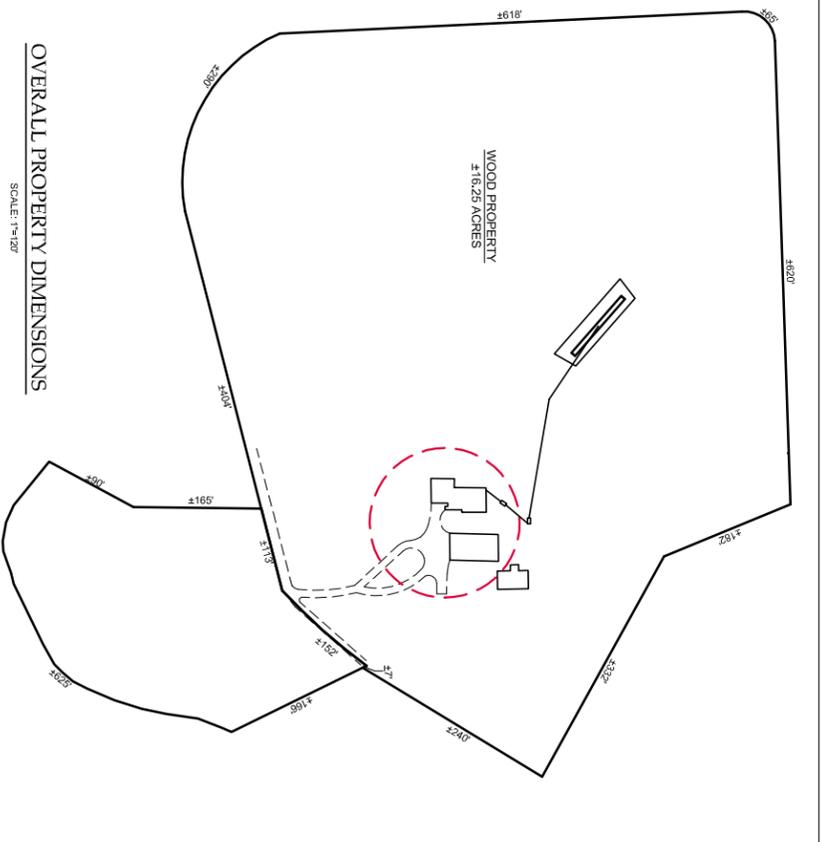


- LEGEND**
- -498--- EXISTING GROUND CONTOUR
 - W EXISTING WATER LINE
 - S EXISTING SANITARY SEWER
 - EDGE OF GRAVEL DRIVE
 - EXISTING PROPERTY LINE
 - EXISTING TREELINE
 - ☀ DECIDUOUS TREE
 - ☀ CONIFEROUS TREE
 - ☀ UTILITY POLE
 - ☀ WELL - DRILLED
 - ☀ BENCHMARK
 - ☀ TEST PIT/PERCOLATION TEST



NOTE: ALL PROPERTY DIMENSIONS BASED UPON TOWN TAX MAP DIMENSIONS



THE CONTRACTOR SHALL NOTIFY DCS&E AT 1-888-935-6868 PRIOR TO ANY EXCAVATION

No.	REVISION	DATE
1	PROPERTY DIMENSION MODIFICATION	5/10/10
2		
3		
4		

I hereby certify that the design related information submitted with this application is true and correct, and that in the exercise of my reasonable professional judgment, the "best-fit" design included in this application for a permit reasonably complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.*

Elias J. Erwin
Licensed Class B Designer #503

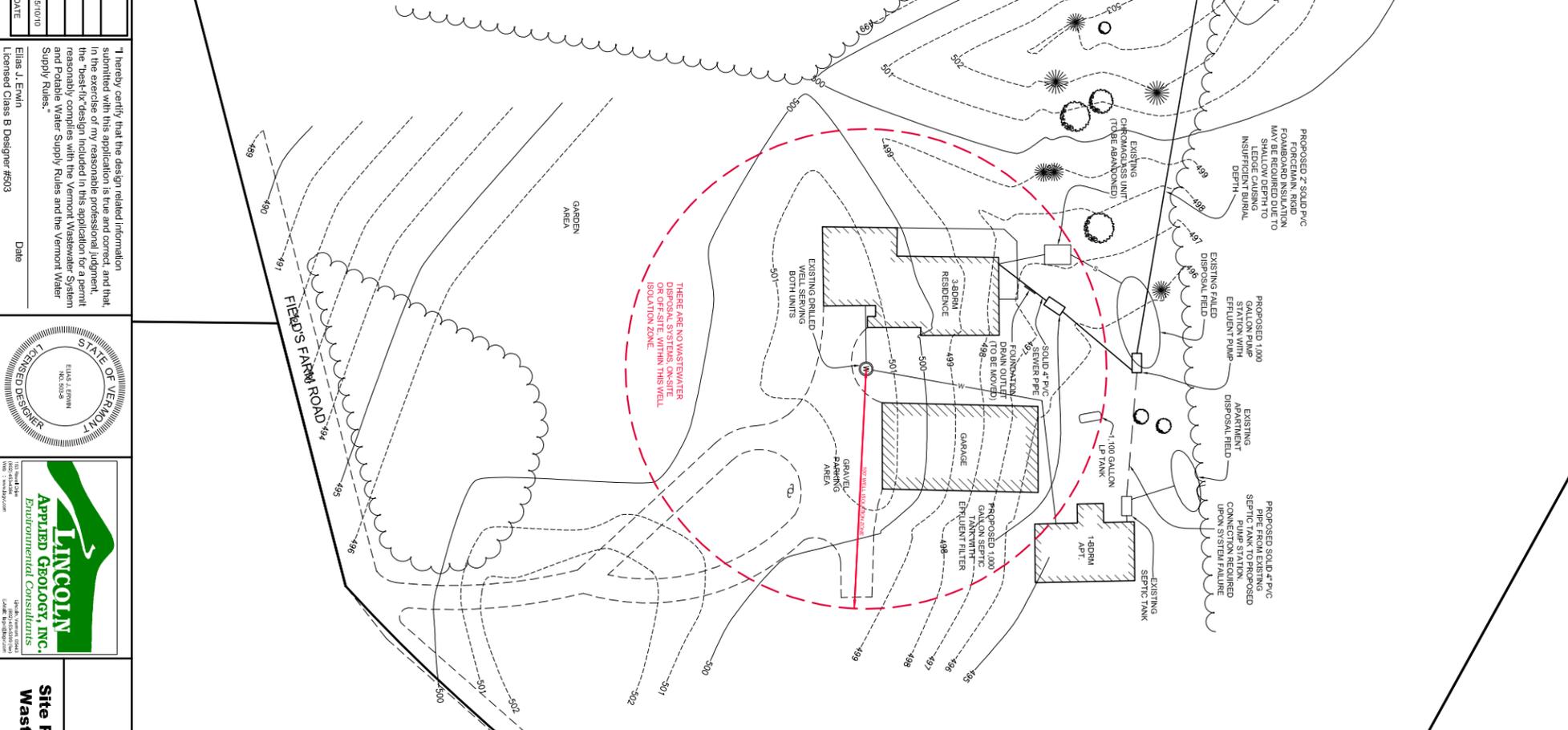
Date _____



Wood Property
189 Field's Farm Road
Charlotte, Vermont

Site Plan with Proposed Replacement Wastewater Disposal System Layout

LOG PROJECT #	10014
DATE	May 2010
DESIGNER	EJ/EM
PROJECT	TAM
PLANSHEET #	1



CONSTRUCTION SPECIFICATIONS - MOUND

1. MOUND CONSTRUCTION PROCEDURES ARE JUST AS IMPORTANT AS THE MOUND DESIGN. GOOD DESIGN WITH POOR CONSTRUCTION WILL RESULT IN THE MOUND OPERATING POORLY AND MAY RESULT IN FAILURE. PROPER EQUIPMENT, RESISTANT, SMALL TRACK TYPE TRACTORS SHOULD BE USED TO CONSTRUCT THE MOUND. THE MOUND SHOULD BE CONSTRUCTED IN THE HILL. THE FOLLOWING IS A STEP-BY-STEP PROCEDURE FOR MOUND CONSTRUCTION, WHICH HAS BEEN TRIED AND PROVEN. OTHER TECHNIQUES COULD BE USED AS LONG AS THE BASIC PRINCIPLES OF MOUND DESIGN, OPERATION AND CONSTRUCTION ARE NOT VIOLATED.
2. SUBMIT A REPRESENTATIVE SAMPLE (ENOUGH TO FILL A 5 GALLON BUCKET) OF MOUND SAND FROM THE INTENDED SOURCE FOR TESTING ACCORDING TO ASTM D42 (RIGHT METHOD). THE SAMPLE SHOULD BE TAKEN FROM THE MOUND AT A POINT WHERE VERIFICATION TESTING CAN ALLY VERIFY THIS TEST. SUBMIT A COPY OF THE RESULTS TO THE DESIGNER PRIOR TO INITIATING CONSTRUCTION.
3. STAKE OUT THE MOUND ON THE SITE SO THAT THE TRENCHES OR BED ARE PERPENDICULAR TO THE DIRECTION OF THE SLOPE. THE SPACING STRAKES ARE RECOMMENDED IN CASE CORNER STRAKES ARE DISTURBED. UNLOCAL APPLIED GEOLOGY, INC., MUST STAKE OUT OR VERIFY THIS TASK.
4. STAKE OUT CORNERS OF THE BED AND DETERMINE THE BOTTOM ELEVATION OF THE BED, DETERMINE WHERE THE FORCE MAIN FROM THE PUMP CHAMBER CONNECTS TO THE DISTRIBUTION SYSTEM IN THE MOUND.
5. DETERMINE WHERE THE FORCE MAIN FROM THE PUMP CHAMBER TO THE MOUND, LAY THE PIPE 9" BELOW THE GROUND SURFACE FOR FROST PROTECTION. WHERE THERE IS LESSER PIPE SIZE, PLACE SAND IN TWO LAYERS WITH STAKES SET IN THE GROUND ON THE UPPER SIDE OF PIPE. PLACE SAND IN TWO LAYERS WITH STAKES SET IN THE GROUND ON THE LOWER SIDE OF PIPE. PLACE SAND IN TWO LAYERS WITH STAKES SET IN THE GROUND ON THE UPPER SIDE OF PIPE TO PREVENT BACK SEEPAGE OF EFFLUENT ALONG PIPE. THIS MUST BE DONE BEFORE PLACING TO AVOID COMPACTING AND DISTURBANCE OF SURFACE.
7. INSTALL THE CURTAIN DRAIN (IF SHOWN ON PLANS).
8. CHECK THE MOISTURE CONTENT OF THE SOIL AT 7" DEEP. IF IT IS TOO WET, SPREADING SAND FROM THE MOUND SURFACE TO THE CURTAIN DRAIN WILL HELP TO DRY THE SOIL. SOIL MOISTURE CAN BE DETERMINED BY ROLLING A SOIL SAMPLE BETWEEN THE HANDS. IF IT ROLLS INTO A RIBBON, THE SITE IS TOO WET TO PREPARE. IF IT CRUMBLES, SOIL PREPARATION CAN PROCEED.
9. CUT TREES TO GROUND LEVEL. REMOVE EXCESS VEGETATION BY MOWING. DO NOT REMOVE STUMPS. PREPARE THE SITE BY USING AN UNLOADED PLOW TO REMOVE 8"-10" DEEP TRENCHES PERPENDICULAR TO THE SLOPE. FURROWS MUST BE THROWN UP HILL TO PREVENT SOIL FROM SLIDING DOWN HILL. HEAVY SOILS MUST BE THROWN UP HILL. MUST NOT BE DONE ON HEAVY SOILS BUT CAN BE USED ON NON-STRUCTURAL SOIL SUCH AS SANDS. ALTERNATIVELY, PLOWING CAN BE DONE BY USING AN UNLOADED BUCKET TO PULL THE SOIL INTO TRENCHES PARALLEL WITH THE GROUND CONTOUR. THE RESULTING SANDS OUTLINED ABOVE, IMMEDIATE CONSTRUCTION AFTER PLOWING IS NECESSARY, AND RUTTING OF PLOWED AREA WITH VEHICULAR TRAFFIC. DESIGNER INSPECTION REQUIRED AT THIS POINT.
10. EXTEND THE EFFLUENT PIPE TO SEVERAL FEET ABOVE THE GROUND SURFACE.
11. PLACE THE APPROVED FILL MATERIAL AROUND THE EDGE OF THE PLOWED AREA. KEEP THE SURFACE OF THE FILL MATERIAL AT THE DESIRED ELEVATION. THE TOP OF THE MOUND SHOULD BE AT LEAST 18" ABOVE THE GROUND SURFACE ON THE DOWN-SLOPE SIDE OF THE MOUND. WORK FROM THE END AND UNDOPE SIDE.
12. MOVE THE FILL MATERIAL INTO TO PLACE USING A SMALL TRACK TYPE TRACTOR WITH A COMPACTOR OF THE NATURAL SOIL.
13. PLACE THE FILL MATERIAL TO THE REQUIRED DEPTH WHICH IS THE TOP OF THE TRENCHES OR BED. STAKE SIDES TO THE DESIRED SLOPE. INSPECTION REQUIRED AT THIS POINT.
14. WITH THE BLADE OF THE TRACTOR FORM THE BED OR TRENCHES. HAND LEVEL THE BOTTOM OF THE BED. MAKE SURE BOTTOM IS AT THE SAME ELEVATION AND LEVEL.
15. PLACE THE COARSE AGGREGATE IN THE TRENCHES OR BED. IT SHOULD BE 4" TO 1/2" WASHED DURABLE AGGREGATE (IE. NOT LIMESTONE OR MARBLE). LEVEL AGGREGATE TO THE DESIRED DEPTH.
16. PLACE THE DISTRIBUTION SYSTEM ON THE AGGREGATE. CONNECT THE MAINFOLD TO THE FORCE MAIN FROM THE PUMP CHAMBER OR SPIN CHAMBER. SLOPE MAINFOLD TO SIGHTLINE OVER DISTRIBUTION LATERALS. LAY LATERALS LEVEL, REMOVING STRESS AND DISCHARGE RATE AND PRESSURE TESTING.
17. PLACE SHIELDS ON ORFICES AND PROPERLY GEMENT ALL COMPONENTS. PLACE 7" OF AGGREGATE OVER THE DISTRIBUTION PIPE.
18. PLACE A SYNTHETIC NON-WOVEN FILTER FABRIC (MIRAFIL PLAIN OR EQUIVALENT) OVER THE ENTIRE STRIKE BED. OVERLAP JOINTS BY 2" MINIMUM. PLACE AN 8" STRIP OF ROAD INSULATION IN TWO LAYERS (1" EACH) AND STRAGGER THE JOINT PATTERN.
19. PLACE SOIL ON TOP OF THE BED OR TRENCH TO A DEPTH OF 1" IN CENTER AND 6" AT OUTER EDGE OF BED OR TRENCHES. THIS MAY BE A SHOULDER ON TOPSOIL.
20. PLACE 6" OF GOOD QUALITY TOPSOIL OVER THE ENTIRE MOUND SURFACE. THIS WILL RAISE THE ELEVATION AT THE CENTER OF THE MOUND TO A MINIMUM OF 18" AND THE OUTSIDE EDGES OF BED OR TRENCHES 1". INSPECTION REQUIRED AT THIS POINT.
21. LANDSCAPE THE MOUND BY PLANTING GRASS, USING THE BEST VEGETATION ADAPTABLE TO THE AREA. A MIXTURE OF 90% BIRDSFOOT TREFOIL AND 10% TIMOTHY MAY BE USED. THE MOUND SHOULD BE PLANTED WITH 1000 PLANTS PER ACRE. PLANTING OF 60% BLUEGRASS, 30% CREEPING RED FESCUE AND 10% ANNUAL PEE GRASS MAY BE THE DESIRED VEGETATIVE COVER. SHRUBS CAN BE PLANTED AROUND THE BASE AND UP THE SIDESLOPES. THEY SHOULD BE SOMewhat MOISTURE TOLERANT SINCE THE TOP OF THE MOUND AND SHRUBS AWAY FROM THE TOP OF THE MOUND, AS ROOT SYSTEMS CAN DESTROY THE DISTRIBUTION NETWORK.
22. MOUND MAINTENANCE INCLUDES PLANNING, THE SEPTIC TANK AND PUMP CHAMBER EVERY 11003 YEARS TO AVOID CARRYOVER OF SOLIDS INTO THE MOUND. A GOOD WATER CONSERVATION PLAN WITHIN THE HOUSE ASSURES THAT THE MOUND WILL NOT BE OVERLOADED. AVOID EXCESS TRAFFIC ON THE MOUND AREA. WINTER TRAFFIC ON MOUND SEPTIC TANK. LEAVE EACH YEAR TO BE REMOVED THE LEVEL OF SOLIDS ACCUMULATION. MOW TWICE A YEAR.
23. UTILITIES NEGOTIATION. SHOW ON THIS PLANS ARE OBTAINED FROM AVAILABLE SOURCES. CHECKED AND MAY NOT BE EITHER COMPLETE OR COMPLETE. THE CONTRACTORS SHALL VERIFY EXACT LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN ON THIS PLAN.
24. ALL FILL AROUND THE STRUCTURES SHALL BE PLACED IN 12" LIFTS AND THOROUGHLY COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.
25. THIS DESIGN MUST BE INSPECTED BY LINCOLN APPLIED GEOLOGY, INC., LINCOLN, VERMONT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS THAT ARISE FROM FAILURE TO FOLLOW SPECIFICATIONS, AND THE DESIGN INTENT THAT THE PLANS CONVEY, AND FROM FAILURE TO HAVE BEEN NOTIFIED BY THE CONTRACTOR FOR INSPECTIONS.

OPERATION & MAINTENANCE RECOMMENDATIONS

1. THE SEPTIC TANKS SHOULD BE TO SETTLE OUT SOLIDS. CONTAIN THE SOLID AND GASS TREATED EFFLUENT. BACTERIA WITHIN THE SEPTIC TANK SHOULD DECOMPOSE THE SOLIDS SHOULD ANY SOLIDS STAY THROUGH THE SEPTIC TANK INTO THE SYSTEM. PREVENTIVE CLOGGING OF THE PIPING THROUGH THE SYSTEM SHOULD BE AVOIDED. THE SYSTEM SHOULD BE MAINTAINED BY THE SEPTIC SYSTEM MAINTENANCE COMPANY. THE MAINTENANCE COMPANY SHOULD CHECK THE SEPTIC TANKS AND SHOULD BE RESPONSIBLE FOR ANY SOLIDS THAT CANNOT ENTER THE SYSTEM. THE MAINTENANCE COMPANY SHOULD CHECK THE SEPTIC TANKS AND SHOULD BE RESPONSIBLE FOR ANY SOLIDS THAT CANNOT ENTER THE SYSTEM.
2. THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS. THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS. THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS. THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS.
3. ONCE PER YEAR, THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS. THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS. THE SEPTIC TANK SHOULD BE CHECKED FOR SOLIDS ON A REGULAR BASIS.
4. THE SOLID LEVEL IS WITHIN 12 INCHES OF THE BOTTOM OF THE OUTLET.
5. IF A OR B IS ANTICIPATED TO OCCUR PRIOR TO THE NEXT INSPECTION.
6. IN ANY CASE, THE TANK SHALL BE PUMPED AT A MAXIMUM 5 YEAR INTERVAL.
7. ONCE A YEAR, THE DISTRIBUTION BOX AND/OR PUMP STATION SHOULD BE INSPECTED AND ANY SETTLED SOLIDS REMOVED.
8. THE EFFLUENT FILTER SHOULD BE INSPECTED AND CLEANED ANNUALLY.
9. ABOVE ITEMS 1-9 ARE INTENDED TO PROLONG THE LIFE OF THE SYSTEM NOT GUARANTEED.

SEWAGE DESIGN INFORMATION

1. THE SEWAGE DISPOSAL SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE TOWN REGULATIONS AND THE VERMONT ENVIRONMENTAL PROTECTION RULES.
2. THE FOLLOWING MINIMUM ISOLATION DISTANCES SHALL BE MAINTAINED FROM THE DISPOSAL AREA TO:

PROPERTY LINE	25 FEET
BUILDING WITH FOOTING DRAIN, UPSLOPE OR SLOPE	35 FEET
BUILDING WITH FOOTING DRAIN, DOWNSLOPE	75 FEET
DRIVEWAYS & PARKING LOTS	10 FEET
TREES	10 FEET

3. BASIS OF DESIGN
 - NO. OF BEDROOMS: 3 BDRM + 1 BDRM
 - DESIGN FLOW RATE: 500 GPD
 - LOADING RATE (G/STONER): 1.0 GALLON PER STONER
4. SEPTIC TANK
 - A. A 1000 GALLON PRECAST CONCRETE SEPTIC TANK, CAMP PRECAST OR APPROVED EQUAL SHALL BE USED WITH THREE ACCESS COVERS, 4,000 PSI CONCRETE, WATERPROOF JOINTS AND SET ON THOROUGHLY COMPACTED SUBGRADE. THE OUTLET MUST BE AT LEAST 18" ABOVE THE GROUND SURFACE. THE OUTLET DIAMETER SHALL BE 6" WITH STEEL COVER.
 - B. THE USE OF GARBAGE DISPOSALS IS NOT RECOMMENDED.
 - 5. MISC.
 - A. IF A WATER TREATMENT SYSTEM IS GOING TO BE USED, THE BACKWASH WATER MAY NOT BE DISCHARGED INTO THE DISPOSAL SYSTEM.

STATE OF VERMONT MOUND SAND SPECIFICATIONS

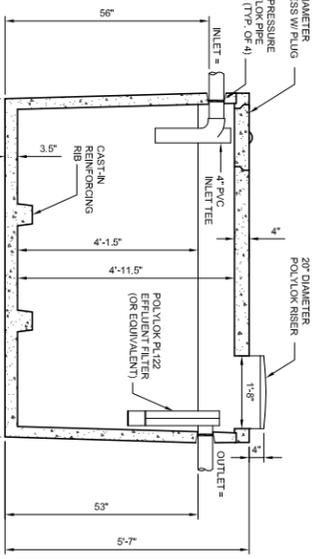
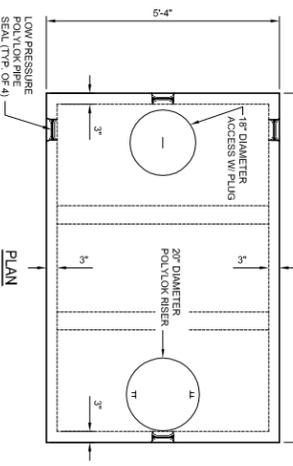
Fill Material: The fill material from the natural soil plowed surface to the top of the trench or bed shall be sand consisting with one of the following sieve analyses:

Sieve Number	Opening (mm)	Percent Passing by Weight
3/8	9.500	65 - 100
40	0.420	25 - 75
100	0.150	0 - 30
200	0.075	0 - 5

Sieve Number	Opening (mm)	Percent Passing by Weight
4	4.750	95 - 100
6	2.500	90 - 100
10	1.750	85 - 100
20	0.850	25 - 60
30	0.600	10 - 30
100	0.149	2 - 10

The material must meet specifications 1, 2 or 3. Interpretation of analyses is not permitted. Fill material 2 is ASTM Specification C-33 and is intended for manufactured material.

1,000 GALLON PRECAST CONCRETE SEPTIC TANK

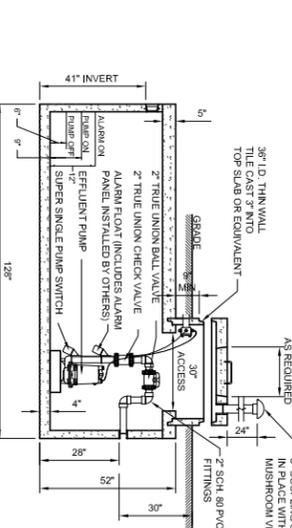
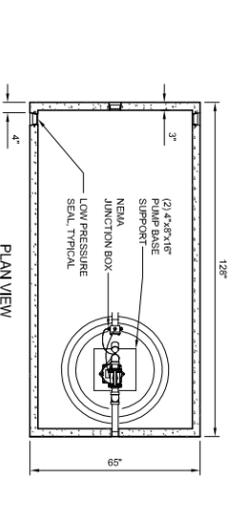


1,000 GALLON PRECAST CONCRETE SEPTIC TANK

NOT TO SCALE

1,000 GALLON SEPTIC TANK NOTES:

1. INLET, OUTLET SEAL, AND CASTING HOLES TO BE SEALED WITH HYDRAULIC CEMENT AND/OR BUTYLENE CASHEL.
2. TANK TO BE SET LEVEL.
3. DIMENSIONS MAY VARY AMONG DIFFERENT MANUFACTURERS.

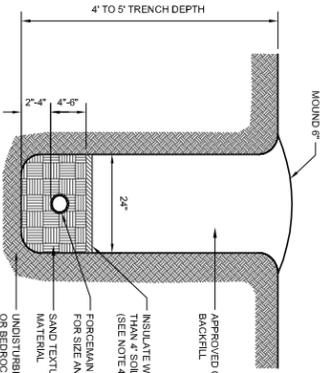


DESIGN NOTES:

1. 4,000 PSI CONCRETE.
2. 28 DAY STRENGTH.
3. LOW PRESSURE SEALS DESIGNED TO ACCEPT 4" CI OR PVC PIPE.
4. REQUIRES EFFLUENT PUMP CAPABLE OF PUMPING A MINIMUM OF 2.31 GPM VERSUS 17.907' TDH. AND A SUPER SINGLE PUMP SWITCH WITH A SWING SETTING (+/- 70 GALLONS) SET 6" ABOVE THE BASE OF THE PUMP WITH HIGH IT SHOULD BE NOTED THAT ANY DEVIATION IN THE LOCATION OR ELEVATION OF THE SEPTIC TANK, PUMP STATION, OR THE DISPOSAL SYSTEM FROM THE DESIGNED LOCATION MAY REQUIRE A DIFFERENT SIZE PUMP.

1,000 GALLON PRECAST CONCRETE PUMP STATION

NOT TO SCALE

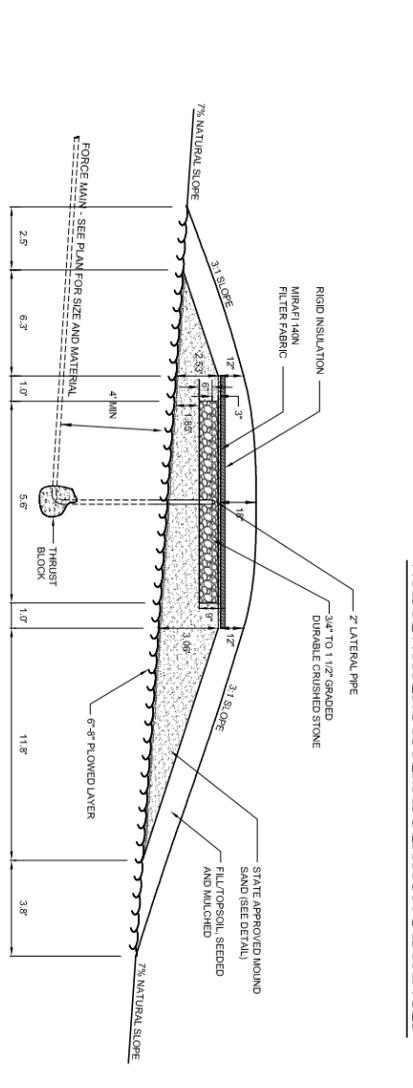


FORCEMAIN TRENCH NOTES:

1. BACKFILL AND BEDDING SHALL BE PROPERLY COMPACTED.
2. BEDDING MATERIAL SHALL NORMALLY CONSIST OF WELL-SORTED SANDS AND GRAVELS WITH A MAXIMUM SIZE OF 3/4".
3. BACKFILL SHALL NOT CONTAIN:
 - CONTAIN ANY FROZER, WET OR ORGANIC MATERIAL.
 - BE GREATER THAN 50 POUNDS.
 - BE GREATER THAN 12" MAXIMUM DIAMETER WITHIN 2' OF THE OUTSIDE OF THE PRELIM IN THE LONGEST DIMENSION.
4. INSULATION SHALL BE TESTED FOR LEAKAGE.
5. FORCEMAIN MUST BE TESTED FOR LEAKAGE.
6. AT ANY CROSSING UNDER A ROAD OR DRIVE, FORCEMAIN IS TO BE ENCASED IN A 4" SAND SLEEVE. SAND SLEEVE IS TO EXTEND 8' IN EITHER DIRECTION FROM EDGE OF ROAD.
7. THE SIDES OF THE TRENCHES 4' OR MORE IN DEPTH ENTERED BY PERSONNEL SHALL BE SHEETED OR SLOPED TO THE ANGLE OF REPOSE AS DEFINED BY OSHA STANDARDS.

FORCEMAIN TRENCH DETAIL

NOT TO SCALE



WASTEWATER SYSTEM ISOLATION DISTANCES

ITEM	LEACHFIELD	SEPTIC TANK	SEWER
DRILLED WELL	(b)	50	50
GRAVEL PACK WELL, SHALLOW WELL OR SPRING	(b)	75	75
LAKES, PONDS AND WATERSHEDS	50	25	25
RIVER, STREAM	50	25	10
DRAINAGE SWALES, ROADWAY DITCHES	25	-	-
MAIN OR MUNICIPAL WATER LINES	50	50	(d)
SEWER SERVICE LINES	25	25	(d)
ROADWAYS, DRIVEWAYS, PARKING LOTS	25	10	-
PROPERTY LINE	10	10	10
TREES	10	10	10
OTHER DISPOSAL FIELD OR REPLACEMENT AREA	100 ^a	-	-
FOUNDATION, FOOTING DRAINS, CURTAIN DRAINS	35 ^b	10	-
PUBLIC COMMUNITY WATER SUPPLY (e)	(f)	(f)	(f)
SUCTON WATER LINE	100	50	50

THESE DISTANCES MAY BE REDUCED WHEN EVIDENT THAT THE DISTANCE IS UNNECESSARY TO PROTECT AN ITEM OR INCREASED IF NECESSARY TO PROVIDE ADEQUATE PROTECTION.

- (a) ISOLATION DISTANCES APPLY REGARDLESS OF PROPERTY LINE AND OWNERSHIP.
- (b) DETERMINED BY METHODS IN THE VERMONT WATER AND SEWERAGE RULES, APPENDIX 214, PART 1.
- (c) SEWERS UNDER ROADS, DRIVEWAYS OR PARKING LOTS MAY REQUIRE PROTECTIVE CONDUITS OR SLEEVES.
- (d) SEPARATION OF PRESSURE WATER LINES CONSIDERED AS SERVICE CONNECTIONS AND SEWER LINES SHALL BE 18" PART OF THE DISTANCE.
- (e) VERMONT WATER SUPPLY RULES SHALL APPLY TO ALL VERMONT WATER SUPPLY RULES.
- (f) THIS REFERS TO PUBLIC COMMUNITY WATER SYSTEMS, AS DEFINED IN THE VERMONT WATER SUPPLY RULES.

NOT TO SCALE

THE CONTRACTOR SHALL NOTIFY "DISCASS" AT 1-800-333-3333 PRIOR TO ANY EXCAVATION.

I hereby certify that the design related information submitted with this application is true and correct, and that in the exercise of my reasonable professional judgment, the design complies with all applicable laws, rules, regulations and standards of the State of Vermont. I am a duly Licensed Professional Engineer in the State of Vermont. My License No. is 10003. I am a member of the Vermont Society of Professional Engineers. My License No. is 10003. I am a member of the Vermont Society of Professional Engineers. My License No. is 10003.

Elias J. Evin
Licensed Class B Designer #503



Wood Property
189 Fields Farm Road
Charlotte, Vermont

Proposed Wastewater System Design Details

DATE: 10/14/2010
DRAWN: ELLIOTT
CHECKED: TAM
PROJECT # 2