

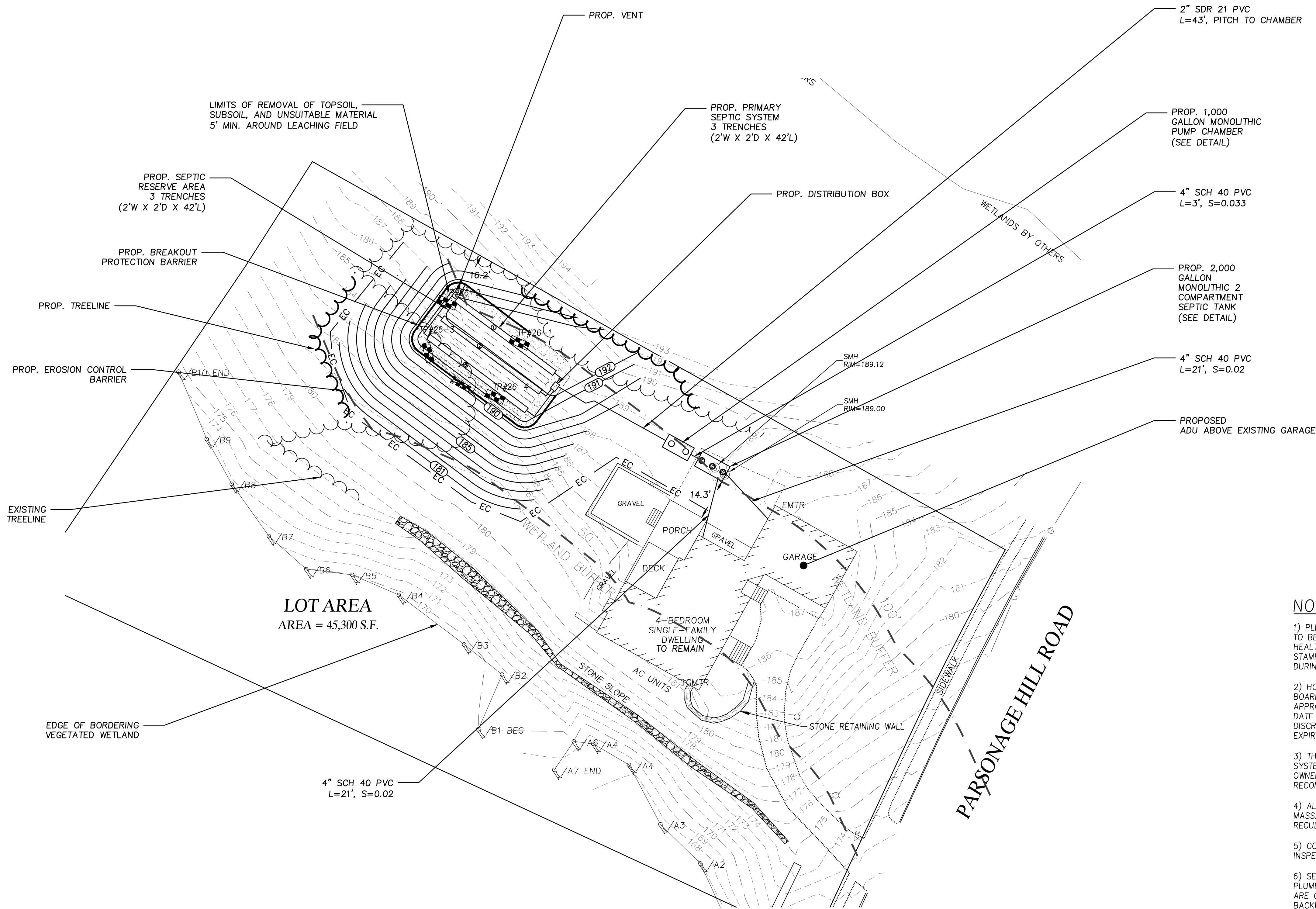


MAP 539. BLOCK 439, LOT 9A-9

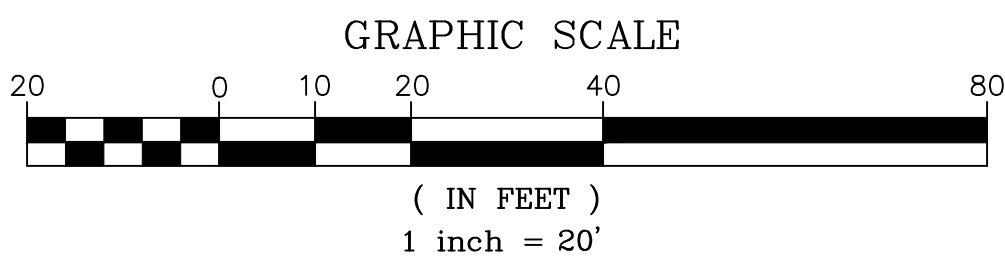
-  IRON PIPE
 IRON ROD/DRILL HOLE
 SOIL TEST PIT
 PERCOLATION TEST
 MARSH/WETLAND
 PROPOSED CONTOURS
 EXISTING CONTOURS
 SUBSURFACE WATER LINE



CONTRACTOR TO USE CAUTION WHEN EXCAVATING AS THIS PROPERTY IS SERVICED BY UNDERGROUND UTILITIES. LOCATIONS SHOWN HEREON COME DIRECTLY FROM UTILITY COMPANY PLANS AND, WHERE POSSIBLE, FROM MEASUREMENTS TAKEN IN THE FIELD. CONTRACTOR RESPONSIBLE FOR CONTACTING DIGSAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION AND SHALL MAINTAIN ALL DIGSAFE MARKINGS DURING CONSTRUCTION.



- 1) PLEASE BE ADVISED THAT THESE PLANS SHOULD BE CONSIDERED TO BE A PROGRESS PRINT UNLESS STAMPED BY THE LOCAL BOARD OF HEALTH AS APPROVED. CONTRACTOR SHOULD OBTAIN A COPY STAMPED APPROVED FROM THE LOCAL BOARD OF HEALTH TO USE DURING CONSTRUCTION.
- 2) HOMEOWNER SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL BOARD OF HEALTH TO DETERMINE THE LENGTH OF TIME THE APPROVAL IS VALID FOR. EXTENSIONS TO THE APPROVAL EXPIRATION DATE MAY BE GRANTED BY THE BOARD OF HEALTH, AT THEIR DISCRETION, IF REQUESTED IN WRITING PRIOR TO THE DATE OF EXPIRATION.
- 3) THIS PLAN IS FOR THE INSTALLATION OF THE PROPOSED SEPTIC SYSTEM ONLY AND SHOULD NOT BE USED TO ESTABLISH LINES OF OWNERSHIP ON THE GROUND. A BOUNDARY LINE SURVEY IS RECOMMENDED TO ESTABLISH LINES OF OWNERSHIP.
- 4) ALL WORK SHALL COMPLY WITH THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION TITLE V REGULATIONS AND ALL LOCAL REGULATIONS.
- 5) CONTRACTOR SHALL NOTIFY DESIGN ENGINEER FOR A BED BOTTOM INSPECTION.
- 6) SEPTIC TANK CORNERS, LEACH LINES AND ALL CONNECTING PUMPING SHALL BE LEFT EXPOSED UNTIL AS-BUILT MEASUREMENTS ARE OBTAINED. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER AFTER BACKFILLING AND SPREADING OF LOAM AND SEED SO THAT FINISHED TOPOGRAPHY MAY BE OBTAINED FOR AS-BUILT DRAWING.
- 7) ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE PRIOR TO BACKFILLING, IN ACCORDANCE WITH 310 CMR 15.22(12), TO ALLOW FOR EASIER LOCATING OF COMPONENTS DURING FUTURE MAINTENANCE.
- 8) ALL SYSTEM COMPONENTS SHALL BE INSPECTED IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS. IT IS HIGHLY RECOMMENDED THAT THE INSPECTIONS ARE COMPLETED ONCE ANNUALLY OR MORE FREQUENTLY AS RECOMMENDED BY THE COMPONENT MANUFACTURER. ALL INSPECTIONS SHALL BE COMPLETED ON AN OFFICIAL REPORT FORM AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE LOCAL BOARD OF HEALTH.



22 PARSONAGE HILL ROAD
HAVERHILL, MA

[illegible]

ENGINEERING AND LAND SURVEYING
62 ELM ST. SALISBURY, MA 01952 (978) 463-8980
2 MERRIMACK ST, SUITE 504 HAVERHILL, MA 01830 (978) 241-4895
13 HAMPTON RD. EXETER, NH 03833 (603) 778-0528

AT

22 PARSONAGE HILL ROAD

SEPTIC SYSTEM DESIGN

SHEET: 1 OF 3

BUOYANCY CALCULATIONS

SEPTIC TANK

FOR A 7.0'W X 13.0'L SEPTIC TANK WITH AN ESHWT OF 184.25
(ESHWT ELEV. - TANK BOTTOM ELEV.) 184.25' - 180.92' =3.33 '

BUOYANT FORCE = VOLUME (CU. FT.) X 62.4 LBF/CU. FT. (WATER)
= (7.0' X 13.0' X 3.33') X 62.4 LBF/CU.FT.
= 18,909± LBF UP

GRAVITY FORCES = (SOIL VOL.) * DENSITY OF SOIL + TANK WEIGHT
= (7.0' X 13.0' X 2.1') X 120 LBF/CU. FT.
(DENSITY OF SOIL) + 11,641 LBF
= 37,177 LBF DOWN

RESULTANT FORCE = GRAVITY FORCES - BUOYANCY FORCE
= 37,177 LBF DOWN - 18,909 LBF UP
= 18,268± LBF DOWN

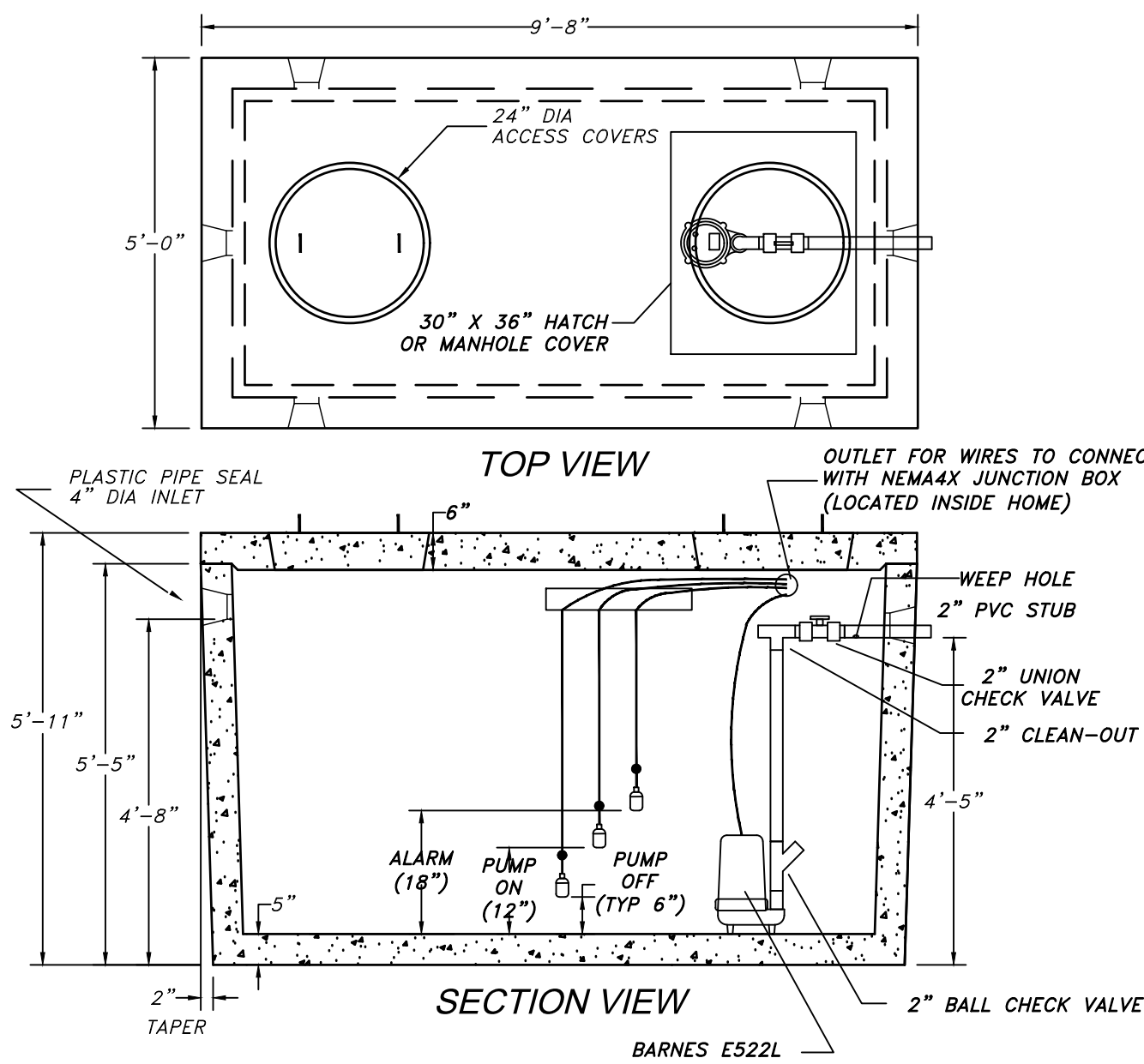
PUMP CHAMBER

FOR A 5.0'W X 9.67'L SEPTIC TANK WITH AN ESHWT OF 184.25
(ESHWT ELEV. - TANK BOTTOM ELEV.) 184.25' - 180.48' =3.77 '

BUOYANT FORCE = VOLUME (CU. FT.) X 62.4 LBF/CU. FT. (WATER)
= (5.0' X 9.67' X 3.77') X 62.4 LBF/CU.FT.
= 11,374± LBF UP

GRAVITY FORCES = (SOIL VOL.) * DENSITY OF SOIL + TANK WEIGHT
= (5.0' X 9.67' X 2.4') X 120 LBF/CU. FT.
(DENSITY OF SOIL) + 11,641 LBF
= 31,134 LBF DOWN

RESULTANT FORCE = GRAVITY FORCES - BUOYANCY FORCE
= 31,134 LBF DOWN - 11,347 LBF UP
= 19,787± LBF DOWN



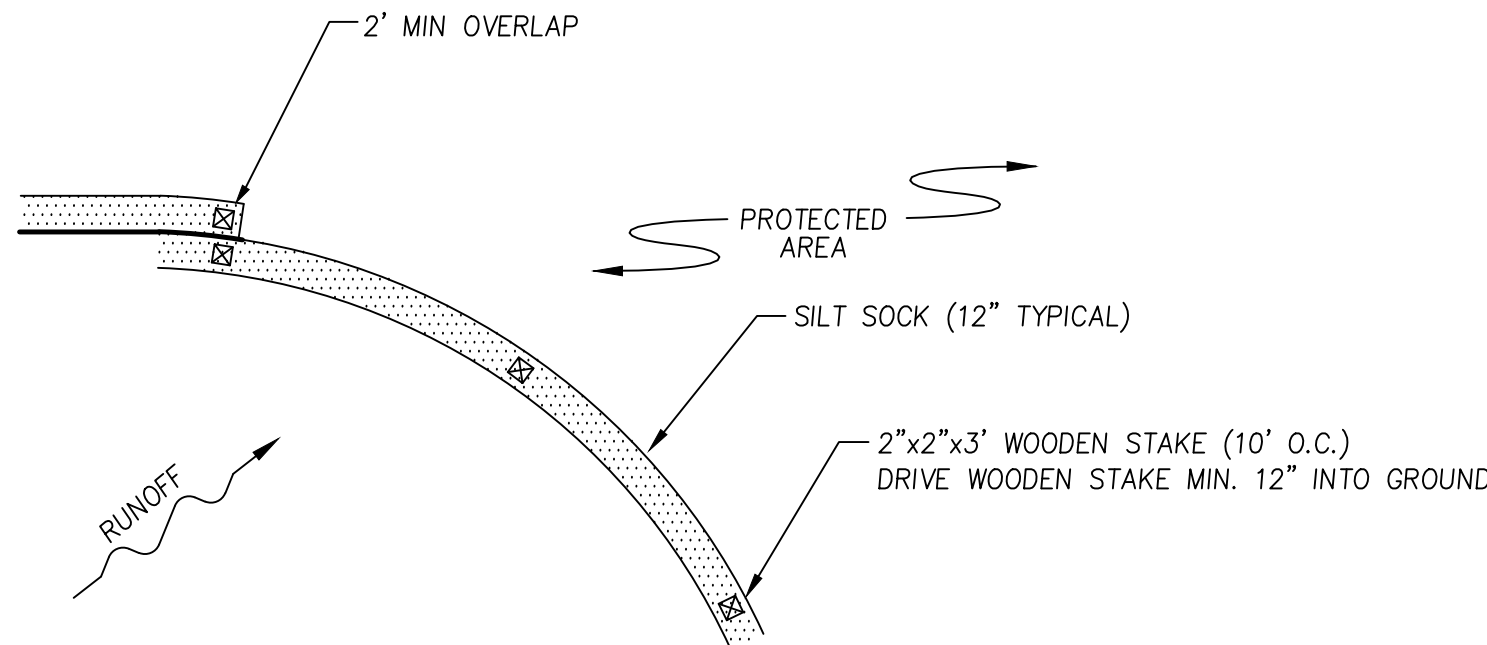
PUMP CHAMBER ELEVATIONS

INV 4" PVC IN = 185.15
INV 2" PVC OUT = 184.90
FLOOR ELEVATION = 180.90
PUMP OFF ELEVATION = 181.40
PUMP ON ELEVATION = 181.90
ALARM ELEVATION = 182.40

SPECIFICATIONS:

1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. CONSTRUCTION OF PUMP CHAMBER CONFORMS WITH DEP TITLE 5 REGS, 310 CMR, SECTION 15.226.
3. ALL REINFORCEMENT PER ASTM C1227-93.
4. JOINT SEALED WITH BUTYLE RESIN.
5. DESIGNED FOR H-20 LOADING.
6. PUMP, FLOATS AND PIPE INSTALLED IN CHAMBER. FLOAT ELEVATIONS TO BE SET BY INSTALLER.
7. SUPPLIED WITH PUMP CONTROL PANEL WALARM.
8. THE AVAILABLE STORAGE VOLUME BETWEEN THE INLET INVERT AND THE PUMP ON ELEVATION = 843 GALLONS.
9. ALARM AND PUMP ARE TO BE WIRED ON SEPARATE CIRCUITS.
10. ALARM IS TO BE LOCATED INSIDE LIVING QUARTERS.
11. THE PUMP CHAMBER IS TO BE MONOLITHIC CONSTRUCTION.
12. JUNCTION BOX TO BE LOCATED INSIDE HOME.
13. PUMP CHAMBER IS AN H-20 TANK (M1000MH).

SHEA CONCRETE PRODUCTS 1000 GALLON SIMPLEX PUMP PACKAGE



NOTES

1. ALL MATERIAL SHALL MEET SPECIFICATIONS BY FILTREXX OR APPROVED EQUAL.
2. SILT SOCK SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
3. THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF THE SILT SOCK WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SILT SOCK.
4. SILT SOCK SHALL BE MAINTAINED UNTIL DISTURBED AREA ABOVE THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.
5. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE SOCK HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.
6. SILT SOCK SHALL BE INSPECTED DAILY BY THE GENERAL CONTRACTOR.

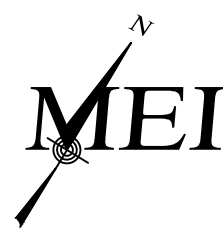
SILT SOCK
INSTALLATION

N.T.S.



PREPARED FOR
JEFF FONTAINE
22 PARSONAGE HILL ROAD
HAVERHILL, MA

NO.	DATE	DESCRIPTION	BY		



MILLENNIUM ENGINEERING, INC.
ENGINEERING AND LAND SURVEYING
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13 HAMPTON RD. EXETER, NH 03833 (603) 778-0528

SCALE: AS NOTED	CALC. BY: J.T.M.	PROJECT: M264560
DATE: JULY. 19, 2026	CHKD. BY: E.W.B.	

SEPTIC SYSTEM DESIGN
IN
HAVERHILL, MA
AT
22 PARSONAGE HILL ROAD

**SEPTIC
SYSTEM
DESIGN**

SHEET: 3 OF 3