

**Raymond Conservation Commission  
Meeting Agenda**

January 31st, 2024

7:00 PM

Media Center

Call to order

Public Input - 3 min./person, 15 min. total

**Agenda Items**

01-Miendl Road Subdivision - review

02-Autumn Trails - Conditional Use Permit - GWCD

03-Project Checklist completion

04-Abutter Letter - next steps

**Finance**

05-Conservation Fund Statement - if available

**Approval of Minutes**

06-January 10th, 2024

**Correspondence**

07-Bear-Paw email

08-Planning Board Letter - Route 27 Warehouse

09-LRAC Final Report - Bacteria Contamination

10-Email regarding LRAC procedure

11-Therese Thompson - Marden letter

**Other items that may come before the board**

**Future Items/Events**

February 14th, 2024 - CC Meeting

February 28th, 2024 - CC Meeting

April 6th, 024 - Saving Special Places

Non-Public RSA 91A:3, II (d) Real Estate

Adjournment (no later than 9:00)

The public is encouraged and welcome to attend. Comments may also be submitted to [conscomchair@raymondnh.gov](mailto:conscomchair@raymondnh.gov)

Supporting documents may be found at the Town of Raymond Website: [Conservation Commission supporting documents](#)

# BA BEALS

ASSOCIATES, PLLC

Land Planning • Civil Engineering  
Landscape Architecture • Septic Design & Evaluation  
Stratham, NH

January 9, 2024

Timothy Phoenix, esq.  
Hoefle, Phoenix, Gormley & Roberts, PLLC  
127 Parrott Avenue,  
Portsmouth, NH 03801

Via: email

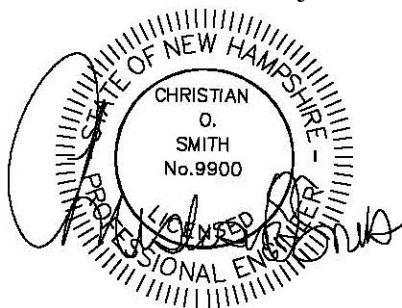
Re: **Meindl Road,  
Proposed Subdivision, Raymond, NH**

Dear Attorney Phoenix:

It has come to my attention that there is a question about the stone structure depicted on the referenced subdivision plan set labeled “stone dam” with regard to it being a jurisdictional dam in need of State permitting. Dam permitting is governed in NH by RSA 482 and Env-Wr 100-800. Both the statute and regulation are consistent in their definition of what constitutes a dam, which is “...any artificial barrier, including appurtenant works, which impounds or diverts water and which has a height of 6 feet or more, or is located at the outlet of a great pond...” (see attached).

The structure in question is a stone structure that it is functionally a check dam/velocity reduction device to the large culvert inlet under the class VI road. The dam fails the jurisdictional definition on two counts: 1. It is less than 6-feet in height; and 2. It does not impound water. Based on this the feature would not be considered a dam & therefore does not require permitting or registration at any level.

Thank you for your time and please feel free to contact me if you need additional information on this subject, or have questions.



Truly Yours  
BEALS ASSOCIATES, PLLC

*Christian O. Smith*

Christian O. Smith, P.E.  
Principal

# TITLE L

## WATER MANAGEMENT AND PROTECTION

### CHAPTER 482

### DAMS, MILLS, AND FLOWAGE

#### Section 482:2

##### **482:2 Definitions. –**

Words and phrases used in this chapter shall mean and be construed as follows, except where a different meaning is clearly intended from the context:

I. "Classification of a dam" means the potential hazard classification placed on a dam by the department based on the potential threat to life and the potential extent of property damage in the event of accidental damage to, or failure of, the dam structure. The classifications shall be "non-menace," "low hazard potential," "significant hazard potential," or "high hazard potential."

II. (a) "Dam" means any artificial barrier, including appurtenant works, which impounds or diverts water and which has a height of 6 feet or more, or is located at the outlet of a great pond. A roadway culvert shall not be considered a dam if its invert is at the natural bed of the water course, it has adequate discharge capacity, and it does not impound water under normal circumstances. Artificial barriers which create surface impoundments for liquid industrial or liquid commercial wastes, septage, or sewage, regardless of height or storage capacity, shall be considered dams.

(b) An artificial barrier at a storm water detention basin, which impounds 0.5 acre-foot or less of water during normal conditions, shall not be considered a dam unless its height is 10 feet or greater or its maximum storage is 6 acre-feet or greater.

III. "Commissioner" means the commissioner of the department of environmental services.

IV. "Department" means the department of environmental services.

V. "Dam in disrepair" means a dam which is a menace to public safety and is incapable of safely impounding flood waters to its crest, or is incapable of maintaining a reasonably constant level of waters impounded, or is one which does not contain adequate gates and sluiceways to provide for the holding or controlled discharge of waters impounded.

VI. "Emergency action plan" means a written document delineating a prescribed sequence of actions to be taken by a dam owner to inform the authorities and others downstream of an impending or actual sudden release of water caused by an accident to, or failure of, the dam. This plan shall be developed in consultation with local officials and notification of the plan shall be given to the general public who would be affected by a sudden release of water caused by an accident or other failure of the dam. The plan shall be kept on file with the local emergency management director and other local officials as deemed appropriate by the department.

VII. "Mills" shall include both manufacturing plants and plants at which electric power is generated for public distribution or for the operation of mills, railroads or public utilities.

VIII. "Person" means any individual, partnership, association, corporation, company, organization or legal entity of any kind.

IX. [Omitted.]

X. "Reconstruction" means:

(a) A change in the height, length, or discharge capacity of the structure;

(b) Restoring a breached dam or one in ruins;

(c) Modification of flashboards which either increases their height or increases the headwater elevation at which the flashboards will fail; or

(d) A change in the structural configuration of a dam.

**Source.** 1989, 339:1. 1996, 228:58, 107. 1997, 51:1, 2. 2000, 182:1. 2006, 306:1, 2. 2009, 187:1, eff. Sept. 11, 2009.

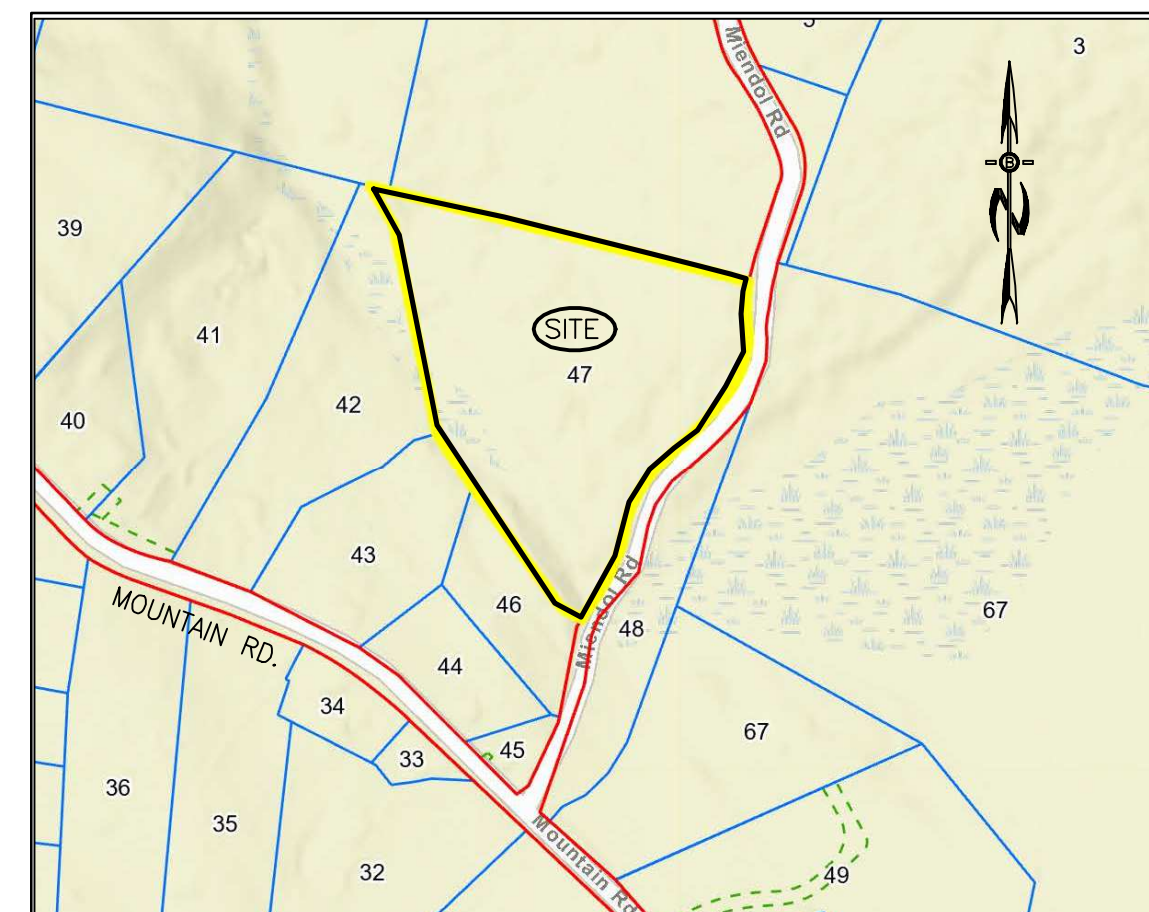
# 3-LOT SUBDIVISION TAX MAP 41 LOT 47 MEINDL ROAD

**RECORD OWNERS:**

FRANCES & RAYMOND SCANLON  
11 JOHN MCQUINN CIRCLE  
FRAMINGHAM, MA 01701

**APPLICANT:**

JOSEPH FALZONE  
7B EMERY LANE  
STRATHAM, N.H. 03885



**LOCATION MAP**  
1"=400'

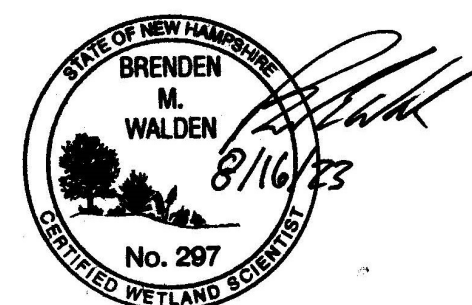
**REQUIRED PERMITS**  
NHDES SUBDIVISION APPROVAL NUMBER: SA 2023.....

**INDEX**

TITLE SHEET	
SUBDIVISION PLAN	1
EXISTING CONDITIONS PLAN	2
ZONE G CALC. PLAN	3
SUBDIVISION SITE PLAN	4

**WETLAND/SOIL CONSULTANT:**

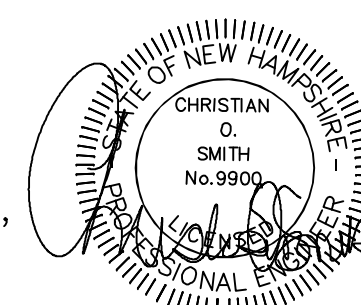
GOVE ENVIRONMENTAL SERVICES INC.  
8 CONTINENTAL DRIVE,  
BLDG 2 UNIT H  
EXETER, NH 03833  
1-603-778-0644



**CIVIL ENGINEERS:**



70 PORTSMOUTH AVE,  
THIRD FLOOR, SUITE 2  
STRATHAM, N.H. 03885  
PHONE: 603-583-4860,  
FAX: 603-583-4863

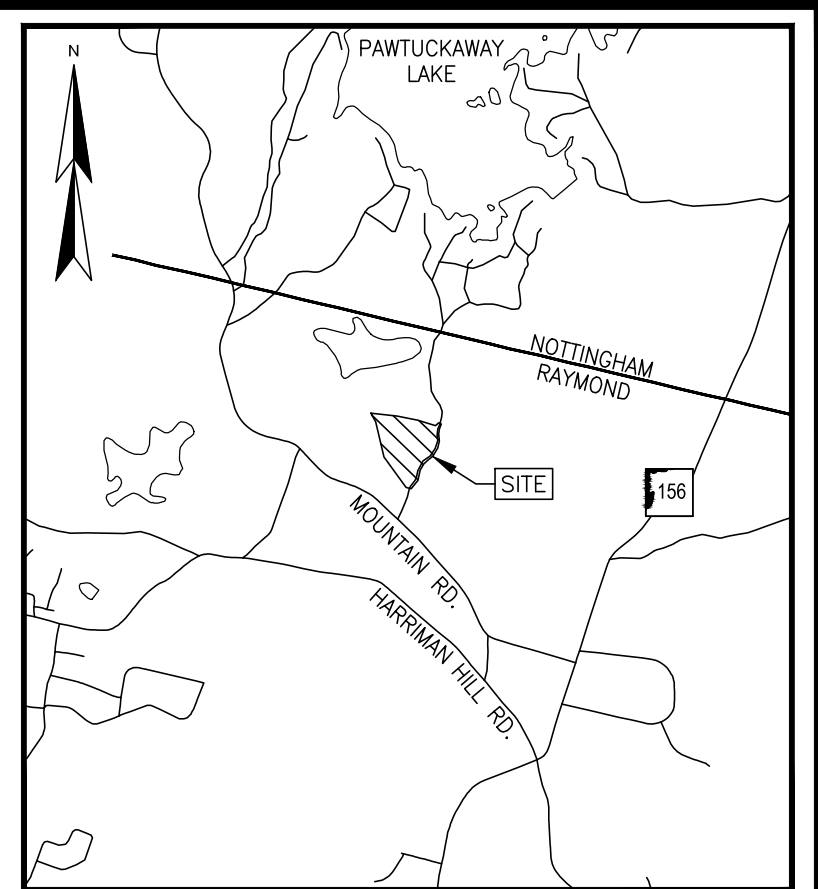
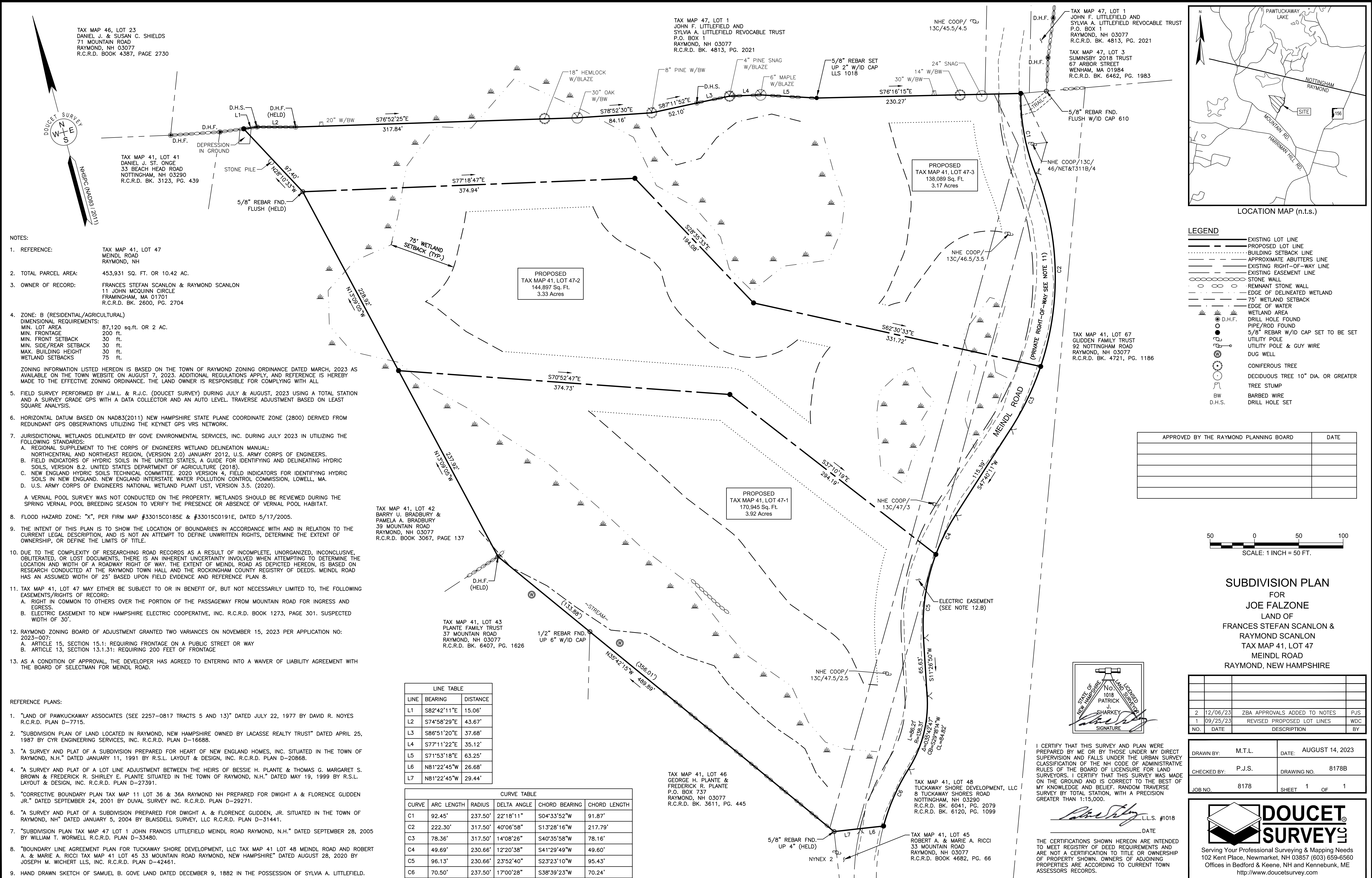


**LAND SURVEYORS:**



PLANNING BOARD APPROVAL BLOCK	
REVISIONS:	DATE:
REVISOR	DATE
<b>COVER SHEET</b>	
PLAN FOR: RESIDENTIAL DEVELOPMENT MEINDL ROAD RAYMOND, NH	
PROJ. NO:	DATE:
NH-1491	AUG 2023

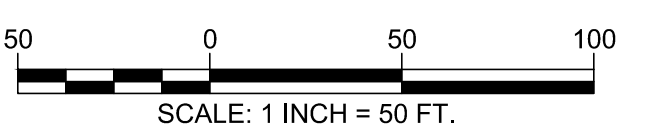
NH-1491 MEINDL ROAD, RAYMOND



**LEGEND**

- EXISTING LOT LINE
- - - PROPOSED LOT LINE
- BUILDING SETBACK LINE
- APPROXIMATE ABUTTERS LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- STONE WALL
- REMNANT STONE WALL
- EDGE OF DELINEATED WETLAND
- 75' WETLAND SETBACK
- EDGE OF WATER
- WETLAND AREA
- D.H.F. DRILL HOLE FOUND
- PIPE/ROD FOUND
- 5/8" REBAR W/D CAP SET TO BE SET
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- DUG WELL
- CONIFEROUS TREE
- DECIDUOUS TREE 10" DIA. OR GREATER
- TREE STUMP
- SW BARBED WIRE
- D.H.S. DRILL HOLE SET

APPROVED BY THE RAYMOND PLANNING BOARD	DATE



**SUBDIVISION PLAN  
FOR  
JOE FALZONE  
LAND OF  
FRANCES STEFAN SCANLON &  
RAYMOND SCANLON  
TAX MAP 41, LOT 47  
MEINDL ROAD  
RAYMOND, NEW HAMPSHIRE**

NO.	DATE	DESCRIPTION	BY
2	12/06/23	ZBA APPROVALS ADDED TO NOTES	PJS
1	09/25/23	REVISED PROPOSED LOT LINES	WDC

DRAWN BY:	M.T.L.	DATE:	AUGUST 14, 2023
CHECKED BY:	P.J.S.	DRAWING NO.	8178B
JOB NO.	8178	SHEET	1 OF 1

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<http://www.doucetsurvey.com>

TAX MAP 46, LOT 23  
DANIEL J. & SUSAN C. SHIELDS  
71 MOUNTAIN ROAD  
RAYMOND, NH 03077  
R.C.R.D. BOOK 4387, PAGE 2730

TAX MAP 41, LOT 41  
DANIEL J. ST. ONGE  
33 BEACH HEAD ROAD  
NOTTINGHAM, NH 03290  
R.C.R.D. BK. 3123, PG. 439

TAX MAP 47, LOT 1  
JOHN F. LITTLEFIELD AND  
SYLVIA A. LITTLEFIELD REVOCABLE TRUST  
P.O. BOX 1  
RAYMOND, NH 03077  
R.C.R.D. BK. 4813, PG. 2021

NHE COOP/ 13C/45.5/4.5

TAX MAP 47, LOT 1  
JOHN F. LITTLEFIELD AND  
SYLVIA A. LITTLEFIELD REVOCABLE TRUST  
P.O. BOX 1  
RAYMOND, NH 03077  
R.C.R.D. BK. 4813, PG. 2021

TAX MAP 47, LOT 3  
SUMINSBY 2018 TRUST  
67 ARBOR STREET  
WENHAM, MA 01984  
R.C.R.D. BK. 6462, PG. 1983

TAX MAP 41, LOT 67  
GLIDDEN FAMILY TRUST  
92 NOTTINGHAM ROAD  
RAYMOND, NH 03077  
R.C.R.D. BK. 4721, PG. 1186

TAX MAP 41, LOT 42  
BARRY U. BRADBURY &  
PAVELA A. BRADBURY  
39 MOUNTAIN ROAD  
RAYMOND, NH 03077  
R.C.R.D. BOOK 3067, PAGE 137

TAX MAP 41, LOT 43  
PLANTE FAMILY TRUST  
37 MOUNTAIN ROAD  
RAYMOND, NH 03077  
R.C.R.D. BK. 6407, PG. 1626

TAX MAP 41, LOT 46  
GEORGE H. PLANTE &  
FREDERICK R. PLANTE  
P.O. BOX 737  
RAYMOND, NH 03077  
R.C.R.D. BK. 3611, PG. 445

TAX MAP 41, LOT 48  
TUCKAWAY SHORE DEVELOPMENT, LLC  
8 TUCKAWAY SHORES ROAD  
NOTTINGHAM, NH 03290  
R.C.R.D. BK. 6041, PG. 2079  
R.C.R.D. BK. 6120, PG. 1099

TAX MAP 41, LOT 45  
ROBERT A. & MARIE A. RICCI  
33 MOUNTAIN ROAD  
RAYMOND, NH 03077  
R.C.R.D. BOOK 4682, PG. 66

- NOTES:**
- REFERENCE: TAX MAP 41, LOT 47 MEINDL ROAD RAYMOND, NH
  - TOTAL PARCEL AREA: 453,931 SQ. FT. OR 10.42 AC.
  - OWNER OF RECORD: FRANCES STEFAN SCANLON & RAYMOND SCANLON 11 JOHN MOQUINN CIRCLE FRAMINGHAM, MA 01701 R.C.R.D. BK. 2600, PG. 2704
  - ZONE: B (RESIDENTIAL/AGRICULTURAL)  
DIMENSIONAL REQUIREMENTS:  
MIN. LOT AREA 87,120 sq.ft. OR 2 AC.  
MIN. FRONTAGE 200 FT.  
MIN. FRONT SETBACK 30 FT.  
MIN. SIDE/REAR SETBACK 30 FT.  
MAX. BUILDING HEIGHT 30 FT.  
WETLAND SETBACKS 75 FT.
- ZONING INFORMATION LISTED HEREON IS BASED ON THE TOWN OF RAYMOND ZONING ORDINANCE DATED MARCH, 2023 AS AVAILABLE ON THE TOWN WEBSITE ON AUGUST 7, 2023. ADDITIONAL REGULATIONS APPLY, AND REFERENCE IS HEREBY MADE TO THE EFFECTIVE ZONING ORDINANCE. THE LAND OWNER IS RESPONSIBLE FOR COMPLYING WITH ALL
- FIELD SURVEY PERFORMED BY J.M.L. & R.J.C. (DOUCET SURVEY) DURING JULY & AUGUST, 2023 USING A TOTAL STATION AND A SURVEY GRADE GPS WITH A DATA COLLECTOR AND AN AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
  - HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
  - JURISDICTIONAL WETLANDS DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 IN UTILIZING THE FOLLOWING STANDARDS:  
A. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.  
B. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.2, UNITED STATES DEPARTMENT OF AGRICULTURE (2018).  
C. NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE, 2020 VERSION 4, FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.  
D. U.S. ARMY CORPS OF ENGINEERS NATIONAL WETLAND PLANT LIST, VERSION 3.5. (2020).
- A VERNAL POOL SURVEY WAS NOT CONDUCTED ON THE PROPERTY. WETLANDS SHOULD BE REVIEWED DURING THE SPRING VERNAL POOL BREEDING SEASON TO VERIFY THE PRESENCE OR ABSENCE OF VERNAL POOL HABITAT.
- FLOOD HAZARD ZONE: "X", PER FIRM MAP #3301500185E & #3301500191E, DATED 5/17/2005.
  - THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.
  - DUE TO THE COMPLEXITY OF RESEARCHING ROAD RECORDS AS A RESULT OF INCOMPLETE, UNORGANIZED, INCONCLUSIVE, OBLITERATED, OR LOST DOCUMENTS, THERE IS AN INHERENT UNCERTAINTY INVOLVED WHEN ATTEMPTING TO DETERMINE THE LOCATION AND WIDTH OF A ROADWAY RIGHT OF WAY. THE EXTENT OF MEINDL ROAD AS DEPICTED HEREON, IS BASED ON RESEARCH CONDUCTED AT THE RAYMOND TOWN HALL AND THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. MEINDL ROAD HAS AN ASSUMED WIDTH OF 25' BASED UPON FIELD EVIDENCE AND REFERENCE PLAN 8.
  - TAX MAP 41, LOT 47 MAY EITHER BE SUBJECT TO OR IN BENEFIT OF, BUT NOT NECESSARILY LIMITED TO, THE FOLLOWING EASEMENTS/RIGHTS OF RECORD:  
A. RIGHT IN COMMON TO OTHERS OVER THE PORTION OF THE PASSAGEWAY FROM MOUNTAIN ROAD FOR INGRESS AND EGRESS.  
B. ELECTRIC EASEMENT TO NEW HAMPSHIRE ELECTRIC COOPERATIVE, INC. R.C.R.D. BOOK 1273, PAGE 301. SUSPECTED WIDTH OF 30'.
  - RAYMOND ZONING BOARD OF ADJUSTMENT GRANTED TWO VARIANCES ON NOVEMBER 15, 2023 PER APPLICATION NO: 2023-007:  
A. ARTICLE 15, SECTION 15.1: REQUIRING FRONTAGE ON A PUBLIC STREET OR WAY  
B. ARTICLE 13, SECTION 13.1.31: REQUIRING 200 FEET OF FRONTAGE
  - AS A CONDITION OF APPROVAL, THE DEVELOPER HAS AGREED TO ENTERING INTO A WAIVER OF LIABILITY AGREEMENT WITH THE BOARD OF SELECTMAN FOR MEINDL ROAD.

**LINE TABLE**

LINE	BEARING	DISTANCE
L1	S82°42'11"E	15.06'
L2	S74°58'29"E	43.67'
L3	S86°51'20"E	37.68'
L4	S77°11'22"E	35.12'
L5	S71°53'18"E	63.25'
L6	N81°22'45"W	26.68'
L7	N81°22'45"W	29.44'

**CURVE TABLE**

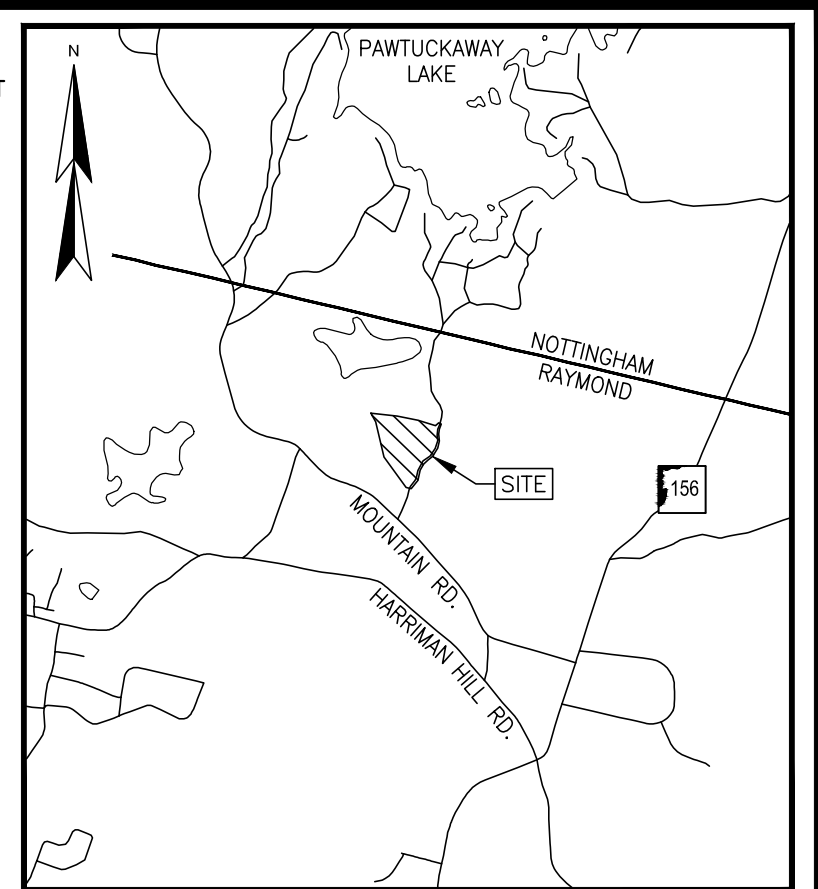
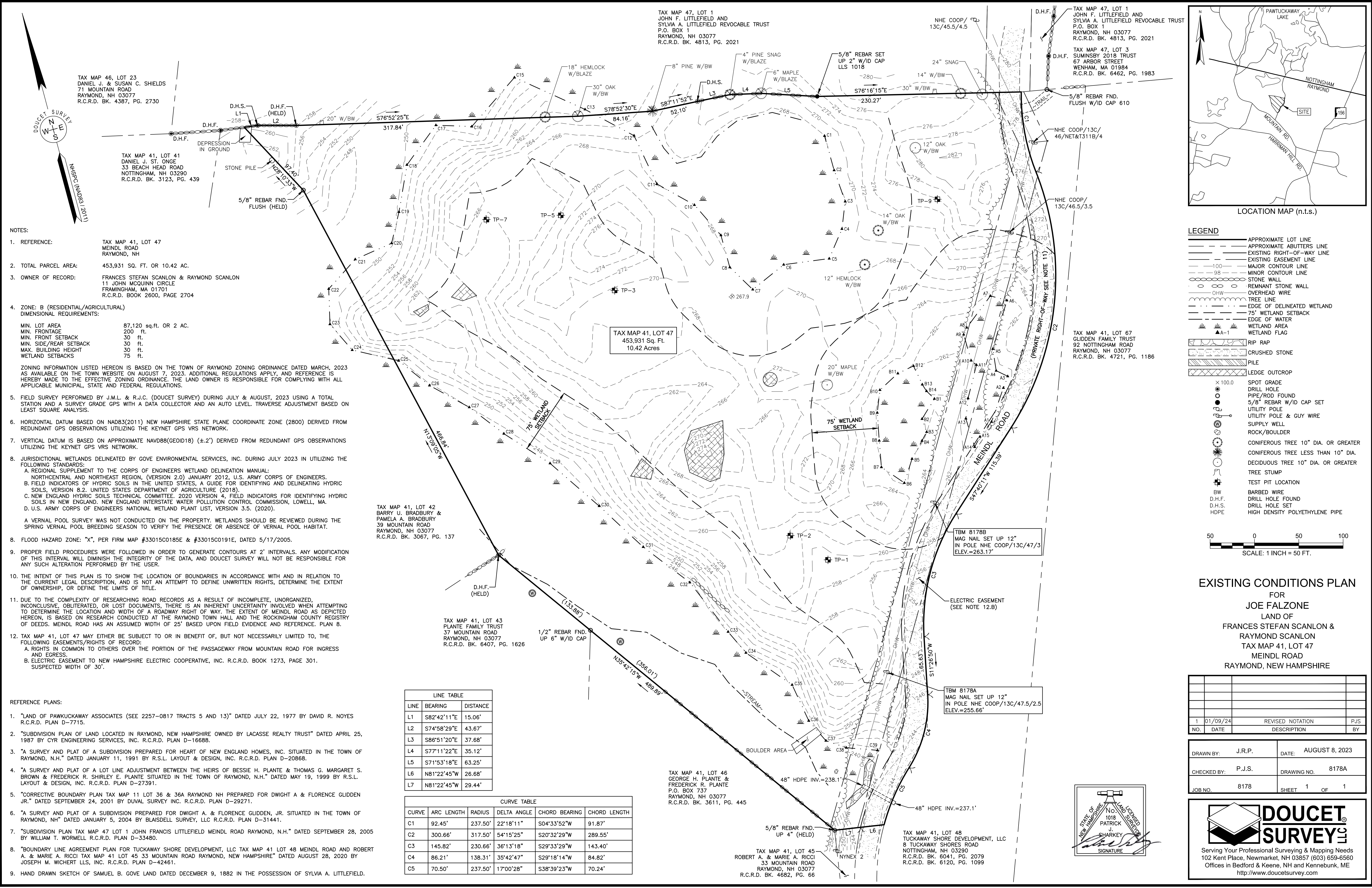
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	92.45'	237.50'	22°18'11"	S04°33'52"W	91.87'
C2	222.30'	317.50'	40°06'58"	S13°28'16"W	217.79'
C3	78.36'	317.50'	14°08'26"	S40°35'58"W	78.16'
C4	49.69'	230.66'	12°20'38"	S41°29'49"W	49.60'
C5	96.13'	230.66'	23°52'40"	S23°23'10"W	95.43'
C6	70.50'	237.50'	17°00'28"	S38°39'23"W	70.24'

STATE OF NEW HAMPSHIRE  
 LICENSED SURVEYOR  
 NO. 1018  
 PATRICK J. SHARKEY  
 SIGNATURE

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.

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

THE CERTIFICATIONS SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND ARE NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.



**LEGEND**

- APPROXIMATE LOT LINE
- APPROXIMATE ABUTTERS LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- STONE WALL
- REMNANT STONE WALL
- OHW
- OVERHEAD WIRE
- TREE LINE
- EDGE OF DELINEATED WETLAND
- 75' WETLAND SETBACK
- EDGE OF WATER
- WETLAND AREA
- WETLAND FLAG
- RIP RAP
- CRUSHED STONE
- PILE
- LEDGE OUTCROP
- × 100.0 SPOT GRADE
- DRILL HOLE
- PIPE/ROD FOUND
- 5/8" REBAR W/D CAP SET
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- SUPPLY WELL
- ROCK/BOULDER
- CONIFEROUS TREE 10" DIA. OR GREATER
- CONIFEROUS TREE LESS THAN 10" DIA.
- DECIDUOUS TREE 10" DIA. OR GREATER
- TREE STUMP
- TEST PIT LOCATION
- BW BARBED WIRE
- D.H.F. DRILL HOLE FOUND
- D.H.S. DRILL HOLE SET
- HOPE HIGH DENSITY POLYETHYLENE PIPE

50 0 50 100  
SCALE: 1 INCH = 50 FT.

**EXISTING CONDITIONS PLAN**  
FOR  
**JOE FALZONE**  
LAND OF  
**FRANCES STEFAN SCANLON & RAYMOND SCANLON**  
TAX MAP 41, LOT 47  
MEINDL ROAD  
RAYMOND, NEW HAMPSHIRE

NO.	DATE	REVISION/NOTATION	DESCRIPTION	BY
1	01/09/24	REVISED NOTATION		PJS

DRAWN BY:	J.R.P.	DATE:	AUGUST 8, 2023
CHECKED BY:	P.J.S.	DRAWING NO.	8178A
JOB NO.	8178	SHEET	1 OF 1

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  - VERTICAL DATUM IS BASED ON APPROXIMATE NAVD83(GEIOD18) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
  - JURISDICTIONAL WETLANDS DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. DURING JULY 2023 IN UTILIZING THE FOLLOWING STANDARDS:  
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- FLOOD HAZARD ZONE: "X", PER FIRM MAP #3301500185E & #3301500191E, DATED 5/17/2005.
  - PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
  - THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.
  - DUE TO THE COMPLEXITY OF RESEARCHING ROAD RECORDS AS A RESULT OF INCOMPLETE, UNORGANIZED, INCONCLUSIVE, OBLITERATED, OR LOST DOCUMENTS, THERE IS AN INHERENT UNCERTAINTY INVOLVED WHEN ATTEMPTING TO DETERMINE THE LOCATION AND WIDTH OF A ROADWAY RIGHT OF WAY. THE EXTENT OF MEINDL ROAD AS DEPICTED HEREON, IS BASED ON RESEARCH CONDUCTED AT THE RAYMOND TOWN HALL AND THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. MEINDL ROAD HAS AN ASSUMED WIDTH OF 25' BASED UPON FIELD EVIDENCE AND REFERENCE. PLAN 8.
  - TAX MAP 41, LOT 47 MAY EITHER BE SUBJECT TO OR IN BENEFIT OF, BUT NOT NECESSARILY LIMITED TO, THE FOLLOWING EASEMENTS/RIGHTS OF RECORD:  
A. RIGHTS IN COMMON TO OTHERS OVER THE PORTION OF THE PASSAGEWAY FROM MOUNTAIN ROAD FOR INGRESS AND EGRESS.  
B. ELECTRIC EASEMENT TO NEW HAMPSHIRE ELECTRIC COOPERATIVE, INC. R.C.R.D. BOOK 1273, PAGE 301. SUSPECTED WIDTH OF 30'.

- REFERENCE PLANS:**
- "LAND OF PAWKUCKAWAY ASSOCIATES (SEE 2257-0817 TRACTS 5 AND 13)" DATED JULY 22, 1977 BY DAVID R. NOYES R.C.R.D. PLAN D-7715.
  - "SUBDIVISION PLAN OF LAND LOCATED IN RAYMOND, NEW HAMPSHIRE OWNED BY LACASSE REALTY TRUST" DATED APRIL 25, 1987 BY CYR ENGINEERING SERVICES, INC. R.C.R.D. PLAN D-16688.
  - "A SURVEY AND PLAT OF A SUBDIVISION PREPARED FOR HEART OF NEW ENGLAND HOMES, INC. SITUATED IN THE TOWN OF RAYMOND, N.H." DATED JANUARY 11, 1991 BY R.S.L. LAYOUT & DESIGN, INC. R.C.R.D. PLAN D-20868.
  - "A SURVEY AND PLAT OF A LOT LINE ADJUSTMENT BETWEEN THE HEIRS OF BESSIE H. PLANTE & THOMAS G. MARGARET S. BROWN & FREDERICK R. SHIRLEY E. PLANTE SITUATED IN THE TOWN OF RAYMOND, N.H." DATED MAY 19, 1999 BY R.S.L. LAYOUT & DESIGN, INC. R.C.R.D. PLAN D-27391.
  - "CORRECTIVE BOUNDARY PLAN TAX MAP 11 LOT 36 & 36A RAYMOND NH PREPARED FOR DWIGHT A & FLORENCE GLIDDEN JR." DATED SEPTEMBER 24, 2001 BY DUVAL SURVEY INC. R.C.R.D. PLAN D-29271.
  - "A SURVEY AND PLAT OF A SUBDIVISION PREPARED FOR DWIGHT A. & FLORENCE GLIDDEN, JR. SITUATED IN THE TOWN OF RAYMOND, NH" DATED JANUARY 5, 2004 BY BLAISDELL SURVEY, LLC R.C.R.D. PLAN D-31441.
  - "SUBDIVISION PLAN TAX MAP 47 LOT 1 JOHN FRANCO LITTLEFIELD MEINDL ROAD RAYMOND, N.H." DATED SEPTEMBER 28, 2005 BY WILLIAM T. WORMELL R.C.R.D. PLAN D-33480.
  - "BOUNDARY LINE AGREEMENT PLAN FOR TUCKAWAY SHORE DEVELOPMENT, LLC TAX MAP 41 LOT 48 MEINDL ROAD AND ROBERT A. & MARIE A. RICCI TAX MAP 41 LOT 45 33 MOUNTAIN ROAD RAYMOND, NEW HAMPSHIRE" DATED AUGUST 28, 2020 BY JOSEPH M. WICHERT LLS, INC. R.C.R.D. PLAN D-42461.
  - HAND DRAWN SKETCH OF SAMUEL B. GOVE LAND DATED DECEMBER 9, 1882 IN THE POSSESSION OF SYLVIA A. LITTLEFIELD.

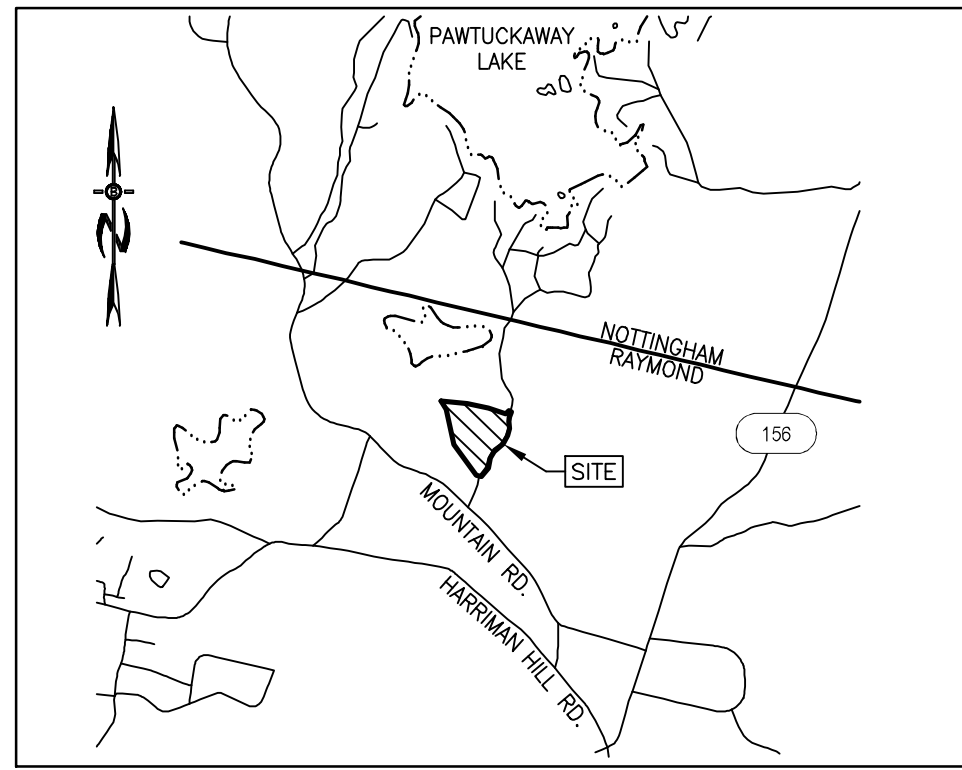
**LINE TABLE**

LINE	BEARING	DISTANCE
L1	S82°42'11"E	15.06'
L2	S74°58'29"E	43.67'
L3	S86°51'20"E	37.68'
L4	S77°11'22"E	35.12'
L5	S71°53'18"E	63.25'
L6	N81°22'45"W	26.68'
L7	N81°22'45"W	29.44'

**CURVE TABLE**

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	92.45'	237.50'	22°18'11"	S04°33'52"W	91.87'
C2	300.66'	317.50'	54°15'25"	S20°32'29"W	289.55'
C3	145.82'	230.66'	36°13'18"	S29°33'29"W	143.40'
C4	86.21'	138.31'	35°42'47"	S29°18'14"W	84.82'
C5	70.50'	237.50'	17°00'28"	S38°39'23"W	70.24'

STATE OF NEW HAMPSHIRE  
LAND SURVEYOR  
No. 1018  
PATRICK J. SHARKEY  
SIGNATURE



LOCUS MAP

LOT AREA CALCULATIONS

LOT#	LOT AREA	-WET AREA	-75' SPA	-STEEP SLOPE	NON ZONE G AREA
#1	3.92 AC	1.46 AC	.05 AC	0.35 AC	2.06 AC
#2	3.33 AC	0.34 AC	0.0 AC	0.06 AC	2.93 AC
#3	3.16 AC	0.96 AC	0.0 AC	0.02 AC	2.18 AC

ZONING REQUIREMENTS

ZONE: B RES/AG  
 MIN. LOT SIZE = 2 AC.  
 MIN. FRONTAGE = 200'  
 MAX. HEIGHT = 35'

BUILDING SETBACKS:  
 FRONT = 30'  
 SIDE/ REAR = 30'  
 WETLANDS = 75'  
 LEACH FIELD SETBACKS  
 POORLY DRAINED SOILS  
 VERY POORLY DRAINED SOILS

PREPARED FOR:

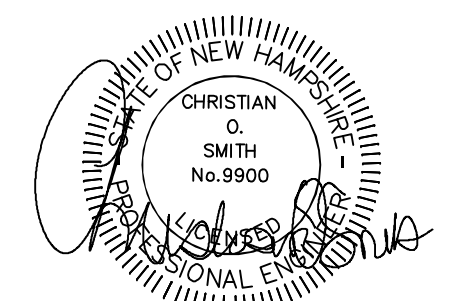
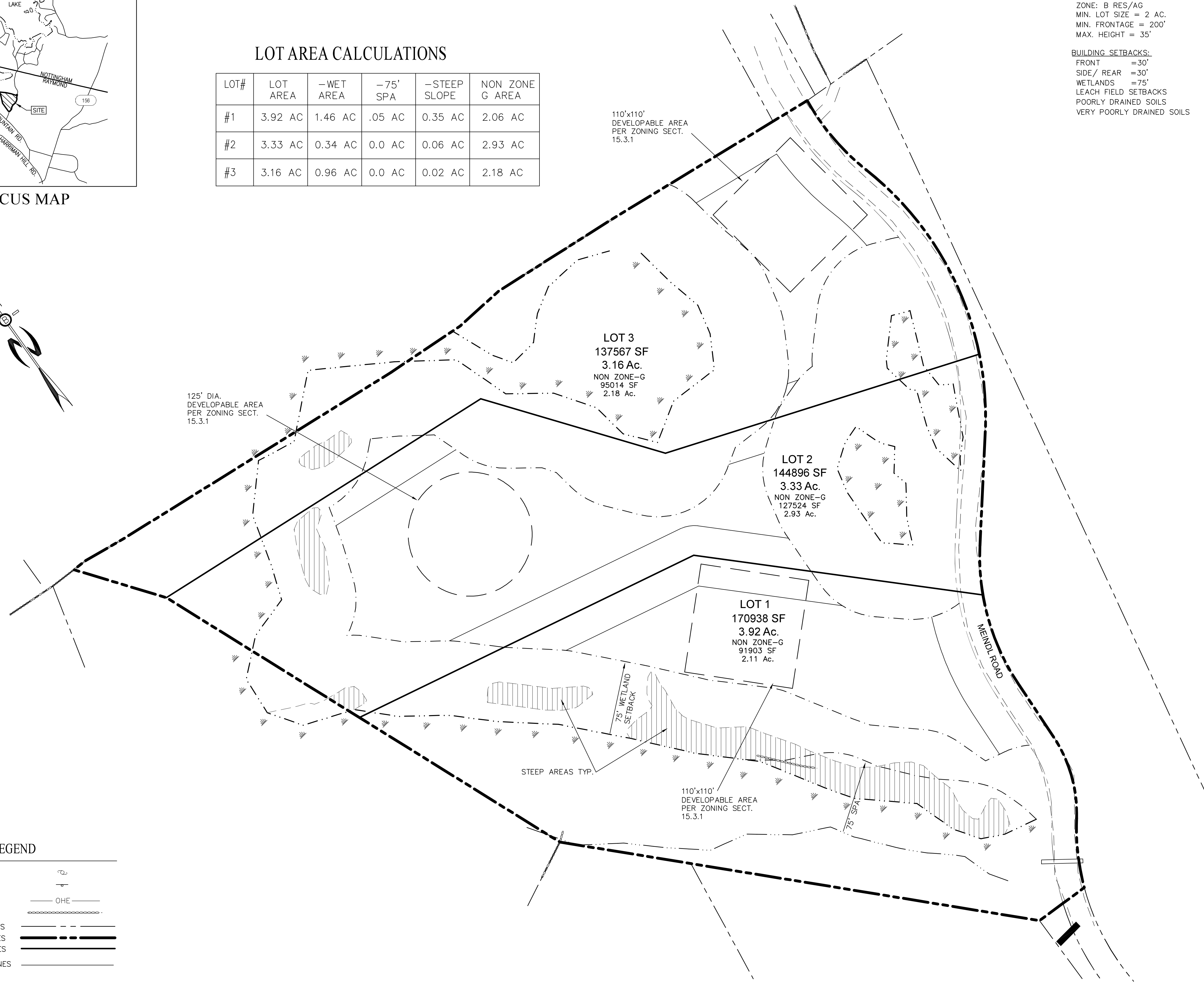
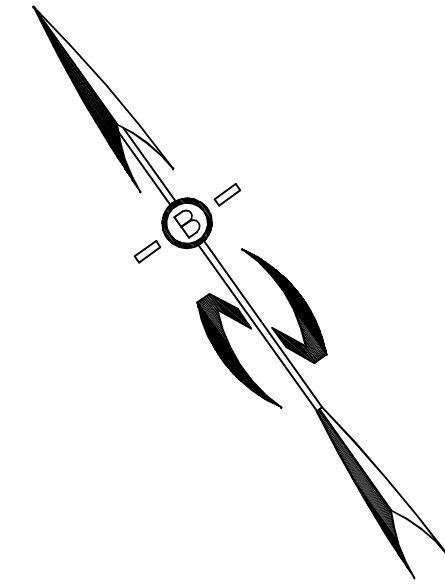
JOSEPH FALZONE  
 7B EMERY LANE  
 STRATHAM, N.H. 03885



70 PORTSMOUTH AVE,  
 THIRD FLOOR, SUITE 2  
 STRATHAM, N.H. 03885  
 PHONE: 603-583-4860,  
 FAX: 603-583-4863

NOTES

- UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN LOCATED FROM FIELD OBSERVATIONS AND THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. BEALS ASSOCIATES OR ANY OF THEIR EMPLOYEES TAKE NO RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN, THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND UTILITIES OR STRUCTURES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-SAFE
- THIS PLAN HAS BEEN PREPARED FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
- ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
- ALL ROAD AND DRAINAGE WORK TO CONFORM TO TOWN STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ALL PROPOSED SIGNS SHALL CONFORM TO THE TOWN ZONING REGULATIONS.
- PROJECT IS BASED ON USGS DATUM NAVD 1988. GPS OBSERVATIONS
- THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.



LEGEND

UTILITY POLE	
SINGLE POST SIGN	
OVERHEAD ELEC. LINE	
STONE WALL	
ABUT. PROPERTY LINES	
EXIST. PROPERTY LINES	
PROP. PROPERTY LINES	
BUILDING SETBACK LINES	

PLANNING BOARD APPROVAL BLOCK

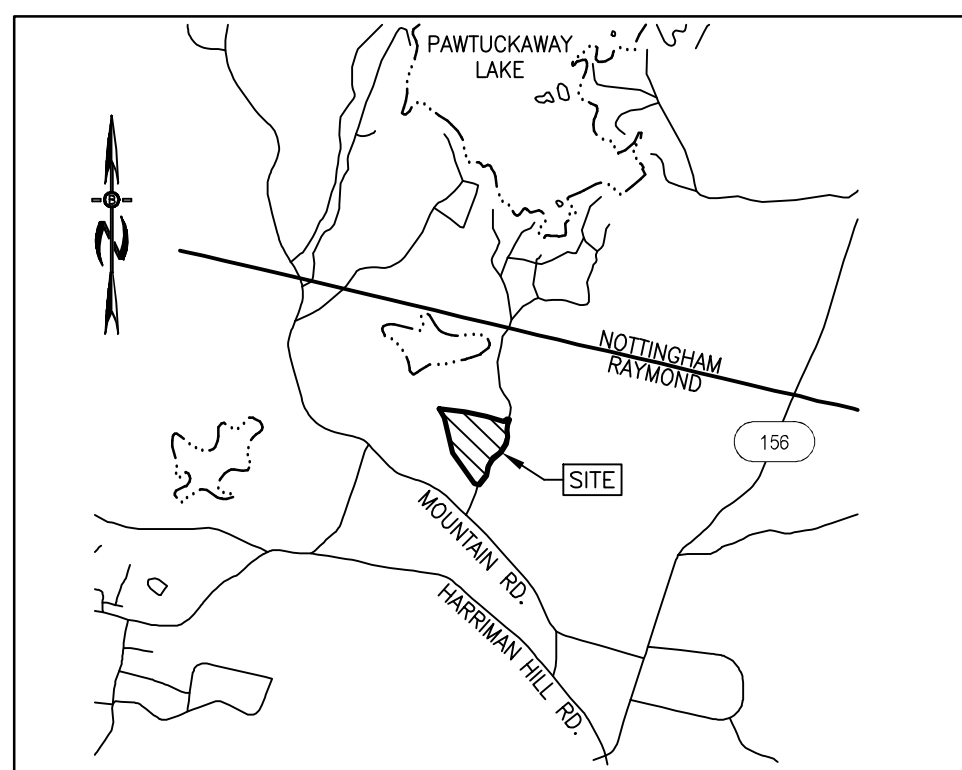

REVISED PER REVIEW	11-30-23
REVISED LOTS	9/18/23
REVISIONS:	DATE:

SUBDIVISION SITE PLAN

PLAN FOR:  
 RESIDENTIAL DEVELOPMENT  
 MEINDL ROAD  
 RAYMOND, NH

DATE:	AUG 2023	SCALE:	1"=50'
PROJ. NO:	NH-1491	SHT. NO.	3





LOCUS MAP

SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, ROCKINGHAM COUNTY WEB SOIL SURVEY

MAP SYMBOL	MAP UNIT NAME	HYDROLOGIC GROUP
140C	CHATFIELD-HOLLIS	B
547B	CANTON COMPLEX	D
	WALPOLE	D

**ZONING REQUIREMENTS**

ZONE: B RES/AC  
 MIN. LOT SIZE = 2 AC.  
 MIN. FRONTAGE = 200'  
 MAX. HEIGHT = 35'

**BUILDING SETBACKS:**

FRONT = 30'  
 SIDE/ REAR = 30'  
 WETLANDS = 75'  
 LEACH FIELD SETBACKS  
 POORLY DRAINED SOILS  
 VERY POORLY DRAINED SOILS

50'  
75'

PREPARED FOR:

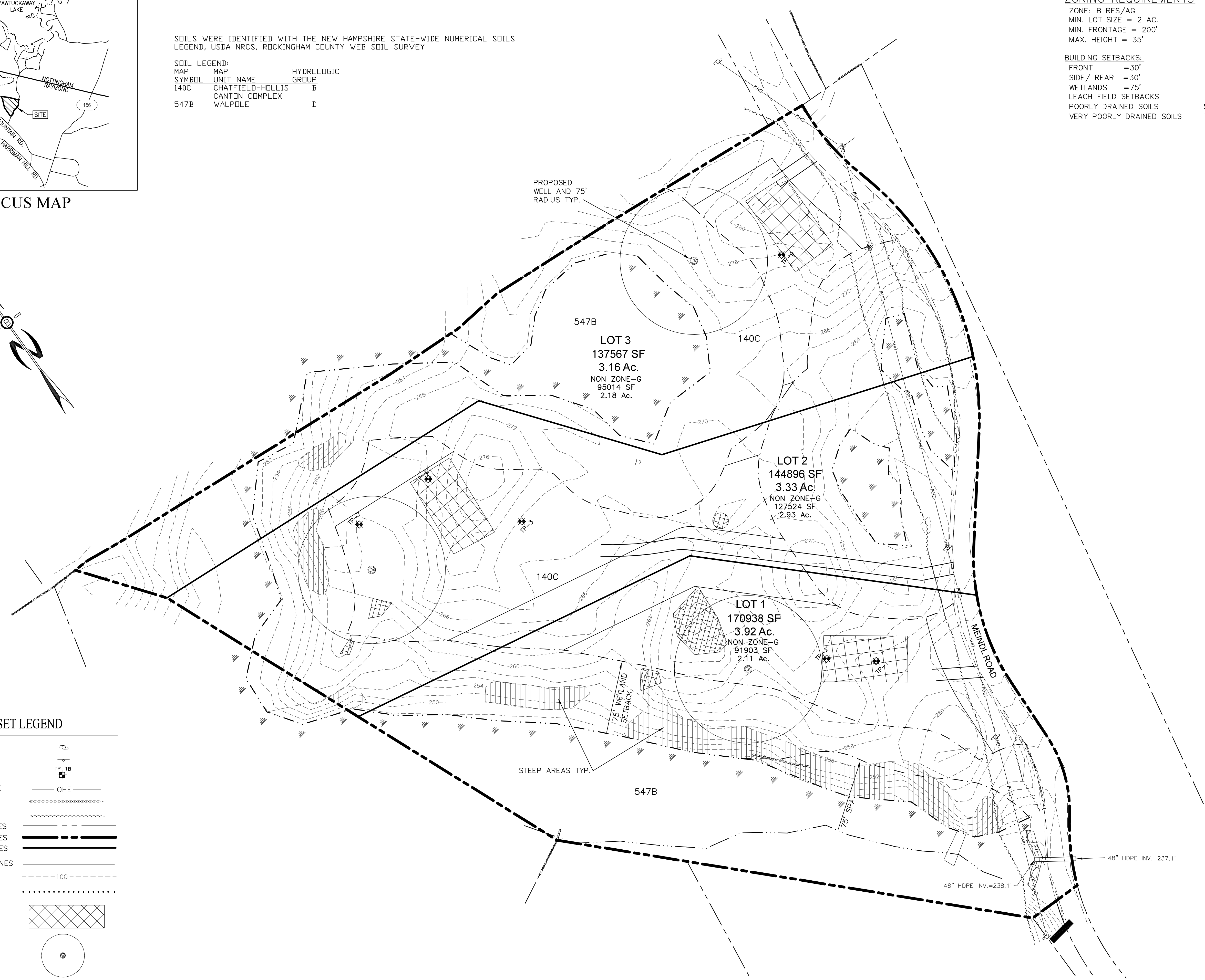
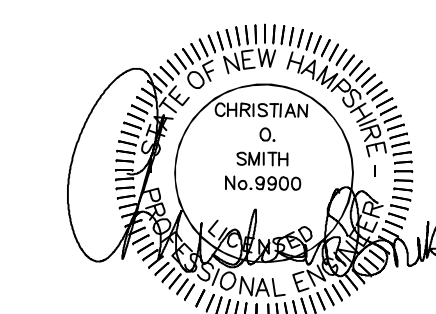
JOSEPH FALZONE  
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**NOTES**

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- THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.



**PLAN SET LEGEND**

UTILITY POLE	
SINGLE POST SIGN	
TEST PIT	
OVERHEAD ELEC. LINE	
STONE WALL	
TREE LINE	
ABUT. PROPERTY LINES	
EXIST. PROPERTY LINES	
PROP. PROPERTY LINES	
BUILDING SETBACK LINES	
EXIST. CONTOUR	
SOIL LINES	
4000 SF SEPTIC RESERVE AREA	
PROP. WELL W/ 75' PROTECTIVE RAD.	

PLANNING BOARD APPROVAL BLOCK	

REVISED PER REVIEW	11-30-23
REVISED LOTS	9/18/23
REVISIONS:	DATE:

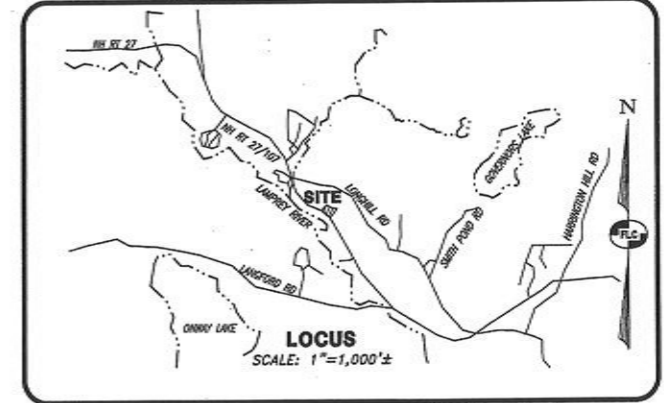
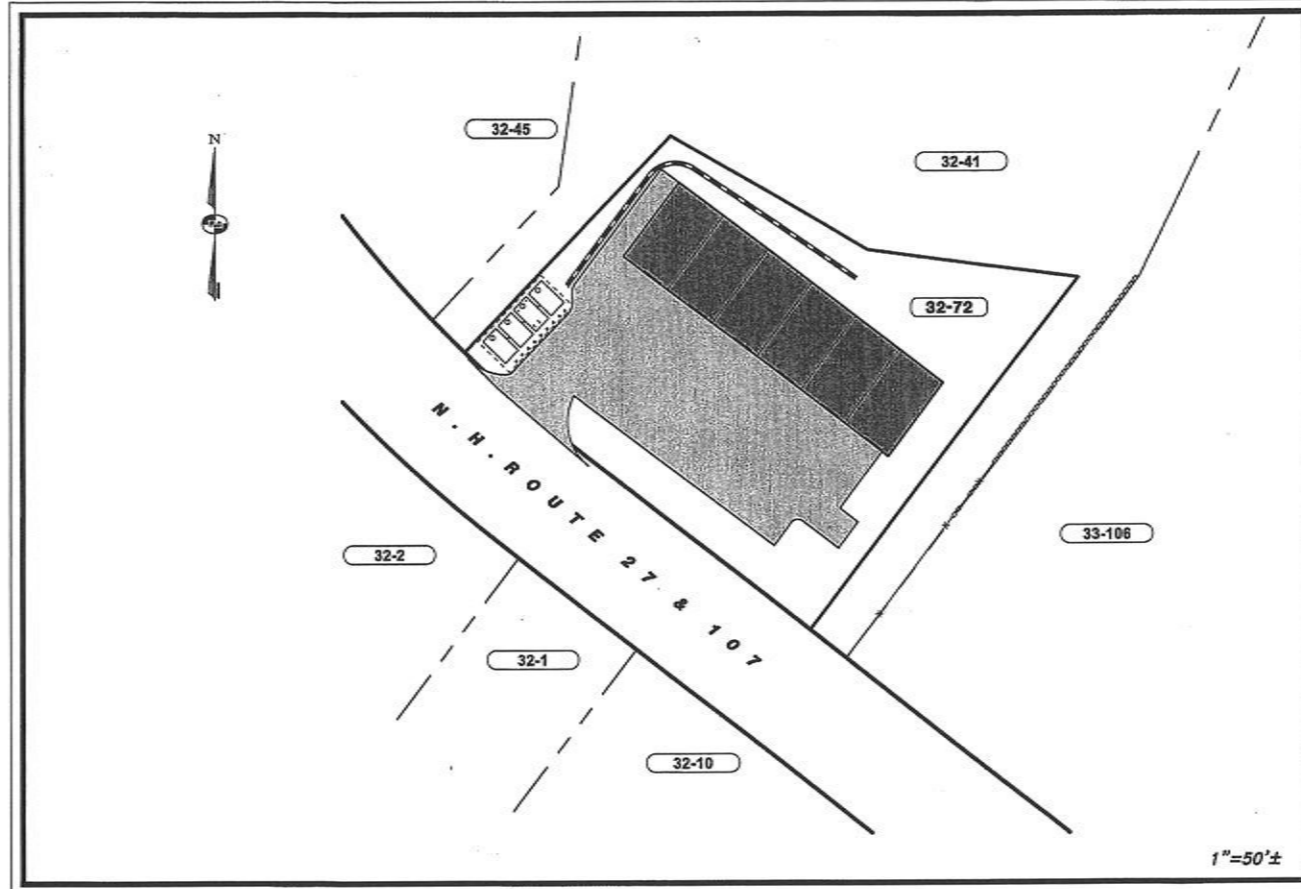
SUBDIVISION SITE PLAN	
PLAN FOR: RESIDENTIAL DEVELOPMENT MEINDL ROAD RAYMOND, NH	
DATE: AUG 2023	SCALE: 1"=50'
PROJ. NO: NH-1491	SHT. NO. 4

**SITE DEVELOPMENT PLANS**  
**TAX MAP 32 LOT 72**  
**CONTRACTOR BAY FACILITY**

DEERFIELD ROAD (N.H. ROUTE 27)  
 RAYMOND, NH

DATE: NOVEMBER 10, 2023  
 LAST REVISED: JANUARY 18, 2024

**RECEIVED**  
 JAN 19 2024  
 TOWN OF RAYMOND



SHEET INDEX		
PAGE	SHEET	TITLE
1	CV-1	COVER SHEET
2	SP-1	SITE PLAN
3	EX-1	EXISTING CONDITIONS PLAN
4	GR-1	GRADING AND DRAINAGE PLAN
5	LT-1	LIGHTING PLAN
6	LS-1	LANDSCAPING AND UTILITY PLAN
7	DT-1	EROSION CONTROL DETAILS
8	DT-2	CONSTRUCTION DETAILS
9	DT-3	CONSTRUCTION DETAILS
10	DT-4	CONSTRUCTION DETAILS
11	DT-5	CISTERN DETAILS

EXHIBIT SHEET INDEX		
PAGE	SHEET	TITLE
1	EH-1	FIRETRUCK TURNING EXHIBIT 1
2	EH-1	FIRETRUCK TURNING EXHIBIT 2
3	ST-1	SEWAGE DISPOSAL SYSTEM PLAN

**PREPARED FOR AND LAND OF:**  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351  
 PITTSFIELD, NH 03263

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

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

**FIELDSTONE**  
**LAND CONSULTANTS, PLLC**

206 Elm Street, Milford, NH 03055  
 45 Roxbury Street, Keene, NH 03431  
 Phone: (603)-672-5456 Fax: (603)-413-5456  
 www.FieldstoneLandConsultants.com



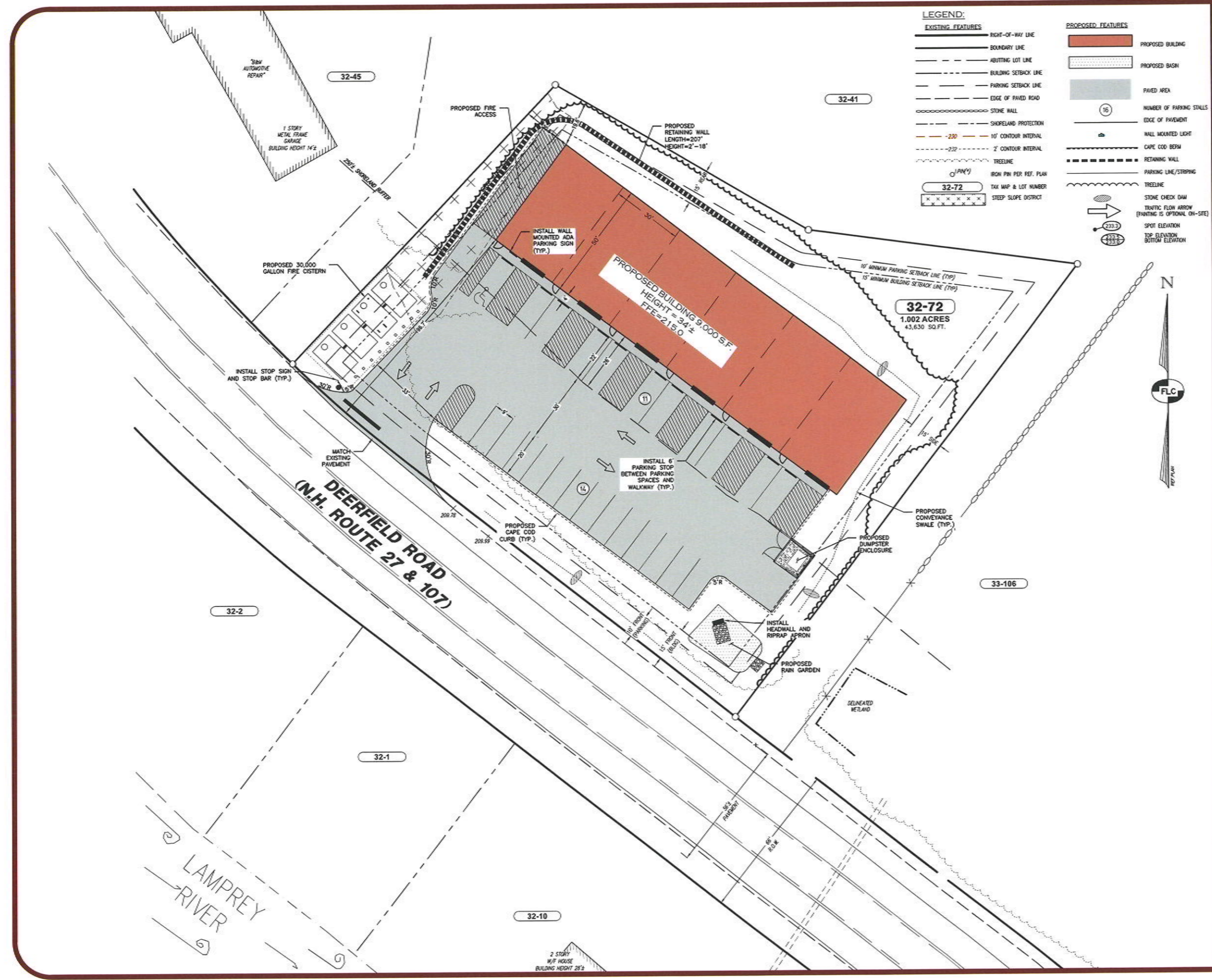
1/19/2024

APPROVED BY THE RAYMOND PLANNING BOARD

ON: \_\_\_\_\_ CERTIFIED BY  
 CHAIRMAN: \_\_\_\_\_ AND  
 SECRETARY: \_\_\_\_\_

REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB

FILE:3649CV00B.DWG    PROJ. NO. 3649.00    SHEET: CV-1    PAGE NO. 1 OF 11



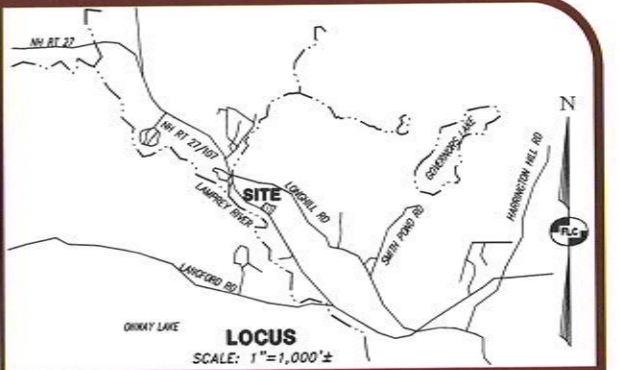
**LEGEND:**

**EXISTING FEATURES**

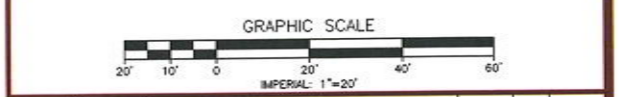
- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- ABUTTING LOT LINE
- BUILDING SETBACK LINE
- PARKING SETBACK LINE
- EDGE OF PAVED ROAD
- STONE WALL
- SHORELAND PROTECTION
- 10' CONTOUR INTERVAL
- 2' CONTOUR INTERVAL
- TREELINE
- IRON PIN PER FEET PLAN
- TAX MAP & LOT NUMBER
- STEEP SLOPE DISTRICT

**PROPOSED FEATURES**

- PROPOSED BUILDING
- PROPOSED BASH
- PAVED AREA
- NUMBER OF PARKING SPACES
- EDGE OF PAVEMENT
- WALL MOUNTED LIGHT
- CAPE COD BERM
- RETAINING WALL
- PARKING LINE/STRIPING
- TREELINE
- STONE CHECK DAM
- TRAFFIC FLOW ARROW (PAINTING IS OPTIONAL ON-SITE)
- SPOT ELEVATION
- TOP ELEVATION
- BOTTOM ELEVATION



- GENERAL NOTES:**
- THE OWNER OF RECORD FOR TAX MAP 32 LOT 72 IS AUTUMN TRAIL REALTY, LLC, P.O. BOX 351 PITTSFIELD, NH 03263. DEED REFERENCE FOR THE LOT IS BK.6457 PG.1000 DATED DECEMBER 3, 2022 IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
  - THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SERVICE BUILDING DEVELOPMENT ON TAX MAP LOT 32-72.
  - THE TOTAL AREA OF TAX MAP 32 LOT 72 IS 43,630 SQ.FT. OR 1.002 ACRES. LOT FRONTAGE IS 240.06 FT. ALONG N.H. ROUTE 27.
  - ZONING FOR THE PARCEL IS COMMERCIAL DISTRICT (C1; ART. 4.3):  
 MIN. LOT SIZE = 21,780 SQ.FT. OR 0.5 ACRES  
 MIN. LOT FRONTAGE = 50'  
 MIN. BUILDING SETBACKS = 15' FRONT, SIDE & REAR  
 MIN. PARKING SETBACK = 10' FRONT, SIDE & REAR  
 OTHER = 50 FT FROM RESIDENTIAL STRUCTURE  
 THE LOT IS ALSO SUBJECT TO THE REGULATIONS OF THE GROUND WATER PROTECTION ZONE 2012, THE GROUNDWATER CONSERVATION DISTRICT (ART. 5.2), ZONE G - CONSERVATION DISTRICT (ART. 4.9) WETLAND (OFF SITE) & STEEP SLOPES (25%+).
  - NO PORTION OF THE PROPERTY LIES WITHIN A FLOOD HAZARD AREA AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), ROCKINGHAM COUNTY, TOWN OF RAYMOND, NEW HAMPSHIRE, COMMUNITY NO.330140, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBER: 33015C0191E, DATED: MAY 17, 2005.
  - PARKING CALCULATION:  
 INDUSTRIAL - LIGHT  
 REQUIRED:  
 1 SPACE/200SF GFA = 45 PARKING SPACES  
 OR  
 1 SPACE PER 2 EMPLOYEES (ASSUMED 4 EMPLOYEES PER UNIT) = 12 PARKING SPACES  
 PROVIDED:  
 25 PARKING SPACES (INCLUDING 1 ADA VAN ACCESSIBLE PARKING SPOT)
  - THERE IS NO SIGN INCLUDED WITH THIS SUBMISSION. ANY FUTURE SIGNS MUST BE IN COMPLIANCE WITH THE RAYMOND ZONING ORDINANCE.
  - SITE ACCESS MEETS SAFE SIGHT DISTANCE REQUIREMENTS. ACCESS WILL REQUIRE AN NHDOT DRIVEWAY PERMIT.
  - TOTAL SITE DISTURBANCE = 38,056 S.F.



REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB

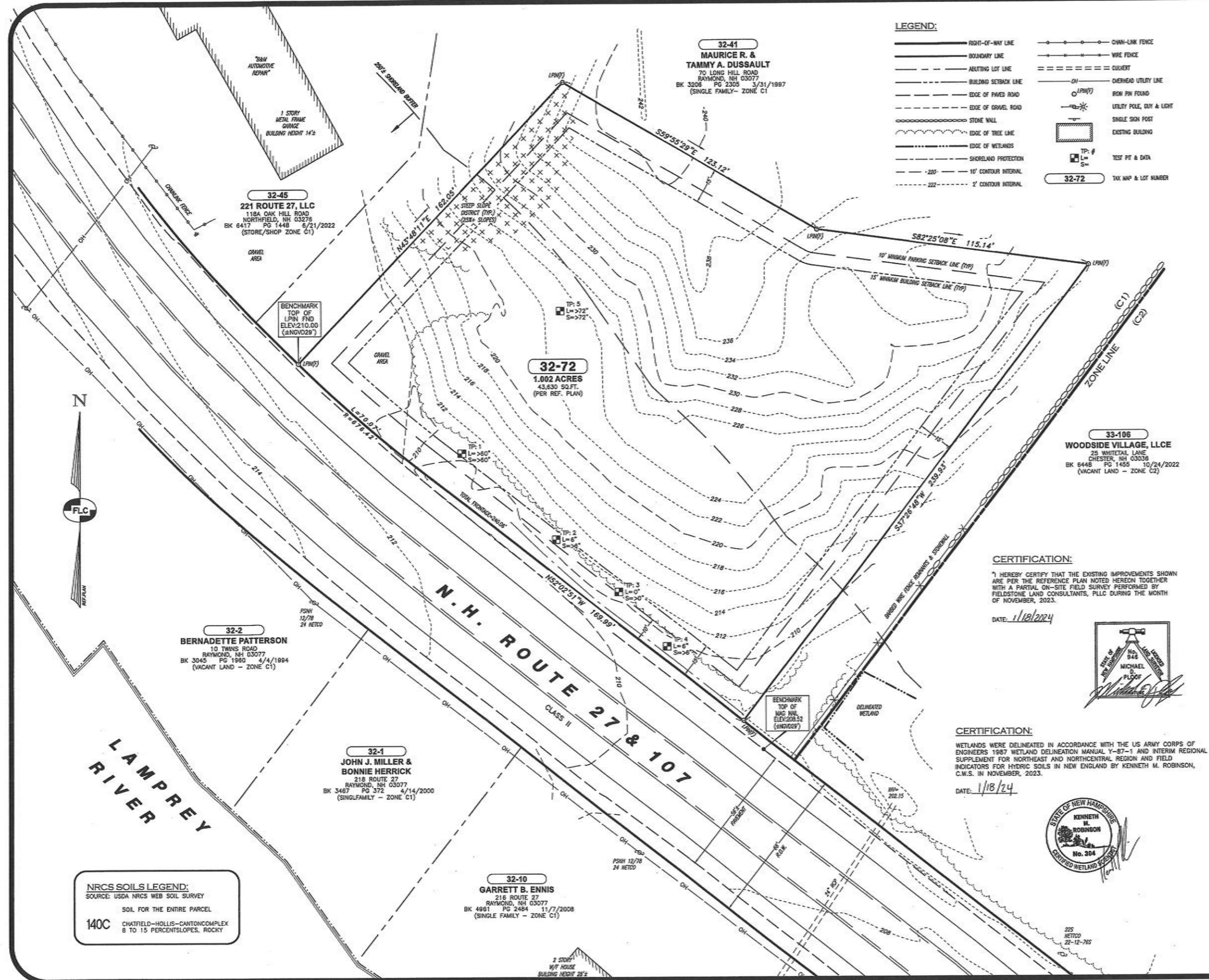
**SITE PLAN**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
 PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: 1" = 20'      OCTOBER 13, 2023

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

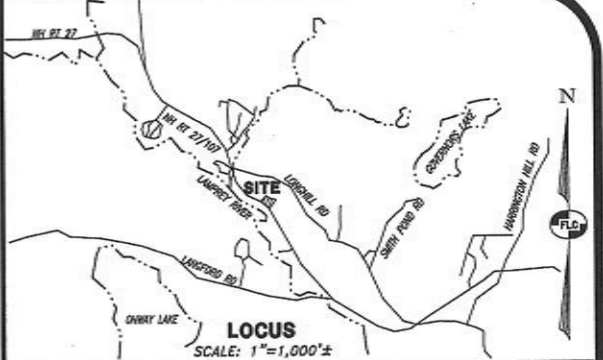
**FIELDSTONE**  
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 45 Roxbury Street, Keene, NH 03431  
 Phone: (603) 672-5456      Fax: (603) 413-5456  
 www.FieldstoneLandConsultants.com



**LEGEND:**

—	RIGHT-OF-WAY LINE	—	CHAIN-LINK FENCE
---	BOUNDARY LINE	---	WIRE FENCE
- - -	ADJUTING LOT LINE	---	CULVERT
- - -	BUILDING SETBACK LINE	---	OVERHEAD UTILITY LINE
- - -	EDGE OF PAVED ROAD	○	IRON PIN FOUND
- - -	EDGE OF GRAVEL ROAD	○	UTILITY POLE, CUY & LIGHT
- - -	STONE WALL	○	SINGLE SIGN POST
- - -	EDGE OF TREE LINE	□	EXISTING BUILDING
- - -	EDGE OF WETLANDS	□	TEST PIT & DATA
- - -	SHORELAND PROTECTION	□	TAX MAP & LOT NUMBER
- - -	10' CONTOUR INTERNAL		
- - -	2' CONTOUR INTERNAL		



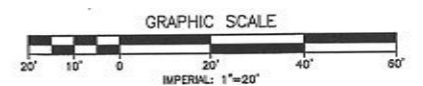
**REFERENCE PLAN:**  
 "EXISTING CONDITIONS PLAN - PLAT OF LAND - FOR - AUTUMN TRAIL - REALTY, LLC - IN - RAYMOND, N.H. - ROCKINGHAM COUNTY" SCALE: 1"=30', DATED AUGUST, 2023, PREPARED BY LANDRY SURVEYING, LLC.

- NOTES:**
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  - THE BOUNDARY INFORMATION SHOWN IS BASED ENTIRELY ON THE REFERENCE PLAN NOTED HEREON. THIS IS NOT TO BE CONSIDERED A BOUNDARY SURVEY BY THIS OFFICE.
  - HORIZONTAL ORIENTATION IS BASED UPON THE REFERENCE PLAN NOTED HEREON. VERTICAL DATUM IS NAD83 PER THE REFERENCE PLAN NOTED HEREON.
  - THE SURFACE FEATURES SHOWN ARE PER THE REFERENCE PLAN NOTED HEREON TOGETHER WITH A PARTIAL ON-SITE FIELD SURVEY PERFORMED BY FIELDSTONE LAND CONSULTANTS, PLLC DURING THE MONTH OF NOVEMBER, 2023.
  - SUBJECT PARCEL LIES OUTSIDE OF THE 100 YEAR FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP NO. 3301500187E, EFFECTIVE DATE 5/17/2006.

**CERTIFICATION:**  
 I HEREBY CERTIFY THAT THE EXISTING IMPROVEMENTS SHOWN ARE PER THE REFERENCE PLAN NOTED HEREON TOGETHER WITH A PARTIAL ON-SITE FIELD SURVEY PERFORMED BY FIELDSTONE LAND CONSULTANTS, PLLC DURING THE MONTH OF NOVEMBER, 2023.  
 DATE: 1/18/2024



**CERTIFICATION:**  
 WETLANDS WERE DELINEATED IN ACCORDANCE WITH THE US ARMY CORPS OF ENGINEERS 1987 WETLAND DELINEATION MANUAL Y-87-1 AND INTERIM REGIONAL SUPPLEMENT FOR NORTHEAST AND NORTHCENTRAL REGION AND FIELD INDICATORS FOR HYDRIC SOILS IN NEW ENGLAND BY KENNETH M. ROBINSON, C.M.S. IN NOVEMBER, 2023.  
 DATE: 1/18/24



REV.	DATE	DESCRIPTION	C/O	DR	CK
A	1/18/24	ADDRESS DUBOIS & KING, INC. COMMENTS			

**EXISTING CONDITIONS PLAN**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
 PREPARED FOR & LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351, PITTSFIELD, NH 03263  
 SCALE: 1" = 20'      NOVEMBER 16, 2023

Surveying + Engineering + Land Planning + Permitting + Septic Designs

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

**NRCS SOILS LEGEND:**  
 SOURCE: USDA NRCS WEB SOIL SURVEY  
 SOL. FOR THE ENTIRE PARCEL  
**140C** CHATFIELD-HOLLIS-CANTON COMPLEX  
 8 TO 15 PERCENT SLOPES, ROCKY

**32-2**  
**BERNADETTE PATTERSON**  
 10 TWINS ROAD  
 RAYMOND, NH 03077  
 BK 3045 PG 1960 4/4/1994  
 (VACANT LAND - ZONE C1)

**32-1**  
**JOHN J. MILLER & BONNIE HERRICK**  
 218 ROUTE 27  
 RAYMOND, NH 03077  
 BK 3467 PG 372 4/14/2000  
 (SINGLEFAMILY - ZONE C1)

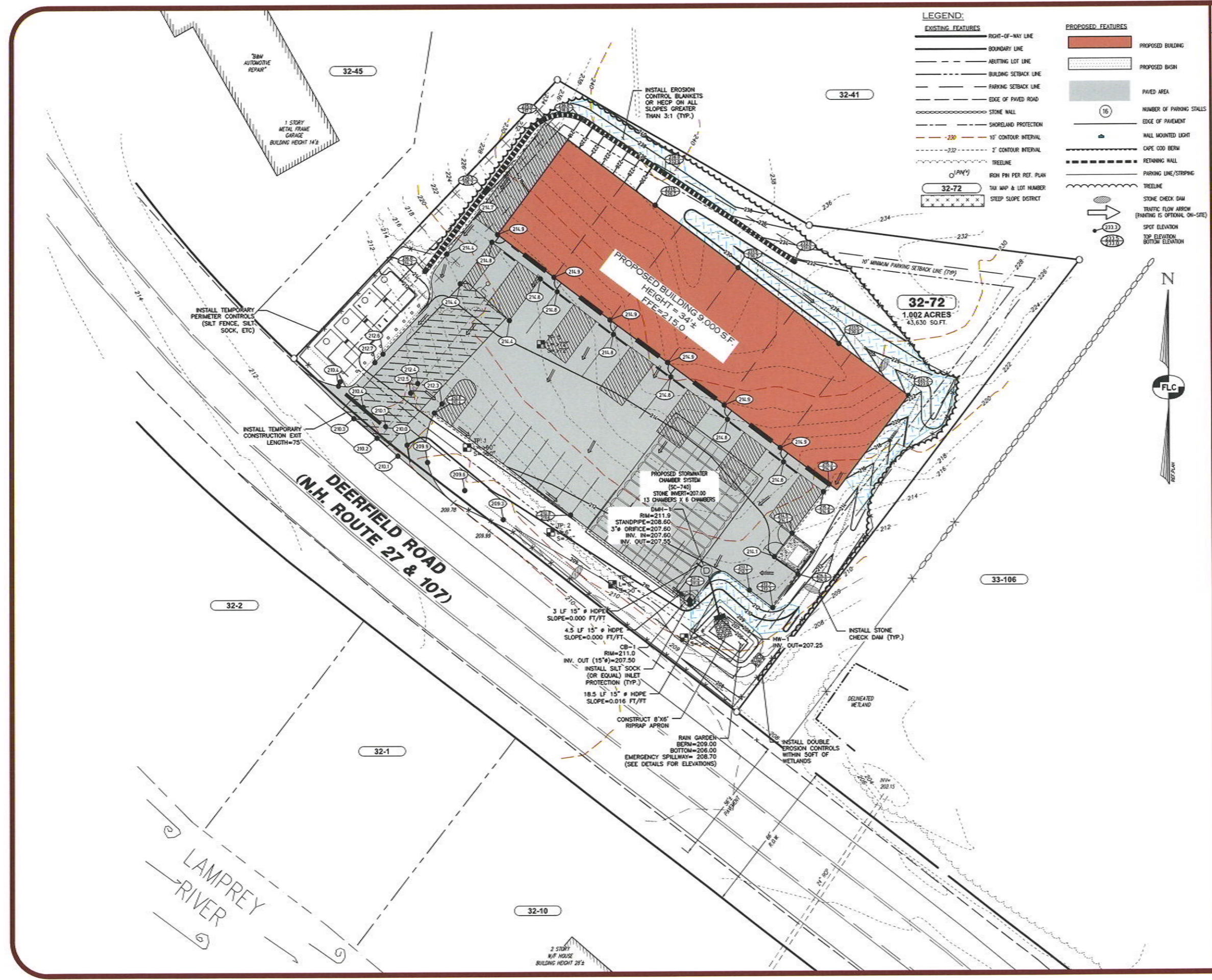
**32-10**  
**GARRETT B. ENNIS**  
 218 ROUTE 27  
 RAYMOND, NH 03077  
 BK 4961 PG 2484 11/7/2008  
 (SINGLE FAMILY - ZONE C1)

**32-45**  
**221 ROUTE 27, LLC**  
 118A ONK HILL ROAD  
 NORTHFIELD, NH 03276  
 BK 6417 PG 1448 6/21/2022  
 (STORE/SHOP ZONE C1)

**32-41**  
**MAURICE R. & TAMMY A. DUSSAULT**  
 70 LONG HILL ROAD  
 RAYMOND, NH 03077  
 BK 3208 PG 2305 3/31/1997  
 (SINGLE FAMILY - ZONE C1)

**32-72**  
**1.002 ACRES**  
 43,630 SQ.FT.  
 (PER REF. PLAN)

**33-106**  
**WOODSIDE VILLAGE, LLC**  
 25 WHITETAIL LANE  
 CHESTER, NH 03039  
 BK 6448 PG 1455 10/24/2022  
 (VACANT LAND - ZONE C2)



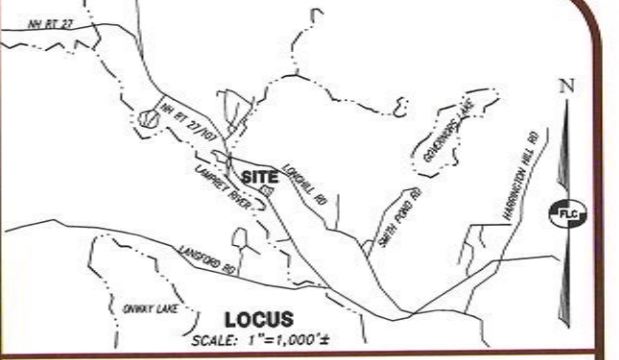
**LEGEND:**

**EXISTING FEATURES**

- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- ABUTTING LOT LINE
- BUILDING SETBACK LINE
- PARKING SETBACK LINE
- EDGE OF PAVED ROAD
- STONE WALL
- SHORELAND PROTECTION
- 10' CONTOUR INTERVAL
- 2' CONTOUR INTERVAL
- TREELINE
- IRON PIN PER REF. PLAN
- TAX MAP & LOT NUMBER
- STEEP SLOPE DISTRICT

**PROPOSED FEATURES**

- PROPOSED BUILDING
- PROPOSED SIGN
- PAVED AREA
- NUMBER OF PARKING SPACES
- EDGE OF PAVEMENT
- WALL MOUNTED LIGHT
- CAPE COD BERM
- RETAINING WALL
- PARKING LINE/STRIPING
- TREELINE
- STONE CHECK DAM
- TRAFFIC FLOW ARROW (PAINTING IS OPTIONAL ON-SITE)
- SPOT ELEVATION
- TOP ELEVATION
- BOTTOM ELEVATION

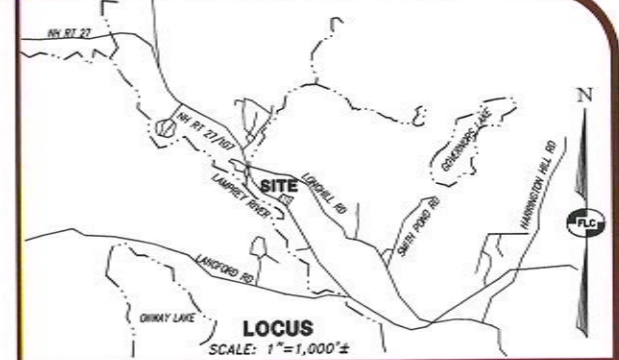


- CONSTRUCTION NOTES:**
- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF RAYMOND AND SHALL BE BUILT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE TOWN OF RAYMOND DEPARTMENT OF PUBLIC WORKS SPECIFICATIONS FOR ROAD CONSTRUCTION AND SEWERS AND DRAINAGE AND THE NHDOT 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 TOWN/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 "DGSAFE" 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.
  - BLASTING, IF REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF RAYMOND FIRE DEPARTMENT REGULATIONS.
  - ALL DISTURBED NON-PAVED AREAS SHALL BE LOADED 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 & NHEC STANDARDS.
  - ALL TELEPHONE WORK SHALL CONFORM TO CONSOLIDATED COMMUNICATIONS SPECIFICATIONS.
  - CONTRACTOR SHALL OBTAIN STRUCTURAL DESIGN PLANS, DETAILS AND SPECIFICATIONS FOR ALL RETAINING WALLS SHOWN ON THIS PLAN PRIOR TO CONSTRUCTION.
- GRAPHIC SCALE**
- 20' 10' 0' 20' 40' 60'
- IMPERIAL: 1"=20'

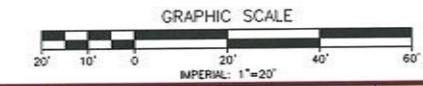
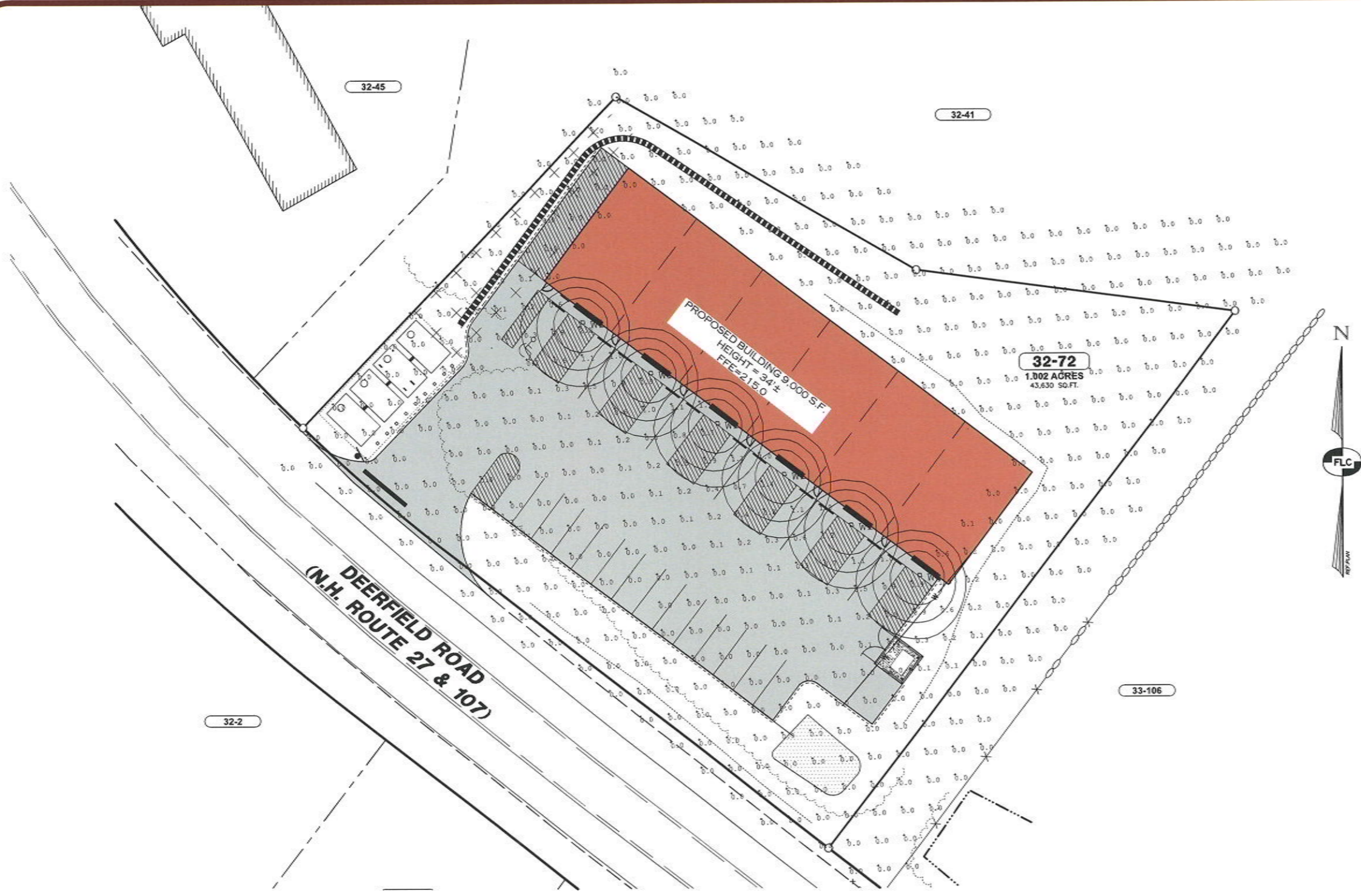
REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB

**GRADING & DRAINAGE PLAN**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
 PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: 1" = 20'      OCTOBER 13, 2023  
 Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs



- LIGHTING NOTES:**
1. LIGHTING SHALL BE INSTALLED AND ARRANGED SO AS NOT TO REFLECT OR CAUSE GLARE UPON ABUTTING LAND, HIGHWAYS, AND ROADS.
  2. ALL FIXTURES ARE FULL CUTOFF, LED FIXTURES. FLOOD LIGHTING AND UPLIGHTING ARE PROHIBITED.
  3. LIGHTING IS PROVIDED VIA WALL MOUNTED LIGHTS.
  4. MOUNTING HEIGHT OF ALL PROPOSED WALL MOUNT LIGHTING FIXTURES SHALL BE 16 FEET ABOVE FINISH GRADE ON THE BUILDING. LOCATED AT EACH BUILDING UNIT.
  5. ALL LIGHTS ARE TO BE SETUP ON PHOTOCELLS TO AUTOMATICALLY TURN OFF DURING DAYLIGHT HOURS. TIMER SHALL BE INSTALLED TO LIMIT HOURS FROM 6 AM - 10 PM. IF OPERATING 24/7 THE LIGHTING MUST REDUCE BY 50% FOR SECURITY LIGHTING. HALF OF THE WALL PACKS SHALL BE INSTALLED WITH MOTION SENSORS.
  6. ALL FIXTURES AND HARDWARE ARE TO BE DARK BRONZE IN COLOR TO MATCH.
  7. LIGHT FIXTURES ARE AVAILABLE THROUGH EXPOSURE 2 LIGHTING. ANY CHANGE IN FIXTURE MUST BE APPROVED BY THE OWNER, DESIGN ENGINEER, AND TOWN OF RAYMOND.



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B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB
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**LIGHTING PLAN**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
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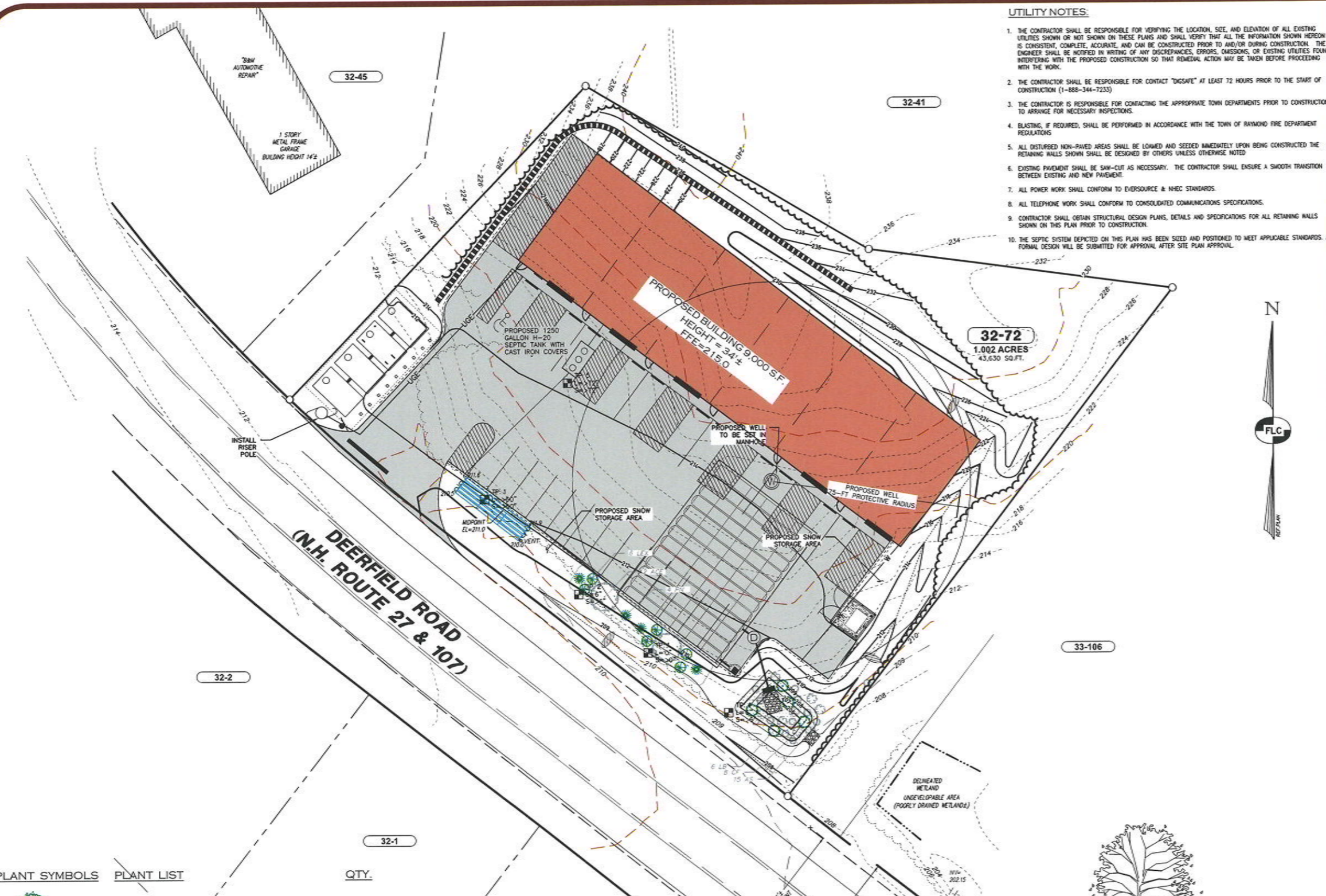
**Slim Wall Pack (WPSLS)**  
 Small LED Slim Wall Pack



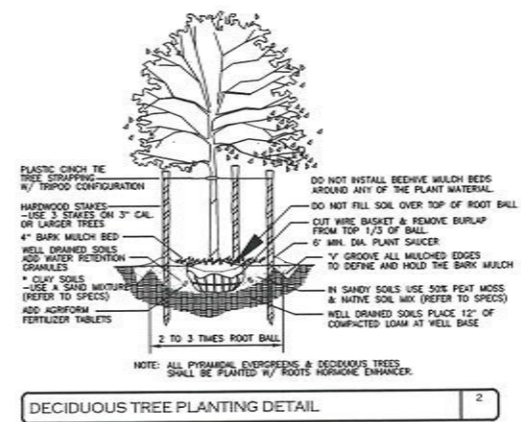
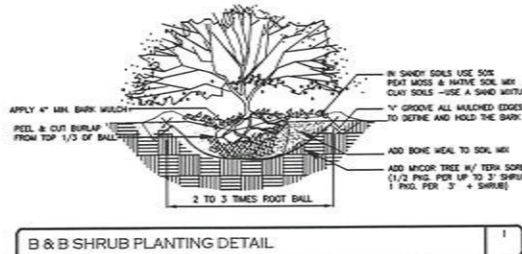
**PARKING LOT**

Illuminance (Fc)  
 Average = 0.32  
 Maximum = 2.0  
 Minimum = 0.0  
 Avg/Min Ratio = N.A.  
 Max/Min Ratio = N.A.

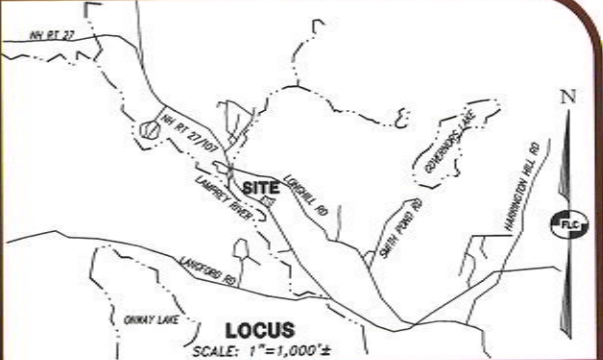
Symbol	Qty	Label	Arrangement	Description	(MANUFACT)
□	6	WL	Single	MPSLS-11-30-B2A / WALL MTD 16" AFG	LSI INDUSTRIES, INC.



PLANT SYMBOLS	PLANT LIST	QTY.
ACE	ACER RUBRUM (RED MAPLE) (OR EQUAL)	(2) 3" CAL.
PH	PINUS NIGRA (AUSTRIAN PINE) (OR EQUAL)	(2) 5-6'H
LEX	ILEX MESURVEAE 'BLUE PRINCE' (MALE HOLLY) (OR EQUAL)	(6) 2.5'-3'
CF	CARDINAL FLOWER (LOBELIA CARDINALIS) (OR EQUAL)	(6) 2'-4'
LB	LOWBUSH BLUEBERRY (VACCINIUM ANGUSTIFOLIUM) (OR EQUAL)	(6) 1'-2'
AS	NEW ENGLAND ASTER (ASTER NOVAEANGUAE) (OR EQUAL)	(15) 1'-2'



- UTILITY NOTES:**
1. 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.
  2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACT "DIGSAFE" AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION (1-888-344-7233)
  3. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE TOWN DEPARTMENTS PRIOR TO CONSTRUCTION TO ARRANGE FOR NECESSARY INSPECTIONS.
  4. BLASTING, IF REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF RAYMOND FIRE DEPARTMENT REGULATIONS.
  5. ALL DISTURBED NON-PAVED AREAS SHALL BE LOWED AND SEEDED IMMEDIATELY UPON BEING CONSTRUCTED THE RETAINING WALLS SHOWN SHALL BE DESIGNED BY OTHERS UNLESS OTHERWISE NOTED.
  6. EXISTING PAVEMENT SHALL BE SAW-CUT AS NECESSARY. THE CONTRACTOR SHALL ENSURE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW PAVEMENT.
  7. ALL POWER WORK SHALL CONFORM TO EVERSOURCE & NHCC STANDARDS.
  8. ALL TELEPHONE WORK SHALL CONFORM TO CONSOLIDATED COMMUNICATIONS SPECIFICATIONS.
  9. CONTRACTOR SHALL OBTAIN STRUCTURAL DESIGN PLANS, DETAILS AND SPECIFICATIONS FOR ALL RETAINING WALLS SHOWN ON THIS PLAN PRIOR TO CONSTRUCTION.
  10. THE SEPTIC SYSTEM DEPICTED ON THIS PLAN HAS BEEN SIZED AND POSITIONED TO MEET APPLICABLE STANDARDS. A FORMAL DESIGN WILL BE SUBMITTED FOR APPROVAL AFTER SITE PLAN APPROVAL.

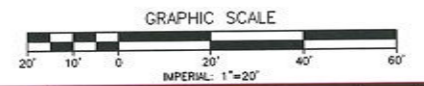


- LANDSCAPING NOTES:**
1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG-SAFE AND FOR VERIFICATION OF ALL UTILITIES AND SHALL NOTIFY THE OWNERS REPRESENTATIVE OF ANY CONFLICTS PRIOR TO COMMENCING.
  2. EXISTING TREES TO REMAIN SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. TEMPORARY FENCING SHALL BE INSTALLED PRIOR TO THE START OF SITE WORK TO PROTECT ROOT NECKS.
  3. EXISTING TREES THAT ARE TO BE REMOVED, SHALL BE REMOVED ENTIRELY FROM THE SITE, INCLUDING STUMPS. NO STUMP-DUMPS ARE ALLOWED ON SITE.
  4. UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED WITHIN THE IMMEDIATE AREA NO PLANT MATERIAL SHALL BE INSTALLED.
  5. UNLESS OTHERWISE NOTED OR APPROVED, ALL TREES MUST BE BALLED AND BURLAPPED.
  6. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF "THE AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSEMEN.
  7. ANY PROPOSED PLANT MATERIAL SUBSTITUTIONS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
  8. 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 REPLACED WITHIN 1-YEAR BEFORE THE END OF THE FOLLOWING PLANTING SEASON, WHICHEVER OCCURS FIRST.
  9. IN AREAS OF STONE MULCH LAY 6 ML SHEETS OF "VISQUEEN" TYPE POLYETHYLENE ON COMPACTED SUBGRADE BEFORE PLACING STONE. MINIMUM 6" OVERLAP. PERFORATE SHEETING IN PLANTING BEDS BEFORE PLACING STONE.
  10. UNLESS OTHERWISE NOTED LOW AND SEED ALL DISTURBED AREAS WITH A MINIMUM 6" OF SUITABLE LOAM. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. SEE SITE PLAN.
  11. WHERE APPLICABLE THE CONTRACTOR SHALL HAVE ALL FALL TRANSPANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
  12. PLANTS SHALL BE INSTALLED WITHIN ONE YEAR OF COMMENCEMENT OF CONSTRUCTION.
  13. ALL LANDSCAPING SHALL BE LOCATED AND MAINTAINED SO AS NOT TO IMPACT THE LINES OF SIGHT AT ENTRANCE.
  14. ALL LANDSCAPED AREAS WILL BE MAINTAINED TO HAVE A SUFFICIENT AMOUNT OF WATER TO MAINTAIN VIABILITY EITHER BY IRRIGATION OR BY OTHER MEANS.
  15. THE PROPOSED PLANTINGS SHALL NOT CONFLICT WITH SNOW STORAGE AREAS, LIGHT FIXTURES, OR UNDERGROUND UTILITIES.

**LANDSCAPING CALCULATIONS:**

AT LEAST 5% OF FRONT YARD AREA SHALL BE LANDSCAPED WITH TREES GREATER THAN OR EQUAL TO 1.5" IN CALIPER AND SHRUBS 1'-3" IN HEIGHT AND CONTIGUOUS GROUND COVER.

FRONT YARD AREA = 21,595 S.F.  
5% OF FRONT YARD AREA = 1,080 S.F. REQUIRED  
FRONT YARD LANDSCAPING PROVIDED = 1,119.22 S.F.



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**LANDSCAPING & UTILITY PLAN**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
PREPARED FOR AND LAND OF,  
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- PRIOR TO STARTING ANY WORK ON THE SITE THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES.
- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS THEREOF IN NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICE STORM WATER MANUALS, VOLUME 1-3, LATEST EDITION.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PER PLANS AND DETAILS. PERMETER CONTROLS SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF EARTH DISTURBING ACTIVITIES.
- INSTALL INLET PROTECTION AROUND ALL STORM DRAIN STRUCTURES. INLET PROTECTION BMP'S SHALL REMAIN UNTIL THE SITE IS STABILIZED. CONSTRUCTION OF STORMWATER BASINS AND TREATMENT SWALES SHALL OCCUR PRIOR TO AND EARTH MOVING OPERATION THAT WILL INFLUENCE STORM WATER RUNOFF.
- THE WORK AREA SHALL BE GRADED, SHAPED AND OTHERWISE DRAINED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE THE LIMITS OF THE WORK AREA.
- EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEN POSSIBLE.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND AFTER EVERY 0.25-INCH OR GREATER RAINFALL. SEDIMENTS SHALL BE DISPOSED OF IN AN UPLAND AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND BE PERMANENTLY STABILIZED.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION. AT NO TIME SHALL THE TOTAL UNSTABILIZED DISTURBED AREA, INCLUDING LOT DISTURBANCES, BE GREATER THAN FIVE (5) ACRES.
- THE LAND AREA EXPOSED SHALL BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. ALL NON-ACTIVE DISTURBED AREAS SHALL BE STABILIZED WITHIN 30 DAYS OF THE DISTURBANCE. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF FINAL GRADING.
- DITCHES, SWALES AND DRAINAGE BASINS SHALL BE CONSTRUCTED DURING THE INITIAL PHASE OF CONSTRUCTION AND STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- AN AREA SHALL BE CONSIDERED STABILIZED IF ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED; OR
  - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES THAT ARE STEEPER THAN 3:1 (HORIZONTAL / VERTICAL), UNLESS OTHERWISE SPECIFIED THE CONTRACTOR SHALL USE NORTH AMERICAN GREEN SC150, OR APPROVED EQUAL.
- ALL AREAS RECEIVING EROSION CONTROL STONE OR RIPRAP SHALL HAVE A GEOTEXTILE MATERIAL INSTALLED BELOW THE STONE (SEE APPROPRIATE DETAILS).
- ALL DISTURBED AREAS TO TURF FINISHED SHALL BE COVERED WITH A MINIMUM THICKNESS OF 6 INCHES OF COMPACTED LOAM. LOAM SHALL BE COVERED WITH THE APPROPRIATE SEED MIXTURE AS INDICATED BELOW:
 

PERMANENT SEED (LAWN AREAS) LBS. / 1,000 SQ. FT.	PERMANENT SLOPE SEED MIX LBS. / 1,000 SQ. FT.
CREeping RED FESCUE 0.92 LBS	CREeping RED FESCUE 0.80 LBS
PERENNIAL RYEGRASS 1.15 LBS	PERENNIAL RYEGRASS 0.69 LBS
KENTUCKY BLUEGRASS 0.58 LBS	REDTOP 0.12 LBS
REDTOP 0.12 LBS	ALSKA CLOVER 0.12 LBS
	BIRDFOOT TREFLOE 0.12 LBS
<b>**APPLICATION RATE TOTALS</b>	<b>**APPLICATION RATE TOTALS</b>
2.8 LBS PER 1,000 SF**	11.85 LBS PER 1,000 SF**
- TEMPORARY STABILIZATION OF DISTURBED AREAS. STRIPPED SOIL SHALL BE STOCKPILED UNCOMPACTED, AND STABILIZED AGAINST EROSION AS OUTLINED BELOW. SEED BED PREPARATION: 10-20 TO FERTILIZATION TO BE SPREAD AT THE RATE OF 7 LBS PER 100 SF AND AGRICULTURAL LIMESTONE AT A RATE OF 90 LBS PER 1000 SF AND INCORPORATED INTO THE SOIL. THE SOIL, FERTILIZER AND LIMESTONE SHALL BE TILLED TO PREPARE FOR SEEDING.

- SEED MIXTURE: USE ANY OF THE FOLLOWING:
 

SPECIES	RATE PER 1,000 SF	DEPTH	SEEDING DATES
WINTER RYE	2.5 LBS	1 INCH	8/15 TO 9/15
GRASS	2.5 LBS	1 INCH	4/15 TO 10/15
ANNUAL RYEGRASS	1.0 LBS	0.25 INCH	8/15 TO 9/15

- MULCHING: MULCH SHOULD BE USED ON HIGHLY ERODIBLE AREAS, AND WHERE CONSERVATION OF MOISTURE WILL FACILITATE PLANT ESTABLISHMENT AS FOLLOWS:
 

TYPE	RATE PER 1,000 SF	USE AND COMMENTS
STRAW	70 TO 90 LBS	MAY BE USED WITH PLANTINGS, MUST BE ANCHORED TO BE USED ALONE
WOOD CHIPS OR BARK MULCH	460 TO 920 LBS	USED WITH TREE AND SHRUB PLANTINGS
FIBROUS MATTING	AS RECOMMENDED BY MANUFACTURER	MUST BE BIODEGRADABLE. USE IN SLOPE AREAS AND AREAS DIFFICULT TO VEGETATE
CRUSHED STONE	SPREAD TO GREATER THAN 1/2" THICKNESS	USE IN SPECIFIC AREAS AS SHOWN ON PLAN OR AS NEEDED

- APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE (CRITICAL TIME FRAMES OR UNAVAILABLE SITES) THEN APPLY FERTILIZER AT A RATE OF 11 POUNDS PER 1,000 SF AND LIMESTONE AT A RATE OF 90 POUNDS PER 1,000 SF. FERTILIZER SHALL BE LOW PHOSPHATE (LESS THAN 2% PHOSPHORUS).
- CAUTION SHOULD BE TAKEN WHEN THE PROPERTY IS LOCATED WITHIN 250 FEET OF A WATER BODY. IN THIS CASE ALL FERTILIZERS SHALL BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER. SLOW RELEASE FERTILIZERS MUST BE AT LEAST 50% SLOW RELEASE NITROGEN COMPONENT. NO FERTILIZER EXCEPT LIMESTONE SHALL BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER. THESE ARE REGULATED LIMITATIONS.
- PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS (SEE WINTER CONSTRUCTION NOTES). NO DISTURBED AREAS SHALL BE LEFT EXPOSED DURING THE WINTER MONTHS.
- A VIGOROUS DUST CONTROL PROGRAM SHALL BE APPLIED BY THE SITE CONTRACTOR. DUST SHALL BE MANAGED THROUGH THE USE OF WATER AND/OR CALCIUM CHLORIDE.
- IN NO WAY ARE THE MEASURES INDICATED ON THE PLANS OR IN THESE NOTES TO BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL USE JUDGMENT TO INSTALL ADDITIONAL EROSION CONTROL MEASURES AS SITE CONDITIONS, WEATHER OR CONSTRUCTION METHODS WARRANT.
- FOLLOWING PERMANENT STABILIZATION, TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND ACCUMULATED SEDIMENTATION IS TO BE DISPOSED OF IN AN APPROVED LOCATION, OUTSIDE OF JURISDICTIONAL WETLANDS.
- LOT DISTURBANCE OTHER THAN SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.
- THE CONTRACTOR AND OWNER ARE RESPONSIBLE FOR OBSERVING AND MANAGING THE PROJECT PER RSA 430:53 AND AGR 3800 REGARDING INVASIVE SPECIES (PLANTS AND INSECTS). NO INVASIVE SPECIES PLANT OR INSECT SHALL BE INTRODUCED ONTO THE SITE.

**EROSION CONTROL NOTES** 1 DT-1

CONTACT DIG SAFE  
72 HOURS PRIOR  
TO CONSTRUCTION  
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OR DIAL 8 1 1  
IT'S SMART, IT'S FREE, IT'S THE LAW.

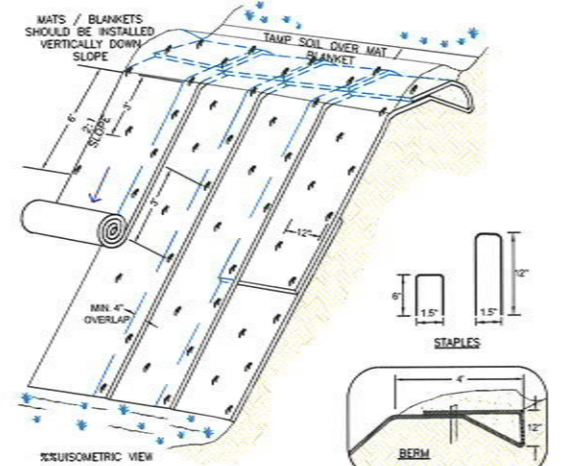


- ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1 AND SEEDING AND PLACING 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 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% VEGETATED GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER NOVEMBER 15TH, 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 OR PROPERLY INSTALLED EROSION CONTROL BLANKETS COVERED WITH HAY. OTHER STABILIZATION OPTIONS ARE TO BE APPROVED BY THE APPROPRIATE AGENCIES AND THE DESIGN ENGINEER. IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER MONTHS THEN THE ROAD SHOULD BE CLEARED OF ACCUMULATED SNOW AFTER EACH STORM EVENT.

**WINTER CONSTRUCTION NOTES** 2 DT-1

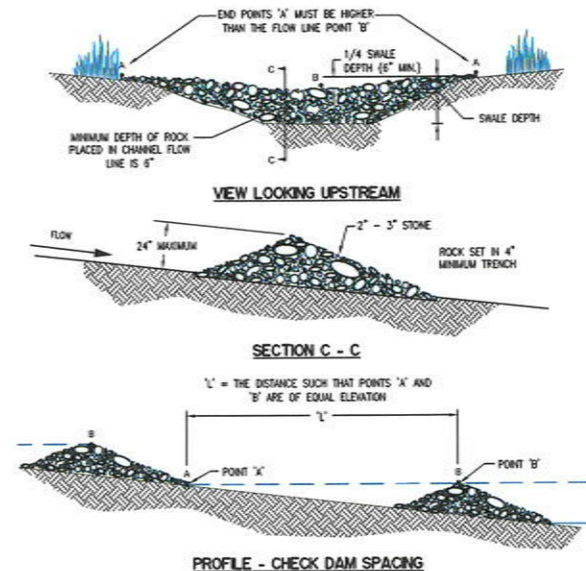
- INSTALL SILTATION CONTROL FENCES IN LOCATIONS SHOWN HEREON. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATION.
- INSTALL STABILIZED CONSTRUCTION EXIT(S).
- CUT AND CLEAR TREES; DEPOSE OF DEBRIS. STUMPS ARE TO BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
- REMOVE TOPSOIL AND STOCKPILE AWAY FROM ANY WETLAND. STABILIZE STOCKPILE IMMEDIATELY BY SEEDING. PLACE SILT FENCE AROUND THE DOWN SLOPE SIDE OF EARTH STOCKPILES.
- ROUGH GRADE SITE - CONSTRUCT DRAINAGE BASINS AND DRAINAGE SWALES DURING INITIAL PORTION OF CONSTRUCTION. STABILIZE IMMEDIATELY PER THE CONSTRUCTION AND EROSION CONTROL DETAILS. DO NOT DIRECT STORM WATER RUNOFF TO THESE STRUCTURES UNTIL A HEALTHY VEGETATIVE COVER IS ESTABLISHED.
- BEGIN BUILDING CONSTRUCTION.
- CONSTRUCT GRAVEL PARKING AREA (PAVEMENT OPTIONAL) AND BUILDING PAD. INSTALL UTILITIES AND STRUCTURES. ALL CUT AND FILL SLOPES SHALL BE STABILIZED UPON COMPLETION OF ROUGH GRADING PER THE EROSION CONTROL NOTES.
- INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS AND AFTER EVERY 0.25" OR GREATER RAINFALL.
- DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BEAMS, CULVERTS, DITCHES, SILTATION FENCES, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED.
- FINISH GRADING TO PREPARE FOR FINISH (IF ANY) AND LOADING. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
- FINISH PAVING (IF ANY). PERMANENT SEEDING SHALL BE PERFORMED UPON COMPLETION OF PARKING AREA (SEE EROSION CONTROL NOTES).
- COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- ALL STRUCTURES SHALL BE CLEARED OF SEDIMENTS ONCE CONSTRUCTION IS COMPLETE.

**CONSTRUCTION SEQUENCE** 3 DT-1



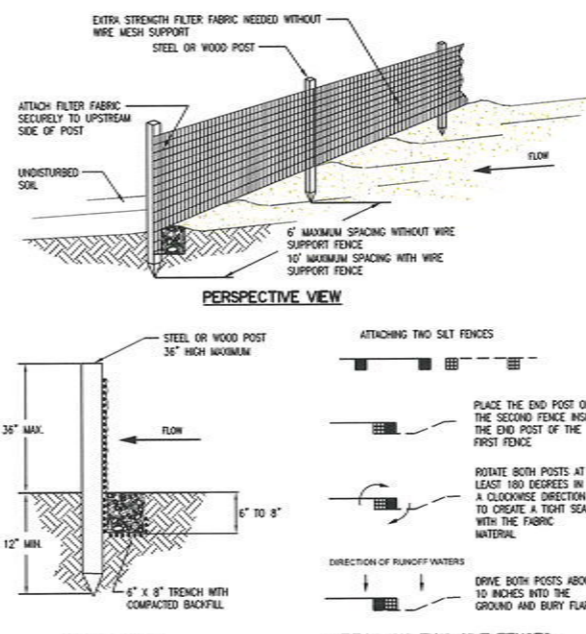
- NOTES:
- DIMENSIONS GIVEN IN THIS DETAIL ARE EXAMPLES. DEVICE SHOULD BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
  - INSTALL STRAW/COCONUT FIBER EROSION CONTROL MAT SUCH AS NORTH AMERICAN GREEN SC150 OR EQUAL ON ALL SLOPES EXCEEDING 3' HORIZ : 1' VERT.
  - THE EROSION CONTROL MATERIAL(S) SHALL BE ANCHORED WITH "U" SHAPED 11 GAUGE WIRE STAPLES OR WOODEN STAKES WITH A MINIMUM TOP WIDTH OF 1 INCH AND LENGTH OF 6 INCH.
  - SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS / BLANKETS SHALL HAVE GOOD SOIL CONTACT.
  - APPLY LIME, FERTILIZER AND PERMANENT SEEDING BEFORE PLACING BLANKETS.
  - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET AS SHOWN. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES OR STAKES IN APPROPRIATE LOCATIONS. REFER TO MANUFACTURER'S STAPLE GUIDE FOR CORRECT STAPLE PATTERN.
  - LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
  - IN LOOSE SOIL CONDITIONS THE USE OF STAPLES OR STAKE LENGTHS GREATER THAN 6 INCHES MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
  - THE CONTRACTOR SHALL MAINTAIN THE BLANKET UNTIL ALL WORK ON THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MAINTENANCE SHALL CONSIST OF THE REPAIR OF AREAS WHERE DAMAGED BY ANY CAUSE. ALL DAMAGED AREAS SHALL BE REPAIRED TO REESTABLISH THE CONDITIONS AND GRADE OF THE SOIL PRIOR TO APPLICATION OF THE COVERING AND SHALL BE RE-FERTILIZED, RE-SEEDED AND RE-MULCHED AS DIRECTED.

**EROSION BLANKETS - SLOPE INSTALLATION** 4 DT-1



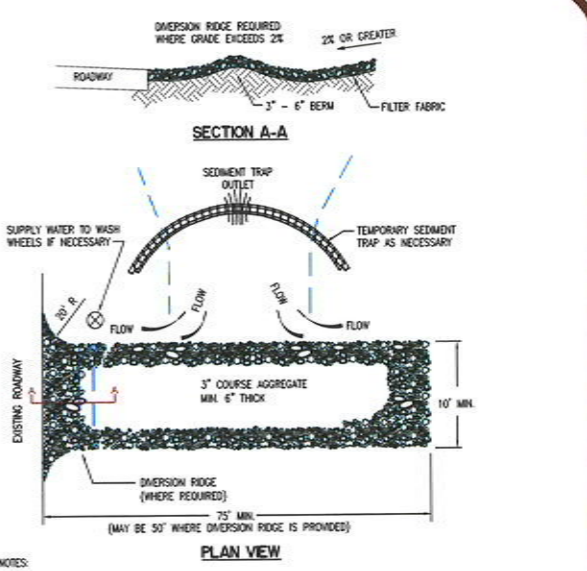
- NOTES:
- STONE CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DETAIL.
  - THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE CHECK DAM SHOULD BE LESS THAN ONE ACRE.
  - STONE CHECK DAMS SHOULD NOT BE USED IN A FLOWING STREAM.
  - STONE CHECK DAMS SHOULD BE CONSTRUCTED OF WELL-GRADED ANGULAR 2 TO 3 INCH STONE. THE INSTALLATION OF 3/4-INCH STONE ON THE UPSTREAM FACE IS RECOMMENDED FOR BETTER FILTERING.
  - WHEN INSTALLING STONE CHECK DAMS THE CONTRACTOR SHALL KEY THE STONE INTO THE CHANNEL BANKS AND EXTEND THE STONE BEYOND THE ABUTMENTS A MINIMUM OF 18-INCHES TO PREVENT FLOW AROUND THE DAM.
  - STONE CHECK DAMS SHOULD BE REMOVED ONCE THE SWALE OR DITCH HAS BEEN STABILIZED UNLESS OTHERWISE SPECIFIED.

**STONE CHECK DAM** 5 DT-1



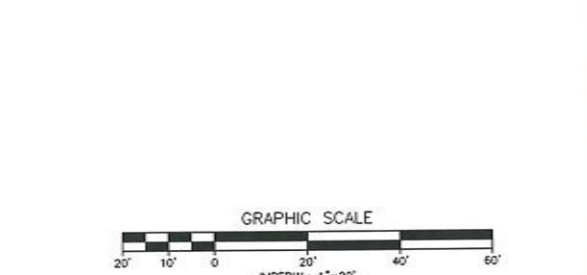
- NOTES:
- SILT FENCES SHOULD NOT BE USED ACROSS STREAMS, CHANNELS, SWALES, DITCHES OR OTHER DRAINAGE WAYS.
  - SILT FENCE SHOULD BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE AND THE ENDS OF THE SILT FENCE SHOULD BE FLARED UPSLOPE.
  - IF THE SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE OR THE PRESENCE OF HEAVY ROOTS THE BASE OF THE FABRIC SHOULD BE EMBEDDED WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE.
  - SILT FENCES PLACED AT THE TOE OF SLOPES SHOULD BE INSTALLED AT LEAST 6 FEET FROM THE TOE TO ALLOW SPACE FOR SHALLOW PONDING AND ACCESS FOR MAINTENANCE.
  - THE MAXIMUM SLOPE ABOVE THE FENCE SHOULD BE 2:1 AND THE MAXIMUM LENGTH OF SLOPE ABOVE THE FENCE SHOULD BE 100 FEET.
  - REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
  - SILT FENCES SHOULD BE REMOVED WHEN THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

**SILT FENCE** 6 DT-1



- NOTES:
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  - THE MINIMUM STONE USED SHOULD BE 3-INCH CRUSHED STONE.
  - THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH HIGH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
  - THE PAD SHOULD EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER.
  - THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.
  - THE PAD SHOULD BE AT LEAST 6-INCHES THICK.
  - THE GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
  - THE PAD SHALL BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOGES IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.
  - NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.
  - WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
  - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
- SCALE: N.T.S.

**GRAVEL CONSTRUCTION EXIT** 7 DT-1



REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/17/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB

**EROSION CONTROL DETAILS**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: 1" = 20' OCTOBER 13, 2023

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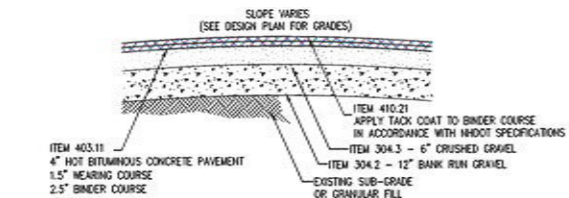
206 Elm Street, Milford, NH 03055  
45 Roxbury Street, Keene, NH 03431  
Phone: (603) 672-5456 Fax: (603) 413-5456  
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- ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS AND SPECIFICATIONS OF THE TOWN OF RAYMOND.
- THE CONTRACTOR SHALL BE 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. FIELDSTONE LAND CONSULTANTS, PLLC, AS THE DESIGN ENGINEER, SHALL BE NOTIFIED BY 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 CONTACT "DIFSAFE" 72 HOURS PRIOR TO THE START OF CONSTRUCTION (1-800-255-4977 IN NH, 1-866-344-7233 IN MA).
- COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND SPECIAL CONDITIONS OF TOWN/CITY AGENCIES, SUCH AS THE PLANNING BOARD, ZONING BOARD, CONSERVATION COMMISSION, AND OTHERS, IS MANDATORY AND IS THE RESPONSIBILITY OF THE OWNER.
- ANY ALTERATION OF THIS DESIGN OR CHANGE DURING CONSTRUCTION MAY REQUIRE APPROVAL OF VARIOUS TOWN/CITY BOARDS OR AGENCIES AND SHALL BE DISCUSSED WITH THE OWNER AND FIELDSTONE LAND CONSULTANTS, PLLC, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE CITY DEPARTMENTS PRIOR TO CONSTRUCTION TO ARRANGE FOR NECESSARY INSPECTIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCURATE AS-BUILT INFORMATION OF ALL WORK, ESPECIALLY UNDERGROUND CONSTRUCTION OF UTILITY LINES, SERVICES, CONNECTIONS, ETC. AND APPROPRIATE TIES TO ABOVE GROUND PERMANENT STRUCTURES, FIELD SURVEY COORDINATES, OR SOME OTHER METHOD OF ESTABLISHING THE AS-BUILT CONDITION OF ALL CONSTRUCTION.
- THE CONTRACTOR AND OWNER ARE RESPONSIBLE FOR OBSERVING AND MANAGING THE PROJECT PER RSA 430:53 AND ACR 3800 REGARDING INVASIVE SPECIES (PLANTS AND INSECTS). NO INVASIVE SPECIES PLANT OR INSECT SHALL BE INTRODUCED ONTO THE SITE.

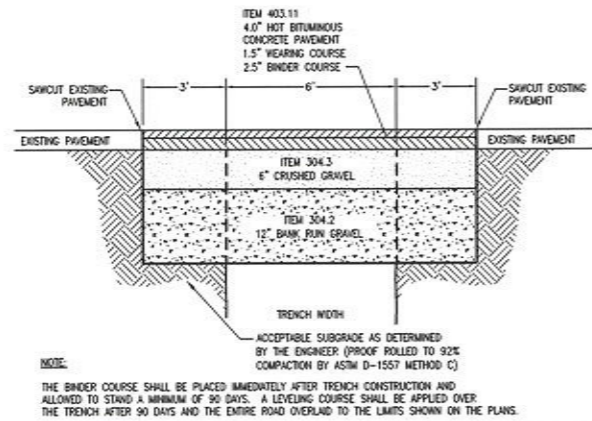
**GENERAL CONSTRUCTION NOTES**

1 DT-2



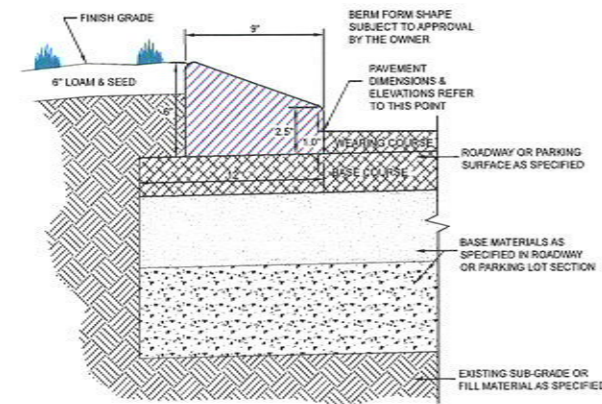
**PAVEMENT SECTION**

2 DT-2



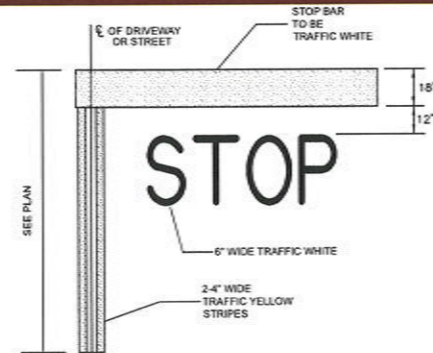
**PAVEMENT TRENCH PATCH**

3 DT-2



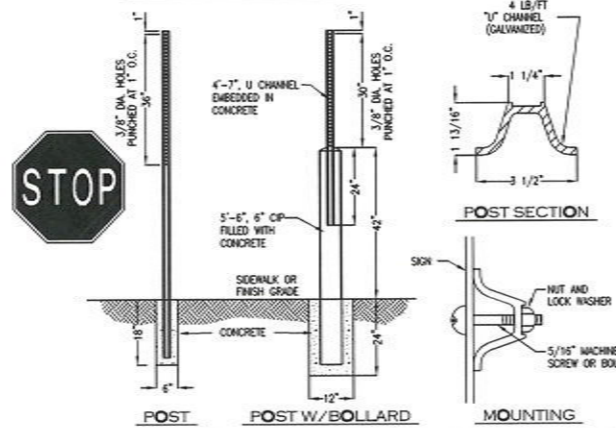
**CURB - ASPHALT (CAPE COD BERM)**

4 DT-2



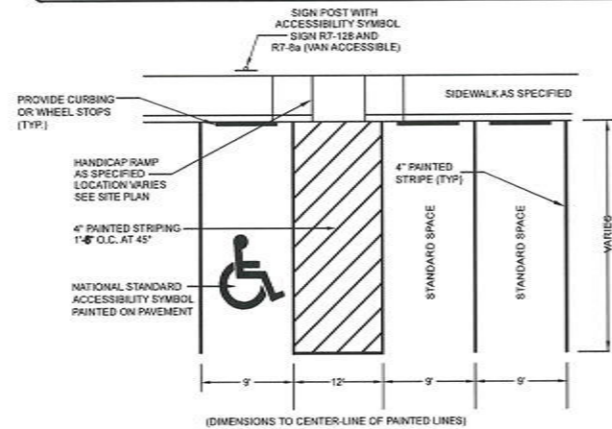
**STOP BAR DETAIL**

5 DT-2



**SIGN POST - STANDARD & W/BOLLARD**

6 DT-2

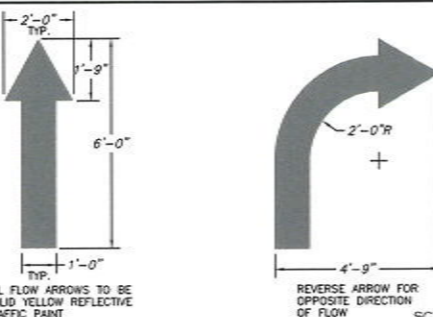


**NOTES:**

- MAXIMUM SLOPE IN ANY DIRECTION IS 2.0% FOR HANDICAP SPACES.
- SEE SITE PLAN FOR LOCATION OF HANDICAP SPACES AND TYPE OF HANDICAP RAMP TO BE USED.
- HANDICAP SYMBOL SHALL BE CENTERED ON WIDTH OF PARKING STALL AND LOCATED 66" FROM ACCESS DRIVE INTO PARKING SPACE.
- THE HANDICAP SYMBOL SHALL HAVE A 5' x 5' CONTRASTING BACKGROUND, NORMALLY BLUE. A BACKGROUND IS NOT REQUIRED IF WHITE OR YELLOW SYMBOL IS ON BLACK ASPHALT.

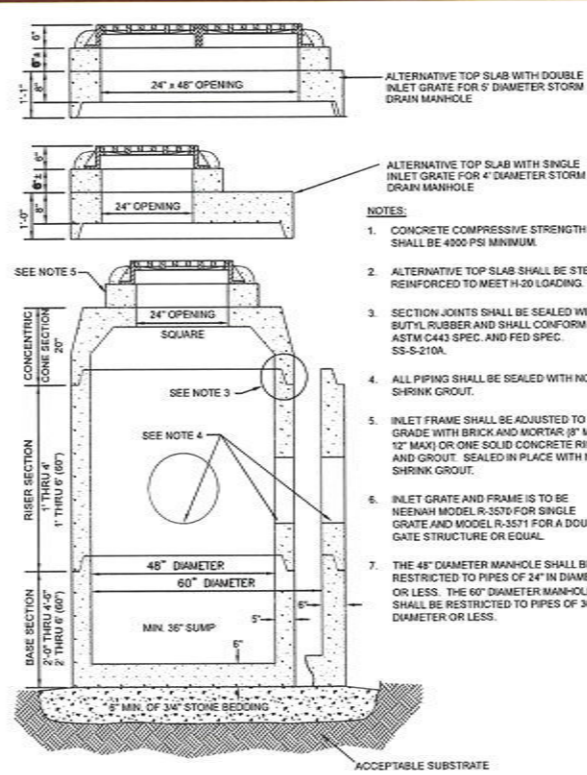
**PARKING STALL LAYOUT**

7 DT-2



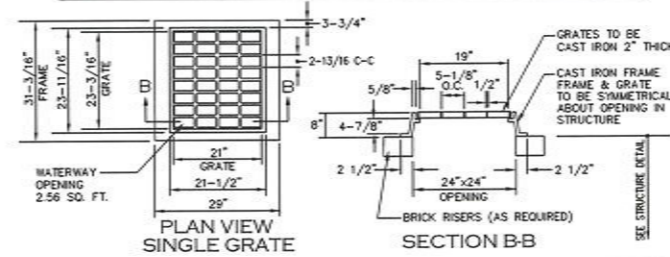
**PAINTED TRAFFIC ARROWS**

8 DT-2



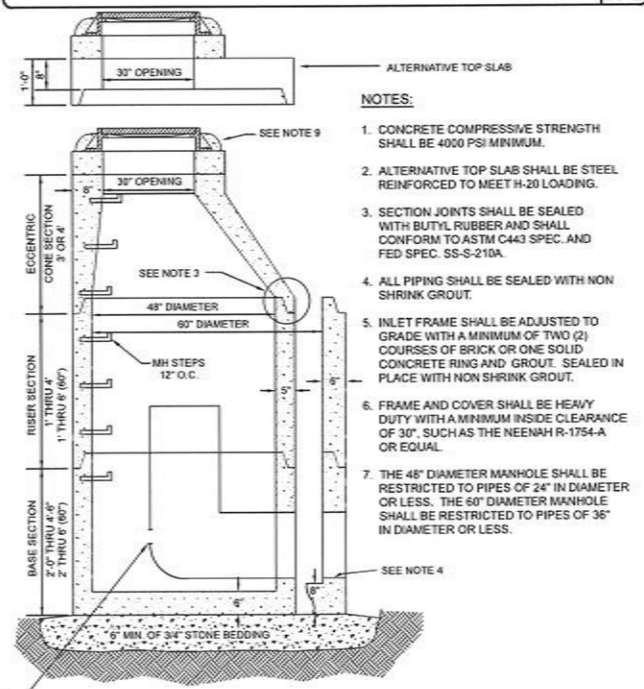
**CATCH BASIN**

9 DT-2



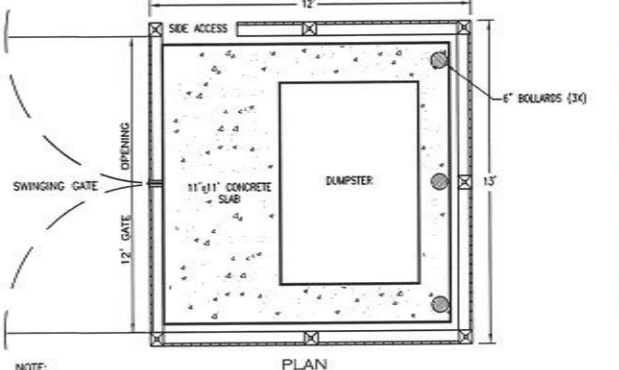
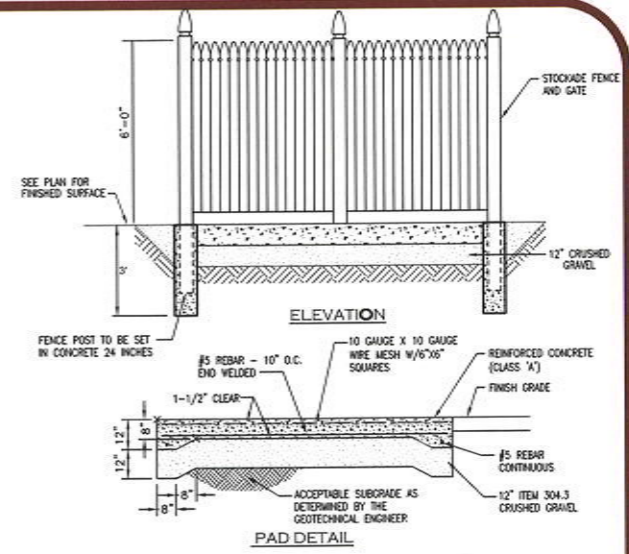
**FRAME AND GRATE - NHDOT TYPE B**

10 DT-2



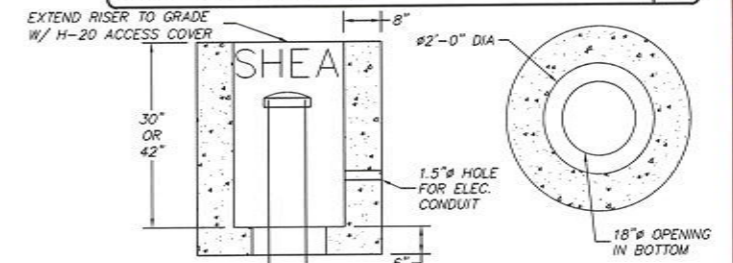
**4' DIA. MANHOLE - STORM DRAIN (DMH 1)**

11 DT-2



**DUMPSTER ENCLOSURE**

12 DT-2



**WELL MANHOLE**

13 DT-2

REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB

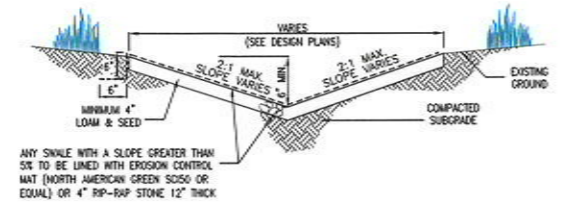
**CONSTRUCTION DETAILS**

**TAX MAP 32 LOTS 72  
(N.H. ROUTE 127)  
RAYMOND, NEW HAMPSHIRE**  
PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
P.O. BOX 351, PITTSFIELD, NH 03263

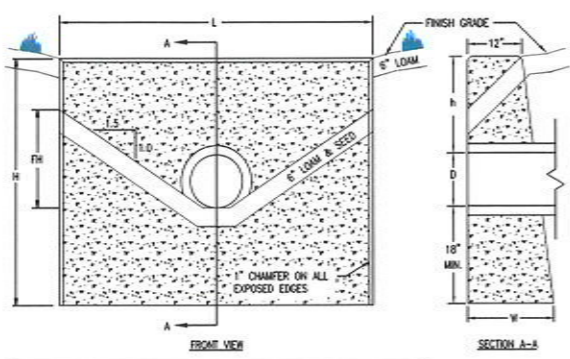
SCALE: AS NOTED NOVEMBER 10, 2023

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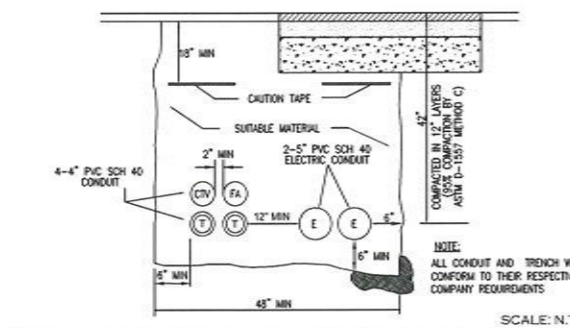
TYPICAL SWALE DETAIL DT-3



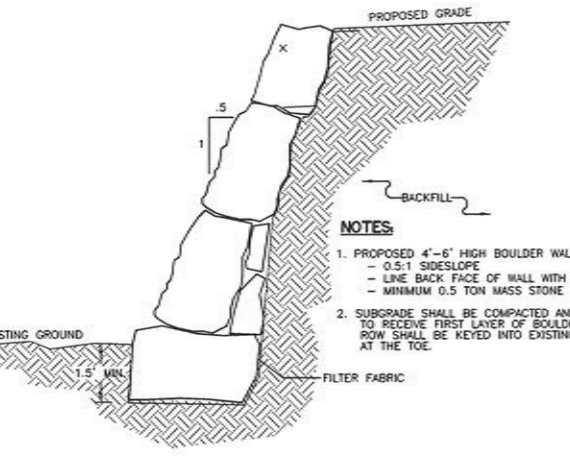
CULVERT DIA	HEADWALL LENGTH	HEADWALL HEIGHT	FILL HEIGHT	TOP HEIGHT	HEADWALL BOTTOM
D	L	H	FH	h	W
INCHES					
FEET & INCHES					
12	4'-3"	3'-9"	1'-1"	1'-3"	1'-11.25"
15	6'-0"	4'-3"	1'-7"	1'-6"	2'-0.75"
18	7'-0"	4'-6"	1'-10"	1'-6"	2'-1.50"
24	9'-0"	5'-0"	2'-4"	1'-6"	2'-3.00"

HEADWALL SHALL BE STEEL REINFORCED AND CONFORM TO MDDOT STANDARD PLAN HW-2, LAST REVISED JUNE 16, 2010.

HEADWALL - PRECAST CONCRETE (HW1) DT-3



TYPICAL UTILITY TRENCH DT-3



BOULDER WALL DT-3

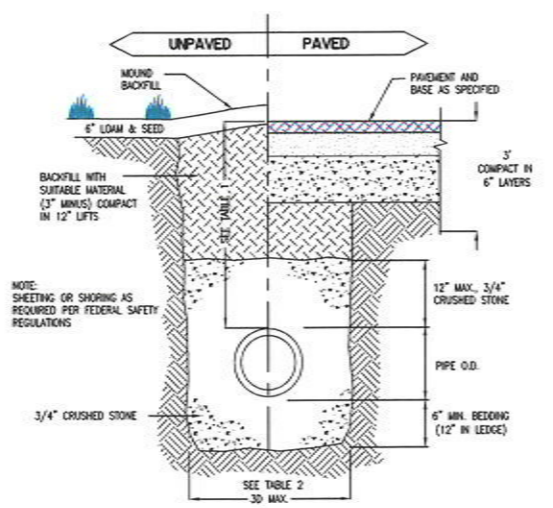
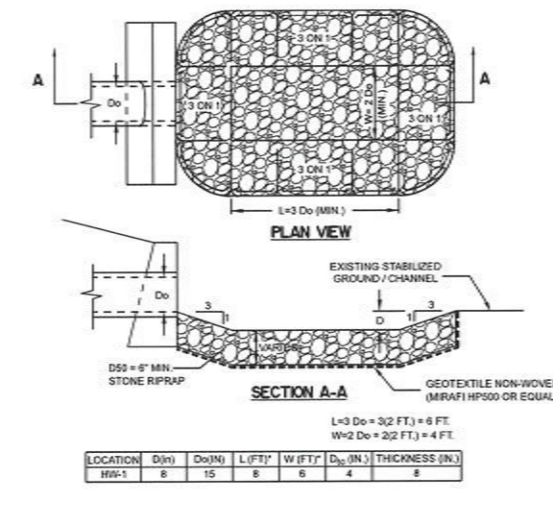
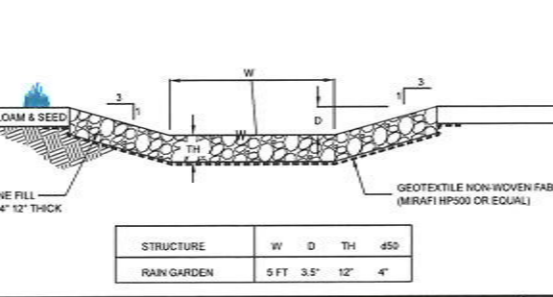


TABLE 1 (RECOMMENDED COVER)			TABLE 2 (RECOMMENDED TRENCH WIDTH)	
LOCATION	PIPE MATERIAL	MINIMUM COVER	INSIDE DIAMETER	TOTAL WIDTH
PAVED ROADS	ALL	3 FT.	12" TO 24"	I.D. + 24"
GRAVEL ROADS	ALL	2 FT.	OVER 24"	2 x I.D.
DRIVEWAYS	ALL	1 FT.		
UNPAVED AREAS	ALL	2 FT.		

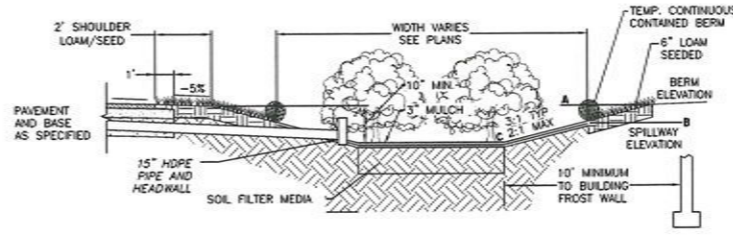
DRAINAGE TRENCH (TYPICAL) DT-3



PREFORMED SCOUR HOLE DT-3



EMERGENCY SPILLWAY DETAIL DT-3



- NOTES:
- DO NOT PLACE RAIN GARDEN SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING DRAINAGE AREA(S) HAVE BEEN FULLY STABILIZED.
  - TO PREVENT DEGRADATION OF INFILTRATION FUNCTION:
    - DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
    - DO NOT COMPACT THE EXCAVATION.
    - DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE RAIN GARDEN AREA DURING ANY STAGE OF CONSTRUCTION. FROM UNHSC BIORETENTION SOIL SPECIFICATION FEBRUARY 2017.
  - SOIL MEDIA SPECIFIED ACCORDING TO PERFORMANCE REQUIREMENTS: PARTICLE SIZE DISTRIBUTION ACCORDING TO ASTM D422 (STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS).
    - PARTICLE SIZE DISTRIBUTION BY SEPARATES:
      - EXCLUDE ANY MATERIAL >4.75 mm - 0%
      - VERY COARSE SAND/GRAVEL: GRAVEL (2.0 TO 4.76 mm) 5% MAXIMUM (PERCENT BY DRY WEIGHT).
      - SAND (0.42 TO 2.0 mm) 60 - 85% (PERCENT BY DRYWEIGHT).
      - SILT (0.075 TO 0.42 mm) 20% MAXIMUM (PERCENT BY DRYWEIGHT).
      - CLAY (LESS THAN 0.075 mm) 5% MAXIMUM (PERCENT BY DRYWEIGHT).

TABLE 1: ACCEPTABLE PARTICLE SIZE DISTRIBUTION OF FINAL BIORETENTION SOIL MIX.

SIEVE #	SIEVE SIZE (mm)	% PASSING
4	0.187 (4.76)	100
10	0.075 (2)	95
40	0.017 (0.42)	40-15
200	0.003 (0.075)	10-20
>200	FIN	0-5

RAIN GARDEN INVERT INFORMATION

GARDEN #	ELEVATION		
	A	B	C
1	209.00	208.70	206.00

RAIN GARDEN TYPICAL SECTION DT-3

REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB

**CONSTRUCTION DETAILS**  
**TAX MAP 32 LOTS 72**  
**(N.H. ROUTE 127)**  
**RAYMOND, NEW HAMPSHIRE**  
 PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: AS NOTED NOVEMBER 10, 2023  
 Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

**FIELDSTONE**  
**LAND CONSULTANTS, PLLC**

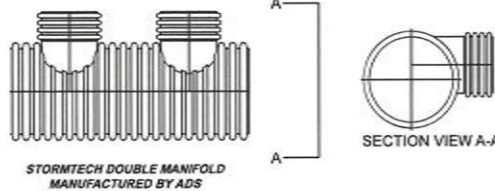
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 45 Roxbury Street, Keene, NH 03431  
 Phone: (603) 672-5456 Fax: (603) 413-5456  
 www.FieldstoneLandConsultants.com

1. REMOVE ALL ORGANIC MATERIAL FROM AREA BELOW PROPOSED INFILTRATION BASINS AND TO EXPOSE UNDERLYING SOILS.
2. CARE SHALL BE TAKEN TO PROTECT THE UNDERLYING SOILS FROM CONSTRUCTION TRAFFIC AND THE DISCHARGE OF SEDIMENT LADEN RUNOFF. IF FEASIBLE, POSITION EQUIPMENT OUTSIDE THE LIMITS OF THE INFILTRATION PRACTICE.
3. ONCE EXCAVATED AND PRIOR TO FILLING, THE UNDERLYING SOILS SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH LEVELING DRAG.
4. FILL BELOW THE INFILTRATION PRACTICE SHALL CONFORM TO THE SPECIFICATIONS FOR NHDOT ITEM 209.1, "GRANULAR BACKFILL".
5. DO NOT PLACE INFILTRATION PRACTICES INTO SERVICE UNTIL ALL CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

**INFILTRATION PRACTICE CONSTRUCTION NOTES**

MANIFOLDS ARE DESIGNED TO BE COUPLED TO STORMTECH PREFABRICATED END CAPS. WHEN USING STANDARD END CAPS, CORRUGATE DPIPE UP TO 18 INCHES CAN BE INSERTED DIRECTLY INTO THE END CAP. FOR 24" INLET PIPES, A CORRUGATED TO SMOOTH PIPE ADAPTER IS REQUIRED.

FOR INFORMATION  
CALL 1-888-892-2694

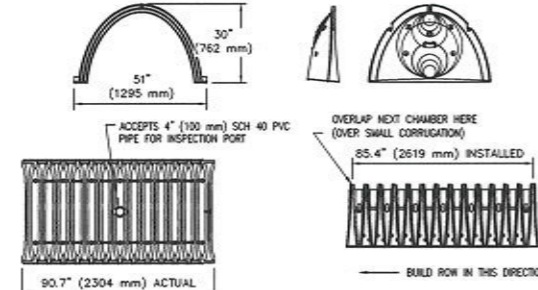


STUB SIZE	48"	42"	36"	30"	24"	18"	15"	12"	10"	8"
24"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-	-	-
18"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-	-	-
15"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-	-	-
12"	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-	-	-	-
10"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	-	-
8"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	-
6"	-	-	-	-	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL	AVAIL

AVAIL - STANDARD HEADERS AVAILABLE

1. ALL DESIGN SPECIFICATIONS FOR STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE STORMTECH DESIGN MANUAL.
2. THE INSTALLATION OF STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE LATEST STORMTECH INSTALLATION INSTRUCTIONS.
3. THE CONTRACTOR IS ADVISED TO REVIEW AND UNDERSTAND THE INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION. CALL 1-888-892-2694 OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF THE LATEST STORMTECH INSTALLATION INSTRUCTIONS.
4. CHAMBERS SHALL MEET THE DESIGN REQUIREMENTS AND LOAD FACTORS SPECIFIED IN SECTION 12.12 OF THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

**SC-740 NOTES**  
SCALE: NONE



**MINIMUM CHAMBER SPECIFICATIONS**  
 SIZE (N x H x INSTALLED LENGTH) 51.0" x 30.0" x 85.4" (1295 mm x 762 mm x 2169 mm)  
 CHAMBER STORAGE 45.5 CUBIC FEET (1.30 m³)  
 MINIMUM INSTALLED STORAGE 74.9 CUBIC FEET (2.12 m³)  
 WEIGHT 75 lbs. (33.6 kg)

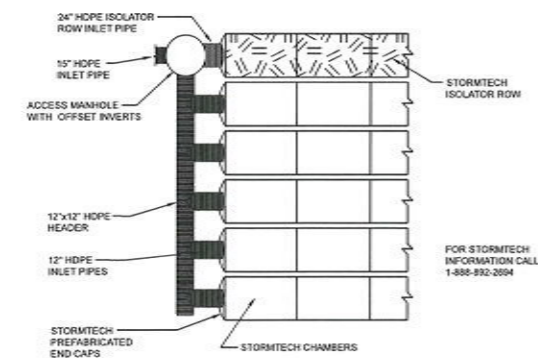
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "0"  
 STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "1"

PART #	CHAMBER	PIPE SIZE	A	B	C	D
SC740EP001	SC 740	9 in (228 mm)	8.26 in (210 mm)	3.85 in (98 mm)	8.50 in (216 mm)	N/A
SC740EP008	SC 740	9 in (228 mm)	8.95 in (227 mm)	3.85 in (98 mm)	N/A	0.50 in (13 mm)
SC740EP127	SC 740	12 in (305 mm)	4.70 in (119 mm)	7.70 in (196 mm)	2.50 in (64 mm)	N/A
SC740EP128	SC 740	12 in (305 mm)	4.70 in (119 mm)	7.70 in (196 mm)	N/A	1.20 in (30 mm)
SC740EP151	SC 740	15 in (375 mm)	8.40 in (213 mm)	6.26 in (160 mm)	9.00 in (229 mm)	N/A
SC740EP158	SC 740	15 in (375 mm)	8.40 in (213 mm)	6.26 in (160 mm)	N/A	1.30 in (33 mm)
SC740EP187	SC 740	18 in (457 mm)	9.70 in (247 mm)	6.72 in (172 mm)	5.00 in (127 mm)	N/A
SC740EP188	SC 740	18 in (457 mm)	9.70 in (247 mm)	6.72 in (172 mm)	N/A	1.80 in (45 mm)
SC740EP248	SC 740	24 in (605 mm)	9.50 in (241 mm)	6.45 in (164 mm)	N/A	0.15 in (4 mm)

ALL STUBS, EXCEPT FOR THE SC740EP248 ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

\*FOR THE SC740EP248 THE 24" (605 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.15" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

**SC-740 TECHNICAL DETAILS**  
SCALE: NONE



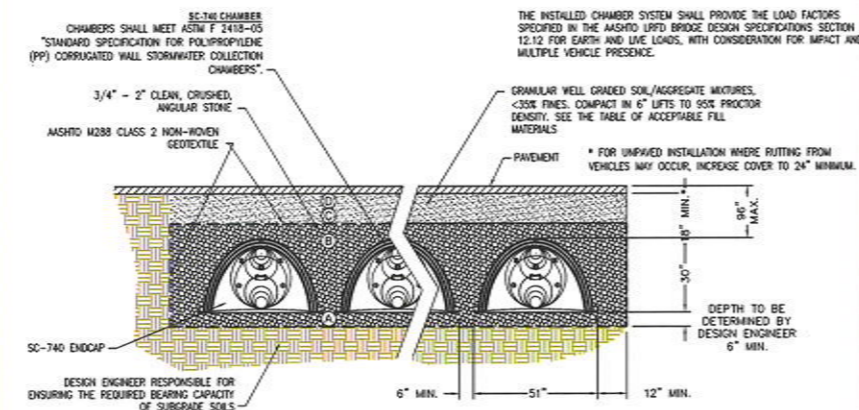
**ISOLATOR ROW MAINFOLD DETAIL**  
SCALE: NONE

**ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 AND SC-310 CHAMBER SYSTEMS**

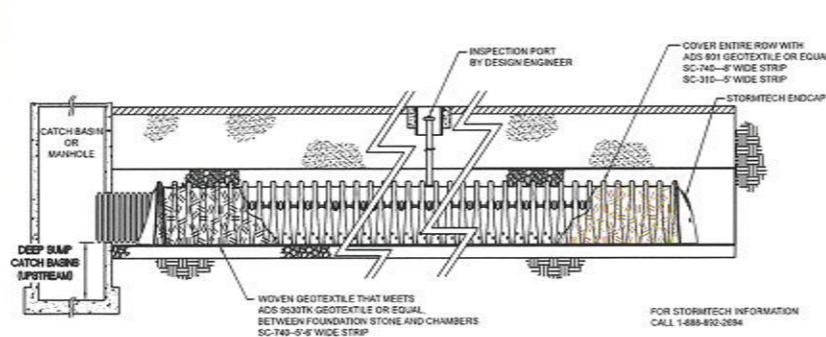
MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION*	COMPACTION/DENSITY REQUIREMENT
(1) FILL MATERIAL FOR LAYER 'Y' STARTS FROM THE TOP OF THE 'Y' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THIS PAVEMENT SURFACE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, WHITE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR FOUNDATION SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. FILL INSTALLATIONS MAY HAVE STRONGER MATERIAL AND PREPARATION REQUIREMENTS.
(2) FILL MATERIAL FOR LAYER 'Z' STARTS FROM THE TOP OF THE CHAMBERSTONE 'Z' LAYER TO 18" (457 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SURFACE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4" - 2 INCH (19 - 51 mm).	3, 352, 4, 457, 5, 56, 57, 6, 63, 69, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" (305 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (152 mm) LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY. ROLLER CROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (55 kN). DRIVING FORCE NOT TO EXCEED 20,000 lbs (90 kN).
(3) EMBANKMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('X' LAYER) TO THE 'Y' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4" - 2 INCH (19 - 51 mm).	3, 352, 4, 457, 5, 56, 57	NO COMPACTION REQUIRED.
(4) FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (NOTW) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4" - 2 INCH (19 - 51 mm).	3, 35, 4, 457, 5, 56, 57	FLAT COMPACT OF ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY.

PLEASE NOTE:  
 1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".  
 2. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'X' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (229 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.

**STORMTECH ACCEPTABLE FILL MATERIALS**  
SCALE: NONE

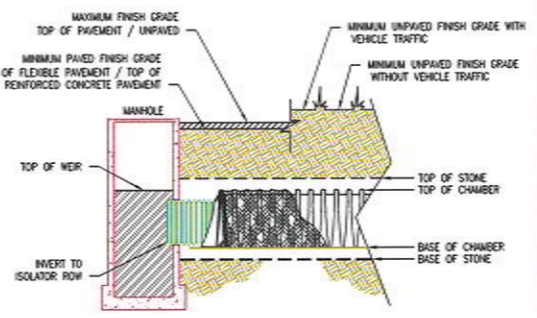
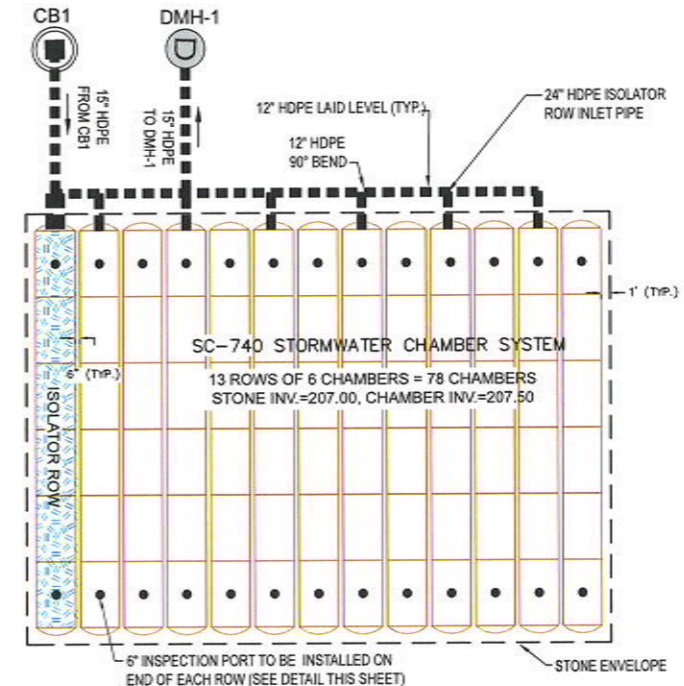


**SC-740 STANDARD CROSS SECTION**  
SCALE: NONE

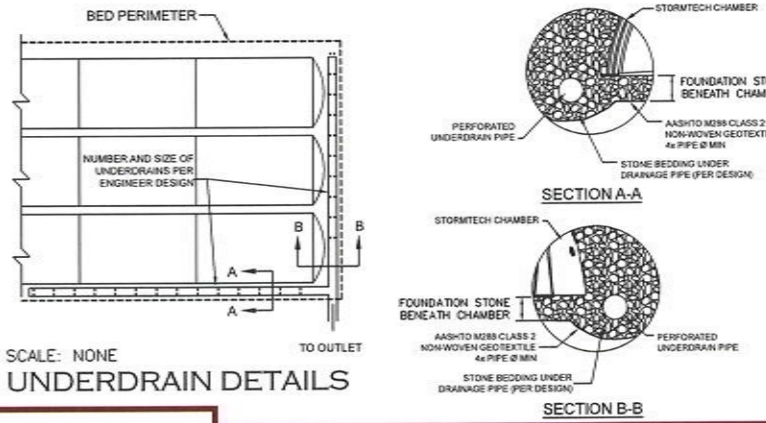


**ISOLATOR ROW DETAIL**  
SCALE: NONE

**STORMWATER INFILTRATION SYSTEM - STORMTECH SC-740 CHAMBER LAYOUT**  
SCALE: 1"=10'



**SECTION AT DRAIN STRUCTURE**  
SCALE: NONE



**SCALE: NONE UNDERDRAIN DETAILS**

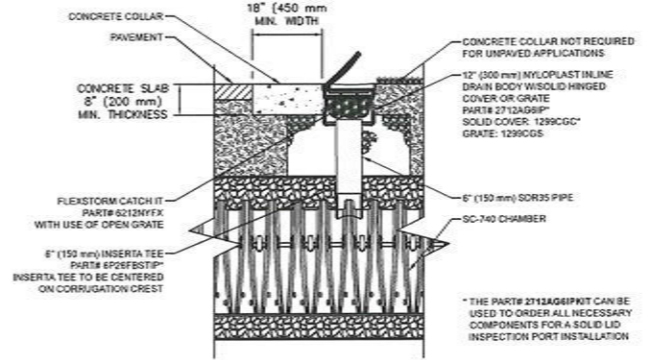
REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB

**CONSTRUCTION DETAILS**  
 TAX MAP 32 LOTS 72  
 (N.H. ROUTE 127)  
 RAYMOND, NEW HAMPSHIRE  
 PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 361, PITTSFIELD, NH 03263

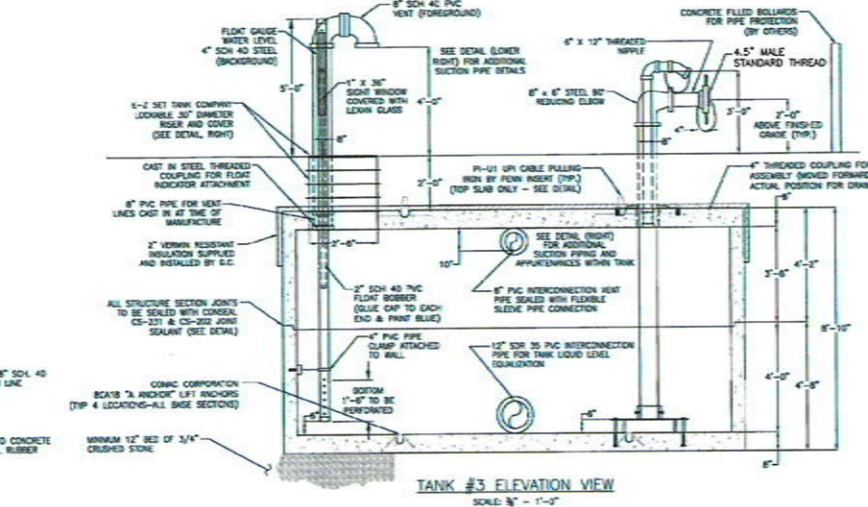
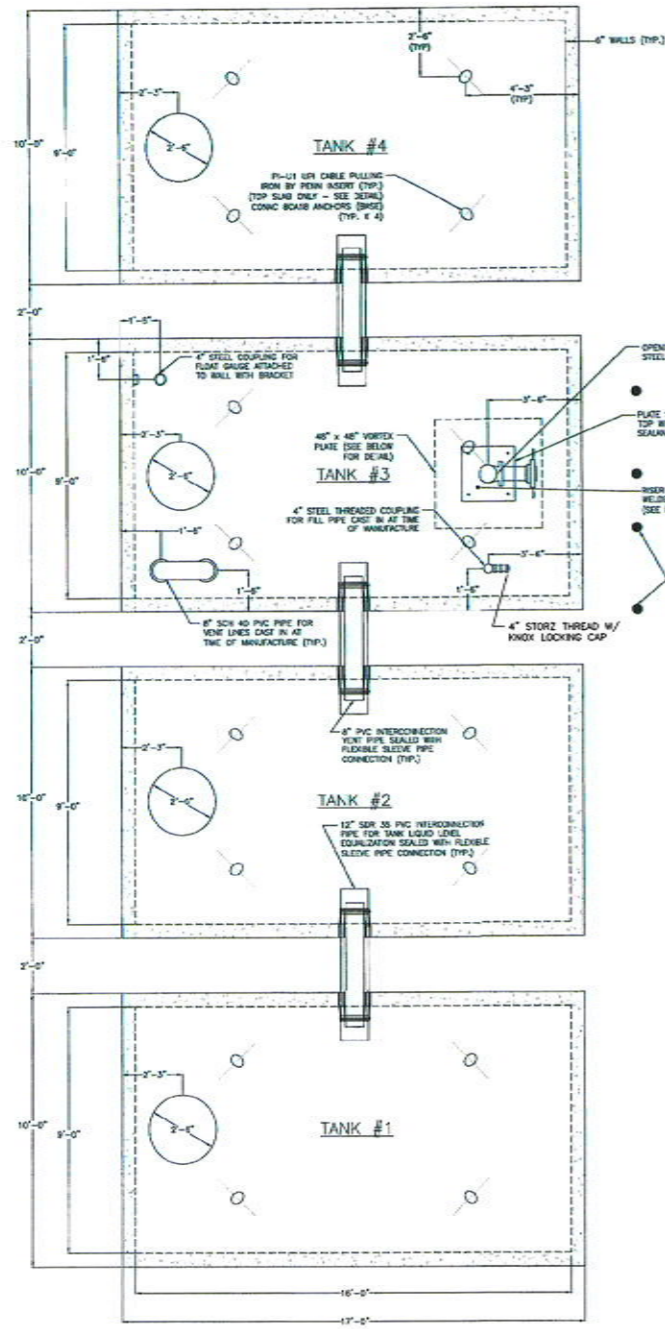
SCALE: AS NOTED  
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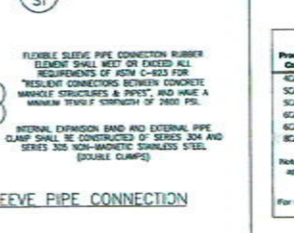
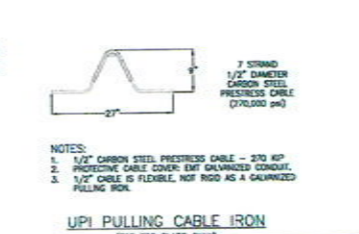
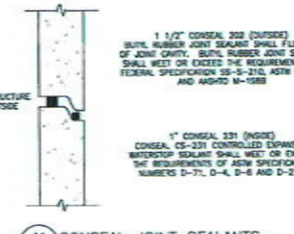
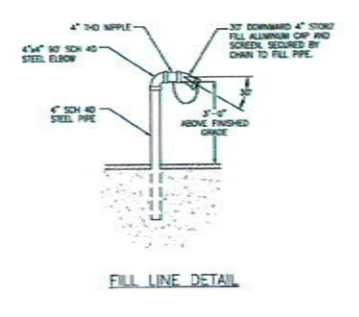
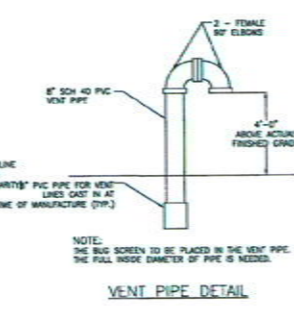
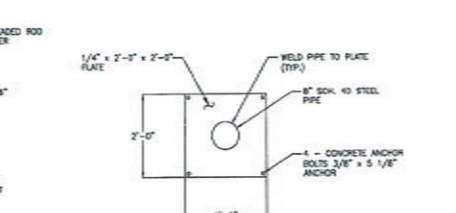
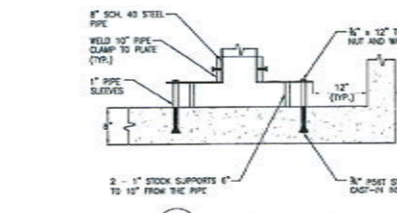
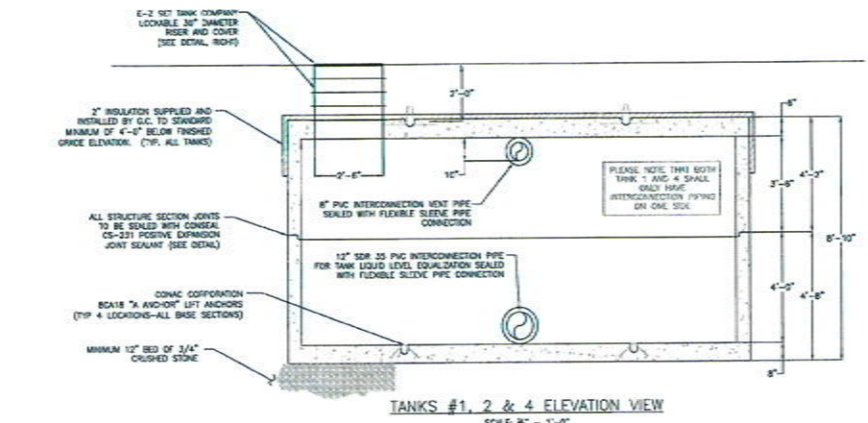
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**SC-740 6" INSPECTION PORT DETAIL**  
SCALE: NONE



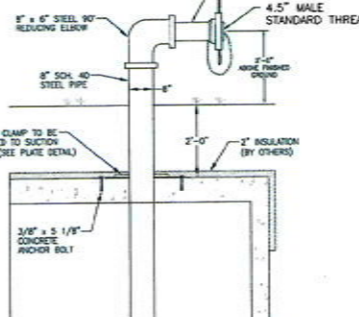
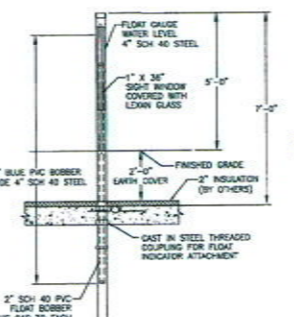
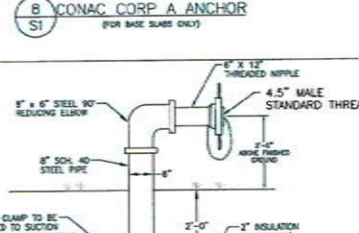
- FOUNDATION & BACKFILL NOTES:**
- FOUNDATION MATERIAL SHALL BE 3/4" CRUSHED STONE, MINIMUM 12" THICK.
  - 1 1/2" DIA. RAIN RUNS SHALL BE USED FOR BROUILL OVERLAYS SURROUNDING TANK. BACKFILL SHALL BE PLACED IN MINIMUM 12" LOOSE LIFTS. IT SHALL BE COMPACTED TO 90% OF MAXIMUM DRY DENSITY BY MOVED, REDUCE METHOD (ASTM 1557). ALL CONNECTIONS SHALL BE DONE WITH HAND OPERATED CONNECTION EQUIPMENT.
  - TANK COAGULATION SHALL BE 100% QUANTIFIED THROUGHOUT INSULATION AND BROUILL OPERATIONS.
  - ALL Joints BETWEEN TANKS SHALL BE FILLED TO A MINIMUM OF 12" ABOVE CORNER OF INTERCONNECTION PIPE WITH 3/4" CRUSHED STONE. 1 1/2" DIA. RAIN RUNS SHALL BE USED ABOVE THIS ELEVATION, PROVIDED THAT PROPER CONNECTION AND SIZES IN NOTE 2 ABOVE CAN BE ACHIEVED.
  - ALL BACKFILL MATERIAL BETWEEN TANKS SHALL BE PLACED IN 12" LIFTS AT THE SAME TIME THE 40 P.C. MATERIAL SURROUND THE TANKS.



Product Code	SLAB THICKNESS	A-Anchor		Edge Distance
		MIN. AT	MAX. AT	
CA14	4"	3,500	5,400	24"
CA18	5"	5,500	8,500	28"
CA24	6"	6,800	9,300	30"
CA30	8"	10,500	13,300	34"
CA36	8"	13,800	20,000	40"

Notes: Safe working load provides a factor of safety of approximately 4:1 based on a minimum concrete strength of 4,000 psi.

For use as Pulling from load increased by 33% with 3 to 1 Safety Factor



- NOTES:**
- CONCRETE: 5,000 PSI @ 28 DAYS. COVER TO BE TYPE II PER ASTM C-150.
  - REINFORCING TO BE PER ASTM A-615, GRADE 60 DEFORMED BULLET STEEL WITH 1" MINIMUM COVER UNLESS OTHERWISE NOTED.
  - REFERENCED TO MEET OR EXCEED REQUIREMENTS OF AMSTD H202-44, COVER 1" - 5".
  - ALL STRUCTURE JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT PER ASTM C-906 & AMSTD M-198.
  - EXTERIOR TO BE COATED WITH CONSEAL CS-55 ACRYLIC COATING OR STABARD UN-12 ASPHALT ALKYLATE PAINT THAT MEETS THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-C-654, TYPES I, II & III.
  - HIGHEST SECTION TO WEIGH 33,789# (19,100 LBS) TOTAL, 8.65 LBS/FT<sup>2</sup> PER SECTION.

**MICHE**

MICHIE CORPORATION, INC.  
11 BUXTON INDUSTRIAL DRIVE-PO BOX 870  
HENNIKER, NH 03242  
PHONE: 603-428-3218  
FAX: 603-428-7426

OR EQUAL

CONTACT DIG SAFE  
72 HOURS PRIOR  
TO CONSTRUCTION

**DIGSAFE.COM**  
OR DIAL 8 1 1  
CALL 811 - KNOW WHAT'S BELOW

REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW	-	BLR	CEB
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**CONSTRUCTION DETAILS**

**TAX MAP 32 LOTS 72**  
**(N.H. ROUTE 127)**  
**RAYMOND, NEW HAMPSHIRE**

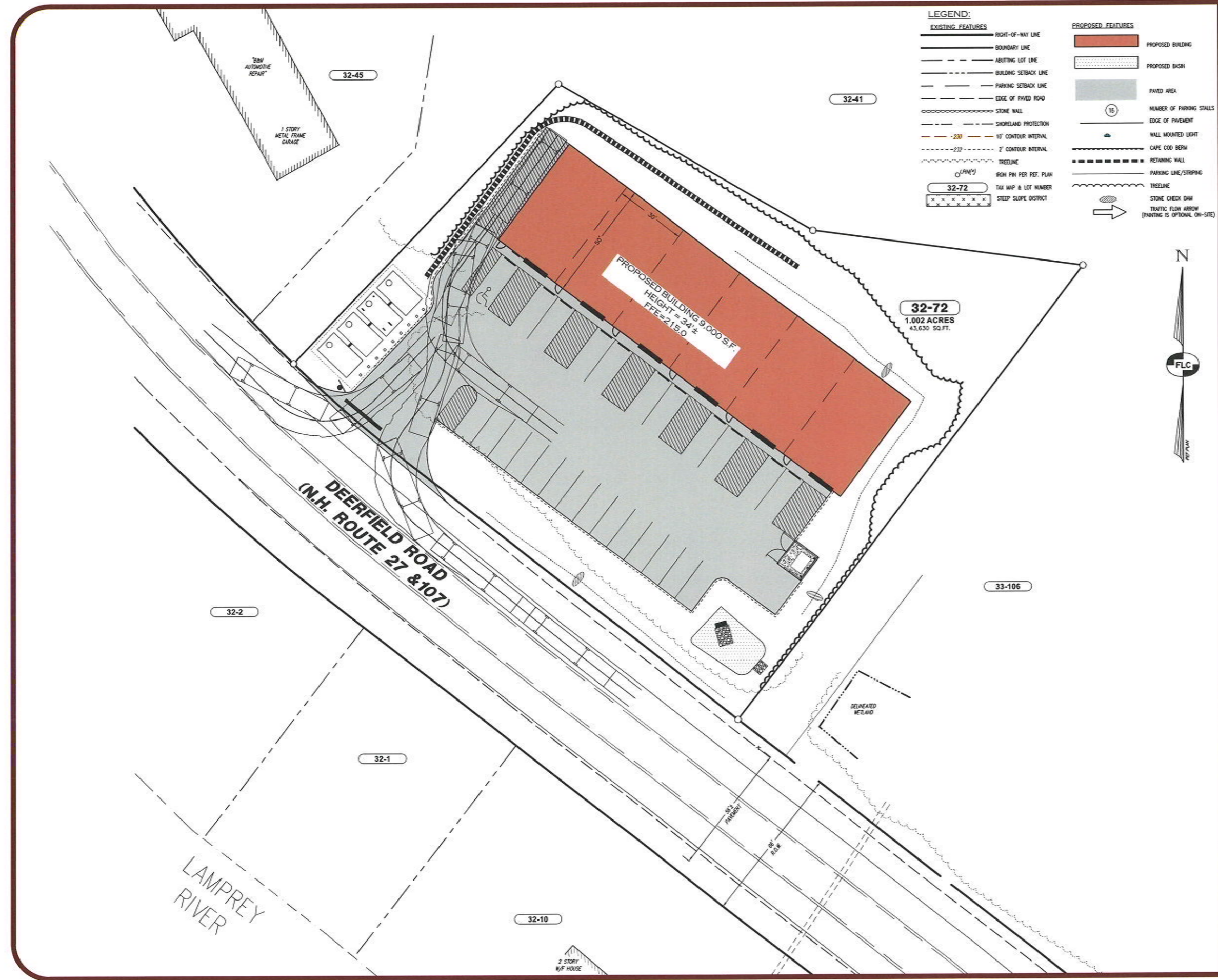
PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: AS NOTED NOVEMBER 10, 2023

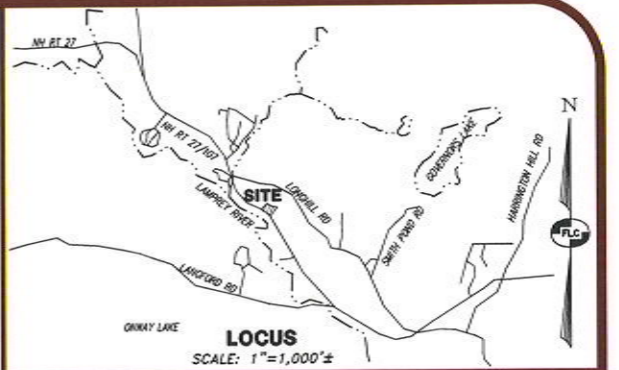
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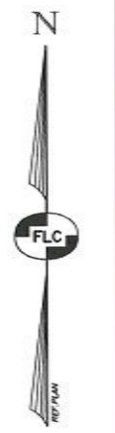


- LEGEND:**
- EXISTING FEATURES**
- RIGHT-OF-WAY LINE
  - BOUNDARY LINE
  - ABUTTING LOT LINE
  - BUILDING SETBACK LINE
  - PARKING SETBACK LINE
  - EDGE OF PAVED ROAD
  - STONE WALL
  - SHORELAND PROTECTION
  - 10' CONTOUR INTERVAL
  - 2' CONTOUR INTERVAL
  - TREELINE
  - IRON PIN PER FEET PLAN
  - TAX MAP & LOT NUMBER
  - STEEP SLOPE DISTRICT
- PROPOSED FEATURES**
- PROPOSED BUILDING
  - PROPOSED BUSH
  - PAVED AREA
  - NUMBER OF PARKING STALLS
  - EDGE OF PAVEMENT
  - WALL MOUNTED LIGHT
  - CAPE COD BERM
  - RETAINING WALL
  - PARKING LINE/STRIPING
  - TREELINE
  - STONE CHECK DAM
  - TRAFFIC FLOW ARROW (PAINTING IS OPTIONAL ON-SITE)



**GENERAL NOTES:**

1. TURNING EXHIBIT BASED ON A FIRETRUCK WITH THE FOLLOWING DIMENSIONS:  
 LENGTH = 43FT  
 WIDTH = 8.67FT



REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB
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**FIRE TRUCK TURNING EXHIBIT 1**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
 PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: 1" = 20'      OCTOBER 13, 2023

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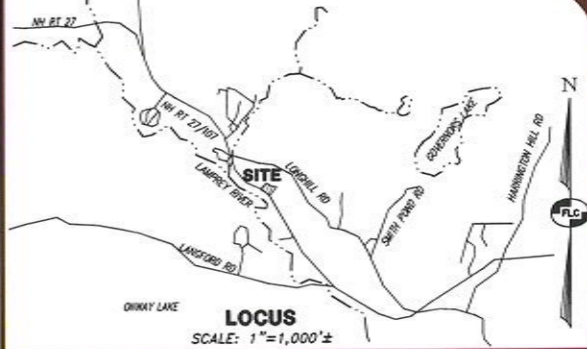
**LEGEND:**

**EXISTING FEATURES**

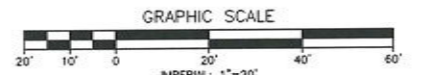
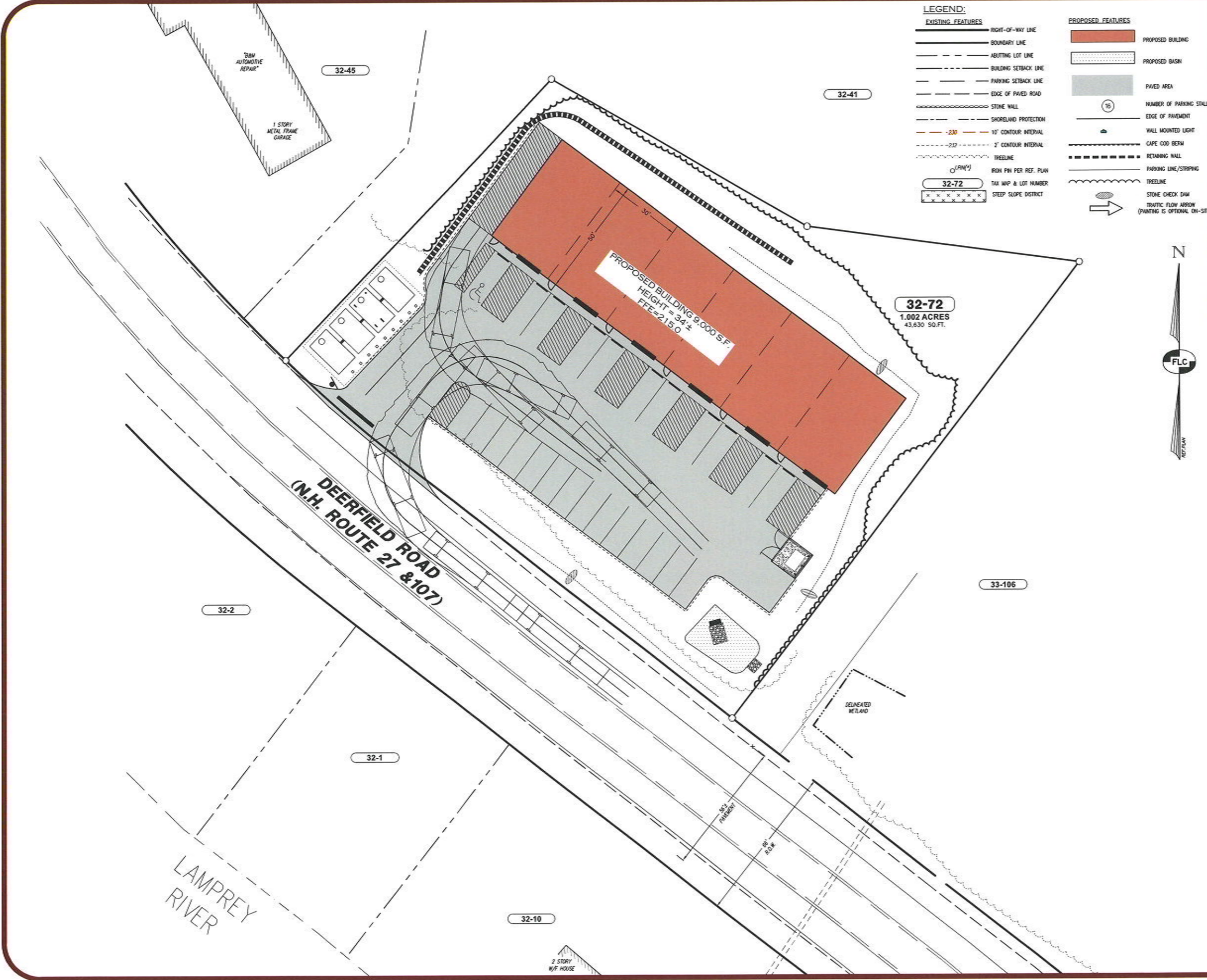
- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- - - ABUTTING LOT LINE
- - - BUILDING SETBACK LINE
- - - PARKING SETBACK LINE
- - - EDGE OF PAVED ROAD
- STONE WALL
- - - SHORELAND PROTECTION
- - - 10' CONTOUR INTERNAL
- - - 2' CONTOUR INTERNAL
- - - TREELINE
- (P/W)
- IRON PIN PER REF. PLAN
- TAX MAP & LOT NUMBER
- STEEP SLOPE DISTRICT

**PROPOSED FEATURES**

- PROPOSED BUILDING
- ▨ PROPOSED BASH
- PAVED AREA
- NUMBER OF PARKING STALLS
- EDGE OF PAVEMENT
- ▲ WALL MOUNTED LIGHT
- CAPE COD BERM
- - - RETAINING WALL
- - - PARKING LINE/STRIPING
- - - TREELINE
- STONE CHECK DAM
- TRAFFIC FLOW ARROW (PAINTING IS OPTIONAL ON-SITE)



**GENERAL NOTES:**  
 1. TURNING EXHIBIT BASED ON A FIRETRUCK WITH THE FOLLOWING DIMENSIONS:  
 LENGTH = 43FT  
 WIDTH = 8.67FT



REV.	DATE	DESCRIPTION	C/O	DR	CK
B	1/18/24	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB
A	12/15/23	REVISIONS PER 3RD PARTY ENGINEERING REVIEW		BLR	CEB

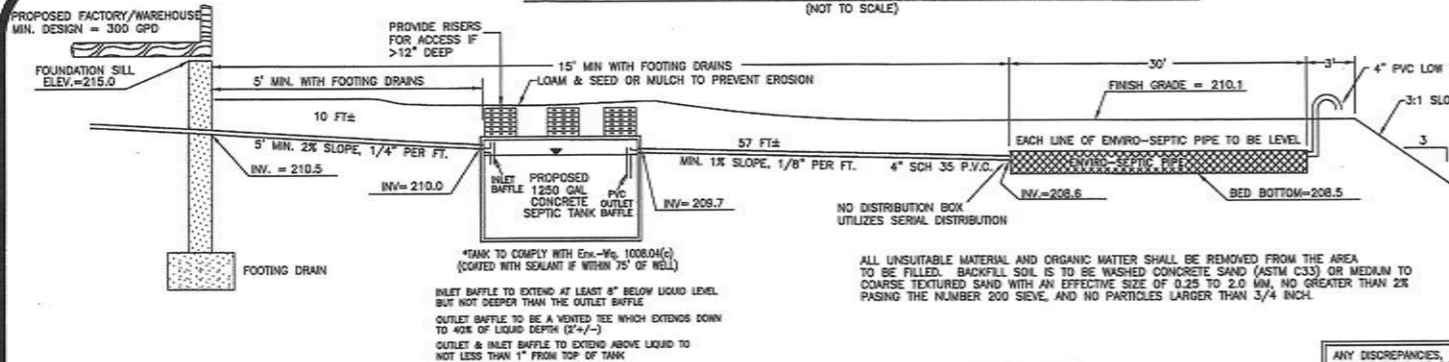
**FIRE TRUCK TURNING EXHIBIT 2**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
 PREPARED FOR AND LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
 P.O. BOX 351, PITTSFIELD, NH 03263

SCALE: 1" = 20'      OCTOBER 13, 2023

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

**FIELDSTONE**  
**LAND CONSULTANTS, PLLC**  
 206 Elm Street, Milford, NH 03055  
 45 Roxbury Street, Keene, NH 03431  
 Phone: (603) 672-5456 Fax: (603) 413-5456  
 www.FieldstoneLandConsultants.com

**TYPICAL SECTION OF PROPOSED EFFLUENT DISPOSAL SYSTEM**  
(NOT TO SCALE)

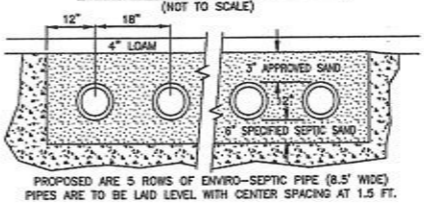


**SPECIFIED SEPTIC SAND**

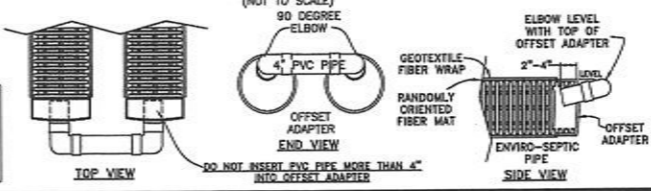
ASTM C-33 STANDARD SAND SPECIFICATION  
SIEVE (SPECIFICATION E11) PERCENT PASSING  
9.5-MM (3/8 IN) 100%  
4.75-MM (No.4) 95-100%  
2.36-MM (No.8) 80-100%  
1.18-MM (No.16) 50-85%  
600-UM (No.30) 25-80%  
300-UM (No.50) 5-30%  
150-UM (No.100) 0-10%

And Presby Environmental, Inc. Requires:  
75-UM (No.200) 0-2%  
(Value must be obtained by washing)

**TYPICAL CROSS SECTION**  
(NOT TO SCALE)



**RAISED CONNECTION DETAIL**  
(NOT TO SCALE)



**DESIGN INTENT**

**SEPTIC LOADING DATA**  
COMMERCIAL LOADING: FACTORY/WAREHOUSE WITHOUT CAFETERIA OR SHOWERS  
6 UNITS W/ 4 EMPLOYEES EACH = 24 EMPLOYEES @ 10 GPD/EMPLOYEE = 240 GPD.  
MINIMUM DESIGN = 300 GPD @ 5 MIN/INCH REQUIRES 150  
LINEAR FEET OF ENVIRO-SEPTIC LARGE DIAMETER LEACHING PIPE  
PROPOSED ARE 5 ROWS OF 30 LINEAR FEET EACH OR 150 TOTAL LINEAR FEET.

**SOIL DATA - CHATFIELD-HOLLIS-CANTON, 8-TO-15 PERCENT SLOPES, STONY**

**DESIGN INTENT**  
DUE TO SHWT AT >60" THE BOTTOM OF THE EFFLUENT DISPOSAL SYSTEM (EDS) SHALL BE CONSTRUCTED AT 208.0 ELEVATION. THIS IS APPROXIMATELY 2.2' ABOVE / BELOW EXISTING GROUND ON THE HIGH CONTOUR OF THE EFFLUENT DISPOSAL SYSTEM (EDS).  
LEACHFIELD IS TO BE REBUILT IN PLACE IF REPLACEMENT BECOMES NECESSARY.  
SUBDIVISION APPROVAL # PRE-1967  
PREVIOUS CONST. APPROVAL #

-WETLANDS WERE DELINEATED IN PROXIMITY TO THE LEACHFIELD AREA-  
WETLANDS WERE DELINEATED IN ACCORDANCE WITH Env-Wq 1014.05  
DELINEATION OF WETLANDS: HYDRIC SOILS DETERMINATION

**MID-POINT NOTE:**  
AT LEAST 50% OF THE LEACHFIELD IS BEYOND THE MID-POINT ELEVATION OF 208.8  
EXISTING GRADE, AND WILL MAINTAIN AT LEAST 2.5 FT BETWEEN BED BOTTOM AND ESHWT  
NO PART OF THE LEACHFIELD SHALL BE CLOSER THAN 2.0 FT TO SHWT.

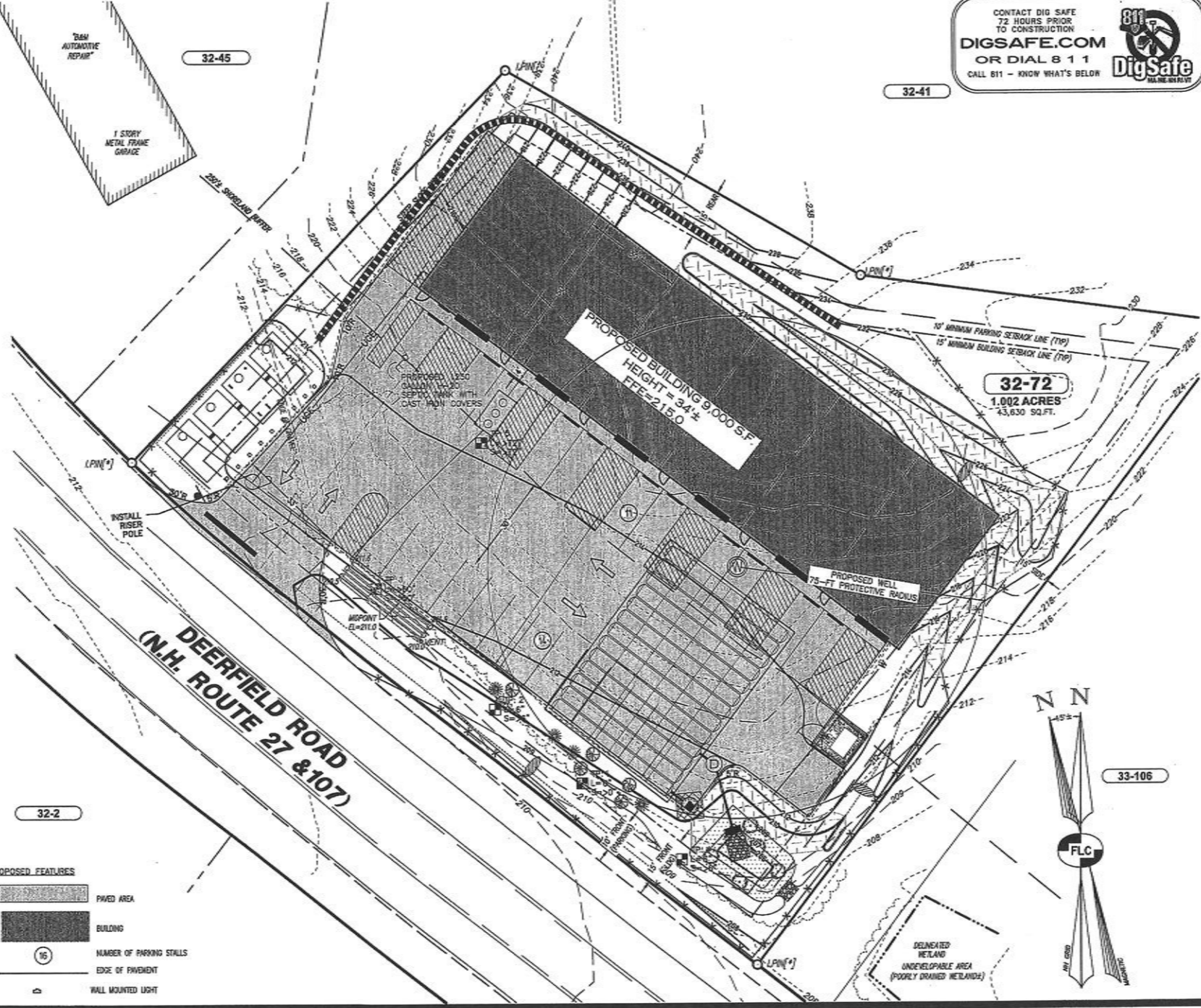
ANY DISCREPANCIES, CHANGES, SUBSTITUTIONS OR DEVIATIONS FROM THIS PLAN REQUIRES NOTIFICATION OF THE DESIGNER. USE OF THIS PLAN FOR ANY PURPOSE OTHER THAN THE CONSTRUCTION OF THE SEWAGE DISPOSAL SYSTEM SHALL BE AT THE USER'S RISK.

- NOTES**
- THIS IS NOT A PROPERTY LINE SURVEY. ALL PROPERTY LINES SHALL BE VERIFIED BY OWNER AND CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
  - CONTRACTOR AND OWNER ARE RESPONSIBLE FOR CONTACTING DIGSAFE FOR MARKING OF UNDERGROUND UTILITIES PRIOR TO BREAKING GROUND. ANY UTILITIES SHOWN HEREIN ARE APPROXIMATE ONLY.
  - THERE ARE NO POORLY DRAINED WETLANDS WITHIN 50 FEET OF THE LEACHFIELD.
  - THERE ARE NO VERY POORLY DRAINED WETLANDS, WELLS OR STANDING SURFACE WATER WITHIN 75 FEET OF THE LEACHFIELD.
  - INSTALLER SHALL NOT ALLOW ANY VEHICULAR TRAVEL TO OCCUR OVER THE PROPOSED EFFLUENT DISPOSAL SYSTEM (EDS) EXCEPT DURING CONSTRUCTION.
  - ALL PIPE CONNECTIONS TO THE SEPTIC TANK SHALL BE SEALED WITH A WATER-TIGHT FLEXIBLE JOINT CONNECTOR IN ACCORDANCE WITH ENV-WQ 1010.08(A).
  - THIS DESIGN DOES NOT PROVIDE FOR THE USE OF A GARBAGE GRINDER IF A GARBAGE GRINDER IS INSTALLED THE SEPTIC TANK CAPACITY WOULD NEED TO BE INCREASED.
  - THIS SYSTEM IS NOT DESIGNED FOR DISCHARGES FROM WATER PURIFICATION SYSTEMS OR FLOOR DRAINS.
  - REPLACEMENT SYSTEM TO BE LOCATED IN THE SAME AREA WHEN OR IF NECESSARY.
  - CONTRACTOR SHALL USE CAUTION WHEN PREPARING THE SITE AND PLACING FILL MATERIALS TO AVOID COMPACTION AND/OR SMEARING OF THE INFILTRATIVE SOILS.
  - ALL INVERT ELEVATIONS AND GRADES ARE REFERENCED FROM THE T.B.M.
  - DESIGNER SHALL BE NOTIFIED OF ANY CONDITIONS CONTRARY TO THOSE DEPICTED ON THIS PLAN.
  - WATER SUPPLY IS ON-SITE WELL.
  - ALL PIPING SHALL BE SCH 35 PVC UNLESS OTHERWISE SPECIFIED ON PLANS.
  - SEPTIC TANK SHALL BE PUMPED AND CLEANED A MINIMUM OF EVERY THREE YEARS OR AT MORE FREQUENT INTERVALS IF NEEDED.
  - SEPTIC TANK ARE TO BE SUPPLIED BY LAMARRE CONCRETE CORP. OR EQUAL.
  - ENVIRO-SEPTIC PRODUCTS TO BE SUPPLIED BY PRESBY ENVIRONMENTAL, INC. 1-800-473-5298.
  - NO KNOWN BURIAL SITES OR CEMETERIES WITHIN 100' OF ANY SEPTIC SYSTEM COMPONENT, PER ENV.WQ 1003.13(A).3.
- ENVIRO-SEPTIC WASTEWATER TREATMENT SYSTEMS ARE APPROVED BY NHDES AS AN ITA IN ACCORDANCE WITH SECTION ENV-Wq 1024 OF THE STATE REGULATIONS. THE SYSTEM IS DESIGNED IN ACCORDANCE WITH THE ENVIRO-SEPTIC AND SIMPLE SEPTIC LEACHING SYSTEM DESIGN AND INSTALLATION MANUAL AND THE ENVIRO-SEPTIC WASTEWATER TREATMENT SYSTEM DESIGN AND INSTALLATION MANUAL NEW HAMPSHIRE STATE ATTACHMENT.

**PLOT PLAN**  
NO SCALE



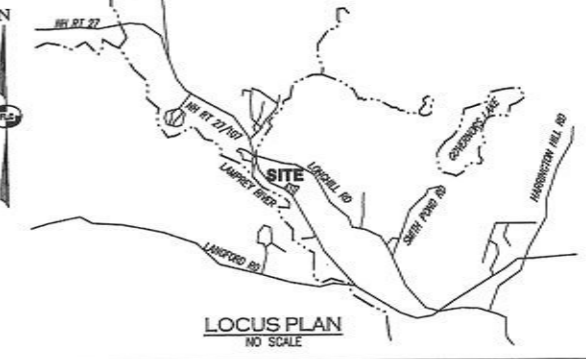
- LEGEND:**
- EXISTING FEATURES**
- RIGHT-OF-WAY LINE
  - BOUNDARY LINE
  - ABUTTING LOT LINE
  - BUILDING SETBACK LINE
  - PARKING SETBACK LINE
  - EDGE OF PAVED ROAD
  - STONE WALL
  - SHORELAND PROTECTION
  - 10' CONTOUR INTERVAL
  - 2' CONTOUR INTERVAL
  - IRON PIN PER REF. PLAN
- PROPOSED FEATURES**
- PAVED AREA
  - BUILDING
  - NUMBER OF PARKING STALLS
  - EDGE OF PAVEMENT
  - WALL MOUNTED LIGHT



CONTACT DIG SAFE  
72 HOURS PRIOR  
TO CONSTRUCTION  
**DIGSAFE.COM**  
OR DIAL 8 1 1  
CALL 811 - KNOW WHAT'S BELOW

**TEST PIT DATA**

DEPTH	SOIL DESCRIPTION	ROOTS	E.S.H.W.T.	WATER	HARDPAN	LEDGE	PERC. TEST	DATE
10"	10 YR 3/3 DARK BROWN LOAM, GRANULAR, FRABLE	40"	NONE	NONE	NONE	NONE	6 MIN./IN. AT 24"	10/27/23
30"	10 YR 4/4 DARK YELLOWISH BROWN FINE SANDY LOAM, SINGLE GRAIN, LOOSE, FEW STONES							
60"	2.5 YR 8/8 LIGHT OLIVE BROWN STONY FINE SANDY LOAM, GRANULAR, FRABLE							



REV	DATE	NOTES	DR	CK

**DRAFT**

DESIGNER'S STAMP

**PROPOSED SEWAGE DISPOSAL SYSTEM PLAN**  
**TAX MAP 32 LOT 72**  
**(N.H. ROUTE 27)**  
**RAYMOND, NEW HAMPSHIRE**  
PREPARED FOR & LAND OF:  
**AUTUMN TRAIL REALTY, LLC**  
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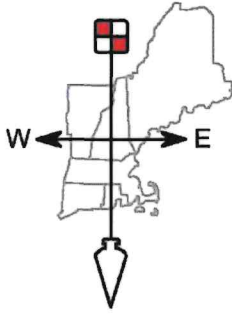
SCALE: 1" = 20'      DECEMBER 19, 2023

Surveying + Engineering + Land Planning + Permitting + Septic Designs

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

FILE: 3549CND08.dwg    PROJ. NO. 3549.00    SHEET: ST-1    SHEET NO. 1 OF 1

# LETTER OF TRANSMITTAL



## 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

**To:** Raymond Planning Board  
Attn: Jason Cleghorn  
Town of Raymond Planning Board  
4 Epping Street  
Raymond, NH 03077

**Date:** November 16, 2023

**Re:** Autumn Trail Realty, LLC.  
Tax Map 32, Lot 72; Deerfield Road (N.H. Route 27)

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:

- Shop drawings  Prints  Plans  Samples  Specifications  
 Copy of letter  Change order

COPIES	DATE	NO.	DESCRIPTION
1	11/16/23		Planning Board Site Plan Application
1	11/16/23		Site Plan Review Checklist
1	11/16/23		Conditional Use Permit Application
1	11/16/23		Check-Site Plan Review Fees (Check #9842)
1	11/16/23		Check-Escrow Fees (Check #9843)
1	11/16/23		Warranty Deed
1	11/16/23		Letter of Authorization
1	11/16/23		Abutters List and Labels (3 sets)
1	11/16/23		Test Pit Data
1	11/16/23		Architectural Elevations
1	11/16/23		Drainage Report
6	11/16/23		Site Plan (22"x34")
10	11/16/23		Site Plan (11"x17")

THESE ARE TRANSMITTED as checked below:

- For approval  Approved as submitted  Resubmit \_\_\_ copies for approval  
 For your use  Approved as noted  Submit \_\_\_ copies for distribution  
 As requested  Returned for corrections  Return \_\_\_ corrected copies  
 For review and comment  \_\_\_\_\_

### REMARKS

Hi Jason,

We are submitting this plan to be heard at the December 21st Planning Board meeting. Please contact me with any questions and if you need anything else.

Thank you,

Brandon L. Richards





Map # 32 Lot # 72

# Site Plan Review Application

## Town of Raymond, NH

Project Name: Contractor Bays, Autumn Trail Realty, LLC.

Location: N.H. Route 27 & 107 (Tax Map 32 Lot 72)

Project Description: See attached narrative.

Zone: C1 New Industrial/Commercial Square Footage: 8,000 sf or Number of Residential Units: \_\_\_\_\_

**Applicant/Agent Information:**

Name: Brandon Richards

Phone: (603)-672-5456 Fax: \_\_\_\_\_

Company: Fieldstone Land Consultants, PLLC

Address: 206 Elm St, Milford, NH 03055

By signing this application, you are agreeing to all rules and regulations of the Town of Raymond, and are agreeing to allow agents of the Town of Raymond to conduct inspections of your property during normal business hours to ensure compliance with all Raymond Zoning and Site Plan Review Regulations while your application is under consideration and during any construction and operational phases after approval is granted.

Signed\*: *BR* Date: 11/16/2023

\*Requires notarized letter of permission

**Owner Information:**

Name: Autumn Trail Realty, LLC. c/o Kevin Cole

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Company: Autumn Trail Realty, LLC.

Address: PO Box 351 Pittsfield, NH 03263

Signed: *Kevin Cole, member* Date: 11-16/23

**Designers of Record:** (Provide Name & License Number for each)

Engineer: Chad Branon, P.E.

Surveyor: MICHAEL RUDOLPH, L.S.

Soil Scientist: Chris Guida, C.S.S.

Landscape Architect: \_\_\_\_\_

Fire Protection Engineer: \_\_\_\_\_

Other(s): \_\_\_\_\_

**FEES:** See attached Fee Schedule

***For Office Use Only:***

Date Application Received: \_\_\_\_\_ Total Fees Collected w/Application: \_\_\_\_\_

# Site Plan Review Checklist

TOWN OF RAYMOND, NH

PROJECT NAME Contrator Bays, Autumn Trail Realty, LLC.

MAP# 32 LOT # 72 APPLICATION DATE 11/16/2023 APPLICATION # \_\_\_\_\_

*A copy of all plans and technical reports must be sent to the Town engineer. Proof of submittal must be provided to the Community Development Department at the time of application. If proof of transmittal is not provided, the application may be delayed until the following month's Planning Board meeting. Address is: Dubois & King, 15 Constitution Dr. Suite 1L, Bedford NH 03110, ATTN: Ross Tsantoulis.*

SUBMITTED			WAIVED	
YES	NO		YES	NO
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Name of project; names and addresses of owners of record; Tax map and lot number.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Name, license number and seal of surveyor or other persons, north arrow, scale and date of plan; signature block.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Vicinity sketch and zoning district(s).	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Abutters and uses of abutting land within 200 feet of the site.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. Shape, size, height, location and use of existing and proposed structures located on the site and within 200 feet of the site.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Boundary lines, dimensions and bearings; lots area in acres And square feet and total disturbed area in square feet.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Location, name and widths of any existing and proposed roads on the property and within 200 feet of the site	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Location of existing and proposed sidewalks and driveways, with indication of travel for both pedestrian and vehicular traffic.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9. Access to the site, sight distance at access point(s), curb cuts and any proposed changes to existing streets; copy of driveway permit. * PENDING	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Location and number of parking spaces; loading spaces.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Location, type and nature of all existing and proposed Landscaping and screening.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Location, type and nature of all existing and proposed exterior lighting.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Natural features (streams, ponds, wetlands, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Waste/dumpster locations and snow storage areas	<input type="checkbox"/>	<input type="checkbox"/>

# Site Plan Review Checklist

TOWN OF RAYMOND, NH

SUBMITTED			WAIVED	
YES	NO		YES	NO
✓	___	15. Existing and proposed grades and contours, including base Flood elevation where appropriate.	___	___
✓	___	16. Size and location of all existing and proposed water mains, sewers, culverts, and distances to the existing fire hydrants, cisterns and/ or fire ponds. No public water in vicinity of site.	___	___
✓	___	17. Copy of certification from septic designer as to sufficiency of system. See note on LS-1.	___	___
✓	___	18. Location and type of proposed waste water disposal system; Outline of 4,000 sq. ft. area; test pits; record of percolation tests.	___	___
✓	___	19. Existing and proposed Storm water drainage system.	___	___
✓	___	20. Location of existing and proposed on-site well (showing required radius on the property.)	___	___
✓	___	21. Soil survey data (see: requirements for soils and wetlands data)	___	___
✓	___	22. Location of any existing or proposed easements, deed restrictions, covenants.	___	___
<b>OTHER:</b>				
___	✓	1. Any federal, state or local permits.	___	___
✓	___	2. Building elevations and design	___	___
___	✓	3. Sign location and design	___	___
✓	___	4. Copies of any proposed or existing easements, deed restrictions, covenants, and street deeds.	___	___
✓	___	5. Such additional studies as may be required.	___	___
✓	___	6. Six (6) full-size copies of all plans and ten (10) copies of all plans in 11 X 17 format, and digital copy of plans. *	___	___
✓	___	7. Three (3) copies of all studies*	___	___
<b>FEES</b>				
✓	___	1. Application Fees		
✓	___	2. Abutters Notice Fees <i>(to include three (3) labels per abutter)</i>		
✓	___	3. Engineering and Legal Review Escrow		
✓	___	4. Site Review-Administrative Fee		



# Application for Conditional Use Permit Groundwater Conservation Overlay District Town of Raymond, NH

## Conditional Use Permits are Subject to Site Plan Approval by the Planning Board

Raymond Zoning Ordinance, Article 5, Section 5.2

Map # 32 Lot # 72 Application Date 11/16/23 Application # \_\_\_\_\_

Project Name: Contractor Bays, Autumn Trail Realty, LLC.

Location: Deerfield Road (N.H. Route 27 & 107), Raymond, NH 03077

Zone: c1 New Industrial/Commercial Square Footage: 8,000 or Number of Residential Units: 0

**Applicant/Agent Information:**

Name: Brandon Richards Phone: (603)-672-5456

Company: Fieldstone Land Consultants, PLLC. Fax: \_\_\_\_\_

Address: 206 Elm St, Milford, NH 03055

Signed\*:  Date: 11/16/2023

Please Check All that Apply:

5.2.11. CONDITIONAL USES: The issuance of a Conditional Use Permit is subject to Site Plan Approval by the Planning Board. The Planning Board may grant a Conditional Use Permit for a use that is otherwise permitted within the underlying district, if the permitted use is or is involved in one or more of the following:

5.2.11.1. Storage, handling, and use of regulated substances in quantities exceeding 100 gallons or 800 pounds dry weight at any one time, provided that an adequate spill prevention, control and countermeasure (SPCC) plan prepared in accordance with [Section 5.2.7](#) by a qualified professional, submitted to the Technical Review Committee for review and approval, with the final plan also submitted to the Raymond Fire Department and the Raymond Community Development Department for its records. The Technical Review Committee may employ the services of a qualified peer review professional to review the plan at the applicant's expense.

5.2.11.2. Any use that will render impervious more than 15% or 2,500 square feet of any lot, whichever is greater.

5.2.11.3

In granting such approval the Planning Board must first determine that the proposed use is not a prohibited use and will be in compliance with the Performance Standards as well as all applicable local, state and federal requirements. The Planning Board may, at its discretion, require a performance guaranty or bond, in an amount and with surety conditions satisfactory to the Board, to be posted to ensure completion of construction of any facilities required for compliance with the Performance Standards. The amount of this bond shall be in addition to any other bond required by the Board under either the Subdivision or Site Plan Review Regulations.

(Continued)



# Application for Conditional Use Permit Groundwater Conservation Overlay District Town of Raymond, NH

If you chose 5.2.11.1, above, you must provide a SPCC plan in accordance with the following:

- 5.2.7 SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) PLAN: Conditional Uses, as described under [Section 5.2.11](#) of this Ordinance shall submit a spill control and countermeasure (SPCC) plan to the Technical Review Committee (TRC) who shall determine whether the plan will prevent, contain, and minimize releases from ordinary or catastrophic events such as spills, floods or fires that may cause large releases of regulated substances. It shall include:
- 5.2.7.1 A description of the physical layout and a facility diagram, including all surrounding surface waters and wellhead protection areas;
  - 5.2.7.2 Contact list and phone numbers for the facility response coordinator, cleanup contractors, and all appropriate federal, state, and local agencies who must be contacted in case of a release to the environment;
  - 5.2.7.3 A list of all regulated substances in use and locations of use and storage;
  - 5.2.7.4 A prediction of the direction, rate of flow, and total quantity of regulated substance that could be released where industry experience indicates a potential for equipment failure;
  - 5.2.7.5 A description of containment and/or diversionary structures or equipment to prevent regulated substances from infiltrating into the ground; and
  - 5.2.7.6 Emergency response plan describing and assigning responsibilities and actions to be taken.

## Appendix II

### Site Plan Review Fees

<b>Sample Chart Using 180 sf per space</b>	
1	\$ 514.80
2	\$ 579.60
3	\$ 644.40
4	\$ 709.20
5	\$ 774.00
6	\$ 838.80
7	\$ 903.60
8	\$ 968.40
9	\$ 1,183.20
10	\$ 1,248.00
11	\$ 1,312.80
12	\$ 1,377.60
13	\$ 1,442.40
14	\$ 1,657.20
15	\$ 1,722.00
16	\$ 1,786.80
17	\$ 1,851.60
18	\$ 1,916.40
19	\$ 2,131.20
20	\$ 2,196.00
21	\$ 2,260.80
22	\$ 2,325.60
23	\$ 2,390.40

**Base Rate:** **\$ 300.00**  
*(Includes staff wages with a 23 % roll-up rate)*

**Variable Costs (per newly created space):** **\$ 0.36**

	<b>Units - SF</b>	<b>3,920 SI</b>
POV Spaces:	180	[28]
Handicap Accessible Spaces:	320	[6]
Tractor Trailer	600	

<b># Spaces</b>	<b>Formula for Calculation of Fees</b>	
1 - 8	\$ 0.36 per sf + (1.5 x \$ 300 base rate)	
9 - 13	\$ 0.36 per sf + (2.0 x \$ 300 base rate)	
14 - 18	\$ 0.36 per sf + (2.5 x \$ 300 base rate)	
19 - 23	\$ 0.36 per sf + (3.0 x \$ 300 base rate)	
24 - 50	\$ 0.36 per sf + (3.5 x \$ 300 base rate)	=\$3,555.60
51 - 75	\$ 0.36 per sf + (4.0 x \$ 300 base rate)	
76 - 100	\$ 0.36 per sf + (4.5 x \$ 300 base rate)	
101 - 150	\$ 0.36 per sf + (5.0 x \$ 300 base rate)	
151 - 200	\$ 0.36 per sf + (5.5 x \$ 300 base rate)	

7 Abutters=\$70.00

**ABUTTERS FEE: \$10.00 PER NOTICE**

Review Fees = 3,625.60

<b>Escrow Deposits for Legal/Engineering/Other Peer Review Expenses<sup>1</sup></b>	
<b>Minimum Fee (Discretion of the Technical Review Committee):</b>	<b>\$ 1,250.00</b>
<b>Disturbed Area<sup>2</sup> - Up to 5 Acres:</b>	<b>\$ 2,500.00</b>
<b>Up to 10 Acres</b>	<b>\$ 3,250.00</b>
<b>Up to 15 Acres:</b>	<b>\$ 4,000.00</b>
<b>Up to 20 Acres:</b>	<b>\$ 4,500.00</b>
<b>Over 20 Acres, but less than 30 acres:</b>	<b>\$ 5,000.00</b>
<b>Over 30 Acres - To be determined by Town Engineer/Legal Counsel</b>	<b>TBD</b>

<sup>1</sup> Once a balance is reduced to 50% of the original deposit, the applicant shall replenish it to 100%.

<sup>2</sup> Disturbed area is defined as: That portion of the site that is altered due to construction of streets, roadways, parking areas, utilities, buildings or other physical improvements, including earth excavation, removal or alteration.

**FIELDSTONE LAND CONSULTANTS PLLC.**

206 ELM ST.  
MILFORD, NH 03055  
PH. 603-672-5456

9842

54-7/114  
72

DATE 11/16/23



PAY TO THE ORDER OF

TOWN OF RAYMOND

\$ 3625.60

THREE THOUSAND SIX HUNDRED TWENTY FIVE & 60/100 DOLLARS



America's Most Convenient Bank®

FOR STATE PLAN SUBM FEES (3649.00)

*[Signature]*

⑈009842⑈ ⑆011400071⑆ 9247745502⑈

**FIELDSTONE LAND CONSULTANTS PLLC.**

206 ELM ST.  
MILFORD, NH 03055  
PH. 603-672-5456

9843

54-7/114  
72

DATE 11/16/23



PAY TO THE ORDER OF

TOWN OF RAYMOND

\$ 2500.00

TWO THOUSAND FIVE HUNDRED & 00/100 DOLLARS



America's Most Convenient Bank®

FOR STATE PLAN SUBM FEES - 3649.00

*[Signature]*

⑈009843⑈ ⑆011400071⑆ 9247745502⑈



LCHIP	ROA638850	25.00
TRANSFER TAX	RO120321	300.00
RECORDING		14.00
SURCHARGE		2.00

TS: \$ 300.00

**WARRANTY DEED**

**JUDITH S. MORSE**, a widowed woman, having an address of 61 Mountain Road, Raymond, New Hampshire, 03077, for consideration paid, grants to **AUTUMN TRAIL REALTY LLC**, a New Hampshire limited liability company with an address of P.O. Box 351, Pittsfield, New Hampshire 03263 and with warranty covenants:

A certain tract or parcel of land situated in the northwest part of Raymond, Rockingham County, New Hampshire, bounded and described as follows:

Commencing at an iron stake on the northerly side of Route 101, said point being twenty-five (25) feet west of the intersection of the northerly edge of Route 101 and a certain stone wall which runs approximately N 39° E; thence N 52° W two hundred forty (240) feet, more or less, to an iron stake; thence N 45° E one hundred sixty-two (162) feet, more or less, to an iron stake; thence S 62° E one hundred twenty-three (123) feet, more or less, to an iron stake; thence S 80° E one hundred fifteen (115) feet, more or less, to an iron stake which lies twenty-five (25) feet westerly of said stone wall; thence S 39° W two hundred forty (240) feet, more or less, by a right of way that extends twenty-five (25) feet westerly from said stone wall to the point of beginning; containing about 53,000 square feet or 1.22 acres.

For title reference see Warranty Deed of Mark D. Kanakis, Trustee of Nickster L.C. Realty Trust recorded on October 31, 2000 at Book 3515, Page 2212 in the official records of Rockingham County Registry of Deeds.

There are no homestead rights in said property.



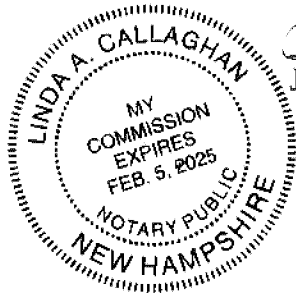
IN WITNESS WHEREOF, the undersigned have executed this Deed on this 3 day of December 2022.

Misty Greenwood  
Witness

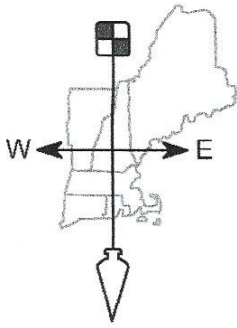
Judith S. Morse  
Judith S. Morse

STATE OF New Hampshire  
COUNTY OF Rockingham

On this the 3 day of December 2022, before me, the undersigned notary or justice, personally appeared Judith S. Morse, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.



Linda A. Callaghan  
Justice of the Peace/Notary Public



# 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

November 10, 2023

RE: Autumn Trail Realty, LLC  
Deerfield Road (N.H. Route 27) - Raymond, N.H.  
Tax Map Parcel 32-72

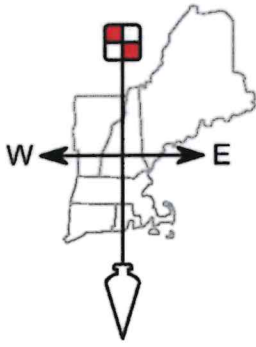
To Whom It May Concern:

The undersigned hereby authorizes Fieldstone Land Consultants, PLLC to act as their agents in filing and seeking the necessary local, state and federal approvals for the above referenced project.

Very truly yours,

Signature: *Kevin Cole, member*

Print: Kevin Cole, member Date 11-16-23



# FIELDSTONE

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11/16/2023  
FLC#3649.00 / BLR

List of Abutters  
Tax Map 32 Lot Number 72  
Raymond, New Hampshire

Map 32 Lot 1  
John J. Miller  
Bonnie Herrick  
218 Route 27  
Raymond, NH 03077

Map 32 Lot 2  
Bernadette Patterson  
10 Twins Road  
Raymond, NH 03077

Map 32 Lot 41  
Maurice R. Dussault  
Tammy A. Dussault  
70 Long Hill Road  
Raymond, NH 03077

Map 32 Lot 44  
Michael D. Straw  
Janice M. Straw  
PO Box 50  
Raymond, NH 03077

Map 32 Lot 45  
221 RT. 27, LLC.  
118A Oak Hill Road  
Northfield, NH 03276

Map 33 Lot 10  
Garrett B. Ennis  
216 Route 27  
Raymond, NH 03077

Map 33 Lot 106  
Woodside Village, LLC.  
25 Whitetail Lane  
Chester, NH 03036

Map 32 Lot 72  
Autumn Trail Realty, LLC.  
PO Box 351  
Pittsfield, NH 03263

Engineer:  
Fieldstone Land Consultants, PLLC  
206 Elm Street  
Milford, NH 03055

11/16/2023  
FLC#3649.00 / BLR

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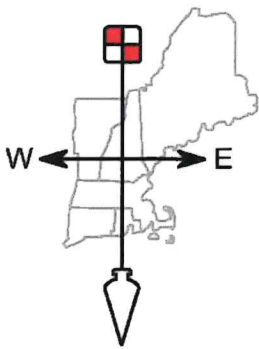
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Fieldstone Land Consultants, PLLC  
206 Elm Street  
Milford, NH 03055

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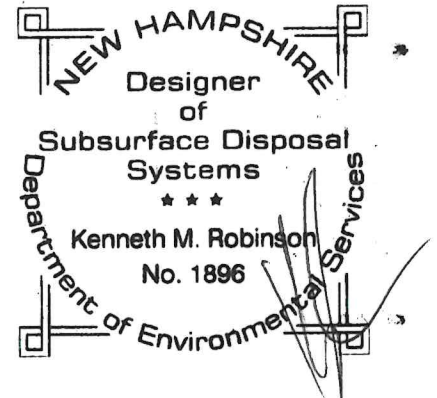
# FIELDSTONE

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TEST PIT DATA  
AUTUMN TRAIL REALTY, LLC  
TAX MAP 32 LOT 72  
NH ROUTE 27  
RAYMOND, NH



10/27/23

Test Pit #1

0-10" – 10YR 3/3 Dark brown loam, granular, friable.

10-30" – 10YR 4/4 Dark yellowish brown fine sandy loam, single grain, loose. Few stones.

30-60" – 2.5Y 5/6 Light olive brown stony fine sandy loam, granular, friable.

ESHWT = None      Observed Water = None      Boulders = 60"      Roots = 40"

Perc Rate = 6 minutes per inch (mpi)

10/27/23

Test Pit #2

0-6" – 10YR 3/3 Dark brown loam, granular, friable.

ESHWT = None      Observed Water = None      Ledge = 6"      Roots = 6"

10/27/23

Test Pit #3

0-0" – Ledge at surface

ESHWT = None      Observed Water = None      Ledge = 0"      Roots = None

10/27/23

Test Pit #4

0-6" – 10YR 3/3 Dark brown loam, granular, friable.

ESHWT = None      Observed Water = None      Ledge = 6"      Roots = 6"

10/27/23

Test Pit #5

0-8" – 10YR 3/3 Dark brown loam, granular, friable.

8-36" – 10YR 4/4 Dark yellowish brown fine sandy loam, single grain, loose. Few stones.

36-72" – 2.5Y 5/6 Light olive brown stony fine sandy loam, granular, friable.

ESHWT = None      Observed Water = None      Ledge/Boulders = None

Roots = 40"

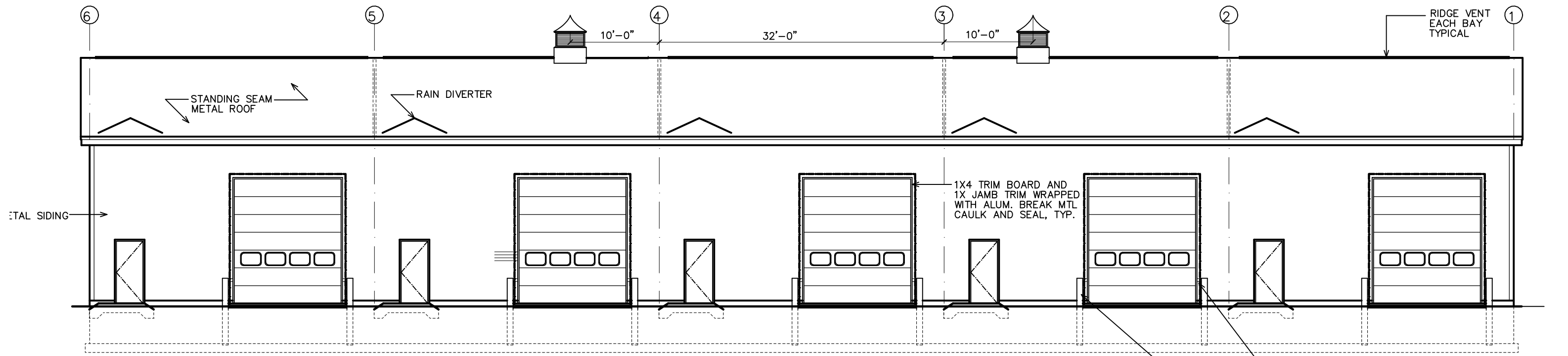
Perc Rate = 6 mpi

Test Pits were logged by:



Kenneth M. Robinson, CWS  
NH Septic Designer # 1896

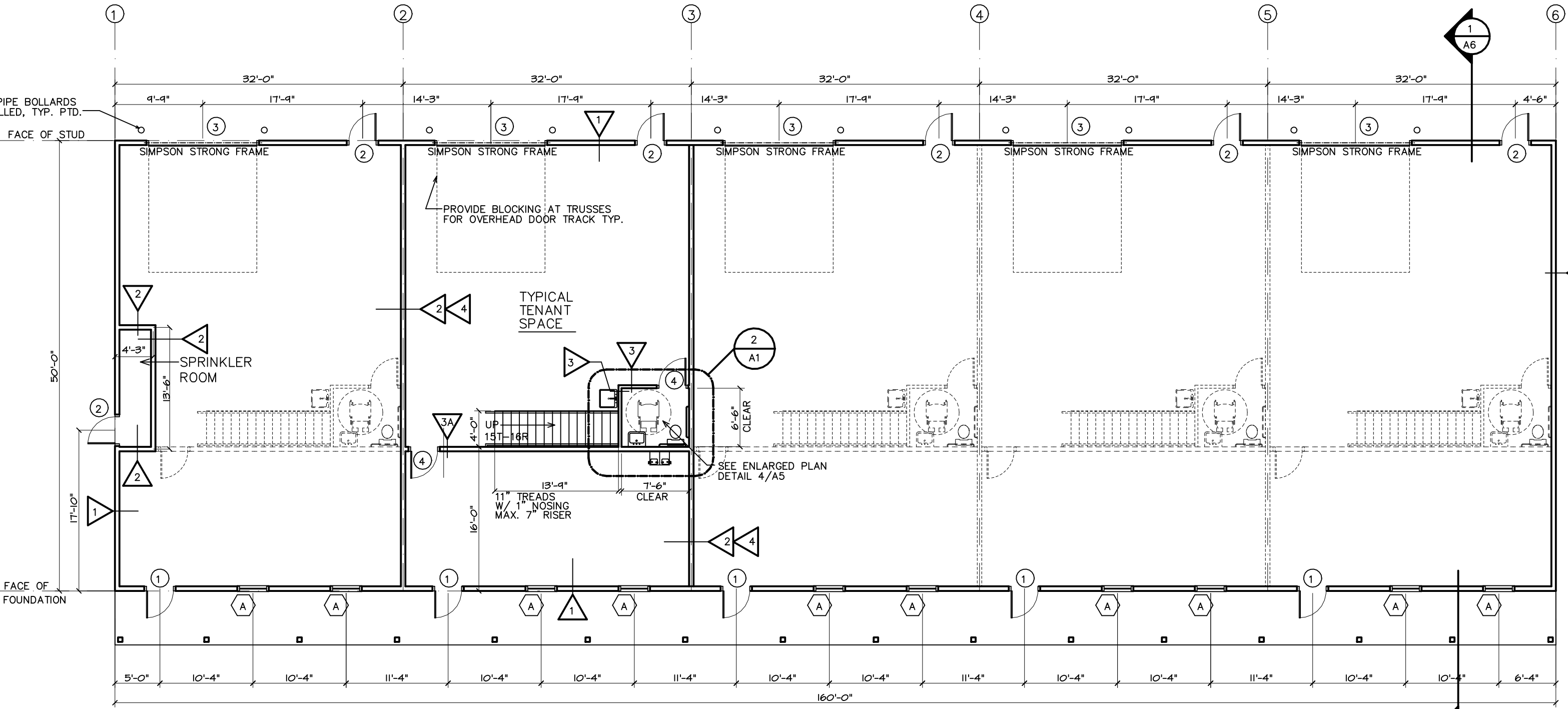




4 REAR ELEVATION  
 A2 @ 1/8" = 1'-0"

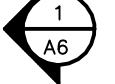
SIMPSON STRONG FRAME (TYPICAL AT OH DOORS)  
 MODEL: OMF1212-12X16  
 (SEE ATTACHMENT FOR FOUNDATION ANCHORAGE)

6" DIA. STEEL BOLLARDS  
 PAINTED, FILL WITH CONCRETE,  
 CARRY 48" BELOW GRADE, TYP.



1  
A1

FIRST FLOOR PLAN  
@ 1/8" = 1'-0"





Autumn Trail email

From: **resi resi**

Date: Thu, Jan 25, 2024 at 10:15 PM

Subject: tonights PB meeting

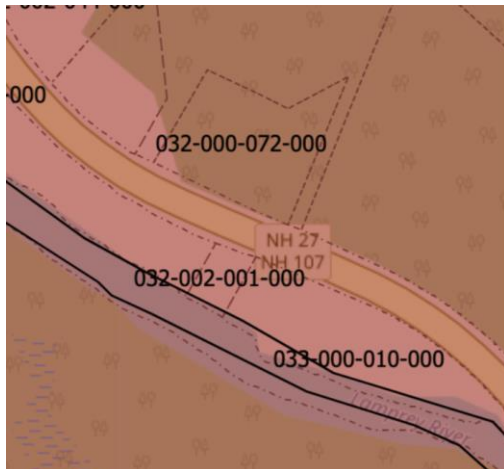
To: Dee Luszcz <[DL.raymondpb@gmail.com](mailto:DL.raymondpb@gmail.com)>

LRAC reviews projects after an applicant files with NH DES using the NH DES website mapping again, attached screen shot clearly Autumn Trail Realty project / applicant should be filing with NH DES it is great that they want to install a rain garden, but the runoff going under Route 27 then into the Lamprey River is a concern.

Therese Thompson

Raymond rep. to LRAC

><{{{{" > =^..^=



# Raymond Conservation Commission Project Review Checklist

Rev. 1/28/24

Project Information	Notes
<input type="checkbox"/> Project Name	
<input type="checkbox"/> Street Address	
<input type="checkbox"/> Tax Map / Lot(s)	
<input type="checkbox"/> Property Owner	
<input type="checkbox"/> Applicant (if different than Owner)	
<input type="checkbox"/> Engineer: Name and Firm	
<input type="checkbox"/> Wetland Scientist: Name and Firm	
<input type="checkbox"/> Surveyor: Name and Firm	
<input type="checkbox"/> Other Consultant: Name and Firm	
<input type="checkbox"/>	

ConsCom Meeting Log	Date & Highlights
<input type="checkbox"/> Preliminary Design Review	
<input type="checkbox"/> Site Walk	
<input type="checkbox"/> Follow-up Meeting	
<input type="checkbox"/> Follow-up Meeting	
<input type="checkbox"/>	

Correspondence Generated	Date & Comments
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Permits (check if req'd)	App Submitted Date	App #	ConsCom Review Notes
<input type="checkbox"/> Raymond Special Permit			
<input type="checkbox"/> NHDES Wetlands			
<input type="checkbox"/> NHDES Alt. of Terrain			
<input type="checkbox"/> NHDES Shoreland			
<input type="checkbox"/> Lamprey RAC comments			
<input type="checkbox"/> Exeter/Squamscott RAC comments			
<input type="checkbox"/> Raymond ZBA (variances)			
<input type="checkbox"/>			



Project Review Elements	Notes
<input type="checkbox"/> Zone G land identified (4.9)	
<input type="checkbox"/> Raymond Open Space Plan	
<input type="checkbox"/> NH Wildlife Action Plan	
<input type="checkbox"/> NH Natural Heritage Bureau	
<input type="checkbox"/> NH Div. of Historical Resources (archaeology)	
<input type="checkbox"/> Wetlands Report: functions and values	
<input type="checkbox"/> Runoff, drainage, erosion control (temporary during construction)	
<input type="checkbox"/> Runoff, drainage, stormwater management (permanent)	
<input type="checkbox"/> Wetlands mitigation - State	
<input type="checkbox"/> Wetlands mitigation – Town (no net loss)	
<input type="checkbox"/> Wetland buffers	
<input type="checkbox"/> Shoreland buffers	
<input type="checkbox"/> Snow storage	
<input type="checkbox"/> Salt use	
<input type="checkbox"/> Groundwater Conservation Overlay District (5.2)	
<input type="checkbox"/> Stormwater Management Plan (5.2.6.1)	
<input type="checkbox"/> Pollution Prevention Plan (5.2.6.2)	
<input type="checkbox"/> Spill Prevention, Control and Countermeasure (SPCC) Plan (5.2.7)	
<input type="checkbox"/> Maintenance Requirements (5.2.16)	
<input type="checkbox"/> Blasting	
<input type="checkbox"/> Groundwater Monitoring	
<input type="checkbox"/> Environmental Site Assessment	
<input type="checkbox"/> Conservation subdivision (6.8)	
<input type="checkbox"/>	
Future Reporting & Notifications Req'd	Notes
<input type="checkbox"/> Wetland Mitigation monitoring & ConsCom site visit	
<input type="checkbox"/>	
<input type="checkbox"/>	

(#.#) indicates Zoning Ordinance section



# RAYMOND CONSERVATION COMMISSION

4 EPPING STREET, RAYMOND, NEW HAMPSHIRE 03077  
(603) 895-7017

Date

Dear Conservation Property Abutter,

Congratulations! Your property is abutting a town owned conservation land. This land is managed by Raymond Conservation Commission and held in a conservation easement by Bear-Paw Regional Greenways. The terms of the easement are intended to safeguard the ecological and environmental values of the property forever, for the benefit of people and wildlife.

This property is open to the public. Everyone is welcome to enjoy this land for low-impact recreation, including hiking, hunting, fishing, bird watching, and cross-country skiing. Snowmobiling is allowed with at least 6 inches of snow on the ground.

As an abutter to this beautiful, conserved land, your partnership is essential in upholding the principles outlined in the conservation easement agreement.

## **Here are a few important points to be aware of and remedy if applicable:**

- Motorized vehicles are prohibited. ATV's, mopeds, and motorized bikes cause soil erosion, compromise water resources, and destroy native plants and sensitive habitats.
- All personal property must be kept on your own land. This includes vehicles, birdfeeders, swings, firewood, garden furniture, and equipment.
- No Dumping. This includes but is not limited to trash, furniture, brush, and other landscaping debris.
- No cutting of trees or branches.
- Stone walls are protected by the state. Please **do not move** or otherwise alter stone walls or other boundary markers. It is against the law per RSA 539:4 and RSA 472:6 and could result in fines and/or a misdemeanor.
- Camping or fires are prohibited. Help prevent wildfires in these remote areas as there is limited access for fire apparatus.

Please be mindful of these restrictions and avoid any activities that could compromise the ecological health of the property and result in a violation.

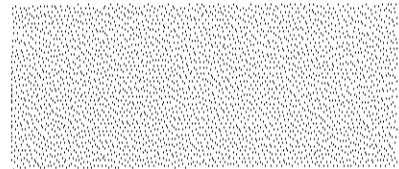
As the easement holder, Bear-Paw is legally responsible for upholding the terms of the conservation easement. Annual monitoring is conducted on these lands, potential violations are noted, and actions taken.

Thank you for your cooperation in this matter. Please enjoy these beautiful lands. If you have any questions or concerns, please get in touch with Raymond Conservation Commission. [conscomchair@raymondnh.gov](mailto:conscomchair@raymondnh.gov).

The Raymond Conservation Commission



CITIZENS BANK  
 900 ELM STREET  
 MANCHESTER, NH 03101



STATEMENT PERIOD  
 FROM THROUGH  
 12-01-23 12-31-23

TOWN OF RAYMOND  
 CONCENTRATION ACCOUNT  
 4 EPPING ST  
 RAYMOND NH 03077-2529

PAGE 6 OF 29

COMBINED STATEMENT OF RELATED ESCROW MASTER AND SUB ACCOUNTS

SUB ACCOUNT DETAIL INFORMATION

NAME: TOWN OF RAYMOND  
 SUB-ACCOUNT NUMBER: 10-8200294385  
 INTEREST PAID THIS PERIOD: 600.18 INTEREST PAID THIS YEAR: 6,852.85  
 CURRENT BALANCE: 347,003.41 FED TAX WITHHELD THIS PERIOD: .00  
 AVERAGE RATE THIS PERIOD 2.04% FED TAX WITHHELD THIS YEAR: .00

EFF-DT	PROC-DT	DESCRIPTION CHK/DEP NO	CONFIRM#	DESCRIPTION CREDITS	DEBITS	BALANCE
11-30	11-30	BEGINNING BALANCE				346,403.23
12-31	12-29	INTEREST PAYMENT		600.18		347,003.41
12-31	12-31	ENDING BALANCE				347,003.41

001675 6/29



1 **Town of Raymond**  
2 **Conservation Commission DRAFT**  
3 **10 January , 2024 Minutes**

4 **Commission Members in Attendance:**     **Meeting called to Order By:**  
5 Jan Kent Chair                                   Jan Kent, Chair  
6 Michael Unger, Vice Chair  
7 Kathy McDonald, Secretary  
8 Warren Gibby, member

9 **Commission Members Excused:**             **Commission Members Absent:**

10 **Recording Secretary:**  
11 Kathy McDonald ( taking minutes in person)

12 **Members of Public in Attendance:**   None

13 **Public Input:** There was none

14 **Annual Report Review**

15 Chair Kent reviewed the 2023 Report, the wording was tweaked, Mr. Unger  
16 motioned to accept the report as amended. Ms. McDonald seconded. Motion  
17 passed unanimously. Jan will send the updated report to the Town Manager.

18 **Jewett Rt 27 Warehouse- update**

19 Chair Kent said at a recent Planning Board meeting a letter from the applicant,  
20 Jewett, was sent to Jason Cleghorn. (See attached letter 12/19/2023 to Diana  
21 Luszcz PB Chair) regarding item #9 putting the undeveloped land into a  
22 conservation easement. Since the Conservation Commission has never held an  
23 easement, Jan forwarded the plan to Bear Paw Regional Greenways for review.  
24 Kaitlin Deyo from Bear Paw replied” Unfortunately due to the size and location of  
25 the warehouse a conservation easement doesn’t look like the best tool, as the  
26 property will have been developed to its’ fullest potential.” Other items from the  
27 letter were discussed. Note the developer did not come to the Cons Com directly  
28 with this letter. Chair Kent suggested a restrictive deed might be better. Ms.  
29 McDonald motioned for Jan to send a letter to the Planning Board recommending  
30 a restricted deed, as opposed to a conservation easement. We would request the

31 applicant work with Cons Com to assist in the wording of the restrictive deed. Mr.  
32 Gibby seconded motion, it passed unanimously.

33 **Abutter Letter update:**

34 Ms. McDonald passed out abutter letters for review. Chair Kent read the new  
35 rules for game cameras and tree stands RSA 207:1 and 207:63. We removed game  
36 cameras from our letter. Mr. Unger motioned to accept the abutter letter as  
37 amended, Mr. Gibby seconded, motion passed unanimously. Chair Kent will send  
38 the approved letter to the Town Manager for him to send to any violators.

39 **Bear- Paw Monitoring Reports**

40 We reviewed monitoring reports for: Cassier, Dearborn, Flint Hill, Robinson Hill  
41 and the Stingy River SELT property( where the town is the secondary easement  
42 holder). Many of the items are on our priority list and are ongoing issues.

43 **Priorities and Project List-Review** was updated. We hope to work with Bear Paw  
44 on ways to fix the beginning of the Dearborn trail at Jama Drive.

45 **Finance:** Conservation Fund Statement was not available.

46 **ESRLAC Dues:** We will pass on this request.

47 **Granite Hills Materials & Recycling- LRAC letter**

48 Chair Kent read the letter from LRAC re: impacted wetlands on the quarry  
49 property. They do not have objections. We do not remember being notified of  
50 this project.

51 **Other items before the board:** Ms. McDonald mentioned the Selectmen are  
52 considering switching from Rockingham Planning Commission to Strafford  
53 Planning. Cons Com would like more information on the pros and cons.

54 **Approval of Minutes 07-December 13, 2023**

55 Ms. McDonald motioned to approve the minutes of Dec 13, 2023, seconded by  
56 Chair Kent, motion approved unanimously.

57 **Future Items/Events:** 01/11/2024- Planning Board-Onway Lake Village-NRG  
58 January 24, 2024- Cons Comm meeting

59 McDonald Motioned to adjourn, Mr. Gibby seconded unanimously. Meeting  
60 adjourned at 8:40 PM Respectfully Yours, Kathleen McDonald acting secretary

61

**From:** Krystal Balanoff <k.balanoff@bear-paw.org>  
**Sent:** Thursday, January 18, 2024 5:00 PM  
**To:** Jan Kent <punda\_milia@hotmail.com>; conscomchair@raymondnh.gov  
<conscomchair@raymondnh.gov>  
**Cc:** Dennis Garnham <>; Peter Cleaves <>; Leslie Randall <>  
**Subject:** Re: Raymond Monitoring Reports

Dear Jan,

I appreciate the Conservation Commission's time and effort in reviewing the 2023 monitoring reports. While Bear-Paw cannot directly offer services to assist you, I hope the following information is helpful to the town.

**Abutter Notification:**

Utilize the Bear-Paw Abutter Letter Template (attached) to simplify and streamline the process of notifying abutters. You only need to fill in the abutter information, print, and mail the letters.

**Conservation Easement Medallions:**

Bear-Paw can assist in placing conservation easement medallions at legal monuments identified on the land survey. However, boundary blazing, if desired, can be done by a licensed land surveyor or forester or the landowner (i.e., the town). Refer to the guidance from the UNH Cooperative Extension [here](#).

**Addressing Erosion at Jama Drive:**

The erosion issue at the end of Jama Drive appears severe but manageable. Implementing best management practices (BMPs), such as multiple water bars and a dry well, can help mitigate the problem by infiltrating and diverting stormwater. SOAK provides detailed DIY factsheets on these BMPs with design, materials, and instructions [here](#) and [here](#).

Please take a look at the attached image for a visual representation of how these DIY practices could be executed by a group of volunteers working with the Conservation Commission or a professional landscaper.

If you have any more questions, feel free to reach out to me directly.

Thank you for your commitment to conservation.

Best regards,  
Krystal

**Krystal Balanoff** (she/they)  
*Executive Director, Bear-Paw*  
p: (603) 463-9400 | PO Box 19, Deerfield, NH 03037  
*Conserving wild and working lands.*





*At Bear-Paw, we know work-life balance is critical. I achieve that by stepping away from my computer when needed, and at times, catching up outside of standard work hours. Do not feel the need to respond outside of your business hours.*

On Thu, Jan 11, 2024 at 11:39 AM Jan Kent <[punda\\_milia@hotmail.com](mailto:punda_milia@hotmail.com)> wrote:

Hi all,

The Raymond CC reviewed the monitoring reports last night and below are some comments regarding the comments.

The CC is aware of the issues with abutters infringing on the conservation lands. Kathy McDonald has been working on a letter to go out to the relevant abutters. I believe the CC knows who the abutters are for Dearborn. I think the impacted abutters for Cassier have not been identified, and I think some of the issues may be that the boundaries are not identified.

For Dearborn, we could really use your help with the erosion issue at the end of Jama Drive. I am not sure if we have the expertise to fix it and not create more of a problem. Additionally, some of that area is not town property so we cannot expend funds on a private road. We have all the other issues on our 'to do' list.

For Flint Hill, the CC recently discussed a gate for Sherburne Drive and decided that it wasn't warranted at this time. Also, at the south end of the town property, a development is proposed that will gate off access to the south of the power lines.

Thank you, Peter and Dennis, for doing the monitoring.

Jan Kent  
Raymond CC





# RAYMOND CONSERVATION COMMISSION

4 EPPING STREET, RAYMOND, NEW HAMPSHIRE 03077  
(603) 895-7017

January 24, 2024

TO: Raymond Planning Board

RE: Jewett Route 27 Warehouse – Conservation Area

The Conservation Commission members discussed at the January 10<sup>th</sup>, 2024, meeting, the question raised regarding permanent conservation of the property not required for the project.

Bear-Paw Regional Greenways reviewed the project for potential conservation easement and recommended a deed restriction over a conservation easement. *“Unfortunately, based on the size and location of that warehouse, a conservation easement doesn't look to be the best tool as the property will have likely been developed to its fullest potential if development moves forward.”*

The Conservation Commission recommends a deed restriction versus a conservation easement.

For the Industrial Drive Warehouse project, the applicant created a separate page in the plan for the conservation area and worked with the Conservation Commission on the conservation restrictive wording. The Conservation Commission recommends following the same approach.

Thank you for the opportunity to review the proposal.

Thank You,

Raymond Conservation Commission  
[ConsComChair@raymond-nh.gov](mailto:ConsComChair@raymond-nh.gov)

CC: Jason Cleghorn - Raymond Community and Economic Development Director

# Tracking Bacterial Contamination in the Lamprey River Watershed

**Final Report**  
to the Lamprey Rivers Advisory Committee

December 31, 2023

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Dept. of Natural Resources and the Environment  
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*NOTE: Funds for this project were provided by the National Park Service under CFDA 15.962-National Wild and Scenic Rivers System. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government.*

## INTRODUCTION AND BACKGROUND

The main goal of this project is to continue monitoring at key sites in the Lamprey River Watershed (LRW) and expand at sites in areas of concern, especially the Moonlight Brook watershed, to provide essential data for assessing water quality, public health risks and sources of any contamination. Addressing this overarching goal will serve to:

- 1.) Expand the baseline of information on bacterial pollution to assess water quality status, trends, and contamination sources in the Lamprey River and the Moonlight Brook watersheds.
- 2.) Target rainfall events to determine if these events trigger elevated bacterial concentrations and/or different pollution sources.
- 3.) Compile data from ongoing and past bacterial monitoring efforts in the Great Bay watershed.
- 4.) Assess the potential for eliminating or mitigating pollution sources identified by this study.
- 5.) Extend findings to interested groups through meetings and published reports.

This Final Report is a summary of all project findings, as well as an updated summary of data from other earlier and ongoing projects related to microbial contamination of the watershed. The report relates particularly to a Goal of the 2013 Lamprey River Management Plan (<https://www.lampreyriver.org/about-us-2013-management-plan-draft>) under “Enough Clean Water”: *Ensure that the Lamprey rivers meet or exceed standards for “fishable and swimmable” water for the health and enjoyment of all species.* The specific focus of this study was assessment of water for swimmable and other recreational uses, using study-generated and other data in comparison to State bacterial indicator standards (NHDES 2019a; 2020a) to enable identifying sites and areas that are clean or of public health concern. The report also sought to identify data trends to track progress or detect new or emerging problems with water quality.

Providing a baseline of information related to bacterial pollution in the Lamprey River and the Moonlight Brook watersheds is important because there are little to no data related to fecal contamination of recreational surface waters other than designated beaches available from the State of New Hampshire in recent years, based on what is presented in their reports related to river water quality (NHDES 2019b; 2020b&c, 2021). These reports include little discussion of this indicator beyond ‘designated’ beaches and the shellfish program. There is a searchable category for Beaches with posted fecal bacterial data on the NHDES OneStop database (<https://www4.des.state.nh.us/DESOnestop/BasicSearch.aspx>), while this report provides a convenient way to access bacterial data for other recreational surface-water uses.

**The Intended Audience** and beneficiaries of this work include: 1.) The LRAC and local volunteers and citizens by providing information about the water quality and potential public health risks for recreating in the Lamprey River watershed and surrounding estuary; 2.) Local and state resource, public health and public works personnel who can use the data to focus resources and effort on problem areas where water pollution may pose a threat or restricts use. 3.) Monitoring program managers who can augment their programs with similar efforts. We intend to present the study findings at several meetings in 2024. The PI will discuss findings at the annual Great Bay Estuarine Research Reserve Research Symposium in Stratham, NH in

January 2024 and some of the data will be used by students to present research posters at the UNH Undergraduate Research Conference in April 2024. The data will also be part of an ongoing evaluation and summarization of findings from several dozen recent (2018 to present) microbial source tracking projects conducted by the Jones lab at UNH in areas ranging from Martha's Vineyard, MA to Trenton Harbor, ME.

**The Evaluation Process** for this project includes data analysis and interpretation, using comparisons of data to State water quality standards to enable clear explanation of the potential significance of the findings. We will track who gets involved and their interests, and how many State, Federal and local agencies are provided with the Final Report. It will be important to also track what management actions are undertaken because of this work once it is made available. The elimination of identified pollution sources can be a direct benefit that can also be tracked.

## METHODS

Sample collection by land for analysis of bacterial pollutants occurred at 8 sites where surface water recreation occurs (Tab. 1; Fig. 1). Site 1\* is near a site listed as NHEPLRDO16 and was sampled in the tidal portion at low tide. Site 2 is in the dam impoundment area (NHRIV600030709-13) of lower Piscassic River. Site 3 corresponds to the NHDES water quality monitoring program site 07T-LMP and is downstream from 08-LMP. Site 4 is located between NHDES sites 11-LMP and 11A-LMP. Site 5 is in section NHRIV600030703-15 behind the Epping Town Hall; Site 6 is in section NHRIV600030703-07-02 at Carroll Beach behind the Raymond Elementary School. Site PB-MS at the Pecker Bridge on Main Street in Raymond NH corresponds to the NHDES site 20-LMP in section NHRIV600030703-07-01, and Site LfRd, is just downstream of Langford Road, at NHDES site 21-LMP in section NHRIV600030703-05.

Study Site	Assessment ID number/site ID	Unit Name	Type** of Recreational use	Last sample	Last exceed	Classification Category†
Site 1*	NHRIV600030709-13	Moonlight Brook	Primary Contact	2008	2000	3-ND
MBO		upstream of Moonlight Bk mouth	Secondary Contact	2008	1996	3-ND
Site 2	NHIMP600030708-03	Piscassic Park Boat Launch	Primary Contact	2007	2005	3-ND
PRBL	near 01-PIS	(Lamprey R. impoundment)	Secondary Contact	2007	N/A	3-ND
Site 3	NHIMP600030709-02	Wiswall Dam	Primary Contact	2008	N/A	3-ND
WD	08-LMP	just above the dam	Secondary Contact	2008	N/A	3-ND
Site 4	NHRIV600030709-01	Upstream of Wadleigh Falls	Primary Contact	2007	1999	4A-P
WF	11-LMP	Lee public canoe boat launch	Secondary Contact	2007	N/A	3-ND
Site 5	NHRIV600030703-15	Behind Epping Town Hall	Primary Contact	2018	2018	4A-P
ETH	13A-LMP	(Middle Lamprey River)	Secondary Contact	2018	2002	2-G
Site 6	NHRIV600030703-07-02	Carroll Lake Beach	Primary Contact	2006	2006	4A-P
RES	BCHCLBRAY	Behind Raymond Elem. Sch.	Secondary Contact	2006	N/A	3-ND
PB-MS	NHRIV600030703-07-01	Pecker Bridge Main Street	20-LMP	1999	N/A	3-ND
	20-LMP	downstream of Carroll Lake		1999	N/A	3-ND
LfRd	NHRIV600030703-05	Langford Road	21-LMP	1999	1990	3-ND
	21-LMP	Lamprey River crossing		1999	N/A	3-ND

\*All sites in the Moonlight Brook watershed fall under this same Assessment Unit

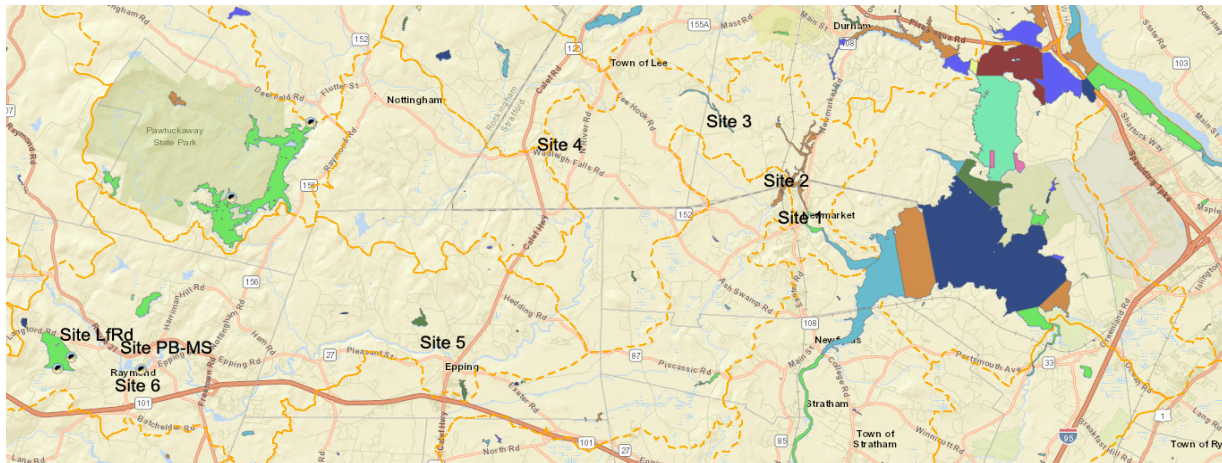
†4A-P: Does not meet water quality standards; the impairment is more severe and causes poor water quality;

2-G: Meets water quality standards by a relatively large margin; 3-ND: No current data. Insufficient information to make assessment decision.

**Table 1.** 2020 NHDES Water Quality Assessment categories in the Lower Lamprey River (HUC 12: 010600030709) and the Middle Lamprey River (HUC 12: 010600030703) for the 8 main study sites.

**Figure 1.** Locations of project study sites during 2023. This figure and Figure 2 were developed using the NHDES Surface Water Quality Assessment Viewer:

<https://nhdes.maps.arcgis.com/apps/webappviewer/index.html?id=d1ba9c5ec85646538e032580e23174f>



To enable more detailed exploration of sources of fecal contamination in Newmarket, we established 6 routine sampling sites in the Moonlight Brook watershed including its one other tributary sub-watershed (Fig. 2). Sample sites included Site MBO the outlet of Moonlight Brook to the tidal portion of the Lamprey River and the same location as Site 1\*, then Site MLD upstream next to Moonlight Drive just to the west of the railroad crossing, Site MLBRec recreation next to the recreational area behind the high school, and at Site MLU near the most upstream section of the brook. Two other sites in a tributary in downtown Newmarket included Site NR next to New Road, and Site CD next to Columbia Drive in the Sleepy Hollow trailer park, where it's probable that little surface water recreation occurs. These sites were chosen instead to help determine the location and types of fecal pollution that contributes to what is discharged in the tidal portion of the Lamprey River, where boating is popular. All sites in the Moonlight Brook watershed are classified the same as Site 1\* (Table 2) by NHDES.

**Figure 2.** Locations of project study sites in the Moonlight Brook watershed during 2023.



All samples were collected and stored on ice until being transported to the Jackson Estuarine Laboratory (JEL) for analysis within 4 hours of sampling. This sampling occurred approximately once per month during 2023 on April 19, May 11, May 28, June 15, July 17, August 14, September 7, October 24, and November 16. The samples were analyzed to determine concentrations of bacterial indicators of fecal pollution that are used by the State of NH for classifying and managing coastal waters: Enterococci (coastal water recreation), fecal coliforms (shellfish harvesting), and *Escherichia coli* (*E. coli*; freshwater recreation) using standard methods accepted by state agencies for these purposes. Although the fecal coliform test relates to shellfishing which is not the goal of this study, the laboratory test we use provides data for both fecal coliforms and *E. coli*, so we do report data for both here, as it also is useful for understanding contamination sources for downstream areas where shellfishing is allowed. Analyses included negative and positive controls for each sampling day.

Water samples were filtered to capture bacterial cells and their DNA. Samples deemed polluted (above State standards) were further analyzed by established procedures in our lab (Rothenheber and Jones 2018) to identify the presence/absence and to some extent relative quantification of sources of fecal contamination in the sample using PCR (polymerase chain reaction-presence/absence) and qPCR (semi-quantitative) methods. This procedure is called microbial source tracking (MST). The potential source species we have targeted include human, dog, bird, gull, Canada goose, cow, horse, ruminants and mammals for the presence/absence PCR assays and mammal, human and bird for the semi-quantitative qPCR assays.

Water quality measurements were also made using datasondes with sensors for water temperature, salinity, pH, depth, dissolved oxygen, turbidity, and chlorophyll *a*. Data for daily rainfall amounts (inches) were from the UNH Weather statistics online database.

Data analysis involved basic comparisons of fecal indicator concentrations to those used as State water quality standards (Tab. 2; NHDES 2020a) to determine the frequency and location of areas that exceed the standards. Given the array of different standards for different types of uses and water quality classification, we used the Class A freshwater and tidal water standards for comparisons. This is based on the recognition that recreational activities in the watershed often include both boating and swimming, so though the watershed has no designated beaches for which the standards are most strict, we needed to inform potential risks for both activities.

INDICATOR	THRESHOLD RISK LEVEL- Primary Contact Recreation							
	Class A fresh		Class B fresh		Designated beaches		Tidal	
	SSMI*	GM	SSMI	GM	SSMI	GM	SSMI	GM
	# cfu or MPN/100 ml							
<i>E. coli</i> for freshwater recreational uses	<b>153</b>	<b>47</b>	<b>406</b>	<b>126</b>	<b>88</b>	<b>47</b>	N/A	N/A
Enterococci for marine water recreational uses	N/A	N/A	N/A	N/A	<b>104</b>	<b>35</b>	<b>104</b>	<b>35</b>
INDICATOR	THRESHOLD RISK LEVEL- Secondary Contact Recreation							
	Class A fresh		Class B fresh		Designated beaches		Tidal	
	SSMI*	GM	SSMI	GM	SSMI	GM	SSMI	GM
	# cfu or MPN/100 ml							
<i>E. coli</i> for freshwater recreational uses	<b>153</b>	<b>235</b>	<b>406</b>	<b>630</b>	N/A	N/A	N/A	N/A
Enterococci for marine water recreational uses	N/A	N/A	N/A	N/A	N/A	N/A	<b>520</b>	<b>175</b>

\*SSMI = 'single sample maximum indicator'; GM = geometric mean, or the average of 3 samples within 60 days.

**Table 2.** State of New Hampshire standard fecal indicator bacteria concentrations for different surface water uses. See citation (State of New Hampshire) in **References** for the source of this information.

The microbial source tracking data were analyzed to determine occurrence and frequency of detection for the different sources at the different sites, noting any temporal trends. The concentrations (copy number per 100 ml) of the human source genetic marker in the qPCR assay are also compared to a threshold (2400 CN/100 ml) above which researchers at EPA and elsewhere have found to exceed acceptable likelihood of human illnesses (Boehm et al. 2013).

**The awarded funds** were used to support time required by Dr. Jones to oversee the project, analyze data, and write the Final Report. Four undergraduate students from UNH and Dr. Jones' Lab Supervisor were also partially supported for their involvement in sampling events and lab analyses. They also helped with data compilation and analysis and providing information for the final report. The project also required purchasing supplies for the water sampling, bacterial analyses, and the pollution source detection analyses, and transportation to sampling sites.



## **RESULTS & DISCUSSION**

### **Review and Summary of Existing Data**

There are Draft 2020 NHDES Watershed Report Cards for an approximate 34 square mile area representing the Lower and Middle portions of the Lamprey River (NHDES 2020c). These areas are given Hydrologic Unit Codes (HUC12) of HUC 12: 010600030709 (Lower) and 010600030703 (Middle). Within these areas there are 34 and 63 different Assessment Units, respectively, each also given unique numerical Assessment IDs. In the Lower Lamprey River there were 2 estuarine, 6 impoundment, 1 lake and 25 river Assessment Units. Most (30 of 34) of these Assessment Units have assessment codes for swimming (Primary contact) or boating (Secondary contact) of “3-ND”, which is “No current data, insufficient information to make an assessment decision”. The assessment codes for the study sites of assessment units closest to the study sites are all ‘3-ND’ (last sample = 2008; Tab. 1), except for Site 2 where there are adequate enterococci data to classify primary contact (swimming) as poor water quality that does not meet water quality standards (4A-P). The secondary contact (boating) classification is ‘2-G’, meaning that the water quality meets standards by a relatively large margin (Tab. 2). One site at Packers Falls also had a 2-G assessment code based on 2017 data for primary and secondary contact uses.

In the Middle Lamprey River portion there were 8 impoundment, 8 lake and 47 river Assessment Units. Most (53 of 63) of these Assessment Units have assessment codes for swimming (Primary contact) or boating (Secondary contact) of “3-ND”, which is “No current data, insufficient information to make an assessment decision”. The assessment codes for the study sites of assessment units closest to the study sites are all ‘3-ND’ except for Sites 5 and 6 where there are adequate *E. coli* data to classify primary contact (swimming) as poor water quality that does not meet water quality standards (4A-P). The secondary contact (boating) classification is ‘2-G’, meaning that the water quality meets standards by a relatively large margin, for Site 5 and ‘3-ND’ for Site 6 (Tab. 1).

### **Lamprey River Watershed**

All intended sample collections occurred on 8 dates from April through November 2023. 2023 was a wet summer featuring 14 intensive (>1 in./24 h) rainfall events in the Lamprey River watershed, especially (8 events >1”/24 h) during June through August. The June and July sample dates occurred after >1” rainfall in the previous 2 days (Tab. 3). The bacterial indicator levels changed with the different monthly sample events, with higher levels of fecal coliforms and *E. coli* especially in June-August, less so in September and October, while all sites had very low levels in May and November and except for 2 sites in April. (Tab. 3).

Date	Site #	Site name	Fecal	<i>E. coli</i>	Enterococci	Rainfall-daily		
			coliforms			sample day	prior day	2 d prior
			CFU/100 ml	CFU/100 ml	CFU/100 ml	"/24 h	"/24 h	"/24 h
4/19/23	1	MB	360	360	<20	0	0.02	0.21
	2	PRBL	240	230	65			
	3	WD	25	25	<5			
	4	WF	20	20	<5			
	5	ETH	15	15	5			
	6	RES	<5	<5	<5			
5/11/23	1	MB	<5	<5	5	0	0	0
	2	PRBL	<5	<5	15			
	3	WD	<5	<5	<5			
	4	WF	30	30	<5			
	5	ETH	<5	<5	<5			
	6	RES	<5	<5	5			
6/15/23	1	MB	2360	2360	<40	0	0.42	0.67
	2	PRBL	64	64	24			
	3	WD	248	248	24			
	4	WF	300	300	32			
	5	ETH	224	224	44			
	6	RES	100	100	<40			
7/17/23	1	MB	520	520	360	0	1.15	0
	2	PRBL	400	400	140			
	3	WD	430	430	610			
	4	WF	400	400	290			
	5	ETH	660	660	300			
	6	RES	2660	2540	770			
8/14/23	1	MB	500	260	140	0	0.28	0
	2	PRBL	84	80	60			
	3	WD	124	112	20			
	4	WF	188	160	88			
	5	ETH	96	60	84			
	6	RES	140	80	12			
9/7/23	1	MB	500	500	120	0	0	0
	2	PRBL	20	20	<4			
	3	WD	96	96	<4			
	4	WF	60	48	4			
	5	ETH	168	144	24			
	6	RES	900	880	710			
10/24/23	1	MB	70	60	80	0	0	0.02
	2	PRBL	320	320	230			1.36
	3	WD	40	40	10			prev day
	4	WF	70	60	40			
	5	ETH	130	130	90			
	6	RES	190	190	150			
	7	PB-MS	130	120	140			
	8	LfRd	50	50	50			
11/16/23	1	MB	<10	<10	5	0	0	0
	2	PRBL	10	10	<10			
	3	WD	30	20	10			
	4	WF	<10	<10	<10			
	5	ETH	30	30	30			
	6	RES	<10	<10	<10			
	7	PB-MS	<10	<10	10			

concentration exceeded State standard

**Table 3.** Fecal indicator bacteria concentrations in water samples collected in the Lamprey River watershed. Site 1: Moonlight Brook-mouth at Lamprey River; Site 2: Piscassic River Boat Launch; Site 3: above Wiswall Dam; Site 4: Wadleigh Falls canoe access. Site 5: behind Epping Town Hall. Site 6: Carroll Lake beach behind Raymond Elementary School. Site 7: Pecker Bridge on Main Street in Raymond. Site 8: below bridge on Langford Road in Raymond.

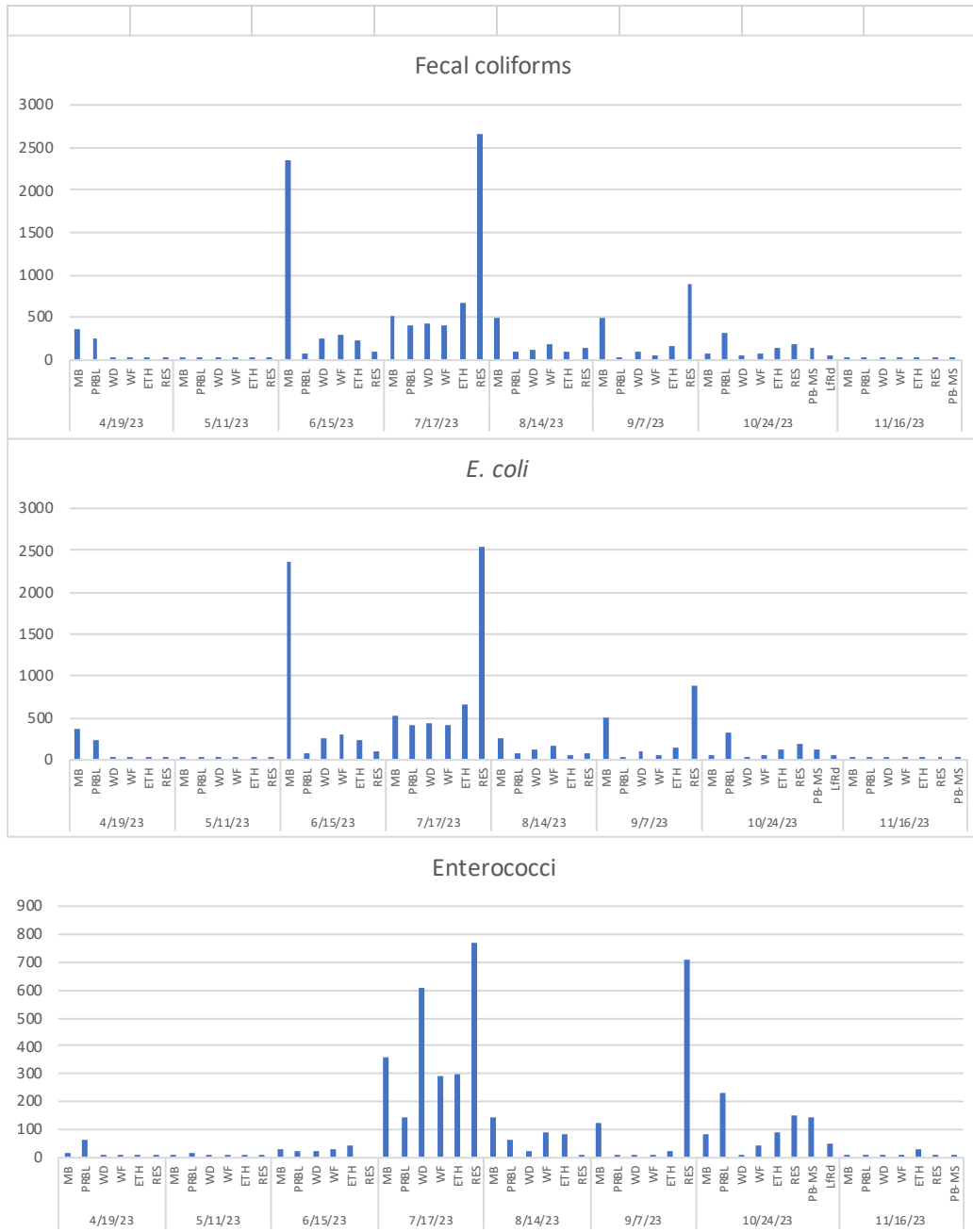
The three bacterial fecal indicators exceeded State water quality standards at varying rates (Tables 3&4). Enterococci levels only exceeded standard (104 enterococci/100 ml) on 1-3 of the 8 sample events at all 6 main sites for a total of 11 out of 48 events, in contrast to fecal coliforms that exceeded standard (14 FC/100 ml) in 33 out of 48 samples. *E. coli* levels, which are most pertinent to this study as they relate to freshwater recreation, exceeded the single sample standard (153 *E. coli*/100 ml) on 2-5 of the 8 sample events the 8 sites for a total of 20 events. This included 11 exceedences out of the 12 samples during June and July, and at 2-3 sites in April, August, and September (Tab. 3). The bacterial indicators were detected at a high frequency, with non-detection occurring in only 4 (enterococci) samples during June to October, although non-detection for all 3 indicators occurred in April, May and November (Tab. 3).

2023 Site	State standard exceedance			Non-detection		
	fecal coliform	<i>E. coli</i>	Enterococci	fecal coliform	<i>E. coli</i>	Enterococci
	>14/100 ml	>158/100ml	>104/100 ml	<5 cfu/100ml	<5 cfu/100ml	<5 cfu/100ml
1	6	5	3	1	1	2
3	6	2	1	1	1	3
4	5	3	1	1	1	3
5	5	3	1	1	1	1
6	5	4	3	3	3	3
Totals	<b>33</b>	<b>20</b>	<b>11</b>	<b>8</b>	<b>8</b>	<b>14</b>
% samples	<b>69%</b>	<b>42%</b>	<b>23%</b>	<b>17%</b>	<b>17%</b>	<b>29%</b>

**Table 4.** Frequency of exceedance of State water quality standards and non-detection of bacterial indicators at the 6 study sites.

In the 2021 and 2022 studies, indicator bacteria were detected at much higher levels at Site 1 compared to all other sites. In 2023, this continued to be the case except Site 6 exceeded State indicator standard concentrations almost as frequently and had higher concentrations on two dates compared to Site 1 (Fig. 3; Tables 3&4), despite this site having somewhat lower contamination levels than Sites 2-5 in 2022. This change induced expansion of water testing to include two more sites in the Carroll Lake section of the Lamprey River in Raymond. The comparison of the 3 fecal contamination indicators in Fig. 3 shows different seasonal dynamics for enterococci compared to the other two indicators. Fecal coliforms and *E. coli* concentrations were elevated in June and July, and somewhat in August-October. Enterococci were only slightly elevated in June, were most consistently elevated in July and to a lesser degree in August and October, with one site, RES-Site 6, showing a high concentration in September. These results illustrate the known differences between different bacterial indicators of fecal contamination that underly different management applications.

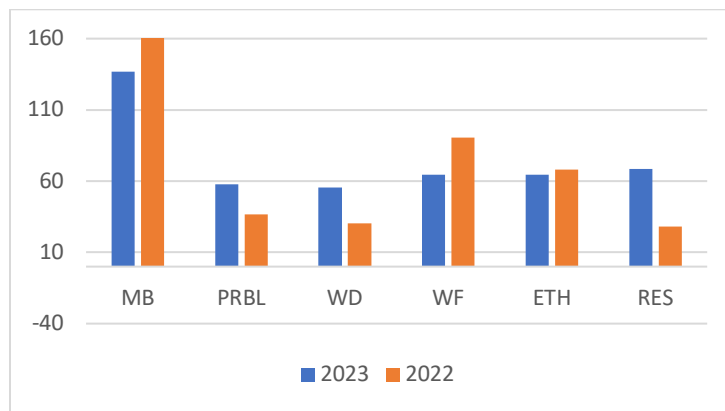
**Figure 3.** Concentrations of the 3 fecal coliforms, *E. coli*, and enterococci for all 8 sample dates at each of the 8 sampling sites.



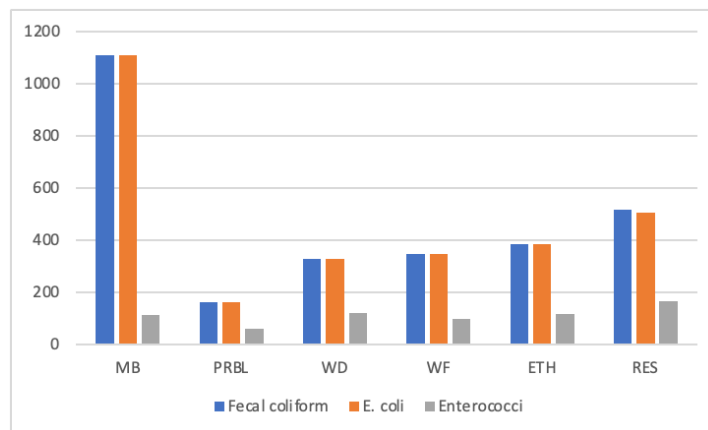
The average concentrations for the fecal indicator bacteria show trends across sites for the full study (Fig. 4A). Fecal coliforms and *E. coli* concentrations were again higher at Site 1 compared to the other 5 sites for the full study time, while the relatively lower enterococci concentrations were highest at Sites 1 and 6 and lower at Sites 2-5, again reflecting a change this year for Site 6. As in 2022, the impact of rainfall and associated runoff was again a focus of this study, but this year instead of a drought the weather was quite rainy which allowed for capturing enough wet weather events to determine potential impacts. In June and July when there was the most rain,

the much higher indicator concentrations (Fig. 4B; see difference in y-axis scales for Figs. 4 A&B) showed similar spatial patterns as for the full study, with Site 1 still having the highest fecal coliform and *E. coli* concentrations; the lowest concentrations were at Site 2, similar concentrations at Sites 3-5, and slightly higher concentrations at Site 6 (Fig. 4B). Average enterococci concentrations varied over a narrower range, but the highest average concentration was at Site 6 instead of at Site 1. Beyond the impacts of rainfall driven runoff as a source of contamination, it is not yet clear if something else may be causing higher levels of contamination at Site 6/RES this year, especially given the relatively high concentrations of all 3 indicators on September 7 compared to other sites (Fig. 3).

**Figure 4A.** Geometric average concentrations (cfu/100 ml) of fecal indicator bacteria at the main 6 sample sites for April to November 2023.

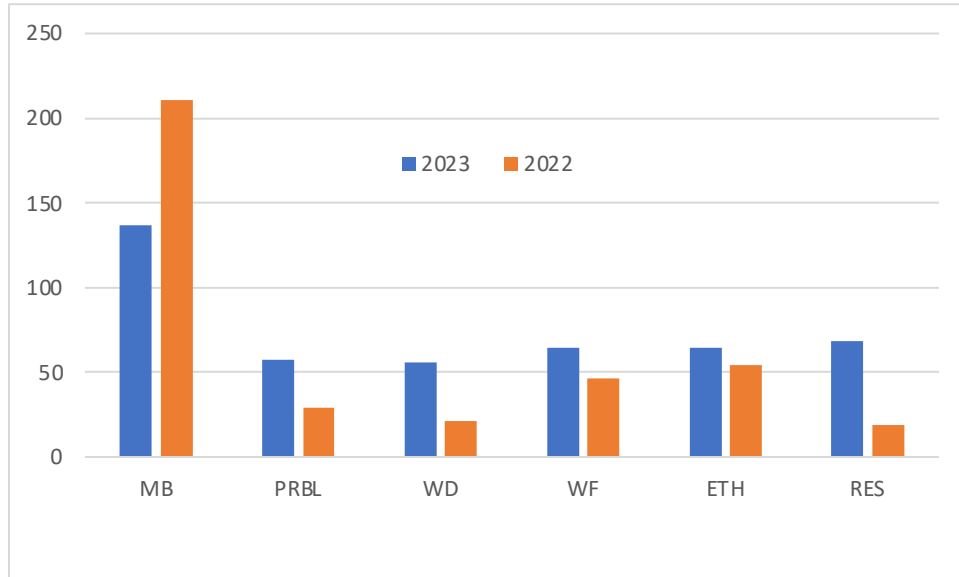


**Figure 4B.** Geometric average concentrations (cfu/100 ml) of fecal indicator bacteria at the main 6 sample sites for June and July 2023.



The average *E. coli* concentrations for all 6 main sites were compared for 2022 and 2023 (Fig. 5). Although Site 1 remained the site with the highest *E. coli* concentrations, the average in 2023 was lower than for 2022, while the *E. coli* concentrations at the other 5 sites were higher in 2023, as expected due to the increased frequency of rainfall/runoff conditions in 2023. It is not clear what caused lower *E. coli* levels at Site 1 in 2023.

**Figure 5.** Geometric average concentrations (cfu/100 ml) of *E. coli* in 2022 and 2023 at the main 6 sample sites for all 8 sample dates.



The bacterial indicator levels at the tidal site at the Newmarket waterfront determined by UNH-JEL for the GBNERR/Piscataqua Regional Estuaries Partnership (PREP) monitoring program, that were included in the 2021 and 2022 LRAC studies (Jones 2022, 2023) are again useful to be compared to levels elsewhere in the upstream Lamprey River watershed determined as part of this 2023 study. In 2023, the levels of all 3 bacterial indicators exceeded State thresholds in April and June, fecal coliforms exceeded the State threshold in every month, and *E. coli* also exceeded the State threshold in July through September. Overall, levels of each indicator showed similar general patterns as this study where the enterococci and *E. coli* levels exceeded standards less frequently than the fecal coliforms for 2021-23 (Tab. 5), except that in November and December 2022, the levels of all three indicators were much higher than for other times, probably due to recent heavy rains and runoff.

Collection Date	Fecal coliform cfu/100 ml	<i>E. coli</i> cfu/100 ml	Enterococci cfu/100 ml
4/13/21	62	60	10
5/11/21	40	32	28
6/8/21	84	64	12
7/15/21	84	80	<4
8/10/21	140	32	28
9/20/21	76	76	72
10/12/21	32	28	8
11/8/21	36	32	8
5/17/22	<4	<4	12
6/21/22	29	25	8
7/18/22	40	36	16
8/15/22	20	12	24
9/19/22	n/d	n/d	n/d
10/17/22	84	80	20
11/15/22	3240	3100	150
12/2/22	1200	1100	960
4/10/23	8440	8200	1440
5/8/23	120	106	6
6/6/23	3280	3200	440
7/19/23	373	310	30
8/7/23	220	220	50
9/18/23	208	204	12
10/16/23	30	30	<3
11/6/23	50	50	30
12/6/23	40	40	100

**Table 5.** Fecal indicator bacteria concentrations in water samples collected at Site GBRLR (Site 2). Yellow highlighted data are levels that exceed water quality standards.

There was evidence of animal (mammal) contamination at all 8 sites for all but 2 of the 51 samples analyzed (Tab. 6). Dog contamination was present at all sample sites in all months except August and November. Bird contamination was also detected in all samples from July through November and to some extent in May through June. Cow contamination was present at some sites each month except in July and November, while ruminants, Canada geese, horses and gulls were detected in diminishingly fewer samples.

Site	Sample date											qPCR: copies/100 ml		
		Mammal	Human	Dog	Ruminant	Cow	Bird	Gull	Canada goose	Horse	Mammal	Human	Bird	
MB	4/19/23	+	-	+	-	+	-	-	-	-	+	72,974	-	-
PRBL		+	-	+	-	+	-	-	-	-	+	812,709	-	-
WD		+	-	+	-	+	-	-	-	-	+	33,555	-	-
WF		-	-	+	+	+	+	-	-	-	-	54,315	-	2,900
ETH		+	-	+	-	-	+	-	-	-	-	115,026	-	6,359
RES		-	-	+	-	-	-	-	-	-	+	49,366	-	-
PB-MS														
LFRd														
MB	5/11/23	+	+	+	+	+	+	-	-	-	-	1,438,276	2,664	4,014
PRBL		+	-	+	-	+	+	-	+	+	+	4,035,839	-	4,834
WD		+	-	+	-	+	+	-	-	-	-	1,368,538	-	12,995
WF		+	-	+	-	+	+	-	-	-	-	1,996,357	-	8,452
ETH		+	-	+	-	+	+	-	-	-	-	1,149,199	-	10,259
RES		+	-	+	-	+	-	-	-	-	+	80,386	-	-
PB-MS														
LFRd														
MB	6/15/23	+	+	+	-	+	+	-	-	-	+	18,118,495	3,169,542	10,311
PRBL		+	+	+	-	+	-	-	+	+	+	2,467,551	<167	-
WD		+	-	+	-	+	+	-	-	-	-	7,954,666	-	3,735
WF		+	+	+	-	+	+	-	-	-	+	3,660,094	<167	2,690
ETH		+	-	+	-	+	+	-	-	-	+	4,672,970	-	5,186
RES		+	-	+	-	+	-	-	-	-	+	1,260,457	-	-
PB-MS														
LFRd														
MB	7/17/23	+	+	+	-	-	+	-	-	-	-	6,190,589	984	6,522
PRBL		+	+	+	-	-	+	-	-	-	-	15,477,627	92,242	7,006
WD		+	-	+	-	-	+	-	-	-	-	19,557,835	-	3,959
WF		+	-	+	-	-	+	-	-	-	-	48,500,856	-	3,072
ETH		+	-	+	-	-	+	-	-	-	-	2,321,529	-	4,467
RES		+	+	+	-	-	+	-	-	-	-	19,699,999	<167	-
PB-MS														
LFRd														
MB	8/14/23	+	+	+	+	+	+	-	+	-	-	26,596,680	7,110,544	288
PRBL		+	-	-	-	+	+	-	+	+	-	49,451,183	-	-
WD		+	-	-	-	-	+	-	+	+	-	36,793,133	-	<167
WF		+	-	+	-	+	+	-	+	+	-	63,504,375	-	284
ETH		+	-	-	-	-	+	-	-	-	-	19,587,653	-	2,684
RES		+	-	-	-	+	+	-	+	+	-	32,267,117	-	2,586
PB-MS														
LFRd														
MB	9/7/23	+	-	+	+	+	+	+	-	-	-	8,665,941	-	52,713
PRBL		+	-	+	+	+	+	-	+	+	-	3,599,131	-	11,494
WD		+	-	+	-	+	+	-	+	+	-	11,014,407	-	2,059
WF		+	-	+	+	+	+	-	+	+	-	26,055,538	-	1,610
ETH		+	-	+	-	+	+	+	+	-	-	14,211,021	-	40,328
RES		+	-	+	-	+	+	+	+	+	-	7,658,007	-	9,334
PB-MS														
LFRd														
MB	10/24/23	+	+	+	+	+	+	+	-	-	-	2,017,118	82,599	3,180
PRBL		+	-	+	+	-	+	-	-	-	-	23,979,659	-	413
WD		+	+	+	-	-	+	+	-	-	-	3,166,780	160,654	26,498
WF		+	+	+	+	+	+	-	-	-	-	3,100,068	3,487,083	857
ETH		+	-	+	-	+	+	+	-	-	-	1,742,586	-	1,201
RES		+	-	+	+	+	+	+	-	-	-	3,692,919	-	485
PB-MS														
LFRd														
MB	11/16/23	+	-	-	+	-	+	-	-	-	-	9,196,426	-	755
PRBL		+	-	-	-	-	+	-	-	-	-	696,309	-	<167
WD		+	-	+	-	-	+	-	-	-	-	20,375,343	-	<167
WF		+	-	-	-	-	+	-	-	-	-	9,920,518	-	237
ETH		+	-	-	-	-	+	-	-	-	-	241,595	-	778
RES		+	-	+	+	-	+	-	-	-	-	5,817,992	-	417
PB-MS														
LFRd														

**Table 6.** Detection of the presence of different pollution sources by of PCR and qPCR analyses for all samples from May through November 2023. Green highlight denotes detection, yellow highlight denotes level above human contamination risk threshold level.



The presence of human contamination was detected most frequently (5 of 8 samples) at Site 1 during each month except April, September, and November (Tab. 6). Human contamination was detected more at other sites in 2023 compared to previous years, including twice at Sites 2 and 4, and once each at Sites 6, PB-MS and LfRd. The follow-up semi-quantitative assay (qPCR), which has a higher detection limit, indicated the human contamination concentrations at Site 1 were always higher than levels found at other sites and were highly elevated (>10,000 copy number/100 ml) in May, June, October, and November. The quantified level of human contamination at Site 1 was above a public health safety threshold (4,200 copy number/100 ml; Boehm et al. 2013) at Site 1 in samples collected in June, August, and October, at Site 2 in July, and at Sites 3, 4 PB-MS, and LfRd in October. The high frequency of human contamination detection, and at elevated levels, in October at 5 out of 8 sites across the study area was unusual and is of unknown cause. The quantified human contamination levels were below this threshold in the other 5 instances of detection and below the detection level in 3 of the samples.

The quantified level of bird contamination (by qPCR assay) for the 44 samples where the presence of bird contamination was detected reflected relatively elevated levels of contamination, as only 5 samples were below the qPCR assay detection limit and of the 39 samples with detectable levels by qPCR, 29 exceeded 1,000 CN/100 ml, with the highest level at 52,713 CN/100 ml and the lowest level at 288 CN/100 ml (Tab. 6). The presence of Canada geese did not correspond to elevated levels of bird contamination; however, many ducks were observed at Site 1 where bird contamination was above detection levels from May-November.

There was some seasonality for a few source types, although detection of human, dog, bird, and cow contamination was spread across the full study period (Tab. 6). Canada geese contamination was only detected in August and September, and gulls were detected only in September and October. Ruminants, which can include deer, were detected most frequently in September through November, while horse contamination, whatever the actual source may be, was detected in May through June, and in the 2 new Raymond sites in October.

In addition to showing the highest concentrations of all three indicator bacteria, Site MBO also had the most diverse identified types of contamination in each sample, with an average of 5.4 types (out of 9 possible) per sample (Tab. 7). In 2022 this analysis showed much lower diversity of contamination types at other sites, yet in 2023, Sites PRBL, WF, PB-MS, and LfRd also showed relatively high diversity (4.5 to 5 source types) with other sites between 3.5-4.0 types.

Site #	Samples #	Ave. # of source types detected	Human source detection	Human source >threshold
<b>LAMPREY RIVER WATERSHED</b>				
<b>MBO</b>	8	<b>5.4</b>	<b>4</b>	4
PRBL	8	4.5	2	1
WD	8	3.9	1	1
WF	8	4.5	2	1
ETH	8	3.5	0	0
RES	8	4.0	1	0
PB-MS	2	5.0	1	1
LfRd	1	5.0	1	1

**Table 7.** The frequency of site-specific fecal-borne bacterial contamination sources.

## **Moonlight Brook watershed**

One significant focus of the 2023 study was to explore how contaminated Moonlight Brook is in relation to the historically elevated levels of bacterial contamination at the sampling site located in the mouth/outlet of Moonlight Brook next to the Newmarket boat launch (Figs. 1&2). New sampling sites were included that were sampled monthly on different days than the sites on the full Lamprey River watershed. The Moonlight Brook watershed sites included initially one then up to 3 more upstream of the downtown railroad crossing, and initially one then 2 more sites in a tributary waterway to the south of the brook outlet that extends into the Sleepy Hollow trailer park.

All intended sample collections, except for MLD in September, occurred on 7 dates in May, June, then August through November 2023 (Tab. 8). 2023 was a wet summer in the Moonlight Brook watershed, especially during June through August. There were no instances, however, where sampling occurred on a date following significant (>1") rainfall within 2 days prior to the sample dates. Even so, akin to what happened at the Lamprey River sites, concentrations of all three bacterial indicators were higher and more often exceeded State risk thresholds during June, August, and September sample dates (Tab. 8).

Date	Site	Fecal			Rainfall-daily		
		coliforms	<i>E. coli</i>	Enterococci	sample day	prior day	2 d prior
		CFU/100 ml	CFU/100 ml	CFU/100 ml	"/24 h	"/24 h	"/24 h
5/16/23	MBO	580	572	28	0	0	0
	NR	72	72	48			
	MLD	56	56	48			
5/24/23	MBO	100	<5	80	0.21	0	0
	NR	72	68	8			
	MLD	40	36	<4			
	CD	36	36	<4			
	MB Rec	48	48	<4			
	LR-Tidal dock	800	780	20			
6/22/23	MBO	160	160	200	0	0	0.04
	NR	504	504	188			
	MLD	240	240	80			
	CD	188	188	72			
	MB Rec	380	380	372			
8/21/23	MBO	476	420	280	0	0	0
	NR	316	244	64			
	MLD	240	240	80			
	CD	400	280	64			
	MB Rec	364	364	108			
9/21/23	MBO	190	190	30	0	0	0.56
	NR	320	320	120			
	MLD	NA	NA	NA			
	CD	200	180	50			
	MB Rec	80	60	170			
10/19/23	MBO	30	30	20	0	0	0
	NR	20	20	20			
	MLD	60	50	<10			
	CD	50	50	20			
	MB Rec	<10	<10	10			
	MB-U	40	40	<10			
11/8/23	MBO	440	440	85	0	0.06	0
	NR	30	30	145			
	MLD	10	10	70			
	CD	40	40	145			
	MB Rec	<5	<5	100			
	MB-U	65	55	35			

**Table 8.** Fecal indicator bacteria concentrations in water samples collected in the Moonlight Brook watershed. Site MBO: Moonlight Brook Outlet-mouth at Lamprey River; Site NR: New Road 3; Site MLD: Moonlight Drive upstream of the railroad crossing; Site CD: Columbia Drive, upstream of New Road; Site MBRec: Moonlight Brook behind the Newmarket High School near the recreational facilities; MBU: Moonlight Brook upstream.

The three bacterial fecal indicators exceeded State water quality standards to varying degrees (Tables 8&9). Enterococci levels only exceeded standard (104 enterococci/100 ml) at 3 sites in June, 2 sites in November and 1 site in August, twice at Sites MBO and NR, and once at Site MBRec. In contrast, fecal coliforms exceeded the standard (14 FC/100 ml) in 30 out of the 34 samples. *E. coli* levels, which are most pertinent to this study as they relate to freshwater recreation, exceeded the single sample standard (153 *E.coli*/100 ml) at all sampled sites in June,

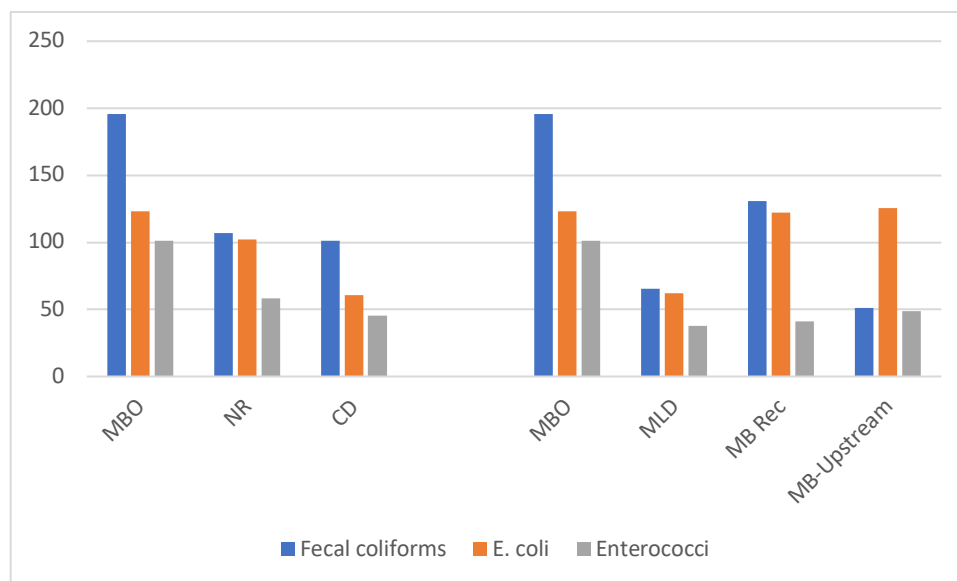
August and September (except Site MBU in September), and only at Site MBO on May 8 and November 8. The bacterial indicators were detected at a high frequency, with non-detection occurring only twice for fecal coliforms, 3 times for *E. coli*, and 4 times for enterococci (Tab. 9).

Site	State standard exceedance			Non-detection		
	fecal coliform	<i>E. coli</i>	Enterococci	fecal coliform	<i>E. coli</i>	Enterococci
MBO	7	5	2	0	1	0
NR	7	3	3	0	0	0
MLD	5	2	0	0	0	2
CD	6	3	1	0	0	1
MBRec	5	2	3	2	2	1
MBU	2	0	0	0	0	1
Totals	<b>32</b>	<b>15</b>	<b>9</b>	<b>2</b>	<b>3</b>	<b>5</b>
% samples	<b>91%</b>	<b>43%</b>	<b>26%</b>	<b>6%</b>	<b>9%</b>	<b>14%</b>

**Table 9.** Frequency of exceedance of State water quality standards and non-detection of bacterial indicators at the 6 study sites in the Moonlight Brook watershed.

The average concentrations for the fecal indicator bacteria show trends across the 6 sites in Figure 6, which separates the two sub-watersheds and includes MBO in both. Fecal coliform concentrations were substantially higher at Site MBO compared to the other 5 sites. *E. coli* concentrations were highest at Sites MBO, MBRec, and MBU, slightly lower at Site NR, then lowest at Sites CD and MLD. The relatively lower enterococci concentrations were highest at Site MBO and at consistently lower concentrations at all other sites.

**Figure 6.** Geometric average concentrations (cfu/100 ml) of fecal indicator bacteria at the 6 sample sites in the Moonlight Brook watersheds: May-November 2023. Site MBO is at the mouth of both watersheds.



There was evidence of animal (mammal) contamination at all 8 sites for all the 35 samples analyzed (Tab. 10). Bird contamination was present in 33 of the 35 samples analyzed and at all sample sites on May 16 and in August through November. Dog contamination was detected in 23 of the analyzed samples and at one site or more on each sample event. Cow contamination was present in 23 analyzed samples and at most sites each month except in September and October, while horses, ruminants, Canada geese, and gulls were detected in diminishingly fewer samples.

Site	Sample date										qPCR: copies/100 ml		
		Mammal	Human	Dog	Ruminant	Cow	Bird	Gull	Canada goose	Horse	Mammal	Human	Bird
MBO	5/16/23	+	+	+	-	+	+	-	-	+	1,884,336	36,465	252
NR		+	-	+	-	+	+	-	-	+	1,764,061	-	11,294
MLD		+	+	+	-	+	+	-	-	+	271,737	27,233	14,689
CD		ND	ND	ND	ND	ND	ND	ND	ND	ND			
MBREC	5/24/23	ND	ND	ND	ND	ND	ND	ND	ND	ND			
MBU		ND	ND	ND	ND	ND	ND	ND	ND	ND			
LRTD		ND	ND	ND	ND	ND	ND	ND	ND	ND			
MBO		+	+	+	-	+	+	-	-	+	1,044,230	502	9,075
NR	+	-	-	-	+	+	-	-	+	3,789,115	-	13,721	
MLD	+	+	+	-	+	+	-	-	+	1,389,770	-	1,990	
CD	+	+	+	-	+	+	-	-	+	1,400,652	-	13,183	
MBREC	+	+	+	-	+	-	-	-	+	1,031,844	539	20,597	
MBU	ND	ND	ND	ND	ND	ND	ND	ND	ND				
LRTD	+	+	+	-	+	+	-	-	-	5,278,679	-	2,335	
MBO	6/22/23	+	+	+	-	+	+	+	-	+	6,645,327	253,208	10,544
NR		+	+	+	-	-	+	-	-	+	1,456,362	<167	5,585
MLD		+	+	+	-	+	-	-	-	-	1,256,207	83,516	-
CD		+	+	+	-	+	+	-	-	+	5,312,388	17,793	4,345
MBREC	+	+	+	-	+	+	-	-	-	2,082,238	37,259	3,927	
MBU	ND	ND	ND	ND	ND	ND	ND	ND	ND				
LRTD	ND	ND	ND	ND	ND	ND	ND	ND	ND				
MBO	8/21/23	+	+	+	+	+	-	-	-	-	20,575,263	30,502	619
NR		+	-	+	+	+	+	-	-	-	71,948,283	-	1,658
MLD		+	-	-	+	+	+	-	-	-	4,641,089	-	922
CD		+	-	+	+	+	+	-	-	+	116,881,795	-	2,106
MBREC	+	-	-	+	+	+	+	-	-	9,716,235	-	3,650	
MBU	ND	ND	ND	ND	ND	ND	ND	ND	ND				
LRTD	ND	ND	ND	ND	ND	ND	ND	ND	ND				
MBO	9/21/23	+	+	-	+	-	+	-	+	+	88,231,002	27,537	770
NR		+	-	-	+	-	+	+	+	+	47,594,560	-	1,004
MLD		ND	ND	ND	ND	ND	ND	ND	ND	ND			
CD		+	-	-	+	-	+	-	+	+	162,198,556	-	1,179
MBREC	+	-	+	-	+	+	-	+	+	121,042,976	-	834	
MBU	ND	ND	ND	ND	ND	ND	ND	ND	ND				
LRTD	ND	ND	ND	ND	ND	ND	ND	ND	ND				
MBO	10/19/23	+	+	+	-	+	-	+	+	-	2,924,080	27,361	712
NR		+	+	+	+	+	-	+	+	-	8,303,139	38,696	688
MLD		+	-	+	-	-	+	-	+	+	1,559,006	-	<167
CD		+	-	-	+	-	+	-	+	-	24,196,166	-	1,552
MBREC	+	+	+	-	-	+	-	+	-	888,612	38,899	513	
MBU	+	+	+	+	+	+	+	+	-	552,952	10,957	1,313	
LRTD	ND	ND	ND	ND	ND	ND	ND	ND	ND				
MBO	11/18/23	+	+	-	+	+	+	-	-	-	13,088,640	786,671	585
NR		+	-	-	+	+	+	-	-	-	8,518,207	-	1,169
MLD		+	-	+	-	+	+	-	-	-	766,367	-	1,782
CD		+	-	-	+	-	+	-	-	-	5,370,792	-	1,834
MBREC	+	-	-	-	+	+	-	-	-	852,601	-	2,014	
MBU	+	-	-	+	+	+	-	-	-	671,034	-	3,725	
LRTD	ND	ND	ND	ND	ND	ND	ND	ND	ND				

**Table 10.** Detection of the presence of different pollution sources by of PCR and qPCR analyses for all samples from May through November 2023. Green highlight denotes detection, yellow highlight denotes level above human contamination risk threshold level.

Human contamination was always (7 of 7 samples) detected at Site MBO (Tab. 10). Human contamination was detected at least once for the other 6 sites in the Moonlight Brook watershed, including the single sample collected below the tidal dam on May 24, 2023, when there was a leaky sewer pipe in the tidal portion of the Lamprey River. Human contamination was detected more than once at Sites NR, MLD, CD, and MBRec.

The follow-up semi-quantitative assay (qPCR), which has a higher detection limit than the presence/absence PCR assay, indicated the human contamination at Site MBO was higher than levels found at other sites for all dates except October 19<sup>th</sup> (Table 10). The quantified level of human contamination at Site MBO was above a public health safety threshold (4,200 copy number/100 ml; Boehm et al. 2013) in samples collected on all dates except May 24<sup>th</sup>. The levels of human contamination in the 13 of 16 instances where it was detected at all sites were highly elevated (>10,000 copy number/100 ml). The relatively common detection of human contamination, and at elevated levels, at all sites and thus in both sub-watersheds, is a concern and suggests that at least some of the human contamination may come from sources upstream of the downtown section where both branches of the brook are underground.

The quantified level of bird contamination for the 33 samples where bird contamination was also detected by the non-quantitative PCR assay reflected relatively elevated levels of contamination, as only 1 sample was below the qPCR assay detection limit and of the 32 samples with detectable levels by qPCR, 23 exceeded 1,000 CN/100 ml, with the highest level at 20,597 CN/100 ml and the lowest level at 252 CN/100 ml (Tab. 10). The presence of Canada geese did not correspond to elevated levels of bird contamination; however, many ducks were observed at Site MBO where bird contamination occurred above detection levels from May through November.

There was some seasonality for a few source types, although detection of human and bird contamination was spread across the full study period (Tab. 10). Canada geese contamination was only detected in September and October, gulls were detected only in June to September, and cows were not detected in September and October. Ruminants, which can include deer, were detected most only from August through November, while horse contamination, whatever the actual source may be, was detected in May through September.

In addition to showing the highest concentrations of all three indicator bacteria, Site 1 also had the most diverse identified types of contamination in each sample, with an average of 5.9 types (out of 9 possible) per sample (Tab. 11). All the other 6 sites also showed relatively high diversity (4.3 to 5.0 source types). Again, human contamination was detected at all sites and, for most samples, at elevated levels above the risk threshold.

Site #	Samples #	Ave. # of source types detected	Human source detection	Human source >threshold
<b>MBO</b>	7	<b>5.9</b>	<b>7</b>	<b>6</b>
NR	7	5.0	2	1
MBD	6	4.3	3	2
CD	6	5.0	2	1
MBREC	6	4.5	2	2
MBU	2	5.0	1	1
LRTD	1	5.0	1	ND

**Table 11.** The frequency of site-specific fecal-borne bacterial contamination sources.

Significant Findings, Accomplishments and Next Steps

This study represents an up-to-date and comprehensive summary of the sanitary water quality conditions in the Lower and Middle Lamprey River watershed. This is important as New Hampshire rivers, streams and impoundments are increasingly used by boaters and swimmers, who may be at risk for water-borne illnesses under contaminated conditions.

The detailed review of existing data on microbial pollution in the watershed showed very few of the assessment units had any available or recent data to provide water quality assessments for swimming and boating uses. The findings from this study are useful as a starting point for all watershed users and groups like LRAC to communicate with NHDES and other agencies about where to focus potential monitoring that could provide data to inform protecting people involved in recreational uses from water-borne illnesses. The new data generated by this study represent a continuation of a 3-year synoptic dataset for 6 key sites in the watershed related to recreational uses, and thus serve as a start for continued monitoring and water quality assessments. This report will be provided to the New Hampshire Department of Environmental Services (NHDES) to inform the State Surface Water Quality Assessment process that is required by Sections 305(b) and 303(d) of the Clean Water Act.

The expansion of water quality assessment to the Moonlight Brook sub-watershed provided context for previous detection of consistent and elevated levels of bacterial contamination at Site MBO that are probably in part a result of upstream sources of pollution. There was some evidence of potential pollution sources upstream, like at Site MBRec where bacterial indicators were detected at levels higher than at the downstream Site MLD, however it does appear that there may be some sources of contamination to MBO from downtown portions of the brook. There is an effort to upgrade a section of sewer pipe on New Road that is suspected of having leaks that may be a source of the elevated levels of contamination at Site MBO.

In addition to the expansion of water quality assessment efforts to Moonlight Brook, there arose concerns about early summer elevated bacterial contamination at Site 6/RES in Raymond. In response sampling also was initiated at two sites: Site PB-MS and LfRd, but neither site has yet to provide clarity about what the sources of contamination may be in that section of the Lamprey

River, mainly because contamination levels were somewhat lower later in the study period when the two new sites were added.

The abundant rainfall in 2023 allowed for assessment of the impacts of rainfall and associated runoff on bacterial contamination in the Lamprey River and Moonlight Brook watersheds. During June and July, sample events followed rainy periods and the levels of bacterial indicators were substantially higher than levels detected during drier conditions. Bacterial indicator levels, especially *E. coli*, the freshwater recreation indicator, became elevated to levels that exceeded State water quality thresholds for safe recreational activities at all sites. These results provide further insights into when and where water quality concerns occur throughout the two watersheds, and thus a better understanding of where and how to manage the area to improve water quality.

Microbial source tracking is an invaluable tool for assessing watershed water quality, as it shows what sources are contributing contamination and where resources for eliminating pollution sources should be used. Human sources are the highest priority/of most concern. Previous year results showed Site 1/MBO was a consistent concern due to elevated bacterial indicator concentrations accompanied by consistent detection of elevated levels of human contamination, and the rare detection of human contamination at Sites 2 through 6 was encouraging. The impacts of rainfall/runoff conditions this year showed that human contamination is more widespread and present at almost all sites in both watersheds. The source(s) of the human contamination is not yet apparent, so the towns along the Lamprey River and around the Moonlight Brook will need to conduct further investigations to pinpoint the sources. More in-depth sampling at sites upstream and following rainfall events could help that process.

The next most manageable source is probably dogs. Dog contamination was consistently present at all sites in both 2022 and 2023. Several management approaches are typical for reducing the significance of this source including signage that is located at water access points (all sites in this study) that alerts dog owners to pick up and dispose of dog feces, plus the provision of dog feces collection bags at the signage locations. The NHDES has a Scoop the Poop Campaign webpage that can help: <https://www.des.nh.gov/home-and-recreation/your-health-and-environment/pet-health-and-environment>.

The LRAC will be able to use the findings to help communicate to recreational users about potential water quality issues and precautions to be taken. These were delineated in a separate 2-page document provided in 2022 that is based on NH Dept. of Health and Human Services/Division of Public Health Services and US CDC fact sheets and information.

Future work could take several directions, the most obvious being a continuation of routine monitoring for bacterial pollution indicators at key sites. One dimension that remains uncaptured is the duration of impacts of rainfall and associated runoff, a condition that is now known to be widely responsible for elevated levels of bacterial pollution in the two study watersheds. Typically, watersheds impacted by runoff-borne contamination require one to several days before elevated levels of contamination are transported out of the system. Three years of data reflecting both dry and wet conditions provides for a solid baseline to compare to future findings that include more rainy condition results. As our regional climate continues to change, rainfall



patterns are expected to become more extreme and may change the dynamics of bacterial contamination levels and types of contamination sources, including birds and animal migration patterns that are influenced by climate change.

This Final Report will be made available to key people involved in the PREP and GBNERR monitoring programs, the Town of Newmarket, as well as water quality managers and the Shellfish Program Manager in NHDES.

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Email regarding LRAC procedure.

**From:** resi resi <>

**Sent:** Friday, January 26, 2024 11:43 AM

**To:** Dee Luszcz <DL.raymondpb@gmail.com>; Jim McLeod <Jimrpb@gmail.com>;  
conscomchair@raymondnh.gov <conscomchair@raymondnh.gov>

**Subject:** Our paid secretary LRAC

I emailed our secretary for LRAC

What is the correct process for town boards to review applications for construction etc. and get LRAC comments ?

this is her answer: FYI

The process seems to vary according to the applicant and the project. The planning board or NHDES often hears about a project long before the official application is submitted to NHDES. These pre-application meetings help the applicant to base plans on what the town and state will require and how to minimize environmental damage where possible. On rare occasions, the LAC gets involved because the applicant or the town requests a pre-application meeting or review.

The LAC usually gets involved after the application is submitted to NHDES or maybe simultaneously. Sometimes we get a notification from NHDES, sometimes we get the set of paper materials first. In either case, the applicant, not NHDES, sends us the materials. My guess is that the town and the LRAC should receive the same final application at the same time.

When we submit official comments, it is because we have received the official application. Our comments go to NHDES, the town planning board and conservation commission, and the applicant. NHDES can require multiple amendments based on state law, and I believe the PB and CC also have that recourse based on town regulations. The LAC does not have that power; the A stands for advisory.

If and when the LRAC receives this application, based on proximity to the river, it most likely will be reviewed. If the town PB or CC wants LRAC pre-application input, the appropriate chair needs to contact Grace Levergood.

Suzanne

Grace is our Chair of LRAC, this is her email address:  
Grace Levergood, 71 Allen Farm Road, Northwood, 603-340-7288,

Therese Thompson

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Email from Therese Thompson – Marden Woods

**From:** resi resi <>

**Sent:** Thursday, January 25, 2024 9:56 AM

**To:** Dee Luszcz <DL.raymondpb@gmail.com>; Jim McLeod <Jimrpb@gmail.com>; conscomchair@raymondnh.gov <conscomchair@raymondnh.gov>

**Subject:** Re: Mardon Woods development

I used the NH DES website mapping

<https://nhdes.maps.arcgis.com/apps/webappviewer/index.html?id=d3869f998e614d81925481ac71c3903e>

attached is the results when I put the address of Mardon Woods development and Lamprey River it looks like this development is NOT within the quarter mile of the Lamprey River

When an applicant applies to NH DES, if the project is within the quarter mile of the Lamprey River, NH DES will notified Lamprey River Advisory Committee to comment on the project.

Therese Thompson

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On Fri, Jan 19, 2024 at 5:40 AM resi resi <> wrote:

I am attending Raymond Cons. Com and PB meetings using RGTV.

At Last nights PB meeting, I was so pleased that the Cons. Com. member brought up the concerns of increase the number of children into the school system.

If the Mardon Woods development is **within** the 1/4 mile of the Lamprey River, than yes, LRAC should review this project.

I had concerns about the White Rock Place apartments, that border of that project is just outside the 1/4 mile from the Lamprey River. But I was concerned about the run off from that property.

Therese Thompson

LRAC rep for Raymond

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