



TOWN OF SALISBURY
CONNECTICUT

P.O. Box 548
Salisbury, Connecticut 06068

Conservation Commission

Town of Salisbury, Conservation Commission, Application for Regulated Activity Permit

- 1) Applicants name: **Pat Hackett, P.E.**
- 2) Applicants home address: **16 East St Lakeville, CT 06039**
- 3) Applicants business address: **prh@prhackett.com**
- 4) Applicants Home Phone #: _____ Business Phone #: **203 788-9959**
- 5) Owner of property: Name: **Angela Cho & Xin Yu**
Address: **302 West 79th Street #4A, New York, NY 10024**
Phone #: _____

Signature of property owner consenting to this application:



- 6) Applicants interest in the land: **Owner's engineer**
- 7) Geographical location of property: **West shore of West Twin Lake**
Description of the land: **Grassed area on west, wetland water on east**
Computation of wetland area or watercourse disturbance: **None**
- 8) Purpose and description of the proposed activity: **Install new septic and well**
- 9) Alternatives considered by applicant: **No alternatives - TAHD approved plan**

Why this proposal to alter wetlands was chosen: **No wetland disturbed**
- 10) Site plan showing existing and proposed conditions in relation to wetlands and watercourses:
(Attach map and plans to application) **See plan**
- 11) Names and addresses of adjacent property owners:

North: **Dianne Storm 6 Bloomer Lane, Ethan Casey 10 Bloomer Lane**
South: **Parcel under review**
East: **Lake**
West: **Martha Greene, 1 Bloomer Lane**

12) Certification that the applicant is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through inaccurate or misleading information:

Signature: _____

13) Authorization for the commissioners and agents of the Commission to inspect the property, at reasonable times, both before and after a final decision has been issued:

Signature: _____

14) DEEP Reporting Form 22A-39-14 provided by applicant (Rev. 3/2013)

15) Any other information the Commission deems necessary to the understanding of what the applicant is proposing:

16) Section 7.6 Requirements, if stipulated by agent

17) Filing Fee: As defined in current Regulations

18) For activities involving a significant activity as determined by the Commission and defined in Section 2 of the regulations the provisions of Article 7.6 must be submitted with the application. (Attach documents).

19) If the affected property is within 500 feet of an adjacent municipality the applicant is responsible for providing documentation that the provisions of 8.9 of the regulations have been satisfied: (Attach documents).

DATE FILED: _____

DATE RECEIVED BY COMMISSION: _____

ACTION: a) INSIGNIFICANT ACTIVITY

CONDITIONS:

DATE OF APPROVAL:

b) SIGNIFICANT ACTIVITY

PUBLIC HEARING DATE:

PUBLIC HEARING DATE + 65 DAYS:

CHECK LIST:

A. PUBLIC NOTICE:

DATES PUBLISHED:

B. PROOF THAT APPLICANT HAS MAILED COPIES OF PUBLIC NOTICE TO ABUTTING PROPERTY OWNERS:

C. PROOF OF PROVISIONS OF SECTION 8.2 (IF APPLICABLE):

FLOAT SWITCH SETTINGS

Measured from the inside bottom of the chamber

Turn Off: 12.0 inches	equals	279.3 Gallons
Minimum Turn On: 13.0 inches	equals	302.6 Gallons
Maximum Turn On: 14.0 inches	equals	325.8 Gallons
Alarm Height: 16.0 inches	equals	372.4 Gallons
Length of Pump Line: 12 Feet		
Flow Back: 0.1 inches	equals	2.0 Gallons
Lost at Bottom: 12.1 inches		
or: 281.2 Gallons		
Pump Volume Minimum: 23.3 Gallons	Actual:	21.3 Gallons
Pump Volume Maximum: 46.5 Gallons	Actual:	44.6 Gallons
After Alarm Volume: 721.5 Gallons		

FLOAT SWITCH SETTINGS

Measured from the outside top of the chamber

Turn Off: 49.0 inches	equals	279.3 Gallons
Minimum Turn On: 48.0 inches	equals	302.6 Gallons
Maximum Turn On: 47.0 inches	equals	325.8 Gallons
Alarm Height: 45.0 inches	equals	372.4 Gallons
Length of Pump Line: 12 Feet		
Flow Back: 0.1 inches	equals	2.0 Gallons
Lost at Bottom: 12.1 inches		
or: 281.2 Gallons		
Pump Volume Minimum: 23.3 Gallons	Actual:	21.3 Gallons
Pump Volume Maximum: 46.5 Gallons	Actual:	44.6 Gallons
After Alarm Volume: 721.5 Gallons		

PUMP NOTES

The engineer shall be notified of any changes that deviate from this plan. No different equipment shall be used until the design values have been checked by the engineer and approved.

The pump shall be a Gould 3885 1/3hp WE03L or approved equivalent. Minimum capacity shall be 900 gallons per hour at 25 feet of head. Discharge rate for a 2" pump lines using the selected pump at the bottom of the PC table. See Total Dynamic Head graph for the pump on plan. Pumps shall be chained as shown on detail and have a union/quick disconnect for non-access pump removal or provide slide rail removal system and secondary interior safety lid on riser.

Pump turn-on and turn-off level to be adjusted by the contractor to match the float elevations shown in the FLOAT SWITCH SETTINGS table. Pumps shall be wired so the alarm is on a separate circuit. All electrical wiring of the pump station, alarm, and feed, shall meet the National Electrical Code, latest edition. The control panel and alarm shall be located in an audible location.

The utility vault used is noted in the Pump Chamber Data (PCD) table and must be watertight with joints sealed with asphalt cement or equal. Inside dimensions are as noted on the PCD table. Float level elevations listed from both the inside top and inside bottom and can be found in the Float Switch Settings table. They are based on the spec'd dimensions and must be re-figured for a different tank.

Acceptable pipe for the pump line shall be 2" PVC plastic pressure pipe ASTM D2241, SDR21, SDR 17, or SDR 13.5 or AWWA C-900 (PC 200 PSI min) with bell and spigot with rubber compression gaskets, 2" PVC ASTM D 1785 / ASTM D 2665 Schedule 40 with solvent welded, threaded joints or gasketed couplings, or 2" polyethylene plastic flexible pressure pipe, 200 p.s.i. rated with no joints within 50' of a well or 50' of an open watercourse or surface water drain.

An 1/8" diameter hole shall be into the discharge pipe facing downward to allow effluent to flow back into the pump chamber when the pump cycle ends.

See Float Switch Settings table for flow back volume to the pump chamber. Flow back is based on the length of pump line and pipe diameter. Float level are set to account for flowback.

EXISTING BUILDING

Elevation	Location	Elevation
748.3	Existing finished first floor	748.3
748.9	Invert out of house	748.9
746.6	Invert in septic tank	746.6
746.3	Invert out septic tank	746.3
746.1	Invert in pump chamber	746.1
745.8	Invert out pump chamber	745.8
748.8	Invert in baffle D-box	748.8
749.1	Top of unit Mantis 536-8	749.1
748.6	Invert unit Mantis 536-8	748.6
747.6	Bottom unit Mantis 536-8	747.6
747.1	Minimum bottom sand	747.1
749.8	Top of bank 10' out from invert	749.8

Basis of SSD Repair Existing Building

Type of Use: Residential, Single Family
 Number of Bedrooms: 2
 Percolation Rate: 13.7 Minutes/Inch
 Design Flow: 300 GPD
 Minimum Septic Tank Size: 1,000 Gallons
 Proposed Septic Tank Size: 1,000 Gallons
 Seasonal High Groundwater at: 30 Inches
 Design Restrictive Layer at: 40 Inches
 Ledge at: N/A Inches
 Leaching Area Required: 500 Square Feet
 Leaching area per linear foot: 11 SF/LF
 or: 45.5 LF Required
 Leaching Area Provided: 550 Square Feet OK
 or: 50 LF Provided OK

Since this plan is a repair, no reserve area is shown.

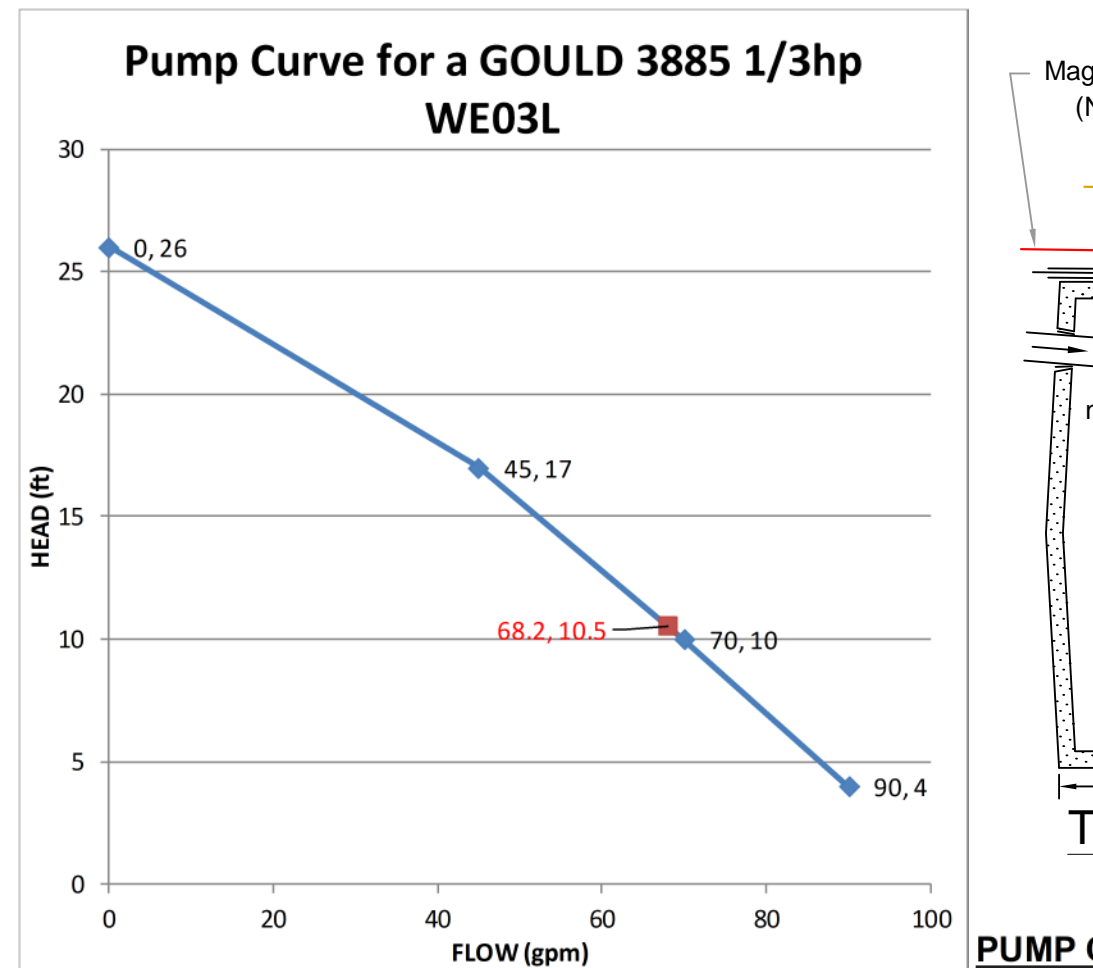
PERCOLATION TEST INFORMATION

By P.R. Hackett, P.E. Date: 09/22/2021

P-5A Presoak dry before test

Time	Depth	Perc Rate
0:00:14	11 5/16	(min/in)
0:12:00	13 1/4	6.1
0:22:05	15 1/16	5.6
0:32:28	16 1/2	7.2
0:42:31	17 1/4	13.4
0:52:39	18	13.5
1:02:56	18 3/4	13.7

Max rate = 13.7 minutes per inch



PUMP CHAMBER DATA

Make and Model Chamber: **Richards PC 1000**

Full Height: 64 inches
 Outlet to bottom: 50 inches
 Inside Available Height: 47 inches
 Inside Width: 56 inches
 Inside Length: 96 inches

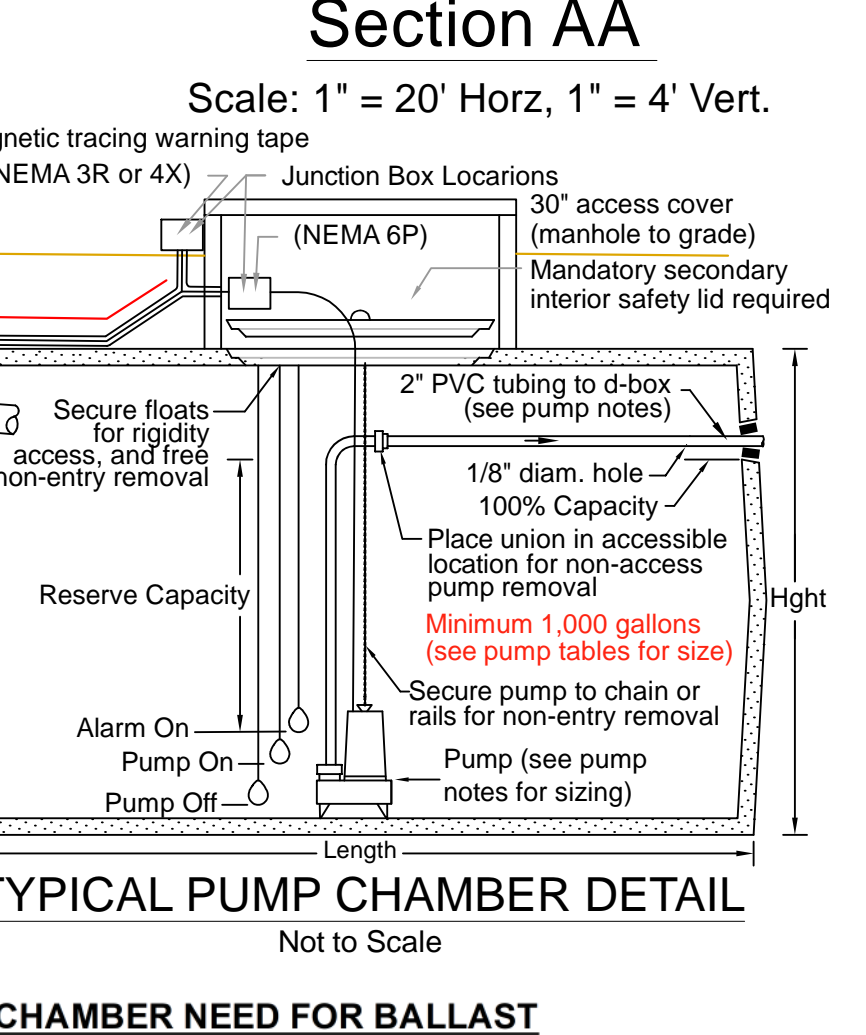
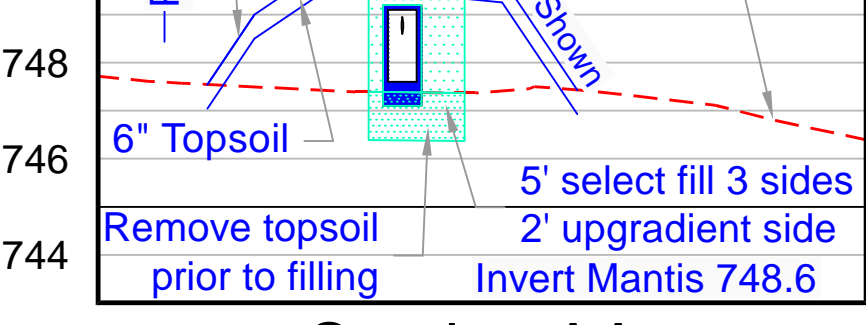
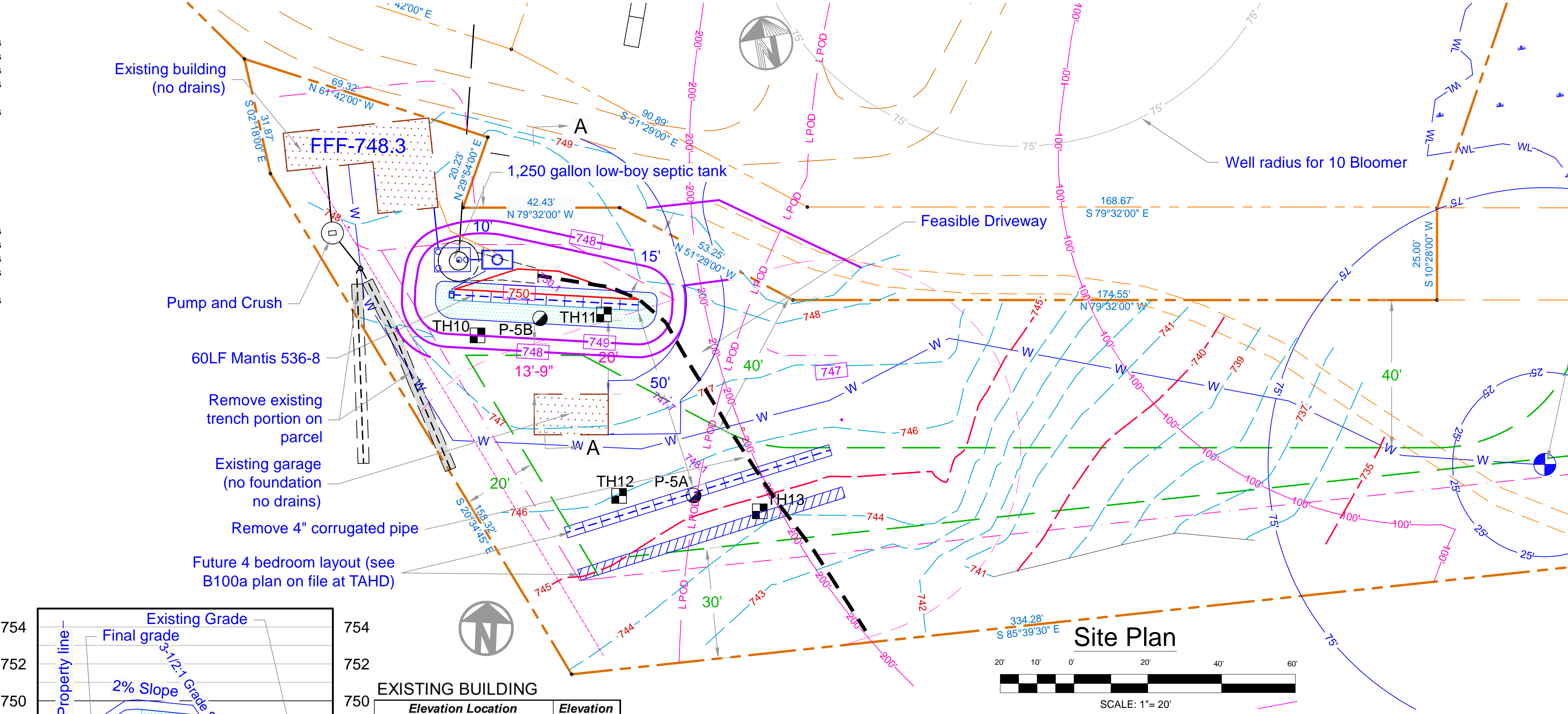
Capacity: 146.2 Cubic Feet Total
 1,093.9 Gallons Total
 23.3 Gallons per Inch of Depth
 Pump Chamber Total Height: 64 inches
 Pump Chamber Bottom Thickness: 3 inches
 Pump Chamber Top Thickness: 4 inches

SEPTIC TANK

Make and Model Chamber: **Richards ST LB 1250**

Full Height: 51 inches
 Outlet to bottom: 39 inches
 Inside Available Height: 36 inches
 Inside Width: 72 inches
 Inside Length: 111 inches

Capacity: 166.5 Cubic Feet Total
 1,245.6 Gallons Total
 34.6 Gallons per Inch of Depth
 Tank Total Height: 51 inches
 Tank Bottom Thickness: 3 inches
 Tank Top Thickness: 4 inches



PUMP CHAMBER NEED FOR BALLAST

Make and Model Chamber: **Richards PC 1000**

Outside Height: 64 inches
 Outside Width: 62 inches
 Outside Length: 102 inches
 Chamber Footprint: 43.9 SF
 Actual Chamber Weight: 8,300 Pounds
 Depth of Cover over tank: 32 inches
 Depth of SHWG: 51 inches
 Tank height under water: 45 inches
 Weight of Water Tank Displaces: 10,231 Pounds
 Assumed Density of Cover: 110 PCF
 Min Depth Over Tank: 5 inches
 Depth Provided: 32 inches OK

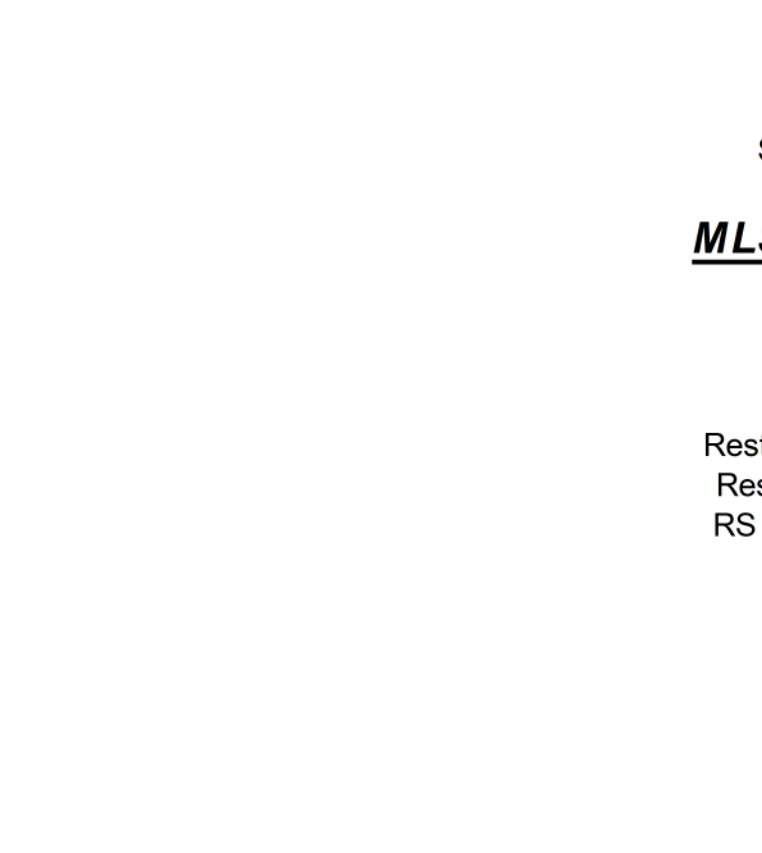
SEPTIC TANK - NEED FOR BALLAST

Make and Model Chamber: **Richards ST LB 1250**

Outside height: 51 inches
 Outside width: 78 inches
 Outside length: 117 inches
 Tank footprint: 63.4 SF
 Actual tank weight: 11,300 Pounds
 Depth of Cover over tank: 26 inches
 Depth of SHWG: 51 inches
 Tank height under water: 26 inches
 Weight of water tank displaces: 8,502 Pounds
 Weight of tank: 11,300 Pounds
 Assumed Density of Cover: 110 PCF
 Min Depth over tank: No Ballast Required
 Depth Provided: 26 inches OK

MLSS CALCULATION Existing Building

Type Use: Single Family
 System to be constructed: Yes, Construction to take Place
 Perc Rate = 13.7 Min per inch PF = 1.25
 Slope of Land = 2.3% FF = 1
 Restrictive Layer at LS area, A = 30 Inches HF = 30
 Restrictive Layer at 25' DG, B = 26 Inches
 RS Depth, less fill/2 = (A+B)/2 = 28 Inches
 Depth of Fill Provided = 18 Inches
 Receiving Soil Depth, RS = 37 Inches
 Number of Bedrooms = 2
 MLSS Required = PF x FF x HF
 = 1.3 x 1.0 x 30.0
 = 37.5 Feet
 MLSS Provided = 50.0 Feet OK



EXISTING BUILDING

Pipe Runs	Length (ft)	High End	Low End	Proposed Slope (%)
4" Schedule 40 PVC Pipe - House to Septic Tank (ST) in	11	746.9	746.6	2.7%
4" SDR35 PVC Pipe - ST out to Pump Chamber (PC) in	3	746.3	746.1	6.7%
2" Schedule 40 PVC Pipe - PC out to Baffle Box in	12	745.8	748.8	-25.0%

PERCOLATION TEST INFORMATION

By P.R. Hackett, P.E. Date: 09/22/2021

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0:52:39	18	13.5
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Max rate = 13.7 minutes per inch

TEST HOLE INFORMATION

Test holes observed by P.R. Hackett, P.E.

Wednesday, September 15, 2021

TH 10

- 0 - 10 Topsoil
- 10 - 26 Light-brown silty-sandy loam
- 26 - 80 Olive-grey silty-sandy till
- No Ledge, Water entering 32", Mottles at 26"

TH 11

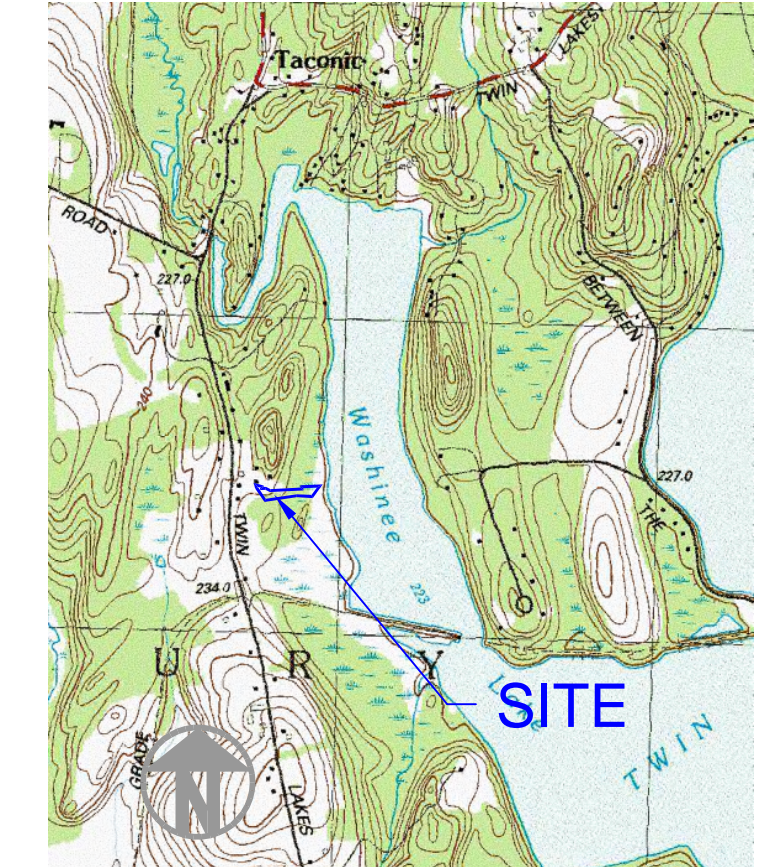
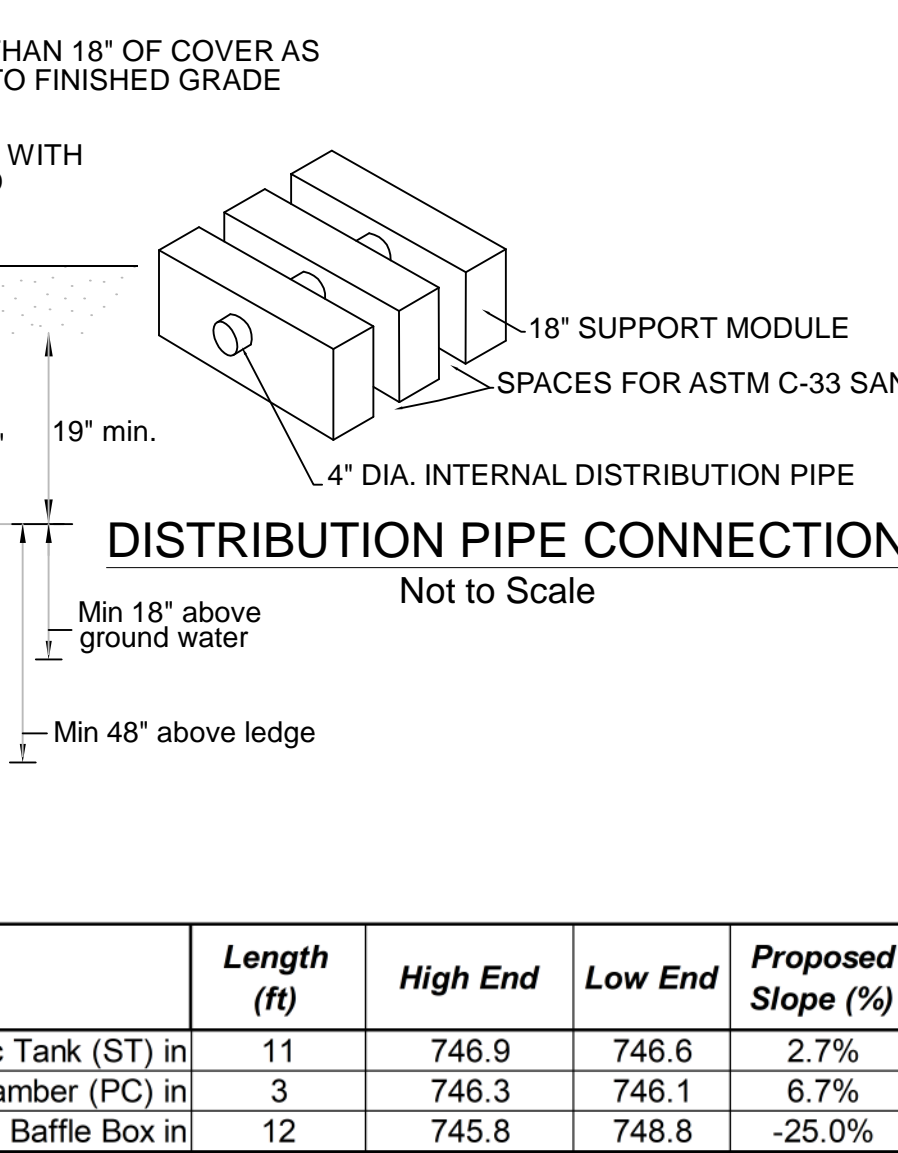
- 0 - 14 Topsoil
- 14 - 32 Orange-brown fine sandy loam
- 32 - 56 Olive-grey sandy till
- Ledge at 56", Water entering 50", Mottles at 30"

TH 12

- 0 - 12 Topsoil
- 12 - 32 Orange-brown fine sandy loam
- 32 - 72 Olive-grey sandy till
- No Ledge, Water entering 42", Mottles at 32"

TH 13

- 0 - 20 Fill
- 20 - 38 Orange-brown fine sandy loam
- 38 - 72 Olive-grey sandy till
- No Ledge, Water entering 60", Mottles at 38"



General Notes

- Owner: Angela Cho & Xin Yu, M-B-L 19-27-1
- Engineer: Patrick R. Hackett, 16 East Street, Lakeville, Connecticut, (203) 788-9959, prh@prhackett.com
- Parcel Area: 2.84± acres. Survey from Town Clerk Map 1325.
- Property boundary should not be construed as an accurate survey.
- The contours are field gathered and show the extend of filling required for both septic areas. Existing features field located.
- This plan is for the repair to the existing system.
- There are no off-site wells within 75' of the proposed septic areas. A new on-site well is shown. There are no septic areas within 75' of the proposed well location.

SSD NOTES

- Plan prepared for: Angela and Xin Yu, 302 West 79th St #4A, NY, NY 10024.
- The engineer shall be notified of any additions, deletions, and/or changes to this plan - Patrick R. Hackett, 16 East Street, Lakeville, Connecticut, (203) 788-9959, prh@prhackett.com
- The Connecticut Public Health Code - Regulations and Technical Standards for Subsurface Sewage Disposal Systems, January 1, 2024, or latest revision is considered part of this plan. A copy the 2024 code can be found at https://portal.ct.gov/-/media/departments-and-agencies/dph/dph/environmental_health/environmental_engineering/ts-2024-documents/2024-technical-standards-final-01012024.pdf (no spaces)
- This map is compiled from other maps, deed dimensions or other sources of information and is not to be construed as an accurate boundary survey and is to be used solely for the construction of the proposed subsurface sewage disposal design and site plan as shown here-in.
- Test holes and percolation tests performed indicate that the parcel as shown meets the minimum standards of the 2024 Technical Standards noted above.
- The 20 scale layout indicates what is required for a two-bedroom subsurface sewage disposal system for the existing house.
- This plan has been prepared to maintain the code-compliant B100a area for a future 4-bedroom house. Any additional proposed construction/site development will require a detailed septic plan and house floor layout to be approved by TAHD prior to any actual construction.
- No water softener, kitchen garbage grinder or tub with a capacity over 100 gallons shall be connected to this system unless additional septic tank size is included. A water softener using ion exchange must have it's own separate leaching area and a kitchen grinder or large tub requires at a minimum an additional 250 gallon capacity septic tank. The engineer shall be notified in the event there is a change.
- In the event an ejector sump pumping 25% or more of the daily discharge, the septic tank size shall have 50% more capacity than the minimum required size.
- Any septic tanks shall be a minimum 1,000 gallon capacity or greater. All parts of the septic tank shall conform to Section V of the Technical Standards for dimensions, compartments, outlet filters, access, configuration, marking, testing and construction. Manholes shall extend to grade. Any change in tank makes and models must be reverified for need for ballast.
- Pipe between the house and septic tank shall be 4 inch PVC Schedule 40 ASTM D1785 solvent weld coupling/fittings using proper two-step PVC solvent solution procedure or as allowed in Table 2 of Section III, Piping. Any cumulative change in pipe direction of more than 45 degrees is not allowed unless a 36 inch sweep is used.
- All solid pipe after the septic tank may be 4 inch PVC Schedule 40 ASTM D1785 solvent weld coupling/fittings using proper two-step PVC solvent solution procedure or as a minimum as allowed in Table 2-A of Section III, Piping, Approved Effluent Distribution Pipe.
- The bottom of the trench and leaching pipe shall be level throughout. Maximum allowable deviation shall be no greater than 1 inch vertical in 50 feet horizontal.
- The leaching trench consists of 50' of Eljen Mantis 536-08 units for the house (existing). The layout indicates what is required for a 2 bedroom repair. The Mantis trench should have a split rail fence installed to protect them heavy loads.
- Any large stones or stumps encountered during the trench excavation shall be removed and replaced with septic fill meeting Section VIII A, of the Technical Standards, Select Fill Material.
- The distribution box shall be placed on a six inch (6") compacted gravel base to prevent heaving or settling.
- All inlets and outlets to the septic tank and d-boxes shall be mortared after pipes are installed.
- In the event a heating oil tank is buried outside, it must be a minimum of 75' from any well.

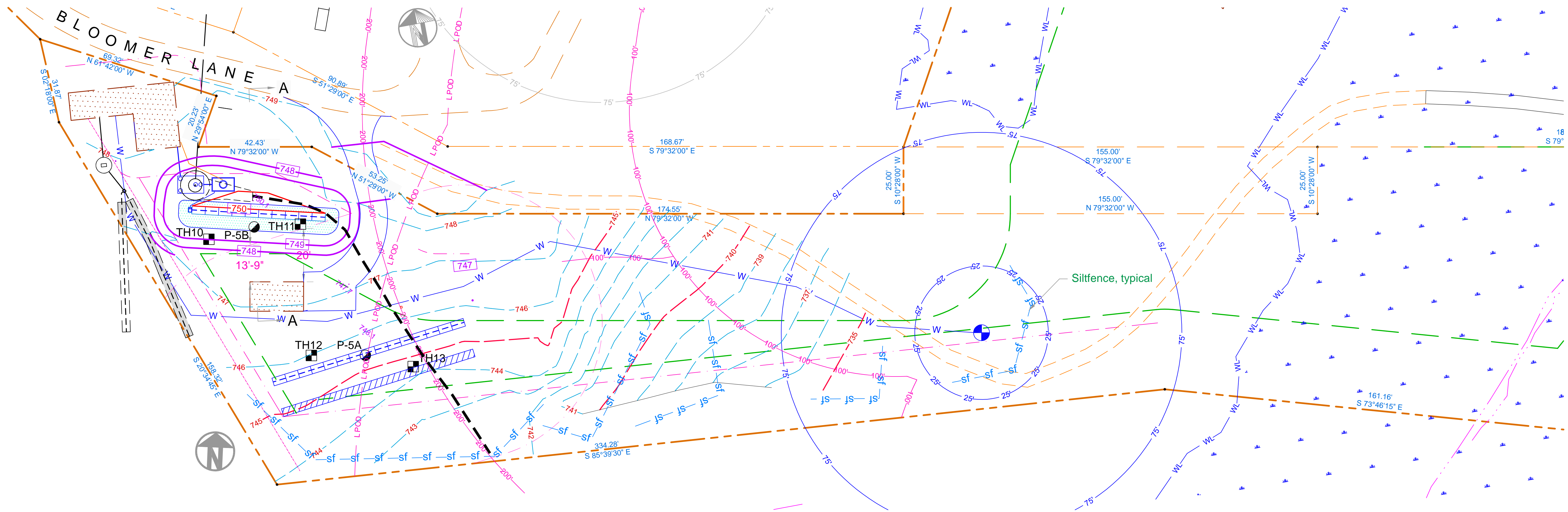
Engineer:
 Patrick R. Hackett, P.E.
 16 East Street
 Lakeville, Connecticut 06039

Date: MAY 5, 2024

YU RESIDENCE
 5 BLOOMER LANE
 SALISBURY, CONNECTICUT

SUBSURFACE SEWAGE DISPOSAL PLAN

SSD Plan



Erosion & Sediment Control Plan



Erosion and Sediment Control Notes

All erosion and sediment control measures shall be in place prior to commencement of work. A pre-construction meeting shall take place after erosion control measure are in and before work starts. All disturbed areas that have been final graded shall be seeded, and mulch the same day. Measures shown on this plan shall be considered a minimum and additional measure shall be install as needed and directed during the project.

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