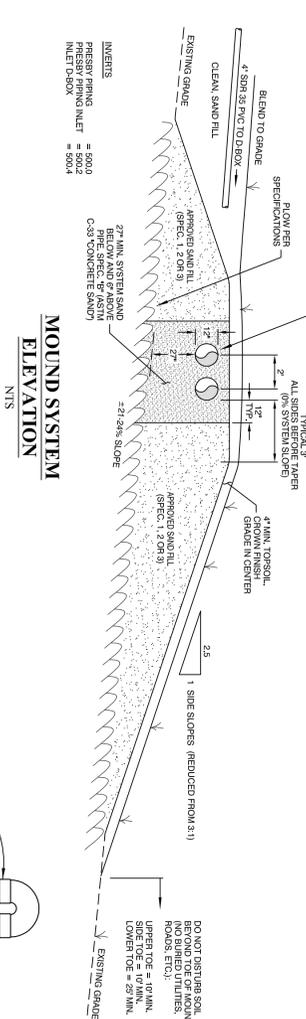
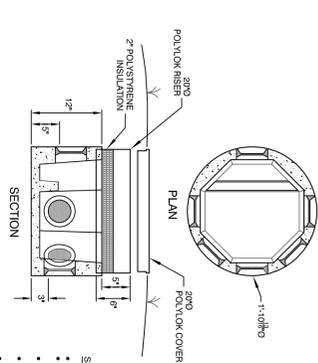


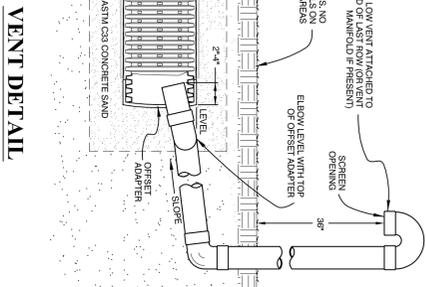
PLAN VIEW
ENVIRO-SEPTIC®
LEACHING SYSTEM
NTS



MOUND SYSTEM
ELEVATION
NTS



DISTRIBUTION BOX
NTS



VENT DETAIL
NTS

61-0131G

SAND FILL SPECIFICATIONS	
(1)	
SILO NO.	OPENING (MM) % PASSING (BY WEIGHT)
3/8	9.000
40	0.250
100	0.149
200	0.074
20	
SILO NO.	OPENING (MM) % PASSING (BY WEIGHT)
4	4.750
6	2.500
8	1.600
10	1.180
15	0.850
20	0.600
30	0.425
40	0.300
60	0.250
100	0.149
200	0.074
400	0.037
600	0.025
800	0.018
1000	0.015
1500	0.010
2000	0.007
2500	0.005
3000	0.004
3500	0.003
4000	0.002
4750	0.001
5000	0.001
6000	0.001
7500	0.001
10000	0.001
ASPM SPECIFICATION C-33 INTENDED FOR MANUFACTURED MATERIAL	
(2)	
SILO NO.	OPENING (MM) % PASSING (BY VOLUME)
3/8	0.425
40	0.250
100	0.149
200	0.074
400	0.037
600	0.025
800	0.018
1000	0.015
1500	0.010
2000	0.007
2500	0.005
3000	0.004
3500	0.003
4000	0.002
4750	0.001
5000	0.001
6000	0.001
7500	0.001
10000	0.001
(3)	
SILO NO.	OPENING (MM) % PASSING (BY VOLUME)
3/8	0.425
40	0.250
100	0.149
200	0.074
400	0.037
600	0.025
800	0.018
1000	0.015
1500	0.010
2000	0.007
2500	0.005
3000	0.004
3500	0.003
4000	0.002
4750	0.001
5000	0.001
6000	0.001
7500	0.001
10000	0.001

BASIS OF DESIGN

EXISTING 2 BR HOME @140 GPD/BR = 280 GPD FLOWS.

DESIGN PERCOLATION RATE = 14.7 MPH (P2)

EMPIRO-SEPTIC® WASTEWATER TREATMENT SYSTEM DESIGN AND INSTALLATION MANUAL-REMOVES SOLID ATTACHMENT

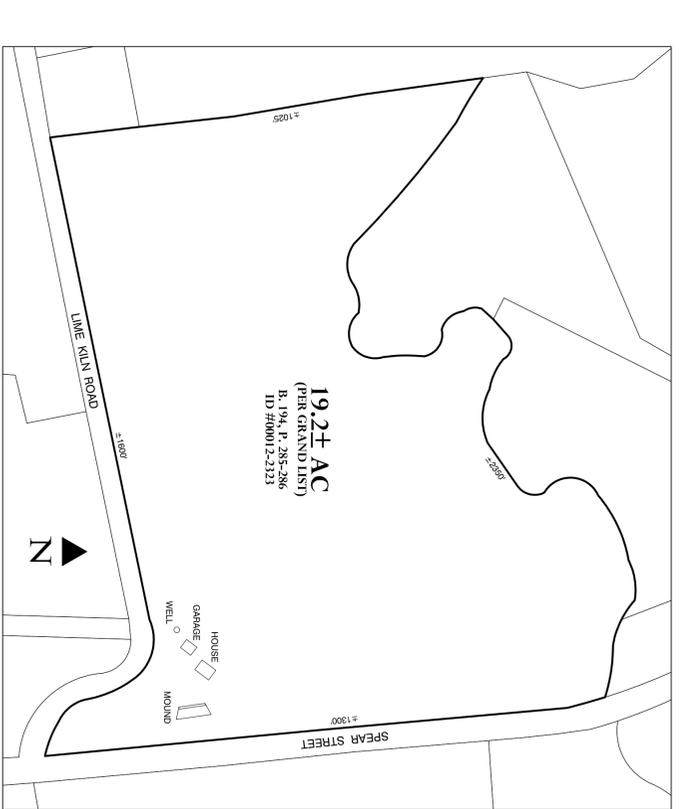
TABLE A. MINIMUM LAYER THICKNESS 2 BEDROCK USING PERCOLATION RATE OF 14-19 MPH, 5' MIN. SPACING IS REQUIRED.

TABLE B. PIPE SPACING USING 0-10" SYSTEM SLOPE WITH PERCOLATION RATE OF 11-20 MPH, 5' MIN. SPACING IS REQUIRED.

TABLE C. LENGTH AND WIDTH PROPOSAL TO INSTALL 2 LINES, 60' PIPING SYSTEM WITH = 3' x 2' = 5' SYSTEM LENGTH = 60' x 2' = 62'.

TABLE D. MINIMUM SAND AREA, SITE 2 BEDROCK HOME WITH PERCOLATION RATE OF 15-16 MPH = 224 SF. PROPOSED SYSTEM AREA 5' X 62' = 310 SF.

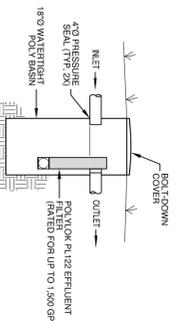
BSM, AREA = 280 GPD/0.74 GPF = 378.4 SF = 62' x 6.1'.



TAX MAP
1" = 4200'

BOUNDARY NOTES

1. THE PROPERTY LINES, DISTANCES, AND OTHER DATA, NECESSARY FOR THE PREPARATION OF THIS PLAN, ARE BASED ON THE SURVEY OF THE AIR ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR LEGAL OBLIGATIONS AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY INTEREST.
2. APPROXIMATE BOUNDARIES ARE DERIVED FROM OWNERS' DEEDS, RECORDS, TAX MAPS AND LIMITED EXTERIOR EVIDENCE IN THE FIELD. THE DESIGNER ASSUMES NO RESPONSIBILITY FOR VERIFYING ALL BOUNDARY DATA AS APPLICABLE.
3. DESCRIPTION, TAX MAP AND LIMITED EXTERIOR EVIDENCE IN THE FIELD, AS WELL AS THE RESPONSIBILITY OF VERIFYING ALL BOUNDARY DATA AS APPLICABLE.
4. CONTACT A LICENSED SURVEYOR AS NECESSARY TO VERIFY BOUNDARIES.



EFFLUENT FILTER BASIN
NTS

LEGEND

TEST PIT	TEST PIT (DEPTH TO ESWM)
PERCOLATION TEST	PERCOLATION TEST
CONTROL POINT	CONTROL POINT
BOUNDARY CORNER	BOUNDARY CORNER (FOR CALCULATED POINT)
UTILITY POLE	UTILITY POLE
DRILLED WELL	DRILLED WELL
EXISTING CONTOURS	EXISTING CONTOURS
APPROX. BOUNDARY	APPROX. BOUNDARY
EASEMENT	EASEMENT
THREELINE	THREELINE
STREAK	STREAK
FORCE MAIN	FORCE MAIN
W	WATERLINE
OE	OH UTILITY
UE	UG UTILITY



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PERCOLATION TEST RESULTS

NUMBER	DEPTH	DIAPH	RUNS	RATE (EXTRAPOLATED)
P1	6"	0.5"	7	23.3 MPH
P2	6"	0.5"	7	14.7 MPH

*DESIGN PERCOLATION RATE

PRESCRIPTIVE DESKTOP MOUNDING ANALYSIS (EXAMPLE)

LINEAR LOADING RATE (L/R) FACTOR:

- AVERAGE SLOPE IN DIRECTION OF FLOW = 421'-24%
- SILT LOAD @ 15' = 20% = 131
- USING 8" (0.66') EFFLUENT PILE, THE MOUNDED WATER TABLE WOULD BE BELOW SURFACE (UNMOUNDED BELOW SURFACE) @ 90"/LF
- 280 GPD = 8.73 GPD/LF = 32.1' LF REQUIRED SYSTEM LENGTH (60' PROPOSED)

THEORETICAL MOUNDING BASED ON PROPOSED SYSTEM LENGTH:

280 GPD = 8.0 LF = 4.88 GPD/LF, 4.88 GPD/LF x 131' = 0.38 FT. (4.37' MOUNDED WATER TABLE). 36" SAND FILL IS PROVIDED BETWEEN SYSTEM AND SEASONAL HIGH WATER TABLE.

PLUMBING FIXTURES SHOULD BE OPERATING PROPERLY.

DESIGN NOTE

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

REQUESTED (NECESSARY) VARIANCES INCLUDE:

-REMOVED MOUND SIDE SLOPES (2:1 PROPOSED) TO PROVIDE PROPER INTERFACE BETWEEN THE FILL AND NATURAL SOIL. FREE STUMPS SHOULD NOT BE PILED. FLOW WITH A MOUND-BUILD WOODED AREAS ONLY.)

USE OF LOW FLOW PLUMBING FIXTURES AND DEVICES IS RECOMMENDED. PLUMBING FIXTURES SHOULD BE OPERATING PROPERLY.

9. THE DESIGNER ASSUMES NO RESPONSIBILITY FOR THE CONTINUED PROPER USE AND MAINTENANCE OF THE SYSTEM.

OPERATION AND MAINTENANCE NOTES

1. THE OPERATOR SHOULD REQUIRE ADJUSTMENTS OF VAPORATIONS DURING STARTUP AS WELL AS DURING THE PERIOD OF THE SYSTEM. THESE ADJUSTMENTS INCLUDE RE-LEVELING SUBSURFACE TANKS OR BEING ADJUSTED TO REPAIR DEFLECTION OR LEVEL SETTING ERRORS.
2. IN GENERAL, SEPTIC TANKS MUST BE PUMPED EVERY 2 TO 3 YEARS (OR MORE FREQUENTLY IF THE TANKS ARE OVERLOADED). THE DEPTH OF SLUDGE AND SOLIDS IN THE SEPTIC TANK BE MEASURED. SLUDGE IS CLOSER THAN TWELVE INCHES TO THE OUTLET Baffle.
3. THE SEWAGE LINE IS CLOSER THAN THREE INCHES TO THE SEPTIC TANK (C) FOLLOWING SEPTIC TANK CLEANING IN UNITS OVER 5,000 GALLONS, SURFACES OF THE TANK SHOULD BE INSPECTED FOR LEAKS AND CORROSION.
4. 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 CLEANED (FOR DETAILS).
5. PLUMBING AND ELECTRICAL COMPONENTS ASSOCIATED WITH PUMP FOR OPERATION AND LEAKS.
6. TONIC OR HAZARDOUS SUBSTANCES SHOULD IN GENERAL NOT BE DISPOSED IN THE TANKS AND CONTAMINANT GROUNDWATER OR REMAIN IN THE TANKS. THESE SUBSTANCES MAY PASS THROUGH THE DEFLECTIONS AND REDOX FEATURES.
7. FLOW ADJUSTMENT DAMS WITHIN DISTRIBUTION BOXES SHOULD BE CHECKED AND ADJUSTED TO ENSURE EQUAL FLOW TO EACH LATERAL. ADJUSTMENT MUST BE PERFORMED WITHIN ONE YEAR OF EACH LATERAL ADJUSTMENT TO PREVENT OVERLOADING OF THE ABSORPTION TRENCH OR BED SYSTEM.
8. THE EFFLUENT FILTER IN THE SEPTIC TANK OUTLET Baffle SHOULD BE CLEANED (Hosed-off) EVERY 3 MONTHS OR MORE FREQUENTLY IF DEFLECTIONS AND REDOX FEATURES ARE PRESENT. THE SEPTIC TANK MAY REQUIRE PUMPING IF THE FILTER BECOMES PLUGGED.
9. IMPROPER MAINTENANCE OF THE PRETREATMENT UNIT (SEPTIC TANK) AND RELATED COMPONENTS MAY RESULT IN PLUGGING WITHIN THE GARAGE AND FACTORS, INTRODUCTION OF MATERIAL OTHER THAN HUMAN WASTES (E.G. OILS, GREASE, NON-Biodegradable DEBRIS, CHEMICALS AND USE OF A SOLIDIFYING AGENT) MAY AFFECT THE OPERATION OF THE SEPTIC SYSTEM. SOIL SETTLEMENT, FREEZING OF COMPONENTS AND CLOSING DUE TO ORGANIC SOLIDS IS PROHIBITED UNLESS SPECIFIC OTHERWISE. USE OF WATER SCREENERS (ORBIT BACKWASH) CAN ADVERSELY AFFECT THE LIFE OF THE SYSTEM.

MOUND CONSTRUCTION SPECIFICATIONS

1. CONTRACT THE DESIGNER PRIOR TO ANY CONSTRUCTION FOR AN ONSITE MEETING WITH THE CONTRACTOR TO STAKE-OUT THE MOUND SYSTEM AND TO DISCUSS CONSTRUCTION REQUIREMENTS AND SCHEDULING OF FIELD VERIFIED. REPORT ANY PROPOSED CHANGES IN THE LOCATIONS OF THE HOUSE, SUB-GRADE TANKS, DRIVEWAY, ETC.
2. THE CONTRACTOR SHALL SUBMIT A RECENT SITE ANALYSIS (6 MONTHS) OF THE SAND FILL GRAIN SIZE DISTRIBUTION SHALL COMPLY WITH OTHER SPECIFICATION (1, 2 OR 3) NOTED ON PLAN.
3. ABOVE-GROUND VEGETATION SHALL BE CLOSELY CUT AND REMOVED AS NEARLY AS POSSIBLE TO FEET FROM EDGE OF THE SYSTEM AS MEASURED FROM THE 100%.
4. FLOW THE MOUND AREA TO A DEPTH OF 2" TO 8" PARALLEL TO THE SYSTEM. THE MOUND SHOULD BE PUMPED TO A DEPTH OF 2" TO 8" TO PROVIDE A PROPER INTERFACE BETWEEN THE FILL AND NATURAL SOIL. FREE STUMPS SHOULD NOT BE PILED. FLOW WITH A MOUND-BUILD WOODED AREAS ONLY.)
5. THE MOUND GENERATOR SHALL BE OPENED TO INSURE PROTECTION OF SURFACE WATER RUN-OFF (DRAINAGE DITCH OR SWALE AS SHOWN).
6. ONCE PLUMBING IS COMPLETE, CONTACT THE DESIGNER FOR AN INSPECTION OF THE SITE PRIOR TO PLACEMENT OF THE SAND FILL.
7. DUMP THE APPROVED SAND FILL AROUND THE EDGE OF THE PAVED AREA WHILE KEEPING THE TRUCK WHEELS OFF THE PAVED AREA AND ROLLS. 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 FLEET OVER. SHAPE THE SIDES TO THE REQUIRED SLOPES.
9. INSTALL THE EMPIRO-SEPTIC LEACHING PIPES LEVEL WITH SPACING AS INDICATED. REFER TO PREPARE 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 APPROVED SAND FILL.
11. CLEAN THE MOUND WITH A MINIMUM OF 4" OF TORSION OVER 6" OF CLEAN SAND FILL (12" TOTAL COVER). CROWN 18" TOTAL IN CENTER (NON-SLOPING SYSTEM ONLY) AND SHAPE SURFACE AS SHOWN.
12. LANDSCAPE THE MOUND BY PLANTING GRASSES ON THE SURFACE. A Mixture OF 80% BIRDSFOOT TREFOIL AND 20% TALL FESCUE MAY BE DESIRED. A COMBINATION OF 60% BIRDSFOOT TREFOIL, 30% CHEERING RED FESCUE AND 10% ANNUAL RYE GRASS WILL PROVIDE ADEQUATE PROTECTION OF THE MOUND. PLANTING SHOULD BE PLACED UP THE SLOPE ON THE MOUND SIDES. SHRUBS PLACED ON TOP OF THE MOUND MAY INTERFERE WITH THE DISTRIBUTION SYSTEM. UPON COMPLETION OF CONSTRUCTION, CONTACT THE DESIGNER.

WILLIS DESIGN ASSOC., INC.
P.O. Box 98, RICHMOND, VERMONT 05477 (802) 858-9228

REBECCA GEJCWICZ
MANCHESTER
2323 LIME KILN ROAD
CHARLOTTE - VERMONT

WASTEWATER SYSTEM DESIGN

DATE: 9/25/12
DESIGNER: JTW
DRAWN: JTW
CHECKED: JTW
PROJECT: 12-088
SHEET: 1