ADDENDUM TO

Conditional Use Application for construction
in the Shoreland Protection Overlay District at 74 Mill Road

Table of Contents

I. Introduction and background

1. Statement of intent

We are submitting this application for Conditional Use in order to rebuild the outbuilding on our property, honoring its same basic elevations and current location as closely as allowed, as an accessory apartment to serve as an aging-in-place residence for Iago's mother. The current outbuilding is failing and in need of re-construction. As part of our work to rebuild this carriage house-like structure on the property and upgrade its use to an accessory apartment over a garage, we seek to address the longstanding erosion and stormwater management issues on this end of our property. Also through this work, we intend to upgrade the septic system on the property as a whole, resulting in an overall reduction of our shoreland impact.

2. Description of existing site conditions

As shown in **Appendix A** (*Current Structure*), the existing single-story outbuilding is located between the driveway and the Oyster River and sits atop an open, walk-in basement area with an unfinished earth floor. The walls of the basement are stacked rock, with the northwest wall (farthest from Mill Road) being the stone abutment of the old Mill Road, before the road was moved downstream to its current location. As shown in **Appendix C** (*Existing Conditions Site Plan - Ross Engineering, LLC*), the nearest point of the footprint of the current building to the center of the Oyster River is approximately 40'. The current outbuilding has 20A electrical service via underground connection to the panel located in the basement of the primary structure on the property (main house).

The primary structure on the property is a single-family home with 2,826 sf of living space. At its closest point, the primary structure is approzimately 98' from the reference line of the Oyster River. As can be seen in **Appendix C** (*Existing Conditions Site Plan - Ross Engineering, LLC*), the whole of the primary structure and nearly the entire property lie within Shoreland Protection Overlay District (i.e. 250' of the reference line of the Oyster River). Currently, the gravel driveway measures approximately 52' long x 16' wide and lies between the main house and the Oyster River.

3. Description of planned work

To preserve as much as possible the historic look and site functions of the current outbuilding, the proposed replacement structure will strive to honor its design, as shown in **Section IV-2** (*Site Plan - Ross Engineering, LLC*) and **Appendix D** (*Proposed Elevations and Floorplan*). Specifically, in addition to matching the height, approximate mass, and style of the current outbuilding, the elevation of the proposed structure will be as similar as possible to that of the current structure on the side visible from Mill Road (southeast elevation). Due to State regulations prohibiting the construction of an accessory building within 50' of the reference line of the Oyster River (see RSA 483-B), we are not allowed to rebuild the structure in its current location. To maintain our needed storage space, which is the main use of the current outbuilding, and to compensate for the loss of driveway area due to shifting the location of the building, the apartment will be built above a ground-level garage area.

As detailed in **Section IV-2** (*Site Plan – Ross Engineering, LLC*) and **Appendix E** (*Stormwater Management and Erosion Control Plans – Ross Engineering, LLC*), the replacement of the current outbuilding east of the driveway with an accessory apartment over a garage at the end of the driveway will involve multiple site improvements, including:

1) Replacing our main house's 30-year-old traditional septic system (4 bedroom) with an increased capacity Advanced Onsite Solutions system with secondary treatment (see **Appendix F** for details), resulting in significantly cleaner effluent;
2) Substantially reducing the effluent disposal area on the property, minimizing site impact; and

3) Moving our current effluent disposal area 11.7’ further away from the stream on the north side of the property and 7.1’ further away from hydric B soils.

In addition to these septic-related improvements, this project will provide an opportunity to address the stormwater management issues we currently have in the area of our driveway and existing outbuilding, issues which have contributed to the erosion of the current outbuilding’s foundation (see **Appendix A**). Town Engineer April Talon visited the site on July 1, 2020, at which time she said she was initiating a process to mitigate the disproportionate volume of stormwater entering our property from Mill Road, a first step toward developing an appropriate stormwater management plan as part of this project.

3. Summary of approvals to date

The original intention with the proposed project was to reconstruct the outbuilding in its exact current location with the same type of foundation, ideally shoring up the existing foundation walls to the extent possible to minimize impact to the riparian site. This approach would have resulted in a ground-level apartment with walk-in storage below, all with minimal impact to the site. On August 14, 2020, the Zoning Board of Adjustment (ZBA) approved our petition for the required variance for an accessory dwelling unit (ADU), with the condition that the new building “maintain the approximate location and massing as the existing structure”.

Following this variance approval by the ZBA, we learned we needed to secure approval by the New Hampshire Department of Environmental Services (NHDES) for this project, under the state’s Shoreland Water Protection Act (RSA 483-B). The need for NHDES approval contradicted information we had been provided previously, a confusion that appears to be due to a minor change in definitions enacted by NHDES in 2019. Prior to 2019, our proposed accessory apartment qualified as an “accessory structure” according to NHDES definitions. Under that definition, our project was in compliance with 483-B. Effective December 15, 2019, however, the definition of an “Accessory Structure” in Env-Wq 1405.03 was updated with the following language:

(i) No accessory structure shall be modified or constructed so as to be serviced by piped water.

Despite the clear accessory use of the proposed building on the property, this change in the State’s definition meant our project was no longer in compliance with 483-B, which states that no Primary Structure can be built within 50’ of the reference line (i.e. the Primary Structure setback), full stop. Despite help from the Durham Town Planner, NHDES authorities were uninterested in the specifics of the site conditions and were unmoving on this point. The result is that we have had to shift the footprint of the proposed structure approximately 20’ away from the river to obtain the necessary NHDES approval, which was finally secured on July 9, 2021 (**Appendix H**). Because the location of the proposed structure shifted relative to our initial proposal to the ZBA in August 2020, we re-applied for the variance, which was granted on April 22, 2022 (**Appendix G**).

II. Addressing the eight general conditional use criteria (Section 175-23 C)

1. Site suitability

In all functional respects, the proposed structure is accessory (or secondary) to the main house, in the sense that its utilities (power and water) will route through the main house and its sewage will tie into the upgraded septic system serving the main house. Situated at the end of a short driveway on Mill Road, the proposed ADU is easily reached by both vehicles and pedestrians and would enjoy the same access to public service as the main house. The proposed building site, being relatively level and consisting of lawn and gravel driveway, presents no significant environmental constraints to the proposed work. As detailed in Appendix E (Stormwater management and erosion control), all necessary steps will be taken to minimize impact to the Oyster River during construction; and the project provides an opportunity to address longstanding stormwater management issues on this end of the property.

2. External impacts

A structure of the same dimensions and style already exists on the property, in essentially the same location, so the continued existence of such a structure perpetuates the *status quo* and presents no impact on the general public. If anything, by replacing a failing structure with a building ~20' farther away from the river, as per NHDES requirements, the intended project is an example of orderly development in the neighborhood and brings our property more into compliance with shoreland protection aims.

One could argue that the introduction of another resident onto the property potentially impacts abutters in terms of increased general activity on the site (e.g. another car using the driveway, additional lights from windows, etc.); but the impacts of such activities are no greater than those of adjacent existing uses or other uses permitted in the RA/RB zone.

3. Character of the site development

Compared to properties in Residential Zone C, the lot sizes in Zones RA and RB are generally smaller, thereby presenting the real risk of accessory buildings impacting the overall proportion of non-built space and negatively impacting abutters (e.g. disrupting views, blocking sunlight, etc.). The following unique attributes of our property, however, make it so that the proposed use is compatible with the established character of the neighborhood, with miminal external impacts:

a. *A building of the same massing, height, and basic elevations already exists*

In essence, the proposed project seeks to shift the position and change the use of an existing building rather than construct an altogether new building on a property where one does not already exist. Because the number, location, and sizes of the structures on the property would not change as a result of this project, there will be no impact on the overall density of structures on the property nor on the welfare of our abutters.

b. The property has no immediate residential abutters

Although our property is zoned RB, it is unlike typical RB properties in terms of its layout, namely shallow with long road frontage and no immediate residential abutters. The old part of our main residence, known as the "Chesley Mill House," is one of the very first houses built on Mill Road that stands today; and this long history of the original structure likely lies at the root of our atypical property siting.

As can be seen in map of abutters (**Section IV-3**), the only immediate abutter is the University of New Hampshire (C), in the form of an unmanaged forest lot cut off from the main campus by the Oyster River and from College Woods by the railroad track. Another abutter is the Town of Durham, in the form of a small conservation wetland forest lot separated from our property by a dirt access road to the adjacent power substation (A) as well as another small triangular lot directly across Mill Road (L). On the other side of the Oyster River is 70 Mill Road (E), whose residence is substantially higher in elevation than our driveway, in addition to being separated from it by vegetation and the river itself. Finally, on the other side of Mill Road, diagonally across the other the end of the property, is 2 Foss Farm Road (M), whose residence is also substantially higher in elevation than our lot, in addition to being separated from it by substantial vegetation and the road itself.

Because of the unique characteristics of the property and nature of the proposed work, essentially pivoting the position and converting the use of an existing structure, the proposed use is compatible with the neighborhood and presents no threat to the current buffering of abutters.

4. Character of the buildings and structures

Replacing our failing outbuilding with a garage and accessory apartment of similar style and mass for one of our parents is an active step toward preserving the essential character of the property and the neighborhood. The current outbuilding, sited near the likely location of the 18-19th century Chesley Mill on the Oyster River, contributes to the historic feel of the property and the neighborhood. Built as near as possible to the current outbuilding's approximate footprint and reproducing its basic elevation visible from Mill Road, the proposed project is compatible with the established character of the property and neighborhood

5. Preservation of natural, cultural, historic, and scenic resources

There are no natural, cultural, historic, or scenic resources on the site or on abutting properties that will be impacted or degraded by the proposed use. No mature vegetation or wildlife habitat will be impacted. If anything, moving the location of the current outbuilding 20' farther from the river will enhance the upstream view of the Oyster River from Mill Road.

6. Impact on property values

By removing a failing outbuilding and investing in a garage and ADU of similar style, massing, and location, the proposed use is not expected to have any negative effect on the values of adjacent properties. We recognize that it is possible for an accessory apartment to diminish the values of abutting properties in two distinct ways, namely via the existence of the structure itself and via its intended use. In this case, because an outbuilding already exists and the proposed accessory apartment aligns with its basic position and massing, the proposed use preserves of the *status quo* with regard to the structure itself. In other words, the proposed use cannot diminish the value of abutting properties due to obstructed views, blocked sunlight, etc. because, in the end, it is the basic form and location of the current structure that will be maintained. In terms of its intended use, please refer to **Section II-2** (*External impacts*) above.

7. Availability of Public Services and Facilities

As stated above in Section II-1, the proposed structure is functionally accessory (or secondary) to the main house, in the sense that its utilities (power and water) will route through the main house and its sewage will tie into the upgraded septic system serving the main house. Situated at the end of a short driveway on Mill Road, the proposed ADU is easily reached by both vehicles and pedestrians and would

enjoy the same access to public service as the main house. Because a structure of similar size already exists on the property, its replacement by the proposed use will not increase the area of impervious surface (roof) on the property. Actually, the proposed use is expected to enhance the permeability and drainage of the property due to a slight reduction in the size of the driveway and slight grading enhancements that can be made as part of this project. The presence of an additional family member on the property will not cause excessive demand on municipal services.

8. Fiscal impacts

The proposed use is not expected to have any fiscal impact on the Town, except for a potential increase in property tax revenue should the work increase the assessed value of the property.

III. Addressing the four specific conditional use criteria in the SPOD (Section 175-72 B)

1. No reasonable alternative location outside of the SPOD

> *From 175-72 B: "There is no alternative location on the parcel that is outside of the SPOD that is reasonable practical for the proposed use;"*

As shown in **Appendix C** (*Existing Conditions Site Plan – Ross Engineering, LLC*), nearly the entire 0.86 acre parcel (74 Mill Road; Tax Map 6, Lot 1-4) lies within the Shoreland Protection Overlay District (i.e. 250' from the reference line of the Oyster River). The whole of the main house lies within the SPOD, as does the driveway. For a garage and accessible ADU, no alternative location outside of the SPOD exists on the parcel.

2. Minimum necessary soil disturbance

> *From 175-72 B: "The amount of soil disturbance will be the minimum necessary for the construction and operation of the facilities as determined by the Planning Board;"*

Given the location of the driveway and the hard boundary set on construction by NHDES (RSA 483-B), there is very little choice in terms of the general siting of this building. That being said, within the context of these constraints, the building has been designed and sited in such a way as to minimize soil disturbance within the SPOD. In terms of design, the foundation of the proposed building will be a slab on grade, reducing soil disturbance because of the lack of a basement or crawlspace. Depending on what is possible under local building permits, we would like to further reduce our impact through the use of a frost-protected shallow foundation (FPSF). In terms of siting, the existing grade of the proposed building site is relatively level, which will also help minimize the need for excavation and grading. Fortunately, the building site itself is easily accessible via the parcel's current driveway, also helping to minimize collateral soil damage (compaction, etc.) during construction.

3. Minimum shoreland impacts

> *From 175-72 B: "The location, design, construction, and maintenance of the facilities will minimize any detrimental impact on the adjacent shoreland and waterbody as well as downstream waterbodies, and mitigation activities will be undertaken to counterbalance any adverse impacts,"*

As neither mature vegetation or wildlife habitat will be disturbed in pursuit of the proposed use, the primary and likely only shoreland impact of the proposed project will be soil disturbance, including erosion, during the construction process itself. As addressed in the previous point (**Section III-2**), the location and design of the building have been chosen in such a way as to minimize soil disturbance as much as possible. Additionally, as outlined in the "Erosion and sedimentation control construction phasing and sequencing" section in Appendix E (*Stormwater Management and Erosion Control Plans – Ross Engineering, LLC*), best practices will be followed to further minimize erosion in the SPOD during the construction process. Long-term, the proposed project promises to actually decrease overall shoreland impact relative to current use through a variety of site improvements, namely:

1. Replacing the 30-year-old septic system with an Onsite Solutions system that implements a secondary treatment, leading to significantly cleaner effluent;
2. Reducing the overal effluent disposal area;
3. Moving the effluent disposal area further away from the stream and hydric B soils;
4. Installing infiltration trenches around the perimeter of the proposed building, leading to improved on-site stormwater management compared to that of the current structure; and
5. Addressing, in coordination with the Town Engineer, the current issue of off-site stormwater entering the property from Mill Road, as part of the overall improvements to stormwater management on this end of the property.

4. Activities to restore site's pre-existing conditions as nearly as possible

> *From 175-72 B: "Restoration activities will leave the site, as nearly as possible, in its pre-existing condition and grade at the time of application for the Conditional Use Permit."*

All proposed activities are located either on relatively level ground that is currently part of the driveway or the lawn; in either case, restoration to pre-existing conditions is relatively straightforward in comparison to steeper terrain with mature/natural vegetation. As detailed in **Section IV-2** (*Site Plan - Ross Engineering, LLC*), no significant changes to the existing grade of the site are anticipated, and any excavation or grading that is required will be followed at the end of construction with restoration to the pre-existing grade and cover (lawn) as nearly as possible.

IV. Additional items, as specified in the Conditional Use Application Checklist

1. Conditional Use Checklist

Conditional Use Checklist
for WCOD and SPOD applications

Address or location of property: 74 Mill Road

Applicant/agent: Erin Hale and Iago Hale

Owner, if different from applicant: SAME

Map: 006-001 Lot: 004 Date: 7/11/22

General items and documentation:

__✓__ Conditional use application

__✓__ This conditional use checklist

__✓__ A letter of intent/narrative describing the project (see Addendum, Section I)

__✓__ A narrative addressing the 8 general conditional use criteria (Section II)

__✓__ A narrative addressing the 4 specific criteria for activity within the WCOD and SPOD (Section III)

__✓__ An electronic/pdf version of the plan (below) (Section IV-2)

__✓__ Application and notice fees. Please coordinate with Karen Edwards, Admin. Assistant.

__✓__ Abutters list including properties within 300 feet of the subject lot. Please coordinate with Karen Edwards. (Section IV-3)

__✓__ Letter or email from property owner authorizing agent to submit the application or represent them, if applicable (Section IV-4)

__✓__ Photograph(s) of the site showing where the proposed activity will occur (Section IV-5)

__✓__ Confirmation that the applicant will install a sign on the property about the public hearing once the hearing date with the Planning Board is set (Section IV-6)

__✓__ Confirmation that the applicant has seen the documents *Considerations for Potential Impacts on Wetlands* and *Wetland and Shoreland Resources for Applicants*. (Section IV-7)

__✓__ Confirmation that the applicant has discussed their project with the Town Planner (Section IV-8)

Information to be included on the plan:

__✓__ A plan drawing to scale prepared by a surveyor, engineer, or other qualified professional

__✓__ A title block with title, owner's name, address of the property, date, and name, address and seal of the person preparing the plan

__✓__ A north arrow and a bar scale. A legend if applicable

__✓__ A locus plan showing the location of the subject lot at an appropriate scale (such as 1" = 500 feet or 1" = 1,000 feet)

__✓__ Names of owners of abutting lots

__✓__ Property lines and location of the proposed activity within the lot. Where the proposed activity is close to a property line and on larger, more significant projects inclusion of surveyed property lines may be needed.

__✓__ Existing buildings, structures, driveways, parking areas, utilities, drainage structures, water bodies, and other salient features in the vicinity of the proposed activity

__✓__ The wetland and edge of wetlands in the WCOD and the waterbody and reference line in the SPOD delineated by a qualified professional

__✓__ The buffer/setback line from the edge of wetlands or reference line

__✓__ All proposed activity within the buffer/setback area and in the vicinity of the buffer/setback area clearly delineated

_NA_ On larger or more significant projects existing and proposed contours in the vicinity of the proposed activity

__✓__ Erosion and sedimentation control measures, if applicable

_NA_ Restoration plan, if applicable

_NA_ Landscaping plan, if applicable

Section IV-2 – *Site Plan*
Ross Engineering, LLC

SHORELAND NOTES

1) AREA WITHIN 250' OF THE REFERENCE LINE = 41,049 SF

2) COVERAGES INSIDE THE 250' SETBACK

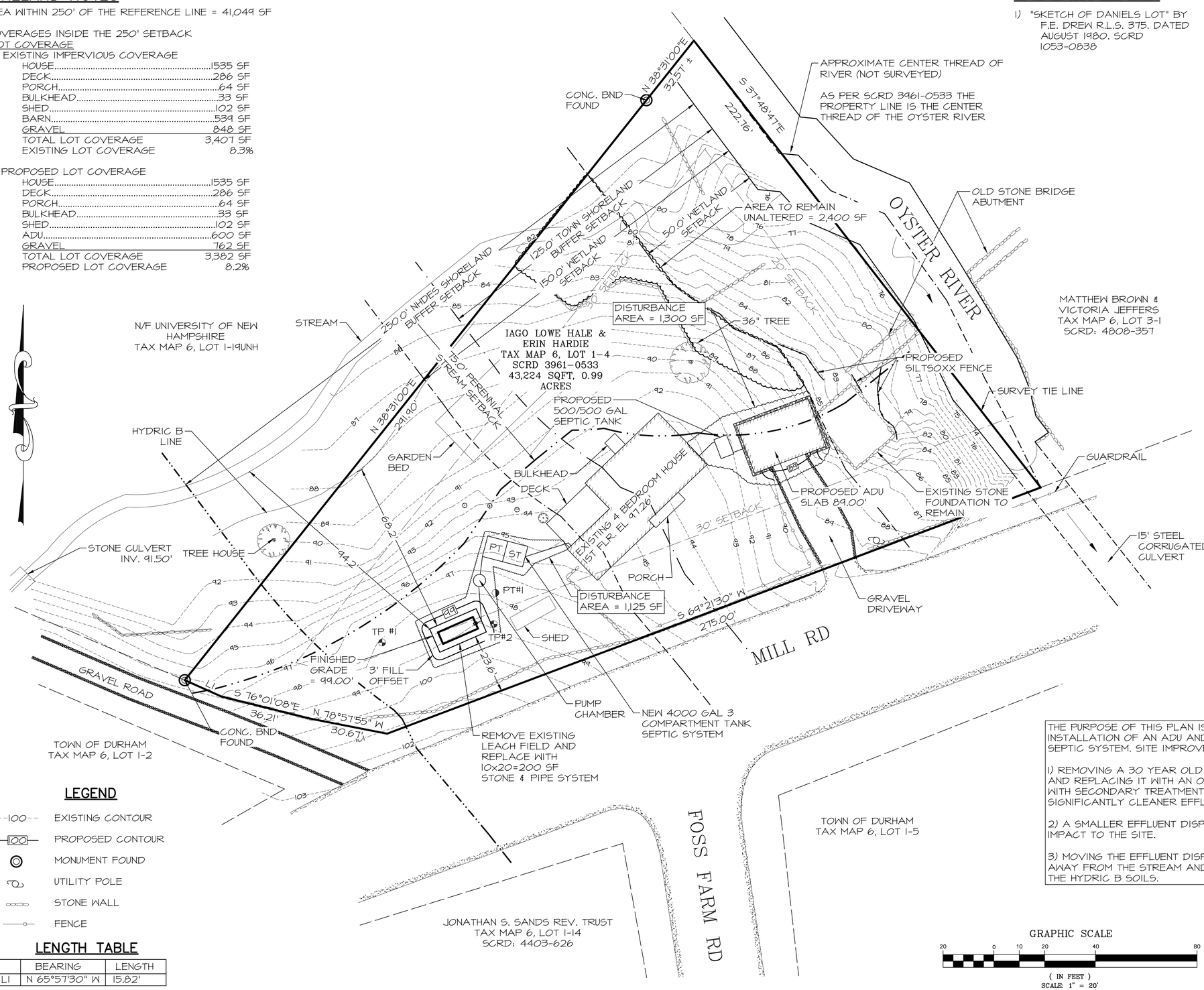
LOT COVERAGE

EXISTING IMPERVIOUS COVERAGE

HOUSE	1535 SF
DECK	286 SF
PORCH	64 SF
BULKHEAD	33 SF
SHED	102 SF
BARN	539 SF
GRAVEL	848 SF
TOTAL LOT COVERAGE	3,407 SF
EXISTING LOT COVERAGE	8.3%

PROPOSED LOT COVERAGE

HOUSE	1535 SF
DECK	286 SF
PORCH	64 SF
BULKHEAD	33 SF
SHED	102 SF
ADU	600 SF
GRAVEL	762 SF
TOTAL LOT COVERAGE	3,382 SF
PROPOSED LOT COVERAGE	8.2%



LEGEND

- 100 EXISTING CONTOUR
- 100 PROPOSED CONTOUR
- MONUMENT FOUND
- UTILITY POLE
- STONE WALL
- FENCE

LENGTH TABLE

	BEARING	LENGTH
L1	N 65°57'30" W	15.82'

REFERENCE PLANS

1) "SKETCH OF DANIELS LOT" BY F.E. DREW R.L.S. 375. DATED AUGUST 1980. SCRD 1053-0838

NOTES

1) OWNER OF RECORD:
IAGO LOWE & ERIN HARDIE
TAX MAP 6, LOT 1-4
29 SIMMONS WAY
DAVIS, CA 95616
SCRD: 3961-0533
AREA: 43,224 SF, 0.99 ACRES

2) BASIS OF BEARING HELD FROM PLAN REFERENCE #1.

3) PARCEL IS IN RESIDENCE B (RB) AND SHORELAND PROTECTION OVERLY DISTRICT ZONES:
MINIMUM LOT AREA....40,000 SF
MIN. LOT AREA PER DWELLING UNIT....40,000 SF
MINIMUM FRONTAGE....150 FT
SETBACKS:
FRONT....30 FT
SIDE....20 FT
REAR....30 FT
SHORELAND BUFFER....125 FT
MAXIMUM BUILDING HEIGHT....30 FT
MAXIMUM IMPERVIOUS COVERAGE....30%

4) COVERAGES:

LOT COVERAGE

EXISTING LOT COVERAGE

HOUSE	1535 SF
DECK	286 SF
PORCH	64 SF
BULKHEAD	33 SF
SHED	102 SF
BARN	539 SF
GRAVEL	848 SF
TOTAL LOT COVERAGE	3,407 SF
EXISTING LOT COVERAGE	7.9%

PROPOSED LOT COVERAGE

HOUSE	1535 SF
DECK	286 SF
PORCH	64 SF
BULKHEAD	33 SF
SHED	102 SF
ADU	600 SF
GRAVEL	762 SF
TOTAL LOT COVERAGE	3,382 SF
PROPOSED LOT COVERAGE	7.8%

5) THE PARCEL IS PARTIALLY WITHIN FEMA FLOOD ZONE AE, AS PER FLOOD INSURANCE RATE MAP #33017C0318E, PANEL 318 OF 681, DATED SEPTEMBER 30, 2015.

6) TOTAL AREA OF DISTURBANCE = 1300 + 1125 = 2425 SF

THE PURPOSE OF THIS PLAN IS TO DEPICT THE INSTALLATION OF AN ADU AND CONNECTING IT TO A NEW SEPTIC SYSTEM. SITE IMPROVEMENTS INCLUDE

1) REMOVING A 30 YEAR OLD TRADITIONAL SEPTIC SYSTEM AND REPLACING IT WITH AN ON SITE SOLUTIONS SYSTEM WITH SECONDARY TREATMENT WHICH WILL RESULT IN SIGNIFICANTLY CLEANER EFFLUENT.

2) A SMALLER EFFLUENT DISPOSAL AREA, MINIMIZING THE IMPACT TO THE SITE.

3) MOVING THE EFFLUENT DISPOSAL AREA 11.7' FURTHER AWAY FROM THE STREAM AND 7.1' FURTHER AWAY FROM THE HYDRIC B SOILS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
SCALE: 1" = 20'

ISS.	DATE	DESCRIPTION OF ISSUE	
2	5/28/21	FOR PERMITS	
1	9/9/20	FOR REVIEW	

SCALE 1" = 20'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
IAGO LOWE HALE
74 MILL ROAD
DURHAM, NH 03824

TITLE

SITE PLAN

74 MILL RD
DURHAM, NH 03824
TAX MAP 6, LOT 1-4

JOB NUMBER	DWG. NO.	ISSUE
20-034	2 OF 4	2

3. List of property abutters within 300 feet of subject lot

The following table contains information about the properties that abut 74 Mill Road. Property labels (A-M) refer to the labels in the annotated Tax Parcels map below. Black type denotes properties that lie within 300' of the building site. Blue type denotes those that are located further from the building site but lie within 300' of the subject lot.

Property	Parcel ID	Owner Information	Address	Zoning District
A	006-001-002	Town of Durham	*unknown (see map below)*	Conservation Land
B	006-001-003	Electrical Substation	*unknown (see map below)*	*unknown*
C	006-001-019UNH	University of New Hampshire	*unknown (see map below)*	*unknown*
D	013-007-003UNH	University of New Hampshire	*unknown (see map below)*	Conservation Land
E	006-003-001	M Brown, V Jeffers	70 Mill Road	RA
F	006-003-002	Conk Rev Trust, W	68 MIll Road	RA
G	006-004-034	McGrath Rev Trust, A	65 Mill Road	RA
H	006-004-035	Meredith Rev Liv Trust, T/D	69 Mill Road	RA
I	006-001-007	KR Shilling, TL Shilling	3 Orchard Drive	RB
J	*formerly 006-001-006*	C McIntire	1 Orchard Drive	RB
K	*formerly 006-001-006*	HTA Adjemian, J Adjemian	3 Foss Farm Road	RB
L	006-001-005	Town of Durham	73 Mill Road	RB
M	006-001-014	C Gruden, L Mockeridge	2 Foss Farm Road	RB
N	006-001-012	M Beaudoin, EM Beaudoin	4 Foss Farm Road	RB

Sources: Strafford Regional Planning Tax Parcels Map Viewer; Town of Durham Maps 109 and 113; and Town of Durham Assessor's Online Database (all accessed July 3, 2022). Black bar in upper right = 300'.

4. Letter from property owners, authorizing application

Not applicable, because the property owners are submitting this application directly, not through an agent.

5. Photograph of the site

XXX

The proposed project site, as seen from Mill Road. For more photographs of the existing structure on the site, please see **Appendix A.**

6. Statement of confirmation that applicants will install public hearing sign

By initialing below, the property owners attest that they will install a sign on the property about the public hearing once the hearing date with the Planning Board is set.

Iago Hale: _____

Erin Hale: _____

7. Statement of confirmation that applicants have seen required documents

By initialing below, the property owners attest that they have seen the documents *Considerations for Potential Impacts on Wetlands* and *Wetland and Shoreland Resources for Applicants*.

Iago Hale: _____

Erin Hale: _____

8. Statement of confirmation that applicants have discussed project with Town Planner

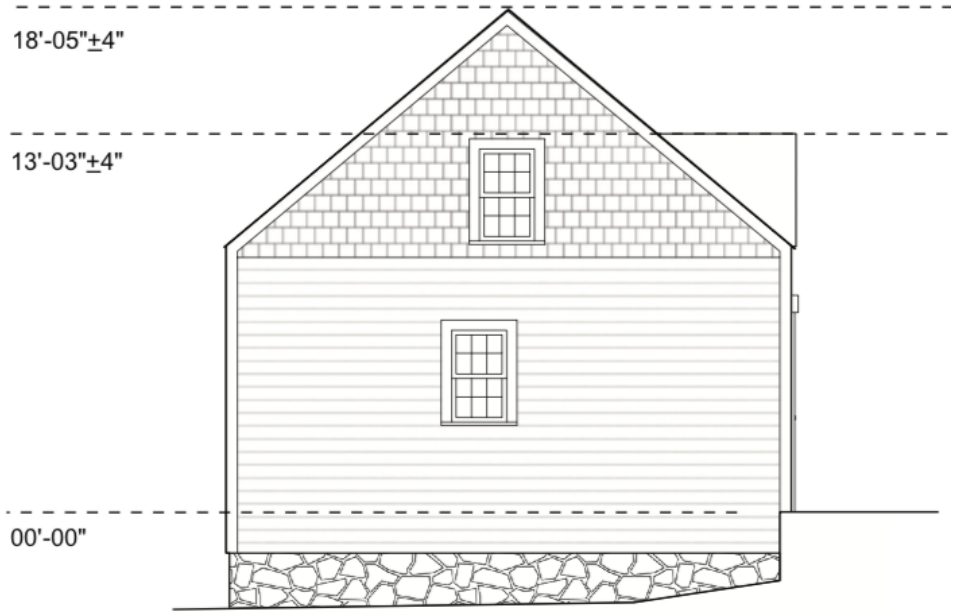
By initialing below, the property owners attest that they have discussed their project with the Town Planner. These discussions began on August 18, 2020, and have continued until the present day.

Iago Hale: _____

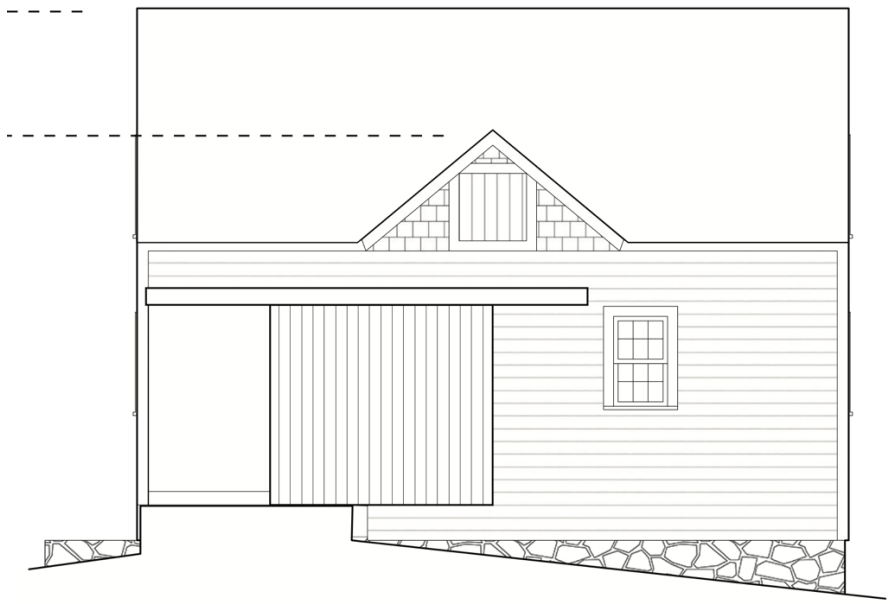
Erin Hale: _____

Appendix A – *Current Structure*

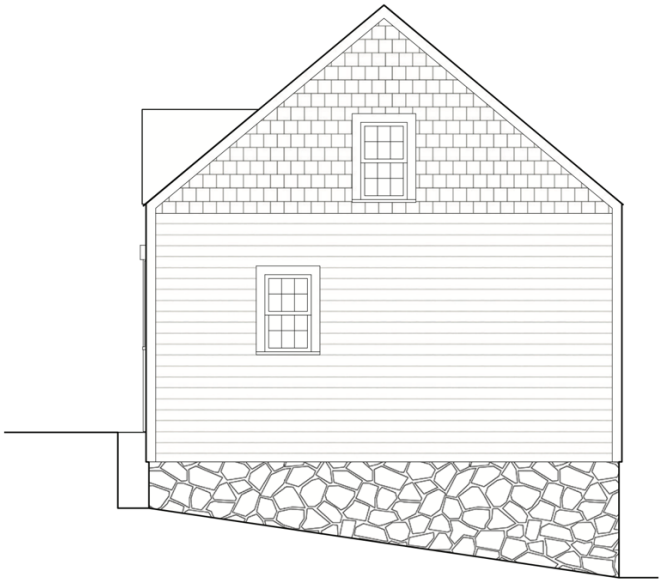
Elevation – Northwest (facing away from Mill Road)



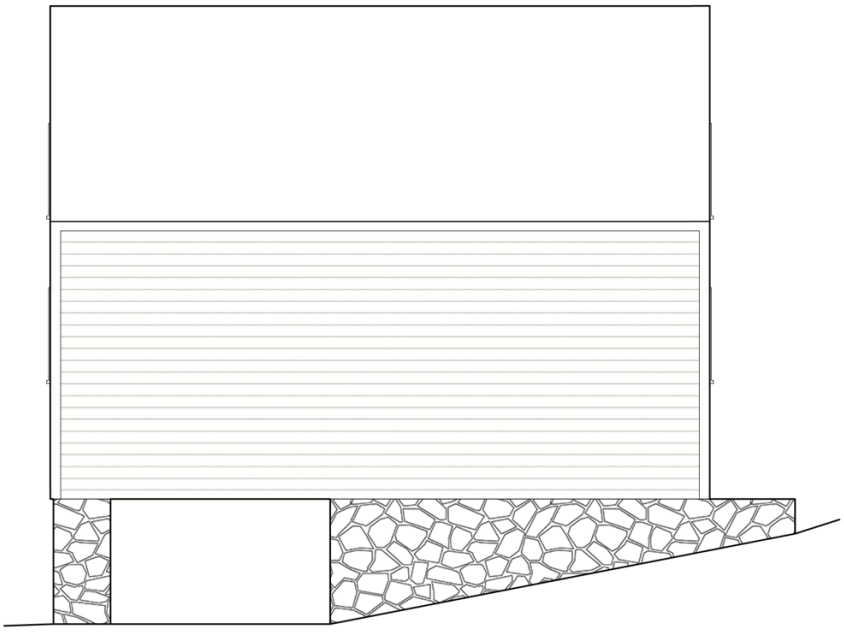
Elevation – Southwest (Front)



Elevation – Southeast



Elevation – Northeast (facing Oyster River)



Erosion of the southwest foundation wall by stormwater runoff from Mill Road
(photo taken from under the structure)

Appendix B

Detailed square footage and footprints of existing and proposed structures

The proposed building project will have essentially no effect on the total footprint of structures on the property. It essence, it changes the current 530 ft^2 of non-living area in the current outbuilding to 600 ft^2 of living area over a garage. Below is a full accounting of the areas on the property:

Existing Structures
TOTAL FOOTPRINT: 2,415 sf

Main House	Total Area (sf)	Living Area (sf)
First Floor	1,535	1,535
Upper Story, Finished	896	896
Three Quarter Story	527	395
Porch, Open Framed	64	0
Attic, Unfinished	896	0
Basement, Unfinished	1,348	0
Deck, Wood	286	0
	5,552	2,826
Outbuilding (storage)	530	0
TOTAL	**6,082**	**2,826**

Proposed Structures
TOTAL FOOTPRINT: 2,485 sf

Main House	Total Area (sf)	Living Area (sf)
First Floor	1,535	1,535
Upper Story, Finished	896	896
Three Quarter Story	527	395
Porch, Open Framed	64	0
Attic, Unfinished	896	0
Basement, Unfinished	1,348	0
Deck, Wood	286	0
	5,552	2,826
Outbuilding (garage + ADU)	1,200	600
TOTAL	**6,752**	**3,426**

Appendix C – *Existing Conditions Site Plan*
Ross Engineering, LLC

SEE NOTE 2

CONC. BND FOUND

N 38°31'00"E 325.71'

APPROXIMATE CENTER THREAD OF RIVER (NOT SURVEYED)

AS PER SCRD 3961-0533 THE PROPERTY LINE IS THE CENTER THREAD OF THE OYSTER RIVER

OLD STONE BRIDGE ABUTMENT

OYSTER RIVER

S 31°48'47"E 222.76'

125.0' SHORELAND BUFFER SETBACK

50.0' WETLAND SETBACK

250.0' NHDES SHORELAND BUFFER SETBACK

30' SETBACK

STREAM

36" TREE

N/F UNIVERSITY OF NEW HAMPSHIRE
TAX MAP 6, LOT 1-19UNH

IAGO LOWE HALE & ERIN HARDIE
TAX MAP 6, LOT 1-4
SCRD 3961-0533
43,224 SQFT, 0.99 ACRES

MATTHEW BROWN & VICTORIA JEFFERS
TAX MAP 6, LOT 3-1
SCRD: 4808-357

BARN
1ST FLR EL. 88.13'

SURVEY TIE LINE

N 38°31'00"E 241.90'

75.0' PERENNIAL STREAM SETBACK

BULKHEAD

HYDRIC B LINE

GARDEN BED

PUMP CHAMBER

DECK

UNALTERED AREA BETWEEN THE 50' AND 150' NATURAL WOODLAND BUFFER = 2,400 SF

GUARDRAIL

TREE HOUSE

EXISTING 4 BEDROOM HOUSE
1ST FLR. EL 97.26

30' SETBACK

PORCH

STONE CULVERT INV. 91.50'

SEPTIC TANK

EFFLUENT DISPOSAL AREA

PT #1

TP #2

TP #1

S 69°21'30" W 275.00'

15" STEEL CORRUGATED CULVERT

GRAVEL DRIVEWAY

CONC. BND FOUND

COMPOST AREA

SHED

GRAVEL ROAD

L1 N 76°01'08"W 36.21'

N 78°57'55" W 30.67'

EXISTING 589 SF
4 BEDROOM PLASTIC CHAMBER SEPTIC SYSTEM
APPROVAL NO. 190809
DATED 12/19/1991

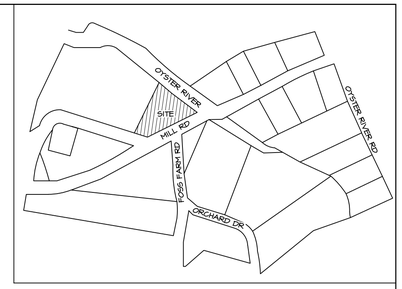
MILL RD

TOWN OF DURHAM
TAX MAP 6, LOT 1-2

TOWN OF DURHAM
TAX MAP 6, LOT 1-5

FOSS FARM RD

JONATHAN S. SANDS REV. TRUST
TAX MAP 6, LOT 1-14
RCRD: 4403-626



LOCUS PLAN
N.T.S.

NOTES

1) OWNER OF RECORD:
IAGO LOWE & ERIN HARDIE
TAX MAP 6, LOT 1-4
29 SIMMONS WAY
DAVIS, CA 95616
SCRD: 3961-0533
AREA: 43,224 SF, 0.99 ACRES

2) BASIS OF BEARING HELD FROM PLAN REFERENCE #1.

3) PARCEL IS IN RESIDENCE B (RB) AND SHORELAND PROTECTION OVERLY DISTRICT ZONES:
MINIMUM LOT AREA.....40,000 SF
MIN. LOT AREA PER DWELLING UNIT.....40,000 SF
MINIMUM FRONTAGE.....150 FT
SETBACKS:
FRONT.....30 FT
SIDE.....20 FT
REAR.....30 FT
SHORELAND BUFFER.....125 FT
MAXIMUM BUILDING HEIGHT.....30 FT
MAXIMUM IMPERVIOUS COVERAGE.....30%

4) THE PARCEL IS PARTIALLY WITHIN FEMA FLOOD ZONE AE, AS PER FLOOD INSURANCE RATE MAP #33017C0318E, PANEL 318 OF 681, DATED SEPTEMBER 30, 2015.

REFERENCE PLANS

1) "SKETCH OF DANIELS LOT" BY F.E. DREW R.L.S. 375. DATED AUGUST 1980. SCRD 1053-0838

LEGEND

--100--	EXISTING CONTOUR
◎	MONUMENT FOUND
	UTILITY POLE
	STONE WALL
—o—	FENCE

LENGTH TABLE

	BEARING	LENGTH
L1	N 65°57'30" W	15.82'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
SCALE: 1" = 20'

ISS	DATE	DESCRIPTION OF ISSUE
2	5/28/21	FOR PERMITS
1	9/9/20	FOR REVIEW
SCALE	1" = 20'	
CHECKED	A.ROSS	
DRAWN	D.D.D.	
CHECKED		

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
IAGO LOWE HALE
74 MILL ROAD
DURHAM, NH 03824

TITLE

EXISTING CONDITIONS PLAN

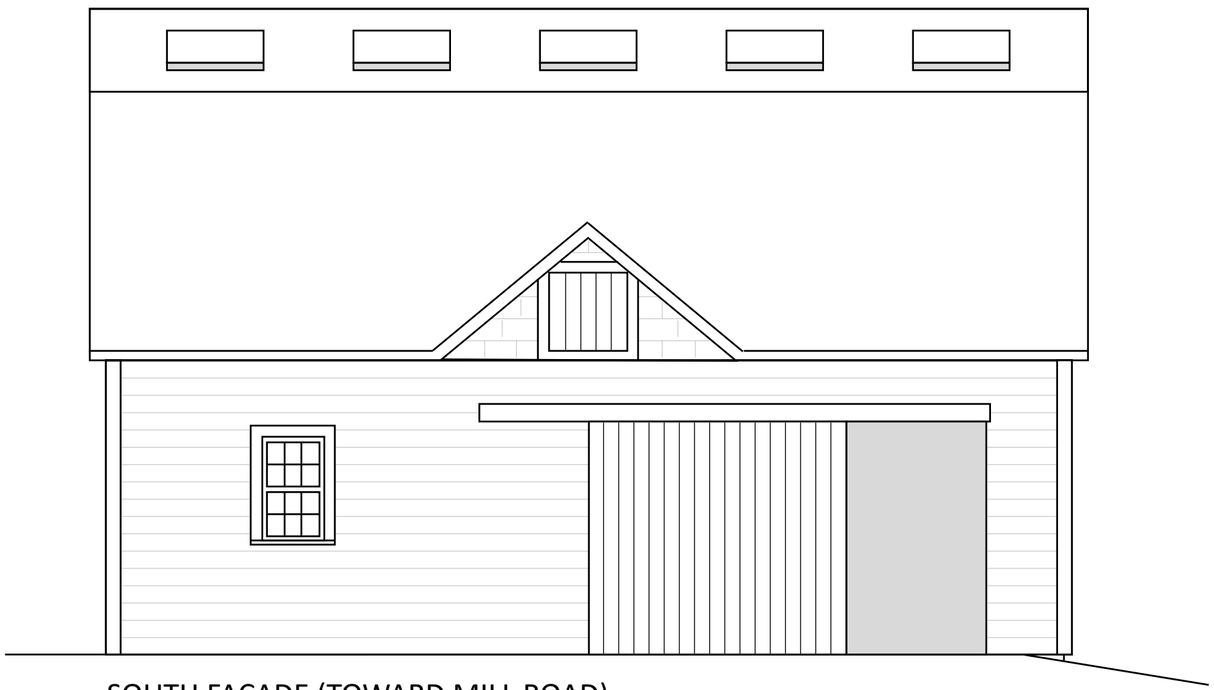
74 MILL RD
DURHAM, NH 03824
TAX MAP 6, LOT 1-4

JOB NUMBER	DWG. NO.	ISSUE
20-034	1 OF 4	2

Appendix D – *Proposed Elevations and Floorplan*

Elevations

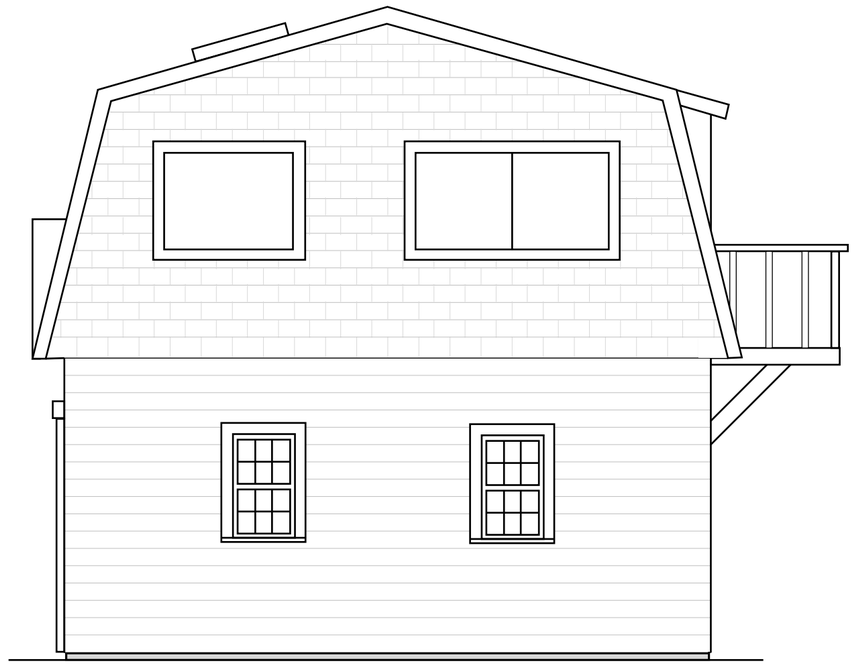
0 1 2 4 8'



SOUTH FACADE (TOWARD MILL ROAD)

WEST FACADE

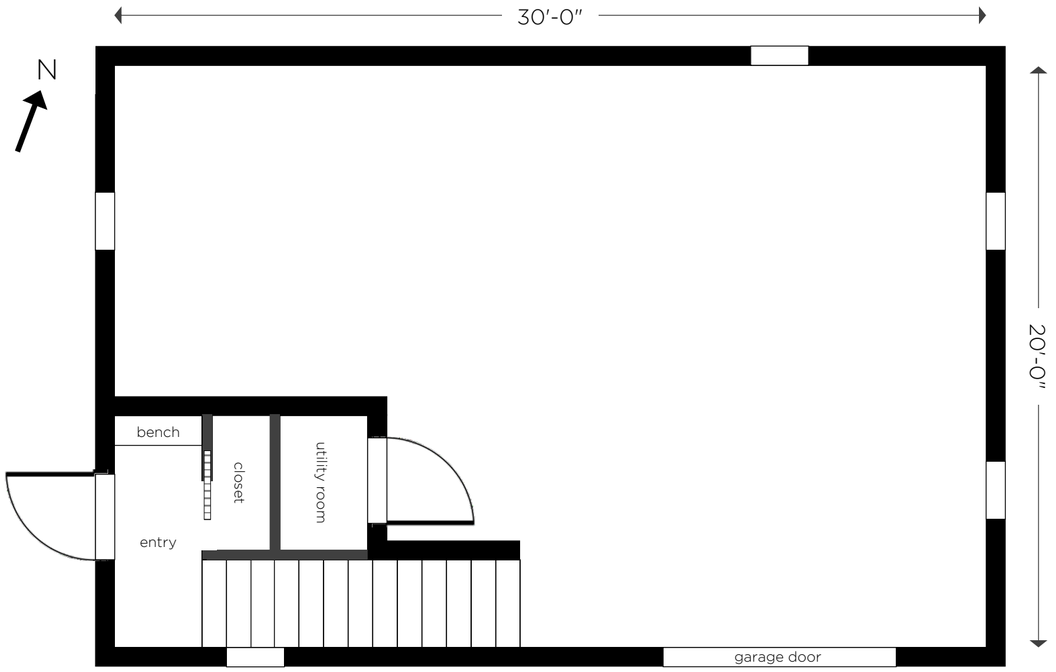
NORTH FACADE



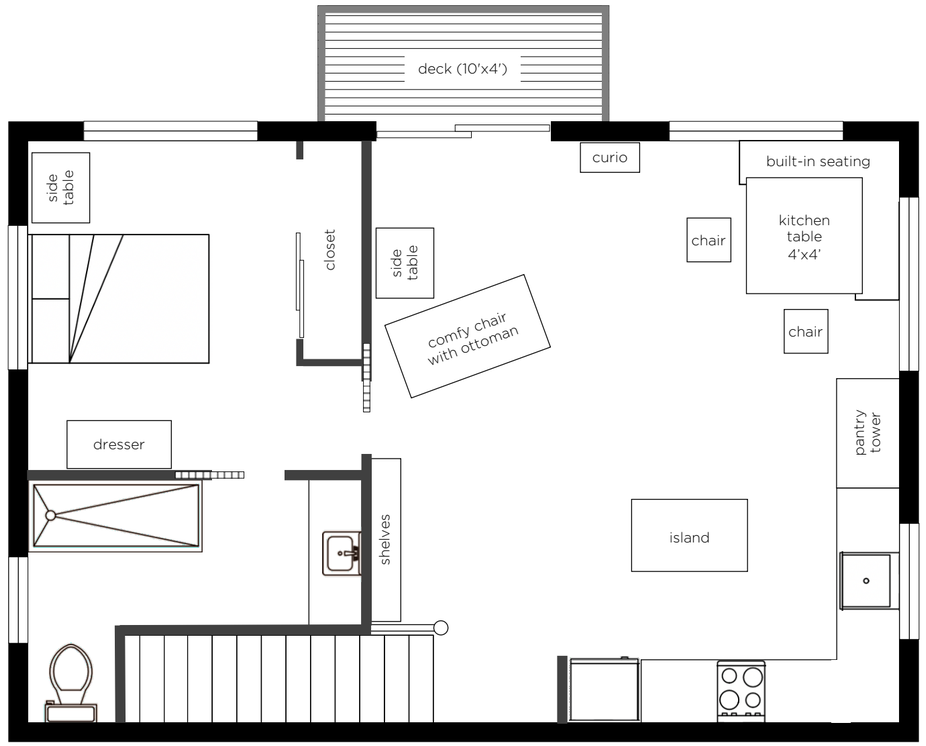
EAST FACADE

74 MILL ROAD, DURHAM, NH

Floorplans



GROUND LEVEL (GARAGE)



UPPER LEVEL (APARTMENT)

Appendix E – *Stormwater Management and Erosion Control Plans*
Ross Engineering, LLC

NOTES

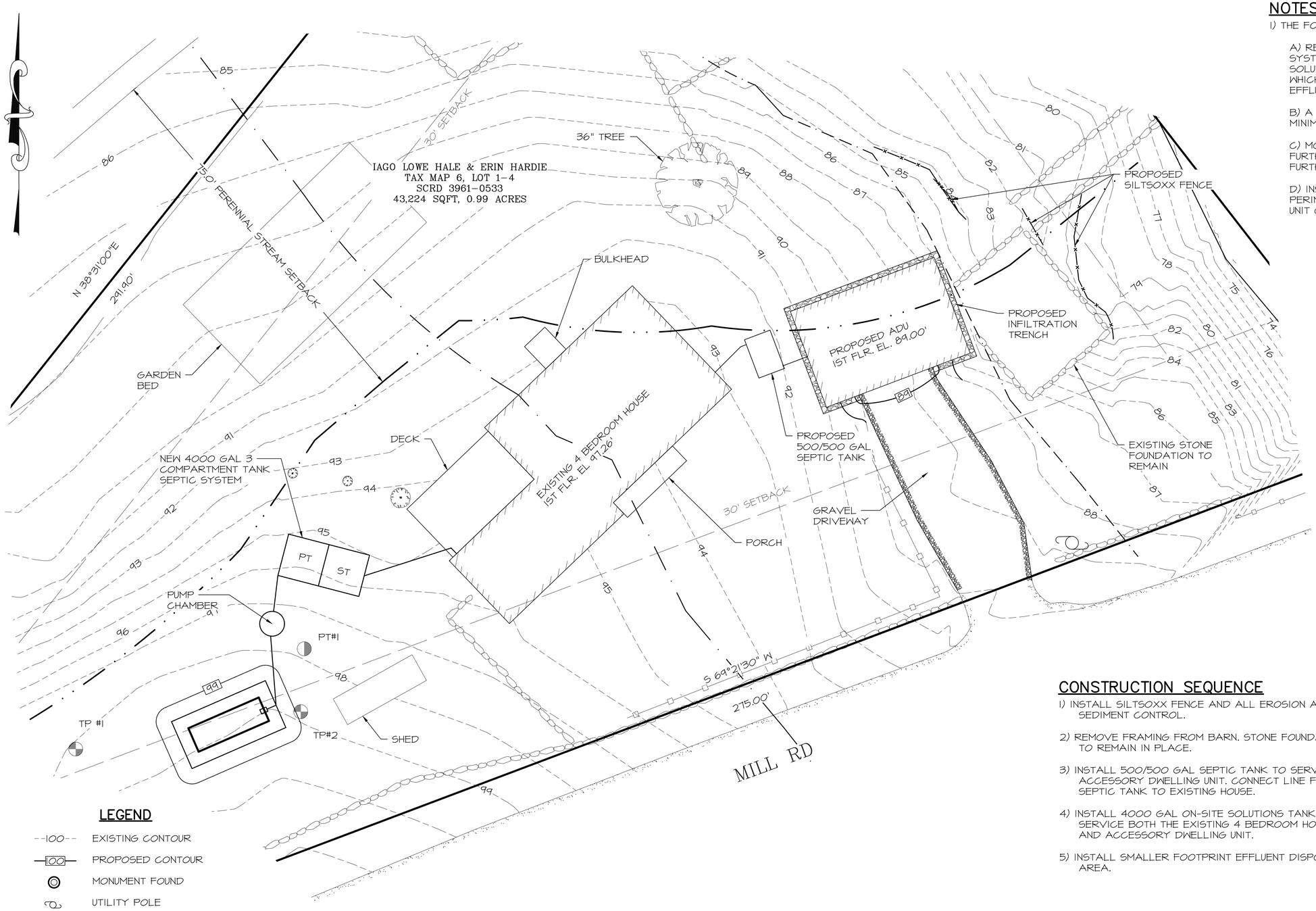
1) THE FOLLOWING SITE IMPROVEMENTS ARE PROPOSED

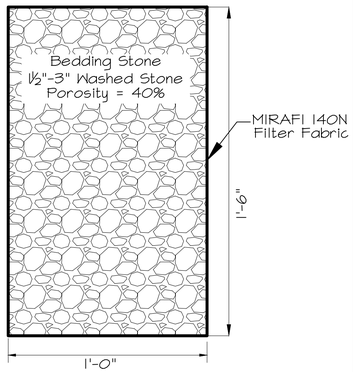
A) REMOVING A 30 YEAR OLD TRADITIONAL SEPTIC SYSTEM AND REPLACING IT WITH AN ON-SITE SOLUTIONS SYSTEM WITH SECONDARY TREATMENT WHICH WILL RESULT IN SIGNIFICANTLY CLEANER EFFLUENT.

B) A SMALLER EFFLUENT DISPOSAL AREA, MINIMIZING THE IMPACT TO THE SITE.

C) MOVING THE EFFLUENT DISPOSAL AREA 11.7' FURTHER AWAY FROM THE STREAM AND 7.1' FURTHER AWAY FROM THE HYDRIC B SOILS.

D) INSTALL INFILTRATION TRENCHES AROUND PERIMETER OF PROPOSED ACCESSORY DWELLING UNIT COLLECTING RUNOFF FROM THE ROOF.





LEGEND

- 100 — EXISTING CONTOUR
- 100 — PROPOSED CONTOUR
- MONUMENT FOUND
- UTILITY POLE
- STONE WALL
- FENCE

LENGTH TABLE

	BEARING	LENGTH
L1	N 65°57'30" W	15.82'

CONSTRUCTION SEQUENCE

1) INSTALL SILTSOXX FENCE AND ALL EROSION AND SEDIMENT CONTROL.

2) REMOVE FRAMING FROM BARN. STONE FOUNDATION TO REMAIN IN PLACE.

3) INSTALL 500/500 GAL SEPTIC TANK TO SERVE ACCESSORY DWELLING UNIT. CONNECT LINE FROM SEPTIC TANK TO EXISTING HOUSE.

4) INSTALL 4000 GAL ON-SITE SOLUTIONS TANK TO SERVICE BOTH THE EXISTING 4 BEDROOM HOUSE AND ACCESSORY DWELLING UNIT.

5) INSTALL SMALLER FOOTPRINT EFFLUENT DISPOSAL AREA.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
SCALE: 1" = 20'

ISS.	DATE	DESCRIPTION OF ISSUE
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SCALE 1" = 20'
CHECKED A.ROSS
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TITLE
STORMWATER MANAGEMENT PLAN
74 MILL RD
DURHAM, NH 03824
TAX MAP 6, LOT 1-4

JOB NUMBER 20-034 | DWG. NO. 3 OF 4 | ISSUE 2

EROSION AND SEDIMENTATION CONTROL CONSTRICTION PHASING AND SEQUENCING

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILTSOXX FENCING AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SWALES , LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S) AS PER DETAIL AND AT LOCATIONS SHOWN ON THE DRAWINGS. MAINTAIN (TOP DRESS) REGULARLY TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS.
5. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL & COVER WHERE PRACTICABLE.
6. MINIMIZE DUST THROUGH APPROPRIATE APPLICATION OF WATER OR OTHER DUST SUPPRESSION TECHNIQUES ON SITE.
7. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
8. FINISH GRADE AND COMPACT SITE.
9. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
10. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
11. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
12. SILT SOXX FENCING TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO ENSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT SOXX FENCING ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
13. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
14. ALL TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC. MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
15. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
16. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM
17. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
18. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
19. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
20. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
21. LOT DISTURBANCE, OTHER THAN THAT 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.

PLANTING NOTES:

1. ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK.
2. ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR ONE YEAR BY THE LANDSCAPE CONTRACTOR.
3. ALL TREES AND SHRUBS SHALL HAVE WATER SAUCERS BUILT AROUND THEIR BASES AND THESE SHALL BE MULCHED WITH 4" OF DARK BROWN AGED BARK MULCH. MULCH MUST BE KEPT 2" AWAY FROM THEIR TRUNKS.
4. ALL TREES AND SHRUBS SHALL BE PLANTED AND MULCHED BEFORE LAWN IS SEEDED.

MAINTENANCE REQUIREMENTS:

1. ALL TREES, SHRUBS, AND PERENNIALS WILL NEED TO BE WATERED THROUGH THANKSGIVING DURING THE FIRST SEASON IN WHICH THEY ARE INSTALLED.
2. AN UNDERGROUND DRIP IRRIGATION SYSTEM IS RECOMMENDED. IF AN UNDERGROUND DRIP IRRIGATION SYSTEM IS NOT INSTALLED, SOAKER HOSES WOUND THROUGHOUT PLANTING BEDS ARE ACCEPTABLE. ALTHOUGH OVERHEAD SPRINKLERS ARE RECOMMENDED FOR LAWN AREAS, THEY ARE NOT ACCEPTABLE FOR IRRIGATING TREES AND SHRUBS.

SEEDING AND STABILIZATION FOR LOAMED SITE:

FOR TEMPORARY & LONG TERM SEEDINGS USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL
COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE,
FERTILIZER & LIME:
NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P205) 100 LBS/ACRE, POTASH (K20) 100 LBS/ACRE, LIME 2000 LBS/ACRE
MULCH:
HAY OR STRAW 1.5-2 TONS/ACRE

A) GRADING AND SHAPING
1) SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

B) SEED BED PREPARATION
1) SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
2) STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 2 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
3. ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
4. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED WITHIN 24 HOURS OF EARTH-DISTURBING ACTIVITIES BEING CEASED, AND WILL BE FULLY STABILIZED NO LONGER THAN 14 DAYS AFTER INITIATION. (SEE NOTE 11 FOR DEFINITION OF STABLE). ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE. ALL TEMPORARY OR LONG TERM SEEDING MUST BE APPLIED TO COMPLY WITH "WINTER CONSTRUCTION NOTES" (SEE WINTER CONSTRUCTION NOTES). EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED (SEE NOTE 11 FOR DEFINITION OF STABLE).
5. TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
6. SILTSOXX FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILTSOXX AND ANY EDGE OF WET AREA.
7. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
8. SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
9. SILTSOXX FENCING WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
10. TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
11. AN AREA SHALL BE CONSIDERED FULLY STABLE 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" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

11. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON STANDARDS AND SPECIFICATIONS SET FORTH IN THE STORM WATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (DECEMBER 2008 OR LATEST) PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, N.H. DES AND NRCS.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPETED IN ADVANCE OF THAW OR SPRING MELT EVENT.;
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
3. AFTER OCTOBER 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 PER NHDOT ITEM 304.3.

OUTLET PROTECTION

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED, OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS; FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAIL WATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

LONG TERM SEEDING

*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C

	lb/ACRE	lb/1000SF
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED CLOVER (ALSIKE)	20	0.45
TOTAL	48	1.35

LIME: AT 2 TONS PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 20 20 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.
SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED.
SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE MIXED INTO THE SOIL.
THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

SHORT TERM SEEDING

*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C

	#/ACRE	#/1000SF
FOR APRIL 1 - AUGUST 15		
ANNUAL RYE GRASS	40	1
FOR FALL SEEDING		
WINTER RYE	112	2.5

LIME: AT 1 TON PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 10 10 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
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* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

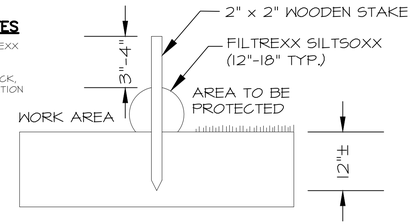
WHEN PROPOSED FOR ALTERATION DURING CONSTRUCTION AS BEING INFESTED WITH INVASIVE SPECIES SHALL BE MANAGED APPROPRIATELY USING THE DISPOSAL PRACTICES IDENTIFIED IN "NHDOT - BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE PLANTS -2008" AND "METHODS FOR DISPOSING NON-NATIVE INVASIVE PLANTS - UNH COOPERATIVE EXTENSION - 2010"

SEED MIXES SHALL NOT CONTAIN ANY SPECIES IDENTIFIED BY THE NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST.

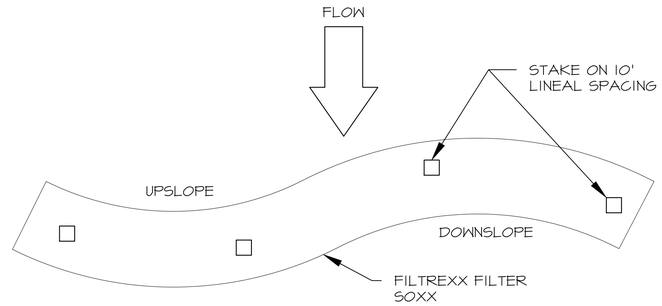
FILTREXX SILTSOXX NOTES

1) ALL MAERTIAL TO MEET FILTREXX SPECIFICATIONS

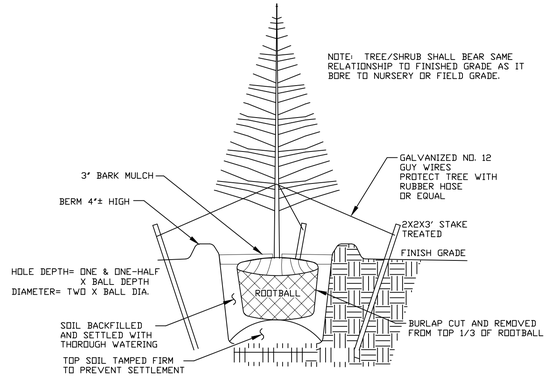
2) SILTSOXX COMPOST, SOIL, ROCK, SEED FILL TO MEET APPLICATION REQUIREMENTS



Filtrexx SiltSoxx Section
N.T.S.



Filtrexx SiltSoxx Plan View
N.T.S.



PLANTING DETAIL
N.T.S.

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2	5/28/21	FOR PERMITS	
1	9/9/20	FOR REVIEW	

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DRAWN D.D.D.
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TITLE

EROSION CONTROL PLAN

74 MILL RD
DURHAM, NH 03824
TAX MAP 6, LOT 1-4

JOB NUMBER	DWG. NO.	ISSUE
20-034	4 OF 4	2

Appendix F – *Information about Advanced Onsite Solutions*

ADVANCED ONSITE SOLUTIONS LLC
PO Box 248
Canterbury, NH 03224
(603)-783-8042
Toll Free: (866) 900-2415

CONVENTIONAL SUBSURFACE DISPOSAL SYSTEMS
vs.
THE CLEAN SOLUTION

In a subsurface disposal system there are basically two processes that break down and treat wastewater. The first process is Anaerobic (without oxygen) in the septic tank, and the second process is Aerobic (with oxygen), which often occurs in the leach field of a conventional subsurface disposal system.

Function of a Septic Tank

The first component of the subsurface disposal system is the septic tank. The septic tank inlet receives black and gray water from the structure (i.e. house) and allows solids to settle out while lighter matter – like oil and grease – rises to the top. The septic tank is the anaerobic component of a conventional subsurface disposal system, allowing the biological process of breaking down solids into dissolved solids - a necessary step for final aerobic treatment. The septic tank then outlets effluent that has gone through the anaerobic process to a leach field.

Function of a Leach Field

Since an anaerobic septic tank provides only partial treatment, further aerobic activity is required for complete treatment. The leach field is the component of the subsurface disposal system that provides this aerobic treatment. There are three major types of leach fields currently being used; Pipe and Stone systems, Chamber Systems, and Fabric Based Systems. All three types require airflow through the system to begin the aerobic treatment process. Air is introduced into the leach field either by airflow through the soil or by adding vents. Aerobic treatment creates a biomat /clogging layer (sludge) within the leach field. The biomat is a biological growth which filters out solid particles and dissolved pollutants not processed within the septic tank. As the biomat forms, a clogging layer forms on the soil interface between the stone and the sand blanket. On fabric based systems the clogging layer forms on the fabric as well as the soil interface between the fabric material and soil surface. The development of biomat /clogging layer is a function of the organic loading as well as the loading rate (gallons per day). High strength effluent from restaurants is typically 5 to 10 times stronger than residential effluent and will result in the biomat / clogging layer forming at a faster rate. As the biomat / clogging layer becomes thicker the infiltration rate of the system decreases. As the infiltration rate decreases over time the leach field becomes overloaded (flooded). Once overloaded, the leach field converts from aerobic treatment to anaerobic treatment. At this point the leach field no longer is able to effectively treat the wastewater, which results in polluting groundwater and nearby surface water. Onsite septic systems are a major concern for property owners in sensitive environmental areas.

Function of *THE CLEAN SOLUTION*

THE CLEAN SOLUTION utilizes a septic tank to perform the same function as the septic tank in a conventional subsurface disposal system. ***THE CLEAN SOLUTION*** system differs from a conventional septic system, however, in that the aerobic treatment process occurs within the BioCon™ chamber, instead of in a leach field.

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In the BioCon chamber, air is introduced into the effluent stream. The air (oxygen) and effluent stream (food) then prompts the growth of a biofilm (bacteria) on the media stored in the BioCon chamber. The biofilm breaks down the wastewater, reducing BOD_5 and TSS levels, as well as nitrogen and phosphorus. The biofilm in the BioCon chamber is equivalent to the biomat in the leach field, creating sludge as a byproduct of the treatment process. The treated effluent from the BioCon chamber then flows into a settling chamber. The settling chamber allows excess sludge to settle out of the effluent.

From the settling chamber, clear treated effluent is dispersed into the ground through a dispersal field. The advantage of ***THE CLEAN SOLUTION*** system is the "Biomat" has been trapped in the settling chamber and is pumped out when the septic tank is serviced. ***THE CLEAN SOLUTION*** system has provided the aerobic treatment, allowing clear treated effluent to be dispersed into the ground in a much smaller area called a “dispersal field”. Because of ***THE CLEAN SOLUTION*** treatment process, the dispersal field does not suffer the same clogging fate as a conventional leach field. The size of the dispersal field varies from State to State and is typically set by a State's Environmental Department. Call AOS for the appropriate sizing information of the dispersal field.

With a conventional soil based septic system, homeowners are not typically aware of problems lurking in the leach field below the lawn. Owners only become aware that the leach field has reached its effective life span - when the sewer line backs up into the house or the lawn becomes too "soggy" to mow. Remote leach fields go years in failure without anyone noticing the problem. Long before the "soggy" areas are noticed or the sewer backs up into the house, untreated wastewater has entered the groundwater and nearby surface water. When the homeowner reaches the "soggy" lawn point the system needs to be replaced, which is very costly and disruptive. Often the replacement of the leach field results in a major impact to the property’s existing landscaping.

With ***THE CLEAN SOLUTION***, the system is typically inspected when the septic tank is serviced. The technician inspecting the system is trained in its proper operation and determines if the system is functioning properly. If a problem is encountered, it can often be corrected during the inspection process and long before the "soggy lawn" symptom occurs.

When to Use *THE CLEAN SOLUTION*

THE CLEAN SOLUTION system is well suited for use in any septic system application where the installation of a standard leach field would be expensive or difficult – whether it’s a single-family house, multi unit development, or a commercial development. Examples include homes on bodies of water, high water tables, ledge, small lots, housing developments, condo units, restaurants, shopping centers and office complexes. ***THE CLEAN SOLUTION*** unit is an affordable, completely in-ground system that is ideal for all new installations or failed system replacements.

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ADVANTAGES OF USING *THE CLEAN SOLUTION*

Environmentally Friendly

- ***THE CLEAN SOLUTION*** system, a tank that is installed in line after the septic tank, provides the same aerobic treatment that a leach field is designed to provide. As a result, a smaller field is required to disperse the treated effluent into the ground.
- ***THE CLEAN SOLUTION*** system helps prevent ground water pollution and protects our natural streams, lakes and wetlands.
- Adaptable for sensitive sites.
- Tests show that ***THE CLEAN SOLUTION*** is more environmentally safe.
- Recharges groundwater with a higher level of treatment than conventional systems.

User Friendly

- Accommodates vacations, low flows and peak loads.
- Landscape friendly - tanks in ground, no raised covers above ground.
- Low operating cost.
- Does not require a pump for gravity systems.
- Reduces costly repairs in the future.

Low Maintenance

- In residential applications, pumping required only every 2 to 3 years depending upon use.
- There are no mechanical or electrical components within the BioCon treatment chamber.
- **Does not require remote operating via phone modem to maintain treatment.**

Technical and Installation Support

- AOS provides one-on-one support throughout the design, installation and startup process.
- AOS staff has experience in designing all types of subsurface disposal systems.
- AOS has on-staff Licensed Designers, Installers, Certified Septic System Evaluators and Wetland Scientists trained in wastewater sampling.
- AOS staff has been involved in onsite wastewater disposal system designs since 1986.
- AOS can provide you value engineering services on projects for cost comparisons.

Community Developments

- Grouping homes together to utilize larger ***CLEAN SOLUTION*** systems, in conjunction with the smaller dispersal field, can substantially reduce cost. The larger systems also permit better land use and can result in maximizing the number of units allowed on a piece of land.

Restaurants

- ***THE CLEAN SOLUTION*** system can be used to treat high strength wastewater.
- Improves efficiency of the subsurface disposal system dispersal field.
- Reduces costly repairs in the future.

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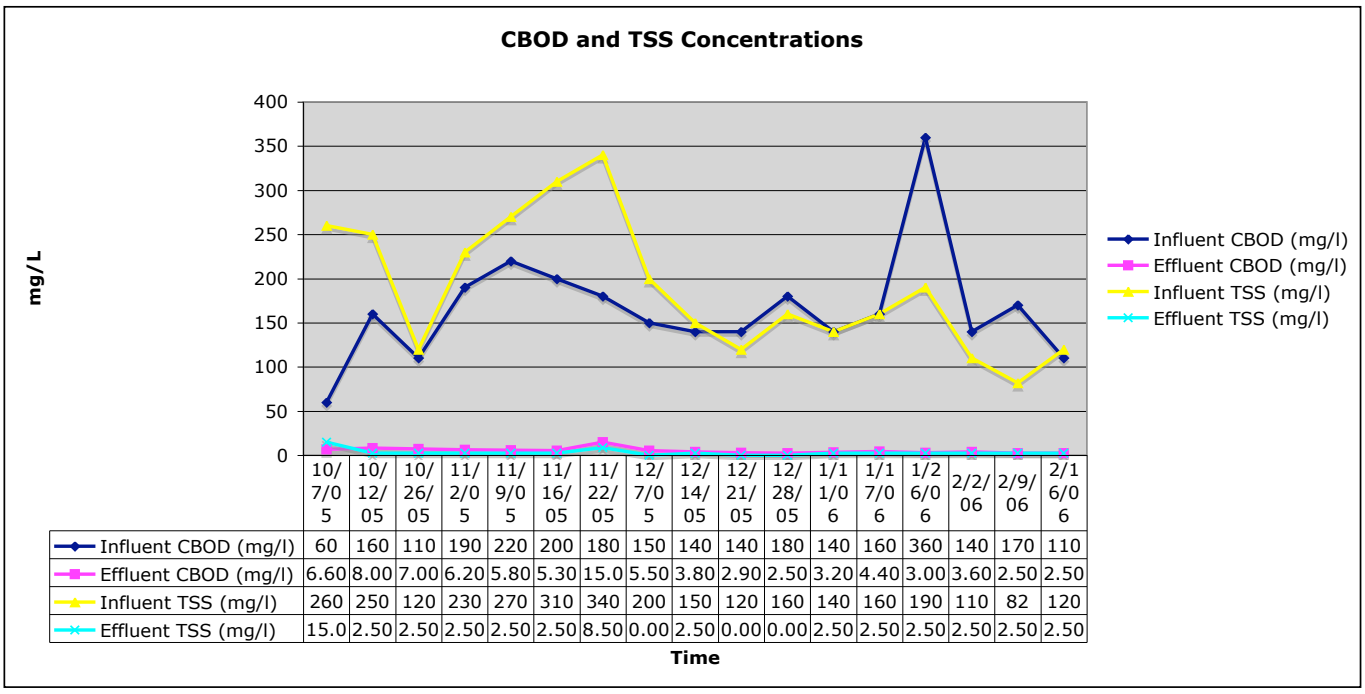
INDEPENDENT TEST RESULTS

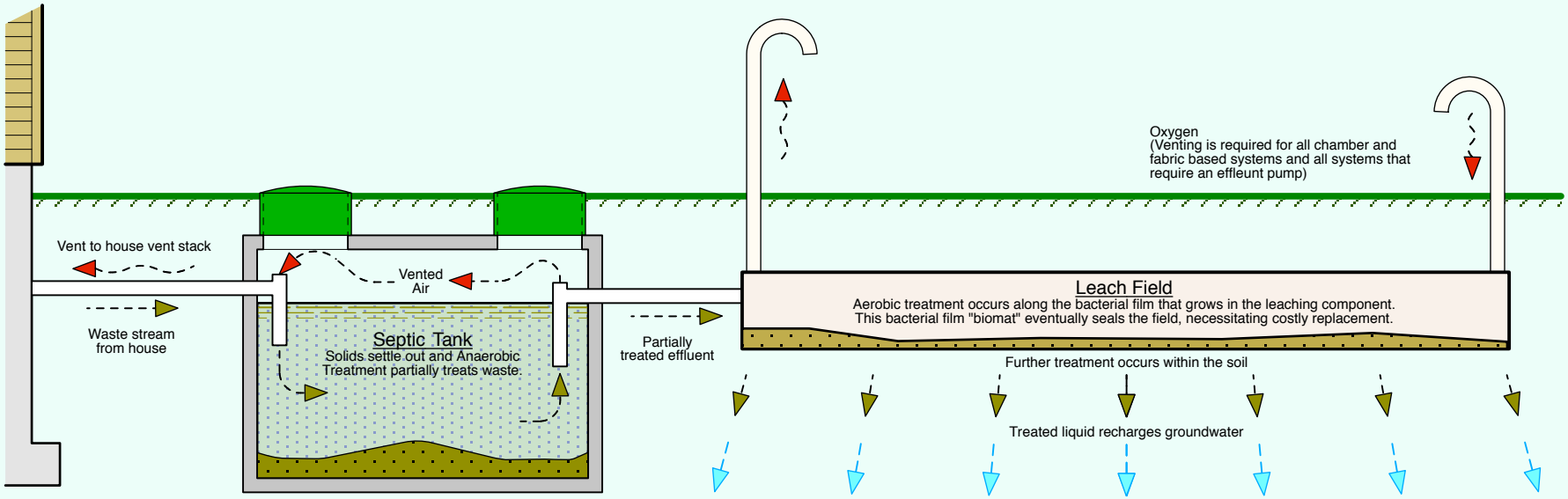
In addition to the creativity and flexibility that it gives designers to fit systems into a natural setting while reducing impact to natural buffers, *THE CLEAN SOLUTION* reduces BOD_5 and TSS below 30 mg/l, and in most residential projects the results are in the single digits. The system has been tested at the Massachusetts Alternative Septic Testing Center located at Otis Air National Guard Base on Cape Cod. A measured 550 gal/day from the base facilities are metered into the system each day. Test results average 5.2 mg/l BOD_5, 3.1.mg/l TSS, levels far superior to municipal plants, typically operating at 30mg/l for both BOD and TSS.



	10/7/05	10/12/05	10/26/05	11/2/05	11/9/05	11/16/05	11/22/05	12/7/05	12/14/05	12/21/05	12/28/05	1/1/06	1/7/06	1/26/06	2/2/06	2/9/06	2/16/06
Influent CBOD (mg/l)	60	160	110	190	220	200	180	150	140	140	180	140	160	360	140	170	110
Effluent CBOD (mg/l)	6.60	8.00	7.00	6.20	5.80	5.30	15.0	5.50	3.80	2.90	2.50	3.20	4.40	3.00	3.60	2.50	2.50
Influent TSS (mg/l)	260	250	120	230	270	310	340	200	150	120	160	140	160	190	110	82	120
Effluent TSS (mg/l)	15.0	2.50	2.50	2.50	2.50	2.50	8.50	0.00	2.50	0.00	0.00	2.50	2.50	2.50	2.50	2.50	2.50

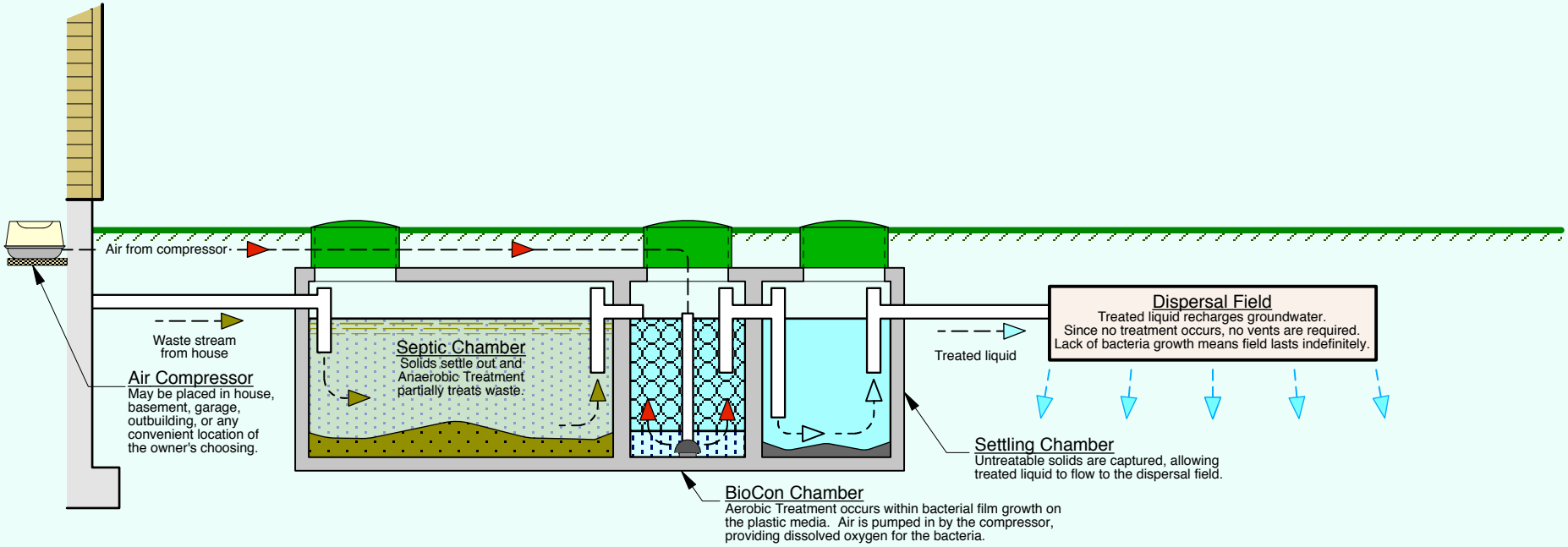
It is important to note the difference between the influent and effluent CBOD, which is a measure of the strength of the wastewater. The influent test BOD is very typical of that from the septic tank in a residential dwelling.

High strength wastewater from a restaurant typically has BOD and TSS levels four to ten times higher then residential wastewater. In wastewater sampling completed by AOS, we have seen wastewater strength as high as 4900 mg/l for BOD, 4000 mg/l for TSS and FOG (Fats-oil-grease) at 930 mg/l. Conventional leach field sizing is based on residential strength wastewater. The organic loading on a conventional soil or fabric based leach field from high strength wastewater increases the rate that the Biomat forms resulting in early failures. ***THE CLEAN SOLUTION*** system reduces high strength wastewater down to levels typical of treated residential wastewater.



CONVENTIONAL LEACH FIELD SEPTIC SYSTEM

Treatment occurs within the leach field components, whether fabric wrapped pipes or mats, concrete or plastic chambers or traditional pipe & stone.



THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

Treatment occurs within the BioCon™ Aerobic treatment chamber, allowing for a dispersal area smaller than a leach field.

Advanced **O**nsite **S**olutions LLC
innovative wastewater solutions with sustainable results
P.O. Box 248
Canterbury, NH 03224
Phone 603.783-8042
www.thecleansolution.com

Appendix G – *ZBA Decision from April 22, 2022*

TOWN OF DURHAM
8 NEWMARKET RD
DURHAM, NH 03824
(603) 868-8064
www.ci.durham.nh.us

April 14, 2022

Iago L. & Erin H. Hale
74 Mill Road
Durham, NH 03824

Dear Iago L. & Erin H. Hale,

Enclosed you will find a copy of the Zoning Board of Adjustment's decision that was rendered April 12, 2022, at the Zoning Board of Adjustment meeting. The application for variance regarding the permitting of an accessory apartment was approved. If you or any abutters wish to appeal this decision, the deadline to file an application of appeal with the Zoning Board of Adjustment is within thirty (30) calendar days beginning April 13, 2021. According to RSA 677:3, a motion for rehearing "shall set forth fully every ground upon which it is claimed that the decision or order complained of is unlawful or unreasonable." The Zoning Board of Adjustment has thirty (30) calendar days to either grant or deny the application for rehearing once it has been filed in the office of Planning and Zoning at the Durham Town Hall. No building permit application shall be approved until the 30-day appeal period has passed.

If you have any questions, please call me at 868-8064.

Sincerely,

Audrey Cline
Zoning Administrator/CEO

Enclosures (1)

ke

TOWN OF DURHAM
8 NEWMARKET ROAD
DURHAM, NH 03824
Tel: 603/868-8064
www.ci.durham.nh.us

Property Referenced:
Tax Map 6, Lot 1-4

ZONING BOARD OF ADJUSTMENT

RE: PUBLIC HEARING on a petition submitted by Iago & Erin Hale, Durham, New Hampshire, for an APPLICATION FOR VARIANCE from Article XII.1, Section 175-53 of the Durham Zoning Ordinance to permit an accessory apartment within the Residence B Zoning District. The property involved is shown on Tax Map 6, Lot 1-4, is located at 74 Mill Road, and is in the Residence B Zoning District.

DECISION OF THE BOARD

After review of the pertinent sections of the Zoning Ordinance of the Town of Durham, and after full consideration of the evidence submitted by Iago & Erin Hale and testimony given at a Public Hearing on April 12, 2022, a motion was made and seconded:

that the Zoning Board of Adjustment approve a petition submitted by Iago & Erin Hale, Durham, New Hampshire, for an APPLICATION FOR VARIANCE from Article XII.1, Section 175-53 of the Durham Zoning Ordinance to permit an accessory apartment within the Residence B Zoning District.

The motion PASSED on a vote of 5-0-0 and the application for variance was approved.

14 APR 22
Date

Chris Sterndale, Chair
Durham Zoning Board of Adjustment

NOTE: Any person affected by this decision has the right to appeal this decision. If you wish to appeal, you must act within thirty (30) calendar days from the date of the hearing. The necessary first step before any appeal may be taken to the courts is to apply to the Zoning Board of Adjustment for a rehearing. The motion for rehearing must set forth all the grounds upon which you will base your appeal. See New Hampshire Statutes, RSA Chapter 677, for details.

As per RSA 674:33 Variances and Special Exceptions shall be valid if exercised within 2 years from the date of final approval, or as further extended by local ordinance or by the zoning board of adjustment for good cause, provided that no such variance shall expire within 6 months after the resolution of a planning application filed in reliance upon the variance.

Any questions should be directed to Audrey Cline, Zoning Administrator/Code Enforcement Officer.

Appendix H – *NHDES Shoreland Impact Permit from July 9, 2021*

The State of New Hampshire

Department of Environmental Services

Robert R. Scott, Commissioner

SHORELAND IMPACT PERMIT 2021-01825

NOTE CONDITIONS

PERMITTEE:	**ERIN H/IAGO L HALE** **74 MILL RD** **DURHAM NH 03824**
PROJECT LOCATION	**74 MILL RD, DURHAM** **TAX MAP #6, LOT #4**
WATERBODY:	**OYSTER RIVER**
APPROVAL DATE:	**JULY 09, 2021**

EXPIRATION DATE: JULY 09, 2026

Shoreland Permit Application 2021-01825 has been found to meet or exceed the requirements of RSA 483-B as required per RSA 483-B:6, II. The New Hampshire Department of Environmental Services (NHDES) hereby issues this Shoreland Impact Permit with conditions pursuant to RSA 483-B:6, II.

PERMIT DESCRIPTION:
Impact 2,425 square feet of protected shoreland in order to remove an existing accessory structure with the exception of its stone foundation, construct a second conforming primary structure on the property, and complete septic system upgrades.

Impervious Surface Percentage Approved: 8.2 %

Natural Woodland Area Required per RSA 483-B:9, V, (b): 2,400 square feet

THE FOLLOWING PROJECT-SPECIFIC CONDITIONS HAVE BEEN APPLIED TO THE PERMIT PURSUANT TO ENV-WQ 1406.15(c):

1. All work shall be in accordance with plans by Ross Engineering, LLC, revision date of May 28, 2021 and received by the NH Department of Environmental Services (NHDES) on June 9, 2021 pursuant to 483-B:5-b Permit Required; Exemption, I, (a).
2. Neither the new primary structure nor the proposed septic system may be constructed until the system is approved by the NHDES Subsurface Systems Bureau as required pursuant to RSA 483-B:6, I, (c).
3. This permit shall not be interpreted as acceptance or approval of any impact that will occur within wetlands jurisdiction regulated under RSA 482-A including all wetlands, surface waters and their banks, and the tidal-buffer zone. The owner is responsible for maintaining compliance with RSA 482-A and Administrative Rules Env-Wt 100 - 900 and obtaining any Wetland Impact Permit that may be required prior to construction, excavation or fill that will occur within Wetlands jurisdiction as required pursuant to RSA 483-B:6, I, (c).
4. This permit shall not preclude NHDES from taking any enforcement or revocation action as authorized pursuant to 483-B:5, I. If NHDES later determines that any of the structures depicted as "existing" on the plans submitted by the applicant were not previously permitted or grandfathered.

THE FOLLOWING STANDARD PROJECT CONDITIONS SHALL BE MET PURSUANT TO ENV-WQ 1406.20:

1. Erosion and siltation control measures shall be installed prior to the start of work, be maintained throughout the project, and remain in place until all disturbed surfaces are stabilized.
2. Erosion and siltation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters.
3. No person undertaking any activity in the protected shoreland shall cause or contribute to, or allow the activity to cause or contribute to, any violations of the surface water quality standards established in Env-Wq 1700.
4. Any fill used shall be clean sand, gravel, rock, or other suitable material.
5. For any project where mechanized equipment will be used, orange construction fence shall be installed prior to the start of work at the limits of the temporary impact area as shown on the approved plans; be maintained throughout the project; and remain in place until all mechanized equipment has been removed from the site.

ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:

1. During construction, a copy of this permit should be posted on site in a prominent location visible to inspecting personnel.
2. This permit does not convey a property right, nor authorize any injury to property of others, nor invasion of rights of others.
3. Pursuant to Env-Wq 1406.21, transfer of this permit to a new owner requires notification to, and approval of, the NHDES.
4. This project has been screened for potential impact to **known** occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.

APPROVED:

D Forst

Darlene Forst
Shoreland Section Supervisor, Shoreland Program
Wetlands Bureau, Land Resources Management
Water Division