS ARE CLEAR FOR A HEIGHT OF 13'-6" OR MORE TO ACCOMMODATE THE FIRE TRUCK.

- PROPOSED FEATURES**
- CONCRETE PAD/SIDEWALK
 - HANDICAP PARKING STALL
 - PROPOSED BUILDING
 - TEMPORARY SILT FENCE
 - 1 FT. CONTOUR
 - 10 FT. CONTOUR
 - SPOT GRADE ELEVATION
 - SPOT ELEVATION AT CURB
 - STORM WATER DRAINAGE
 - DRAIN MANGLE
 - SILT SOCK FOR ALL CATCH BASINS
 - SOIL TEST PIT
 - LEDGE
 - WATER ELEV.
 - PROPOSED SANITARY SEWER
 - CULVERT W/ END SECTION & RIP-RAP
 - HYDRANT, GATE VALVE & WATER MAIN
 - G.V.
 - GAS LINE, PROPANE
 - ELECTRICAL TRANSFORMER & UNDERGROUND
 - ASPHALT PAVED AREAS



REV.	DATE	DESCRIPTION	C/O	DR	CK

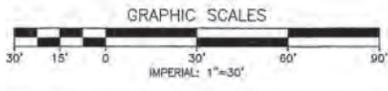
EXHIBIT PLAN - FIRE ACCESS
TAX MAP 515 LOT 15
(DRUMMER ROAD & TIMBERLANE DRIVE)
KEENE, NEW HAMPSHIRE
 PREPARED FOR:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042
 LAND OF:
CHRISTOPHER E. FARRIS
 34 ROLLINS ROAD EPPING, NH 03042

SCALE: 1" = 30' JUNE 13, 2022

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

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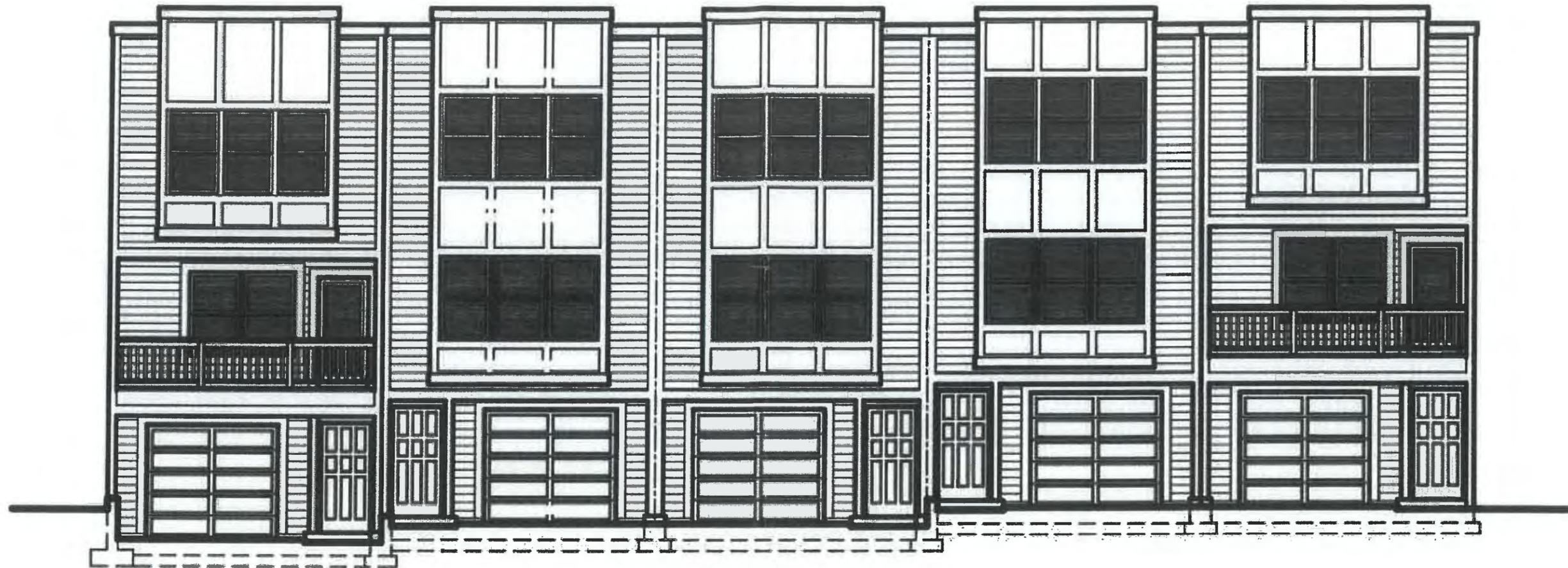
206 Elm Street, Milford, NH 03055
 Phone: (603) 672-5456 Fax: (603) 413-5456
www.FieldstoneLandConsultants.com





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MAR 18 2022
By _____

S-04-22
100 of 123



FRONT ELEVATION

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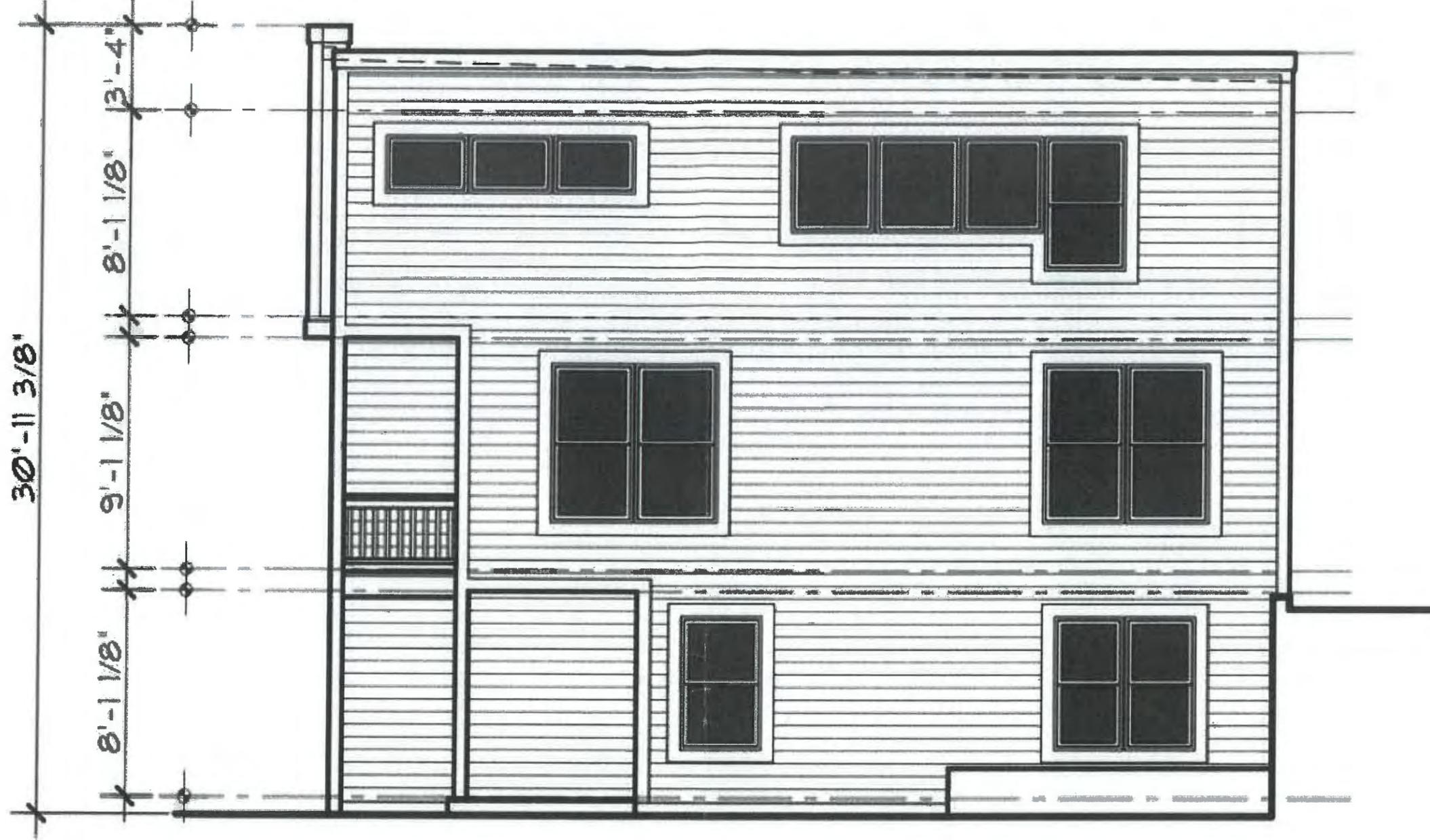
S-04-22



SIDE 2 ELEVATION

RECEIVED
 MAR 18 2022
 By _____

S-04-22



SIDE ELEVATION

RECEIVED
 MAR 18 2022
 By _____

S-04-22



To: Mr. Chad Branon, PE
Fieldstone Land Consultants, PLLC
778 Elm Street, Suite C
Milford, NH 03055

Date: May 12, 2022

Memorandum

Project #: 52846.00

From: Jason R. Plourde, PE, PTP

Re: Traffic Assessment
Proposed Timberlane Drive Townhouses
Keene, New Hampshire

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this memorandum to summarize the anticipated traffic impacts associated with a proposed residential development to be located off Timberlane Drive north of Elm Street in Keene, New Hampshire. As proposed, the development would consist of 26 residential townhouse units. In addition, access would be provided along Timberlane Drive. The site location in relation to the surrounding roadway network is shown on Figure 1.

Timberlane Drive and Elm Street are legislatively categorized as Class V: Local Roads. Therefore, review and approval are expected to be required with respect to traffic through the City of Keene permitting process. In accordance with Article 20.9.1 of the City of Keene's Land Development Code, a traffic study is required for a residential development with 10 or more dwelling units. This evaluation has been conducted to summarize the anticipated traffic impacts associated with the proposed residential development.

Existing Traffic Volumes

Existing traffic volumes in the area were researched from New Hampshire Department of Transportation (NHDOT) historical data in the vicinity of the site. NHDOT conducts a three-year traffic count program along Court Street north of Elm Street and along Court Street north of North Street.^{1, 2} The most recent traffic counts collected and uploaded to the NHDOT traffic-volume database for Court Street north of Elm Street were from July 2020 with the next counts planned for 2023. For the Court Street location north of North Street, the most recent traffic counts collected and uploaded to the NHDOT database were from August 2021 with the next counts planned for 2024. The NHDOT historical data are summarized in Table 1 and are provided in the Appendix.

¹ Count Station 82237181 along Court Street north of Elm Street.

² Count Station 82237159 along Court Street north of North Street.

2 Bedford Farms Drive
Suite 200
Bedford, NH 03110-6532
P 603.391.3900



Site Location Map

Figure 1



0 250 500 Feet

Table 1 – Existing Traffic-Volume Summary

Location/Time Period	Daily Traffic Volume (vpd) ^a	Peak Hour Traffic Volume (vph) ^b	K-Factor ^c
Court Street north of Elm Street ^d			
Weekday Daily	9,905		
Weekday AM Peak		712	7.2
Weekday PM Peak		810	8.2
Saturday Daily	7,557		
Saturday Peak		671	8.9
Safford Drive east of Old Homestead Highway (NH Route 32) ^e			
Weekday Daily	10,985		
Weekday AM Peak		786	7.2
Weekday PM Peak		896	8.2
Saturday Daily	7,321		
Saturday Peak		641	8.8

^a In vehicles per day.

^b In vehicles per hour.

^c Percent of average daily traffic occurring during the peak hour.

^d Traffic counts collected between Saturday, July 18, 2020, and Thursday, July 23, 2020 (Count Station 82237181).

^e Traffic counts collected between Saturday, August 7, 2021, and Thursday, July 12, 2021 (Count Station 82237159).

As shown, traffic volumes along Court Street north of Elm Street experienced the highest peak hour demands between 11:00 AM and 12:00 PM during the weekday morning and on a Saturday, and between 3:00 and 4:00 PM during the weekday evening. In addition, traffic volumes along Court Street north of North Street were the highest between 7:00 and 8:00 AM during the weekday morning, between 4:00 and 5:00 PM during the weekday evening, and between 10:00 and 11:00 AM on a Saturday.

Many rural and urban roadways experience a K-factor that falls between 9.0 and 10.0. The K-factor may exceed 10.0 for roadways with heavy peak traffic demand.³ As shown, the K-factors for both locations along Court Street are less

³ Dowling, Richard, et al. Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual. National Cooperative Highway Research Program Report 825, Washington, DC: National Academy of Sciences, 2016.



than 10.0, which suggests that traffic volumes along the Court Street corridor may have a relatively even distribution of traffic throughout the day or throughout a peak period that last more than 1 hour.

Build Conditions

For purposes of this Traffic Assessment, the proposed development program evaluated consists of constructing 26 residential townhouse units. A full access driveway would be constructed on Timberlane Drive.

Trip Generation

To estimate the volume of traffic to be generated by the proposed project, trip rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual⁴ were researched. The trip-generation summary is provided in Table 2 with the trip-generation calculations provided in the Appendix. As shown, the proposed residential development is estimated to generate 10 trips (2 entering and 8 exiting) during the weekday AM peak hour, 13 trips (8 entering and 5 exiting) during the weekday PM peak hour, and 11 trips (6 entering and 5 exiting) during the Saturday peak hour.

In accordance with ITE methodologies,⁵ a development may have an impact if the addition of site trips would increase peak hour traffic volumes on an intersection approach by 100 vehicles or more. In addition, NHDOT guidance⁶ suggests that a development estimated to generate 100 vehicles per hour or more (total of entering and exiting trips) through an intersection may result in a change in vehicular operations (i.e., noticeably drop level of service or increase volume-to-capacity [v/c] ratios). In general, traffic increases less than these thresholds could be attributed to the fluctuation of vehicles due to driver patterns that occur during the day, on different days of a week, or different months of a year.

⁴ Institute of Transportation Engineers. Trip Generation Manual, 11th ed. Washington, DC, Sept. 2021.

⁵ Transportation Impact Analyses for Site Development: An ITE Proposed Recommended Practice. Washington, DC: Institute of Transportation Engineers, 2010.

⁶ Bollinger, Robert E. Inter-Department Communication. New Hampshire Department of Transportation, Bureau of Traffic. 17 Feb. 2010.

Table 2 – Trip-Generation Summary

Time Period/Direction	Estimated Site Trips ^a
Weekday Daily	
Enter	88
Exit	88
Total	176
Weekday AM Peak Hour	
Enter	2
Exit	8
Total	10
Weekday PM Peak Hour	
Enter	8
Exit	5
Total	13
Saturday Daily	
Enter	60
Exit	60
Total	120
Saturday Peak Hour	
Enter	6
Exit	5
Total	11

^a ITE Land Use Code 220 (Multifamily Housing [Low-Rise]) for 26 units.

Site Trip Impacts

With the proposed residential development to be located along Timberlane Drive, motorists would be able to access the site along Timberlane Drive via Court Street to the north and south, Elm Street to the south, and Old Gilsum Road to the north. For planning purposes in order to provide a conservative (worse-case) scenario, the site trips were distributed along the adjacent roadway network with all site trips traveling through the Court Street and Elm Street



intersection. At this intersection, the site trips were then evenly distributed with 50 percent to/from the north and 50 percent to/from the south.

Based on the traffic-generation and distribution estimates for the proposed residential development, the site trips were assigned to the adjacent roadway network. The project-generated traffic volumes are shown on Figure 2 for the weekday AM, weekday PM, and Saturday peak hours.

As shown, the proposed development would increase traffic volumes along Court Street north of Elm Street in the range of 5 to 6 vehicles per hour (1 additional vehicle/10-12 minutes) and along Court Street south of Elm Street in the range of 5 to 7 vehicles per hour (1 additional vehicle/8.6-12 minutes). As shown in Table 2 and on Figure 2, standard traffic engineering practice suggests that the proposed residential development would be expected to result in negligible impacts to the adjacent roadway system.

Summary of Findings

In summary, standard traffic engineering practice suggests that the vehicular trips associated with the proposed 26 townhouses would have negligible impacts to the adjacent roadway system during the weekday AM, weekday PM, and Saturday peak hours. The total site trips estimated for the proposed development do not meet the ITE and NHDOT guidelines for which developments may have a noticeable impact.

Storm Water Management Report

TIMBERLANE WOODS

CRD SUBDIVISION

Project Location:

Tax Map 515, Lot 15
Timberlane Drive
Keene, NH 03431

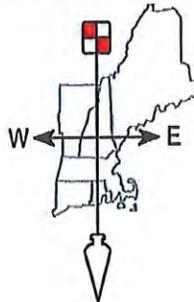
Prepared for:

Farris Development, LLC
34 Rollins Road
Epping, NH 03042
Project #3145.00

Date: March 18, 2022

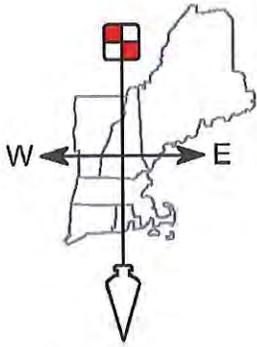


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www.FieldstoneLandConsultants.com

STORM WATER MANAGEMENT REPORT TIMBERLANE WOODS – MULTI-FAMILY KEENE, NEW HAMPSHIRE

Prepared for:
Farris Development LLC

March 18, 2022

I) INTRODUCTION

This stormwater management report was conducted for a proposed site development known as Timberlane Woods in Keene NH. The property is located on Tax Map Lot 515-15 with frontage on Timberlane Drive and Drummer Road. The proposal is to subdivide the lot into six lots as a Conservation Residential Development (CRD) Subdivision. Five of the lots will be residential building lots and the sixth lot will be placed into a conservation easement. A private road will provide access to the subdivision, with two driveways branching off to the northern two lots.

The purpose of this report is to analyze the qualitative and quantitative impacts of the proposed development on stormwater runoff. The objective of the proposed stormwater management system is to mitigate any increases resulting from the proposed development and to meet the drainage guidelines set forth in the City of Keene Land Development Code.

II) SITE DESCRIPTION (EXISTING)

The existing Tax Map Lot 515-15 has 570, 000 square feet or 13.1+/- acres with 817.88 feet of frontage along Timberlane Drive, and an additional 160 +/- feet along Drummer Road. The parcel is currently undeveloped and entirely wooded with forested wetlands towards the Drummer Road side of the property. The property abuts the Drummer Hill Conservation area to the north and the west.

NRCS soil survey maps indicate that the dominant soils present on the site consist of Searsport Mucky Peat (HSG D), Windsor Loamy Sand (HSG A), Turnbridge-Lyman-Rock outcrop complex (HSG C), and Ossipee Mucky Peat (HSG D). The development area is located completely within the Turnbridge-Lyman-Rock outcrop complex soils, per NRCS, with a listed Ksat value of 0.6 in/hour. These Hydrologic Group (HSG) are based on the Ksat Values for New Hampshire Soils, as used by NHDES. Field examination was conducted with test pit excavations in the development area only, which found sands, gravels, and stony soils. Ledge and refusal were encountered in the excavations. The estimated seasonal high-water table varied from 48" to 84" across the test pits, and percolation rates were consistent between 4-6 min/inch.

III) METHODOLOGY

The quantity of runoff and the conveyance of that flow through the site are determined using the software package HydroCAD r 10.10.6a by HydroCAD Software Solutions, LLC. HydroCAD is a computer program for modeling storm water hydrology based on the Soil Conservation Service (SCS) TR-20 method, combined with standard hydraulics calculations used to model detention basins and culverts.

Stormwater management systems are designed in accordance with the methodology for the "Best Management Practices" (BMP's), as outlined in the New Hampshire Storm Water Manual, Volume 2.

IV) DRAINAGE DESIGN

In accordance with the City of Keene and NHDES standards, there will be no increase in the peak flow rate of surface runoff. In order to demonstrate this, the two (2), ten (10), and fifty (50) year frequency storm events have been evaluated using a Type III, 24-hour storm distribution. These design storms have been analyzed to compare the Pre and Post-Development peak flow rates for the site (see comparison table).

Pre-Development Drainage Conditions:

The Pre-Development Drainage Area Plan outlines the two areas where water flows off the property. The first observation point is the catch basin (CBSQ#1571) in Timberlane Drive, which is part of the municipal stormwater drainage system. The second observation point is the wetland complex to the southwest, within the Open Space lot. These two areas are modeled as Observation Points, OP 1 and OP 2, in the drainage report. A third observation point is modeled as a Summary of all off-site stormwater, shown as SUM.

Post-Development Drainage Conditions:

The proposed drainage systems were designed to capture runoff from the buildings and paved areas, and direct the flow to stormwater management systems. There are 9 Subcatchments modeled in the post-development condition.

The default saturated conductivity rate (Ksat) for Turnbridge-Lyman-Rock outcrop complex soils is 0.6 in/hour for the low end in the C-horizon. An exfiltration rate of 0.3 in/hr was used for the infiltration systems, which provides a factor of safety of 2.0. The test pits in this area had a field measured percolation rate of 4 - 6 min/in.

The drainage system has been designed to collect the stormwater runoff from most of the new impervious surfaces on-site and direct it to the proposed stormwater management systems. The majority of the site will drain to the detention basin, so water will runoff in the same manner as in the existing condition. The net result is that virtually all of the new paved areas will receive

qualitative treatment and there will be a reduction of peak rates of runoff leaving this site for all storm events.

V) SUMMARY

The intent of the stormwater management system for this project is to address the qualitative and quantitative aspects of the stormwater runoff so that there are no downstream adverse impacts created by the project. To mitigate the resulting increases in runoff volume and peak rates due to the development of Lot 515-15, this project proposes that a stormwater management system consisting of three (3) catch basins, four (4) driveway culverts, one (1) treatment swale, one (1) level spreader, and one (1) detention basin to be constructed. The net result is that the new buildings and paved areas will receive qualitative treatment and there will be no increase in the peak rates of runoff leaving the site.

The stormwater management design for this project therefore complies with the stormwater standards set forth in the City of Keene's Land Development Code.

The following table is a summary of the attached calculations and show a comparison of the peak flow rates at the outlet point for the site. The values presented are based on pre- and post-development conditions.

Table 1.1: Peak Flow Rates (CFS)/Volume (AF) to OBSERVATION POINT 1 (OP1)

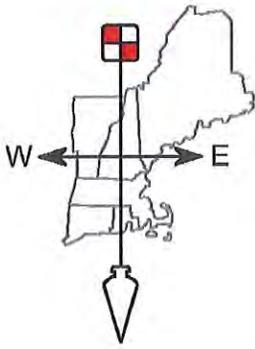
STORM FREQUENCY	PRE-DEV. RUNOFF (CFS/AF)	POST-DEV. RUNOFF (CFS/AF)	CHANGE (CFS/AF)
2-YEAR	0.93/0.108	0.49/0.06	-0.44/-0.048
10-YEAR	2.14/0.234	0.99/0.116	-1.15/-0.118
50-YEAR	4.22/0.453	1.79/0.210	-2.34 /-0.243

Table 1.2: Peak Flow Rates (CFS)/Volume (AF) to OBSERVATION POINT 2 (OP2)

STORM FREQUENCY	PRE-DEV. RUNOFF (CFS/AF)	POST-DEV. RUNOFF (CFS/AF)	CHANGE (CFS/AF)
2-YEAR	0.91/0.102	0.60/0.166	-0.31/0.064
10-YEAR	2.35/0.234	1.93/0.386	-0.42/0.152
50-YEAR	4.92/0.474	4.82/0.795	-0.1 /0.321

Table 1.3: Peak Flow Rates (CFS)/Volume (AF) to SUMMARY (SUM) – TOTAL OFFSITE FLOW

STORM FREQUENCY	PRE-DEV. RUNOFF (CFS/AF)	POST-DEV. RUNOFF (CFS/AF)	CHANGE (CFS/AF)
2-YEAR	1.82/0.210	1.08/0.225	-0.74/0.015
10-YEAR	4.42/0.468	2.90/0.502	-1.52/0.034
50-YEAR	8.97/0.927	6.61/1.005	-2.36/0.078



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3145.00 – TIMBERLANE WOODS SEWER FLOW CALCULATIONS

From Metcalf & Eddy/AECOM, "Wastewater Engineering Treatment and Resource Recovery", 5th Edition:

Table 3-2: Apartment - 120 gpd/bedroom

ON-SITE GRAVITY SEWER = 156 LF (0.030 MI) 6" PVC + 341 LF (0.065 MI) 8" PVC

PROPOSED USE

26 UNITS (2 Bedroom): 52 Bedrooms for all five buildings

DESIGN FLOW

52 Bedrooms x 120 GPD/Bed = 6,240 GPD

Infiltration Allowance = [(0.030)(6)+(0.065)(8)]x300 GPD/PIPM = 210 GPD

Average Daily Flow = 6,450 GPD

Apply Peaking Factor of 6 for design flow

Peak Design Flow = 6 x 6,450 GPD 38,700 GPD

PIPE CAPACITY: $Q = (1.486/n)AR^{2/3}S^{1/2}$

38,700 GPD = 0.039 MGD X 1.54722865 CFS/MGD = **0.06 CFS**

For Proposed 8" PVC: A = 0.36 sq. ft., R = 0.34 ft., S = 0.004 ft./ft.

$Q = (1.486/.010)(0.36)(0.34^{2/3})(0.004^{1/2}) = 1.61 \text{ CFS} > .06 \text{ CFS}; \text{ Factor of Safety} = 27$

AT SMH 1780 ON ELM STREET, THE SEWER GOES FROM 8" TO 6". SEWER FLOW DATA WAS COLLECTED TO VERIFY THE PIPE CAPACITY DOWN STREAM OF THE PROPOSED DEVELOPMENT.

PIPE CAPACITY AT SMH 1780 (6" ACP) ON ELM ST.:

0.039 MGD (Proposed Development) + 0.115 MGD (Existing Daily Peak on Elm St) = 0.154 MGD

0.154 MGD X 1.54722865 CFS/MGD = **0.24 CFS PROPOSED**

$Q = (1.486/.010)(0.196)(0.25^{2/3})(0.01^{1/2}) = 1.15 \text{ CFS} > 0.24 \text{ CFS}; \text{ Factor of Safety} = 4.8$

The proposed development's sewer load will not exceed the capacity of the City sewer where the line size decreases from 8 inch to 6 inch at SMH 1780. This is based on the attached sewer flow data by Flow Assessment Services.



Fieldstone Land Consultants, PLLC
206 Elm Street
Milford, NH 03055
Attn: John Noonan

May 26, 2022

Re: Keene, NH
Flow Monitoring
April – May 2022

Dear Mr. Noonan,

This letter is written to present the flow monitoring data collected in Keene, NH. The meter was installed on 04/27/22. This letter presents the data from 04/27/22 to 05/16/22. The meter was removed 05/16/22.

Site configuration information:

Site	Location	Meter
1780	526 Elm Street	Level Meter installed with a 6" Palmer- Bowlus Flume in an existing 8" diameter line.

The Level Meter senses depth. This depth information is stored in the meter's memory. The recorded data is uploaded from the flow meters with a laptop computer. During the installation, maintenance visits and removal, the depth and velocity information is confirmed and calibration measurements are noted.

This report contains a summary flow report and flow analysis graph for the meter site. The summary flow report presents minimum, peak and total daily flow based on the recorded 5-minute interval readings. The flow analysis graph data is presented averaged hourly to make it easier to visualize the overall flow pattern during the monitoring period.

Additionally, this report contains a meter site investigation sketch for the meter site.

The final data is also included in Excel format in its recorded 5-minute intervals. All data is recorded and presented in Eastern Standard Time.

No rainfall data was collected during this project.

If you have any questions or require anything additional, please feel free to contact me via email or phone.

Sincerely,

A handwritten signature in cursive script that reads "Margaret Fryer".

Margaret Fryer
Data Analyst



KEENE PLANNING BOARD

DRAFT Rules of Procedure

1. Authority, Adoption, & Amendment

- 1.1. *Authority.* These Rules of Procedure for the City of Keene Planning Board (“Rules”) are adopted under the authority of New Hampshire Revised Statutes Annotated (“RSA”), 676:1, and may be amended from time to time. These Rules supplement the application procedures set forth in Article 25 of the Keene Land Development Code.
- 1.2. *Adoption.* The Keene Planning Board Rules of Procedure shall be adopted by a simple majority vote of all Planning Board members at a regular meeting of the Board. The Rules of Procedure shall be effective upon adoption and when the Rules have been signed by a simple majority of the Planning Board and placed on file with the City Clerk for public inspection.
- 1.3. *Amendment.* The Keene Planning Board Rules of Procedure may be amended in the same manner as the initial adoption.

2. Membership

- 2.1. *Membership.* In accordance with state law, the Keene Planning Board (“Board”) shall be composed of nine members. One of the members of the Board shall be the Mayor or the Mayor’s designee, one of the members shall be an administrative official appointed by the Mayor, one of the members shall be a member of City Council selected by the Council, and the remaining six members of the Board shall be appointed by the Mayor.
- 2.2. *Terms of Office.* All regular Board members and alternates shall be appointed for terms of three years. The terms of office shall commence on the first secular day of January and end on the last secular day of December three (3) years subsequent. The terms of office shall continue until successors have been appointed and qualified.
- 2.3. *Alternate Members.* In accordance with RSA 673:6, up to five alternate members may be appointed by the Mayor. Alternate members may participate in meetings of the Board as a nonvoting member.
- 2.4. *Vacancies.* Vacancies in membership shall be filled by appointment of the Mayor for the unexpired balance of the term.

2.5. *Officers.* The Board shall elect by majority vote a Chair and Vice Chair on the first meeting of the new calendar year. It shall be the responsibility of the Chair to preside over all meetings and hearings, appoint Planning Board members to committees and groups as directed by the Board, represent the Board before other bodies, and to undertake such other duties as may be asked by the Board. It shall further be the duty of the Chair to officially sign all subdivisions, site plans, and permits approved by the Board. The Vice-Chair shall preside in the absence of the Chair and shall have the full powers of the Chair on matters that come before the Board during the absence of the Chair.

3. Steering Committee & Subcommittees

3.1. *Steering Committee.* The Planning Board Steering Committee shall be comprised of the Chair, Vice Chair, and a third member that shall be elected annually by a majority vote of the Board at the first meeting of the new calendar year. It shall be the responsibility of the Steering Committee to consult with and advise the Community Development Director or their designee regarding the Planning Board's agenda and formal Planning Board site visits in connection with any application before the Board. The Steering Committee meeting schedule shall be adopted at the first meeting of the new calendar year, and may be modified from time to time.

3.2. *Subcommittees.* The Board may create subcommittees as necessary to assist in its operations, which shall be advisory to the Board. Subcommittees shall be created by vote of the Board for a stated purpose, identifying the specific Board members appointed, with the purpose and membership included in the minutes of the Board. Non-Board members shall not be appointed to subcommittees. Subcommittees are public bodies under RSA 91-A, and are subject to all of the requirements applicable to the Board under the foregoing Rules of Procedure, including prior public notice of meeting dates, times and meeting locations which are accessible to the public, and keeping and submitting appropriate minutes within the time periods stated above.

4. Meetings

4.1. *Regular Meetings.* The Board shall normally hold a regulatory meeting each month. At the first meeting of each new calendar year, the Board shall establish a calendar of meetings which may be modified from time to time. The Board may hold such other meetings or workshops as it deems necessary and appropriate. The meetings of the Board shall normally be conducted in accordance with Roberts Rules of Order, unless otherwise stipulated or agreed upon by the Board. Regulatory matters such as subdivisions, site plans, permit applications, and driveway applications shall be considered by the Board in accordance with specific Board regulations regarding those matters.

4.2. *Non-Public Session.* The Board may not enter a non-public session without prior notice to, and the presence of, City Staff at the meeting. In the event of a requirement to enter into non-public session, a majority of members present at a Board meeting may, by roll call, vote to go into non-public session in accordance with RSA 91-A:3. The motion shall state the specific statutory basis relied upon for the non-public session. All persons

who are not Board members qualified to participate in the discussion shall leave the meeting, unless specifically requested to remain. No action or decision with respect to the matter shall be taken in non-public session. Minutes of the non-public sessions shall be taken and the minutes shall be publicly disclosed within seventy-two (72) hours unless, by recorded vote of two-thirds (2/3) of the members present, the minutes are sealed in accordance with RSA 91-A:3. For all meetings held in nonpublic session, where the minutes or decisions were determined to not be subject to full public disclosure, a list of such minutes or decisions shall be kept and this list shall be made available as soon as practicable for public disclosure. This list shall identify the public body and include the date and time of the meeting in nonpublic session, the specific exemption which is relied upon as foundation for the nonpublic session, the date of the decision to withhold the minutes or decisions from public disclosure, and the date of any subsequent decision, if any, to make the minutes or decisions available for public disclosure.

- 4.3. *Agenda.* The meeting agenda shall be prepared by the Community Development Director or their designee (“Director”) in consultation with the Steering Committee or the Chair, although the Board shall retain the right to adjust that agenda during the course of its meeting. Items to be placed on the meeting agenda must be received by the Director a minimum of five (5) business days prior to the scheduled meeting. No subject matter that is not on the agenda shall be discussed at the meeting, but shall be referenced under New Business and shall be placed on the agenda for discussion at the next regular meeting.
- 4.4. *Quorum.* A quorum shall consist of five members, including alternates sitting in place of regular members. Board business shall not be conducted in the absence of a quorum. Whenever a regular Planning Board member is absent or disqualified, the Chair shall designate an alternate to act in the absent or disqualified member’s place; except that only the alternate designated for the City Council shall serve in place of that member. Unless the appointed alternate member becomes unable to continue to participate, the alternate member so appointed should continue to serve in the place of the absent regular member if a matter under consideration by the Board extends over multiple meetings, and/or until that matter has been completed.
- 4.5. *Remote Participation.* A Board member may participate by telephone or other electronic communication (“remotely”) with the approval of the Board when the member’s attendance is not reasonably practical, the reason for absence is stated in the minutes, the remote member states where they are physically located, and who is present in that location with them. All participants, including the public, must be able to hear, read and discern the meeting discussion. Members participating remotely may vote, but shall not count toward quorum. All votes must be taken by roll call. The Presiding Officer shall be physically present at the meeting location specified in the meeting notice.
- 4.6. *Order of Business.* The business of all regular meetings of the Keene Planning Board shall be transacted in the following order: (1) call to order; (2) roll call of attendance; (3) acceptance of minutes of the preceding meeting; (4) non-binding consultations, application reviews, public hearings, discussions, and decisions; (5) reports and other business, including requests for advice and consideration; and (6) adjournment. The Chair of the Planning Board may permit any item of business to be taken out of order

unless there is an objection by a Board member, in which case such item of business may be taken out of order only by a majority vote.

4.7. *Presiding Officer.* The Chair shall preside over the meeting and call the members to order. In case of absence of the Chair, if a quorum is determined to be present, the Board shall proceed with the Vice-Chair acting as the presiding officer. In case of absence of both the Chair and Vice Chair, if a quorum is determined to be present, the Board shall proceed to elect a Board member, by majority vote of those present, as Temporary Chair of the meeting until the presiding officer appears.

4.8. *Right of Floor.* The Chair or Presiding Officer shall control the meeting. When recognized by the Chair, a member of the Board, applicant, or member of the public, shall respectfully address the members of the Board and shall confine themselves to the question under debate, avoid personal comments, and refrain from impugning the motives of any other individual's argument or vote. The Chair shall act on all proper motions for which there is a second.

5. Motions, Voting, & Conflict of Interest

5.1. *Motions in General.* Unless otherwise indicated in these Rules of Procedure, a motion that is duly seconded shall be carried when a simple majority of Commission members present vote in the affirmative.

5.2. *Tie Vote.* In case of a tie vote on any motion or recommendation, said motion or recommendation shall be deemed defeated.

5.3. *Conflict of Interest.* A member of the Planning Board shall not participate in deciding nor shall they sit upon the hearing of any question which the Board is to decide in a quasi-judicial capacity if that member has a direct personal or pecuniary interest in the outcome which differs from the interest of other citizens, or if that member would be disqualified for any cause to act as a juror upon the trial of the same matter in any action at law. Reasons for disqualification do not include exemption from service as a juror, or knowledge of the facts involved gained in the performance of the member's official duties.

When uncertainty arises as to the application of the above standard to a Board member in particular circumstances, the Board shall, upon the request of that member or another member of the Board, vote on the question of whether that member should be disqualified. Any such request and vote shall be made prior to or at the commencement of any required public hearing. Such a vote shall be advisory and non-binding, and may not be requested by persons other than Board members.

If a member is disqualified or is unable to act in any particular case pending before the Board, the Chair shall designate an alternate to act in the member's place.

6. Records, Communications, & Board Conduct

6.1. *Minutes.* Minutes of all Board meetings shall be kept in accordance with RSA 91-A:2. The official minutes of the Board shall be those minutes, which are in writing, which

have been reviewed and voted upon and approved by a majority of the Board. Once approved, meeting minutes shall be immediately filed with the City Clerk. Any recordings of Board meetings are for administrative convenience only, and are not the official minutes of the Board.

- 6.2. *Correspondence.* All correspondence shall be addressed to the Chair. The Board shall only accept, introduce, place on the Agenda, and/or act upon written correspondence by applicants, representatives or agents of applicants, abutters, and other parties that are signed by the drafter or representative or agent of the drafter. The correspondence must provide the mailing address and residential/commercial address, if different, of the drafter or drafter's agent or representative. Correspondence addressed to Planning Board members that are of a personal or argumentative nature shall not be accepted, introduced, or acted upon by the Board. Any correspondence directly to a member of the Board relating to a matter before the Board must be provided to the Staff Liaison for compliance with this paragraph and for inclusion in the record.
- 6.3. *Electronic Communication.* Email and other electronic communications among the Board or between the Board and Staff Liaison shall be used only for the transmittal of administrative matters such as scheduling or the transmittal of information to be acted upon at the public meeting. Board business shall not be conducted in any manner other than at a duly noticed public meeting.
- 6.4. *Board Conduct.* Board members shall use caution in entering into any discussion of a project coming before the Board other than at a regularly scheduled meeting of the Board. Board members shall not accept phone calls or packets of information from applicants or their representatives, or from anyone other than the Community Development Department except at Board meetings. Anyone wishing to present information to Board members should be directed to provide that information through the normal channel of the Community Development Department, where a full public record of all information transmitted to the Board can be kept.

7. Coordination with Other Boards

- 7.1. *Joint Committee of the Planning Board and Planning, Licenses and Development Committee.* The Planning Board shall hold at least one joint meeting annually with the City Council Planning, Licenses and Development Committee ("Joint Committee") to discuss and review the Master Plan.
- 7.2. *Joint Meetings.* Pursuant to RSA 676:2; an applicant seeking approval from the Planning Board and another land use board(s) may petition the Planning Board and the other land use board(s) to hold a joint meeting or hearing when the subject matter is within the responsibilities of those boards. Similarly, the Planning Board shall have the authority on its own initiative to request a joint meeting with any other land use board(s). Each land use board so petitioned shall have the discretion as to whether or not to hold a joint meeting with any other land use board. The following rules shall apply to all joint hearings:

- 7.2.1. The Chairperson of the Planning Board along with the chairperson(s) of the other land use board(s) shall mutually determine who shall chair the joint meeting.
 - 7.2.2. The Rules of Procedure for the joint meeting shall be governed by the land use board that chairs the meeting.
 - 7.2.3. Every board or commission shall be responsible for rendering a decision on the subject matter that is within its own jurisdiction.
- 7.3. *Coordination with other boards.* The Planning Board may hold joint meetings with other City Boards and Commissions to discuss matters of mutual interest, including but not limited to the City Council Finance, Organization, and Personnel Committee, to discuss both the Capital Improvement Program and the annual-operating budget of the Board; the Zoning Board of Adjustment to discuss the Zoning Ordinance and other matters of mutual interest; and the Conservation Commission to discuss the Open Space Plan and other matters of mutual interest.

8. Statutory Duties

- 8.1. *Zoning Ordinance & Amendments.* The Joint Committee of the Planning Board and the Planning, Licenses and Development Committee has the authority to make recommendations to City Council on all proposed changes to the Land Development Code (LDC), including changes to the Zoning Map or text of the Zoning Regulations. For any proposed change to the Zoning Map or text of the Zoning Regulations, the Joint Committee shall hold a public workshop in accordance with Section 25.3 of Article 25 of the LDC.
- 8.2. *Master Plan.* In accordance with the provisions of RSA 674:1-4, the Board is required to prepare and revise as necessary a Master Plan.
 - 8.2.1. *Schedule for Review and Updates.* In consideration of the provisions of RSA 674:2 (VIII), and to assure that the Master Plan remains a useful decision tool, it shall be a policy of the Board to review the entire Master Plan every five (5) years and use its best efforts to update every ten (10) years. The Board shall work directly with the Community Development Department, Planning, Licenses and Development Committee of the City Council, and the City Manager to maintain a schedule of Master Plan review.
 - 8.2.2. *Review and Adoption by City Council.* In order to assure that the City Council fully understands and supports the Master Plan, the Planning Board shall seek Council review and adoption of the Master Plan prior to Board adoption. Prior to adoption of revisions or new sections of the Master Plan, the Board shall hold a public hearing, in accordance with the requirements of State law.
- 8.3. *Capital Improvement Plan.* The Planning Board shall review the Capital Improvement Plan (CIP) every two years, and recommend revisions or modifications of that Plan to the City Council. The principal purpose of Board review and comment shall be to assure, to the degree possible, that the CIP reflects the principals and priorities of the Master Plan.

9. Minor Project Review Committee (MPRC)

- 9.1. *Authority.* The Planning Board has the authority to delegate its site review powers and duties in regard to minor site plans to a committee of technically qualified administrators chosen by the planning board in accordance with RSA 674:43(III). The process and procedures for this committee, which shall be known as the Minor Project Review Committee (MPRC), are set forth in Article 25 of the Keene Land Development Code.
- 9.2. *Establishment.* The Minor Project Review Committee was formed by the Planning Board and the City Council through Ordinance O-2020-10B (adopted May 20, 2021 and effective September 1, 2021), which established the City of Keene Land Development Code.
- 9.3. *Duties.* The MPRC shall have the authority to hear and decide on minor site plan applications, to review and comment on proposed projects for site plan review or subdivision review prior to the formal submission of a site plan or subdivision applications, and to hear and decide on requests for extensions to minor site plan approvals.
- 9.4. *Membership.* The MPRC shall be comprised of five members. One member shall be the Public Works Director or their designee, one member shall be the Community Development Director or their designee, one member shall be the Zoning Administrator or their designee, one member shall be the Fire Chief or their designee, and one member shall be a designee of the City Manager.

10. Miscellaneous Rules of Procedure

- 10.1. *Robert's Rules of Order.* "Robert's Rules of Order," as amended, shall govern points of order not covered by these Rules of Procedure.
- 10.2. *Suspension of Rules of Procedure.* Any provision of these Rules of Procedure that are not governed by the City of Keene Charter, state law, or local ordinance or regulation and do not affect the substantive rights of persons appearing before the Keene Planning Board may be temporarily suspended at any meeting of the Planning Board, by a two-thirds (2/3) majority vote of all members present. The vote on any such suspension of the Rules shall be taken by roll call and entered upon the records.
- 10.3. *Severability Clause.* If any of the provisions set forth in these Rules of Procedure are held to be invalid, for any reason, by a court of law, such holding shall not invalidate any other provision contained herein.