

# PLANS FOR NEW SEPTIC SYSTEM

FOR

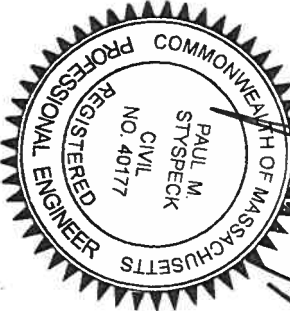
LARRY BROTHERTON  
83 STATE ROAD (ROUTE 5)  
WHATELY, MA

LANDSCAPING BUSINESS DESIGNED  
FOR 20 EMPLOYEES

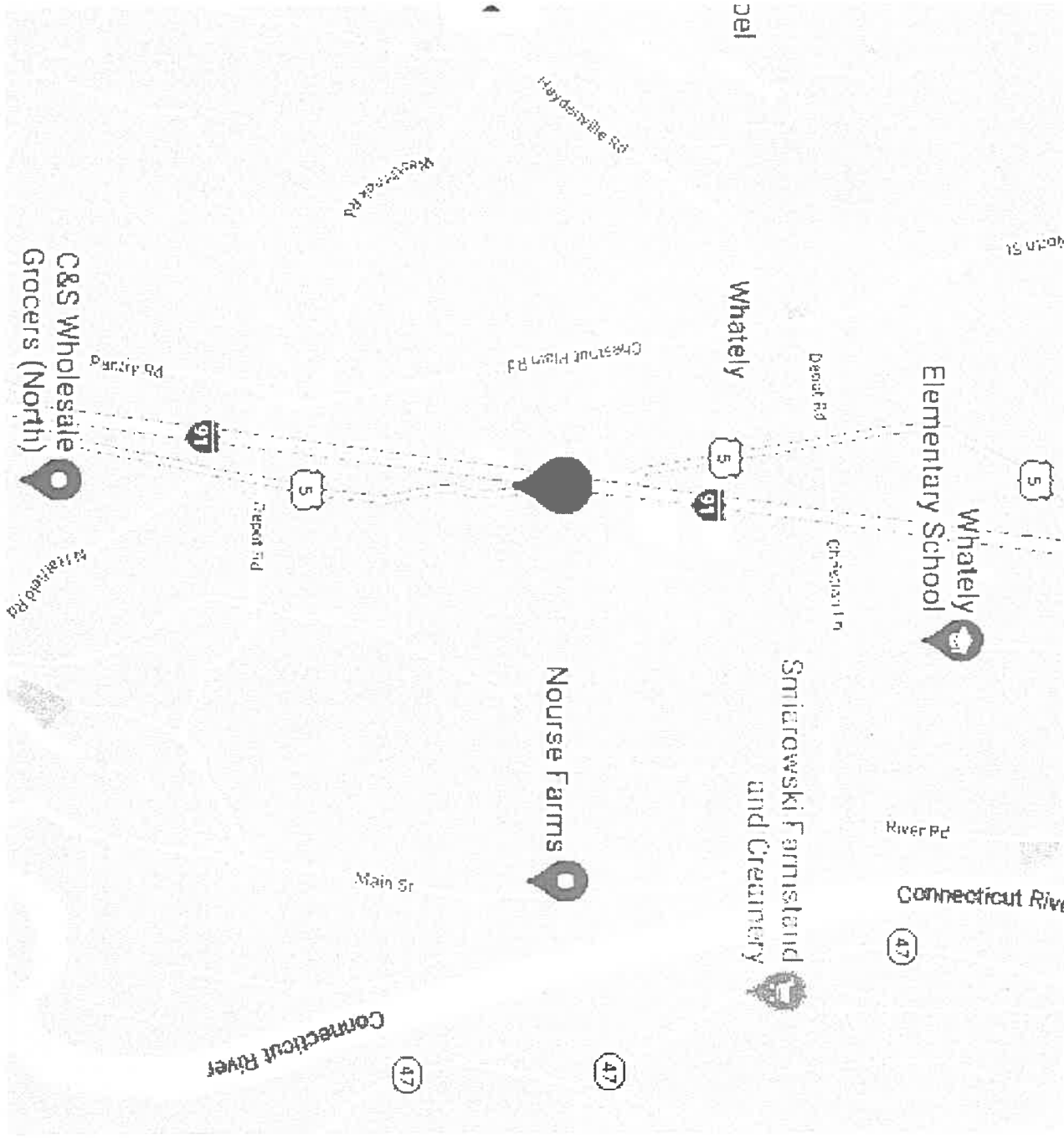
BY

PAUL M. STYSPECK, P.E.  
CONSULTING CIVIL ENGINEER  
#3 WEST STREET  
HADLEY, MASSACHUSETTS 01035  
PAULSTYSPECK@GMAIL.COM  
413-237-4733

FEBRUARY 2, 2021 REV. 0



*Paul M. Styspeck*  
2/13/22

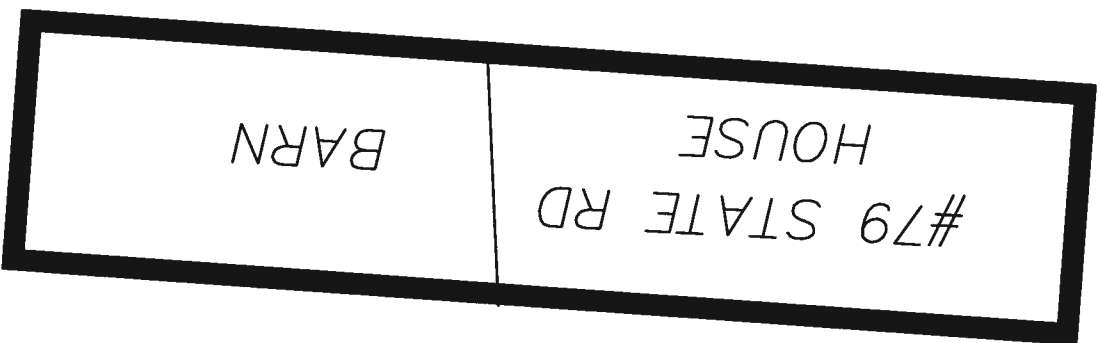
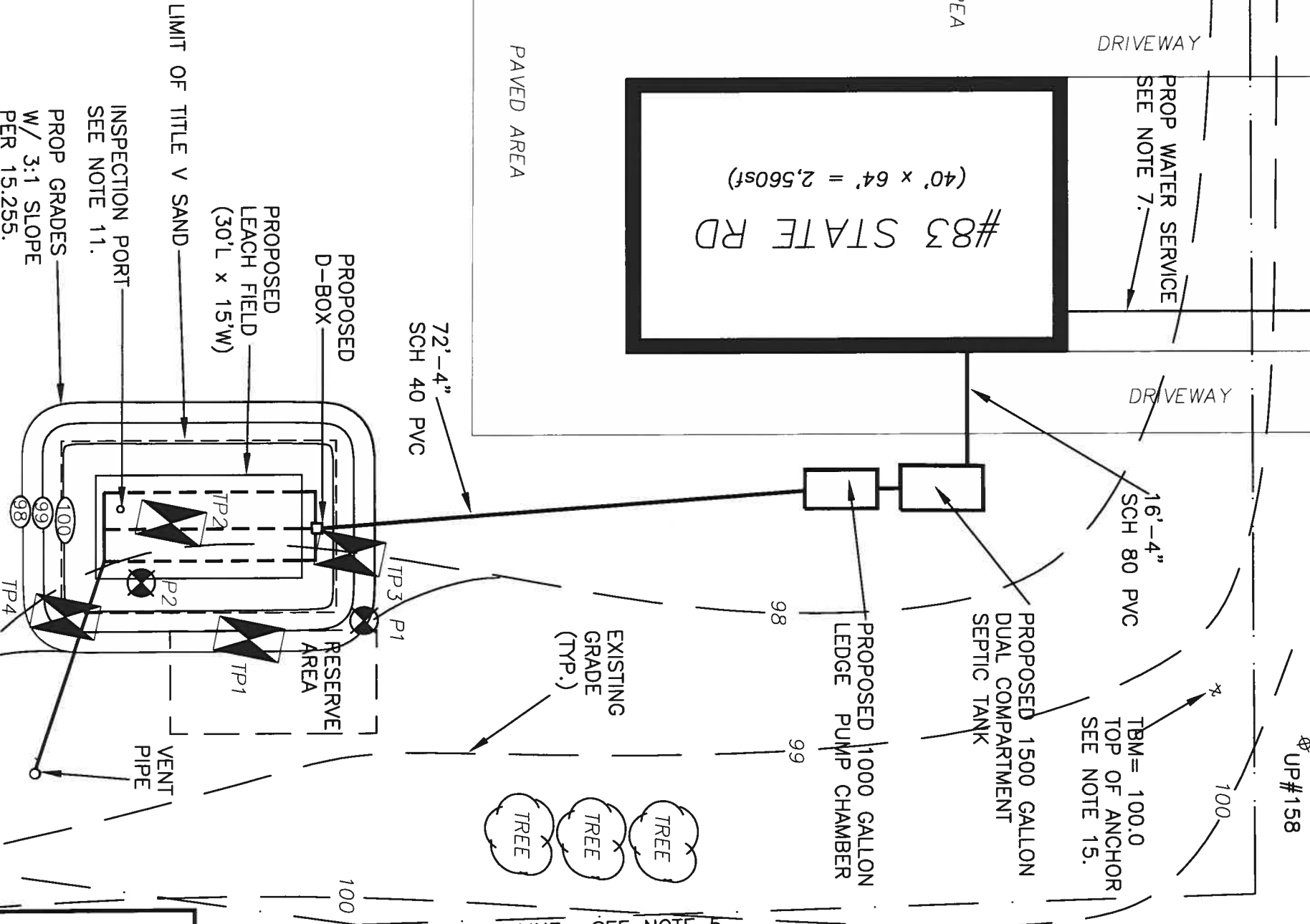


INDEX

- PAGE 1 - SITE LOCUS AND TITLE SHEET
- PAGE 2 - 20 SCALE PLAN
- PAGE 3 - PROFILE AND SECTIONS
- PAGE 4 - SYSTEM DETAILS
- PAGE 5 - NOTES, CALCULATIONS AND SOIL PROFILES

# STATE RD - RT 5

PROPERTY LINE - SEE NOTE 5



- NOTES:
1. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH MASSACHUSETTS TITLE V CODE AND ANY ADDITIONAL REGULATIONS OF THE TOWN OF WHATLEY.
  2. SEE PRINT 4 FOR ABSORPTION SYSTEM DETAILS AND ELEVATIONS.
  3. SEE PRINT 5 FOR SOIL AND DESIGN INFORMATION.
  4. MATCH FINAL GRADES TO EXISTING WHERE POSSIBLE.
  5. PROPERTY LINES SHOWN AS APPROXIMATE. INFORMATION FROM SURVEY PLAN DATED JANUARY 31, 1990 BY REGISTERED SURVEYOR HAROLD EATON AND ASSOCIATES, BOOK 4122/PAGE 301.
  6. BENCHMARK = 100.00 DN TOP OF GUY ANCHOR AT UP# 1158.
  7. NEW TOWN WATER SERVICE TO BE LOCATED AT LEASE 10' FROM SEPTIC SYSTEM PER 15.211.
  8. THE DEPARTMENT OF ENVIRONMENTAL PROTECTION RECOMMENDS HAVING YOUR TANK PUMPED OUT AND SYSTEM INSPECTED EVERY ONE TO THREE YEARS.
  9. FOR SOIL INFO SEE ATTACHED SOIL EVALUATION REPORT.
  10. CONTRACTOR TO REMOVE 26' OF A AND B LAYERS (TO EL=95.83)
  11. INSPECTION PORT TO BE INSTALLED PER TITLE V REGULATIONS, SEE PRINT 4 FOR ADDITIONAL INFO.
  12. MAGNETIC LOCATING TAPE IS REQUIRED ON ALL PIPES WITHIN NEW SEPTIC SYSTEM PER TITLE V.
  13. CONTRACTOR TO NOTIFY DIGSAFE AND ALL OTHER RELEVANT MUNICIPAL UTILITIES PRIOR TO EXCAVATION ACTIVITY.
  14. NO KNOWN WELLS WITHIN 200' OF PROPOSED SYSTEM.
  15. TBM TO BE TRANSFERRED TO WITHIN 75' OF NEW SYSTEM COMPONENTS BY CONTRACTOR DURING CONSTRUCTION.

SCALE: 1" = 20'



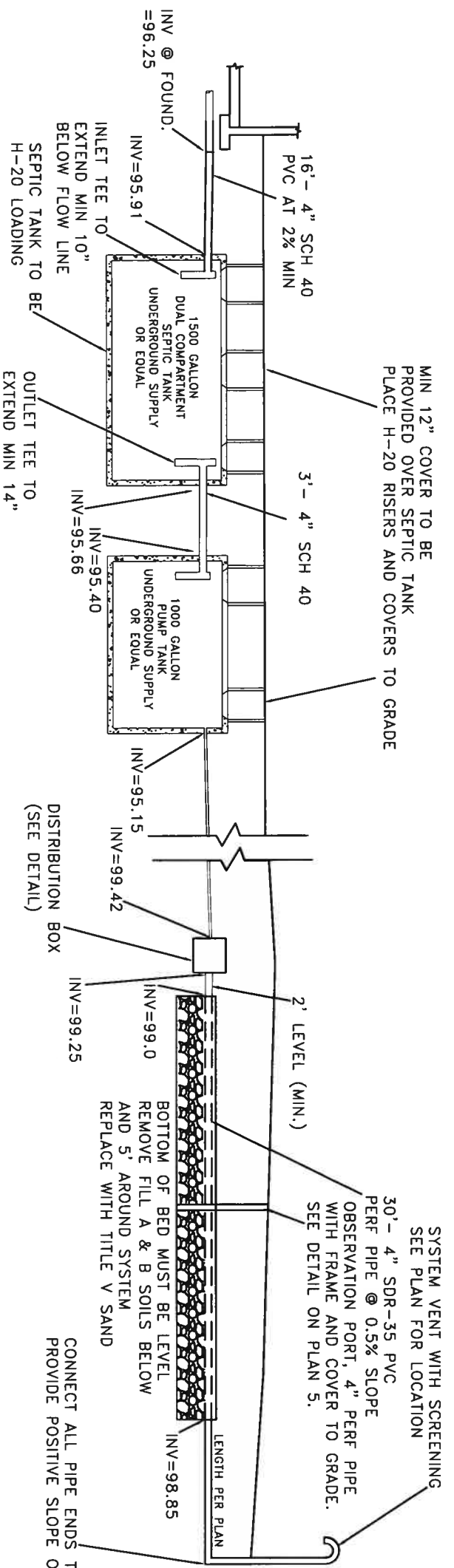
## SEPTIC SYSTEM PLAN 20 SCALE PLAN



*Paul M. Styspeck*  
2/13/22

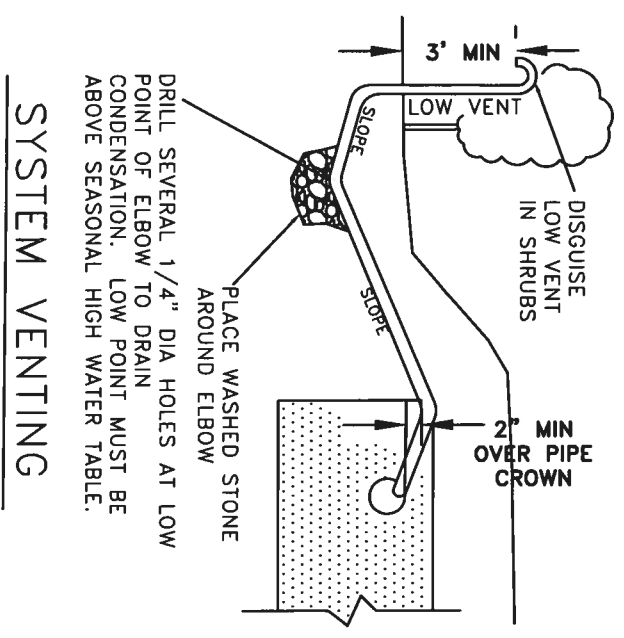
REV. NO.	DATE
0	1/30/22
SCALE AS NOTED	

**LARRY BROTHERTON**  
#83 STATE RD  
WHATLEY, MA  
PAUL M. STYSPECK, P.E.  
3 WEST ST  
HADLEY, MA 01035



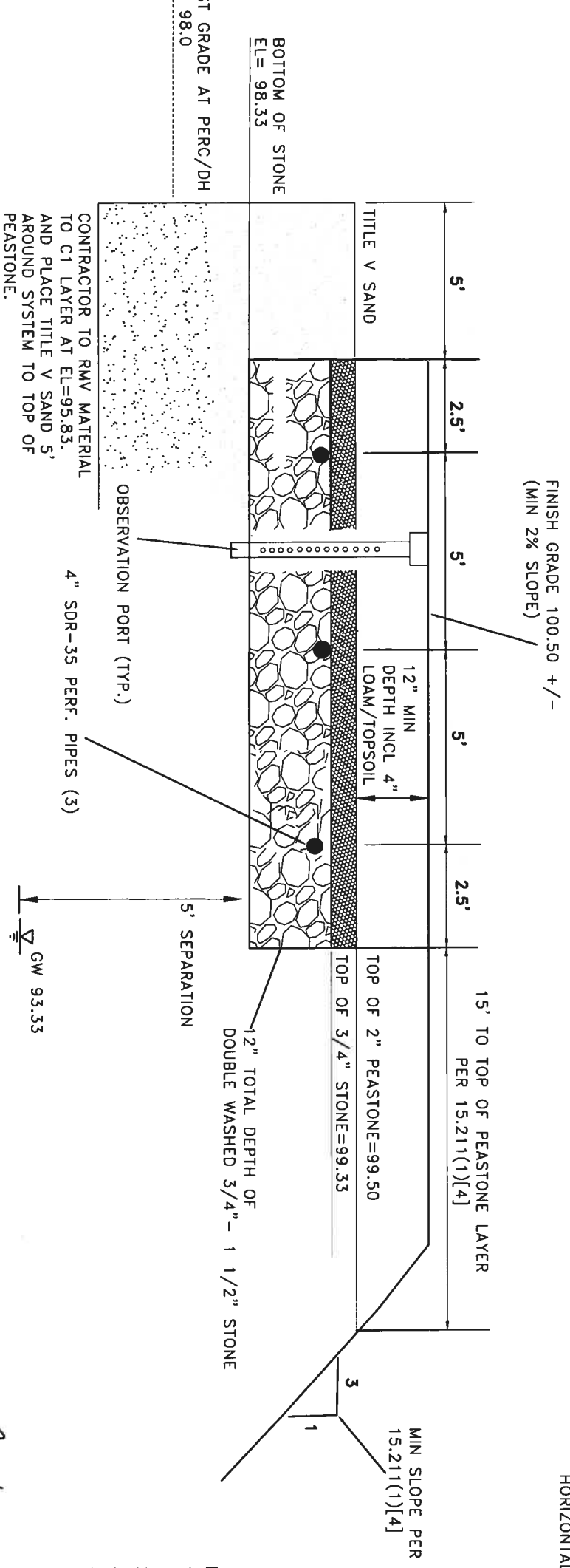
**SEPTIC SYSTEM PROFILE**

NO SCALE



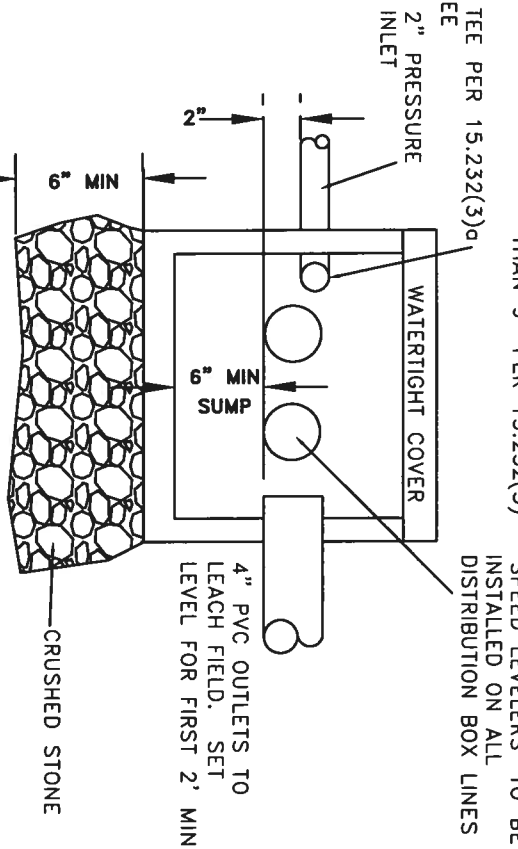
**SYSTEM VENTING**

NO SCALE



**LEACH BED DETAIL**

NO SCALE



**DISTRIBUTION BOX DETAIL**

NO SCALE

- NOTES:
1. REMOVE ANY FILL, A AND B SOIL HORIZONS TO 5' HORIZONTALLY AROUND SYSTEM.
  2. FILL REQUIRED TO MEET PROPOSED GRADES SHALL CONFORM TO TITLE V 310 CMR 15.00.
  3. PRIOR TO PLACEMENT OF FILL, THE BOTTOM OF EXCAVATION SHALL BE SCARIFIED.
  4. THE BOTTOM OF THE LEACHING BED SHALL BE EXCAVATED TO A LEVEL GRADE.
  5. BACKFILL OVER THE LEACHING BED SHALL BE A MINIMUM OF 9", EXCLUDING TOP SOIL.
  6. INSTALL AT LEAST ONE INSPECTION PORT AS SPECIFIED ON PLANS AND 15.240(13).
  7. LEACH BED TO BE 50' IN LENGTH.

- NOTES:
1. CONSTRUCTION OF DISTRIBUTION BOX SHALL BE IN CONFORMANCE WITH THE PROVISIONS OF 15.221 AND 15.226.
  2. ALL OUTLET INVERTS SHALL BE SET AT THE SAME ELEVATION.
  3. THE MINIMUM INSIDE DIMENSION SHALL BE 12".
  4. THE MINIMUM WALL THICKNESS SHALL BE 2".
  5. DISTRIBUTION BOXES BURIED GREATER THAN 9" BELOW GRADE SHALL BE EQUIPPED WITH RISERS.

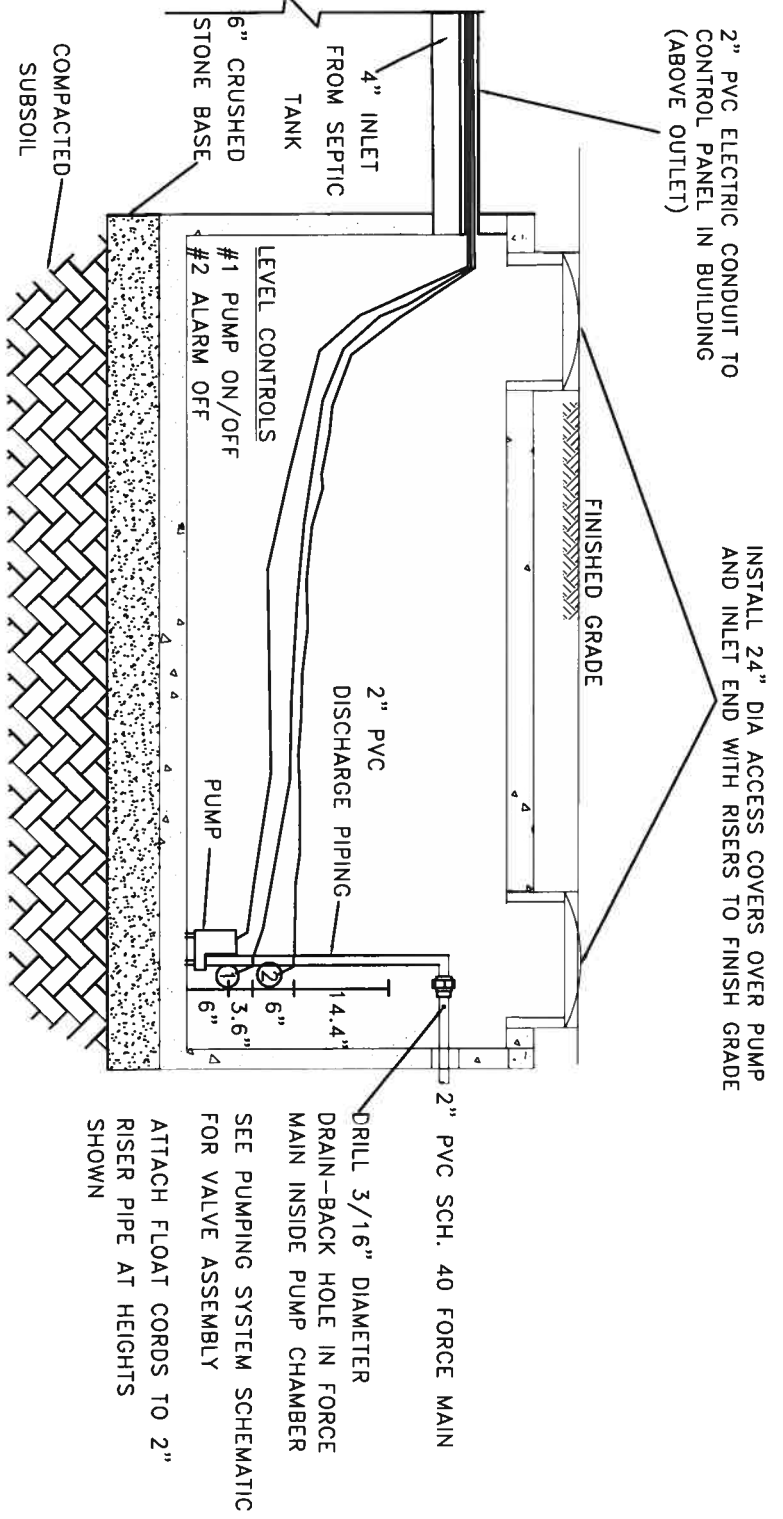
**PROPOSED SEPTIC SYSTEM PROFILE AND SECTIONS**

LARRY BROTHERTON  
83 STATE RD  
WHATLEY, MA

PAUL M. STYSPECK, P.E.  
3 WEST ST  
HADLEY, MA. 01035

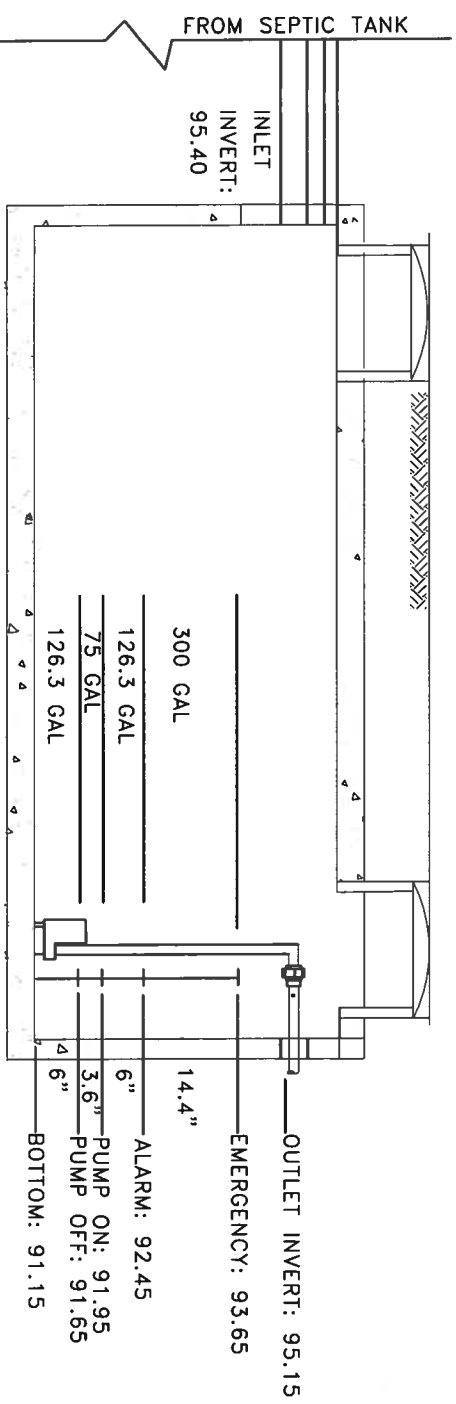
REV. NO. DATE  
0 1/30/22  
AS NOTED





**PUMP CHAMBER - 1000 GAL**

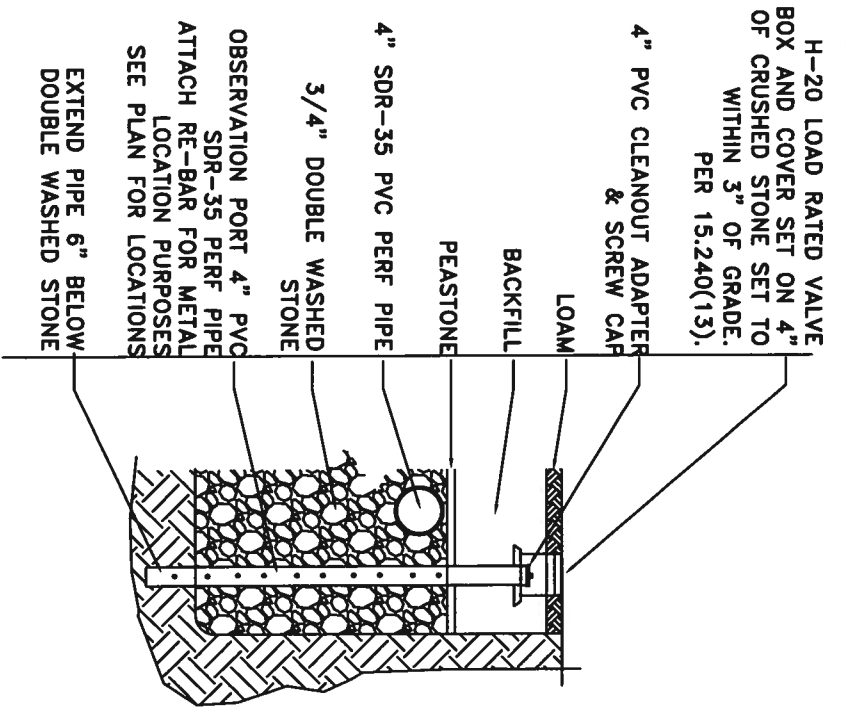
NO SCALE  
 PUMP CHAMBER TO BE UNDERGROUND SUPPLY PRECAST CONCRETE 1000 GAL TANK 96" L x 60" W x 68" H H-20 OR APPROVED EQUAL



PUMP CYCLES SET FOR 4X/DAY @ 75GAL/CYCLE (300GPD/4CYCLES)

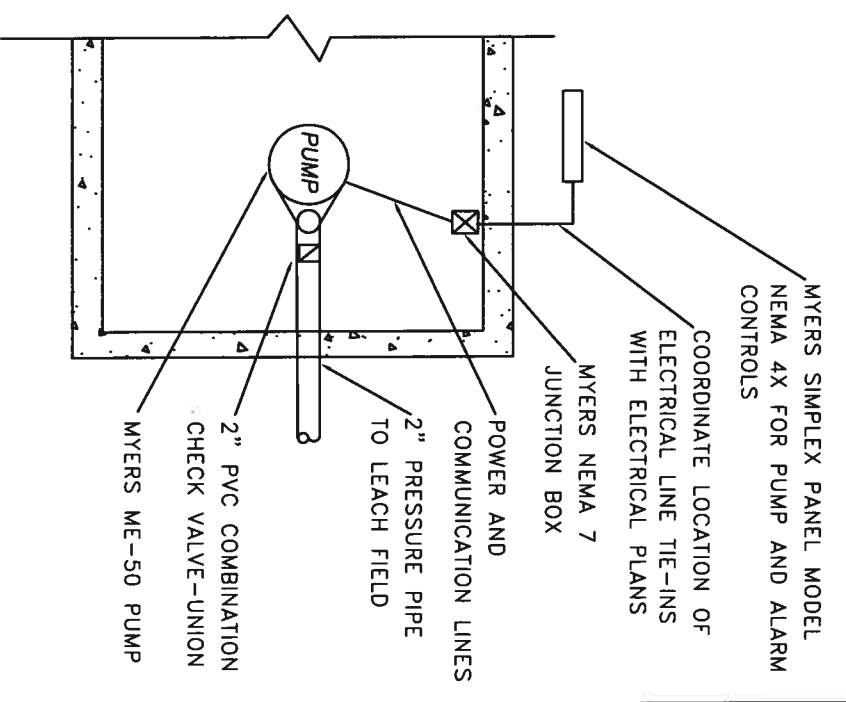
**PUMP CHAMBER CALCULATIONS**

NO SCALE



**OBSERVATION PORT**

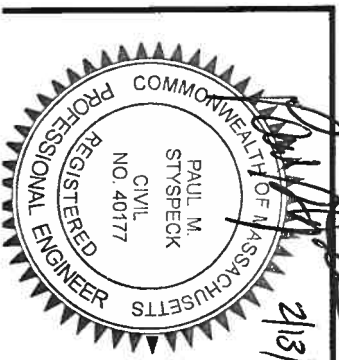
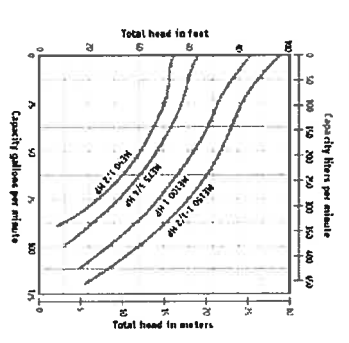
NO SCALE



**PUMPING SYSTEM SCHEMATIC**

NO SCALE

NOTE: PUMP SIZED TO HANDLE TDH CAPACITY TO FUTURE RESERVE AREA IF NECESSARY.



2/13/22

REV. NO.	DATE
0	1/30/22

**PROPOSED SEPTIC SYSTEM DETAILS**

LARRY BROTHERTON  
 83 STATE ROAD  
 WHATLEY, MA  
 PAUL M. STYSPECK, P.E.  
 3 WEST ST  
 HADLEY, MA, 01035

NOTES:  
 THIS PLAN IS FOR THE INSTALLATION OF A NEW SEPTIC SYSTEM.

2. PER 15.021(2) THE SUBGRADE INSPECTION SHALL BE DONE BY THE DESIGN ENGINEER. THE FINAL INSPECTION SHALL BE DONE BY THE DESIGN ENGINEER, THE INSTALLER AND THE APPROVING AUTHORITY PRIOR TO BACKFILLING.

3. ALL DISTURBED AREAS SHOULD BE LOAMED, RAKED, SEEDED, FERTILIZED, AND MULCHED AT THE COMPLETION OF CONSTRUCTION.

4. 4" PIPE WITH TIGHT JOINTS TO BE USED IN DISPOSAL SYSTEM EXCEPT WHERE OTHERWISE NOTED.

5. 4" SDR-35 PERFORATED PIPE TO BE USED IN LEACHING AREA.

6. NEW 1500 GALLON DUAL COMPARTMENT CONCRETE SEPTIC TANK AND 1000 GALLON PUMP TANK TO BE USED. FROM UNDERGROUND SUPPLY OR EQUAL.

7. ELEVATIONS ARE BASED ON ASSUMED DATUM.

8. UNLESS OTHERWISE NOTED, ALL SYSTEM COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH TITLE 5 OF THE STATE SANITARY CODE AND ANY OTHER APPLICABLE LOCAL RULES AND REGULATIONS.

9. ANY CHANGES IN THIS PLAN MUST BE APPROVED BY THE LOCAL BOARD OF HEALTH AND THE DESIGN ENGINEER.

10. CONTACT ENGINEER AT 413-237-4733 48 HOURS IN ADVANCE FOR INSPECTIONS.

DESIGN INFORMATION :  
 ALL CONSTRUCTION TO BE IN ACCORDANCE WITH 310 CMR 15 TITLE 5 AND ANY LOCAL BOARD OF HEALTH REGULATIONS

DESIGN FLOW: 310 CMR 15.203 - FACTORY, INDUSTRIAL PLANT, WAREHOUSE, OR STORAGE SPACE WITHOUT CAFETERIA = 15 GPD/PERSON

20 PERSONS X 15 GPD/PERSON = 300 GALS/DAY

SEPTIC TANK: 310 CMR 15.223  
 REQUIRED 300 GALS/DAY X 200% = 600 GALS/DAY  
 MINIMUM TANK SIZE PERMITTED 1500 GALLON

LEACHING SYSTEM: 310 CMR 15.249  
 DUE TO SOIL CONDITIONS LEACH FIELD DESIGN IS TO BE USED PER 310 CMR 15.252.

5'W x 30'L FIELD TO BE INSTALLED.

PERMEABILITY/EFFLUENT LOADING RATE: 310 CMR 15.242  
 DESIGN RATE: <2 MINUTES / INCH IN CLASS 1 SOIL  
 .TAR: .74 GAL./SQ FT/DAY & 5' SEPARATION TO ESGW

EACH FIELD:  
 15' WIDE X 30' FT LONG = 450 SF  
 450 SQ. FT. X .74 = 333 GAL./DAY ALLOWED

EXCEEDS CODE REQUIRED FLOW OF 300 GAL./DAY FOR PLANNED USE FLOW

# SOIL INFO

SOIL EVALUATION PERFORMED BY: ALAN WEISS  
 WITNESSED BY: MARK BUSHEE WHATLEY BOH REPRESENTATIVE  
 TEST PERFORMED: 3/17/21

TEST PITS 1 & 2  
 EXISTING EL. = 98.0+/-

TEXTURE	COLOR	MOTTLES	
0"	FSL	10 YR 3/2	A
8"	FSL	10YR 5/6	B
26"	FS/MS	2.5YR 5/3	C1

PARENT MATERIAL: BASEL TILL  
 DEPTH TO BEDROCK: NONE  
 ESTIMATED HIGH WATER: 56" (EL. 93.33)  
 PERC RATE <2 MIN/IN

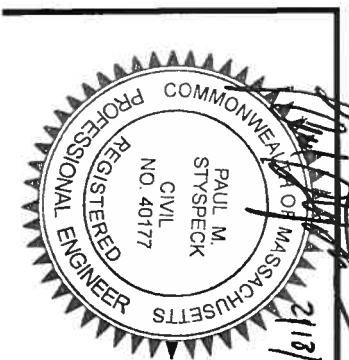
TEST PITS 3 & 4  
 EXISTING EL. = 98.0+/-

TEXTURE	COLOR	MOTTLES	
0"	FSL	10 YR 3/2	A
9"	FSL	10YR 5/6	Bw
28"	FS/MS	2.5YR 5/3	C1

PARENT MATERIAL: BASEL TILL  
 DEPTH TO BEDROCK: NONE  
 ESTIMATED HIGH WATER: 56" (EL= 93.33)  
 PERC RATE <2 MIN/IN

### BUOYANCY CALCULATIONS FOR SEPTIC TANK AND PUMP TANK:

GW AT EL 93.33  
 SEPTIC TANK WEIGHT = 12,930#, LENGTH= 126", WIDTH= 68"  
 PUMP TANK WEIGHT = 8,765#, LENGTH= 96", WIDTH= 60"  
 BOTTOM OF TANK EL = 91.33  
 GW DEPTH = 93.33 - 91.33 = 2'  
 DISPLACED GROUNDWATER VOLUME:  
 SEPTIC TANK - 2' x 126"/12 x 68"/12 = 119CF  
 PUMP TANK - 2' x 96"/12 x 60"/12 = 80CF  
 DISPLACED GROUNDWATER WEIGHT:  
 SEPTIC TANK - 62.4#/CF x 119CF = 7,427#  
 PUMP TANK - 62.4#/CF x 80CF = 4,992#  
 12,930# SEPTIC TANK (W/ NO COVER OR EFFLUENT WEIGHT INCLUDED > 7,427# BUOYANCY FORCE  
 8,765# PUMP TANK (W/ NO COVER OR EFFLUENT WEIGHT INCLUDED > 4,992# BUOYANCY FORCE  
 NO BALLAST OR EXTRA WEIGHT REQUIRED TO OFFSET BUOYANCY



REV. NO. DATE  
 0 1/30/22

**PROPOSED SEPTIC SYSTEM**  
 NOTES, CALCULATIONS AND SOIL PROFILES

LARRY BROTHERTON  
 83 STATE RD  
 WHATLEY, MA  
 PAUL M. STYSPECK, P.E.  
 3 WEST ST  
 HADLEY, MA 01035