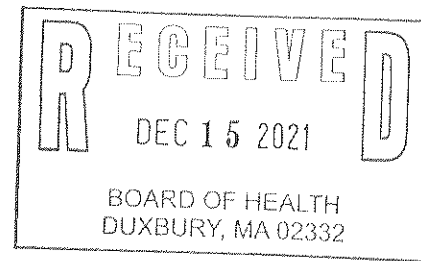


# GRADY CONSULTING, L.L.C.

Civil Engineers ♦ Land Surveyors ♦ Landscape Architects

December 7, 2021

Duxbury Board of Health  
878 Tremont Street  
Duxbury, MA 02332



RE: #28 Hornbeam Road – Septic System Repair  
Applicant: Christopher Turner

Dear Board Members:

On behalf of the applicant we hereby submit this application for the repair of the septic system at the above referenced address. The owner proposes to install an irrigation well, a 2,000 gallon septic tank, distribution box and 1-50' long x 11' wide x 2' deep leaching chamber system with 7- 3' wide x 6' long LC-6 concrete leaching chambers. Enclosed please find the following:

1. 8 sets of the Septic Repair Plan dated December 7, 2021.
2. 4 sets of the Proposed Irrigation Well Plan dated December 7, 2021.
3. Copy of Soil Evaluation Report dated November 10, 2021.
4. Application for Disposal System Construction Permit
5. Application for Well Construction Permit.
6. Check for \$230 for Disposal System Construction Permit application fee
7. Check for \$108 for Well Construction Permit application fee.
8. Check for \$32 for Duxbury Supplementary Rules and Regulations variance request fee.

### **Variance Request From Town of Duxbury Supplemental Rules and Regulations to the State Environmental Code Title 5**

1.10(1) - Reduction in system (Soil Absorption System) location setbacks to a wetland from the required 150 feet to 132 feet.

1.20(1) - Variances shall be granted only when the Board of Health finds that the applicant has established that enforcement of the provision of Town of Duxbury Supplementary Rules & Regulations from which a variance is sought would be manifestly unjust, considering all the relevant facts and circumstances of the individual case and the applicant has established that a level of environmental protection that is at least equivalent to that provided by Town of Duxbury Supplementary Rules & Regulations can be achieved without strict application of the provision of Town of Duxbury Supplementary Rules & Regulations from which a variance is sought.

Due to the location of the existing plumbing and septic system it is necessary to locate the proposed system behind the existing dwelling. The leaching system is proposed as far from the boarding vegetated wetlands as feasible (132'). The system setback is compliant with Title 5 regulations

We believe this request can be approved without compromising the degree of environmental protection since the proposed system is a substantial improvement of the existing system.

If you have any questions please do not hesitate to call.

Sincerely,

GRADY CONSULTING, L.L.C.

A handwritten signature in black ink, appearing to be 'K. Grady', written over a horizontal line.

Kevin Grady  
Project Engineer

Enc.

Cc: Christopher Turner  
10 Commerce Boulevard  
Middleboro, MA 02346

No. \_\_\_\_\_

THE COMMONWEALTH OF MASSACHUSETTS

FEE \_\_\_\_\_

BOARD OF HEALTH

Town Duxbury OF \_\_\_\_\_

APPLICATION FOR DISPOSAL SYSTEM CONSTRUCTION PERMIT

Application for a Permit to Construct ( ) Repair ( ) Upgrade ( ) Abandon ( ) -  Complete System  Individual Components

<u>28 Hanbeam Road, Duxbury, MA 02332</u> Location	<u>Christopher Turner</u> Owner's Name
<u>110-975</u> Map/Parcel #	<u>10 Commerce Blvd., Middleboro, MA 02346</u> Address
<u>002</u> Lot #	<u>508-962-2404</u> Telephone #
Installer's Name	<u>Grady Consulting LLC</u> Designer's Name
Address	<u>71 Evergreen Street, Kingston, MA 02364</u> Address
Telephone #	<u>781-585-2300</u> Telephone #

Type of Building: Single Family Dwelling

Lot Size 59,677 ± Sq. feet

Dwelling— No. of Bedrooms \_\_\_\_\_

Garbage Grinder ( )

Other — Type of Building \_\_\_\_\_

No. of persons \_\_\_\_\_

Showers ( ), Cafeteria ( )

Other fixtures \_\_\_\_\_

Design Flow (min. required) 550 gpd

Calculated design flow 794 gpd

Design flow provided 794 gpd

Plan: Date 12/7/21

Number of sheets 1

Revision Date \_\_\_\_\_

Title Septic Repair Plan

Description of Soil(s) Medium Sand

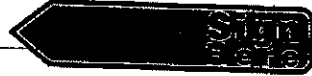
Soil Evaluator Form No. \_\_\_\_\_ Name of Soil Evaluator Kevin Grady

Date of Evaluation 11/10/21

DESCRIPTION OF REPAIRS OR ALTERATIONS Install irrigation well, septic tank, distribution box and 1-50' long x 11' wide x 2' deep leaching chamber system with 7-3' long x 6' wide LC-6 concrete leaching chambers

The undersigned agrees to install the above described Individual Sewage Disposal System in accordance with the provisions of TITLE 5 and further agrees not to place the system in operation until a Certificate of Compliance has been issued by the Board of Health

Signed \_\_\_\_\_



Inspections \_\_\_\_\_



FORM 1 - APPLICATION FOR DSCP

DEP APPROVED FORM 5/96

No. \_\_\_\_\_

THE COMMONWEALTH OF MASSACHUSETTS

FEE \_\_\_\_\_

BOARD OF HEALTH

CERTIFICATE OF COMPLIANCE

Description of Work:  Individual Component(s)  Complete System

The undersigned hereby certify that the Sewage Disposal System; Constructed ( ), Repaired ( ), Upgraded ( ), Abandoned ( )

by: \_\_\_\_\_

at \_\_\_\_\_

has been installed in accordance with the provisions of 310 CMR 15.00 (Title 5) and the approved design plans/as-built plans relating to application No. \_\_\_\_\_ dated \_\_\_\_\_ Approved Design Flow \_\_\_\_\_ (gpd)

Installer \_\_\_\_\_

Designer: \_\_\_\_\_ Inspector \_\_\_\_\_ Date \_\_\_\_\_

The issuance of this certificate shall not be construed as a guarantee that the system will function as designed.

FORM 3 - CERTIFICATE OF COMPLIANCE

DEP APPROVED FORM 5/96

Commonwealth of Massachusetts

Duxbury, Massachusetts

Soil Suitability Assessment for On-site Sewage Disposal

Performed by: Kevin Grady  
GRADY CONSULTING, L.L.C.  
71 Evergreen Street, Suite 1  
Kingston, MA 02364  
Phone: (781) 585-2300 Fax: (781) 585-2378

Date: 11/10/21

Witnessed by: Jessy Mayo

Location Address or Lot #

\*Owner's Name  
\*Address &  
\*Telephone #

Chris Turner  
10 Commerce Boulevard  
Middleboro MA 02346  
508-962-2404

28 Hornbeam

New Construction  Repair  Title V Inspection

Office Review

Published Soil Survey Available: No  Yes

Year Published: \_\_\_\_\_ Publication Scale: \_\_\_\_\_ Soil Map Unit: \_\_\_\_\_

Drainage Class: \_\_\_\_\_ Soil Limitations: \_\_\_\_\_

Surficial Geology Report Available: No  Yes

Year Published: \_\_\_\_\_ Publication Scale: \_\_\_\_\_

Geologic Material (Map Unit): \_\_\_\_\_

Landform: \_\_\_\_\_

Flood Insurance Rate Map:

Above 500 year flood boundary: No  Yes

Within 500 year flood boundary No  Yes

Within 100 year flood boundary No  Yes

Wetland Area:

National Wetland Inventory Map (map unit): N/A

Wetlands Conservancy Program Map (map unit): \_\_\_\_\_

Current Water Resource Conditions (USGS):

Month: November

Range: Above Normal  Normal  Below Normal

Other References Reviewed:

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material?

Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise, and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated on the attached soil evaluation form, are accurate and in accordance with CMR 15.100 through 15.107.

Signature: KG

Date: 11/10/21

TITLE 5 ON-SITE REVIEW

Deep Hole # 2 Date 11/10/21 Time 9:30 Weather cloudy 55°  
Location (Identify on Site Plan) \_\_\_\_\_  
Land Use Residential Slope(%) 5 Surface Stones none  
Vegetation woods Landform \_\_\_\_\_

Distances from: Open Water Body — ft. Possible Wet Area \_\_\_\_\_ ft. Drinking Water Well \_\_\_\_\_ ft.  
Drainageway \_\_\_\_\_ ft. Propertyline 150 ft Other \_\_\_\_\_

DEEP OBSERVATION HOLE LOG

Depth From Surface (Inches) Soil Horizon (USDA) Soil Texture (Munsell) Soil Color Soil Mottling Other: Structures, Stones, Boulders, Consistency, %Gravel

0-6	A	Loam	10YR3/3		
6-24	B	Loamy Sand	10YR5/6		Friable
24-120	C	Medium Sand	2.5Y6/3	none	loose no gravel

Parent Material (geologic) Outwash Depth to Bedrock \_\_\_\_\_  
Depth to Groundwater: Standing Water in Hole: none Weeping from Pit Face non  
Estimated Seasonal High Groundwater \_\_\_\_\_

DETERMINATION FOR SEASONAL HIGH WATER TABLE

Method Used: \_\_\_\_\_  
Depth observed standing in observation hole: \_\_\_\_\_ inches Depth to soil mottles: \_\_\_\_\_ inches  
Depth to weeping from side of observation hole: \_\_\_\_\_ inches Groundwater adjustment \_\_\_\_\_ ft  
Index Well # \_\_\_\_\_ Reading Date \_\_\_\_\_ Index well level \_\_\_\_\_ Adj. factor \_\_\_\_\_ Adj. Groundwater level \_\_\_\_\_

PERCOLATION TEST

Date \_\_\_\_\_ Time \_\_\_\_\_

Observation Hole # \_\_\_\_\_ Time at 9" \_\_\_\_\_  
Depth of Perc \_\_\_\_\_ Time at 6" \_\_\_\_\_  
Start Presoak \_\_\_\_\_ Time (9"-6") \_\_\_\_\_  
End Presoak \_\_\_\_\_ Rate Min/Inch \_\_\_\_\_

Site Suitability Assessment: Site Passed \_\_\_\_\_ Site Failed \_\_\_\_\_ Additional Testing Needed: \_\_\_\_\_  
Performed By Kevin Grady Certification # \_\_\_\_\_  
Witnessed By Tracy Mayo

Comments:

**TITLE 5 ON-SITE REVIEW**

Deep Hole # 1 Date 1/10/21 Time 9:00 Weather cloudy 55°  
 Location (Identify on Site Plan) \_\_\_\_\_  
 Land Use Residential Slope(%) 2-5 Surface Stones none  
 Vegetation Lawn/Woods Landform \_\_\_\_\_

Distances from: Open Water Body — ft. Possible Wet Area 200 ft. Drinking Water Well — ft.  
 Drainageway — ft. Propertyline 100 ft Other \_\_\_\_\_

**DEEP OBSERVATION HOLE LOG**

Depth From Surface (Inches)	Soil Horizon (USDA)	Soil Texture (Munsell)	Soil Color	Soil Mottling	Other: Structures, Stones, Boulders, Consistency, %Gravel
<u>0-6</u>	<u>A</u>	<u>Loam</u>	<u>10YR 3/3</u>		
<u>6-24</u>	<u>B</u>	<u>Loamy Sand</u>	<u>10YR 5/6</u>		
<u>24-96</u>	<u>C</u>	<u>Medium Sand</u>	<u>2.5Y 4/3</u>	<u>none</u>	<u>loose no gravel</u>

Parent Material (geologic) Outwash Depth to Bedrock \_\_\_\_\_  
 Depth to Groundwater: Standing Water in Hole: \_\_\_\_\_ Weeping from Pit Face none  
 Estimated Seasonal High Groundwater 8'-0" assumed

**DETERMINATION FOR SEASONAL HIGH WATER TABLE**

**Method Used:**

\_\_\_ Depth observed standing in observation hole: \_\_\_ inches \_\_\_ Depth to soil mottles: \_\_\_ inches  
 \_\_\_ Depth to weeping from side of observation hole: \_\_\_ inches \_\_\_ Groundwater adjustment \_\_\_ ft  
 Index Well # \_\_\_ Reading Date \_\_\_ Index well level \_\_\_ Adj.factor \_\_\_ Adj.Groundwater level \_\_\_

**PERCOLATION TEST**

Date \_\_\_\_\_ Time \_\_\_\_\_

Observation Hole # 1 Time at 9" \_\_\_\_\_  
 Depth of Perc 24-42 Time at 6" \_\_\_\_\_  
 Start Presoak 9:27 Time (9"-6") \_\_\_\_\_  
 End Presoak 9:31 Rate Min/Inch < 2 Min/In

Site Suitability Assessment: Site Passed X Site Failed \_\_\_\_\_ Additional Testing Needed: \_\_\_\_\_  
 Performed By Kevin Gready Certification # \_\_\_\_\_

Witnessed By Tracy Mayo

Comments: