

NARRATIVE

Request for Determination of Applicability
347 Dutton Road, Sudbury, Massachusetts
October 30, 2019

On behalf of the owner of 347 Dutton Road, Doucette Engineering submits this narrative to accompany the Request for Determination of Applicability.

Design Plan: Sewage Disposal System Upgrade Design for 347 Dutton Road, Sudbury, Massachusetts, by Doucette Engineering, Ted P. Doucette, P.E. dated 30OCT2019

Background

The property on Dutton Road is located between two wetland areas, one is across the street from a wetland, and the other is to the rear of the property. MassGIS mapping shows that both of these areas are potential vernal pools. As shown on the Design Plan the related buffer zones nearly meet near the middle of the property. The home was constructed in around 1950, includes four bedrooms on about an acre of land. During the soil evaluation for the proposed septic system the parent soil was found to be medium sand with groundwater at a depth of 110 inches. The existing septic system includes a 1,500-gallon septic tank installed around 2002, and a single leach pit. The existing leach pit is in failure and backs up until the surrounding area is saturated.

Proposed project

The design of a new Title 5 compliant system is shown on the design plan and includes only the replacement of the soil absorption system which is proposed beyond the 50-foot offset from the wetland. The system is nearly against the 50-foot offset, this is due to the location of the existing septic tank and other parameters. Other areas on the property were considered prior to deciding on this location. No reasonable place on the property can be found outside of the buffer zone. The rear of the yard is not feasible because the grade increase from the front to the back which would require a pump system or the depth of the system would be greater than allowed by Title 5 (and the system would still be in the buffer zone). The side of the yard is not desirable due to the location of the existing water service; relocating the service would increase the cost and not move the system considerably further from the resource area. The length of the work will be approximately two days.

The environmental benefits of this project include replacing the non-compliant leach pit with a Title-5 compliant system that will provide better treatment in the soil. The proposed design also increases the offset between the bottom of the soil absorption system and the seasonal high groundwater elevation.

The WPA performance standards are met, as there is no work proposed within a resource area, and the work in the buffer zone is proposed to be located in a manner that minimized a threat to the resource area.

Mitigation and minimizing impacts

There is no mitigation proposed for the project because no work is proposed in a resource area; the lot is already developed and the lawn will be returned to the current state,

There are a few potential impacts that are being addressed or considered in this design.

The materials for the soil absorption system includes plastic chambers that can be carried into the property by hand, rather than a conventional system that would require truckloads of stone.

Erosion control will be installed between the work area and the resource area, nine-inch straw wattles are proposed.

There are no impervious areas proposed for this project as it is only a soil absorption system and no structures or paving.



Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

Sudbury

City/Town

WPA Form 1- Request for Determination of Applicability

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

A. General Information

Important:

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



1. Applicant:

Nicolas & Elisa deBeco

Name

elisadebeco@yahoo.com

E-Mail Address

347 Dutton Road

Mailing Address

Sudbury

City/Town

MA

State

01776

Zip Code

857-389-2554

Phone Number

Fax Number (if applicable)

2. Representative (if any):

Doucette Engineering

Firm

Ted Doucette

Contact Name

doucette.engineering@comcast.net

E-Mail Address

152 Whitcomb Ave

Mailing Address

Littleton

City/Town

MA

State

01460

Zip Code

978-621-2138

Phone Number

Fax Number (if applicable)

B. Determinations

1. I request the Sudbury make the following determination(s). Check any that apply:
Conservation Commission

- ☒ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- ☐ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- ☐ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- ☐ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Name of Municipality

- ☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



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C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

347 Dutton Road

Street Address

Wayland

City/Town

4

Assessors Map/Plat Number

7

Parcel/Lot Number

- b. Area Description (use additional paper, if necessary):

Residential area, with a developed lot and a wetland across the Dutton Road. See narrative

- c. Plan and/or Map Reference(s):

Sewage Disposal System Design for 347 Dutton Road,
Sudbury, Massachusetts

30OCT2019

Date

Title

Date

Title

Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

Replacement of the soil absorption system with a Title-5 compliant system, see narrative



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C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☐ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)



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D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Nicolas & Elisa deBeco

Name

347 Dutton Road

Mailing Address

Sudbury

City/Town

MA

State

01460

Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Signature of Applicant

Date

Signature of Representative (if any)

Date

Owner of Record: Nicolas and Elisa deBeco
347 Dutton Road
Sudbury, Massachusetts 01776
Sudbury Assessors Parcel ID: H4/7
Lot Area: 40,728 +/- sf
Zoning District: Res-A
This property IS NOT located within in a Zone II
This property IS NOT located within a 100-year flood plain
This property IS NOT located within a NHESP Priority Habitat
This property IS located within 100 feet of a wetland

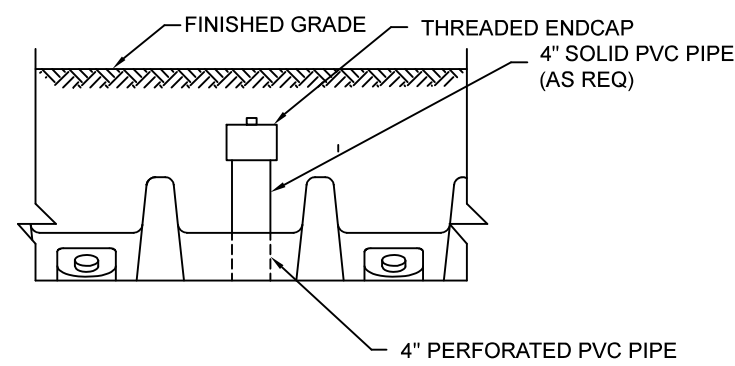
LEGEND



Diagram illustrating the cross-section of a road construction. The layers and dimensions are labeled as follows:

- LOAM 4" MINIMUM
- CLEAN SAND BACKFILL (3" MINUS)
- QUICK4 STANDARD CHAMBER
- 6" MIN
- 60"
- 34"
- EXISTING C LAYER OR TITLE 5 SAND FOR LEVELING

NTS
THIS DETAIL IS FOR CONCEPT, THE DESIGN INCLUDES 5 ROWS OF 8 CHAMBERS



NTS
INSPECTION PORT PIPE SHALL EXTEND TO THE
SAND BELOW THE INFILTRATOR CHAMBER



NTS



NTS



NTS
SOURCE: MASSGIS

SOIL EVALUATION:

THE SOIL EVALUATION WAS CONDUCTED ON OCTOBER 17, 2019 BY TED P DOUCETTE, PE AND WAS WITNESSED BY WILLIAM MURPHEY, RS SUDBURY HEALTH DIRECTOR

DEEP TEST HOLE LOGS:

DTH 1 (EL = 100.16)
 0 - 12" A LOAM (VERY FRIABLE)
 12" - 34" B FINE SANDY LOAM (LOOSE)
 34" - 120" C SANDY LOAM (LOOSE)
 STANDING WATER: NOT OBSERVED
 SEEPING WATER: NOT OBSERVED
 REDOXIMORPHIC FEATURES: 110"

PERCOLATION TEST 1 AT DTH 2:
DEPTH: 40" - 58"
SOAK START 0940
SOAK END CNS
12"
9"
6"
TIME 9' - 6" = N/A
PERCOLATION RATE < 2 MIN/IN
LTAR = 0.74 GPD/SF

CERTIFY THAT ON 13NOV2003 I HAVE PASSED THE SOIL EVALUATOR
EXAMINATION APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL
PROTECTION AND THAT THE ABOVE ANALYSIS WAS PERFORMED BY ME
CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE DESCRIBED
IN 310 CMR 15.017

SIGNATURE *[Signature]* DATE 21SEP2017

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH 310CMR14.00, THE MASS DEPARTMENT OF ENVIRONMENTAL AFFAIRS' REGULATIONS CONCERNING THE RULES AND REGULATIONS GOVERNING THE SUBSURFACE DISPOSAL OF SEWAGE.

2. NO WORK SHALL BE CONDUCTED UNTIL ALL NECESSARY PERMITS ARE OBTAINED.

3. THE SEPTIC SYSTEM SHALL BE INSTALLED BY A CONTRACTOR LICENSED IN THE TOWN OF DUNSTABLE, MASSACHUSETTS.

4. THIS PLAN IS INTENDED FOR THE INSTALLATION OF THE SEWAGE DISPOSAL SYSTEM ONLY. PROPERTY LINES SHALL BE CONSIDERED APPROXIMATE AND SHALL NOT BE USED FOR THE LOCATION OF STRUCTURES, FENCES OR OTHER PROPERTY LINE OFFSETS.

5. THE LOTS AND LINES ARE SHOWN AS TAKEN FROM THE RECORD MAP OF THE RELEASE PLAN IN SUBURBAN MASS BY R. WILSON AND ASSOCIATES, DATED JANUARY 2, 2001, RECORDED WITH THE MIDDLESEX COUNTY REGISTRY OF DEEDS PLAN NO 767 OF 2001, RUSSELL D. WILSON PLS.

6. NO CHANGES SHALL BE MADE TO THE APPROVED PLAN WITHOUT PRIOR APPROVAL OF THE BOARD OF HEALTH AND THE ENGINEER.

7. THIS SYSTEM IS NOT DESIGNED FOR THE USE OF A GARBAGE GRINDER.

SPECIFICATIONS:
310.CMR15, INFILTRATOR WATER TECHNOLOGIES DESIGN AND INSTALLATION
MANUAL FOR INFILTRATOR CHAMBERS IN MASSACHUSETTS, AND THE SUDBURY
BOARD OF HEALTH REGULATIONS SHALL BE CONSIDERED PART OF THESE
SPECIFICATIONS. ALL MATERIALS AND METHODS SHALL MEET THESE SPECIFICATIONS

GENERAL/ALL COMPONENTS
ALL PIPING SHALL BE 4" MINIMUM SCH40 P.V.C.
BUILDING SEWER SHALL BE IN ACCORDANCE WITH THE PLUMBING CODE, 246CMR2.00
ALL JOINTS SHALL BE WATERTIGHT
ALL SEWAGE DISPOSAL ACCESS MANHOLES SHALL BE NO GREATER THAN NINE INCHES BELOW FINISHED GRADE.
IN ACCORDANCE WITH 310CMR1.5.221 ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MACHINE-READABLE TAGS OR COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED
RISERS FITTED WITH CAST IRON MANHOLE FRAMES AND COVERS OR APPROPRIATE EQUIVALENTS SHALL BE AFFIXED TO ANY SYSTEM COMPONENT WITH A DEPTH GREATER THAN 6", BRINGING ACCESS TO A POINT BETWEEN 6" AND 9" OF FINAL FINISHED ELEVATION.
ALL ACCESS COVERS BROUGHT TO THE SURFACE SHALL HAVE SUFFICIENT WEIGHT OR OTHERWISE BE SECURED TO PREVENT UNAUTHORIZED OPENING. RISERS MAY BE PLASTIC OR CONCRETE.
GRAVITY SEWER
ALL PIPING SHALL BE A MINIMUM OF SCH 40 P.V.C., STATE PLUMBING CODES SHALL SUPERSEDE THE REQUIREMENT AS NECESSARY.

SEPTIC TANK
 EXISTING SEPTIC TANK TO REMAIN
 INSTALL FILTER ON OUTLET TEE AND INSTALL RISER TO GRADE WITH STEEL FRAME AND COVER
 DISTRIBUTION BOX
 THE DISTRIBUTION BOX SHALL BE CONCRETE, INVERT ELEVATIONS OF ALL OUTLETS SHALL BE EQUAL AND TWO INCHES BELOW THE INVERT.
 OUTLET DISTRIBUTION LINES SHALL BE LEVEL FOR THE FIRST 12'.
 THERE SHALL BE A MINIMUM SUMP OF 6" BELOW THE OUTLET INVERT.
 THERE SHALL BE A MINIMUM OF 12" BETWEEN MANHOLES SHALL NOT BE MORE THAN NINE FEET BUT NOT LESS THAN SIX INCHES BELOW GRADE.
SOIL ABSORPTION SYSTEM
 ANY LEVELING COURSE OR SAND USED FOR THE SOIL ABSORPTION SYSTEM SHALL COMPLY WITH 3-19.2.1.1.
 THE MINIMUM COVER OVER THE SOIL ABSORPTION SYSTEM SHALL BE 12" AND FILL SHALL BE FREE OF STONES, BOULDERS GREATER THAN 6".
 ALL UNSUITABLE MATERIAL INCLUDING THE B HORIZON, FILL, EXISTING SYSTEM AND EXISTING SOIL SHALL BE REMOVED AND DISCARDED FOR A DISTANCE OF AT LEAST 5'. THE SOIL ABSORPTION SYSTEM SHALL HAVE ONE INSPECTION PORT CONSISTING OF A PERFORATED 4" PIPE PLACED VERTICALLY DOWN INTO THE NATURALLY OCCURRING SOIL OR SAND FILL BELOW THE SOIL ABSORPTION SYSTEM.
 THE SOIL ABSORPTION SYSTEM SHALL BE CONSTRUCTED WITH QUICK STANDARD CHAMBERS BY INFILTRATOR SYSTEMS, INC., OLD SAYBROOK CONNECTICUT, EACH END OF THE QUICK 4 ROWS SHALL HAVE A MULTIPORT END CAP INSTALLED. THE MULTIPORT END CAP SHALL BE INSTALLED BY A PERSON CERTIFIED BY INFILTRATOR SYSTEMS, INC. IN ACCORDANCE WITH THE INFLTRATOR SYSTEMS TECHNOLOGIES DESIGN AND INSTALLATION MANUAL FOR INFILTRATOR CHAMBERS IN MASSACHUSETTS AND THE INFILTRATOR GENERAL USE APPROVAL LETTER DATED FEBRUARY 19, 2015
 EXISTING JUNE 12, 2015 AND THE STANDARD CONDITIONS LETTER DATED FEBRUARY 23, 2016.

WORK NOTES:
WORK SHALL BE CONDUCTED IN COMPLIANCE WITH THE PERMIT ISSUED BY THE WAYLAND CONSERVATION COMMISSION.
EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ACTIVITIES ON THE PROPERTY. SHALL SERVE AS A LIMIT OF WORK, NO MATERIALS ARE TO BE PLACED BEYOND THE LIMIT OF WORK.
EROSION CONTROL SHALL BE 9" DIAMETER STRAW WATTLE OF HDPE PHOTODEGRADABLE NETTING FILLED WITH ANIMAL FILL CONSISTING OF AGRICULTURAL STRAW. WATTLES SHALL BE INSTALLED WITH 24" STAKES AT 10' INTERVALS.
ALL SHALL BE STORED OUTSIDE OF THE 50-FOOT BUFFER ZONE.
THERE SHALL BE NO DISPOSAL OR BURIAL OF CONSTRUCTION DEBRIS WITHIN 100 FEET OF THE WETLAND. ANY DEBRIS THAT ENTERS THE BUFFER ZONE OR RESOURCE AREA SHALL BE REMOVED BY HAND.
NO CONSTRUCTION SHALL NOT BE FUELED WITHIN 100 FEET OF THE RESOURCE AREA.
THE SEQUENCE OF CONSTRUCTION SHALL BE AS FOLLOWS:
INSTALL EROSION CONTROLS
CONSTRUCT THE SOIL ABSORPTION SYSTEM
GRADE, SPREAD LOAM, SEED
REMOVAL OF EROSION CONTROLS SHALL ONLY BE COMPLETED WHEN SUFFICIENT VEGETATION HAS GROWN TO PREVENT EROSION OF LOAM.

Sewage Disposal System Upgrade Design for 347 Dutton Road, Sudbury Massachusetts



**DOUCETTE
ENGINEERING**

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Revisions:

DATE: 30OCT2019

Scale: as noted

Sheet 1 of 1

Drawn by: TPD

Drawing number: 2019 - 119

