

Hayes Engineering, Inc

603 Salem Street
Wakefield, MA 01880
Tel: (781) 246-2800
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Nantucket, MA 02554
Tel: (508) 228-7909

Refer to File No. LYF-0381B

July 27, 2021

Planning Board
c/o Emilie Cademartori
Director of Planning and Conservation
55 Summer Street
Lynnfield, MA 01940

RE: Response to Definitive Subdivision Filing
109 Lowell Street / Vallis Way / Caggiano

Dear Members,

The following is provided in response to two June 17, 2021 memos; one from Linden Engineering Partners, LLC and one from the Town Engineer of Lynnfield. Numbered paragraphs in this response correspond to the numbered paragraphs in those memos.


Memo from Linden Engineering Partners, LLC

INITIAL COMMENTS

1. The large remaining land was not considered to be part of the subdivision and is to be remaining land of Linda Vallis. We understand that there was an ANR plan previously submitted and signed, but we are not intending to use it as there are minor changes in the street line on the Subdivision Plan submitted. The parcel has been given an area and designated "remaining land of Linda Vallis". We have added it as "remaining land" in the data tables.


The land area is included in the watershed studies as it is currently developed and does not anticipate any future development of the land. Development of the remaining land would fall under the Stormwater Bylaw based on the amount of disturbance, or be exempted, depending on the project presented at the time of future development.

Attorney Kimball is checking to see whether or not fees were paid for this lot, based on the Planning Board's deliberations of June 23, 2021.



To: Lynnfield Planning Board
RE: Vallis Way Subdivision / Caggiano
Date: July 27, 2021

2. Roadway extension to the adjoining land of Sagamore Springs Real Estate Trust (the golf course) is not being required and has been removed from the plan. The elimination of this roadway, however, does not enable the shortening of the cul-de-sac in terms of the frontage requirements and regularity requirements of the Lynnfield Zoning. We have, however, reconfigured Lot 5, making it a more traditional configuration by applying more of the excess area to that lot.
3. The Planning Board has not yet voted on the length of dead-end street waiver, although this waiver has been consistently granted in the past. We believe that it will ultimately be acceptable to the Planning Board.
4. It is my understanding that the potential issue of encroachment was adequately answered by the abutter at the June 23rd meeting.
5. A written opinion of the conformance of Lot 5 with the requirements of the Zoning Bylaw was obtained from the Building Inspector.
6. The roof drainage system and septic system of Lot 5 have been modified to get the septic system out from under the driveway and place the infiltration system for the roof in the front yard of the house.
7. We believe we have complied with the Rules and Regulation, locating trees within the proposed right-of-way in the easement areas. As we interpret it, the Planning Board would have to let us know if they require the location of any significant trees.
8. The locations of test pits SWMA 1, 2 and 3 have been shown on the plan. The logs of test pits required for the septic systems for the five lots were submitted to the Board of Health in response to a memo from Kristen McRae dated May 11, 2021. A copy of that correspondence is included with this response.
9. Requires no further action by the applicant, although we also believe that we are not subject to the Stormwater Bylaw or any pending changes to those regulations.
10. The undersigned believes the design to build up a berm on the side of potential discharge is effective in increasing freeboard and recommends leaving the design as is.
11. We do not believe that such detail is required in the HydroCAD modeling as storms in excess of the hydraulic capacity of the pipes will simply result in ponding on the catch basin grates until the downstream discharge can be received. The State's Stormwater Regulations only require that the 100-year flow will ultimately reach the design point, which in this case it will, and the regulations do not require 100-year storm capacity for roadway drainage systems.



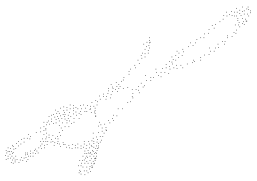
To: Lynnfield Planning Board
RE: Vallis Way Subdivision / Caggiano
Date: July 27, 2021

We have also redesigned the first reach of pipe to include significant infiltration and, although we have not amended the model, the detail of a 6' to 8' deep trench with at least 4' of stone below a perforated HDPE pipe wrapped in fabric after a Stormceptor will provide significant distribution of additional infiltrated flow, further mitigating any back up in the 100-year storm.

12. While we believe the fencing of the detention pond is at the applicant's discretion, we have added a fence to deter unauthorized access to the area.
13. The roadway drainage easement requested on Lot 5 has been added.
14. Jay Kimball, the applicant's attorney, is looking into that.
15. The water main can easily be rerouted around the drain at Station 7+10.
16. We have added benchmarks to the two stone bounds on the layout of Essex Street.
17. All sheets of the plan are signed by both a P.E. and a P.L.S.
18. We do not see the purpose of detailed/enlarged grading plans at the roadway in the cul-de-sac as such plans do not prove useful in staking and construction and are not required by the Rules and Regulations. We have, however, generated gutter line profiles which are helpful both in reading the plan and also field-staking, giving the work a useful purpose.
19. Not answered at this time.
20. The scrivener's error on the radius on Lot 3 has been corrected.
21. A statement has been added as to the existence of wetlands.

Memo from Charles Richter, Town Engineer

1. Previously addressed as item 1 in the Linden Engineering response.
2. This change was voted and has been made to the plans.
3. The 500' request has not yet been voted by the Planning Board.



To: Lynnfield Planning Board
RE: Vallis Way Subdivision / Caggiano
Date: July 27, 2021

4. This item requests a number of things which I respond to as follows:
 - a. The location of significant trees requires the Planning Board to point them out. The locations at 4" in diameter DBH of trees within the right-of-way and easements are shown on the plan.
 - b. Benches have been added to the two granite bounds in front of the property.
 - c. The soil evaluator forms are attached.
 - d. No detail of the detention basin has been added to the plan, and we need further clarification as to what detail is being requested.
 - e. This detail has been changed.
 - f. The site distances have been added to the topographic plan.
5. The 18" pipe was placed on 19 Smith Farm Road property when, in an odd phenomena involving frozen ground and flooded fairways on the Sagamore Golf Course, caused the water to flow to a what was apparently a dry swale at the time of the construction of the dwelling. In order to insure such overflow would not flow into the garage as it did during that storm, the developer, in conjunction with the owner, placed the pipe to insure the flow went around the house. Where a dry swale existed in that location prior to the building of the house, it was believed that that was a natural flow in extreme conditions.
6. The applicant has been asked to chase down feedback from the utilities.
7. We believe that streetlights, as configured, are in conformance, and that streetlights are spaced 250 feet apart (or less) on each side of the street (not both), with any pole being midway (approximately) between the two on the opposite side.

We believe these changes are consistent with the requirements of the Peer Engineer and Town Engineer review, as well, and look forward to hopefully advancing the approval of this project on August 4, 2021.



To: Lynnfield Planning Board
RE: Vallis Way Subdivision / Caggiano
Date: July 27, 2021

Thank you for your cooperation in this matter.

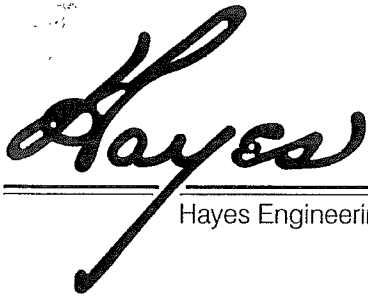
Very truly yours,

Peter J. Ogren, P.E., P.L.S.
President

PJO/dab

Enclosures

cc: Paul Caggiano
✓ Bill Jones
Charlie Richter



Hayes Engineering, Inc

603 Salem Street
Wakefield, MA 01880
Tel: (781) 246-2800
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Nantucket, MA 02554
Tel: (508) 228-7909

Report File No. LYF-0381B

May 20, 2021

Board of Health
55 Summer Street
Lynnfield, MA 01940

Email: kmcrae@town.lynnfield.ma.us

RE: Memo from Kristin McRae of May 11, 2021
Definitive Subdivision Plan
Vallis Way (109 Lowell Street) / Caggiano

Dear Board Members,

We are in receipt of the above-captioned memo in response to our submission of the Definitive Plan to the Town of Lynnfield Planning Board and Board of Health, and respond to the issues in that memo, as follows.

1. The premises at 109 Lowell Street is not being sold for the subdivision, but rather being retained by Linda Vallis, the current owner. In this circumstance, I do not believe a Title 5 inspection or a new septic system is required.
2. We are aware of the requirements in the Groundwater Protection District, and the final system designs will be one bedroom per 10,000 square feet, as required.
3. All that is required at this point in time with the Planning Board is the Statement of Suitability, which is the soil testing conducted in August 2020. This requires only that adequate soils and depths to groundwater exist to construct septic systems in total compliance with Title 5. Copies of the Form 11 reports for the testing that was done on August 25, 2020 are enclosed.
4. As it relates to the stormwater management infiltration pond on Lot 2, we understand mosquito control will be required, and the responsible party for both mosquito control and pond maintenance will be a Homeowners' Association of lots within the subdivision.
5. The proposed equipment storage on Lot 4 can be kept off the area of the proposed soil absorption system.

To: Lynnfield Board of Health
RE: Vallis Way / Caggiano
Date: May 20, 2021

6. The Lot 5 topography consists of a fairly abrupt hill. Although not shown on the plan, test holes were dug to determine if ledge would be encountered. No ledge was encountered to a depth of 9 feet at the top of the knoll. As a consequence, we do not expect to encounter ledge with the proposed construction.
7. The proposed septic system on Lot 5 is shown under the driveway pavement, and we agree that that can be avoided. The final house design and driveway will not have pavement over the soil absorption system. Should the tank be under the driveway or in close proximity to it, H-20 loading tanks are readily available.

I look forward to discussing these issues at this evening's meeting via Zoom.

Very truly yours,

Peter J. Ogren, P.E., P.L.S.
President

PJO/dab
Enclosure

cc: Paul Caggiano -Pcaggdev@hotmail.com

Commonwealth of Massachusetts
City/Town of **LYNNFIELD**
Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal



A. Facility Information

Owner Name MARCO TAMMARO Map/Lot# 17-921
 Street Address 9 PINE STREET Ma State 01940
LYNNFIELD City Zip Code 3A-38

B. Site Information

- (Check one) New Construction Upgrade Repair
- Soil Survey Available? Yes No If yes: _____

Soil Name MERRIMAC fsi Soil Limitations _____
GLACIOFLUVIAL DEPOSITS Landform OUTWASH PLAIN
 Source NRCS Soil Map Unit 254B
 Surfacial Geological Report Available? Yes No If yes: 1962 Year Published/Source Map Unit Qvt

- Description of Geologic Map Unit VALLEY TRAIN COMPOSED OF SAND AND GRAVEL
- Flood Rate Insurance Map Within a regulatory floodway? Yes No
 - Within a velocity zone? Yes No
 - Within a Mapped Wetland Area? Yes No
 - Current Water Resource Conditions (USGS): _____
 Range: Above Normal Normal Below Normal
 Wetland Type Above Normal Normal Below Normal
 - Other references reviewed: _____



Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. 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 in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Gordon R.
Signature of Soil Evaluator

Gordon Rogerson SE 2014

Typed or Printed Name of Soil Evaluator / License #

LEO F. CORMIER

Name of Approving Authority Witness

Aug 25, 2020
Date

June 30, 2022

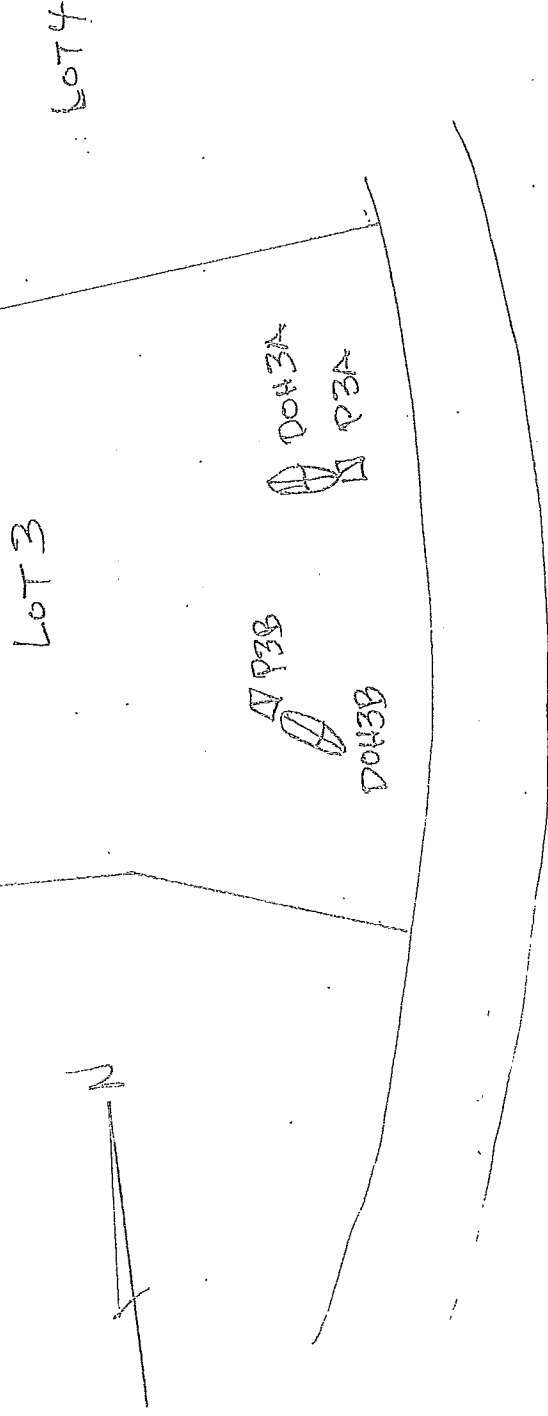
Expiration Date of License

LYNNFIELD

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:





Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 10H3A 82520
 Date: 8/23/18 Time: 1:15 PM Weather: Sunny 80 Latitude: _____ Longitude: A

1. Land Use: WOODS (e.g., woodland, agricultural field, vacant lot, etc.)
 Vegetation: PINE Surface Stones (e.g., cobbles, stones, boulders, etc.): _____ Slope (%): _____

Description of Location: 109 LOWELL ST
 Landform: OUTWASH Position on Landscape (SU, SH, BS, FS, TS): _____

2. Soil Parent Material: _____
 Distances from: Open Water Body 1100 feet
 Property Line _____ feet
 Drainage Way _____ feet
 Drinking Water Well _____ feet
 Wetlands 700 feet
 Other _____ feet

3. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 Groundwater Observed: Yes No If yes: NO Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon / Layer | Soil Texture (USDA) | Soil Matrix Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|----------------------|---------------------|-----------------------------------|------------------------|-------|------------------------------|--------|----------------|--------------------------|--------------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-8 | Ap | fsl | 10YR3/3 | | | 0 | 0 | gf | mfr | |
| 8-20 | Bw | sl | 10YR2/6 | | | 0 | 0 | m | mfr | |
| 20-72 | C1 | ls | 2.5Y7/6 | | | 0 | 0 | m | mfr | Roots to 72" depth |
| 72-120 | C2 | gros | 10YR7/3 | 7/20 | | 20 | 15/10 | sg | mfr | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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Additional Notes:



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 20436 825-2020 Sunny 80 Latitude: _____ Longitude: _____
 Hole (Cobb) WOODS Date PINE Weather None

1. Land Use WOODS (e.g., woodland, agricultural field, vacant lot, etc.) PINE Surface Stones (e.g., cobbles, stones, boulders, etc.) _____ Slope (%) _____
 Description of Location: 109 LOWELL ST. Vegetation _____

2. Soil Parent Material: GLACIO FLUVIAL DEPOSITS Landform Overtwash Position on Landscape (SU, SH, BS, FS, TS) _____
 Distances from: Open Water Body 7100 feet Drainage Way _____ feet Wetlands 100 feet
 Property Line _____ feet Drinking Water Well _____ feet Other _____ feet

3. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

4. Groundwater Observed: Yes No If Yes: ND Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix: Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|------------------------------------|------------------------|-------|------------------------------|--------|----------------|--------------------------|-----------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-6 | Ap | fi | 10YR 3/3 | | | 0 | 0 | gr | mfr | |
| 6-20 | Bw | si | 10YR 5/6 | | | 0 | 0 | m | mfr | |
| 20-50 | C1 | ls | 2.5Y 7/6 | | | 0 | 0 | m | mfr | Roots to 50" dn |
| 50-120 | C2 | gcs | 10YR 7/3 | > 170 | | 20 | 15/10 | Sg | mvr | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Notes:



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (Sh) (USGS methodology)

Obs. Hole # D043A Obs. Hole # D043B
 _____ inches _____ inches
 _____ inches _____ inches
120 inches 120 inches
 _____ inches _____ inches

Index Well Number _____ Reading Date _____

$Sh = Sc - [Sr - x (OW_c - OW_{max}) / OW_r]$

Obs. Hole/Well# _____ Sc _____ Sr _____ OW_c _____ OW_{max} _____ OW_r _____ Sh _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

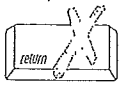
1. Depth of Naturally Occurring Pervious Material
 - a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil system? Yes No absorption
 - b. If yes, at what depth was it observed (exclude A and O Horizons)?
 Upper boundary: _____ inches Lower boundary: _____ inches
 - c. If no, at what depth was impervious material observed?
 Upper boundary: _____ inches Lower boundary: _____ inches



Commonwealth of Massachusetts
 City/Town of LYNNFIELD
 Percolation Test

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

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



A. Site Information

Owner Name MARCO TAMMARO
 Street Address or Lot # 9 PINE STREET
LYNNFIELD MA 01940
 City/Town State Zip Code
 Contact Person (if different from Owner) _____ Telephone Number _____

B. Test Results

| | Date | Time | Date | Time |
|--------------------|--|------|--|------|
| Observation Hole # | 8-25-2020 | | 8- -2020 | |
| | P3A | | P3B | |
| Depth of Perc | 30" + 18" = 48" | | 32" + 18" = 50" | |
| Start Pre-Soak | 1:29 | | 1:46:30 | |
| End Pre-Soak | | | 1:52:49 | |
| Time at 12" | 1:44 | | | |
| Time at 9" | 1:54 | | 1:57:00 | |
| Time at 6" | 2:07 | | 2:01:15 | |
| Time (9"-6") | 13 | | 4 | |
| Rate (Min./Inch) | 45 | | 22 | |
| | Test Passed: <input checked="" type="checkbox"/> | | Test Passed: <input checked="" type="checkbox"/> | |
| | Test Failed: <input type="checkbox"/> | | Test Failed: <input type="checkbox"/> | |

Gordon Rogerson SE 2074
 Test Performed By: LED F. CORMIER
 Board of Health Witness _____

Comments:

Commonwealth of Massachusetts
 City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

Owner Name MARCO TAMMARO Map/Lot # 17-921
 Street Address 9 PINE STREET Ma State 01940
 City LYNNFIELD Zip Code 4A-4B

B. Site Information

- (Check one) New Construction Upgrade Repair
- Soil Survey Available? Yes No If yes:

MERRIMAC fsi

Soil Limitations

GLACIO FLUVIAL DEPOSITS OUTWASH PLAIN

Soil Parent material

Landform

- Surficial Geological Report Available? Yes No If yes: 1962 Year Published/Source

Qvt

Map Unit

NRCS Source

254B Soil Map Unit

VALLEY TRAIN COMPOSED OF SAND AND GRAVEL

Description of Geologic Map Unit:

- Flood Rate Insurance Map Within a regulatory floodway? Yes No

- Within a velocity zone? Yes No

- Within a Mapped Wetland Area? Yes No

- Current Water Resource Conditions (USGS):

Range: Above Normal Normal Below Normal

If yes, MassGIS Wetland Data Layer:

Wetland Type

- Other references reviewed:



Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. 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 in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

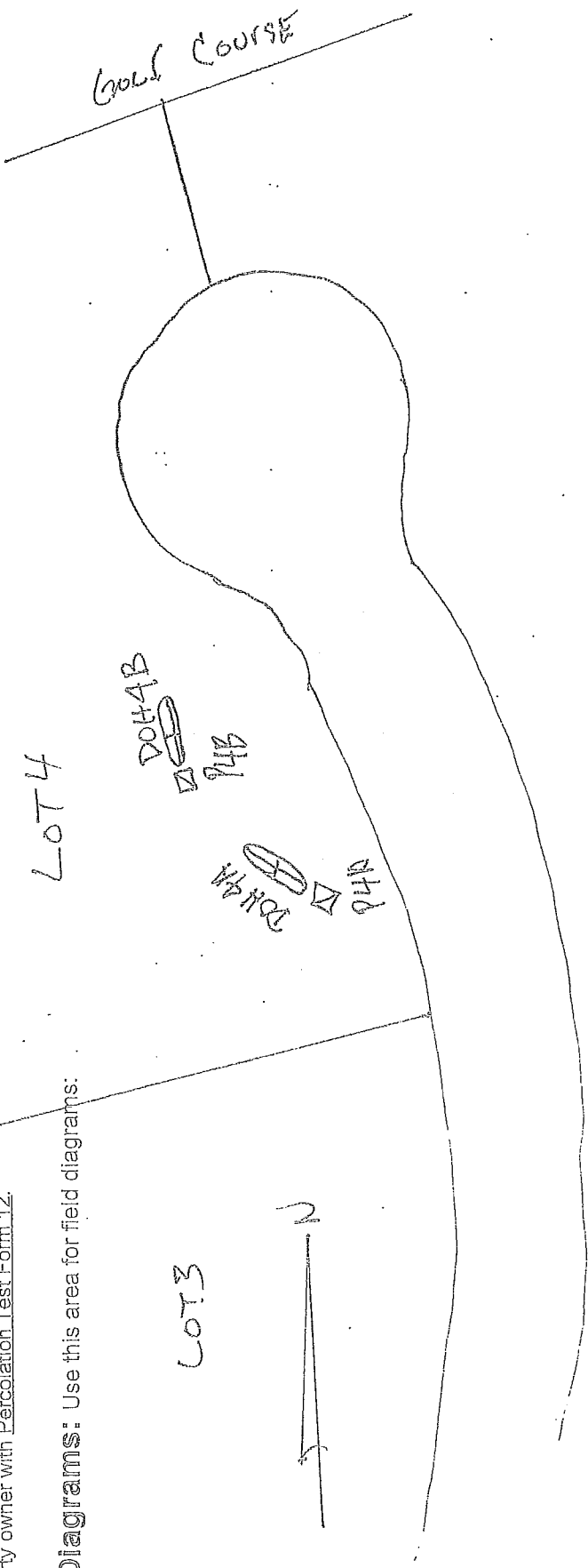
[Signature]
Signature of Soil Evaluator

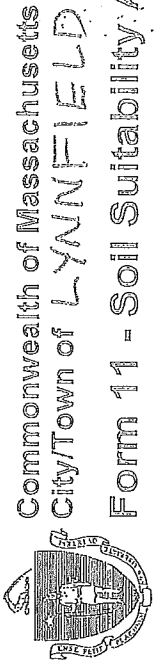
Gordon Rogerson, SE 2014
Typed or Printed Name of Soil Evaluator / License #
LEO F. CORMIER
Name of Approving Authority Witness

[Signature]
Date
June 30, 2022
Expiration Date of License
LYNNFIELD
Approving Authority

Note: in accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:





Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

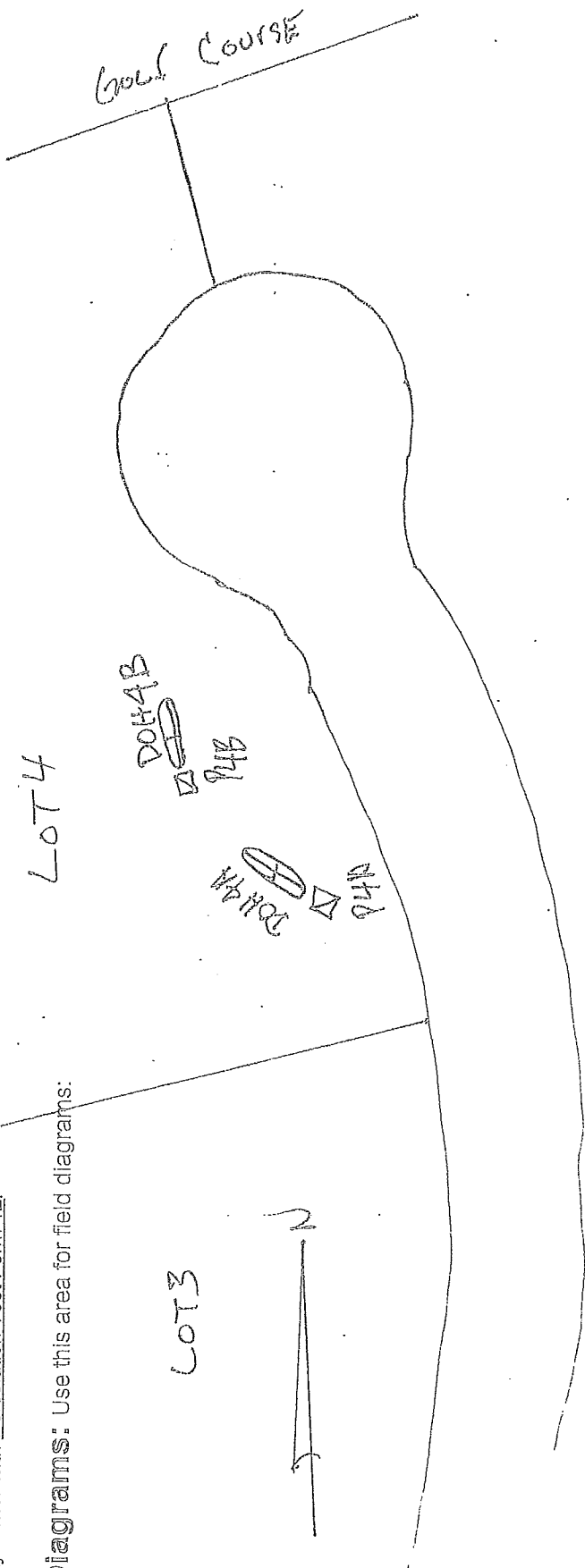
I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify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

[Signature]
Signature of Soil Evaluator
Gordon Rogerson SE 2014
Typed or Printed Name of Soil Evaluator / License #
LEO F. CORMIER
Name of Approving Authority Witness

Aug 25, 2020
Date
June 30, 2022
Expiration Date of License
LYNNFIELD
Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:





Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: DH-1A Date: 8-25-20 Time: PINE Weather: Cldy 75° Latitude: _____ Longitude: A
 Hole # (606) Vegetation: _____ Surface Stones (e.g., cobbles, stones, boulders, etc.): _____ Slope (%): _____
 Land Use: WOODS (e.g., woodland, agricultural field, vacant lot, etc.)

Description of Location: 109 LOWELL ST
 Landform: GLACIAL DEPOSITS Position on Landscape (SU, SH, BS, FS, TS): _____
 Soil Parent Material: GLACIAL DEPOSITS Landform: OUTWASH

Distances from: Open Water Body 700 feet Property Line _____ feet
 Drainage Way _____ feet Wetlands 700 feet
 Drinking Water Well _____ feet Other _____ feet

Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 Groundwater Observed: Yes No If yes: NO Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix: Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|------------------------------------|------------------------|-------|------------------------------|--------|----------------|--------------------------|-----------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-8 | A ₁ | fsl | 10YR 3/3 | | | 0 | 0/0 | gr | mfr | |
| 8-20 | B _w | sl | 10YR 5/6 | | | 0 | 0/0 | m | mfr | |
| 20-60 | C ₁ | ls | 2.5Y 7/6 | | | 0 | 0/0 | m | mfr | Roots to 60" da |
| 60-120 | C ₂ | grcs | 10YR 5/3 | >120 | | 30 | 15/10 | sf | mfr | |
| | | | | | | | | | | |
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Additional Notes:



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: DOH4B Date: 8-25-2020 Time: 8:25-20:20 Weather: Sunny Temperature: 75° Longitude: _____
 Hole # (1885) Vegetation: _____ Latitude: _____
 Land Use Woods (e.g., woodland, agricultural field, vacant lot, etc.) Surface Stones (e.g., cobbles, stones, boulders, etc.): _____ Slope (%): _____
 Description of Location: 109 Lowell St.

Soil Parent Material: GLACIOFLUVIAL DEPOSITS Landform: Outwash Position on Landscape (SU, SH, BS, FS, TS): _____
 Distances from: Open Water Body 210s feet Drainage Way _____ feet Wetlands 7100 feet
 Property Line _____ feet Drinking Water Well _____ feet Other _____ feet
 4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes No If Yes: NO Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix: Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|------------------------------------|------------------------|-------|------------------------------|--------|----------------|--------------------------|-----------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-6 | A | fs | 10YR 3/4 | | | 0 | 0 | gfb | mf | |
| 6-15 | Bw | ls | 10YR 5/6 | | | 0 | 0 | gfb | mf | |
| 15-32 | C | gcs | 10YR 5/3 | 7132 | | 35 | 35/0 | gfb | mf | Roots to 69" dh |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Notes:



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (Sh) (USGS methodology)

Obs. Hole # DOH 41A Obs. Hole # DOH 41B
 _____ inches _____ inches
 _____ inches _____ inches
2170 inches 2132 inches
 _____ inches _____ inches

Index Well Number _____ Reading Date _____

$S_h = S_c - [S_r \times (Ow_c - Ow_{max}) / Ow_r]$ Ow_c _____ Ow_{max} _____ Ow_r _____ S_h _____

Obs. Hole/Well# _____ S_c _____ S_r _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material _____ absorption

- a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil system? Yes No
- b. If yes, at what depth was it observed (exclude A and O Horizons)? Upper boundary: _____ inches Lower boundary: _____ inches
- c. If no, at what depth was impervious material observed? Upper boundary: _____ inches Lower boundary: _____ inches



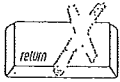
Commonwealth of Massachusetts

City/Town of LYNNFIELD

Percolation Test

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

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



A. Site Information

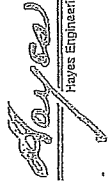
Owner Name: MARCO TAMMARO
Street Address or Lot #: 9 PINE STREET
City/Town: LYNNFIELD State: MA Zip Code: 01940
Contact Person (if different from Owner): Telephone Number:

B. Test Results

Table with 2 columns for test dates (8-25-2020 and 8-25-2020) and rows for Observation Hole #, Depth of Perc, Start Pre-Soak, End Pre-Soak, Time at 12", Time at 9", Time at 6", Time (9"-6"), Rate (Min./Inch), Test Passed/Failed checkboxes.

Gordon Rogerson SE 2074
Test Performed By: LED F. CORMIER
Board of Health Witness

Comments:



Land Planning
Environmental Engineering

603 Saffers Street
Worcester, MA 019
T: (781) 246-28
F: (781) 246-75
Manufacturers (508) 228-79

www.hayeseng.com

Commonwealth of Massachusetts
City/Town of LYNNFIELD
Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal



A. Facility Information.

Owner Name MARCO TAMMARO Map/Lot # 17-921
Street Address 9 PINE STREET City LYNNFIELD State Ma Zip Code 01940
City LYNNFIELD State Ma Zip Code 01940

B. Site Information

- 1. (Check one) New Construction Upgrade Repair
- 2. Soil Survey Available? Yes No If yes: Source NRCS 254B Soil Map Unit

Soil Name MERRIMAC FSI Soil Limitations OUTWASH PLAIN
Soil Parent material GLACIO FLUVIAL DEPOSITS Landform OUTWASH PLAIN
Soil Parent material VALLEY TRAIN COMPOSED OF SAND AND GRAVEL Map Unit Qvt

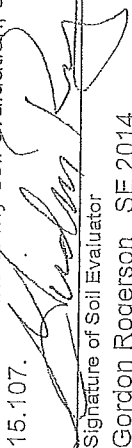
- 3. Surficial Geological Report Available? Yes No If yes: Year Published/Source 1962 Map Unit
- 4. Flood Rate Insurance Map Within a regulatory floodway? Yes No
- 5. Within a velocity zone? Yes No
- 6. Within a Mapped Wetland Area? Yes No
- 7. Current Water Resource Conditions (USGS): Range: Above Normal Normal Below Normal
- 8. Other references reviewed: _____



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

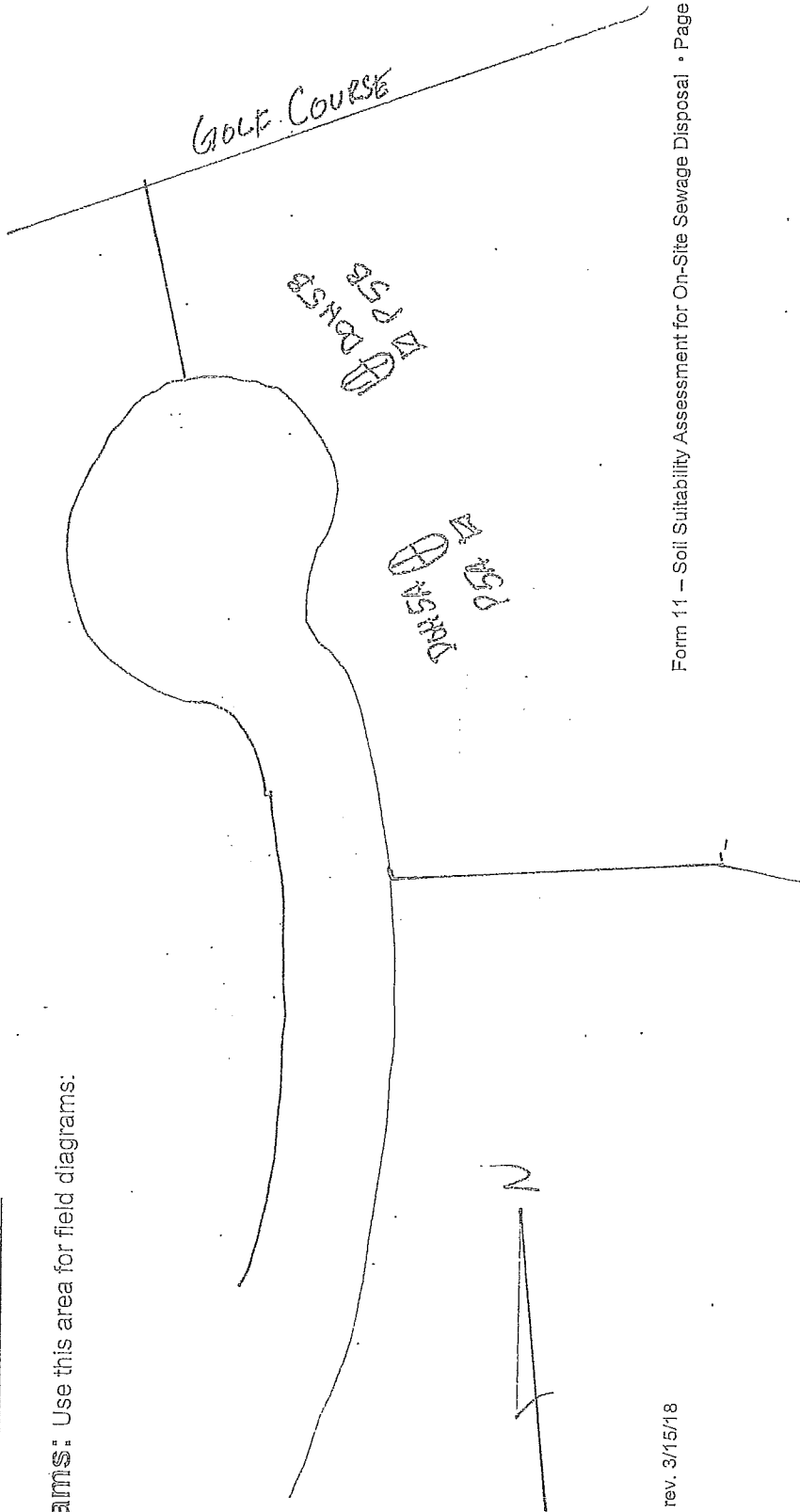
I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify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


Signature of Soil Evaluator
Gordon Rogerson SE 2014
Typed or Printed Name of Soil Evaluator / License #
LEO F. CORMIER
Name of Approving Authority / Witness

Aug 25, 2020
Date
June 30, 2022
Expiration Date of License
LYNNFIELD
Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:





Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 0415A 8-25-20 Date 8-25-20 Weather Sunny & D Latitude _____ Longitude: _____
 Hole # 1082 Time PM 15

1. Land Use: WOODS (e.g., woodland, agricultural field, vacant lot, etc.) Surface Stones (e.g., cobbles, stones, boulders, etc.) NONE Slope (%) _____
109 Lowell St Vegetation _____

Description of Location: Glacial/Euvial Deposits Landform Outwash Position on Landscape (SU, SH, BS, FS, TS) _____
 2. Soil Parent Material: _____

3. Distances from: Open Water Body >100 feet Drainage Way _____ feet Wetlands >100 feet
 Property Line _____ feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes No If Yes: NO Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon / Layer | Soil Texture (USDA) | Soil Matrix Color-Moist (Munsell) | Redoximorphic Features | | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|----------------------|---------------------|-----------------------------------|------------------------|-------|---------|------------------------------|------------------|----------------|--------------------------|-----------------|
| | | | | Depth | Color | Percent | Gravel | Cobbles & Stones | | | |
| 0-8 | Aa | fsl | 10YR 7/3 | | | | 0 | 0% | fs | mfy | |
| 8-20 | Bw | ls | 10YR 7/6 | | | | 0 | 0% | m | mfr | |
| 20-120 | C | gcs | 10YR 7/3 | 7120 | | | 30 | 20/10 | ss | mwf | Roots to 70" dn |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Additional Notes:

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: **0045B** Date: **8-25-20** Time: **Sunny 80** Weather: **NONE** Latitude: _____ Longitude: _____
 Hole # (1083) **WOODS** Vegetation: **Pine** Surface Stones (e.g., cobbles, stones, boulders, etc.): _____ Slope (%): _____
 Description of Location: **109 LOWELL ST**

1. Land Use (e.g., woodland, agricultural field, vacant lot, etc.): _____
 2. Soil Parent Material: **Glacial Fluvial Deposits** Landform: **Outwash** Position on Landscape (SU, SH, BS, FS, TS): _____
 3. Distances from: Open Water Body **> 100** feet Drainage Way _____ feet Wetlands **100** feet
 Property Line _____ feet Drinking Water Well **Public** feet Other _____ feet
 4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes No If Yes: **NO** Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix: Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|------------------------------------|------------------------|-------|------------------------------|--------|----------------|--------------------------|-----------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-8 | Ap | FS | 10YR 3/3 | | | | | gr | mfr | |
| 8-20 | Bw | IS | 10YR 5/6 | | | | | m | mfr | |
| 20-120 | C | grcs | 10YR 5/3 | 7-120 | | 30 | 15/5 | ss | mfr | Roots to 60" db |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Notes: _____



Commonwealth of Massachusetts
City/Town of **LYNNFIELD**

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (Sh) (USGS methodology)

Obs. Hole # DDK5A

_____ inches

_____ inches

> 120 inches

_____ inches

Obs. Hole # DDH5B

_____ inches

_____ inches

> 120 inches

_____ inches

Index Well Number _____ Reading Date _____

$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

- a. 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 No
- b. If yes, at what depth was it observed (exclude A and O Horizons)? Upper boundary: _____ inches Lower boundary: _____ inches
- c. If no, at what depth was impervious material observed? Upper boundary: _____ inches Lower boundary: _____ inches



Commonwealth of Massachusetts

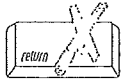
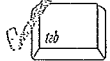
City/Town of LYNNFIELD

Percolation Test

Form 62

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

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



A. Site Information

Owner Name: MARCO TAMMARO
Street Address or Lot #: 9 PINE STREET
City/Town: LYNNFIELD State: MA Zip Code: 01940
Contact Person (if different from Owner) Telephone Number

B. Test Results

Table with 2 columns for test dates (8-25-2020) and 2 sub-columns for Date and Time. Rows include Observation Hole # (P5A, P5B), Depth of Perc (28' + 18" = 46", 24' + 18" = 42"), Start Pre-Soak (12:22:20, 12:42), End Pre-Soak (20 gals, 20 gals), Time at 12" (12:23:15, 12:50), Time at 9" (12:24:07, 12:54:50), Time at 6" (12:26:17, 1:00:56), Time (9"-6") (2, 6), Rate (Min./Inch) (< 2 m/i, 2). Test Passed/Failed checkboxes are checked.

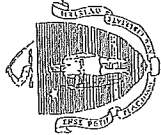
Gordon Rogerson SE 2074

Test Performed By:

LED F. CORMIER

Board of Health Witness

Comments:



Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

Owner Name MARCO TAMMARO

Street Address 9 PINE STREET

City LYNNFIELD Ma State

Map/Lot # 17-921

Zip Code 01940

60A-6B

B. Site Information

1. (Check one) New Construction Upgrade Repair

2. Soil Survey Available? Yes No If yes:

Source NRCS

Soil Map Unit 254B

Soil Name MERRIMAC fsl

Soil Limitations

Landform GLACIO FLUVIAL DEPOSITS

Year Published/Source 1962

Map Unit Qvt

3. Surficial Geological Report Available? Yes No

Description of Geologic Map Unit VALLEY TRAIN COMPOSED OF SAND AND GRAVEL

4. Flood Rate Insurance Map

Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No

7. Current Water Resource Conditions (USGS):

Month/Day/ Year

8. Other references reviewed:

If yes, MassGIS Wetland Data Layer:

Range: Above Normal Below Normal

Wetland Type

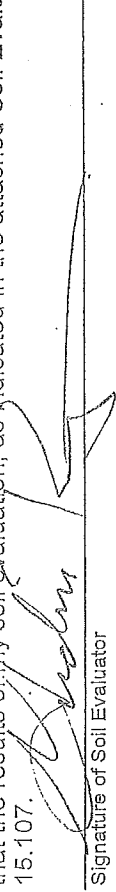
Normal Below Normal



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. 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 in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

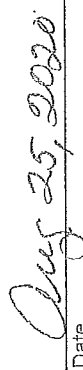

Signature of Soil Evaluator

Gordon Rogerson SE 2014

Typed or Printed Name of Soil Evaluator / License #

LEO F. CORMIER

Name of Approving Authority Witness


Date

June 30, 2022

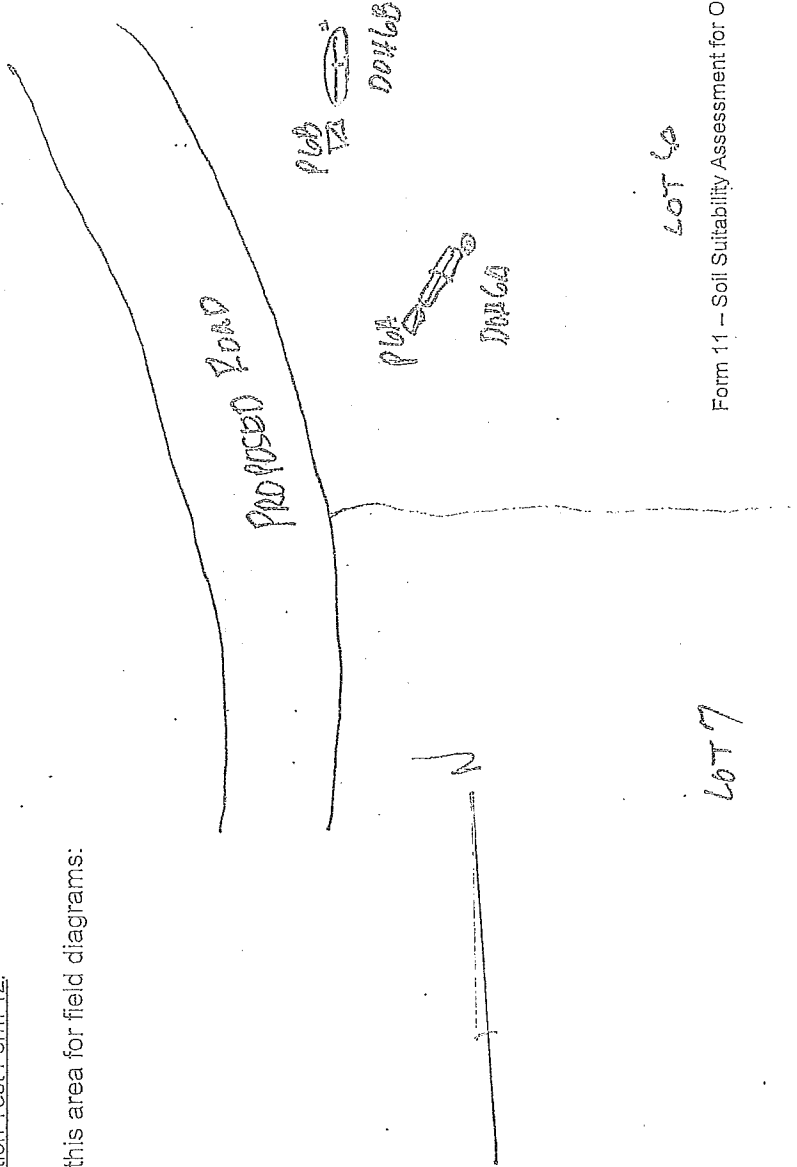
Expiration Date of License

LYNNFIELD

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:





Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: DAH6A 8-25-2020 Sunny 75° Date Time Weather Latitude Longitude

1. Land Use: Woods (e.g., woodland, agricultural field, vacant lot, etc.) Surface Stones (e.g., cobbles, stones, boulders, etc.): _____ Slope (%) _____

Description of Location: 109 LOWELL ST Vegetation _____ Landform DETERMINED Position on Landscape (SU, SH, BS, FS, TS) _____

2. Soil Parent Material: _____ Distances from: Open Water Body 2100 feet Wetlands 2100 feet
Property Line _____ feet Drinking Water Well Public feet Other _____ feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If Yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|-----------------------------------|------------------------|-------|------------------------------|---------|----------------|--------------------------|-----------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-6 | Ap | fsl | 10YR 2/3 | | | 0 | 0 | gr | mfr | |
| 6-13 | Bw | fsl | 10YR 5/6 | | | 0 | 0 | m | mfr | |
| 13-48 | C1 | ls | 2.5Y 7/6 | | | 0 | 0 | m | muf | Roots to 60" dn |
| 48-132 | C2 | gccs | 10YR 5/3 | 7132 | | 30 | 30/20/0 | gg | muf | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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Additional Notes:



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

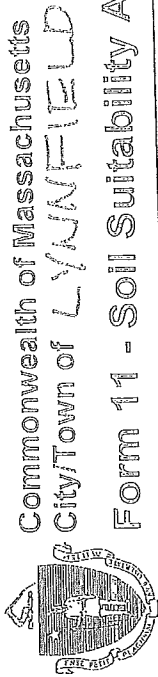
Deep Observation Hole Number: DH6B 8-25-2020 Date 8:15 AM Time Sunny 75 Weather None Latitude _____ Longitude: 3
wood (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation None
 Description of Location: 109 LOWELL ST. Surface Stones (e.g., cobbles, stones, boulders, etc.) _____ Slope (%) _____

1. Land Use _____
 2. Soil Parent Material: Glacial Outwash Landform Outwash Position on Landscape (SU, SH, BS, FS, TS) _____
 3. Distances from: Open Water Body 200 feet Drainage Way _____ feet Wetlands 200 feet
 Property Line _____ feet Drinking Water Well Public Other _____ feet
 4. Unsuitable Materials Present: Yes No Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes No If yes: NO Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix: Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|------------------------------------|------------------------|-------|------------------------------|--------|----------------|--------------------------|------------------|
| | | | | Depth | Color | Percent | Gravel | | | |
| 0-9 | Ap | loPR | 10YR 3/3 | | | 0 | 0/0 | g | mf | |
| 9-18 | Bw | sl | 10YR 5/6 | | | 0 | 0/0 | m | mf | |
| 18-50 | C1 | ls | 2.5Y 7/6 | | | 0 | 0/0 | m | mvf | Roots to 50" dia |
| 50-72 | C2 | grCS | 10YR 5/3 | 7/32 | | 30 | 20/20 | sg | mvf | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Notes:



Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (Sh) (USGS methodology)

Obs. Hole # DOK 6A Obs. Hole # DOK 6B
 _____ inches _____ inches
 _____ inches _____ inches
2132 inches 2132 inches
 _____ inches _____ inches

Index Well Number _____ Reading Date _____

$S_h = S_c - [S_r \times (Ow_c - Ow_{max}) / Ow_r]$

Obs. Hole/Well# _____ S_c _____ S_r _____ Ow_c _____ Ow_{max} _____ Ow_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material:

- a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil system? Yes No absorption
- b. If yes, at what depth was it observed (exclude A and O Horizons)? Upper boundary: _____ inches Lower boundary: _____ inches
- c. If no, at what depth was impervious material observed? Upper boundary: _____ inches Lower boundary: _____ inches



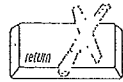
Commonwealth of Massachusetts

City/Town of LYNNFIELD

Percolation Test

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

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



A. Site Information

Owner Name: MARCO TAMMARO
Street Address or Lot #: 9 PINE STREET
City/Town: LYNNFIELD MA Zip Code: 01940
Contact Person (if different from Owner): Telephone Number:

B. Test Results

Table with 2 columns for test dates (8-25-2020) and rows for Observation Hole #, Depth of Perc, Start Pre-Soak, End Pre-Soak, Time at 12", Time at 9", Time at 6", Time (9"-6"), Rate (Min./Inch), Test Passed/Failed checkboxes.

Gordon Rogerson SE 2074
Test Performed By: LED F. CORMIER
Board of Health Witness

Comments:

Commonwealth of Massachusetts
City/Town of LYNNFIELD
Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

Owner Name MARCO TAMMARO Map/Lot # 17-921
 Street Address 9 PINE STREET Ma 01940
 City LYNNFIELD State Zip Code MA - 7B

B. Site Information

- (Check one) New Construction Upgrade Repair
- Soil Survey Available? Yes No If yes:

Source NRCS Soil Map Unit 254B

Soil Name MERRIMAC FSI Soil Limitations OUTWASH PLAIN

Soil Parent material GLACIO FLUVIAL DEPOSITS Landform Qvt

Surficial Geological Report Available? Yes No If yes: 1962 Year Published/Source

Description of Geologic Map Unit: VALLEY TRAIN COMPOSED OF SAND AND GRAVEL

- Flood Rate Insurance Map Within a regulatory floodway? Yes No
- Within a velocity zone? Yes No
- Within a Mapped Wetland Area? Yes No
- Current Water Resource Conditions (USGS): _____
 Range: Above Normal Normal Below Normal
 Wetland Type _____
 Month/Day/ Year _____
- Other references reviewed: _____



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

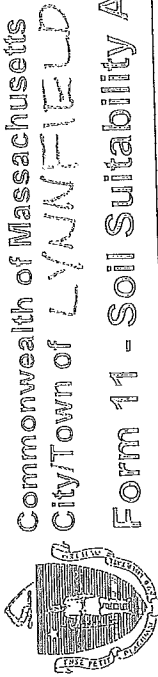
Deep Observation Hole Number: DA17B 8-25-20 Date 8-25-20 Time None Latitude None Longitude: None
 1. Land Use Woods (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation None
 Description of Location: 109 Lowell St. Surface Stones (e.g., cobbles, stones, boulders, etc.) None Slope (%) None

2. Soil Parent Material: GLACIOFLUVIAL DEPOSITS Outwash Landform Outwash
 3. Distances from: Open Water Body >100 feet Drainage Way None Wetlands >100 feet
 Property Line None feet Drinking Water Well None feet Other None feet
 4. Unsuitable Materials Present: Yes No, If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes, No, If Yes: NO Depth Weeping from Pit NO Depth Standing Water in Hole NO

Soil Log

| Depth (in) | Soil Horizon /Layer | Soil Texture (USDA) | Soil Matrix: Color-Moist (Munsell) | Redoximorphic Features | | Coarse Fragments % by Volume | | Soil Structure | Soil Consistence (Moist) | Other |
|------------|---------------------|---------------------|------------------------------------|------------------------|-------|------------------------------|------------------|----------------|--------------------------|------------------|
| | | | | Depth | Color | Gravel | Cobbles & Stones | | | |
| 0-6 | Ap | sl | 10YR 3/3 | | | 0 | 0/0 | gr | mvf | |
| 6-13 | ba | sl | 10YR 5/6 | | | 0 | 0/0 | m | mvf | |
| 13-102 | C1 | ls | 2.5Y 7/6 | | | 0 | 0/0 | m | mvfr | Roots to 100" DN |
| 102-156 | C2 | grcs | 10YR 3/3 | 7/5b | | 20 | 15/5 | sg | mvfr | |
| | | | | | | | | | | |
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Additional Notes:



Commonwealth of Massachusetts
City/Town of LYNNFIELD

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (Sh) (USGS methodology)

Obs. Hole # DDH7A Obs. Hole # DDH7B
 _____ inches _____ inches
 _____ inches _____ inches
2144 inches 2156 inches
 _____ inches _____ inches

Index Well Number: _____ Reading Date: _____

$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

- a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil system? Yes No absorption
- b. If yes, at what depth was it observed (exclude A and O Horizons)? Upper boundary: _____ inches Lower boundary: _____ inches
- c. If no, at what depth was impervious material observed? Upper boundary: _____ inches Lower boundary: _____ inches



Commonwealth of Massachusetts
 City/Town of LYNNFIELD
 Percolation Test

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

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



A. Site Information

Owner Name MARCO TAMMARO
 Street Address or Lot # 9 PINE STREET
 City/Town LYNNFIELD State MA Zip Code 01940
 Contact Person (if different from Owner) _____ Telephone Number _____

B. Test Results

| | Date | Time | Date | Time |
|--------------------|----------------|------|-----------------|------|
| Observation Hole # | 8-25-2020 | P7A | 8-25-2020 | P7B |
| Depth of Perc | 30" ± 18" = 48 | | 42" ± 18" = 60" | |
| Start Pre-Soak | 10:28 | | 10:31 | |
| End Pre-Soak | | | | |
| Time at 12" | 10:40:43 | | 10:40:53 | |
| Time at 9" | 10:37:22 | | 10:44:22 | |
| Time at 6" | 10:45:14 | | 10:49:06 | |
| Time (9"-6") | 8 | | 5 | |
| Rate (Min./Inch) | < 3 | | < 2 | |

Test Passed:
 Test Failed:

Test Passed:
 Test Failed:

Gordon Rogerson SE 2074
 Test Performed By: LED F. CORMIER
 Board of Health Witness _____

Comments:

