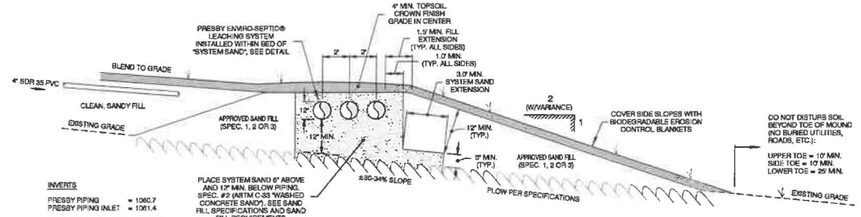
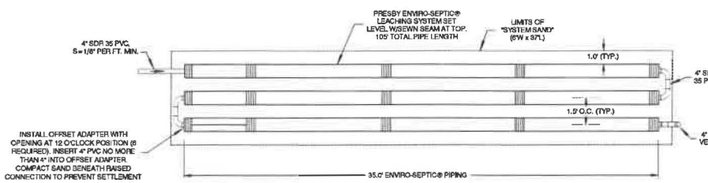
EXHIBIT N



SECTION
MOUND SYSTEM
NTS



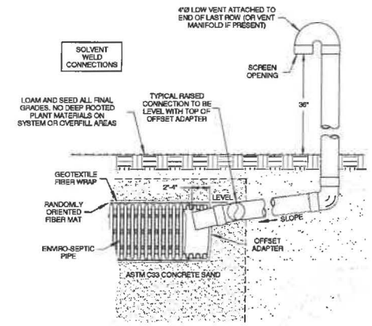
PLAN VIEW
ENVIRO-SEPTIC® LEACHING SYSTEM
NTS

- CONTRACTOR NOTE -

THE INSTALLER (CONTRACTOR) SHALL BE CERTIFIED BY PRESBY ENVIRONMENTAL, INC.

THE INSTALLER SHALL CONSTRUCT THE SYSTEM IN ACCORDANCE WITH THIS PLAN AND THE VERMONT DESIGN & INSTALLATION MANUAL FOR ENVIROSEPTIC® (DATE OF ISSUE 7/31/14)

THE INSTALLER SHALL COMPLETE THE VERMONT INSTALLATION FORM AND RETURN IT TO THE LOCAL APPROVING AUTHORITY AND TO PRESBY ENVIRONMENTAL, INC.



VENT DETAIL
NTS

§1-913(c) SAND FILL SPECIFICATIONS

	SIEVE NO.	OPENING (MM)	% PASSING (BY WGT)
(1)	3/8	9.500	85 - 100
	#8	0.420	25 - 75
	60	0.240	0 - 30
	100	0.149	0 - 10
	200	0.074	0 - 5
(2)	4	4.750	95 - 100
	8	2.360	80 - 100
	16	1.190	50 - 85
	30	0.590	25 - 60
	50	0.297	10 - 30
	100	0.149	2 - 10
	200	0.075	0 - X*
ASTM SPECIFICATION C-33, INTENDED FOR NATURALLY STURBED MATERIAL.			
(3)	3/8	9.500	85 - 100
	40	0.420	30 - 50
	200	0.074	0 - 5
THE FILL MATERIAL MUST MEET SPECIFICATIONS (1), (2) OR (3) ABOVE. INTERPOLATION OF ANALYSIS IS NOT PERMITTED.			

SYSTEM SAND

*X = 5% FOR SYSTEM SAND; X = 5% FOR SAND FILL

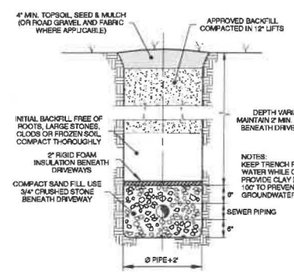
PRESBY SYSTEM SAND REQUIREMENTS

12.23 SYSTEM SAND REQUIREMENTS FOR ALL BEDS

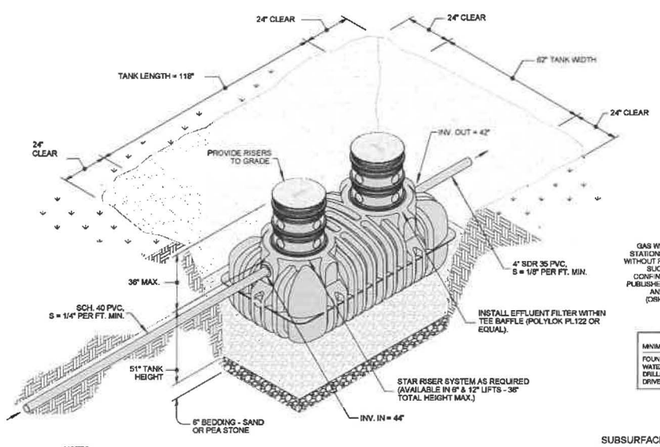
IT IS **CRITICAL** TO THE PROPER FUNCTIONING OF THE PRESBY SYSTEM THAT THE PROPER AMOUNT AND TYPE OF SYSTEM SAND BE INSTALLED. SYSTEM SAND MUST BE CLEAN, GRANULAR SAND FREE OF ORGANIC MATTER AND MUST ADHERE TO VERMONT §1-913(C),(2) FILL MATERIAL, EXCEPT; A MAXIMUM OF 3% OF TOTAL SAND MAY PASS THROUGH A #200 SIEVE (VERIFIED BY WASHING SAMPLE PER REQUIREMENTS OF ASTM C-117). ASTM C-33 ("CONCRETE SAND") IS ACCEPTABLE FOR USE AS SYSTEM SAND PROVIDING THAT NO MORE THAN 3% CAN PASS A #200 SIEVE (VERIFIED BY WASHING SAMPLE PER REQUIREMENTS OF ASTM C-117 AS NOTED IN THE ASTM C-33 SPECIFICATION). SYSTEM SAND IS PLACED A MINIMUM OF 6 IN. BELOW THE PRESBY ROWS FOR BELOW GRADE SYSTEMS, A MINIMUM OF 12 IN. BELOW THE PRESBY ROWS FOR MOUND/ELEVATED/SLOPING SYSTEMS, A MINIMUM OF 8 IN. ABOVE THE PRESBY ROWS, AND A MINIMUM OF 12 IN. HORIZONTALLY AROUND THE PERIMETER OF THE ROWS. NOTE: SYSTEM SAND MAY BE USED IN PLACE OF SAND FILL.

12.24 SAND FILL

SAND FILL IS USED TO RAISE THE ELEVATION OF THE SYSTEM IN ORDER TO MEET THE REQUIRED SEPARATION DISTANCE FROM THE SHWT OR OTHER RESTRICTIVE FEATURE. SAND FILL IS DEFINED BY VERMONT §1-913(C), NO ORGANIC MATERIAL IS ALLOWED, IF §1-913(C)(2) OR §1-913(C)(3) MATERIAL IS USED, NO MORE THAN 5% SHALL PASS A #200 SIEVE (TESTED PER ASTM C-117) AND NO STONES OVER 3/4 INCH IS SIZE



TYPICAL
SEWER TRENCH
NTS



NOTES:

OPTIONAL PARTITION WALL REQUIRES THAT BOTH OPENINGS BE ACCESSED FOR PUMPING.

PROVIDE COUNTER-BUOYANCY TIE DOWNS AND DEAD MEN AS NECESSARY.

INSTALL PER MFR. GUIDELINES.

FRALO PLASTECH
1,000 GAL./MODEL ST-1000E
SEPTIC TANK
NTS

- CAUTION -

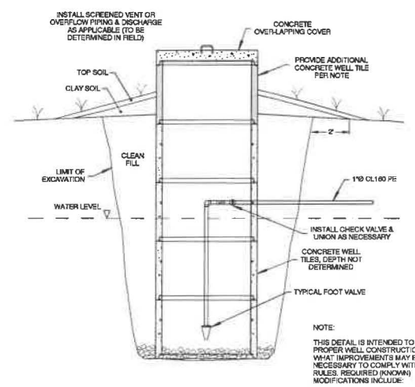
GAS WITHIN SEPTIC TANKS AND PUMP STATIONS CAN CAUSE DEATH IF ENTERED WITHOUT PROPER RESPIRATORY EQUIPMENT. SUCH SPACES ARE SUBJECT TO CONFINED-SPACE ENTRY REGULATIONS PUBLISHED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA STANDARD CFR 1910.146).

SUBSURFACE TANK MINIMUM ISOLATION REQUIREMENTS	
FOUNDATION/FOOTING DRAIN	10'
WATER SERVICE	20'
DRILLED WELL	50'
DRIVEWAY	5'

SUBSURFACE TANK NOTE

THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AN AREA WHICH CONTAINS SUFFICIENT SOIL DEPTH FOR TANK PLACEMENT. ALTERNATE LOCATIONS MAY BE REQUIRED TO ACHIEVE DESIRED ELEVATIONS AND PROPER SOIL COVER OVER TANK. SOIL DEPTH SHOULD VERIFIED PRIOR TO ORDERING OR DELIVERY OF TANK(S).

KEEP EXCAVATION FREE OF WATER DURING INSTALLATION. PLACE 3"-6" CRUSHED STONE BED BENEATH TANK.



NOTE:

THIS DETAIL IS INTENDED TO DEPICT PROPER WELL CONSTRUCTION AND WHAT IMPROVEMENTS MAY BE NECESSARY TO COMPLY WITH THE RULES. REQUIRED (KNOWN) MODIFICATIONS INCLUDE:

ADDITIONAL TILE NEEDED TO ALLOW SOIL TO BE MOUNDED PER DETAIL.

A SCREENED OVERFLOW SHALL BE INSTALLED IF DEEMED NECESSARY AFTER MOUNDING SOIL AROUND WELL.

TYPICAL
DUG WELL
NTS

TEST PIT LOGS

DATE 5/9/18
METHOD EXCAVATOR (C. WELLS EXCAVATING)
PRESENT J. WILLIS, L.D.
W. ZABILOSKI, VT DEC

TP-1
0"-4": 10YR 2/2 (VERY DARK BROWN) FINE SANDY LOAM, LOOSE.
4"-36": 10YR 3/4 (DARK YELLOWISH-BROWN) LOAMY FINE SAND, VERY FRIABLE.
36"-48": 10YR 3/3 (DARK BROWN) FINE SANDY LOAM, FIRM, POSSIBLE BEDROCK AT DEPTH.

SEASONAL HIGH WATER TABLE (SHWT) NONE TO DEPTH.
BEDROCK NONE TO DEPTH.

TP-2
0"-4": 10YR 2/2 (VERY DARK BROWN) FINE SANDY LOAM, LOOSE.
4"-26": 10YR 3/4 (DARK YELLOWISH-BROWN) LOAMY FINE SAND, VERY FRIABLE.
26"-40": 10YR 3/3 (DARK BROWN) FINE SANDY LOAM, FIRM, REDOX. FEATURES.

SHWT 26".
BEDROCK NONE TO DEPTH.

TP-3
0"-10": 10YR 2/2 (VERY DARK BROWN) FINE SANDY LOAM, LOOSE.
10"-22": 10YR 3/4 (DARK YELLOWISH-BROWN) LOAMY FINE SAND, VERY FRIABLE, BOULDER.
22"-42": 10YR 3/3 (DARK BROWN) FINE SANDY LOAM, FIRM, REDOX. FEATURES AT 22"-24", SEEPAGE AT 36".

SHWT 22"-24".
BEDROCK NONE TO DEPTH.

PERCOLATION TEST RESULTS

NUMBER	DEPTH	DROP	RUNS	RATE (EXTRAPOLATED)
P1	18"	1"	7	8.1 MPI*

*DESIGN RATE.

BASIS OF DESIGN - PROPOSED WASTEWATER SYSTEM

PROJECT: EXISTING 1 BR SEASONAL HOME TO BE CONVERTED TO YEAR-ROUND USE.

1 BR HOME @140 GPD/BR = 140 GPD FLOWS.

DESIGN PERCOLATION RATE = 8.1 MPI

DESIGN REFERENCE (2 BR MIN.):

VERMONT DESIGN & INSTALLATION MANUAL FOR ENVIRO-SEPTIC® (DATE OF ISSUE 7/31/14)

9.0 TABLE A: PERCOLATION RATE OF 7-9 MPI = 100 MIN. FT OF PIPE.

10.0 TABLE B: PERCOLATION RATE OF 9-10 MPI, 185.0 SF AREA REQUIRED.

11.0 TABLE C: 35' PIPE LENGTH REQUIRES 3 ROWS TO PROVIDE 105 LF.

INSTALL (3) 35'L PIPE LENGTHS AT 1.5' C-C.
SYSTEM SAND BED AREA = 6.0'Wx37'L = 222.0 SF. (185.0 SF MIN.)

BASAL AREA = 140 GPD/0.74 GDSF = 189.2 SF = 5.1'Wx37.0'L (DEFAULT TO 6.0'x37').

BASIS OF DESIGN - EXISTING WATER SUPPLY

THE EXISTING WATER SUPPLY IS NOT CURRENTLY FAILED (PER OWNER). THE SOURCE SHOULD BE TESTED FOR CONTAMINANTS PRIOR TO USE.

1 BR HOME @140 GPD/BR = 140 GPD FLOWS.

NOTE:
A REPLACEMENT WELL MAY BE CONSTRUCTED PER §304(c)22 OF THE VERMONT ENVIRONMENTAL PROTECTION RULES (IF AND WHEN REQUIRED).

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Drinking Water & Groundwater Protection Division
THIS IS SUBJECT TO PROVISIONS OR CONDITIONS LISTED IN PERMIT
Permit #: WW-4-5075
Date: 7/20/2018

MOUND CONSTRUCTION SPECIFICATIONS

1. CONTACT THE DESIGNER PRIOR TO ANY CONSTRUCTION MEETING WITH THE CONTRACTOR TO STAKE-OUT THE MOUND SYSTEM AND TO DISCUSS CONSTRUCTION REQUIREMENTS. ALL ELEVATIONS OF FEATURES SUCH AS FLOOR, SEPTIC TANK AND PUMP STATION TO BE FIELD VERIFIED. REPORT ANY PROPOSED CHANGES IN THE LOCATIONS OF THE HOUSE, SUB-GRADE TANKS, DRIVEWAY, ETC.
2. THE CONTRACTOR SHALL SUBMIT A RECENT SIEVE ANALYSIS (<6 MONTHS) OF THE SYSTEM SAND AND SAND FILL. GRAIN SIZE DISTRIBUTION SHALL COMPLY WITH EITHER SPECIFICATIONS NOTED ON PLAN.
3. ABOVE GROUND VEGETATION SHALL BE CLOSELY CUT AND REMOVED FROM THE MOUND AREA AND 10 FEET FROM EDGE OF THE SYSTEM AS MEASURED FROM THE TOE(S). DO NOT REMOVE TREE STUMPS.
4. PLOW THE MOUND AREA TO A DEPTH OF 7" TO 8" PARALLEL TO THE LAND CONTOUR WITH THE PLOW THROWING THE SOIL UPSLOPE TO PROVIDE A PROPER INTERFACE BETWEEN THE FILL AND NATURAL SOIL. TREE STUMPS SHOULD NOT BE PULLED. PLOW WITH A MOLD-BOARD PLOW OR A CHISEL POINT ADAPTED TO A BACKHOE BUCKET (USED IN WOODED AREAS ONLY).
5. THE MOUND PERIMETER SHALL BE GRADED TO ENSURE DIVERSION OF SURFACE WATER RUN-OFF (DIVERSION DITCH OR SWALE AS SHOWN).
6. ONCE PLOWING IS COMPLETE, CONTACT THE DESIGNER FOR AN INSPECTION OF THE SITE PRIOR TO PLACEMENT OF FILL.
7. DUMP THE APPROVED SAND FILL AROUND THE EDGE OF THE PLOWED AREA WHILE KEEPING THE TRUCK WHEELS OFF THE PLOWED AREA. WHEEL TRACKS IN THE PLOWED AREA WILL LEAD TO COMPACTION AND RUTS, ADVERSELY AFFECTING THE OPERATION OF THE SYSTEM.
8. MOVE THE SAND AROUND INTO PLACE WHILE MAINTAINING AT LEAST 12" OF SAND UNDER THE EQUIPMENT TO MINIMIZE COMPACTION OF PLOWED LAYER. SHAPE THE SIDES TO THE REQUIRED SLOPES.
9. INSTALL THE ENVIRO-SEPTIC® LEACHING PIPES LEVEL WITH SPACING INDICATED. PLACE APPROVED SAND FILL BETWEEN AND 6" ABOVE THE PIPING AS INDICATED. REFER TO PRESBY DESIGN AND INSTALLATION MANUAL FOR INSTALLATION, HANDLING AND STORAGE GUIDELINES.
10. CONTACT THE DESIGNER FOR AN INSPECTION PRIOR TO COVERING THE LEACHING PIPES WITH 6" OF SYSTEM SAND.
11. CAP THE MOUND WITH A MINIMUM OF 4" OF TOPSOIL, CROWN IN CENTER AND SHAPE SURFACE AS DEPICTED.
12. LANDSCAPE THE MOUND BY PLANTING GRASSES ON THE SURFACE. SHRUBS PLACED AT THE FOOT AND UP THE SLOPE ON THE SIDES AND ENDS ARE OPTIONAL. SHRUBS PLACED ON TOP OF THE MOUND MAY INTERFERE WITH THE DISTRIBUTION SYSTEM. UPON COMPLETION OF CONSTRUCTION, CONTACT THE DESIGNER.

OPERATION AND MAINTENANCE NOTES

1. THE DISPOSAL SYSTEM MAY REQUIRE ADJUSTMENTS OR MODIFICATIONS DURING STARTUP AS WELL AS DURING THE LIFETIME OF THE SYSTEM. THESE ADJUSTMENTS INCLUDE RE-LEVELING SUBSURFACE TANKS OR DISTRIBUTION BOXES DUE TO FROST ACTION OR SETTLEMENT. FILL MAY BE ADDED TO REPAIR EROSION OR LEVEL SETTLED AREAS.
2. IN GENERAL, SEPTIC TANKS MUST BE PUMPED EVERY 2 TO 3 YEARS (OR MORE FREQUENTLY DEPENDING UPON USAGE). AT LEAST ONCE A YEAR, THE DEPTH OF SLUDGE AND SCUM IN THE SEPTIC TANK BE MEASURED. THE TANK SHOULD BE PUMPED IF:

(A) THE SLUDGE IS CLOSER THAN TWELVE INCHES TO THE OUTLET BAFFLE,
(B) THE SCUM LAYER IS CLOSER THAN THREE INCHES TO THE SEPTIC TANK BAFFLE.
(C) FOLLOWING SEPTIC TANK CLEANING IN UNITS OVER 5,000 GALLONS, SURFACES OF THE TANK SHOULD BE INSPECTED FOR LEAKS AND CRACKS).

3. AT LEAST ONCE A YEAR, DOSING TANKS AND DISTRIBUTION BOXES SHOULD BE OPENED AND SETTLED SOLIDS REMOVED AS NECESSARY AND THE DOSING TANK OR DISTRIBUTION BOX CHECKED FOR LEVELNESS.
4. PLUMBING AND ELECTRICAL COMPONENTS ASSOCIATED WITH PUMP STATIONS OR ADVANCED TREATMENT UNITS MUST BE CHECKED REGULARLY FOR OPERATION AND LEAKS.
5. TOXIC OR HAZARDOUS SUBSTANCES SHOULD IN GENERAL NOT BE DISPOSED OF IN SEPTIC SYSTEMS. THESE SUBSTANCES MAY PASS THROUGH THE SYSTEM IN AN UNALTERED STATE AND CONTAMINATE GROUNDWATER OR REMAIN IN THE SEPTAGE AND SUBSEQUENTLY CONTAMINATE THE SOIL OR CROPS AT THE SITE OF ULTIMATE DISPOSAL.
6. FLOW ADJUSTMENT DIALS WITHIN DISTRIBUTION BOXES SHOULD BE CHECKED AND ADJUSTED AS NECESSARY TO ENSURE EQUAL FLOW TO EACH LATERAL. ADJUSTMENT MUST BE PERFORMED WITHIN ONE YEAR OF INSTALLATION AND WHENEVER THE SEPTIC TANK IS PUMPED. FAILURE TO DO SO MAY OVERLOAD AND CAUSE THE PREMATURE FAILURE OF AN ABSORPTION TRENCH OR BED SYSTEM.
7. THE EFFLUENT FILTER IN THE SEPTIC TANK OUTLET BAFFLE SHOULD BE CLEANED (HOSED-OFF) EVERY 3-6 MONTHS OR MORE FREQUENTLY DEPENDING ON USAGE. THE EFFLUENT FILTER MUST BE CLEANED IF SEWAGE BEGINS TO DRAIN SLOWLY FROM THE HOUSE. THE SEPTIC TANK MAY REQUIRE PUMPING IF THE FILTER BECOMES PLUGGED.
8. IMPROPER MAINTENANCE OF THE PRETREATMENT UNIT (SEPTIC TANK) AND RELATED COMPONENTS MAY RESULT IN PLUGGING WITHIN THE DISTRIBUTION NETWORK. THE LIFE OF THE DISPOSAL SYSTEM CANNOT BE ESTIMATED DUE TO A VARIETY OF OPERATIONAL AND ENVIRONMENTAL FACTORS. INTRODUCTION OF MATERIAL OTHER THAN HUMAN WASTES (E.G. USE OF NON-BIODEGRADABLE DETERGENTS, CHEMICALS AND USE OF A GARBAGE DISPOSAL). EXCESSIVE SEWAGE FLOWS OR RAINFALL WILL ADVERSELY AFFECT THE OPERATION OF THE DISPOSAL SYSTEM. SOIL SETTLEMENT, FREEZING OF COMPONENTS AND CLOGGING DUE TO ORGANIC SOLIDS ACCUMULATION WILL REQUIRE REPAIRS.

- USE OF GARBAGE DISPOSALS IS PROHIBITED UNLESS SPECIFIED OTHERWISE.
- IMPROPERLY OPERATING WATER SOFTENERS CAN ADVERSELY AFFECT THE OPERATION OF THE SYSTEM. DEMAND-DOSED SYSTEMS ARE RECOMMENDED VERSUS TIME-DOSED. CONNECTION TO A WASTEWATER DISPOSAL SYSTEM SHOULD BE AVOIDED IF POSSIBLE.

9. THE OWNER ASSUMES FULL RESPONSIBILITY FOR THE CONTINUED PROPER USE AND MAINTENANCE OF THE SYSTEM.

DESIGN NOTE

TO THE EXTENT REASONABLY POSSIBLE, THIS DESIGN WAS PREPARED IN ACCORDANCE WITH CHAPTER 1, WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES, EFFECTIVE 9/29/07.

SYSTEM PLACEMENT IS SUBJECT TO EXISTING SITE CONSTRAINTS (STEEP SLOPES, AREA LIMITATIONS, ETC.). REQUESTED (KNOWN) VARIANCES INCLUDE: THE WASTEWATER SYSTEM IS PROPOSED ON SLOPE EXCEEDING 30%, 2:1 MOUND SIDE SLOPES PROPOSED VERSUS 3:1 AND MINIMUM SITE CONDITIONS DO NOT EXIST 25 FT. DOWNSLOPE FROM MOUND TOE.

THE LANDOWNER IS ADVISED THAT A FUTURE APPLICATION TO INCREASE DESIGN FLOWS (I.E. ADD BEDROOM) MAY NOT BE PERMITTED WHEN VARIANCES ARE GRANTED. FULL COMPLIANCE IS REQUIRED TO INCREASE DESIGN FLOWS.

USE OF LOW FLOW PLUMBING FIXTURES AND DEVICES IS STRONGLY RECOMMENDED.

STATE OF VERMONT
JUSTIN T. WILLIS
NO. 344-9
LICENSED DESIGNER

NO.	DATE	REVISION	BY

WILLIS DESIGN ASSOC., INC.
P.O. BOX 1001, JERICHO, VERMONT 05465 (802) 858-9228

DETAILS
WASTEWATER SYSTEM & WATER SUPPLY

KURT THOMA
RACHEL FRAUMANN
43 ELLSWORTH MEADOW LANE
UNDERHILL - VERMONT

DRAWN: JTW	SCALE: NOTED
DESIGN: JTW	
DATE: 8-25-18	SHEET: D1
PROJECT: 18-014	
DRAWING: 18014-1	

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