2024-0253

APPLICATION FOR SITE PLAN APPROVAL

Owner of record: Mary Hedman

Address of owner: 116 South Shore Road

Property Location: Tax Map 60 Lot 10 Land Records: Vol. 255 Page 227

Acreage: 1.128 Zone: R20

Site Plan Requirements:

Soil Erosion and Sediment Control Measures: ✓

Conservation Commission Approval, if applicable: N/A

Historic District Commission Approval, if applicable: N/A

Approval From TAHD: ✓ WPCA: ____ BHC: ____

If applicable, boundaries of flood plain, aquifer protection zone, Housatonic River District, or Historic District should be on Site Plan.

Additional Remarks: None at this time. Purpose of site plan is to install 100% code-compliant septic system.

Owner's Signature: Mary C Hedman Date: 6.13.24

Applicant's Signature and Title: Patrick R. Hackett, P.E.

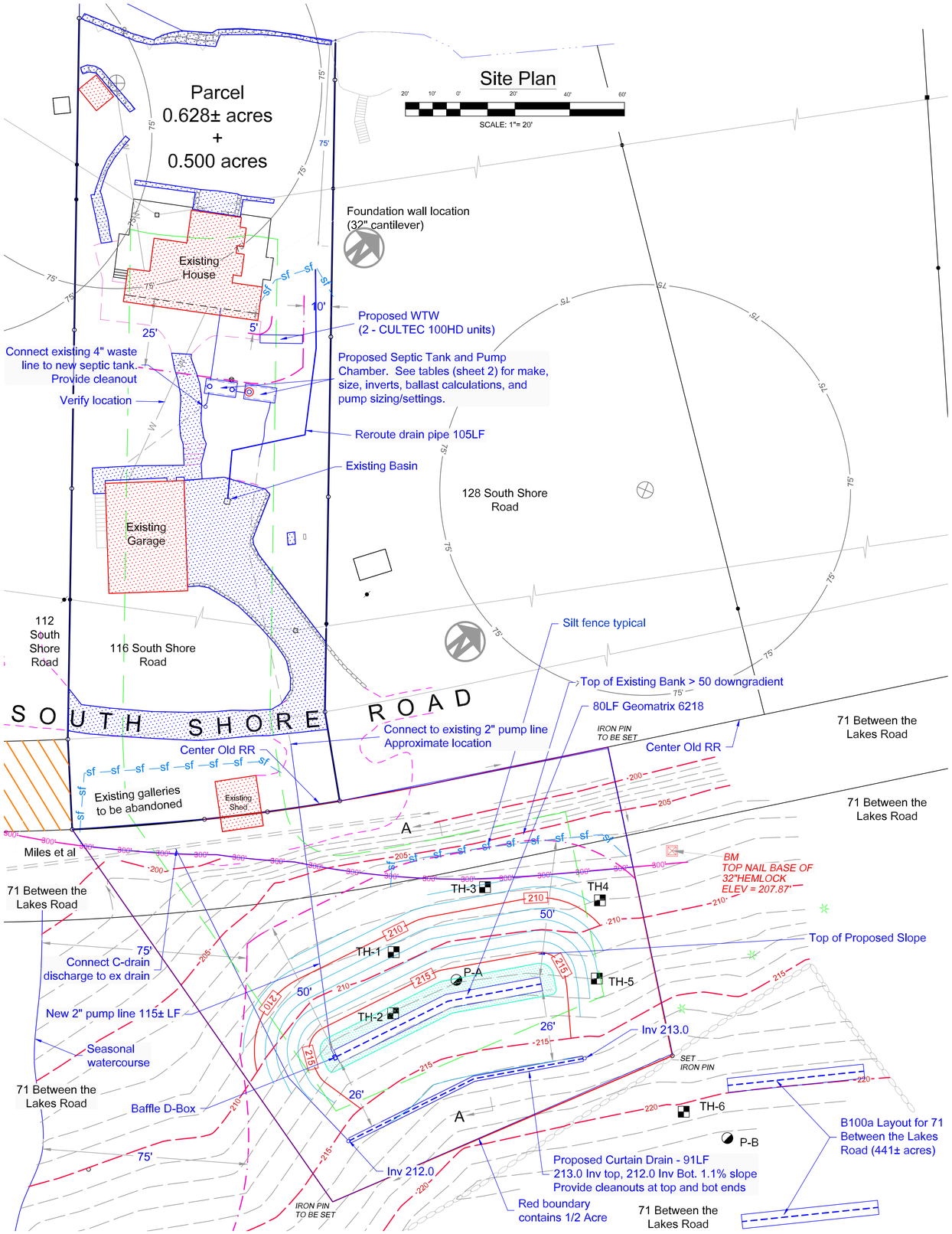
Applicant's address and phone number: 16 East St Lakeville, CT 203 788-9959

Filed at Planning and Zoning Commission Office: 6/13/24 ~~, 2001~~
Date of next regular Commission meeting: 6/17/24
Date of approval or denial of plan: ____

A decision on a site plan submitted as part of a zoning permit application shall be rendered within 65 days after receipt of the plan at a regular meeting of the Commission. The applicant may request extensions of the decision period, not to exceed two further 65-day periods.

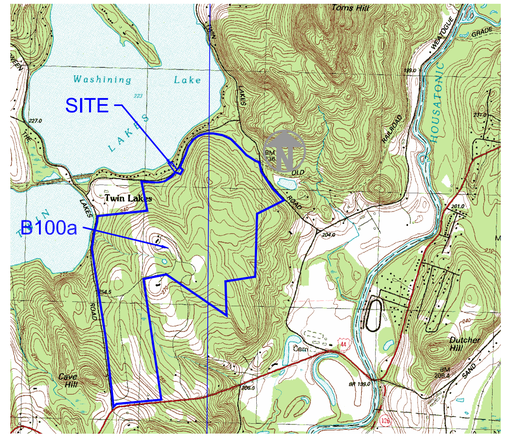
PD Ck # 153
$360

Patrick R. Hackett, P.E. 12808 16 East Street, Lakeville, Conn. 06039 prh@prhackett.com 203.788.9959

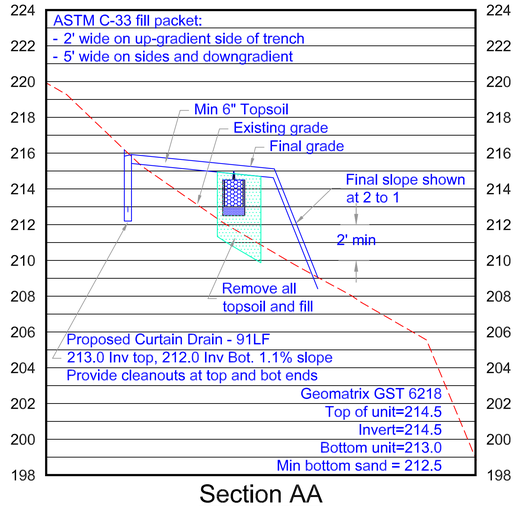


General Notes

- Owner: Mary Hedman , 116 South Shore Road, Salisbury, M-L 60-10.
- Engineer: Patrick R. Hackett, 16 East Street, Lakeville, Connecticut, (203) 788-9959, prh@prhackett.com
- Parcel Area: 0.628± acres.
- Property boundary from Lamb-Kiefer Land Surveyors
- This design is a compliant repair area.
- The contours of the leaching area are from Lamb-Kiefer Land Surveyors.
- See sheet 2 for erosion & sediment control measures and SSD Notes.
- Select ASTM C-33 fill estimate is 300 tons. Common fill estimate is 450 CY.
- Half-acre parcel south of current parcel shall be conveyed to 116 South Shore Road prior to any construction.
- There are no wells within 75' of the proposed septic system.



LOCATION MAP
SCALE: 1"= 2000'

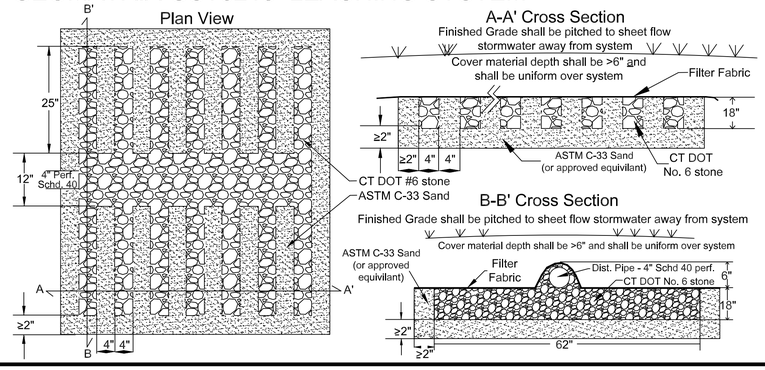


Section AA
Scale: 1" = 20' horizontal, 1" = 4' vertical

Parcel & Owner Information

Plan prepared for:	Mary Hedman
Parcel acreage:	0.628
Map Lot and Block:	60-10
Project Address:	116 South Shore Road
Town and State:	Salisbury, Connecticut

GEOMATRIX GST6218 LEACHING SYSTEM NOT TO SCALE



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

Date: April 20, 2024

Revisions: 1 notes May 24, 2024
2 Notes June 7, 2024

HEDMAN RESIDENCE
116 SOUTH SHORE ROAD
SALISBURY, CONNECTICUT

SUBSURFACE SEWAGE DISPOSAL SYSTEM REPAIR

SSD
1 of 2

Patrick R. Hackett, P.E. 12808 16 East Street, Lakeville, Conn. 06039 prh@prhackett.com 203.788.9959

Basis of SSD Repair

Type of Use:	Residential, Multi Family	
Number of Bedrooms:	5 (4+1)	
Percolation Rate:	15.0 Minutes/Inch	
Design Flow:	675 GPD	
Minimum Septic Tank Size:	1,375 Gallons	
Proposed Septic Tank Size:	1,500 Gallons	
Seasonal High Groundwater at:	18 Inches	
Design Restrictive Layer at:	18 Inches	
Ledge at:	N/A Inches	
Leaching Area Required:	1,038 Square Feet	
Design Leaching Trench:	GST 6218	
Leaching area per linear foot:	14 SF/LF	
or:	74.11 LF Required	
Leaching Area Provided:	1,120 Square Feet	OK
or:	80 LF Provided	OK

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

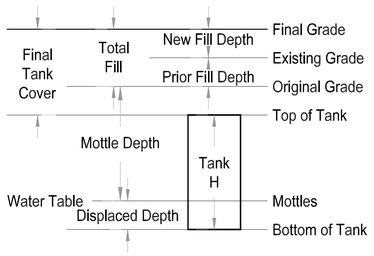
Leaching Field Pump Volume Calculation

Type Trench:	GST 6218 18 Inch Deep by 62 Wide
Length:	80 LF
Width:	62 Inches
Depth:	18 Inches
Max Allowable Volume per Unit:	6.92 Gallons
Max Allowable per foot:	13.84 GLF
Unit Length:	1.00 Feet
Number of Units:	80
Max Allowable Storage	553.6 Gallons per Pump Cycle
Available Volume	1,107 Gallons
Available Volume	148 CF
Percent Loading:	50% Gallon Total Capacity

MLSS CALCULATION

Type Use: Multi Family
System to be constructed: Yes, Construction to take Place

Perc Rate =	15.0 Min per inch	PF =	1.25
Slope of Land =	10.8%	FF =	2.5
Restrictive Layer at LS area, A =	18 Inches	HF =	24
Restrictive Layer at 25' DG, B =	18 Inches		
RS Depth, less fill/2 = (A+B)/2 =	18 Inches		
Depth of Fill Provided =	18 Inches		
Receiving Soil Depth, RS =	27 Inches		
Number of Bedrooms =	5		
MLSS Required =	PF x FF x HF		
	= 1.25 x 2.5 x 24.0		
	= 75.0 Feet		
MLSS Provided =	80.0 Feet	OK	



SEPTIC TANK

Make and Model Chamber:	**Eastern PC ST H-20 1500**
Inside Available Height:	58 inches
Inside Width:	54 inches
Inside Length:	126 inches
Capacity:	226.4 Cubic Feet Total
	1,693.7 Gallons Total
	29.5 Gallons per Inch of Depth
Pump Chamber Total Height:	80 inches
Pump Chamber Bottom Thickness:	6 inches
Pump Chamber Top Thickness:	8 inches

NEED FOR BALLAST

Make and Model Chamber:	**Eastern PC ST H-20 1500**
Outside height:	80 inches
Outside width:	66 inches
Outside length:	138 inches
Tank footprint:	63.3 SF
Actual tank weight:	23,600 Pounds
Depth of Cover over tank:	37 inches
Depth of SHWG :	24 inches
Tank height under water:	80 inches
Weight of water tank displaces:	26,148 Pounds
Weight of tank:	23,600 Pounds
Assumed Density of Cover:	110 PCF
Min Depth over tank:	5 inches
Depth Provided:	37 inches OK

PUMP CHAMBER DATA

Make and Model Chamber:	**Eastern PC PC H-20 1250**
Inside Available Height:	44 inches
Inside Width:	54 inches
Inside Length:	115 inches
Capacity:	158.1 Cubic Feet Total
	1,182.9 Gallons Total
	26.9 Gallons per Inch of Depth
Pump Chamber Total Height:	68 inches
Pump Chamber Bottom Thickness:	8 inches
Pump Chamber Top Thickness:	8 inches

PUMP CHAMBER NEED FOR BALLAST

Make and Model Chamber:	**Eastern PC PC H-20 1250**
Outside Height:	68 inches
Outside Width:	66 inches
Outside Length:	127 inches
Chamber Footprint:	58.2 SF
Actual Chamber Weight:	21,800 Pounds
Depth of Cover over tank:	43 inches
Depth of SHWG :	24 inches
Tank height under water:	87 inches
Weight of Water Tank Displaces:	20,582 Pounds
Assumed Density of Cover:	110 PCF
Min Depth Over Tank:	No Ballast Required
Depth Provided:	43 inches OK

Trench Table	*Width (in)*	*Depth (in)*	*4" Pipe Invert*	*Top Stone*	*Bottom Stone*	*Min Elev Sand*	*Min C-C*	*Length (ft)*	*SF/LF*	*Prov'd*	*Req'd*
GST 6218 18 Inch Deep by 62 Wide	62	18.0	214.5	214.5	213.0	212.5	13'	80.0	14.0	1120 sf	1038 sf

Pipe Runs	*Length (ft)*	*High End*	*Low End*	*Proposed Slope (%)*
Length of Pipe from Main House to Septic Tank	27	179.8	179.2	2.2%
Length of Pipe from Septic Tank to Pump Chamber	3	178.9	178.7	6.7%
Length of Pipe from Pump Chamber to Baffle D-box	245	178.4	214.7	-14.8%

Elevation Location	*Elevation*
Finished floor main house	184.0
Grade at foundation	182.0
Invert out of house	179.8
Avg Ground at Septic Tank	183.0
Invert in septic tank	179.2
Invert out septic tank	178.9
Invert In Pump Chamber	178.7
Invert out Pump Chamber	178.4
Invert In Baffle D-Box	214.7
Invert GST 6218	214.5
Top of GST 6218	214.5
Bottom of GST 6218	213.0
Minimum Bottom Sand	212.5

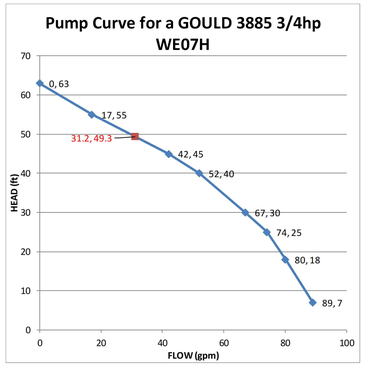
PUMP CALCULATIONS

Selected Pump: GOULD 3885 3/4hp WE07H
High Elevation: *215.00*
Low Elevation: *177.00*

FORCE MAIN PIPING

Type Pipe:	*PVC ASTM D 1785 / ASTM D 2665*	
Mannings n :	0.012	
f VALUE =	0.048	
K Value Elbow :	0.9	(P.227 D&F)
Number of Bends :	*1*	
Pipe Diameter:	*2*	Inches
Xsec Area :	3.1	$Inches^2$
or :	0.022	$Feet^2$
Length of Pipe :	*245*	Feet
Volume in Pipe :	40.0	Gallons
Start GPM	**0**	(This is where VBA starts)
Minimum Flow :	15	Gallons per Minute (GPM)
Estimated Flow :	**31.175**	GPM
Velocity :	3.2	FPS
H_v =	0.16	Feet
Static Head :	38	FT. OR 16.5 psi $H_{elevation}$
Pipe Friction :	11.2	FT. OR 4.9 psi H_{pipe}
Elbow Loss :	0.1	FT. OR 0.1 psi H_{bend}
MIN TDH =	**49.3**	**FT. @ 31.1 GPM**

(SEE P.327 Daugherty & Franzini (D&F), P6-15 Brater & King (B&K))
*ROUGHNESS FACTOR, f = [8g*n²]/[(1.486)²R^(1/3)] = 185n²/D^(1/3)*
*PIPE HEAD LOSS = fL/D*Hv = 2.87n²LV²/D^(4/3) = DARCY-WEISBACH FORMULA*



TEST HOLE INFORMATION

Test holes observed by P.R. Hackett, P.E.
Wednesday, March 13, 2024

TH 1
0 - 12 Topsoil
12 - 18 Yellow-brown fine very sandy loam
18 - 70 Compact olive-brown very fine sandy till
No Ledge, Water entering 40", Mottles at 18", Roots fine at 30"

TH 2
0 - 10 Topsoil
10 - 20 Yellow-brown fine very sandy loam
20 - 72 Compact olive-brown very fine sandy till
No Ledge, Water entering 44", Mottles at 20", Roots fine at 32"

TH 3
0 - 9 Topsoil
9 - 20 Yellow-brown fine very sandy loam
20 - 70 Compact olive-brown very fine sandy till
No Ledge, Water entering 55", Mottles at 20"

TH 4
0 - 10 Topsoil
10 - 18 Yellow-brown fine very sandy loam
18 - 72 Compact olive-brown very fine sandy till
No Ledge, No Water, Mottles at 18"

TH 5
0 - 11 Topsoil
11 - 18 Yellow-brown fine very sandy loam
18 - 70 Compact olive-brown very fine sandy till
No Ledge, Water entering 60", No Mottles, Roots

TH 6 Off Parcel - On 400+ acre parcel
0 - 10 Topsoil
10 - 20 Yellow-brown fine very sandy loam
20 - 70 Compact olive-brown very fine sandy till
No Ledge, No Water, Possible Mottles at 53"

Parcel & Owner Information

Plan prepared for:	Mary Hedman
Parcel acreage:	0.628
Map Lot and Block:	60-10
Project Address:	116 South Shore Road
Town and State:	Salisbury, Connecticut

PERCOLATION TEST INFORMATION

By P.R. Hackett, P.E.

P-A Date: 03/17/2024
Presoak dry before test
Total Depth: 18 inches
Datum Depth: 18 inches

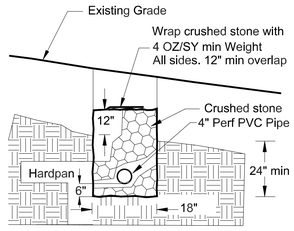
Time	Depth	Perc Rate (min/in)
0:00:00	9	
0:11:15	10 1/2	7.5
0:20:01	11 3/4	7.0
0:30:28	12 5/8	11.9
0:40:53	13 3/8	13.9
0:50:16	14	15.0
1:00:15	14 1/2	20.0

Max rate = 20.0 minutes per inch

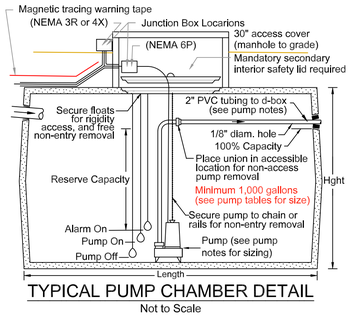
P-B Date: 03/17/2024
Presoak dry before test
Total Depth: 19 inches
Datum Depth: 19 inches

Time	Depth	Perc Rate (min/in)
0:05:09	7	
0:15:40	13 3/4	1.6
0:25:30	19	1.9

Max rate = 1.9 minutes per inch



CURTAIN DRAIN SECTION
Not to Scale



TYPICAL PUMP CHAMBER DETAIL
Not to Scale

FLOAT SWITCH SETTINGS

Measured from the inside bottom of the chamber

Turn Off:	6.0 inches	equals	161.3 Gallons
Minimum Turn On:	15.0 inches	equals	403.3 Gallons
Maximum Turn On:	16.0 inches	equals	430.2 Gallons
Alarm Height:	17.0 inches	equals	457.0 Gallons
Length of Pump Line:	245 Feet		
Flow Back:	1.5 inches	equals	40.0 Gallons
Lost at Bottom:	7.5 inches		
or:	201.3 Gallons		
Pump Volume Minimum:	242.0 Gallons	Actual:	202.0 Gallons
Pump Volume Maximum:	268.8 Gallons	Actual:	228.9 Gallons
After Alarm Volume:	725.9 Gallons		

FLOAT SWITCH SETTINGS

Measured from the outside top of the chamber

Turn Off:	54.0 inches	equals	161.3 Gallons
Minimum Turn On:	45.0 inches	equals	403.3 Gallons
Maximum Turn On:	44.0 inches	equals	430.2 Gallons
Alarm Height:	43.0 inches	equals	457.0 Gallons
Length of Pump Line:	245 Feet		
Flow Back:	1.5 inches	equals	40.0 Gallons
Lost at Bottom:	7.5 inches		
or:	201.3 Gallons		
Pump Volume Minimum:	242.0 Gallons	Actual:	202.0 Gallons
Pump Volume Maximum:	268.8 Gallons	Actual:	228.9 Gallons
After Alarm Volume:	725.9 Gallons		

B100a Notes - 71 B/T the Lakes Rd

- Owner: Kenneth Page et al Trustees , M-L 20-04.
- Engineer: Patrick R. Hackett, 16 East Street, Lakeville, Connecticut, (203) 788-9959, prh@prhackett.com
- Parcel Area: 441± acres.
- The B100a is to demonstrate there is an area for a repair system to be installed. There are many locations systems could be located on the 441 acre parcel. Leaching fields shown are 2 - 50' GST 6218 trenched spaced greater than 50' apart (MLSS provided - 100LF)
- This design is a compliant repair area.
- In the event there is a need to repair/replace a system, a detail design will be required to be submitted to TAHD for permitting.

SSD NOTES

- Owner Information: See table - Sheet 1
- 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
- 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 by P.R. Hackett, P.E.
- It is recommended that the house and septic system be staked out by a qualified engineer or land surveyor.
- No kitchen garbage grinder or tub with a capacity over 100 gallons shall be connected to this system. A water softener must have it's own separate leaching area and a kitchen grinder or large tub requires at a minumum a larger septic tank.
- 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.
- The contractor shall verify and check elevations PRIOR to actual septic system installation.
- 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 shall be not be 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.
- A layer of non-woven filter fabric having a minimum weight of 4.0 OZ/SY (per ASTM D 5261), a minimum permittivity of 1.0 (sec-1)(per ASTM D 4491), and a minimum trapezoid tear of 15 lbs (per ASTM D 4533). Note the minimum weight called out above is more stringent than the minimum allowed in the Health Code (1.5 SY/OZ).
- Septic fill material shall be meet requirements of Section VIII A, of the Technical Standards, Select Fill Material. Fill material shall extend a minimum of 5 feet beyond all trench perimeter. There shall be no more than 5% by weight of calcium carbonate in any select sand material used. The trench sand interface is ASTM-C33 and may prove easier to use all ASTM C33 sand.
- Fill material beyond the last trench shall not be lower than the last trench invert 10 feet beyond the last trench.
- 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.
- All erosion and sediment control measures shall be in place prior to start of work and shall be maintained for the duration of the project and removed after all disturbed area have stable vegetative cover.

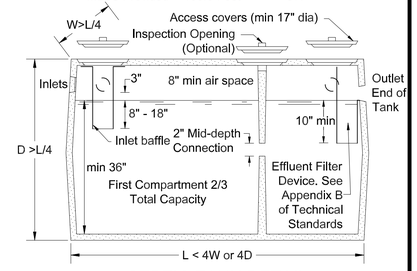
Basis of B100a - 71 Between the Lakes Road

Type of Use:	Residential, Single Family	
Number of Bedrooms:	4	
Percolation Rate:	15.0 Minutes/Inch	
Design Flow:	525 GPD	
Minimum Septic Tank Size:	1,125 Gallons	
Proposed Septic Tank Size:	1,250 Gallons	
Seasonal High Groundwater at:	18 Inches	
Design Restrictive Layer at:	18 Inches	
Ledge at:	N/A Inches	
Leaching Area Required:	788 Square Feet	
Design Leaching Trench:	GST 6218	
Leaching area per linear foot:	14 SF/LF	
or:	56.25 LF Required	
Leaching Area Provided:	1,400 Square Feet	OK
or:	100 LF Provided	OK

MLSS CALCULATION - 71 Between the Lakes Road

Type Use: Single Family
System to be constructed: No Construction now

Perc Rate =	15.0 Min per inch	PF =	1.25
Slope of Land =	10.8%	FF =	2
Restrictive Layer at LS area, A =	18 Inches	HF =	28
Restrictive Layer at 25' DG, B =	18 Inches		
RS Depth, less fill/2 = (A+B)/2 =	18 Inches		
Depth of Fill Provided =	18 Inches		
Receiving Soil Depth, RS =	18 Inches		
Number of Bedrooms =	5		
MLSS Required =	PF x FF x HF		
	= 1.3 x 2.0 x 28.0		
	= 70.0 Feet		
MLSS Provided =	100.0 Feet	OK	



PUMP NOTES SEPTIC TANK DETAIL
Not to Scale

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 pumps shall be a as selected on the PUMP CALCULATION table . 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 withing 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.

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

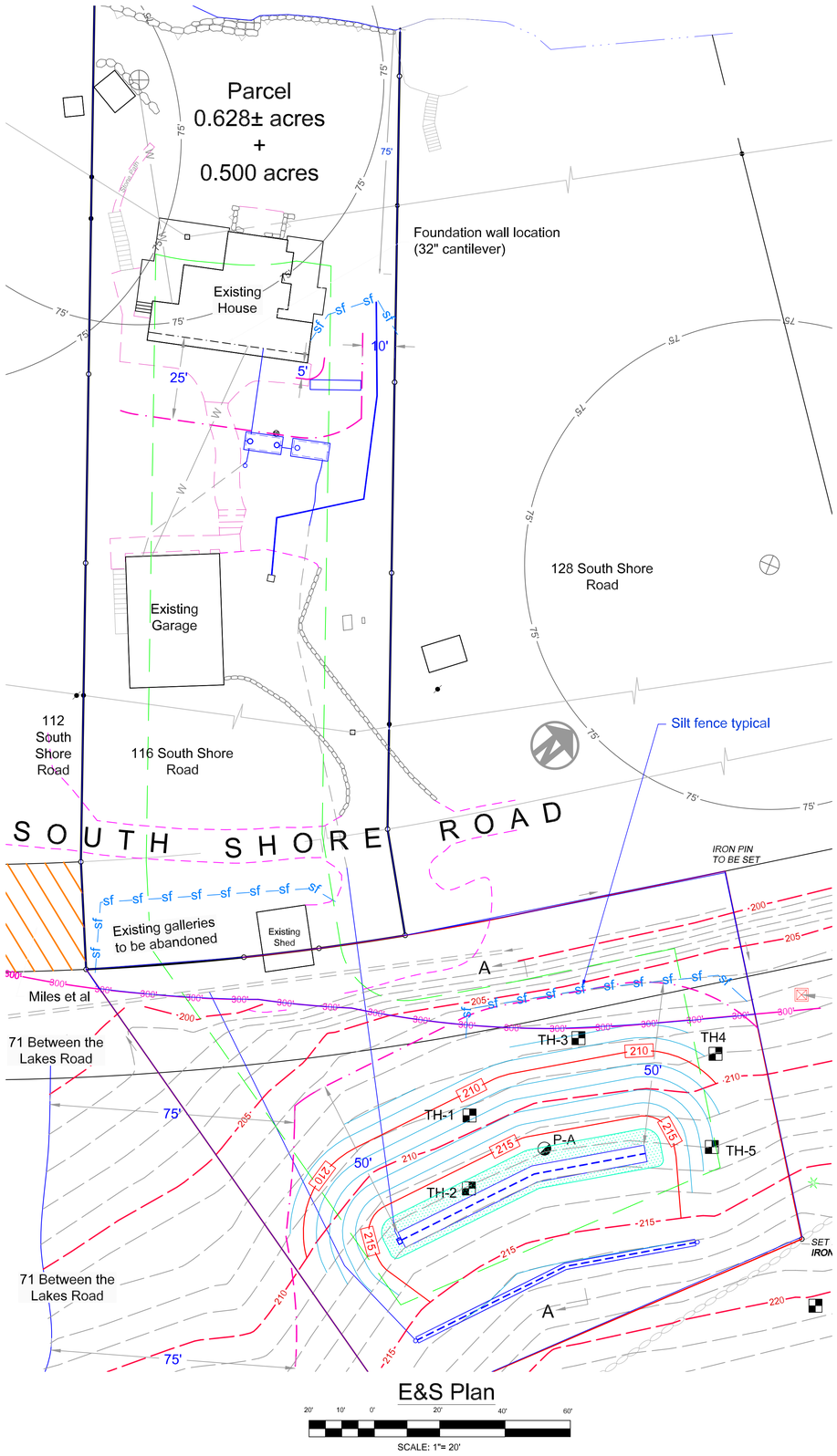
Date: April 20, 2024

Revisions: 1 notes 2024-05-24
2 Notes June 7, 2024

HEDMAN RESIDENCE
116 SOUTH SHORE ROAD
SALISBURY, CONNECTICUT
SUBSURFACE SEWAGE DISPOSAL SYSTEM REPAIR

SSD
2 of 2

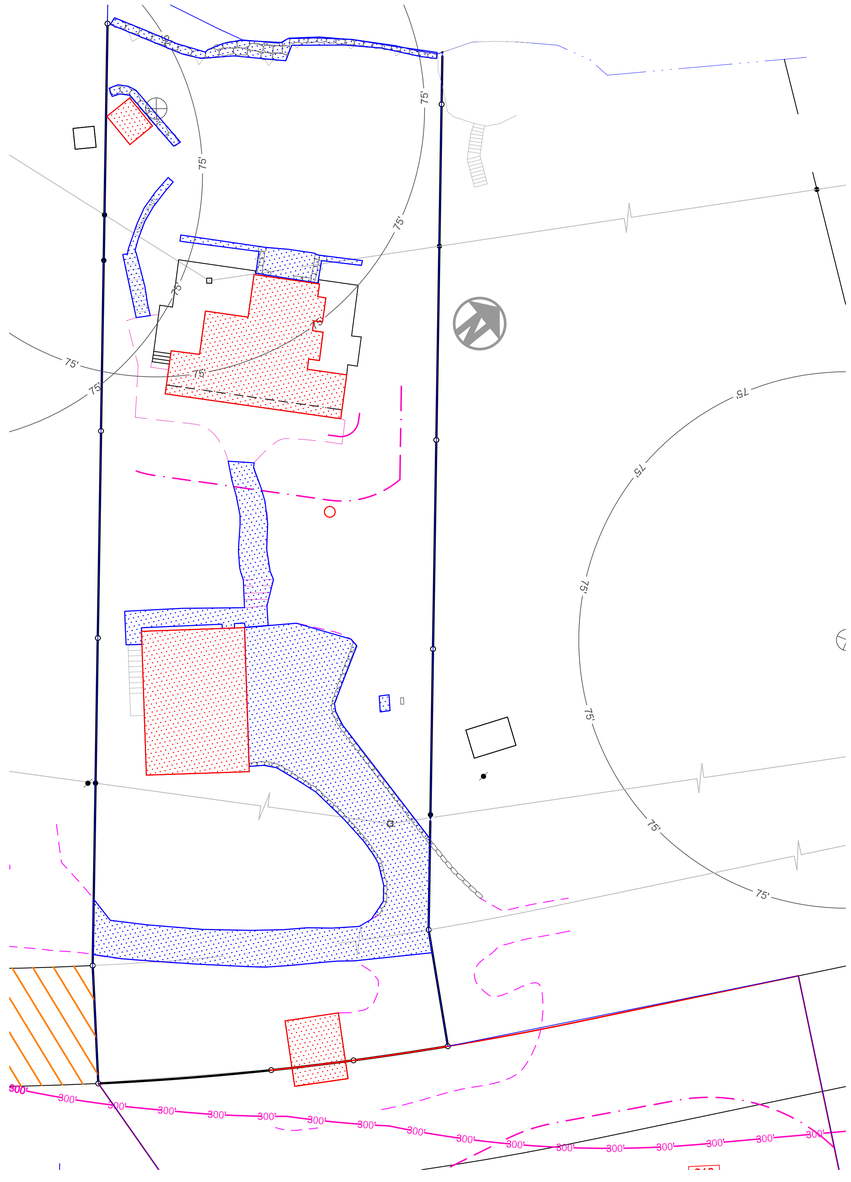
Patrick R. Hackett, P.E. 12808 16 East Street, Lakeville, Conn. 06039 prh@prhackett.com 203.788.9959



E&S Plan

20' 10' 0' 20' 40' 60'

SCALE: 1"= 20'



20' 10' 0' 20' 40' 60'

SCALE: 1"= 20'

Original Parcel

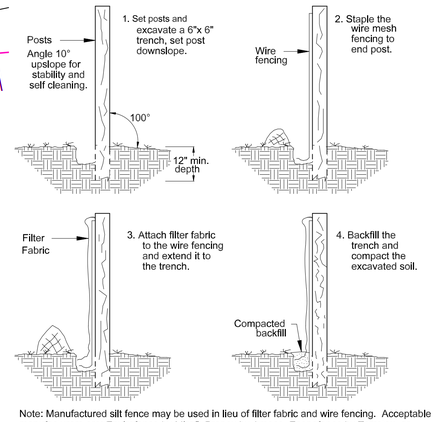
Area:	0.628 acres	
	27,356 sf	
Within LPOZ	27,356	
Buildings		
lower shed	83	
shed	203	
garage	1,159	
House	1,240	
	2,685	
Walls, sidewak, and pavement		
Generator	12	
Driveway & South Shore Road	2,829	
walk & steps	526	
front wall area	190	
lake wall	227	
shed wall	57	
sidewalk	117	
	3,958	
Total Impervious		6,643
		27,356
		24.3%

Combined New Parcel

Area:	1.128 acres	
	49,136 sf	
Within LPOZ	32,514 sf	
Buildings		
lower shed	83	
shed	279	
garage	1,159	
House	1,240	
	2761	
Walls, sidewak, and pavement		
Generator	12	
Driveway & South Shore Road	2,829	
walk & steps	526	
front wall area	190	
lake wall	227	
shed wall	57	
sidewalk	117	
	3,958	
Total Impervious		6,719
		32,514
		20.7%

Notes

- Owner: Mary Hedman , 116 South Shore Road, Salisbury, M-L 60-10.
- Engineer: Patrick R. Hackett, 16 East Street, Lakeville, Connecticut, (203) 788-9959, prh@prhackett.com
- Parcel Area: 1.128± acres.
- Property boundary from Lamb-Kiefer Land Surveyors
- This design is a compliant repair area.
- There is no additional impervious area proposed
- The addition of the half acre to the south dropped impervious from 24.3% to 20.7%
- No land disturbance is proposed within 75' of the ordinary high water mark line.
- Half acre merged into Parcel on June 10, 2024



Note: Manufactured silt fence may be used in lieu of filter fabric and wire fencing. Acceptable manufacturers are: Envirofence by Mirafi, Propex by Amoco, Econofence by Terratex, or engineer approved equivalent.

SEDIMENT CONTROL BARRIER

Not to Scale

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

Date: June 13, 2014

Revisions:

HEDMAN RESIDENCE
116 SOUTH SHORE ROAD
SALISBURY, CONNECTICUT

STORMWATER AND
EROSION AND SEDIMENT PLAN

SW
E&S