

**SOIL TEST DATA**

TP #1	147.86	TP #2	147.24
HTM	0-17" 10YR 3/2	HTM	0-50" 10YR 3/2 FILL/TOPSOIL
Ab	17-18" FSL 10YR 2/2 GRANULAR, FRIABLE	Bw	58-70" SL 7.5 YR 4/6 WEAK BLOCKY, FRIABLE
Bw	18-40" FSL 7.5 YR 4/6 WEAK BLOCKY, FRIABLE	C	70-72" SL 2.5Y 5/3 MASSIVE, FRIABLE
C	40-43" SL 2.5Y 5/3 MASSIVE, FRIABLE		

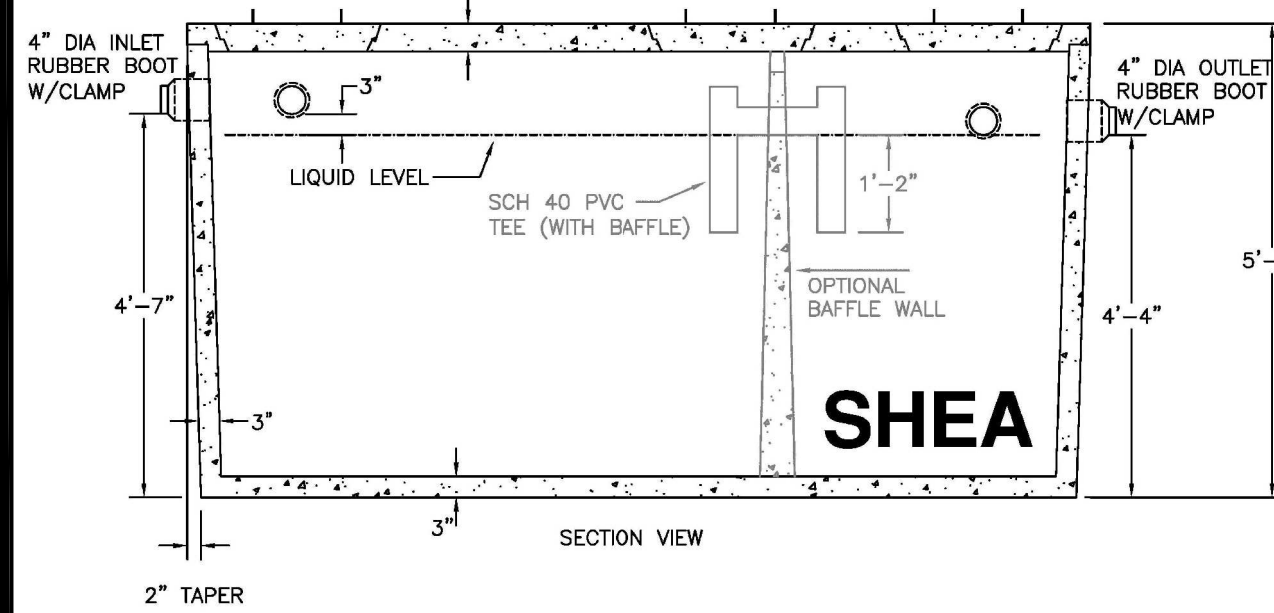
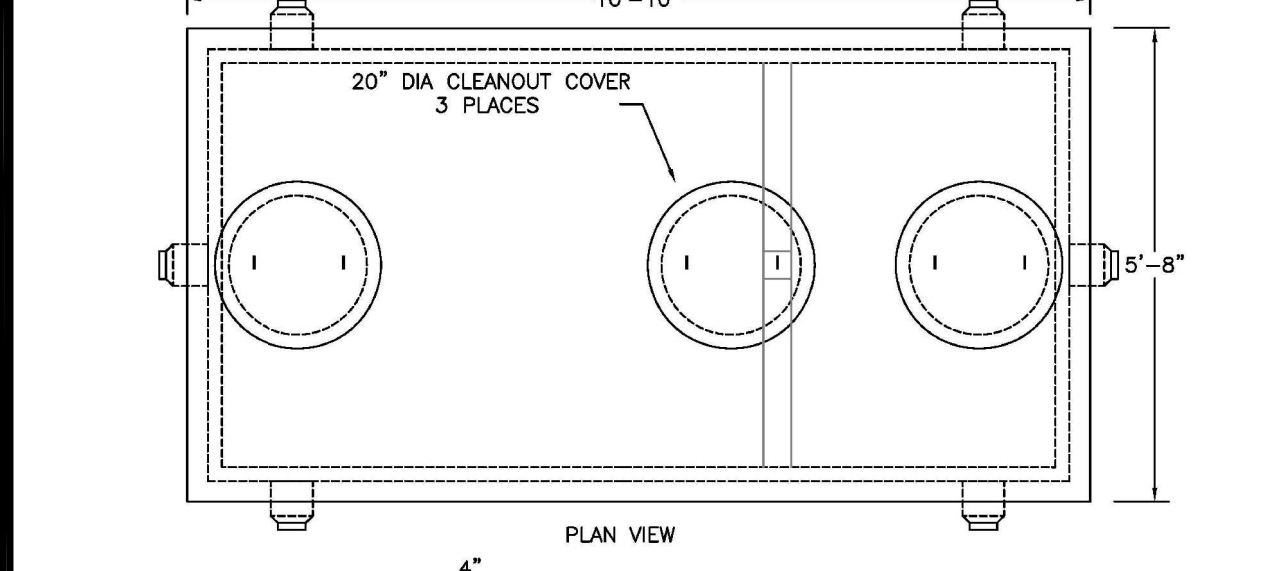
WEEP: NONE  
OBS: NONE  
ESHW: >43" (144.28)  
LEDGE REFUSAL @ 43"

**PERC. TEST #1 ELEV: 145.58**

START SOAK	10:30
12" @	10:45
9" @	10:55
6" @	11:06
RATE	4 MIN/IN

DEPTH OF HOLE: 18"

PARENT MATERIAL:  
ROCK OUTCROP-CHARLTON-HOLLIS COMPLEX



- NOTES:**
- CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
  - CONSTRUCTION OF SEPTIC TANK CONFORMS WITH 310 CMR, SECTION 15.00 DEP TITLE 5 REGS.
  - ALL REINFORCEMENT PER ASTM C1227.
  - BAFFLE WALL OPTIONAL FOR TWO COMPARTMENT TANKS.
  - TEES AND GAS BAFFLE SOLD SEPARATELY.
  - TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
  - IF COVER EXCEEDS 4 FEET, HEAVY DUTY TANK REQUIRED. ALSO AVAILABLE IN AASHTO HS-20 LOADING.

**WAIVERS GRANTED:**

FROM TITLE V: (310 CMR 15.211: MINIMUM SETBACK DISTANCES:  
1. 35' SEPARATION FROM WETLANDS (50' REQUIRED).  
2. 87' FROM ABUTTING PROPERTY WELL (100' REQUIRED).

FROM CHAPTER 201-9 OF THE TOWN OF BOXFORD SUBSURFACE SANITARY REGULATIONS:  
B. C. LEACHING FACILITY LOCATED WITHIN 100' FROM WETLAND RESOURCE AREA (35' PROVIDED)  
D. LEACHING FACILITY WITH A PERCOLATION RATE LESS THAN 5 MINUTES PER INCH TO BE LESS THAN 150' OF A POTABLE WELL WATER SUPPLY: (87' PROVIDED)  
E. LEACHING FACILITY WITH A PERCOLATION RATE LESS THAN 5 MINUTES PER INCH TO BE LESS THAN 150' FROM A WETLAND RESOURCE AREA (35' PROVIDED)

- NOTES:**
- BOUNDARY FROM SERD PLAN BOOK 92, PLAN 42.
  - WETLANDS FLAGGED BY NORSE ENVIRONMENTAL, TYNGSBORO, MA IN AUGUST, 2021
  - EXISTING TOPO FROM ON-GROUND SURVEY CONDUCTED IN AUGUST 2021 BY THIS OFFICE.
  - THIS PROPOSED SEPTIC SYSTEM REPLACEMENT HAS BEEN DESIGNED IN ACCORDANCE WITH SEPTEMBER 9, 2016 REVISION OF MASSACHUSETTS TITLE V (310 CMR 15), AND THE MASSACHUSETTS ADVANCED ENVIRO-SEPTIC DESIGN AND INSTALLATION MANUAL BY PRESBY ENVIRONMENTAL, DATED SEPTEMBER, 2019.
  - THE TOP SOIL AND FILL MATERIAL BELOW THE PROPOSED SYSTEM SHALL BE REMOVED AND REPLACED WITH CONCRETE SAND MEETING PRESBY ENVIRO-SEPTIC STANDARDS.
  - EXISTING 750 GAL. SEPTIC TANK SHALL HAVE THE BOTTOM PUNCTURED AND THE TANK FILLED WITH SAND OR OTHER SUITABLE MATERIAL.
  - SYSTEM IS NOT DESIGNED FOR USE WITH GARBAGE GRINDER.
  - WATER SERVING DWELLING IS BY ONSITE WELL LOCATED IN REAR YARD OF DWELLING.
  - ELEVATIONS REFER TO NAVD88.
  - TEMPORARY BENCHMARK NAIL SET IN PAVEMENT IN STREET NEAR DRIVEWAY. ELEV=148.67
  - SURFACE AND SUBSURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE SOIL ABSORPTION SYSTEM.
  - ANY VARIATIONS TO THIS DESIGN SHALL BE REPORTED TO THE ENGINEER IN WRITING.
  - INSTALLER SHALL CALL DIGSAFE PRIOR TO ANY EXCAVATION.
  - 4" DIA. PVC W/ SCREW CAP INSPECTION PORT TO BE PROVIDED AT LOCATION SHOWN PORT TO BE WITHIN 3" OF FINAL GRADE.
  - O'HARA ENGINEERING TO BE NOTIFIED OF ANY CHANGES TO THIS PLAN.

**DESIGN DATA:**

- DESIGN FLOW: 4 BEDROOMS X 110 GPD/BR = 440 GPD
- PERC RATE: 4 MIN/INCH
- ENVIRO SEPTIC PIPING REQUIRED:  
PERC RATE = 4 MIN/INCH  
4 BEDRMS @ 4 MIN/INCH = 440 GPD/0.60 LTAR x 60% REDUCTION ALLOWED = 440 S.F.  
PROPOSE 220 LF OF 12" DIA. ENVIRO SEPTIC TUBES SPACED AT 1.50 FT ON CENTER.
- USE 6 ROWS @ 30 FT LENGTH AND 4 ROWS AT 20 FT.
- 1500 GAL. SEPTIC TANK MEETING TITLE V REQUIREMENTS.
- REMOVE ALL FILL AND "A" HORIZON FROM EXISTING GRADE WITHIN 5 FEET OF BED AND REPLACE WITH SYSTEM SAND OR SAND FILL MEETING ENVIRO-SEPTIC STANDARDS (CONCRETE SAND).

REVISION	DATE	DESCRIPTION	BY
2	9-29-21	REVISED PER 9-29-21 BOH MEETING	MO
1	9-29-21	REVISED LIST OF WAIVERS	MO

ENGINEER	DRAFTER	CHECKED	FILE#
MO	MO	MO	210604

**SEPTIC SYSTEM REPLACEMENT PLAN**  
BOXFORD TAX MAP 20, BLOCK 10, LOT 9  
15 KING RICHARD DRIVE  
BOXFORD, MA 01921

SCALE: 1" = 20' AUGUST 26, 2021

20 0 20 40 60 80

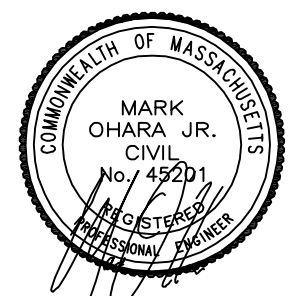
SCALE IN FEET

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PREPARED BY:

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**1500 GAL SEPTIC TANK**