

January 8, 2018

Sudbury Conservation Commission
Department of Public Works Building
275 Old Lancaster Road
Sudbury, MA 01776

RE: Notice of Intent, 0 Willis Road, Sudbury

Dear Sudbury Conservation Commission,

Goddard Consulting, LLC is pleased to submit this Notice of Intent (NOI) on behalf of the applicant and owner, Michael Merullo, for the property located at 0 Willis Road (Assessor Map E-07, Lot 0178) in Sudbury. This NOI is a filing under the Sudbury Wetlands Administration Bylaw (SWAB). A prior NOI was filed in 2015 and a SOC was issued by Mass DEP on 5/25/17 (DEP File #301-1186).

One original and two hard copies of the NOI application are enclosed, along with full size site plans. The titles of all the documents enclosed are as follows:

- NOI (Modified WPA Form 3) Application Form
- Copy of Check, Bylaw Fee
- Affidavit of Service, Abutters List, Notification to Abutters
- USGS Site Locus. Goddard Consulting, LLC. 9/11/15
- Orthophoto View of Site. Goddard Consulting, LLC. 9/11/15.
- Wildlife Habitat Evaluation, 1/4/18, Dan Wells, Mark Arnold
- Figure 1 – Orthophoto View of Site, 1/4/18
- Figure 2 – Limit of Work Overlay, 1/4/18
- *Order of Resource Delineation*, Sudbury Conservation Commission, 3/9/16 (DEP File # 301-1172)
- *Superseding Order of Conditions*, MassDEP, 5/25/17
- *Proposed Sewage Disposal System. Lot 178. (Sheet 1 of 2)* Sullivan, Connors & Associates. 1/2/18
- *Proposed Sewage Disposal System. Lot 178. (Sheet 2 of 2)* Sullivan, Connors & Associates. 7/3/17

Existing Conditions

Map E-07, Parcel 0178 is a vacant lot between 147 & 159 Willis Road in Sudbury. The large portion of the lot consists of a wetland system with an intermittent stream running south to north that passes through a culvert under Willis Road and another intermittent stream running west to east near the middle of the lot. The lot also contains an upland section along Willis Road in the northwest corner as well as in the back western end of the site. The wetland resources were confirmed by an ORAD on March 9, 2016 by the Sudbury Conservation Commission (DEP #301-1172).

Table 1: Existing AURA

Front AURA	28,928Fr s.f.
Front Upland	125 s.f.
Rear AURA	31,803± s.f.
Rear Upland	3,087± s.f.

Proposed Conditions

The applicant is proposing to construct a single-family home with associated, septic system, driveway and yard. The septic system is proposed as far from the wetlands as possible to be under the proposed driveway and has verbal approval with no wavers from the Board of Health of Sudbury pending conservation permits. Table 1 summarizes the proposed work. All work has been kept over 25' from the wetland edge. The driveway is pitched to filter through a rain garden with 16 native shrub plantings. These are the same size and species as listed in Table 2. The house also has an infiltration system for roof run-off that is located in the front yard. This system is a 3-chambered Cultec system that is backfilled with gravel and can store up to 230 cubic feet of water before gently spilling into a gravel level spreader.

Table 2: Summary of Proposed Work

	DEP SOC		Bylaw		Change
	Proposed Area	Distance to Resource Area	Proposed Area	Distance to Resource Area	
House	2,162 s.f.	39'	2,162 s.f.	39'	None
Driveway	2,830 s.f.	61'	2,830 s.f.	61'	None
Deck	272 s.f.	45'	272 s.f.	45'	None
Paver Patio (pervious pavers)	495 s.f.	39'	465 s.f.	37'	+2', Reduction of 30 s.f.
Front walk (pervious pavers)			107 s.f.	60'	Increase of 107 s.f.
Landscaping	15,419 s.f.	10'	10,592 s.f.	25'	- 15'
Total Project Area	20,826 s.f.		16,428 s.f.		Decrease of 4,750 s.f.
Remaining Front AURA	7,750 s.f.		12,500 s.f.		Increase of 4,444 s.f.
Remaining Rear AURA	31,803± s.f.		31,803± s.f.		None
Reaming Rear Upland	3,087± s.f.		3,087± s.f.		None
Total AURA & Upland Remaining	42,640± s.f.		47,390± s.f.		Increase of s.f. 4,444 s.f.

Regulatory Compliance – Wetlands Protection Act

The submitted project was approved under a Superseding Order of Conditions by the Massachusetts Department of Environmental protection (DEP File #301-1186). In this approval, the limit of work had an area of 20,826 sq. ft. and was up to 10' from the wetland edge, no roof run-off infiltration was proposed. The patio was assumed to be impervious and no rain garden for the driveway was proposed. In addition, no buffer zone plantings were required. The only condition beyond what was shown on the approved plan was a requirement for a row of boulder along the approved limit of work.

This approval was stated as follows:

“It is MassDEP’s position that the enclosed Superseding Order of Conditions approving the project as proposed and conditioned serves to protect the statutory interests identified in the Wetlands Protection Act and Regulations”. The “statutory interests” of the Wetlands Protection Act and Regulations are listed in 310 CMR 10.01(2) and checked in the SOC decision.

- ❖ protection of public and private water supply
- ❖ protection of ground water supply
- ❖ flood control
- ❖ storm damage prevention
- ❖ prevention of pollution
- ❖ protection of fisheries
- ❖ protection of wildlife habitat

* protection of land containing shellfish – omitted as it’s not applicable to this project.

MassDEP found that these interests were preserved under the proposed project and conditions of the SOC. Therefore the presumption is that this application that presumptions satisfied in the SOC area also preserved and also satisfied in with application as well. Therefore, in so far as the SWAB is more restrictive than the WPA, then this application demonstrates that the added measures will satisfy the SWAB standards.

Regulatory Compliance – Sudbury Wetlands Administrative Bylaw

This project proposes work within 25-100’ Buffer Zone. The final limit of lawn will be 2’(min) interior to the erosion control line and be demarked with a split rail fence. Once the site work is completed 78 native shrubs will be planted at 4’ on-center between the fence line and the erosions control line. Table 2 lists the species proposed.

Table 3: Limit of Work Planting List

Species	Quantity	Size
Sweet Pepperbush (Clethra Alnifolia)*	19	36”
Service Berry (Amelanchier Candadensis)*	20	36”
Spice Bush (Lindera Benzoin)*	19	36”
Black Chokeberry (Aronia Melanocarpa)*	20	36”
*no cultivars allowed.		
Total	78	

A rain garden with 16 native shrubs (Same species as listed in Table 2) is also proposed at the low end of the driveway to provide for stormwater run-off control and treatment for the pavement. The proposed patio and front steps will be constructed with pervious pavers to allow for infiltration of rainfall.

Burden of Proof

The work proposed in the Notice of Intent permit application will not have an unacceptable significant or cumulative effects upon the resource area values protected by the Sudbury Wetlands Administration Bylaw.

Section 7.2 states that

The Commission therefore may require that the applicant maintain a strip of continuous, undisturbed vegetative cover in part or all of the 100-foot area and set other conditions on this area, unless the applicant provides evidence deemed sufficient by the Commission that the area or part of it may be

disturbed without harm to the values protected by the law.”

Bylaw Values Summary

Section 1 of Sudbury Bylaws Chapter 22:

Accordingly, this bylaw protects the wetlands, related water resources, and certain adjoining land areas in the Town by providing for prior review and control of activities deemed to have a significant or cumulative adverse effect upon wetlands values, including but not limited to the following: protection of public and private water supply, protection of ground water, flood control, erosion and sedimentation control, storm damage prevention, avoidance of water and soil pollution, protection of fisheries, wildlife habitat, rare species habitat including rare plant species, agriculture, aqua culture, and recreation values deemed important to the community (collectively, the "wetlands values protected by this bylaw".)

- Emphasis Added

The Sudbury Bylaw lists the following “wetlands values” also known as “wetlands values protected by this bylaw” under Section 1 of Sudbury Bylaws Chapter 22

a) protection of public and private water supply;

The stormwater management design will prevent any runoff or infiltration of polluted water into public or private water supplies during first flush of storms. A deed restriction listing that no herbicides can be used on the property is also proposed. A larger scale project with no stormwater management was approved by DEP under the WPA which has the interest of “*protection of public and private water supply*” (310 CMR 10.01(2)).

b) protection of ground water;

The stormwater management system will ensure proper infiltration of runoff so that there will be no harm to groundwater recharge. A larger scale project with no stormwater management was approved by DEP under the WPA which has the interest of “*protection ground water supply*” (310 CMR 10.01(2)).

c) flood control;

There will be no alteration of or direct discharge to the existing wetland system which would impair its ability to provide flood control. A larger scale project was approved by DEP under the WPA which has the interest of “*flood control*” (310 CMR 10.01(2)).

d) erosion and sedimentation control;

A proper erosion control barrier will prevent erosion or sedimentation into the wetland during construction. Upon completion of the project, the site will be stabilized and the stormwater management system has been designed to mitigate any runoff, erosion or sedimentation.

e) storm damage prevention;

This project will not affect the abilities of the resource areas to prevent storm damage. A larger scale project was approved by DEP under the WPA which has the interest of “*storm damage prevention*” (310 CMR 10.01(2)).

f) avoidance of water and soil pollution;

There are no biological or chemical pollutants involved with this project, therefore water and soil pollution will be avoided. Erosion control measures include straw bales with staked silt fence. A larger scale project was approved by DEP under the WPA which has the interest of “*prevention of pollution*” (310 CMR 10.01(2)).

g) protection of fisheries

The stream is intermittent and therefore does not contain a fishery. DEP did approve the project at a larger scale and did check that the interest of “*protection of fisheries*” (310 CMR 10.01(2)).

h) wildlife habitat, rare species habitat including rare plant species;

There is only a small area that provides some wildlife habitat in the buffer zone. In addition, any dense vegetation which is closer to the wetland is being protected as no work is proposed within 25’ of the wetland edge. A larger scale project was approved by DEP under the WPA which has the interest of “*protection of wildlife habitat*” (310 CMR 10.01(2)). There are no rare plant or animal species known to inhabit the property or nearby vicinity. The proposed plantings of native shrubs will provide enhanced protection to the wildlife habitat in the wetland and also provide habitat in the undisturbed buffer zone.

Under Section 7.3 of the Bylaw Regulations the following wildlife habitat is protected.

- *Large cavity trees*

No large cavities, even over 6” are located within the proposed work area or in close proximity to the proposed work.

- *Turtle nesting areas*

No turtle nesting areas are present on the site. No sanding areas have been noted near the proposed work either.

- *Existing nest trees for birds that reuse nests (e.g., great blue herons, osprey)*

No trees with next for large birds are located within the proposed work area or in close proximity.

- *Beaver dams, dens, and lodges*

No recent beaver activity has been noted on the property or in close proximity to the proposed work.

- *Mink or otter dens*

No mink or otter dens are present on site.

- *Vernal pools*

No vernal or potential vernal pools are present on the site.

- *Vertical sandy banks*

No sandy banks area present on the site. The banks of the intermittent stream are only short and muddy.

- *Movement corridors that provide connectivity between wildlife habitats*

The proposed project have no barriers or structures that would severely inhibit wildlife movement and leave a natural 25’ buffer off the wetland edge for habitat to move within naturalized areas. The propose fence along the edge of lawn is a spilt rail to allow for free movement of wildlife.

- *Sphagnum hummocks and pools suitable to serve as nesting habitat for four-toed salamanders*

No Sphagnum hummocks or pools suitable for four-toed salamanders have been observed on the site.

i) Agriculture;

This project is not relevant to agriculture.

j) Aquaculture;

This project is not relevant to aquaculture.

k) Recreation values, deemed important to the community.

This project is located within a private residential property therefore it is not relevant to recreation values deemed important to the community.

Bylaw Values Summary:

The proposed project provides stormwater and wildlife habitat enhancement to mitigate the effects of work within the Buffer Zone. A larger version of this project was approved by DEP under the WPA which protects the same “wetland values” protected by the Bylaw. The proposed reduced project foot print and measures provide additional measures for any “adverse impacts” to the wetland resource area.

Bylaw “Adjacent Upland Resource Areas”

The Sudbury Bylaw in Section 7.0 for Adjacent Upland Resource Areas (AURA) list the following “adverse impacts from construction” within the AURA:

- a) erosion*
- b) siltation*
- c) loss of groundwater recharge*
- d) poor water quality*
- e) harm to wildlife habitat.*

These “adverse impacts” are listed “...because activities undertaken in close proximity to wetlands and other resources have a high likelihood of adverse impact up the wetland or other resource”. These “adverse impacts” are only protected when they directly impact the values and functions of the “wetland values protected under this bylaw”. The proposed project will address the presumed “adverse impacts from construction” within the AURA as follows:

a) Erosion

The project will protect undisturbed areas by the installation and maintenance of erosion controls until the site is stabilized. Stormwater management for roof run-off and the driveway have been provided with the addition of native plantings along the edge of the proposed lawn. This protection along with the 25'+ undisturbed AURA will provide adequate erosion measures to protect the wetland.

b) Siltation

As discussed above the projects erosion controls during construction will prevent siltation during construction. The proposed stormwater management and 25'+ undisturbed AURA will provide adequate siltation prevention in the wetland during the future. Erosion Controls include straw bales with staked silt fence

c) Loss of groundwater recharge

The proposed project has two forms of groundwater re-charge. The 3-chambered drywell system for the house and the rain garden for the driveway. This will provide replacement recharge for the structures, while the rest of the site will have recharge from lawn and pervious patio.

d) Poor water quality

The proposed projects two forms of groundwater re-charge with one being a rain garden will provide water treatment for the structures. The lawn will be maintained with no herbicides under the deed restriction which will also mitigate water quality.

e) Harm to wildlife habitat.

The wildlife habitat within the proposed work area is limited to a sparse upland area. The 25' buffer off the wetland that is complete protected is where more abundant food sources and dense cover exist. In addition the native plantings proposed would increase wildlife habitat. The trees proposed to be removed provide no significant shelter habitat as no large cavities exist. The trees along the wetland edge are protected along with a large oak that leans towards the wetlands. This are the trees that provide important habitat for birds looking for food in the wetland.

Bylaw AURA Summary:

The proposed project provides stormwater and wildlife habitat enhancement to mitigate the effects of work within the Buffer Zone. A 25'+ strip of continuance buffer zone is proposed to remain along with a native planting buffer that will provide additional wildlife habitat and long term natural stabilization. The project addresses the "adverse impacts" that can occur for work near a wetland resource area and the "wetland values" protected under the bylaw have been addressed to preserve the values protected.

Bylaw "Alternatives Analysis"

Under Section 7.12 of the Sudbury Bylaw the following alternatives were considered.

Lot History:

The 0 Willis Road (Assessor Map E-07, Lot 0178) was first created in 1997 (South Middlesex Registry of Deeds, Plan 313, Year 1997). The lot was transferred to the current owner in 2014. At this time #159, E167 & E177 Willis Road were also created. In 2005 #159, #167 & #177 have all been developed into single family homes with work and structures in the buffer zone for some of the houses.

Alternative: No Build

This option would result in a uneconomical proposal for the owner. The lot was created in the same period as adjacent lots and these have all been developed under the SWAB.

Alternative: Project in Rear Upland Area – Wetland Crossing

This alternative would construct a single-family house in the rear of the parcel where upland exist. Work would be required in the same proximity to the wetland as the front proposal. This would however require a wetland crossing to access from Willis Road. This alternative would therefore have a large impact on the wetland resource areas on site and be less desirable. The rear upland area is also the more native and robust buffer zone when compared to the front buffer zone.

Alternative: Project in Rear Upland Area – Upland Access

This alternative would construct a single-family house in the rear of the parcel where upland exist. Work would be required in the same proximity to the wetland as the front proposal. Access would have to be gained from an abutting parcel which would require negotiations and add a significant cost. The rear upland area is also the more native and robust buffer zone when compared to the front buffer zone.

Alternative: Project as proposed

The proposed project minimizes the projects footprint and access to the proposed site while preserving the more ecologically significant parts of the AURA within the front upland and completely preserving the rear AURA. More than 12,500 sq. ft. of the front AURA is preserved while the estimated ±31,800 sq. ft. of rear buffer zone is also preserved.

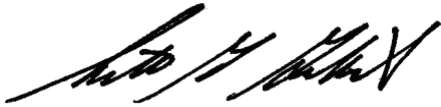
Conclusion

The proposed project has been designed to protect the values protected under the bylaw and provide enhancement to the AURA of the wetland resource area. The significant reduction of work area from the project that was approved under the WPA also provides additional measures that will protect the interest protected in the bylaw. The preservation of a large portion of the front buffer zone and the preservation of the entire rear buffer zone is a significant preservation of natural areas on the property.

If there are any questions concerning this submission, please do not hesitate to contact us.

Very truly yours,

GODDARD CONSULTING, LLC

A handwritten signature in black ink, appearing to read 'Scott Goddard', written over a horizontal line.

Scott Goddard, Manager & PWS

CC: Michael Merullo, 370 Chestnut Street, Lynnfield, MA 01940



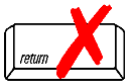
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Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

0 Willis Road

a. Street Address

Sudbury

b. City/Town

01776

c. Zip Code

Latitude and Longitude:

42.40877N

d. Latitude

71.38183W

e. Longitude

E-07

f. Assessors Map/Plat Number

0178

g. Parcel /Lot Number

2. Applicant:

Michael

a. First Name

Merullo

b. Last Name

c. Organization

370 Chrestnut Street

d. Street Address

Lynnfield

e. City/Town

MA

f. State

01940

g. Zip Code

617-567-2524

h. Phone Number

i. Fax Number

mjmerullo@icloud.com

j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Scott

a. First Name

Goddard

b. Last Name

Goddard Consutling LLC

c. Company

291 Main Street, Suite 8

d. Street Address

Northborough

e. City/Town

MA

f. State

01532

g. Zip Code

508-393-3784

h. Phone Number

i. Fax Number

scott@goddardconsutlingllc.com

j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

\$250

a. Total Fee Paid

Bylaw Only

b. State Fee Paid

\$250

c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

Construction of single family home with associated patio, deck, driveway and septic system within Adjacent Upland Resource Areas. ORAD Issued 3/9/15, DEP File #301-1172

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Single Family Home | 2. <input type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Commercial/Industrial | 4. <input type="checkbox"/> Dock/Pier |
| 5. <input type="checkbox"/> Utilities | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input type="checkbox"/> Transportation |
| 9. <input type="checkbox"/> Other | |

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR 10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

South Middlesex County

a. County

64525

c. Book

b. Certificate # (if registered land)

131

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☒ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input type="checkbox"/> Riverfront Area	1. Name of Waterway (if available) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- ☐ 25 ft. - Designated Densely Developed Areas only
- ☐ 100 ft. - New agricultural projects only
- ☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	Proposed Replacement (if any)
f. <input type="checkbox"/> Coastal Banks	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet	
h. <input type="checkbox"/> Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	1. square feet	
4. <input type="checkbox"/> Restoration/Enhancement	If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here. a. square feet of BVW b. square feet of Salt Marsh	
5. <input type="checkbox"/> Project Involves Stream Crossings	a. number of new stream crossings	b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

- ☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

- a. ☐ Yes ☒ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

08/2017

b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

- c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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C. Other Applicable Standards and Requirements (cont'd)

- (c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/esa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

- (d) ☐ Vegetation cover type map of site
- (e) ☐ Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following
1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/esa/esa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)
2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____
3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.
3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?
- a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.



Notice of Intent

Sudbury Wetlands Administration Bylaw

Sudbury
City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users:

Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
- a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
- b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
- a. ☐ Yes ☒ No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
- a. ☐ Yes ☒ No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
- a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. ☐ A portion of the site constitutes redevelopment
 3. ☐ Proprietary BMPs are included in the Stormwater Management System.
- b. ☒ No. Check why the project is exempt:
1. ☒ Single-family house
 2. ☐ Emergency road repair
 3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- ☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



Notice of Intent

Sudbury Wetlands Administration Bylaw

Sudbury
City/Town

D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Proposed Sewage Disposal System. Lot 178 (Sheet 1 of 2)

a. Plan Title

Sullivan, Connors & Associates

Vito Colonna

b. Prepared By

c. Signed and Stamped by

1/2/18

1"=20'

d. Final Revision Date

e. Scale

Proposed Sewage Disposal System. Lot 178 (Sheet 2 of 2)

7/3/17

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.
6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
8. ☐ Attach NOI Wetland Fee Transmittal Form
9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

22137

2. Municipal Check Number

8/11/17

3. Check date

4. State Check Number

5. Check date

Michael

Merullo

6. Payor name on check: First Name

7. Payor name on check: Last Name



Notice of Intent

Sudbury Wetlands Administration Bylaw

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Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Michael J. Merullo
1. Signature of Applicant

8-2-17
2. Date

Michael J. Merullo
3. Signature of Property Owner (if different)

8-2-17
4. Date

[Signature]
5. Signature of Representative (if any)


8/14/17
6. Date

ORIGINAL DOCUMENT PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER

23182



DISPOSAL SERVICE, INC.
20 RAILROAD STREET
REVERE, MA 02151

 **Santander** www.santanderbank.com
Santander Bank, N.A.

5-75150110

1/5/2018

PAY TO THE
ORDER OF Town of Sudbury

Two Hundred Fifty and 00/100*****

\$ **250.00

DOLLARS

Town of Sudbury

MEMO

Willis Road Sudbury

THE REVERSE SIDE OF THIS DOCUMENT INCLUDES A SECURITY SCREEN BACKER

⑈023182⑈ ⑆011075150⑆ 63304952094⑈



AUTHORIZED SIGNATURE

Security Features Included.



Details on back

January 8, 2018

Re: Notification of Abutters
Willis Road, Sudbury, MA

Dear Abutter:

Enclosed please find a Notification to Abutters form to inform you of a public hearing that will be held by the Town of Sudbury Conservation Commission under the Sudbury Wetland Administration Bylaw. The subject of the hearing is for an Notice of Intent (NOI) to construct a single family home within the parcel known as E07-0178 at 0 Willis Road located in Sudbury, MA.

Should you have any questions relative to this project, feel free to contact Goddard Consulting at (508) 393-3784 or the Town of Sudbury Conservation Commission at (978) 440-5471.

Lastly, if you are receiving this notice, there is a high likelihood that your property also may contain wetland resource areas, be within 100 feet of wetlands, or be within 200 feet to a regulated stream. If so, activity on your property may be subject to similar permitting requirements. Goddard Consulting is well experienced in the nuances of this town and is fully capable to assist you. If you are considering a project on your property, please contact us for all your wetland consulting and permitting needs.

Very truly yours,
GODDARD CONSULTING, LLC

by 

Scott Goddard, Principal & PWS

**Notification to Abutters Under the
Sudbury Wetland Administration Bylaw**

In accordance with the Sudbury Wetland Administration Bylaw you are hereby notified of the following.

- A. The name of the applicant is: **Michael Merullo**
- B. The applicant has filed an Notice of Intent (NOI) with the Conservation Commission for the municipality of **Sudbury, MA** seeking permission to construct a single family home within Areas Subject under the Sudbury Wetland Administration Bylaw.
- C. The project scope is: **Construction of single family home with associated driveway and landscaping.**
- D. The address of the lot where the activity is proposed is: **0 Willis Road (Parcel E07-0178).**
- E. Copies of the NOI may be examined at the **Conservation Office, Department of Public Works Building, 275 Old Lancaster Road, Sudbury** between the hours of **9:00am to 2:00pm Mon. – Wed., 10:00am to 4:00pm on Thurs., and 9:00am to 2:00pm on Fridays.** For more information, please call the Conservation office at **(978) 440-5471** or email at **concom@sudbury.ma.us**.
- F. Copies of the NOI may be obtained for a reasonable fee from the applicant's representative, **Goddard Consulting**, by calling **(508) 393-3784** between the hours of **10 and 3** on the following days of the week: **M-F**.
- G. Information regarding the public hearing can be attained by calling the **Sudbury Conservation Commission** at **(978) 440-5471** or email at **concom@sudbury.ma.us**.

NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the **Sudbury Town Crier**.

NOTE: Notice of the public hearing, including the date, time, and place, will be posted on the 1st floor bulletin board of the Town Hall not less than forty-eight (48) hours in advance.

AFFIDAVIT OF SERVICE

Under the Sudbury Wetland Administration Bylaw.

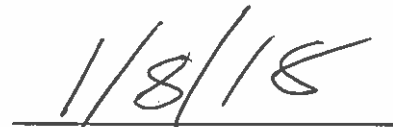
I, Mark Arnold hereby certify under the pains and penalties of perjury that on January 8, 2018, I gave notification to abutters in Compliance with the Sudbury Wetland Administration Bylaw in connection with the following matter:

An Notice of Intent was filed under the Massachusetts Wetlands Protection Act by Michael Merullo with the Sudbury Conservation Commission on January 8, 2018, for the property located at 0 Willis Road (Assessor Map E-07, Lot 0178).

The form of the notification, and the list of abutters to whom it was given, and their addresses, are attached to this Affidavit of Service.



(Name)



(Date)

Abutters List[print this list](#)

Date: January 08, 2018

Subject Property Address: WILLIS RD Sudbury, MA
Subject Property ID: E07-0178

Search Distance: 100 Feet

Prop ID: E07-0018
Prop Location: 127 WILLIS RD Sudbury, MA
Owner: TOOTHMAN JESSE J &
Co-Owner: TOOTHMAN- ALSWORTH KETURAH

Prop ID: E07-0019
Prop Location: 135 WILLIS RD Sudbury, MA
Owner: FINN ANDREW D & KELLY A
Co-Owner:

Prop ID: E07-0020
Prop Location: 147 WILLIS RD Sudbury, MA
Owner: ANDERSON DAVID J & BENEIEAU
Co-Owner: ALICIA M

Prop ID: E07-0140
Prop Location: 87 CUDWORTH LN Sudbury, MA
Owner: VIRK NAVNEET
Co-Owner: TRUSTEE OF THE KOTIA TIKKA TRS

Prop ID: E07-0171
Prop Location: 11 KENDRA LN Sudbury, MA
Owner: HILL TIVONA & KARIM
Co-Owner:

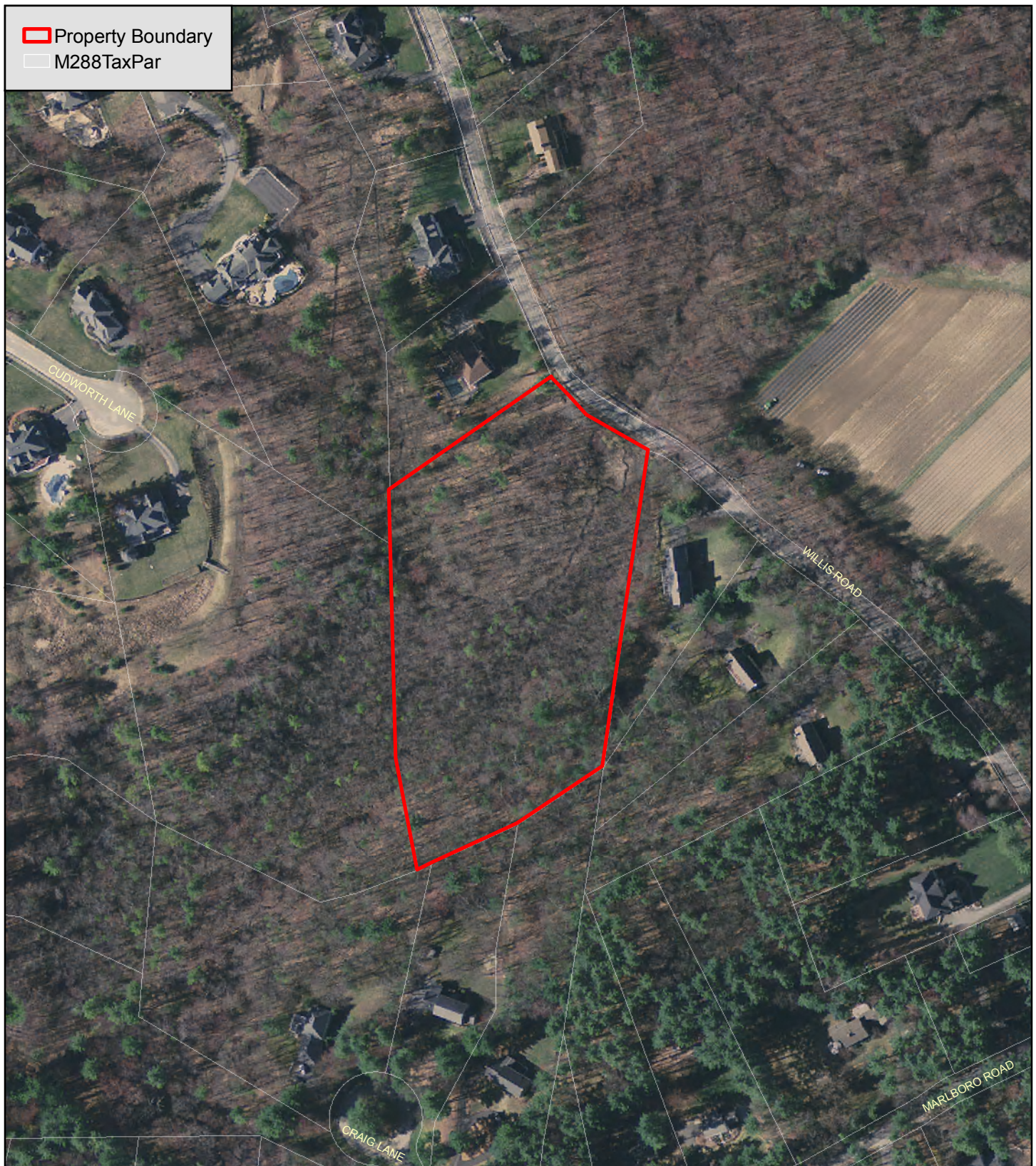
Prop ID: E07-0177
Prop Location: 159 WILLIS RD Sudbury, MA
Owner: GAYSHAN VADIM &
Co-Owner: DUBINCHIK IRINA

Prop ID: E07-0402
Prop Location: 6 CRAIG LN Sudbury, MA
Owner: JOACHIM MICHAEL & WINER ELLEN
Co-Owner:

Prop ID: E07-0403
Prop Location: 12 CRAIG LN Sudbury, MA
Owner: BRESNAHAN EDWARD W & JANE A
Co-Owner:

Prop ID: E07-0404
Prop Location: 16 CRAIG LN Sudbury, MA
Owner: ZUSMAN LAWRENCE A & SUSAN B TR
Co-Owner: 16 CRAIG LANE REALTY TRUST

Prop ID: E08-0602
Prop Location: MARLBORO RD Sudbury, MA
Owner: TOWN OF SUDBURY
Co-Owner: CONSERVATION



Orthophoto View of Site

Willis Road - Sudbury, MA



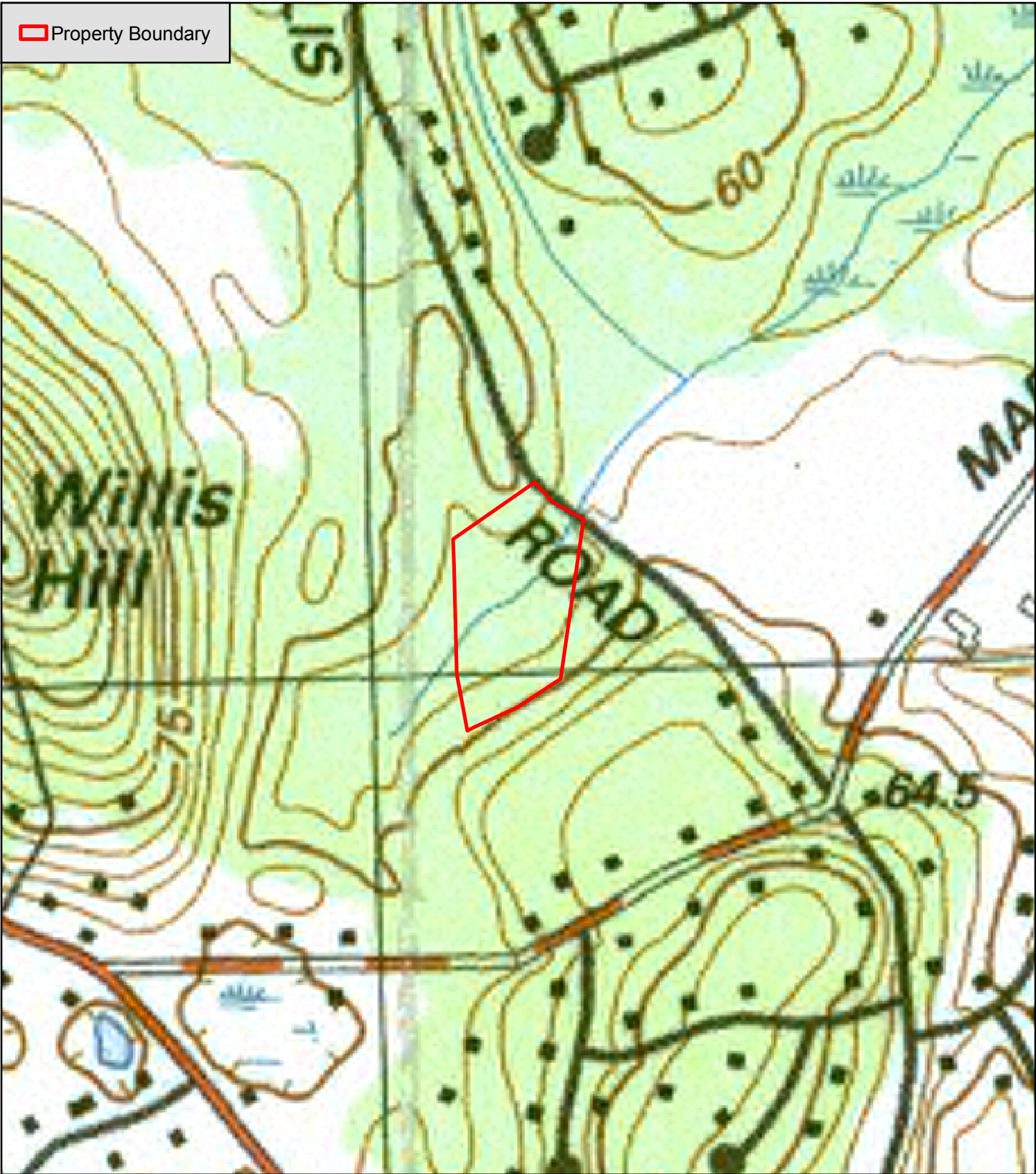
0 50 100 200 Feet

1 inch = 200 feet

Date: 9/11/2015

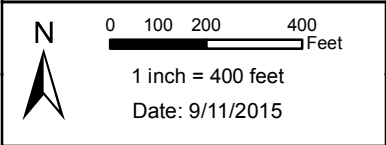
GIS Data Source: "Office of Geographic Information
(MassGIS), Commonwealth of Massachusetts Information
Technology Division"

GODDARD CONSULTING
Wetland Strategies
LLC



USGS Site Locus

Willis Road - Sudbury, MA



GIS Data Source: "Office of Geographic Information (MassGIS), Commonwealth of Massachusetts Information Technology Division"



January 4, 2018

Sudbury Conservation Commission
Department of Public Works Building
275 Old Lancaster Road
Sudbury, MA 01776

RE: Wildlife Habitat Evaluation
0 Willis Rd., Sudbury, MA (Assessor Map E-07, Lot 0178)

1. Introduction

Goddard Consulting, LLC (GC) is pleased to submit this Wildlife Habitat Evaluation (WHE) as a supplemental submission for the Notice of Intent (NOI) application, on behalf of the applicant, Michael Merullo. The WHE has been prepared in accordance with the Sudbury Wetlands Administration Bylaw (1998) and Wetland Protection Regulations

The resource area impacts for this project are not subject to any Wetland Protection Act alteration thresholds that would trigger an Appendix A or Appendix B review as described in the "Massachusetts Wildlife Habitat Protection Guidelines for Inland Wetlands" manual produced by the Mass Department of Environmental Protection (DEP), aka the "DEP manual." The project is subject to a WHE review under the Bylaw for alteration of Adjacent Upland Resource Area (AURA). Materials reviewed for the WHE include sheet 1 of 1 "*Proposed Sewage Disposal System. Lot 178*". By Sullivan, Connors & Associates, dated July 3, 2017.

The Bylaw Resource Area to be altered consists of the "front" portion of the 100-foot Buffer Zone/AURA with the resource area totaling 16,387 s.f. +/- . Thirty-eight trees are proposed to be removed within the front Buffer Zone, while fifty-six trees will remain in the undisturbed portions of the front buffer zone. This tree removal would be 40% of the trees within the Buffer Zone. The project has been designed so that no alteration will take place within the onsite wetlands or at a minimum 25-feet of the wetlands. The proposed Limit of Work (LOW) has been minimized to the greatest extent practicable in order to minimize the thirty-eight trees to be cut. A substantial mitigation plan is proposed, consisting of plantings of native shrubs along the edge of the proposed lawn, stormwater management for the driveway and house and a split rail fence along the limit of work to demarcate the limit of lawn for future owners.

Under the Sudbury Wetlands Administration Bylaw "*...wildlife habitat...*" is one of the "*...wetlands values...*" the "*...bylaw protects...*". Under the current Regulations, "*all resource areas are presumed significant for wildlife habitat interests and values.*" Further, "*The near-upland areas around wetland resources often play important roles in determining and maintaining the wildlife habitat values of associated wetlands.*"

Mark Arnold & Daniel Wells of GC conducted the WHE. The site inspection took place on September

14, 2017. Mr. Wells has a Master's Degree in Environmental and Forest Biology from the SUNY College of Environmental Science and Forestry, and over 18 years of experience conducting rare species surveys and wildlife habitat evaluations in Massachusetts. He therefore meets the criteria for conducting wildlife habitat evaluations listed in the WPA Regulations (310 CMR 10.60 (1)(b)). Mark Arnold has a Bachelor's degree in Civil Engineering from Worcester Polytechnic Institute and is enrolled in the Umass Amherst Soil Science Master's program. Mr. Arnold also has worked with Mr. Wells for the past 2 years on multiple projects that required WHE's.

This WHE will provide evidence that the project does not have a significant adverse effect on the "wildlife habitat" wetlands interest and value protected by the Bylaw, and that the proposed mitigation will provide an improvement in wildlife habitat over the existing conditions by increasing the quality of native shrubs that provide foraging and sheltering to the local wildlife.

2. Description of the Bylaw Resource Areas

Figure 1 shows the locations and extent of existing onsite Bylaw Resource Areas, which includes Bordering Vegetated Wetland (BVW) and two separate areas of 100-foot buffer zone. The figure also shows the locations of existing trees with a DBH of 5" or greater within these Bylaw resource areas for the front of the property.

2.1 Onsite Bordering Vegetated Wetland (BVW)

The onsite BVW is approximately 2.95 acres of the 4.46 acres of the site. The rear edge of the wetlands as shown on the plan is estimated from GIS, but this was found to be fairly accurate during the site visit. The wetland onsite is mostly forested with areas of dense shrubs and open areas with herbaceous cover (Photos 1 & 2). The wetland begins to the south and west behind the project site and slopes towards Willis Road with two intermittent streams forming off-site and joining in the center of the site and flowing to the culvert under Willis Road (Photos 3, 4 & 5). This wetland contains a mature tree canopy dominated by red maple and American elm (60-80% cover). Highbush blueberry, sweet pepperbush and winterberry are abundant native shrubs within the understory of the wetland, with a percent cover of 40-60%. Herbaceous cover was very dense in the open areas consisting of sensitive fern, jewel weed, rushes and sedges. The east side of the wetland that abuts the uplands on site does have invasive multiflora rose present in the wetland and immediate buffer zone.



Photo 1 - Onsite BVW, facing south from northern edge.



Photo 2 - Onsite BVW, facing south from center of BVW.



Photo 3 - Onsite intermittent stream junction within BVW



Photo 4 - Onsite intermittent stream within BVW



Photo 5 – Culvert under Willis Road

2.2 Front Buffer Zone

The total front buffer zone is 28,882 s.f. in extent. It extends west of the BVW edge sloping up from El. 195. to El. 199' towards the abutting property 159 Willis Road. To the north of the BVW, the first 25 feet of the buffer zone contains a mature tree canopy comprised of a diverse assemblage of deciduous and coniferous species (Photos 4, 5 & 6) dominated by red maple, red oak and white pine. Native shrubs are present with a 60-70% cover, including sweet pepperbush and highbush blueberry. Also present in the shrub layer are several invasive species including multiflora rose, glossy false buckthorn and Japanese barberry.



Photo 6 - Forested portion of inner 25 feet of onsite buffer zone, western edge of BVW, looking south



Photo 7 - Forested portion of inner 25 feet of onsite buffer zone (Near WF#20), looking north

Beyond the first 25 feet of forested habitat, the remainder of the buffer zone consists of open forest with mostly small shrubs interspersed. There are some denser clumps near the road.



Photo 8 -Portion of onsite buffer zone extending 25-100 feet north of BVW, facing North.



Photo 9 - Portion of onsite buffer zone, facing North



Photo 10 -Portion of onsite buffer zone, near Willis Road, facing North



Photo 11 -Portion of onsite buffer zone, near Willis Road, facing Northeast

2.3 Rear Buffer Zone

The rear buffer zone is estimated to be 31,800± s.f. in extent. The rear boundary of the lot is a short stone wall which help to confirm that the GIS is fairly accurate. The slope is steeper in the buffer zone which makes the wetland line fairly well defined. This buffer zone has a 90-100% tree canopy present dominated by black oak, white oak, white pine, American elm, white pine and red maple. More than 50 trees are located within this buffer zone with diameters of 9 inches to 3.3 feet. Many saplings under 9" are also present. The largest trees were two black oaks which had diameters of 3 feet and 3.3 feet. There were very few shrubs except along the edge of the wetland and the ground cover had patches of sensitive fern and other herbaceous species. No invasive species were noted, although a handful may be present.



Photo 12: Portion of onsite rear buffer zone (along #135/ #147 Willis Road Property line)



Photo 13: Portion of onsite rear buffer zone, looking southwest from stone wall along #135/ #147 Willis Road Property line (looking westerly of Photo 10).



Photo 14: Large Black Oak, in rear onsite Buffer Zone, behind #12 Craig Lane



Photo 15: Rear onsite Buffer Zone, behind #12 Craig Lane, looking southwest

3. Description of Existing Wildlife Habitat Characteristics

3.1 Onsite BVW

The onsite BVW contains numerous mature trees that may provide foraging, sheltering and nesting habitat for birds, small mammals and non-breeding habitat for amphibians. Gray and red squirrels are likely to make use of the mature trees and their nut and seed food sources. The central part of the wetland had hummocks with highbush blueberry and winterberry shrubs. Some of these areas are thick which provide excellent sheltering habitat along with food sources for many species. Ground cover in the open area of the wetland near Willis Road consisted of dense herbaceous cover and woody debris. The area does appear to be fairly wet but may be used as sheltering habitat for small mammals as well as redback salamanders and invertebrates.



Photo 16: Stream dry at Willis Road Culvert (9/14/17)

Two small streams join in the middle of the wetland and flow northeastward to a culvert under Willis Road. The streams were both observed to be intermittent. Sections of the stream are deeper than others which would provide ponding of shallow standing water during wet periods. These points may provide foraging, sheltering and breeding habitat for amphibians such as green frogs, but aren't likely used for breeding by vernal pool species. Hummocks covered with sphagnum moss were noted in the same areas. The area where water would pond is not likely deep enough to support over-wintering by turtles or frogs, however they could migrate through the channel during the spring and summer months for foraging and sheltering. No natural turtle nesting habitat (exposed, sparsely vegetated sandy soils) was observed within the property.

Other wildlife that may make use of the wetland system include small mammals such as chipmunks, voles, shrews, mice and moles which could find invertebrates, seeds and berries for food and rotting logs for shelter. Larger mammals such as skunks and raccoons could forage for invertebrate prey and use the wetland as a migratory corridor. Large mammals such as deer, foxes and coyotes could use the wetland as a migratory corridor to connect with the forest in other areas, but would not be expected to use the wetland as a denning site. Garter snakes may forage for insects and amphibians and take shelter under the numerous crevices and logs. A variety of birds likely make use of the nut-and-berry-producing plant species present within the BVW for food, and possibly for nesting in the tree or shrub canopy.

3.2 Onsite Front Buffer Zone

The upland forested habitat located in the northwest corner of the lot within the first 25 or so feet from the wetland includes foraging, sheltering and nesting habitat for small mammals and birds. The native shrubs within these areas may provide cover for birds and small mammals, seeds and fruit for birds and small mammals, and nectar for insects when flowering. The non-native invasive

shrub species present are not likely to provide much wildlife habitat other than cover and possibly nesting habitat for birds. The densest thickets are located closest to Willis Road with the shrubs thinning out further from the roadway. Trees within this area vary from 5-36" in diameter.

The buffer zone extending from 25-100 feet from BVW is more open in the shrub layer except right along the road. Trees vary in size from 7-30" with only one tree showing a cavity and this tree has a split at the base as well which would likely cause its death. A dead snag was noted along the limit of work near the WP-19 & EH-18. No unique or uncommon habitat features are present within the Buffer Zone. Several highbush blueberry shrubs which provide an excellent food source were noted within the buffer zone. Those within the proposed work area could be transplanted to the areas to remain naturalized.



Photo 17: Tree cavity in Tree (20")

3.3 Rear Onsite Buffer Zone

The rear onsite buffer zone contains more than 50 trees which provide multiple location to provide wildlife habitat in the form of foraging, sheltering and nesting habitat to small mammals and birds. The multiple oaks will provide acorns which are valuable to squirrels, chipmunks and blue jays. The two large black oaks also provide good potential for large cavities in the future. The secluded nature of this buffer zone makes the likelihood of its use being frequent a good possibility and with no pockets of invasive species being noted it also provides excellent native habitat for wildlife.

4. Proposed Bylaw Resource Area Alterations

Figure 2 shows the project limit of disturbance overlaid on the existing resource areas. It also shows the locations of the 38 trees proposed to be removed within the resource areas. It should be noted that there are 56 trees will remain in the undisturbed front upland resource area which results in 60% of the trees remaining.

4.1 Onsite BVW

There is no alteration proposed to this resource area, and the nearest alteration is greater than 25 feet away from the wetland edge. This preserves all the excellent wildlife habitat within the wetland.

4.2 Onsite Buffer Zone

The project's alterations in this buffer zone consist of grading, driveway, house, water garden and an underground stormwater management system. The footprint of the area to be disturbed is approximately 16,387 s.f. Importantly, no work will take place within the 25-foot. The tree with the cavity will be removed, but as its health is uncertain due to the large split at the base its longevity was already questionable.

4.3 Rear onsite Buffer Zone

This buffer zone will remain completely undisturbed which will preserve this excellent natural buffer zone. Including over 50 trees with two being over 3' in diameter.

5. Evaluation of Impacts to Wildlife Habitat

5.1 Onsite BVW

There is no alteration to the onsite BVW. The nearest alteration is greater than 25 feet away from the wetland, and the mitigation measures described below have been designed to improve upon the wildlife habitat conditions within the buffer zone, and therefore protect and improve upon the wildlife habitat currently present within the BVW.

5.2 Onsite Buffer Zone

The project will not impact any significant wildlife habitat features such as dead snags, mammal dens, and will preserve 56 of the 94 trees. The project will also preserve the densest buffer zone which is within 25' of the wetland.

5.3 Rear Onsite Buffer Zone

The project will not impact any wildlife habitat features within the rear onsite buffer zone. No work is proposed and it will be left preserved and will continue to provide significant wildlife habitat.

6. Proposed Mitigation Details

The proposed site plans detail the proposed mitigation. The mitigation includes the planting of 78 native shrubs (36" Height min.) along the limit of work, plus a spilt rail fence outside the proposed 78 shrubs to protect the undisturbed buffer zone.

The specific components of the Mitigation Plan are as follows:

1. Fully protect undisturbed Buffer zone (minimum 25') and BVW including all existing trees.

2. Transplant berry producing shrubs in the proposed disturbed areas to the areas proposed to remain naturalized. This would be tied to the removal of the invasive species and native transplants can be installed where invasive species are removed.
3. Plant 78 native shrubs (36" height min.) along the limit of work.
4. Construct a Rain Garden with 16 native shrubs
5. Complete a 2-year monitoring plan of invasive plant removal within the Buffer Zone and 10' of wetland edge.

The proposed mitigation will restore, enhance, and mitigate for any wildlife habitat characteristics and functions that may be loss due to proposed work.

7. Conclusions

- No unique or uncommon wildlife habitat features will be eliminated for construction of the project.
- All but one tree be removed do not contain any obvious nesting cavities, and there will be numerous trees that remain outside of the work area throughout the site.
- All of the existing important habitat features identified above (tree cavities, large oak trees, nut-and-berry-producing plants, rotting logs/woody debris, etc.) are present and/or abundant elsewhere within the site's undeveloped wetland and upland resource areas.
- Enhancement of 78 native shrubs along the limit of work.
- Transplanting of native shrubs from the proposed disturbed areas to the naturalized areas thereby saving most of the berry producing sources within the disturbed buffer zone.
- Removal and monitoring of invasive species will provide for a more robust native habitat.
- The proposed mitigation will replace, and greatly increase the abundance of wildlife food source function altered by the project.
- BVW will continue to function as it has prior to proposed development.
- The footprint and magnitude of the wildlife habitat impacts is small relative to the amount of forested wetland and upland forest that will remain in place upon completion of the project.
- No work will take place within the 25 feet immediately adjacent to the wetlands, which is considered the most important habitat for reptiles, amphibians and small mammals that utilize wetland resource area.

7.1 Additional Recommendations:

- ❖ A dead snag resides near the trees labeled as WP-19 & EH-18. This snag should be preserved. WP-19 should be hand cut at base and its stump ground to prevent damage to adjacent snag.

Based on the above, we conclude that the proposed alteration of the onsite and offsite buffer zones will not result in an impairment of the capacity of either Bylaw Resource Area to provide any important wildlife habitat functions.

Goddard Consulting, LLC

By: 

Mark R. Arnold, BSc, Wetland Engineer

&

By: 

Daniel L. Wells, M.S.
Senior Wildlife Biologist and Wetland Scientist

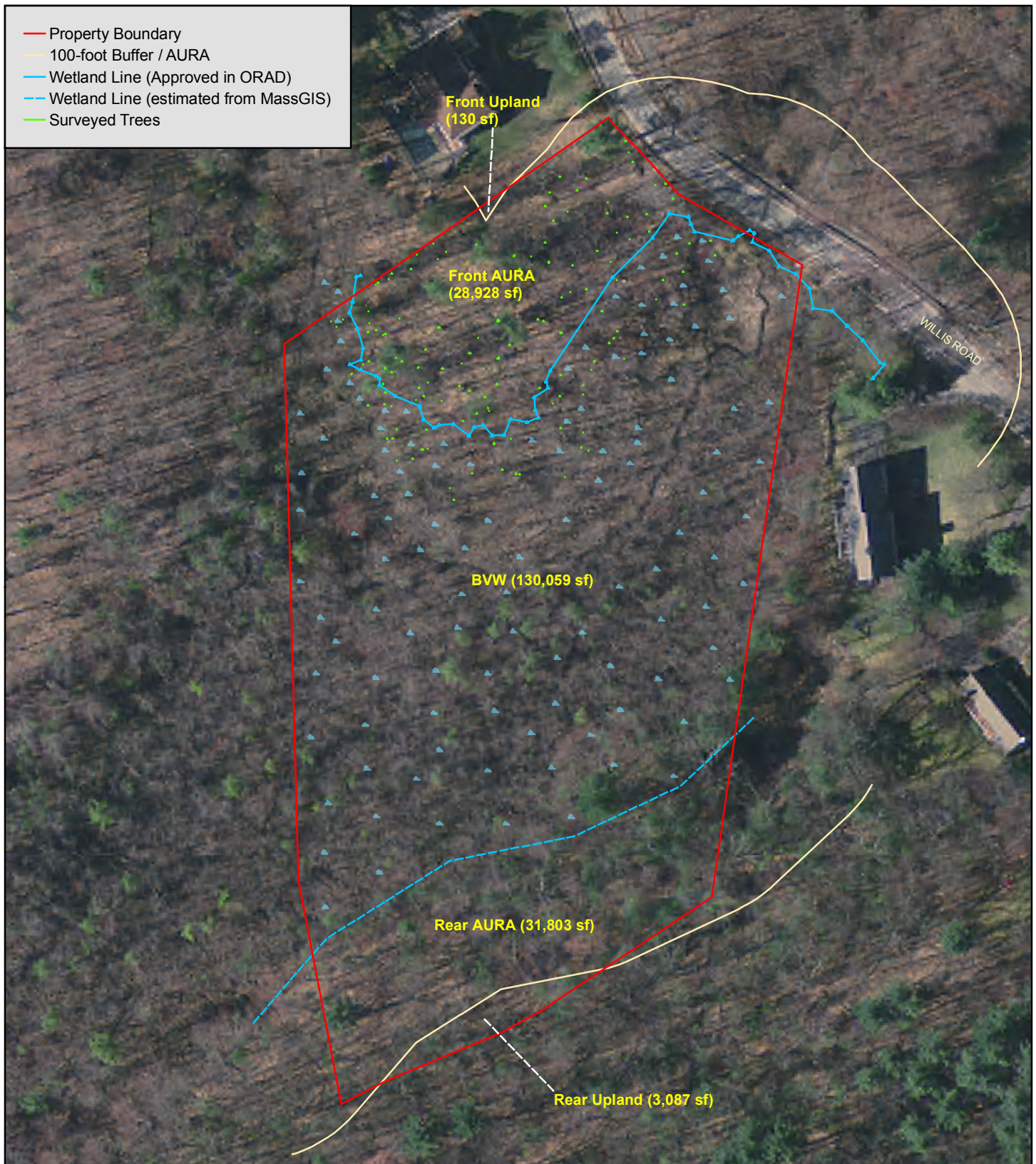


Figure 1 - Orthophoto View of Site

Willis Road - Sudbury, MA



0 25 50 100 Feet

1 inch = 100 feet

Date: 1/4/2018

GIS Data Source: "Office of Geographic Information (MassGIS), Commonwealth of Massachusetts Information Technology Division"

Engineering Data Provided by: Connorstone Engineering

GODDARD CONSULTING LLC
Strategic Wetland Permitting

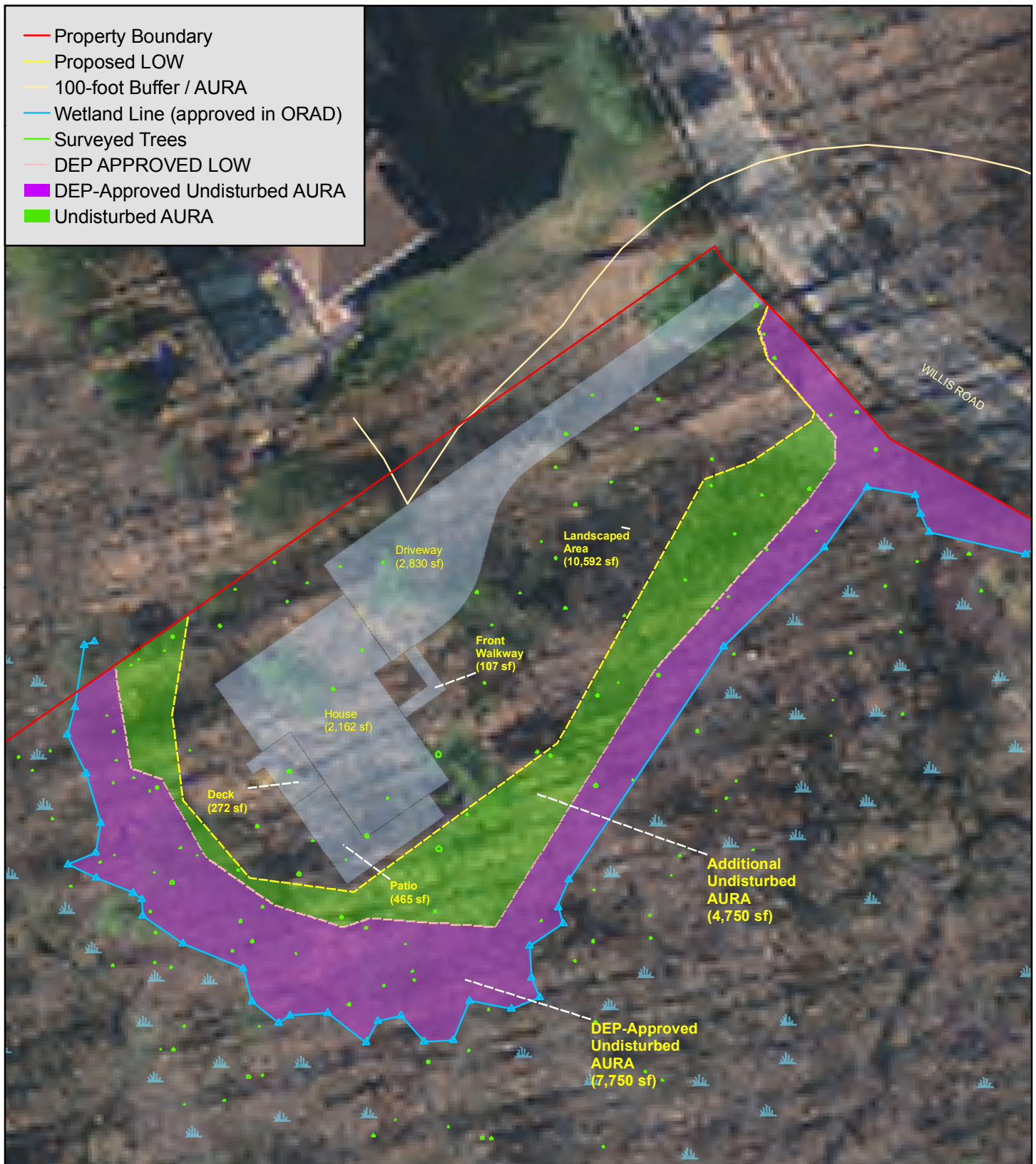


Figure 2 - Limit of Work Overlay

Willis Road - Sudbury, MA



0 10 20 40 Feet

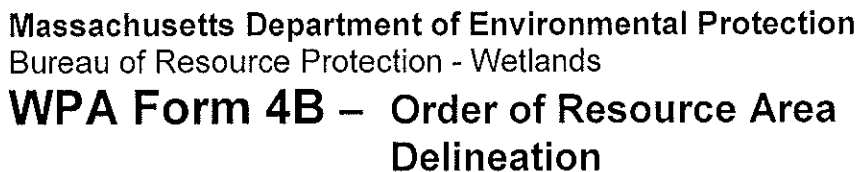
1 inch = 40 feet

Date: 1/4/2018

GIS Data Source: "Office of Geographic Information (MassGIS), Commonwealth of Massachusetts Information Technology Division"

Engineering Data Provided by: Connorstone Engineering

GODDARD CONSULTING LLC
Strategic Wetland Permitting



City/Town



**WPA Form 4B – Order of Resource Area
Delineation**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

301-1172

MassDEP File Number

eDEP Transaction Number

Sudbury

City/Town

B. Order of Delineation

1. The Conservation Commission has determined the following (check whichever is applicable):

- a. ☒ **Accurate:** The boundaries described on the referenced plan(s) above and in the Abbreviated Notice of Resource Area Delineation are accurately drawn for the following resource area(s):

1. ☒ Bordering Vegetated Wetlands
2. ☒ Other resource area(s), specifically:

a. Intermittent Stream; b. bank (as shown on the plan revised through 2/23/2016)

- b. ☐ **Modified:** The boundaries described on the plan(s) referenced above, as modified by the Conservation Commission from the plans contained in the Abbreviated Notice of Resource Area Delineation, are accurately drawn from the following resource area(s):

1. ☐ Bordering Vegetated Wetlands
2. ☐ Other resource area(s), specifically:

a.

- c. ☐ **Inaccurate:** The boundaries described on the referenced plan(s) and in the Abbreviated Notice of Resource Area Delineation were found to be inaccurate and cannot be confirmed for the following resource area(s):

1. ☐ Bordering Vegetated Wetlands
2. ☐ Other resource area(s), specifically:

3. ☐ The boundaries were determined to be inaccurate because:



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

**WPA Form 4B – Order of Resource Area
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C. Findings

This Order of Resource Area Delineation determines that the boundaries of those resource areas noted above, have been delineated and approved by the Commission and are binding as to all decisions rendered pursuant to the Massachusetts Wetlands Protection Act (M.G.L. c.131, § 40) and its regulations (310 CMR 10.00). This Order does not, however, determine the boundaries of any resource area or Buffer Zone to any resource area not specifically noted above, regardless of whether such boundaries are contained on the plans attached to this Order or to the Abbreviated Notice of Resource Area Delineation.

This Order must be signed by a majority of the Conservation Commission. The Order must be sent by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate DEP Regional Office (see <http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html>).

D. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Resource Area Delineation. When requested to issue a Superseding Order of Resource Area Delineation, the Department's review is limited to the objections to the resource area delineation(s) stated in the appeal request. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order of Resource Area Delineation will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order or Determination, or providing written information to the Department prior to issuance of a Superseding Order or Determination.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

**WPA Form 4B – Order of Resource Area
Delineation**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

301-1172

MassDEP File Number

eDEP Transaction Number

Sudbury

City/Town

E. Signatures

March 9, 2016
Date of Issuance

Please indicate the number of members who will sign this form.

1. Number of Signers

[Signature]
Signature of Conservation Commission Member
Charles Russo
[Signature]
Signature of Conservation Commission Member
DAVE HENKELS
[Signature]
Signature of Conservation Commission Member
Bruce Portak
Signature of Conservation Commission Member

[Signature]
Signature of Conservation Commission Member
Elizabeth Armstrong
[Signature]
Signature of Conservation Commission Member
[Signature]
Signature of Conservation Commission Member
Fredlaender
Signature of Conservation Commission Member

This Order is valid for three years from the date of issuance.

If this Order constitutes an Amended Order of Resource Area Delineation, this Order does not extend the issuance date of the original Final Order, which expires on _____ unless extended in writing by the issuing authority.

This Order is issued to the applicant and the property owner (if different) as follows:

2. ☐ By hand delivery on _____

a. Date

3. ☒ By certified mail, return receipt requested on _____

a. Date



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

May 25, 2017

Mr. Michael Merullo
370 Chestnut Street
Lynnfield, MA 01940

RE: WETLANDS/SUDBURY
DEP File #301-1186
0 Willis Road
**SUPERSEDING ORDER OF
CONDITIONS**

Dear Mr. Merullo:

Following an in-depth review of the file referenced above, and in accordance with Massachusetts General Laws, Chapter 131, Section 40, the Northeast Regional Office of the Massachusetts Department of Environmental Protection, Wetlands Program ("MassDEP"), is issuing the enclosed Superseding Order of Conditions. This SOC allows the project, based upon: 1) information and plans submitted; 2) information gathered during an on-site inspection; and 3) reasons MassDEP has deemed necessary to protect the statutory interests identified in the Wetlands Protection Act ("WPA") and Regulations.

The project site is located at 0 Willis Road, Sudbury, Massachusetts and is approximately 4.46 acres in size. The undeveloped lot contains a dense upland forest, forested wetlands and two (2) intermittent streams that flow from south to north and west to east, respectively. An Order of Resource Area Delineation ("ORAD") (DEP File #301-1172) was issued by the Sudbury Conservation Commission ("SCC") in March 9, 2016, which confirmed the boundary of the Bordering Vegetated Wetlands ("BVW"), the presence of the intermittent stream and Bank.

The project, as presented in the May 17, 2016 Notice of Intent ("NOI"), proposed to construct a single-family house with a garage, driveway, deck, patio, lawn/landscaping, utilities, a septic system, and site clearing and grading within the 100-foot Buffer Zone to BVW. The original design proposed to clear all of the trees and vegetation up to ten (10) feet of the BVW.

On August 10, 2016, the SCC issued an Order of Conditions ("OOC") denying the project because the work could not be conditioned to protect the interests of the WPA.

This information is available in alternate format. Call the MassDEP Diversity Office at 617-556-1139. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

Specifically, the SCC raised concerns regarding the extent of work within the Buffer Zone and the negative effects it would have on the adjacent BVW through the loss of tree canopy, leaf litter, wildlife habitat and pollution attenuation.

On August 19, 2016, Goddard Consulting, LLC filed an appeal on your behalf in accordance with 310 CMR 10.05(7).

On September 21, 2016, MassDEP conducted a site inspection. In attendance was your wetland consultant and members of the SCC. At the site visit, MassDEP staff discussed the project and observed existing site conditions with a focus on the existing tree and canopy cover, as well as the proposed location of the house.

Based upon a review of the project site and information contained in the file, MassDEP has determined that the site contains the following Areas Subject to Protection Under the Act: 1) Bordering Vegetated Wetlands ("BVW"); and 2) Banks associated with the intermittent streams. These areas are presumed to protect one or more of the statutory interests identified in the Wetlands Protection Act Regulations and are noted in the attached SOC.

MassDEP was concerned that the proposed clearing of mature trees, which included a mix of deciduous and evergreen trees, native shrubs and groundcover, was likely to adversely affect the functions of the BVW through loss of shading, changes in temperature, as well as changes in the plant community (i.e., the reduction of shade tolerant plants and the introduction of non-native species). On October 14, 2016, MassDEP issued an information request asking for additional information, including a revised plan that provided a wider, undisturbed buffer along the edge of the BVW, or an analysis that demonstrated that proposed tree and understory clearing would not have an "edge effect" on the BVW. In addition, MassDEP requested that the applicant quantify the amount of Buffer Zone that currently exists on the site and the amount of permanent impacts proposed within the Buffer Zone.

On December 14, 2016, your wetland consultant submitted a response letter asserting the removal of trees would result in minimal shade reduction in the BVW because of the location of the sun's path in relation to the location of the BVW on the site, coupled with the preservation of seventeen (17) trees along the erosion control line and wetland boundary. A subsequent letter was submitted to MassDEP on January 24, 2017 from Goddard Consulting in response to the SCC's December 19, 2016 comment letter further explaining his previous response that the sun would cast a shadow away from the BVW and asserting that the remaining trees would provide shade in the BVW and Buffer Zone.

On February 23, 2017, MassDEP issued a second letter reiterating its request that the plan be revised to provide a wider, undisturbed buffer along the BVW boundary, and to clarify whether the proposed limit of work coincided with the erosion control line. Goddard Consulting submitted a response letter, dated May 1, 2017, accompanied by a revised plan that depicts a wider, undisturbed buffer along the western and southwestern portion of the lot. This was accomplished by relocating the erosion control line farther away from the BVW boundary, which also resulted in the preservation of an additional 19 trees.

Based on the revised plan, it is MassDEP's opinion that the proposed project meets the performance standards set forth 310 CMR 10.53(1). It is MassDEP's position that the enclosed

Superseding Order of Conditions approving the project as proposed and conditioned serves to protect the statutory interests identified in the Wetlands Protection Act and Regulations. However, MassDEP reserves the right, should there be further proceedings in this matter, to raise additional issues and present further evidence as may be appropriate. Should you or any concerned party dispute these findings, your attention is directed to the language at the end of the attached Orders specifying the rights and procedures for appeal.

If you have any questions concerning this Superseding Order of Conditions, please contact Pamela Merrill at 978.694.3249 or at pamela.merrill@state.ma.us.

Sincerely,



Rachel Freed
Deputy Regional Director
Bureau of Water Resources – NERO



Pamela A. Merrill
Environmental Analyst
Wetlands Program- NERO

Cc: Goddard Consulting, LLC, 291 Main Street, Suite 8, Northborough, MA 01532
Sudbury Conservation Commission, 275 Old Lancaster Road, Sudbury, MA 01776



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands Program
Superseding Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #

301-1186

A. General Information

1. From: Northeast Regional Office
Massachusetts Department of Environmental Protection (MassDEP/the Department)
2. This issuance is for (check one):
a. ☒ Superseding Order of Conditions
b. ☐ Amended Superseding Order of Conditions
3. To: Applicant:
- Michael Merullo
a. First Name, Last Name b. Company
- 370 Chestnut Street
c. Organization
d. Mailing Address Line 1
- Lynnfield MA 01940
e. City/Town f. State g. Zip Code
4. Property Owner (if different from applicant):
- a. First Name b. Last Name
- c. Organization
- d. Mailing Address Line 1
- e. City/Town f. State g. Zip Code
5. Project Location:
- 0 Willis Road Sudbury
a. Street Address b. City/Town
- E07 178
c. Assessors Map/Plat Number d. Parcel/Lot Number
- Latitude and Longitude, if known:
e. Latitude f. Latitude



A. General Information (cont'd)

6. Property recorded at the Registry of Deeds (attach additional information if more than one parcel):

Middlesex South

a. County

64525

c. Book

24315

b. Certificate (if registered land)

131

d. Page

7. Dates:

a. Date NOI Received

b. Date Local Order Issued

September 21, 2016

c. Date of SOC Site Visit

8. Final Approved Plans and Other Documents (attach additional plans or document references):

Proposed Sewage Disposal System

a. Plan Title

Sullivan, Connors and Associated

b. Prepared By

April 19, 2017

d. Final Revision Date

Vito Colonna, R.P.E. & Michael J. Sullivan, R.S.

c. Signed and Stamped By

1"=20'

e. Scale

See attachment to the Superseding Order of Conditions

f. Additional Plan or Document Title

g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act - Following the review of the above-referenced Notice of Intent and based on the information provided in this application, the Department finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

- a. ☒ Public Water Supply b. ☐ Land Containing Shellfish c. ☒ Prevention of Pollution
d. ☒ Private Water Supply e. ☒ Fisheries f. ☒ Protection of Wildlife Habitat
g. ☒ Groundwater Supply h. ☒ Storm Damage Prevention i. ☒ Flood Control

2. This Department hereby finds the project, as proposed, is (check one):

Approved subject to:

- a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. The Department orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



B. Findings (cont'd)

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

3. ☒ Buffer Zone Impacts: Shortest distance between limit of project disturbance and wetland boundary (if available) 10
a. linear feet

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	<u> </u> a. linear feet	<u> </u> b. linear feet	<u> </u> c. linear feet	<u> </u> d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
	<u> </u> e. c/y dredged	<u> </u> f. c/y dredged		
7. <input type="checkbox"/> Bordering Land Subject to Flooding Cubic Feet Flood Storage	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
	<u> </u> e. cubic feet	<u> </u> f. cubic feet	<u> </u> g. cubic feet	<u> </u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding Cubic Feet Flood Storage	<u> </u> a. square feet	<u> </u> b. square feet		
	<u> </u> c. cubic feet	<u> </u> d. cubic feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
9. <input type="checkbox"/> Riverfront area	<u> </u> a. total sq. feet	<u> </u> b. total sq. feet		
Sq feet within 100 feet	<u> </u> c. square feet	<u> </u> d. square feet	<u> </u> e. square feet	<u> </u> f. square feet
Sq feet between 100-200 feet	<u> </u> g. square feet	<u> </u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

10. ☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and wetland boundary (if available)
a. linear feet

11. ☐ Designated Port Areas - Indicate size under Land Under the Ocean, below

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
12. <input type="checkbox"/> Land Under the Ocean	<u> </u> a. square feet	<u> </u> b. square feet		
	<u> </u> c. c/y dredged	<u> </u> d. c/y dredged		

13. ☐ Barrier Beaches - Indicate size under Coastal Beaches and/or Coastal Dunes below.



B. Findings (cont'd)

- | | | | | |
|--|-------------------|-------------------|-----------|-----------------|
| 14. <input type="checkbox"/> Coastal Beaches | a. square feet | b. square feet | c. c/y | d. c/y nourish. |
| 15. <input type="checkbox"/> Coastal Dunes | a. square feet | b. square feet | c. c/y | d. c/y nourish. |
| 16. <input type="checkbox"/> Coastal Banks | a. linear feet | b. linear feet | | |
| 17. <input type="checkbox"/> Rocky Intertidal Shores | a. square feet | b. square feet | | |
| 18. <input type="checkbox"/> Salt Marshes | a. square feet | b. square feet | c. square | d. square feet |
| 19. <input type="checkbox"/> Land Under Salt Ponds | a. square feet | b. square feet | | |
| | c. c/y dredged | d. c/y dredged | | |
| 20. <input type="checkbox"/> Land Containing Shellfish | a. square feet | b. square feet | c. square | d. square feet |
| 21. <input type="checkbox"/> Fish Runs - Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above | | | | |
| | a. c/y dredged | b. c/y dredged | | |
| 22. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | a. square feet | b. square feet | | |
| 23. <input type="checkbox"/> Riverfront area | a. total sq. feet | b. total sq. feet | | |
| Sq feet within 100 feet | c. square feet | d. square feet | e. square | f. square feet |
| Sq feet between 100-200 feet | g. square feet | h. square feet | i. square | j. square feet |

C. General Conditions Under Massachusetts Wetlands Protection Act

Brief Project Description of Permitted Activities:

This permit allows for the construction of a single-family house with associated driveway, septic system, deck, patio, and site clearing and grading in the Buffer Zone to Bordering Vegetated Wetlands.



C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

(only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. the work is a maintenance dredging project as provided for in the Act; or
 - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. If this Order constitutes an Amended Superseding Order of Conditions, this Amended Superseding Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Superseding Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Department on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MA DEP"]

"File Number 301-1186 "



C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Department of Environmental Protection.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Department in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Department.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Department, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. The work associated with this Order (the "Project") is (1) ☐ is not (2) ☒ subject to the Massachusetts Stormwater Standards. If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:
 - a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.



C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
 - i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;
 - iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
 - v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMPs Operation and Maintenance Plan ("O&M Plan") and certifying the following: i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, and acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (See attached sheet(s) or below for additional Special Conditions numbered 20 through 47.

See the attached document for a list of Special Conditions.

D. Findings Under Municipal Wetlands Bylaw or Ordinance

SUPERSEDING ORDER OF CONDITIONS SPECIAL CONDITIONS

**0 Willis Road, Sudbury
DEP File No. 301-1186**

20. All work shall conform to the plans, reports and special conditions:
 - Plan entitled, "Proposed Sewage Disposal System," dated March 3, 2016, last revised on April 19, 2017, prepared by Sullivan, Connors and Associates, and signed and stamped by Vito Colonna, R.P.E. and Michael James Sullivan, R.S.
 - Correspondence to MassDEP Northeast Regional Office dated May 1, 2017 from Goddard Consulting, LLC.
21. This Superseding Order of Conditions supersedes all previous Orders issued for the project, DEP File #301-1186. All work shall conform to the plans and documentation referenced above unless otherwise specified in the Superseding Order. In case of a conflict, the conditions of this Superseding Order of Conditions shall prevail.
22. A copy of this Superseding Order of Conditions shall be included in all construction contracts and shall supersede any conflicting requirements.
23. A copy of this Superseding Order of Conditions as well as the plans and reports referenced in Condition #20 shall be available on site while activities regulated by this Order are being performed. In addition to the owners, all contractors and subcontractors shall be held responsible for compliance with this Superseding Order.
24. No work shall commence on-site until all appeal periods have elapsed and this Superseding Order of Conditions has been recorded with the Registry of Deeds and MassDEP has been formally notified via the form provided at the end of this Order.
25. This Superseding Order of Conditions shall apply to any successor or assigns in interest or control and any other party engaging in activity on the property identified in the Notice of Intent. MassDEP shall be notified in writing within 30 days of all transfers of title of any portion of property that takes place prior to the issuance of a Certificate of Compliance.
26. Any proposed or executed change in the plans approved under this Superseding Order shall require the applicant to file a new Notice of Intent with the Sudbury Conservation Commission ("SCC") or to inquire of MassDEP in writing whether the change is substantial enough to require a new filing. A copy shall be sent at the same time to the SCC. Any errors in the plans or information submitted by the applicant shall be considered changes and the above procedures shall be followed.

27. Members and agents of MassDEP shall have the right to enter and inspect the premises to evaluate compliance with the conditions contained in this Superseding Order of Conditions, and may require the submittal of any data deemed necessary by MassDEP for that evaluation.
28. Prior to the commencement of work on site, except for the installation of the erosion controls, there shall be a pre-construction meeting between the applicant, the project supervisor, the contractor(s) performing the work, a representative from SCC and MassDEP to ensure the requirements of the Superseding Order of Conditions are understood. Arrangements for the meeting shall be with made at least two (2) weeks prior to any activity. Please contact Pamela Merrill, MassDEP Wetlands Program at 978.694.3249 or at pamela.merrill@state.ma.us.
29. Prior to the pre-construction meeting, the erosion control barriers shall be installed in the location shown on the record plan referenced in Special Condition #20. Additionally, the hay bales (or equivalent) shall be installed along the proposed silt fence line that is shown on the record plan.
30. No later than the pre-construction meeting, the applicant shall submit a detailed construction schedule to MassDEP for approval. The construction schedule shall include, but is not limited to, site clearing and grading, excavation for the foundation of the house, construction of the home, utilities and permanent stabilization of the site. Work shall not commence until MassDEP has approved the construction schedule.
31. No later than the pre-construction meeting, the applicant shall provide MassDEP with a contact list containing the telephone number, address and email for the project supervisor and site contractor.
32. The erosion control measures shall serve as the limit of work, and shall be maintained in good repair until disturbed areas have been fully stabilized with vegetation or other means acceptable to MassDEP. At no time shall sediments be deposited in a wetland resource area.
33. The applicant shall immediately correct any erosion problems that occur on the site and shall also immediately notify MassDEP and the SCC. MassDEP reserves the right to require additional erosion controls and/or damage prevention controls that are deemed necessary.
34. The applicant shall have on hand at the start of work additional erosion controls materials (stored under cover) for emergency and routine replacement.
35. Erosion controls shall remain in place until MassDEP approves their removal.
36. Wetland flags shall be maintained at all times and replaced if they are missing until MassDEP approves their removal or a Certificate of Compliance has been issued.

37. Since the majority of the lot is within the 100-foot Buff Zone, all soil stockpiles shall be located as far from the BVW boundary as possible and shall be surrounded by erosion controls.
38. The applicant shall permanently mark the edge of the erosion control line with large boulders, fencing, shrubs or by other means acceptable to MassDEP prior to the construction of the new house. This boundary will assure that no future inadvertent encroachment into the BVW occurs. This Condition shall remain in effect in perpetuity and shall be noted as such in the Certificate of Compliance.
39. Immediately after the installation and backfilling of the house foundation, the applicant shall submit a foundation as-built plan to MassDEP and copied to the SCC. This interim as-built plan shall include spot elevations of all corners of the foundation, 100-Buffer Zone and measurements from the foundation to the closest wetland flag(s).
40. Excess soils shall be removed from the site and disposed of legally.
41. At no time during or after construction shall fill or other material be placed, slump into or fall beyond the limit of grading as shown on the plan. The applicant shall be responsible for inspecting and maintaining all slopes and shall immediately notify the MassDEP and the SCC if slumping, erosion or encroachment occurs.
42. If dewatering is necessary, a dewatering basin shall be constructed in an upland area and water shall be effectively filtered or settled to remove silt prior to being discharged. MassDEP shall be notified prior to any dewatering activities.
43. Discharges from any dewatering activities shall not cause scouring or erosion to the BVW or the Buffer Zone.
44. Storing, servicing or cleaning of equipment, including but not limited to fueling, changing, adding or applying lubricants or hydraulic fluids, or washing/rinsing of trucks or equipment shall be performed no less than 75-feet from the BVW.
45. There shall be no discharge or spillage of fuel, oil or other pollutants, including sediments, onto any part of the site. The applicant shall take all reasonable precautions to prevent the release of pollutants by ignorance, accident or vandalism.
46. Immediately upon completion of construction, all exposed soils shall be seeded with appropriate vegetation or otherwise stabilized by a method acceptable to MassDEP. Where necessary, loam and seed shall be held in place using jute matting or the equivalent for permanent stabilization against soil erosion. All materials not to remain on the site shall be removed and disposed of in a legal manner.

47. Upon completion of the project, the applicant shall request a Certificate of Compliance (WPA Form 8A) from MassDEP and shall submit the following information with the request:
- a. A written statement prepared and signed by a professional engineer registered in the Commonwealth of Massachusetts certifying compliance with the approved plans referenced above and this Superseding Order of Conditions and setting forth deviations, if any exist;
 - b. An as-built site plan prepared and stamped by a registered professional engineer in the Commonwealth of Massachusetts showing the location and grades of the project, including, but not limited to: the house, driveway, deck, patio, lawn, subsurface utilities entering the property, measurements from the house to the wetland flags and topography shown in one (1) foot contours. The as-built plan shall also include the permanent bounds and plantings along the erosion control line, all wetland flags, the 100-foot Buffer Zone and the date(s) of survey.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands Program
Superseding Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
301-1186

To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no jurisdiction to supersede the local by-law order.

E. Issuance

This Order is valid for three years from the date of issuance, unless otherwise specified as a special condition pursuant to General Conditions # 4 or # 6.

Issued by: **Massachusetts Department of Environmental Protection:**

Northeast Regional Office

MassDEP Regional Office

Rachel Freed

Wetland Section Chief Signature

Rachel Freed

Wetland Section Chief Printed Name

May 25, 2017

Date

This Order is issued to the applicant as follows:

☐ by Hand delivery on

☒ by certified mail on:

Date

25 May 2017 70151520000214149578

Date – Certified Mail #



F. Appeal Rights and Time Limits

The applicant, the landowner, the conservation commission, any person aggrieved by the Superseding Order, Determination or other Reviewable Decision as defined at 310 CMR 10.04, who previously participated in the proceedings leading to this Reviewable Decision, the conservation commission, or any ten (10) residents of the city or town where the land is located if at least one resident was previously a participant in the permit proceeding, are hereby notified of their right to appeal this Reviewable Decision pursuant to M.G.L. c.30A, § 10, provided the request is made by certified mail or hand delivery to the Department, along with the appropriate filing fee and a MassDEP Fee Transmittal Form within ten (10) business days of the date of issuance of this Superseding Order or Determination, and addressed to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
One Winter Street, 2nd Floor
Boston, MA 02108

A copy of the request (hereinafter also referred to as Appeal Notice) shall at the same time be sent by certified mail or hand delivery to the Conservation Commission, the applicant, the person that requested the Superseding Order or Determination, and the issuing office of the MassDEP at:

MassDEP – Northeast Region
Wetlands Program
205B Lowell Street (street address)
Wilmington, MA 01887 (city/town, state, zip)

In the event that a ten-resident group requested the Superseding Order or Determination, the Appeal Notice shall be served on the designated representative of the ten resident group, whose name and contact information is included in this Reviewable Decision (when relevant).

Contents of Appeal Notice

An Appeal Notice shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6) and 310 CMR 10.05(7)(j), and shall contain the following information:

- a) the MassDEP Wetlands File Number, name of the applicant, landowner if different from applicant, and address of the project;
- b) the complete name, mailing address, email address, and fax and telephone numbers of the party filing the Appeal Notice; if represented by consultant or counsel, the name, fax and telephone numbers, email address, and mailing address of the representative; if a ten residents group, the same information for the group's designated representative;
- c) if the Appeal Notice is filed by a ten (10) resident group, then a demonstration of participation by at least one resident in the previous proceedings that led to this Reviewable Decision;
- d) if the Appeal Notice is filed by an aggrieved person, then a demonstration of participation in the previous proceeding that lead to this Reviewable Decision and sufficient written facts to demonstrate status as a person aggrieved;
- e) the names, telephone and fax numbers, email addresses, and mailing addresses of all other interested parties, if known;



F. Appeal Rights and Time Limits (cont.)

- f) a clear and concise statement of the alleged errors contained in the Department's decision and how each alleged error is inconsistent with 310 CMR 10.00 and does not contribute to the protection of the interests identified in the Wetlands Protection Act, M.G.L. c.131, § 40, including reference to the statutory or regulatory provisions that the party filing the Appeal Notice alleges has been violated by the Department's Decision, and the relief sought, including any specific desired changes to the Department's decision;
- g) a copy of the Department's Reviewable Decision that is being appealed and a copy of the underlying Conservation Commission decision if the Reviewable Decision affirms the Conservation Commission decision;
- h) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant and the conservation commission; and
- i) if asserting a matter that is Major and Complex, as defined at 310 CMR 10.04(1), a statement requesting that the Presiding Officer make a designation of Major and Complex, with specific reasons supporting the request.

Filing Fee and Address

A copy of the Appeal Notice along with a MassDEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, Massachusetts 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands Program
Superseding Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
301-1186

G. Recording Information

This Superseding Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Department.

To: Massachusetts Department of Environmental Protection Northeast Regional Office
Issuing Authority
205B Lowell Street, Wilmington, MA 01887
MassDEP Regional Office Address

Please be advised that the Order of Conditions for the Project at:

0 Willis Road, Sudbury 301-1186
Project Location (Street and Town) MassDEP File Number

Has been recorded at the Registry of Deeds of:

County Book Page

For: Property Owner

and has been noted in the chain of title of the affected property in:

Book Page

In accordance with the Order of Conditions issued on:

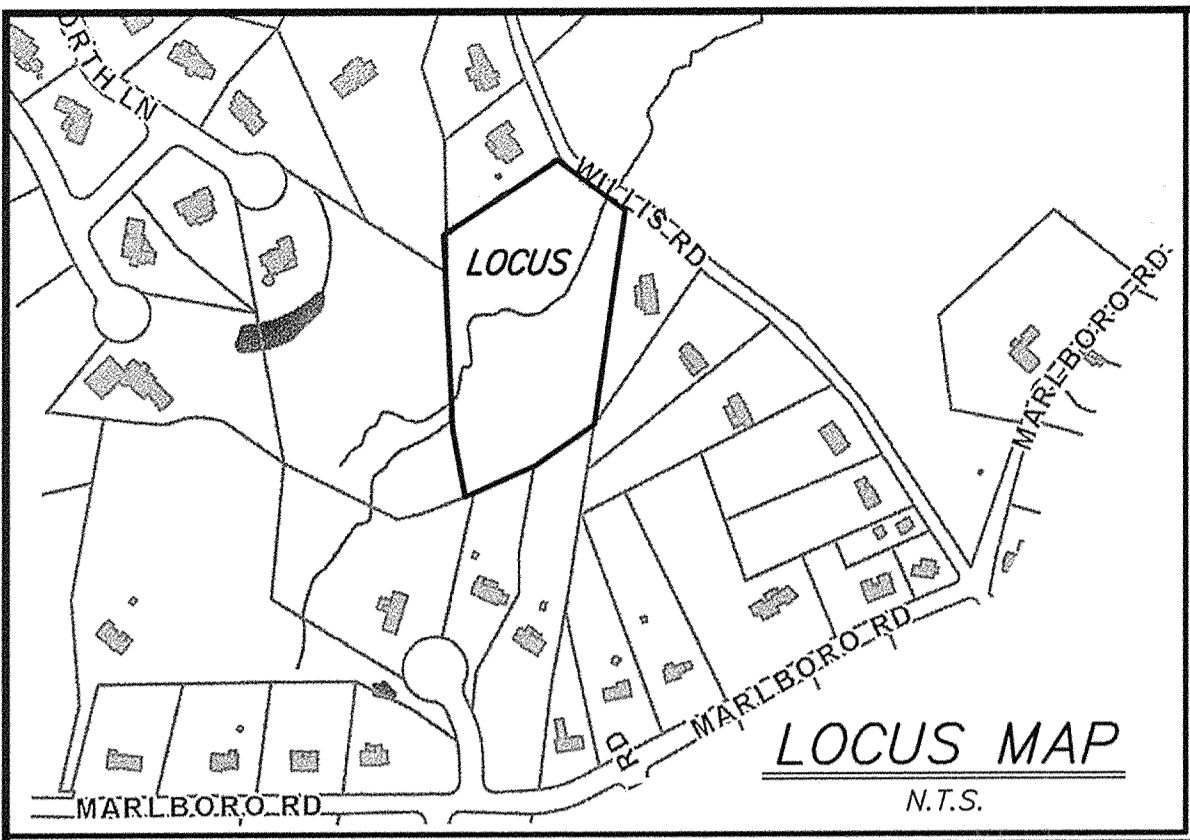
Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number Signature of Applicant



SCHEDULE OF ELEVATIONS

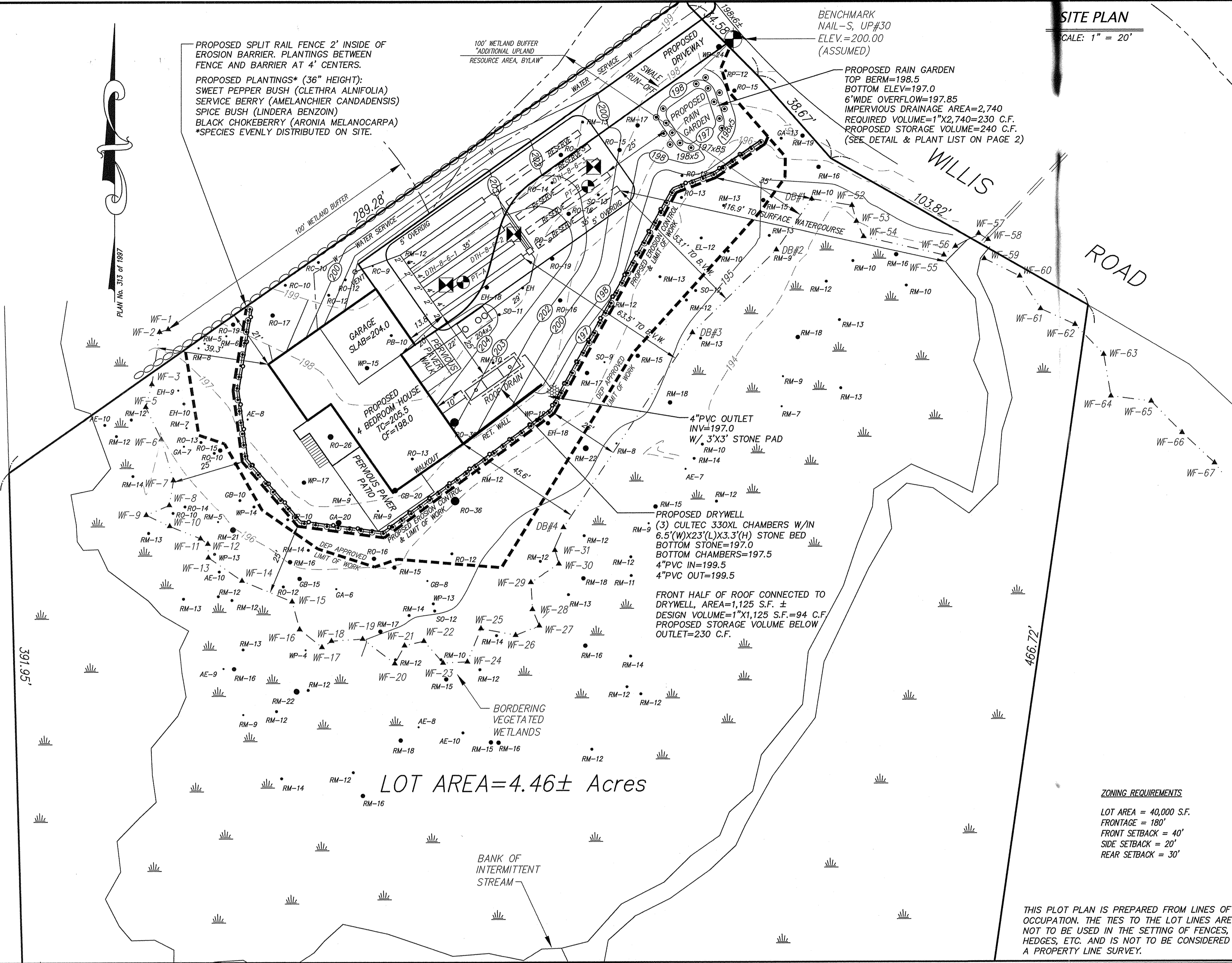
TOP OF FOUNDATION T.C. =	205.5
BASEMENT FLOOR FIN. C.F. =	198.0
INVERT OF PIPE AT FOUNDATION =	203.0
INVERT AT SEPTIC TANK INLET =	202.6
INVERT AT SEPTIC TANK OUTLET =	202.4
INVERT AT DISTRIBUTION BOX INLET =	202.1
INVERT AT DISTRIBUTION BOX OUTLET =	201.9
INVERT AT LEACHING LINES (BEGINNING) =	201.7
INVERT AT LEACHING LINES (END) =	201.5
ELEVATION OF TRENCH BOTTOM =	199.5
FINISH GRADE OVER LEACHING AREA =	204-203

DESIGN CRITERIA

1. ESTIMATED FLOW = 4 BDRMS X 110 GPD/BR=440 GPD
2. DESIGN PERCOLATION RATE = 15 MPI
3. LEACHING AREA CALCULATION =
TOWN REGULATIONS LEACH AREA REQUIREMENT:
15 MPI REQUIRES 170 S.F. OF SIDEWALL PER BEDROOM 4x10=688 S.F. REQ'D.
SA=10(2'X35') = 700 SF > 1050 SF(0.56 GPD/SF)=588 GPD
BA=5(2'X35') = 350 SF

STORMWATER RECHARGE CALCULATIONS:
TOTAL IMPERVIOUS = 4,985 S.F.
REQUIRED RECHARGE (SOIL GROUP A) = 4,985 S.F. X 0.6 INCHES=250 C.F.
AREA ADJUSTMENT=TOTAL IMPERVIOUS/COLLECTED=4,985/3,865=1.3
TOTAL REQUIRED = 250 C.F. X 1.3 = 325 C.F.
TOTAL RECHARGE PROVIDED = 480 C.F.
(RAIN GARDEN=300 C.F. DRYWELL=160 C.F.)

STORMWATER TREATMENT CALCULATIONS:
DRIVEWAY AREA=2,740 S.F.
REQUIRED VOLUME=1 INCH X 2,740=230 C.F.
PROPOSED STORAGE VOLUME=300 C.F.



- GENERAL NOTES:**
- Contractor shall call Digsafe at (888) 344-7233 a minimum of 72 hours prior to commencing any construction activities on site.
 - Inspections by Design Engineer and Board of Health are as required by the Board of Health.
 - This plan was prepared for the design of the subsurface sewage disposal system only and is based on the subsurface explorations and percolation tests listed below.
 - System was designed only to accommodate sanitary sewage associated with normal domestic usage, consisting of water carried putrescible waste, and for flows indicated in the design criteria.
 - The system must be vented through the buildings plumbing in accordance with the state building code.
 - Plans show only features that were visually apparent on the date of the topographic survey, and the absence of subsurface structures, utilities, etc. is not guaranteed.
 - Contractor to determine if site conditions are suitable for construction of proposed system, and must promptly notify the Design Engineer and Owner, in writing, of any plan deficiencies, unforeseen subsurface conditions, or required changes.
 - There are no wells located within 100 feet of the proposed leaching area or within 100 feet of the proposed septic tank (except as shown).
 - The subject property is not located within a Zone II of a public drinking water supply well.
 - All construction is to conform to the requirements of the Massachusetts Environmental Code, Title V, and the town of SUDBURY Board of Health regulations.
 - There are no bordering vegetated wetlands, inland banks, or surface waters within 100' of the proposed system.
 - There are no surface or subsurface drains which are used to lower the ground water.
 - All elevations refer to TBM, U.S. POLE#30 NAIL, EL.=200.0.
 - For proper performance, septic tank should be pumped annually.
 - System cannot be backfilled or concealed until design firm and board of health have inspected the system and permission to backfill has been given.
 - Design firm must prepare and submit "As-Built" plan to Board of Health. This plan must certify that the system was installed in accordance with state and local regulations and that it complies with the proposed plan.
 - Property lines and area are not to be used for boundary survey purposes.
 - Surface features and topography outside of work area are approximate.
 - System is not designed to accommodate a garbage grinder.

- TECHNICAL NOTES:**
- Building sewer shall be in accordance with state plumbing code and have a minimum of 4" of cover in landscaped areas. A minimum of 12" of cover and/or appropriate sleeving shall be used in areas subject to vehicular traffic.
 - All tanks, including septic tanks, distribution boxes, dosing chambers, and grease traps shall be either watertight through manufacturer's specification and warranty, or made watertight by the manufacturer or other individual by means and persons as approved in 310 CMR 15.221. Septic tank shall be constructed and placed in accordance with 310 CMR 15.223 through 310 CMR 15.228.
 - Septic tanks shall have at least three (3) 20" manholes with at least one (1) of these manholes located no more than 6" below finish grade. (Systems over 1,000 gpd shall have access ports at both the inlet and outlet tees.)
 - Distribution box ("d-box") shall be of watertight construction, installed level on a firm base, and installed in accordance with 310 CMR 15.232.
 - Septic tank covers and d-box are to be brought within 6" and 12" of finish grade respectively by the use of riser sections.
 - When the soil absorption system (SAS) is to be dosed or the slope of the inlet pipe exceeds 0.08 feet per foot, an inlet tee, baffle or splash plate extending to one inch above the outlet invert elevation shall be provided to dissipate velocity of the influent.
 - When the SAS is installed within the top and subsoil layers or above natural grade, all topsoil and subsoil shall be removed below and laterally a minimum of 3 feet in accordance with 310 CMR 15.255(3).
 - All disturbed areas shall be loamed, seeded, and maintained so as to prevent erosion.
 - All native soil interfaces which will contact the SAS shall be scarified prior to placement of stone.

PERCOLATION TESTS

HOLE NO. & DATE	TOP ELEVATION	DEPTH (In.)	SATURATION (Min.)	12"-9" DROP (Min.)	9"-6" DROP (Min.)	PERC. RATE (Min./In.)
PT-A 8-6-15	198.5	40"	15 MIN	40 MIN	45 MIN	15 MIN/IN
PT-B 8-6-15	198.2	41"	15 MIN	13 MIN	23 MIN	8 MIN/IN

DEEP OBSERVATION HOLE LOG

NO., DATE & ELEV.	DEPTH (In.)	SOIL HORIZON	TEXTURE (USDA)	COLOR (MUNSELL)	SOIL MOTTLING	OTHER
DTH-1 8-6-15 198.5	0-9" 9-31" 31-106"	Ap Bw C1	SANDY LOAM LOAMY SAND SANDY LOAM	10YR3/2 10YR6/6 10YR5/4	37"	

PARENT MATERIAL: GLACIAL TILL DEPTH TO BEDROCK: - STANDING WATER: 78" KEEPING FROM PIT FACE: - ESHWT: 195.4

DTH-2 8-6-15 198.7	0-11" 11-29" 29-110"	Ap Bw C1	SANDY LOAM LOAMY SAND SANDY LOAM	10YR3/2 10YR6/6 10YR5/4	41"	
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PARENT MATERIAL: GLACIAL TILL DEPTH TO BEDROCK: - STANDING WATER: 78" KEEPING FROM PIT FACE: - ESHWT: 195.3

DTH-3 8-6-15 198.5	0-10" 10-27" 27-101"	Ap Bw C1	SANDY LOAM LOAMY SAND SANDY LOAM	10YR3/2 10YR6/6 10YR5/4	37"	
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PARENT MATERIAL: GLACIAL TILL DEPTH TO BEDROCK: - STANDING WATER: 80" KEEPING FROM PIT FACE: - ESHWT: 195.4

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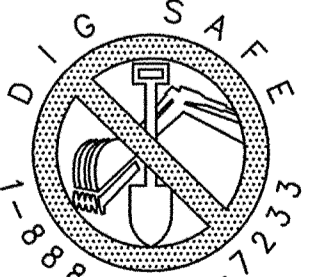
TESTS CONDUCTED BY: MIKE SULLIVAN
TESTS OBSERVED BY: BILL MURPHY
DATE: 8-6-15

I certify that I have passed the examination approved by the department of Environmental Protection and that the above analysis has been performed by me consistent with the required training, expertise, and experience described in 310 CMR 15.018(2).

Certified:

APPLICANT
MICHAEL MERULLO

LOCATION
LOT 178 WILLIS ROAD
SUDBURY, MA
ASSESSORS MAP E07 & PARCEL 178



NO.	DATE:	REVISION:	BY:
2	1/2/2018	REVISED LIMIT OF WORK	VC
1	7/3/2017	CONSERVATION ITEMS	RM

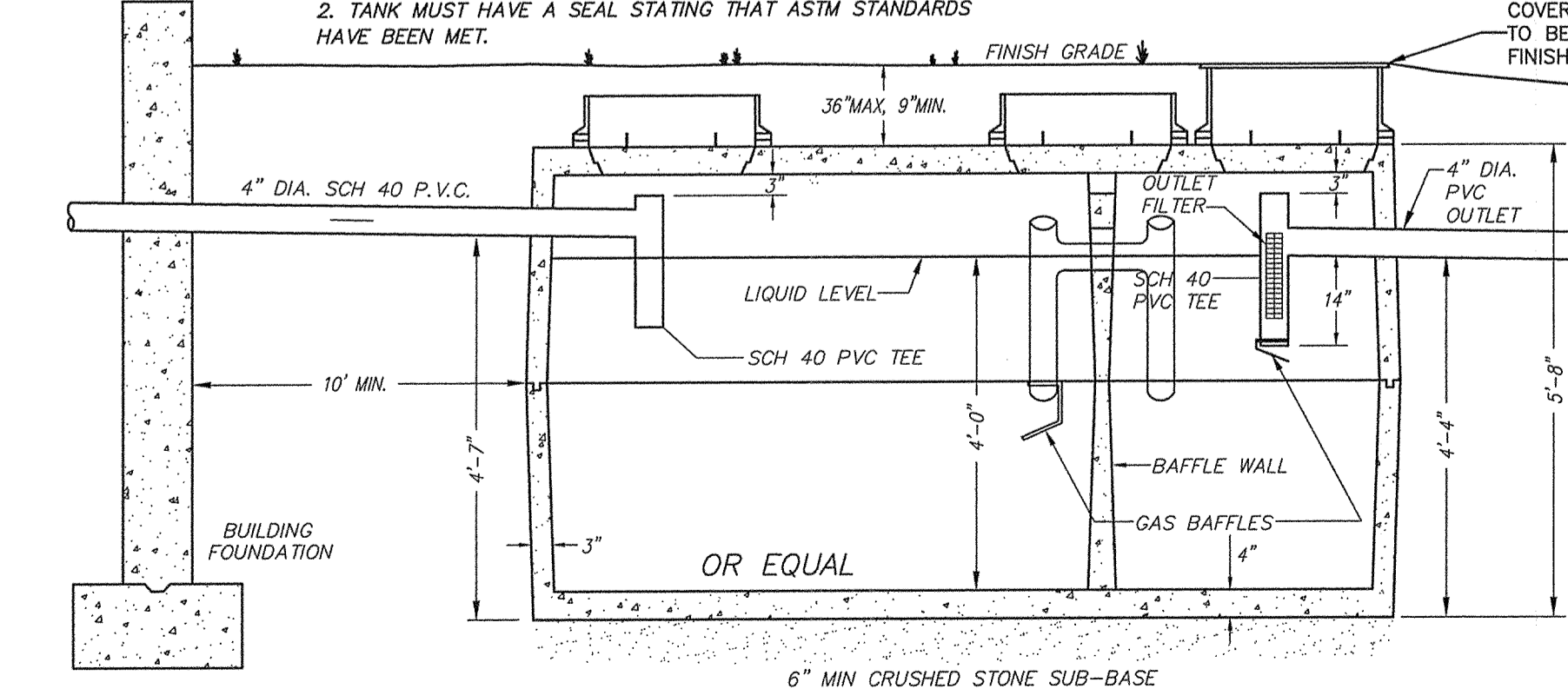
PROPOSED SEWAGE DISPOSAL SYSTEM
SULLIVAN, CONNORS
AND ASSOCIATES

LAND SURVEYING AND CIVIL ENGINEERING
121 BOSTON POST RD. SUDBURY, MA. 01776
PHONE: 978-443-9566 FAX: 978-443-8915

DATE: 3-3-16 SHEET 1 OF 2

- SEPTIC TANK NOTES**
- MUST BE WATER TIGHT AND SET ON A LEVEL BASE THAT HAS BEEN COMPACTED TO PREVENT SETTLING.
 - TANK MUST HAVE A SEAL STATING THAT ASTM STANDARDS HAVE BEEN MET.

THREE 20" MANHOLES WITH READILY REMOVABLE IMPERMEABLE COVERS OF DURABLE MATERIAL

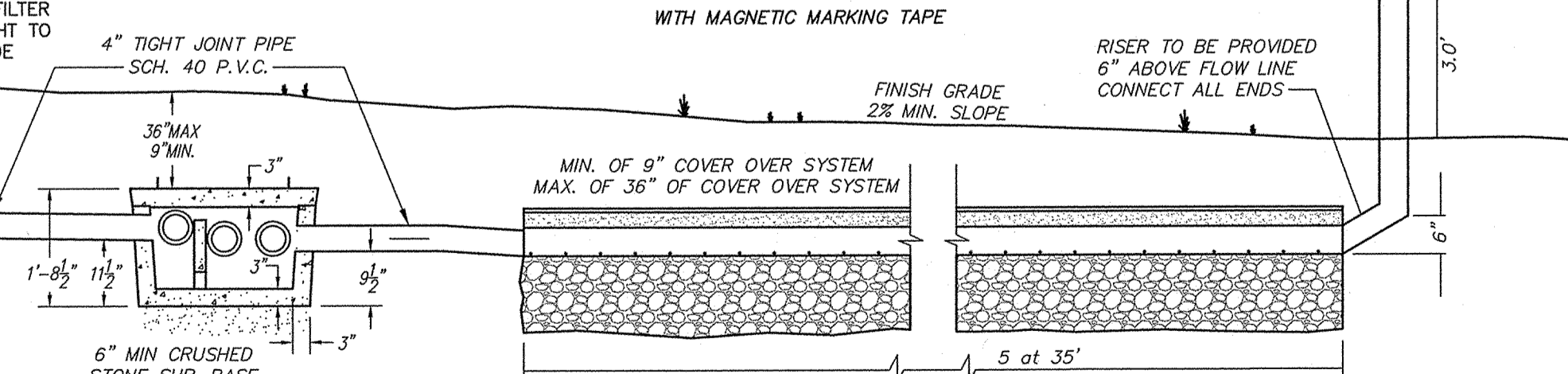


- BUILDING SEWER NOTES**
- SEWER LINE MUST BE LAID ON A FIRM COMPACTED BASE.
 - PIPE MUST BE SLOPED AT A MIN. OF 1% (2% PREFERRED)
 - PIPE MUST BE LAID ON A CONTINUOUS UNIFORM GRADIENT.

H-20 SEPTIC TANK
PRECAST REINFORCED CONCRETE
CAPACITY OF TANK = 1500 GAL.

SYSTEM PROFILE
NOT TO SCALE

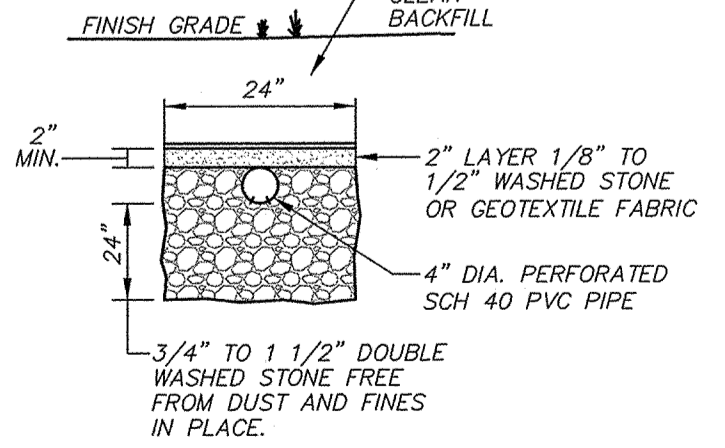
- NOTE:**
ALL SYSTEM COMPONENTS ARE TO BE MARKED WITH MAGNETIC MARKING TAPE



LEACH TRENCHES

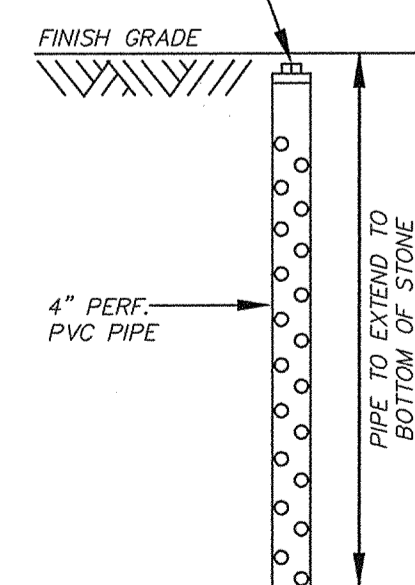
- LEACH FIELD NOTES**
- SIDES AND BOTTOM OF LEACHING FACILITY TO BE SCARIFIED.
 - BOTTOM OF LEACHING FACILITY MUST BE LEVEL.
 - PIPING MUST BE SCH 40 P.V.C. WITH TIGHT JOINTS.
 - THE ORIFICES OF THE PIPE MUST BE 3/8" - 5/8".
 - VENT REQUIRED IF LEACH LINES ARE GREATER THAN 50'.

- FINAL GRADING NOTES**
- 2% SLOPE MUST BE PROVIDED OVER AND AROUND SYSTEM.
 - SURFACE DRAINAGE MUST BE AWAY FROM SYSTEM.
 - GRADING MUST BE DONE TO PREVENT PONDING.



TRENCH CROSS SECTION

- INSPECTION PORT**
NOT TO SCALE



INSPECTION PORT
NOT TO SCALE

THIS PLOT PLAN IS PREPARED FROM LINES OF OCCUPATION. THE TIES TO THE LOT LINES ARE NOT TO BE USED IN THE SETTING OF FENCES, HEDGES, ETC. AND IS NOT TO BE CONSIDERED A PROPERTY LINE SURVEY.

ZONING REQUIREMENTS

LOT AREA = 40,000 S.F.
FRONTAGE = 180'
FRONT SETBACK = 40'
SIDE SETBACK = 20'
REAR SETBACK = 30'

LOT AREA=4.46± Acres