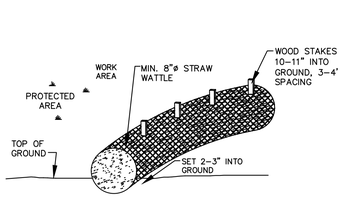
PRESBY LEACHING SYSTEM NOTES:

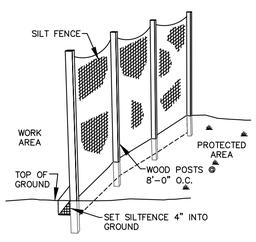
1. INSTALLATION, MAINTENANCE, MONITORING, REPORTING, ETC. SHALL BE IN ACCORDANCE WITH THE GENERAL USE CERTIFICATION ISSUED BY DEP DATED OCTOBER 2019 AND IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
2. MASS DEP AND PRESBY REQUIRE ALL DESIGNERS AND INSTALLERS TO BE CERTIFIED. SYSTEM TO BE INSTALLED IN ACCORDANCE WITH PRODUCT DESIGN AND INSTALLATION MANUAL, STATE AND LOCAL REGULATIONS. FOR PRODUCT INFORMATION OR THE NEAREST DEALER CONTACT PRESBY.
3. INSTALLERS OF PRESBY SYSTEMS SHALL PROVIDE OWNER, MANUFACTURER, AND THE LOCAL APPROVING AUTHORITY WITH A COPY OF A COMPLETED "SYSTEM INSTALLATION REPORT FORM" FOR EACH NEW OR REMEDIAL SYSTEM INSTALLED.
4. ALL SYSTEMS SHALL BE DESIGNED AND INSTALLED USING DISTRIBUTION BOXES AS INSPECTION PORTS. THE OUTLET OF THE D-BOX SHALL BE AT LEAST 2" ABOVE THE INLET OF THE HIGHEST PRESBY LINE WITH THE CONNECTING PIPE SLOPE NOT LESS THAN 2%.
5. THE MINIMUM TOTAL DEPTH OF COVER ON PRESBY LINES IS 10": 6" OF SYSTEM SAND PLUS 4" OF TOPSOIL. PRESBY PIPES WITH 12" OF STRUCTURAL COVER IS DESIGNED FOR H-10 LOADING, AND PRESBY PIPE WITH 18" OF STRUCTURAL COVER IS DESIGNED FOR H-20 LOADING.
6. THE USE OF PRESSURE DISTRIBUTION LINES IN PRESBY WASTEWATER TREATMENT SYSTEMS IS PROHIBITED.
7. SYSTEMS INCORPORATING PUMPS TO GAIN ELEVATION MUST USE DIFFERENTIAL VENTING AND VELOCITY REDUCTION TO CONTROL LIQUID FLOW. VELOCITY REDUCTION MAY BE ACCOMPLISHED THROUGH THE USE OF A DISTRIBUTION BOX WITH A TEE OR 90° ELBOW AT THE FORCE MAIN OUTLET.
8. EACH PRESBY SYSTEM MUST BE INSTALLED WITH VENTING AT THE END OF EACH D-BOX LINE, SECTION OR SERIAL BED. VENT MANIFOLDS MAY BE USED TO CONNECT MULTIPLE VENTS TO ONE VENT OUTLET.
9. EFFLUENT TEE FILTERS WILL NOT BE REQUIRED FOR SEPTIC TANKS USED IN GRAVITY PRESBY SYSTEMS.
10. PRESBY SYSTEMS MAY BE INSTALLED IN AN AREA UP TO 40% SMALLER THAN A CONVENTIONAL TITLE 5 BED DESIGNED IN ACCORDANCE WITH 310 CMR 15.252. CURRENTLY MASSACHUSETTS LIMITS ALL SYSTEMS TO A MINIMUM BED SIZE OF 400 SF.
11. ALL CONFIGURATIONS OF PRESBY SYSTEM REQUIRE A MINIMUM OF 6" OF SYSTEM SAND SURROUNDING THE CIRCUMFERENCE OF THE PIPE, AND 12" OF SAND BEYOND ALL PIPE ENDS AND THE OUTER PIPE ROWS (FIRST & LAST). ASTM STANDARD: C-33 (CONCRETE SAND) MEETS THE REQUIREMENTS FOR SYSTEM SAND.
12. SAND BEDS SLOPING 10% OR LESS REQUIRE THE SYSTEM SAND AREA TO EXTEND A MINIMUM OF 1 FOOT AROUND THE PERIMETER OF THE PRESBY PIPE. (SEE EFFLUENT DISPOSAL AREA CROSS SECTION DETAIL).
13. SAND BEDS SLOPING GREATER THAN 10% REQUIRE THE SYSTEM SAND AREA TO EXTEND A MINIMUM OF 1 FOOT AROUND THE PERIMETER OF THE PRESBY PIPE PLUS AN ADDITIONAL 3 FOOT EXTENSION SHALL BE PROVIDED ON THE DOWNSLOPE SIDE. (SEE EFFLUENT DISPOSAL AREA CROSS SECTION DETAIL).
14. A COMBINATION DISTRIBUTION IS REQUIRED FOR SYSTEMS WITH GREATER THAN 500GPD. TO PREVENT MOVEMENT, BE SURE DISTRIBUTION BOX IS PLACED ON A STABLE SOIL BASE OR CONCRETE PAD.
15. ALL DISTRIBUTION BOXES THAT DIVIDE EFFLUENT FLOW IN PUMP OR GRAVITY SYSTEMS REQUIRE FLOW EQUALIZERS IN THEIR OUTLETS. MOST FLOW EQUALIZERS ARE LIMITED TO A MAXIMUM OF 10 GALLONS/MINUTE IN GRAVITY SYSTEMS AND 20 GALLONS/MINUTE IN PUMPED SYSTEMS.
16. DO NOT INSTALL SYSTEM ON FROZEN GROUND OR LEAVE SYSTEM UNCOVERED FOR EXTENDED PERIODS OF TIME.

SYSTEM NOTES:

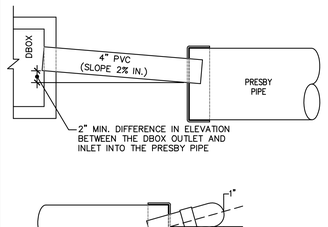
1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO VERIFY THAT THE CONSTRUCTION PLANS ARE THE MOST CURRENT REVISION.
2. ALL MODIFICATIONS TO THIS PLAN MUST BE PRE APPROVED IN WRITING BY THE DESIGN ENGINEER AND THE LOCAL BOARD OF HEALTH.
3. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE LOCAL BOARD OF HEALTH AND THE STATE ENVIRONMENTAL CODE TITLE 5 (310 CMR 15.000) & THE MANUFACTURER'S SPECIFICATIONS.
4. SEVENTY TWO HOURS PRIOR TO COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT 811. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF NEW UTILITIES WITHIN THE VICINITY OF EXISTING UTILITIES (UNDERGROUND AND OVERHEAD) WITH THE APPROPRIATE UTILITY PROVIDER.
5. EXISTING UTILITY LOCATIONS ARE APPROXIMATE ARE TO BE FIELD VERIFIED. QUINN ENGINEERING, INC. DOES NOT WARRANT THAT ALL EXISTING UTILITIES HAVE BEEN INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EXISTING UTILITY LOCATIONS AND ENSURING THAT THE PROPOSED WORK DOES NOT CONFLICT WITH THE EXISTING UTILITIES (SHOWN OR NOT SHOWN).
6. THE SYSTEM WAS NOT DESIGNED TO FACILITATE A GARBAGE DISPOSAL.
7. A SURVEYOR REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS SHALL STAKE OUT THE SYSTEM LOCATION AND SHALL PROVIDE AS-BUILT LOCATION AND ELEVATIONS TO QUINN ENGINEERING, INC. THE INSTALLER SHALL NOT COVER THE SYSTEM OR PIPING UNTIL QUINN ENGINEERING, INC. VERIFIES FROM THE AS-BUILT INFORMATION PROVIDED THAT THE SYSTEM LOCATIONS AND ELEVATIONS ARE SUITABLE.
8. ALL PORTIONS OF THE FILL, A AND B SOIL HORIZONS SHALL BE REMOVED FROM WITHIN THE LIMITS OF THE LEACHING FACILITY AND FOR A DISTANCE OF FIVE FEET IN ALL DIRECTIONS THEREFROM,(310 CMR 15.255 (5)). (SEE DEEP HOLE DATA FOR SOIL HORIZON INFORMATION.)
9. WHERE A SEWAGE DISPOSAL SYSTEM IS TO BE CONSTRUCTED IN FILL, THE FILL SHALL BE PLACED AND COMPACTED IN 12 INCH LIFTS OR ALLOWED TO SETTLE FOR A MINIMUM OF ONE YEAR. THE FILL MATERIAL MUST CONFORM WITH THE LOCAL BOARD OF HEALTH AND STATE ENVIRONMENTAL CODE TITLE 5 SECTION 15.255.
10. ALL INTERIOR PLUMBING SHALL BE CONNECTED TO PROPOSED LEACHING FACILITY WITH THE EXCEPTION OF WATER SOFTENING OR CONDITIONING SYSTEMS, BACKWASH FROM FILTRATION SYSTEMS, OR FLOOR DRAINS.
11. THE INSTALLER SHALL SUBMIT TO THE ENGINEER A GRADATION ANALYSIS FOR THE FILL WITHIN THE SYSTEM TO DEMONSTRATE CONFORMANCE WITH 310 CMR 15.255(3) FOR "TITLE 5 FILL" & CONFORMANCE WITH THE MANUFACTURER'S SPECIFICATIONS FOR THE "SYSTEM SAND" PRIOR TO PLACING THE FILL.
12. THE SYSTEM INSTALLATION SHALL BE INSPECTED BY THE LOCAL BOARD OF HEALTH AT THE MILESTONES AS DETERMINED BY THE LOCAL BOARD OF HEALTH.
13. THE INSTALLER SHALL NOTIFY QUINN ENGINEERING, INC. AT LEAST 24 HOURS IN ADVANCE OF REQUESTING INSPECTIONS. QUINN ENGINEERING, INC. SHALL CONDUCT INSPECTIONS AT THE FOLLOWING MILESTONES:
    A. EXCAVATION COMPLETE – PRIOR TO PLACING FILL
    B. INSTALLATION OF PIPING
    C. FINISH GRADING COMPLETE
    D. COMPLETE STABILIZATION
14. ALL SYSTEM PIPING SHALL BE MARKED WITH MAGNETIC MARKING TAPE IN ACCORDANCE WITH 310 CMR 15.221 (12).
15. THE SYSTEM OWNER SHALL HAVE A SEPTAGE HANDLER, LICENSED BY THE LOCAL BOARD OF HEALTH, PUMP THE SEPTIC TANK IN ACCORDANCE WITH 310 CMR 15.351. ALL COMPONENTS OF THE SYSTEM SHALL BE MAINTAINED IN ACCORDANCE WITH 310 CMR 15.351, THE SYSTEM MANUFACTURER'S REQUIREMENTS OR OTHER APPLICABLE SECTION OF 310 CMR 15.
16. MACHINERY WHICH MAY CRUSH OR DISTURB THE PIPE SHALL NOT BE ALLOWED ON THE DISPOSAL AREA.
17. THE CONSTRUCTION OF PERMANENT STRUCTURES UPON THE DISPOSAL SYSTEM AND/OR RESERVE AREA IS NOT ALLOWED.



PROP. STRAW WATTLE DETAIL
SCALE: NOT TO SCALE

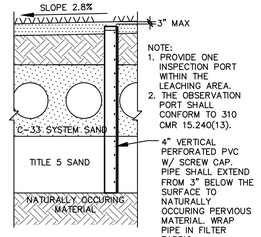


STAKED SILT FENCE DETAIL
SCALE: NOT TO SCALE

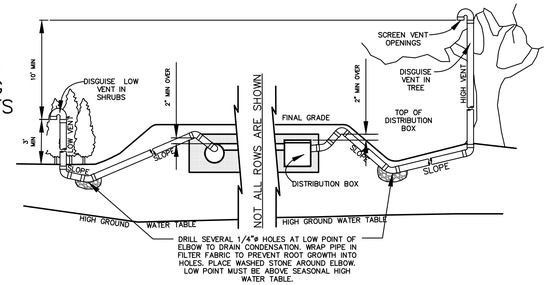


PROPOSED D-BOX CONNECTION DETAIL
SCALE: NOT TO SCALE

PROPOSED RAISED CONNECTION DETAIL
NOT TO SCALE



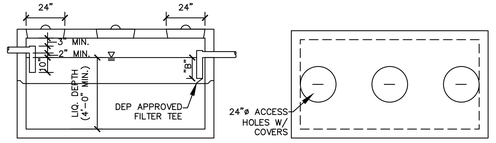
PROPOSED OBSERVATION PORT SECTION
SCALE: NOT TO SCALE



PROPOSED HIGH AND LOW REMOTE VENTING OFFSET REQUIREMENTS
SCALE: NOT TO SCALE

NOTES:

1. A = LIQUID DEPTH
2. B = 14" FOR 4' LIQUID DEPTH
   B = 19" FOR 5' LIQUID DEPTH
   B = 24" FOR 6' LIQUID DEPTH
3. TANK CONSTRUCTION SHALL CONFORM TO 310 CMR 15.000.
4. TANK SHALL BE CAPABLE OF CARRYING H10 WHEEL LOAD WITH THE PROP. SOIL OVERBURDEN.
5. PROVIDE RISERS WITH LOCKABLE, WATERTIGHT COVERS TO GRADE OVER BOTH TEE'S.

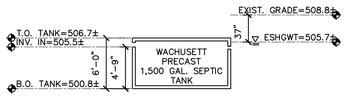


PROPOSED 1,500 GALLON SEPTIC TANK DETAIL
SCALE: NOT TO SCALE

SEPTIC TANK:

BUOYANCY CALCULATIONS:
ASSUME ELEVATIONS & TANK DIMENSIONS INDICATED.
ASSUME ESHGWT AT 30" BELOW EXISTING GRADE BASED ON DH-H2.
ASSUME SOIL WEIGHT = 110 PCF

TANK WEIGHT:
±21,600# (PER WACHUSETT PRECAST)
SOIL WEIGHT:
(508.8 – 506.7)[(11')(6') – (2)(PI*2^2)/4)](110 PCF) = ±12,966#
BUOYANCY FORCE:
(505.7 – 500.8)(11')(6')(62.4 PCF) = ±20,180#
FORCE TOTALS:
±21,600# + ±12,966# – ±20,180# = ±14,386# OK

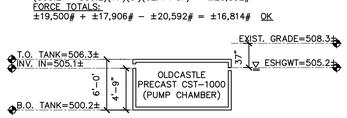


BUOYANCY CALCULATIONS (PROPOSED CONDITIONS)
SCALE: NOT TO SCALE

PUMP CHAMBER:

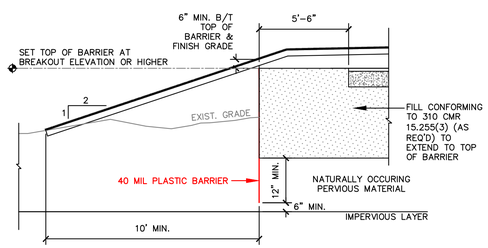
ASSUME ELEVATIONS & TANK DIMENSIONS INDICATED.
ASSUME ESHGWT AT 30" BELOW EXISTING GRADE BASED ON DH-H2.
ASSUME SOIL WEIGHT = 110 PCF

TANK WEIGHT:
TOP: (5')(11')(0.5')(150 PCF) = 4,125#
BOTTOM: (5')(11')(0.5')(150 PCF) = 4,125#
LONG SIDES: (2)(11')(5')(0.5')(150 PCF) = 8,250#
SHORT SIDES: (2)(4')(5')(0.5')(150 PCF) = 3,000#
TOTAL: = 19,500#
SOIL WEIGHT:
(509.2 – 506.3)[(11')(6') – (2)(PI*2^2)/4)](110 PCF) = ±17,906#
BUOYANCY FORCE:
(505.2 – 500.2)(11')(6')(62.4 PCF) = ±20,592#
FORCE TOTALS:
±19,500# + ±17,906# – ±20,592# = ±16,814# OK

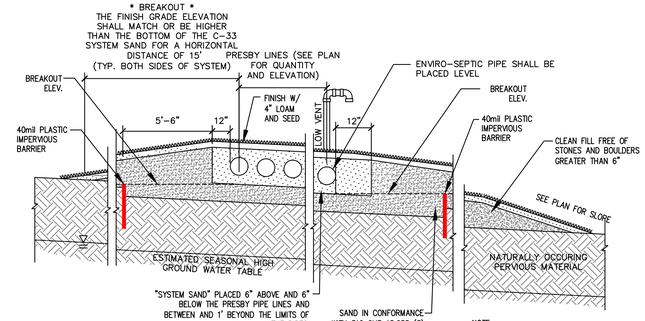


NOTES:

1. PLASTIC BARRIERS SHALL:
   A. BE OF SUFFICIENT TENSILE STRENGTH TO WITHSTAND PERFORATION, INCLUDING CRACKING, TEARING AND BREAKING.
   B. BE AT LEAST 40 MIL THICKNESS AND HAVE SIGNIFICANT DURABILITY AND RESISTANCE TO TEMPERATURE AND MOISTURE CONDITIONS EXPECTED IN THE SUBSURFACE ENVIRONMENT.
   C. BE INSTALLED WITHOUT HOLES OR GAPS AND SO THAT PERFORATIONS DO NOT DEVELOP AFTER INSTALLATION.
   D. HAVE NO WEEP HOLES.
   E. HAVE A WATERPROOF SURFACE ON AT LEAST THE UPGRADIENT SIDE.
   F. BE ANCHORED OR REINFORCED AS NECESSARY TO MAINTAIN STRUCTURAL INTEGRITY.
   G. NOT ALLOW SEEPAGE OR DETERIORATION OVER TIME.
   H. BE INSTALLED PER 310 CMR 15.000 AND PER THE "GUIDELINES FOR THE DESIGN AND INSTALLATION OF IMPERVIOUS BARRIERS" PUBLISHED BY THE MA DEP.



PROPOSED IMPERVIOUS BARRIER DETAIL
SCALE: NOT SHOWN



PROPOSED PRESBY ENVIRO-SEPTIC LEACHING SYSTEM
SCALE: NOT TO SCALE

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DIG SAFE DIAL-811

NO.	REVISION	DATE
1	REVISE TO PRESBY 2019 SIZING REQUIREMENTS	12/22/21

COMMONWEALTH OF MASSACHUSETTS KEVIN J. QUINN No.53922 REGISTERED PROFESSIONAL ENGINEER
KEVIN J. QUINN CIVIL #53922

OWNER:
DAVID SCHMIDT
7 BRIARCLIFF LN.
PAXTON, MA 01612

APPLICANT:
DAVID SCHMIDT
7 BRIARCLIFF LN.
PAXTON, MA 01612

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM REPAIR PLAN
IN PAXTON, MASSACHUSETTS
7 BRIARCLIFF LN.
SCALE: AS SHOWN

QUINN ENGINEERING, INC.
P.O. Box 107
Paxton, Massachusetts 01612
(508)753-7999 Fax:(508)795-0939

DATE: NOVEMBER 21, 2016

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM REPAIR PLAN

SHEET 2 OF 2

16AD01