

**SOIL TEST DATA**

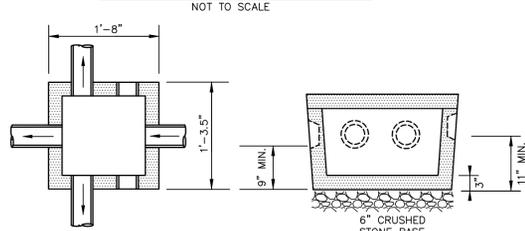
SOIL TESTING AND EVALUATION BY: PAUL G. GUNN S.E.#14362  
 SOIL TESTING WITNESSED BY: PATRICK BRENNAN  
 DATE: JUNE 18, 2024

TP-1	APPROX. GRADE EL.	TP-2	APPROX. GRADE EL.
A HORIZON	LOAMY SAND	14"	EL. 38.4
B HORIZON	LOAMY SAND	14"	EL. 37.6
C1 HORIZON	COARSE SAND	22"	EL. 36.6
C2 HORIZON	COARSE SAND	48"	EL. 29.6

WEeping OBSERVED: NONE  
 MOTTling OBSERVED: NONE  
 PERC. RATE: NONE  
 ESHGW: >112" (EL. 31.5)

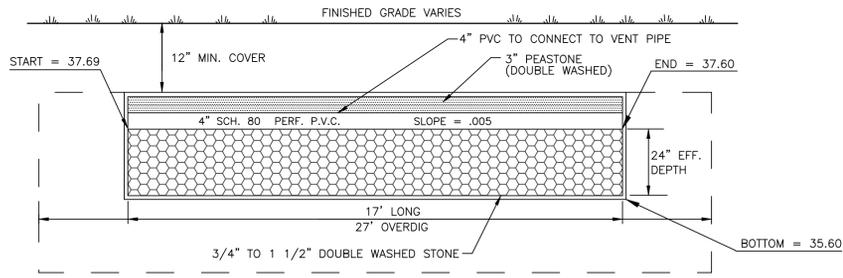
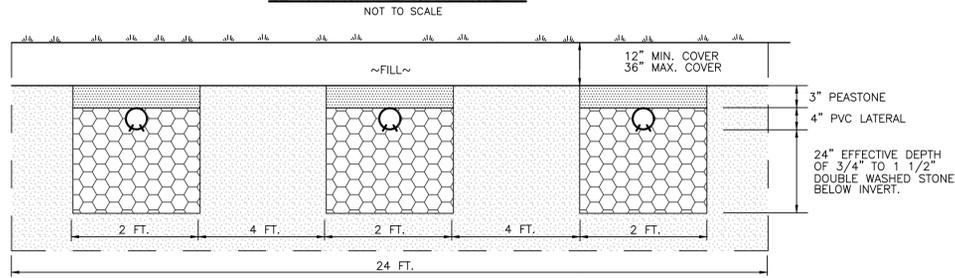
WEeping OBSERVED: NONE  
 MOTTling OBSERVED: NONE  
 PERC. RATE: <2 MPI @ 32"-50"  
 ESHGW: >120" (EL. 29.6)

**5-OUTLET DISTRIBUTION BOX**



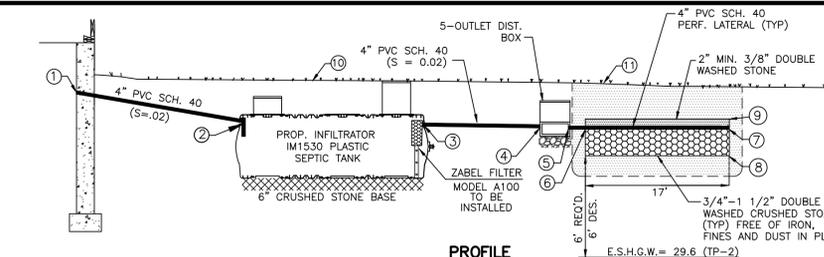
- NOTES:**
- DISTRIBUTION BOX COVER SHALL BE EQUIPPED WITH RISERS AS NECESSARY TO BRING THE COVER TO WITHIN 6" OF FINISHED GRADE.
  - ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
  - DISTRIBUTION BOX TO BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
  - THE FIRST 2 FT. OF PIPE EXITING THE DISTRIBUTION BOX SHALL BE INSTALLED LEVEL.

**LEACHING TRENCH FACILITY**



**DESIGN DATA**

- BUILDING TYPE: SINGLE FAMILY DWELLING
- NO. OF BEDROOMS: 1 (DEED RESTRICTION REQUIRED)
- DESIGN FLOW: 1 x 110 GPD/BEDROOM = 110 GPD (220 GPD MIN. PER TITLE 5)
- DESIGN PERCOLATION RATE: <2 MPI (TP-2)
- GARBAGE DISPOSAL: NO
- SEPTIC TANK DESIGN REQUIREMENT: 200% DESIGN FLOW  
220 x 2 = 440 GAL. (PROVIDE NEW IM1530 INFILTRATOR SEPTIC TANK)
- LEACH AREA REQUIREMENTS GALLONS/SQ. FT. (CLASS I)  
BOTTOM: 0.74 GAL./S.F. SIDE: 0.74 GAL./S.F.
- TOTAL LEACH AREA REQUIRED:  
TITLE 5: 220 GPD / (0.74 GPD/S.F.) = 297 S.F.  
PROVIDED: (3) 2'W x 2'D x 17'L STONE INFILTRATOR LEACHING TRENCHES  
EFFECTIVE AREA: 3 TRENCHES x 6 S.F./L.F. x 17' = 306 S.F.  
CAPACITY = 306 S.F. x 0.74 GPD/S.F. = 226 GPD



**SCHEDULE OF ELEVATIONS**

1. PIPE INV. AT FOUNDATION = 38.40 (CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION)	7. INV. OF PIPE AT END OF LEACHING BED = 37.60
2. INV. OF PIPE AT SEPTIC TANK INLET = 38.27	8. BOTTOM OF LEACHING TRENCH CRUSHED STONE = 35.60
3. INV. OF PIPE AT SEPTIC TANK OUTLET = 38.02	9. TOP OF PEASTONE (BREAKOUT) = 38.31
4. INV. OF PIPE AT DISTRIBUTION BOX INLET = 37.92	10. FINISHED GRADE OVER SEPTIC TANK = 39.9 (MIN.) - 42.1 (MAX.)
5. INV. OF PIPE AT DISTRIBUTION BOX OUTLET = 37.75	11. FINISHED GRADE OVER LEACHING FACILITY = 39.3 (MIN.) - 41.3 (MAX.)
6. INV. OF PIPE AT START OF LEACHING TRENCH = 37.69	

**GENERAL NOTES**

- SEPTIC SYSTEM INSTALLATION CONTRACTORS SHALL BE LICENSED BY THE BOARD OF HEALTH AND MUST COMPLY WITH ALL REQUIREMENTS OF THE BOARD OF HEALTH DISPOSAL WORKS' CONSTRUCTION PERMIT AND ANY CONDITIONS, IF ISSUED BY THE CONSERVATION COMMISSION.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- THESE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE BOARD OF HEALTH AND DESIGN ENGINEER.
- ANY CHANGE IN SITE CONDITIONS, DISCREPANCIES, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING PRIOR TO THE COMMENCEMENT OF WORK.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH TITLE 5 (310 CMR 15) AND THE LOCAL BOARD OF HEALTH REQUIREMENTS TO THE FULLEST EXTENT PRACTICABLE. NO GUARANTEE TO THE SYSTEMS PERFORMANCE IS EXPRESSED OR IMPLIED.
- SOIL TEST DATA SHOWN IS LIMITED TO THE CONDITIONS EXISTING AT THE SUBJECT TEST PIT LOCATION ONLY. IF DIFFERENT SOIL CONDITIONS ARE FOUND IN THE AREA OF THE PROPOSED ABSORPTION SYSTEM THEY SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING IMMEDIATELY.
- THE CONTRACTOR SHALL NOTIFY DIGSAFE PRIOR TO ANY EXCAVATION AT THE SUBJECT PROPERTY. IT IS SPECIFICALLY CAUTIONED THAT THE SUBSURFACE UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND OBSERVABLE SITE FEATURES. UTILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT AT THIS LOCATION.
- THIS PLAN HAS BEEN PREPARED SPECIFICALLY AS A SEPTIC SYSTEM DESIGN AND IS NOT TO BE USED TO ESTABLISH PROPERTY LINES OR BUILDING SETBACKS. PROPERTY LINES AND BUILDING LOCATIONS ARE GRAPHIC ONLY. PROPERTY LINES NOT HAVING BEEN VERIFIED. NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED.
- CONTRACTOR TO VERIFY AND ENSURE THAT ALL INTERIOR PLUMBING IS DIRECTED INTO PROPOSED SEPTIC SYSTEM. ANY VARIATIONS FROM THE DESIGN AS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

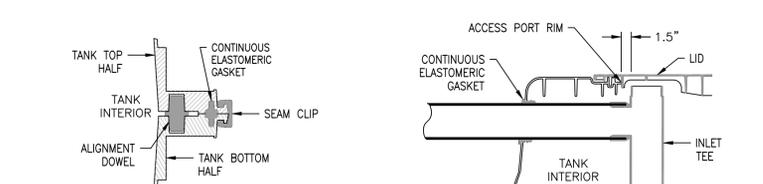
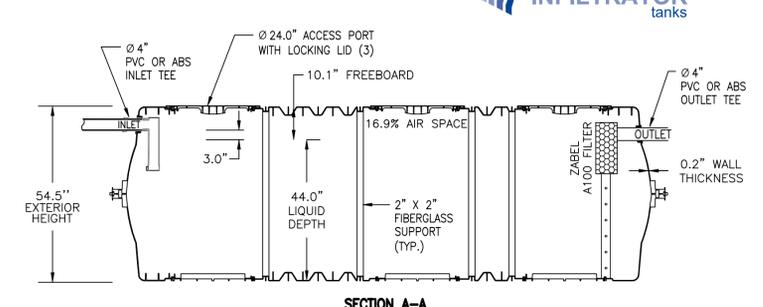
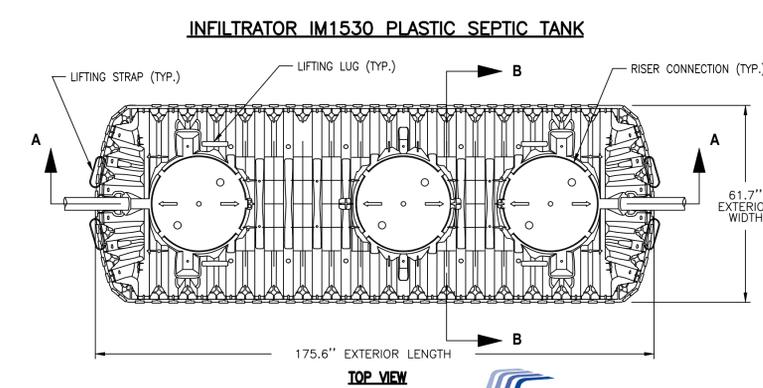
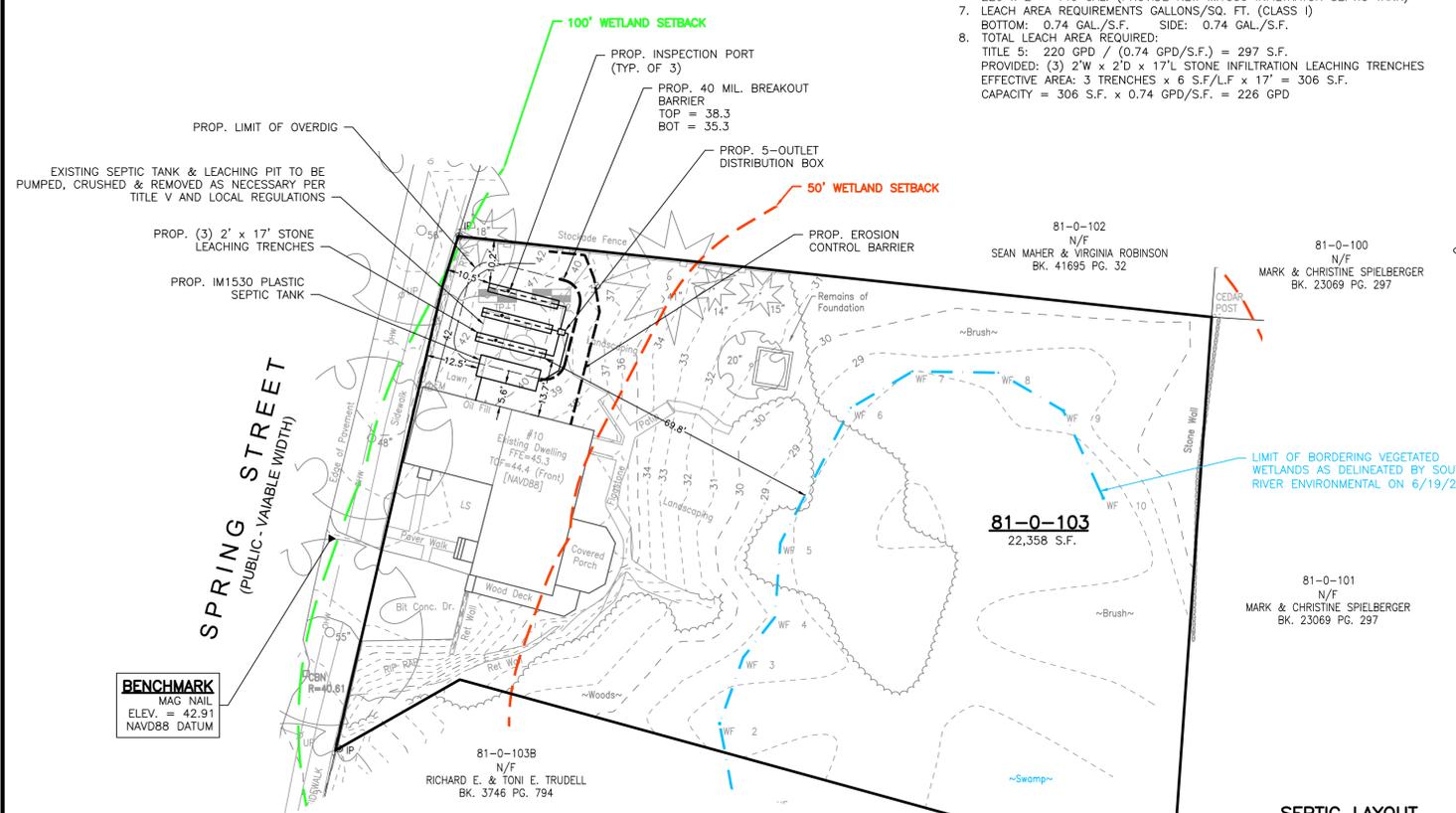
**CONSTRUCTION NOTES**

- CONTRACTOR SHALL COORDINATE INSPECTION TIMES WITH THE LOCAL BOARD OF HEALTH AND DESIGN ENGINEER 24-HOURS IN ADVANCE OF THE FOLLOWING INSPECTIONS:
  - AFTER EXCAVATION OF ALL UNSUITABLE MATERIAL FROM SOIL ABSORPTION AREA.
  - PRIOR TO COVERING THE CONSTRUCTED SYSTEM.
  - AFTER SYSTEM BACKFILL AND FINAL GRADING.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- ALL TIGHT-JOINT PLUMBING SHALL BE CONSTRUCTED OF SCH. 40 PVC PIPE WITH CLEANED AND CEMENTED FITTINGS, UNLESS OTHERWISE NOTED.
- ALL PRECAST/PIPE CONSTRUCTION JOINTS AND FITTINGS SHALL BE MADE WATERTIGHT BY PACKING WITH HYDRAULIC CEMENT.
- THE CONTRACTOR SHALL PROVIDE A SIEVE ANALYSIS OF THE TITLE 5 PERC SAND UTILIZED FOR FILL TO VERIFY THAT IT MEETS THE REQUIREMENTS OF 310 CMR 15.255(3). TITLE 5 SAND FILL SHALL COMPLY WITH THE FOLLOWING:
 

SIEVE SIZE	PARTICLE SIZE
#4	4.75 mm
#50	0.30 mm
#100	0.15 mm
#200	0.075 mm
- THE CONTRACTOR SHALL PREVENT ANY HEAVY CONSTRUCTION MACHINERY AND/OR TRUCKS FROM DRIVING OVER THE PROPOSED SOIL ABSORPTION SYSTEM LOCATION UNTIL FINISHED GRADE IS ESTABLISHED.
- THE CONTRACTOR SHALL INSTALL MAGNETIC TAPE OVER SYSTEM PIPING & COMPONENTS
- THE DESIGN ENGINEER SHALL CERTIFY AND PREPARE AN "AS-BUILT" PLAN FOR SUBMITTAL TO THE BOARD OF HEALTH UPON SEPTIC SYSTEM COMPLETION.
- ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" LOAM & SEED POST CONSTRUCTION.
- ALL SEPTIC SYSTEM COMPONENTS TO BE STAKED OUT BY PROFESSIONAL LAND SURVEYOR PRIOR TO SYSTEM INSTALLATION.
- CONTRACTOR SHALL ABANDON EXISTING SEPTIC COMPONENTS IN ACCORDANCE WITH 310 CMR SEC. 15.354 OF TITLE 5 AND LOCAL REGULATIONS BY PUMPING DRY, CRUSHING AND ABANDONING.

**SITE NOTES**

- LOCUS DOES NOT LIE WITHIN A DEP DESIGNATED ZONE II RESOURCE AREA.
- ALL KNOWN WETLANDS WITHIN 100 FEET OF THE PROPOSED SEWAGE SYSTEM ARE SHOWN.
- PROPERTY LINE DATA WAS OBTAINED FROM RECORDED DEED (BK. 13055 PG. 24) AND RECORDED PLANS ON FILE AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS.
- THERE ARE NO KNOWN ACTIVE/POTABLE WELLS OBSERVED WITHIN 100' OF THE PROPOSED SYSTEM.
- LOCUS LIES IN FEMA ZONE "X" AS SHOWN ON FEMA COMMUNITY MAP PANEL 25023C0082J DATED JULY 17, 2012. ZONE "X" IS NOT A SPECIAL FLOOD HAZARD AREA.



- NOTES:**
- THE SEPTIC TANK INLET COVER SHALL BE EXTENDED TO WITHIN 6" OF FINISHED GRADE AND THE SEPTIC TANK OUTLET COVER SHALL BE EXTENDED TO FINISHED GRADE.
  - ALL PIPE CONNECTION & CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
  - SEPTIC TANK SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE (0.5-3" DIAMETER STONE).
  - OUTLET SHALL BE EQUIPPED WITH A ZABEL A100 EFFLUENT FILTER (OR APPROVED EQUAL).
  - TANK IS NOT H-20 RATED AND FOR NON-TRAFFIC APPLICATIONS ONLY.
  - TANK IS NOT TO BE BURIED A DEPTH GREATER THAN 48".

**REQUIRED STONE**

**REQUIRED CRUSHED STONE**  
 (2'W x 17'L x 2.3'D x (3 TRENCHES) x 1.2) / 27 = 11± C.Y.

**REQUIRED PEASTONE**  
 (2'W x 17'L x 0.3'D x (3 TRENCHES) x 1.2) / 27 = 2± C.Y.

**REMOVE & REPLACE NOTE**

CONTRACTOR TO EXCAVATE ALL UNSUITABLE MATERIAL TO A DEPTH OF C1 HORIZON (22"±) DIRECTLY UNDER & WITHIN 5' OF PROPOSED LEACHING AREA AND REPLACE CLEAN TITLE 5 PERC SAND TO TOP OF PEASTONE ELEVATION.

VOL. OF SAND = (24'W x 27'L x (38.3-37.6)D) x 1.2) / 27 = 20± C.Y.

\*ALL CONTAMINATED SOILS IN RELATION TO THE EXISTING SDS WITHIN 5-FT OF THE PROPOSED LEACHING FIELD SHALL BE REMOVED AND REPLACED WITH CLEAN TITLE 5 SAND.

**LOCAL UPGRADE APPROVAL REQUESTS**

- 310 CMR 15.405(b): TO ALLOW A REDUCTION BETWEEN A SEPTIC TANK AND CELLAR WALL FROM 10'-FT (REQUIRED) TO 5.6'-FT (PROPOSED).
- 310 CMR 15.405(b): TO ALLOW A REDUCTION BETWEEN A LEACHING TRENCH AND CELLAR WALL FROM 20'-FT (REQUIRED) TO 13.7'-FT (PROPOSED).



PREPARED BY:  
  
  
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 T: 781-545-0895

PROJECT:	10 SPRING STREET (ASSESSOR'S PARCEL 81-0-103) HINGHAM, MASSACHUSETTS	DESIGN:	PGG
APPLICANT:	LINDA G. LUCAS 10 SPRING STREET HINGHAM, MA 02061	CHECK:	JDG
PLAN TITLE:	SEPTIC SYSTEM DESIGN PLAN	JOB NO.:	24-207
		DATE:	7/11/2024
		REV:	
		SHEET:	1

\*DEED RESTRICTION REQUIRED\*