



**NOTICE OF PUBLIC MEETING
SUDBURY CONSERVATION COMMISSION**
Monday, September 12, 2022 at 6:45 PM
Virtual Meeting

The Sudbury Conservation Commission will hold a public meeting to review the Request for Determination of Applicability filing under the Wetlands Protection Act and the Sudbury Wetlands Administration Bylaw to replace the septic system within the 100-foot Buffer Zone at 196 North Road, in Sudbury, MA. Mary Brennan, Applicant. The meeting will be held on Monday, September 12, 2022 at 6:45 pm, via Zoom.

The application and meeting details may be reviewed on the Conservation Department web page at:

<https://sudbury.ma.us/conservationcommission/meeting/conservation-commission-meeting-monday-september-12-2022/>

Please contact the Conservation Office with any questions at 978-440-5470.

SUDBURY CONSERVATION COMMISSION
TODAY'S DATE 9/1/22



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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:

Mary B. Brennan
Name
196 North Rd
Mailing Address
Sudbury
City/Town
617-653-2267
Phone Number
breabrennan4@gmail.com
E-Mail Address
MA
State
01776
Zip Code
Fax Number (if applicable)

2. Representative (if any):

Capstone Design Build, Inc.
Firm
David Schofield
Contact Name
PO Box 127
Mailing Address
Wayland
City/Town
508-358-5763
Phone Number
dschof@verizon.net
E-Mail Address
MA
State
017789
Zip Code
Fax Number (if applicable)

B. Determinations

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

- 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:

Sudbury
Name of Municipality

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

N/A



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

City/Town _____

WPA Form 1- Request for Determination of Applicability

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

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).

septic system replacement for existing design flow.

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.)

**Narrative and Summary – Request for Determination of Applicability (RDA)
Filing (Filing Date: August 29, 2022)**

196 NORTH RD - SUDBURY

This filing involves the replacement of the existing failed septic system that serves the existing 5-bedroom dwelling at 196 North Rd - Sudbury.

The subject property is located on the north side of North Rd (Route 117) just east of the Bruce Freeman Rail Trail (between Dakin Rd and the Concord town line). The site contains an existing single-family home with a paved driveway at the front and landscaped lot.

Resource Area delineation was conducted by David Burke in June 2022 and is marked by numbered flags.

The design approach for the septic design was to site the septic tank and leaching trenches as far as possible from protected resources while working within the project parameters. The Geomatrix GST system was employed in this design as it is very compact providing the greatest leaching area in the smallest footprint. Additionally a variance was taken to allow the lawn deciduous tree near the leaching trenches to remain.

Soil testing showed loamy sand soils with a perc rate of less than 2 minutes per inch. No indicators of Estimated Seasonal High Groundwater (ESHGW) were noted in the test holes.

A new 1,500 gallon septic tank and distribution box are proposed prior to the leaching trenches. The 1,500 gallon septic tank is proposed to be 63 feet from the nearest edge of the BVW.

The proposed Soil Absorption System (SAS) consists of three GST leaching trenches that are 32' long and 37" wide providing a total effective leaching area of 1,122 sf in a 360 sf footprint. The leaching field is located 53' from the nearest the nearest BVW.

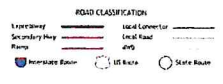
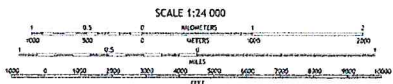
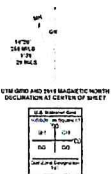
The grade over the leaching field will remain largely unchanged throughout the leaching area.

An erosion control barrier (silt fence) is proposed between the work area and the BVW to separate the work area from the BVW. The work will begin on this project as soon as approved by the Conservation Commission. Disturbed areas will be raked and seeded immediately following installation of the septic system so that full stabilization is achieved.

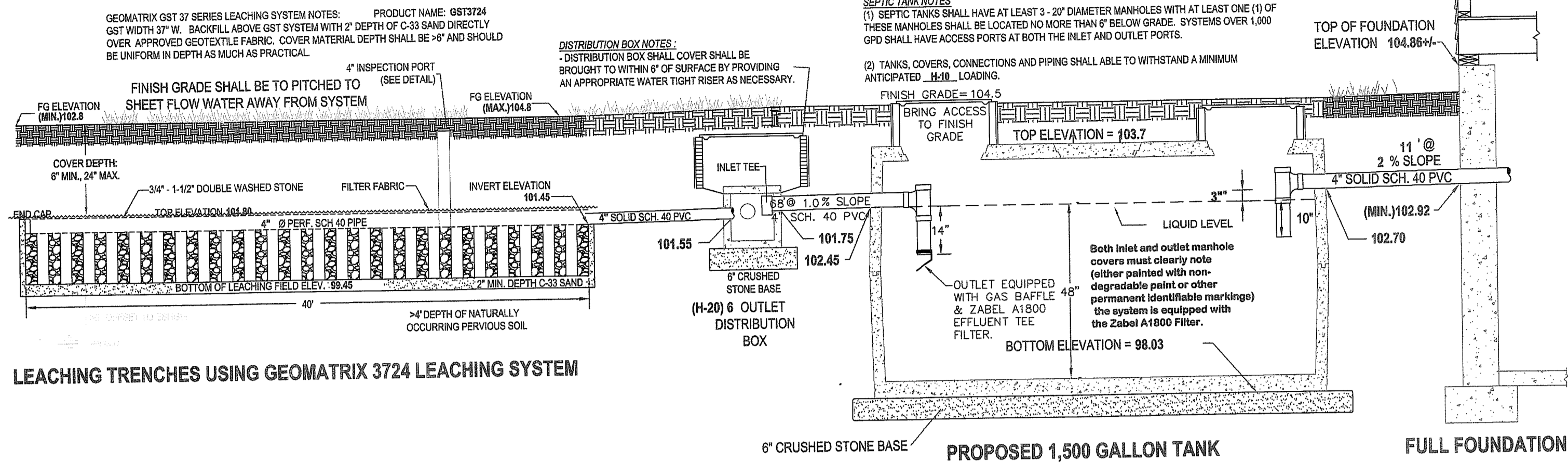


Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1:250,000 scale. Contour interval is 20 feet. Zone 18T
This map is not a legal document. Boundaries may be
generalized for this scale. Private lands with government
restrictions may not be shown. Obtain permission before
reproducing graphic marks.

Map Date: July 2014 - September 2014
Base: U.S. Census Bureau, 2010
Hydrography: National Hydrography Dataset, 2004
Contour: National Elevation Dataset, 2011
Boundaries: Mapping Service, see metadata file 2010_2011
Vert datum: FWS National Wetlands Inventory 1992 - 1995



PROFILE (NOT TO SCALE)



LEACHING TRENCHES USING GEOMATRIX 3724 LEACHING SYSTEM

PROPOSED 1,500 GALLON TANK

FULL FOUNDATION

I/A SYSTEM DESIGN CERTIFICATION

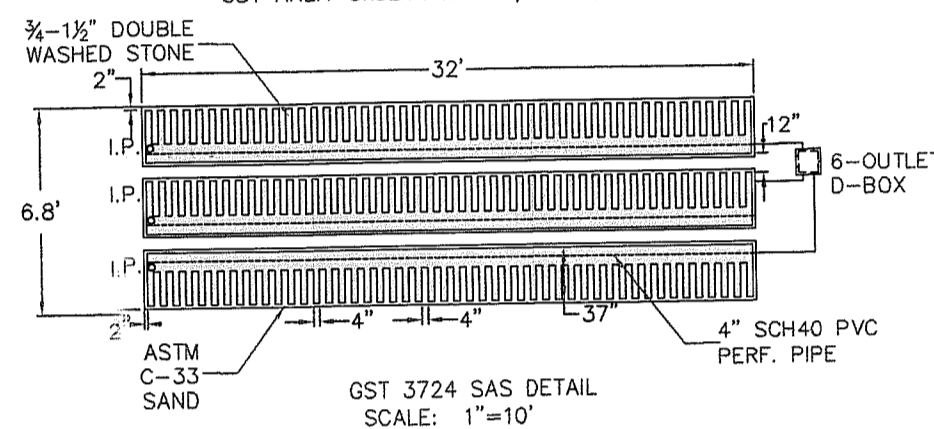
I certify that I have satisfactorily completed any required training for the design and installation of the Technology. I further certify that this design conforms to the approval letter referenced herein, any Company design guides and 310 CMR 15.000.

Signature: *David A. Schofield* Date: 6/6/22
 David A. Schofield (REV. 6/12/22)

15.256: CONSTRUCTION IN FILL

(3) FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF SELECT ON-SITE OR IMPORTED SOIL MATERIAL. THE FILL SHALL BE COMPRISED OF CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES. MIXTURES AND LAYERS OF DIFFERENT CLASSES OF SOIL SHALL NOT BE USED. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN TWO INCHES. A SIEVE ANALYSIS, USING A #4 SIEVE, SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE OF THE FILL. UP TO 45% BY WEIGHT OF THE FILL SAMPLE MAY BE RETAINED ON THE #4 SIEVE. SIEVE ANALYSES ALSO SHALL BE PERFORMED ON THE FRACTION OF THE FILL SAMPLE PASSING THE #4 SIEVE. SUCH ANALYSES MUST DEMONSTRATE THAT THE MATERIAL MEETS EACH OF THE FOLLOWING SPECIFICATIONS:

SIEVE SIZE	EFFECTIVE PARTICLE SIZE	% THAT MUST PASS SIEVE
#4	4.75 mm	100%
#10	0.30 mm	10% - 100%
#100	0.15 mm	0% - 20%
#200	0.075 mm	0% - 5%



Date: 5/18/2022
 Performed by: DAVID SCHOFIELD
 Witnessed by: ROB LAZO, Health Agent, Town of SUDBURY

Deep Hole Number: 10-20-1 Surface Elevation: 105.1

Depth from Surface	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Consistence (Loose, Friable, Firm), % Gravel, Stones, Boulders)
0-20	A	SANDY LOAM	10YR3/2		
20-34	B	LOAMY SAND	7.5YR5/6		TO REMAIN IN PLACE
34-110	C	LOAMY SAND	2.5Y7/4		WITH TEXTURAL DISCONTINUITIES

Parent Material (geologic): Depth to Bedrock: >110"
 Depth to Groundwater: Standing Water Depth: NONE Weeping from Pit Face: NONE
 Estimated Seasonal High Ground Water: >=110", ELEV. <=95.93

Deep Hole Number: 5-22-2 Surface Elevation: 103.4

Depth from Surface	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Consistence (Loose, Friable, Firm), % Gravel, Stones, Boulders)
0-18	A	SANDY LOAM	10YR3/2		
16-40	B	LOAMY SAND	10YR5/6		TO REMAIN IN PLACE
40-112	C	LOAMY SAND	2.5Y5/4		

Parent Material (geologic): Depth to Bedrock: >112"
 Depth to Groundwater: Standing Water Depth: NONE Weeping from Pit Face: NONE
 Estimated Seasonal High Ground Water: >=112", ELEV. <=95.07

310 CMR 15.246: EXCAVATION AND FLAGGING OF SOIL ABSORPTION SYSTEM

- EXCAVATION FOR CONSTRUCTION OF A SOIL ABSORPTION SYSTEM MAY BE BY MECHANICALS MEANS, PROVIDED CARE IS TAKEN TO ASSURE THAT THE SOIL AT THE BOTTOM OF THE EXCAVATION IS NOT COMPACTED OR SMEARED. THE BOTTOM AND SIDES OF THE EXCAVATION SHALL BE LEVEL AND SCARIFIED. VEHICULAR TRAFFIC AND PARKING OF VEHICLES OR EQUIPMENT IN OR ON THE AREA OF THE SOIL ABSORPTION SYSTEM SHOULD BE AVOIDED AT ALL TIMES PRIOR, DURING AND AFTER CONSTRUCTION OF THE SYSTEM.
- PRIOR TO THE INSTALLATION OF THE SOIL ABSORPTION SYSTEM AND UNTIL THE RECEIPT OF A CERTIFICATE OF COMPLIANCE WITH 310 CMR 15.021, THE PERIMETER OF THE SAS SHALL BE STAKED AND FLAGGED TO IDENTIFY THE LOCATION OF THE SOIL ABSORPTION SYSTEM AND PREVENT THE USE OF SUCH AREA FOR ALL ACTIVITIES WHICH MIGHT DAMAGE THE SOIL ABSORPTION SYSTEM. SUCH FLAGGING IS NOT INTENDED TO PRECLUDE FINAL GRADING AND LANDSCAPING OF THE AREA OF THE SOIL ABSORPTION SYSTEM. STOCKPILING OF MATERIALS OR EQUIPMENT WITHIN THE AREA IS PROHIBITED.

INLINE INVERT ELEVATIONS PROPOSED A.B. 104.86+/-

TOP OF CONCRETE BUILDING SEWER @ FOUNDATION	(MIN.) 103.10
SEPTIC TANK INLET	102.70
SEPTIC TANK OUTLET	102.45
PUMP CHAMBER INLET	-
PUMP CHAMBER OUTLET	-
DISTRIBUTION BOX INLET	101.75
DISTRIBUTION BOX OUTLET	101.55
SOIL ABSORPTION SYSTEM (SAS) ORIGIN	101.45
SOIL ABSORPTION SYSTEM (SAS) END	101.45
SOIL ABSORPTION (SAS) BOTTOM	99.45
PROPOSED F.G. ELEVATION OVER SAS	SEE PLAN
DEEP TEST HOLE ELEVATIONS:	SEE PLAN
MINIMUM ESHGW OFFSET	5'
ESHGW ELEVATION	<=94.07

DESIGN CRITERIA

- FLOW: 5 BDRMS @ 110GPD / BDRM = 550 GPD
- SEPTIC TANK DESIGN CRITERIA: (MIN. CAPACITIES)
 - A. COMPARTMENT 1 CAPAC. 1,100 GALLONS
 - B. COMPARTMENT 2 CAPAC. 550 GALLONS
 - C. TOTAL CAPACITY: 2,000 GALLONS
- SAS DESIGN CRITERIA: GEOMATRIX GST
 - A. DESIGN PERCOLATION RATE: 2 MIN / IN
 - B. EFFLUENT LOADING RATE: 0.74 GPD/SF
 - C. NEC. LEACHING AREA: 743.2 SF
 - D. BOTTOM AREA PROVIDED: - SF
 - E. SIDEWALL PROVIDED: - SF
 - F. TOTAL AREA PROVIDED: 748.1 SF
 - G. DESIGN CAPACITY: (MA) 553.6 GPD

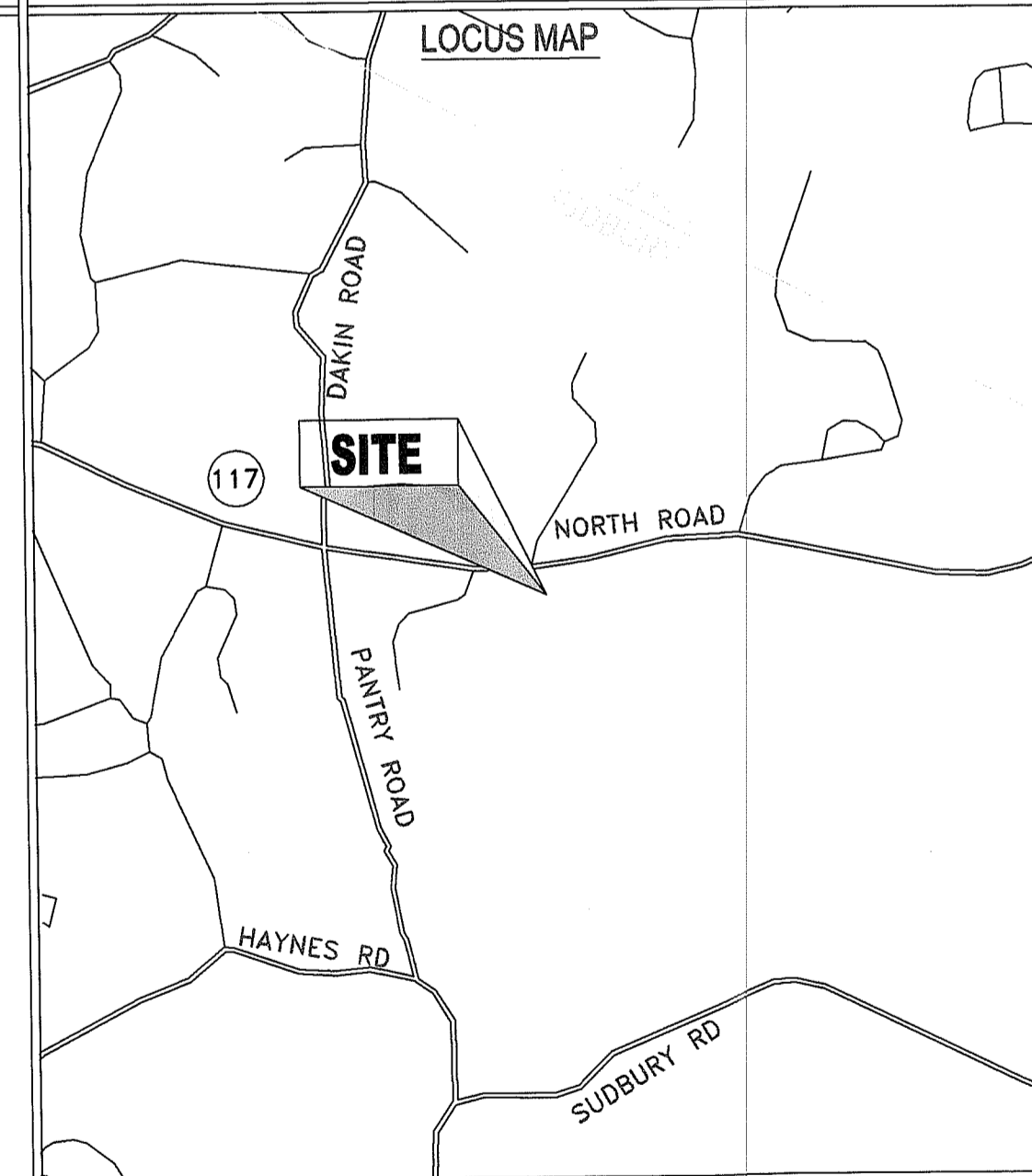
SYSTEM IS NOT DESIGNED FOR GARBAGE GRINDER. THE USE OF A GARBAGE GRINDER MAY SHORTEN THE LIFE OF THE SEPTIC SYSTEM.

PERC HOLE TEST DATA

PERC TESTING PERFORMED BY: DAVID SCHOFIELD
 WITNESS: ROB LAZO, SUDBURY BOARD OF HEALTH AGENT(S)

DATE(S): 5/18/2022

HOLE #	SOIL CLASS	PERC RATE	EFFL. LOAD. RATE	DEPTH
C1	I	<2 MPF	0.74	48"



VARIANCES REQUESTED
 -NONE REQUESTED

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- STONEWALL
- FENCELINE
- EDGE OF PAVEMENT
- PROPERTY LINE
- PERCOLATION TEST
- DEEP HOLE TEST

General Notes

- All utility locations shown are to be verified by Contractor prior to work commencement.
- Contractor shall call Digsafe (811) a minimum of 72 hours, excluding weekends and holidays, prior to commencing any excavation 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 exploration and percolation tests listed.
- 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 state building and plumbing codes.
- Owner shall verify effective zoning regulations prior to construction.
- Plans show only those features that were visually apparent on the date of 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 at mobilization, 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' of the proposed SAS or within 50' of the proposed septic tank.
- There are no wetlands located within 100' of the proposed leaching area or within 100' of the proposed septic tank.
- The subject property is NOT located within a Zone II of a public drinking water supply well.

- 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 utilized 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" man holes with at least one (1) of these manholes shall be 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 water tight construction, installed level on a firm base, and installed in accordance with 310 CMR 15.232.
 - D-box outlet lines shall be installed level for a minimum of the first 2' in order to equalize flow to the distribution lines.
 - The minimum inside dimension of the d-box shall be 12" with a minimum wall thickness of 2" for reinforced concrete units.
 - Septic Tank covers and d-box to be brought to within 6" of finish grade by the use of watertight risers.
 - When an effluent pump is utilized or the slope of the d-box inlet pipe exceeds 8%, an inlet tee, baffle or splash plate extending to one inch above the outlet invert elevation shall be provided.
 - When the SAS is installed within unsuitable soil layers or above natural ground, all unsuitable soil shall be removed below and laterally for a minimum of 5' surrounding the SAS. Removed material shall be replaced with clean granular material 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 SAS shall be scarified prior to placement of SAS sand or stone.

- Additional Notes:
- MARK ALL SYSTEM COMPONENTS WITH MAGNETIC TAPE FOR FUTURE LOCATION PURPOSES.
 - SYSTEM DESIGNED UNDER THE GEOMATRIX GST GENERAL USE APPROVAL, TRANSMITTAL #289163, Date of Issuance: 12/4/2016.
 - SYSTEM ALSO SUBJECT TO DEPS "STANDARD CONDITIONS FOR ALTERNATIVE SOIL ABSORPTION SYSTEMS," REVISED 3/8/2019.
 - INSTALLER MUST BE TRAINED BY GEOMATRIX FOR THE INSTALLATION OF THE GST SYSTEM.

Received

AUG 29 2022

Sudbury Conservation Department

No.	Revision/Issue	Date
1	ADD 3RD TRENCH	8/28/2022

Firm Name and Address

Capstone Design Build, Inc.
 Post Office Box 127
 Wayland, MA 01778
 (508) 358-5763

Project Name and Address

SEPTIC SYSTEM DESIGN

196 NORTH RD
 SUDBURY, MASS.

Project

22-105

Date

6/6/2022

Sheet

1

Scale

1" = 20'