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 SIDESLOPE	35 FEET
BUILDING (WITH FOOTING DRAIN) DOWNSLOPE	75 FEET
DRIVEWAYS & PARKING LOTS	10 FEET
TREES	10 FEET

3. BASIS OF DESIGN:

NO. OF BEDROOMS	5
DESIGN FLOW	560
PERCOLATION RATE	<60 MIN/INCH
LOADING RATE, Q (TRENCHES)	1.12 GAL/SF/DAY - 6" OF STONE

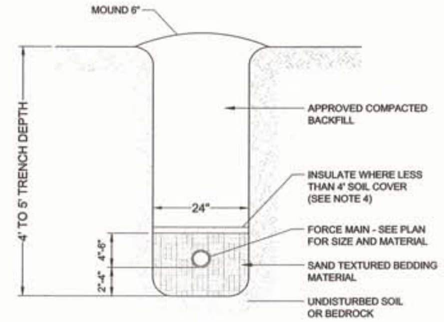
4. SEPTIC TANK

A. A 1,000 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 SUBBASE. THE OUTLET BAFFLE SHALL HAVE AN EFFLUENT FILTER & A TWO (2) FOOT DIAMETER RISER TO GRADE WITH STEEL COVER.

B. THE USE OF GARBAGE DISPOSALS IS NOT RECOMMENDED.

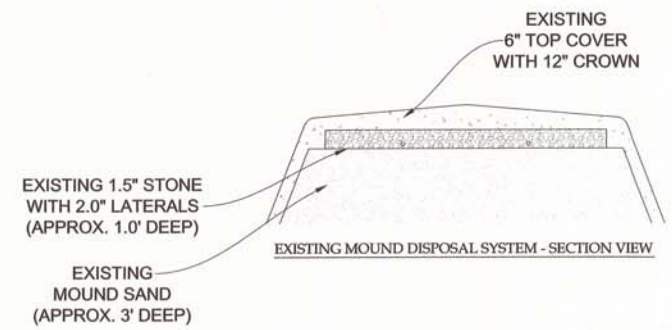
5. MISC.:

A. IF A WATER TREATMENT SYSTEM IS GOING TO BE USED, THE BACKWASH WATER MAY NOT BE DISCHARGED INTO THE DISPOSAL SYSTEM.

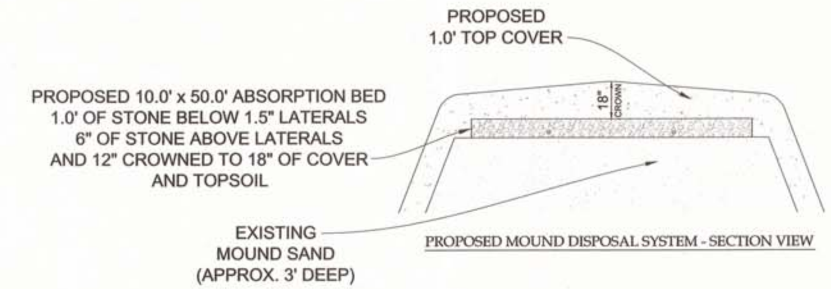


EXISTING FORCE MAIN TRENCH DETAIL

NOT TO SCALE



EXISTING MOUND DISPOSAL SYSTEM - SECTION VIEW



PROPOSED MOUND DISPOSAL SYSTEM - SECTION VIEW

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 texture with one of the following sieve analyses:

1.

Sieve Number	Opening (mm)	Percent Passing, by Weight
3/8	9.500	85 - 100
40	0.420	25 - 75
60	0.240	0 - 30
100	0.149	0 - 10
200	0.074	0 - 5

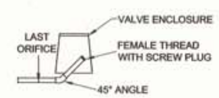
2.

Sieve Number	Opening (mm)	Percent Passing, by Weight
4	4.750	95 - 100
8	2.380	80 - 100
16	1.190	50 - 85
30	0.590	25 - 60
50	0.297	10 - 30
100	0.149	2 - 10

3.

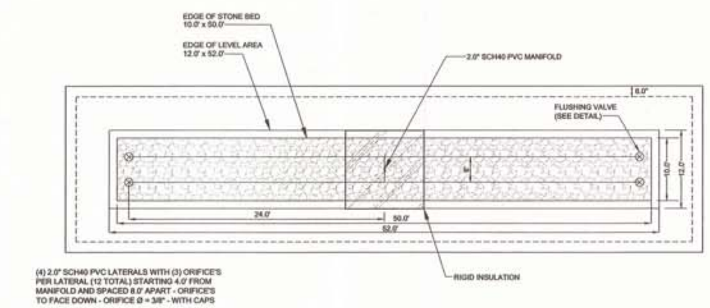
Sieve Number	Opening (mm)	Percent Passing, by Weight
3/8	9.500	85 - 100
40	0.420	30 - 50
200	0.074	0 - 5

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



FLUSHING VALVE DETAIL

NOT TO SCALE



EXISTING MOUND DISPOSAL SYSTEM - PLAN VIEW

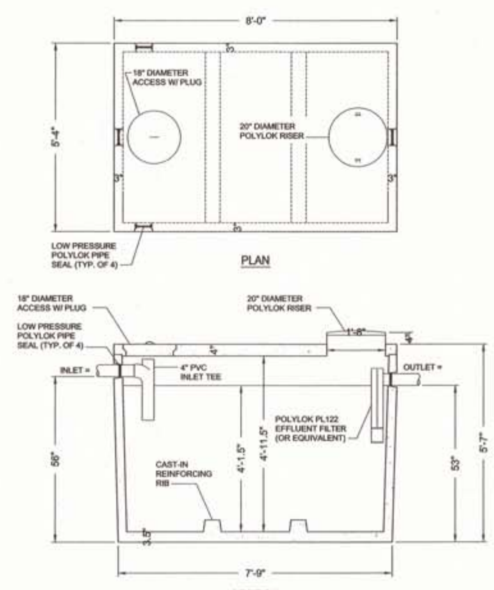
NOT TO SCALE

ITEM	LEACHFIELD	SEPTIC TANK	SEWER
DRILLED WELL	(b)	50	50
GRAVEL PACK WELL, SHALLOW WELL OR SPRING	(b)	75	75
LAKES, PONDS AND IMPOUNDMENT'S	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	10	5	(c)
TOP OF EMBANKMENT, OR SLOPE > 30%	25	10	–
PROPERTY LINE	25[1]	10	10
TREES	10	10	10
OTHER DISPOSAL FIELD OR REPLACEMENT AREA	10[2]	–	–
FOUNDATION, FOOTING DRAINS, CURTAIN DRAINS	35[3]	10	–
PUBLIC COMMUNITY WATER SUPPLY (e)	(f)	(f)	(f)
SUCTION WATER LINE	100	50	50

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

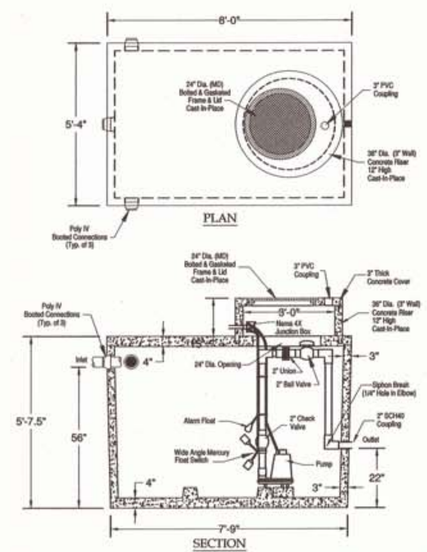
(a) ISOLATION DISTANCES APPLY REGARDLESS OF PROPERTY LINE AND OWNERSHIP.
(b) SEPARATION BETWEEN POTABLE WATER SUPPLIES AND LEACHFIELD'S SHALL BE DETERMINED BY METHODS IN THE VERMONT WATER AND SUPPLY RULE, APPENDIX 21-A, PART 11, 11.4.
(c) SEWERS UNDER ROADS, DRIVEWAYS OR PARKING LOTS MAY REQUIRE PROTECTIVE CONDUITS OR SLEEVES.
(d) SEPARATION OF PRESSURE WATER LINES CONSIDERED AS "SERVICE CONNECTIONS" AND SEWER LINES SHALL ADHERE TO THE VERMONT PLUMBING RULES. SEPARATION OF PRESSURE WATER LINES (CONSIDERED TO BE PART OF A PUBLIC WATER SYSTEM AS DEFINED BY THE VERMONT WATER SUPPLY RULE) AND SEWER LINES SHALL ADHERE TO THE REQUIREMENTS OF THE VERMONT WATER SUPPLY RULE.
(e) THIS REFERS TO PUBLIC COMMUNITY WATER SYSTEMS, AS DEFINED IN THE VERMONT WATER SUPPLY RULE.
(f) CONTACT DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S WATER SUPPLY DIVISION, 103 SOUTH MAIN STREET, WATERBURY, VERMONT FOR ISOLATION DISTANCES RELATIVE TO PUBLIC COMMUNITY WATER SUPPLY.

WASTEWATER SYSTEM ISOLATION DISTANCES



EXISTING 1,000 GALLON PRECAST CONCRETE SEPTIC TANK

NOT TO SCALE



EXISTING 1000 GALLON PRECAST CONCRETE PUMP STATION

NOT TO SCALE

DESIGN NOTES:

NOTE: EXISTING EFFLUENT PUMP CAPABLE OF PUMPING A MINIMUM OF 18.53 GPM VERSUS 2.99' TDH, WITH EXISTING PUMP AND ALARM CONTROLS.

MOUND RECONSTRUCTION SPECIFICATIONS

1. MOUND RECONSTRUCTION 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 IS ESSENTIAL. SMALL TRACK TYPE EXCAVATORS WORK BEST. WHEEL TYPE TRACTORS ARE TOO DIFFICULT TO MANEUVER IN THE FILL. THE FOLLOWING IS A STEP-BY-STEP PROCEDURE FOR MOUND RECONSTRUCTION, WHICH HAS BEEN TRIED AND PROVEN.

2. SUBMIT A REPRESENTATIVE SAMPLE (ENOUGH TO FILL A 5 GALLON BUCKET) OF MOUND SAND FROM THE INTENDED SOURCE FOR TESTING ACCORDING TO ASTM D 422 (KNIGHT CONSULTING ENGINEERS, PHELPS ENGINEERING, OTTER CREEK ENGINEERING, AND VERMONT TESTING CAN ALL PERFORM THIS TEST). SUBMIT A COPY OF THE RESULTS TO THE DESIGNER PRIOR TO INITIATING RECONSTRUCTION.

3. REMOVE SOIL COVER OF 10' x 50' MOUND APPLICATION AREA, SET ASIDE FOR FINAL GRADING PURPOSES.

4. REMOVE FOULED STONE, PIPE AND SAND.

5. REPLACE FOULED SAND WITH CLEAN MOUND SAND.

6. PLACE 6" COARSE AGGREGATE IN THE BED. IT SHOULD BE ¾ TO 1½", WASHED, DURABLE AGGREGATE (I.E. NOT LIMESTONE OR MARBLE). LEVEL AGGREGATE TO THE DESIGN DEPTH.

7. PLACE THE DISTRIBUTION SYSTEM ON THE AGGREGATE. CONNECT THE MANIFOLD TO THE FORCE MAIN FROM THE PUMP CHAMBER, LAY LATERALS LEVEL, AND CONNECT TO FORCEMAIN. INSPECTION REQUIRED AT THIS POINT (TO OBSERVE DISCHARGE RATE AND PRESSURE TESTING).

8. PLACE SHIELDS ON ORIFICES AND PROPERLY CEMENT ALL COMPONENTS. PLACE 3" OF AGGREGATE OVER THE DISTRIBUTION PIPE.

9. PLACE A SYNTHETIC NON-WOVEN FILTER FABRIC (MIRAFI 140N OR EQUIVALENT) OVER THE ENTIRE STONE BED. OVERLAP JOINTS BY 12" MINIMUM. PLACE AN 8' X 8' MAT OF RIGID POLYSTYRENE INSULATION, 2" THICK, CENTERED OVER FORCE MAIN RISER. PLACE INSULATION IN TWO LAYERS (1" EACH) AND STAGGER THE JOINT PATTERN.

10. PLACE SOIL ON TOP OF THE BED TO A DEPTH OF 1' IN CENTER AND 6" AT OUTER EDGE OF BED OR TRENCHES. THIS MAY BE A SUBSOIL OR TOPSOIL.

11. 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 1.5' AND THE OUTSIDE EDGES OF BED 1'. INSPECTION REQUIRED AT THIS POINT.

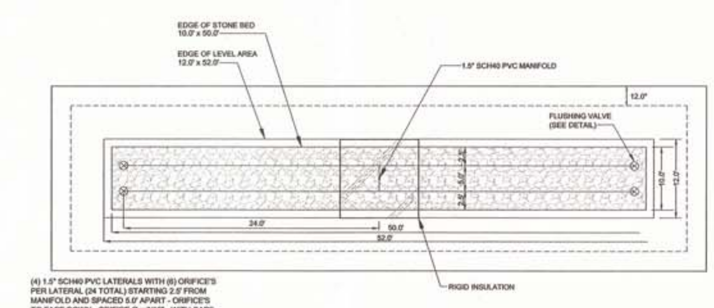
12. LANDSCAPE THE MOUND BY PLANTING GRASS, USING THE BEST VEGETATION ADAPTABLE TO THE AREA. A MIXTURE OF 90% BIRDSFOOT TREEFOIL AND 10% TIMOTHY MAY BE DESIRABLE IF THE MOUND IS NOT MANICURED. IF MANICURING IS DESIRED, A COMBINATION OF 60% BLUEGRASS, 30% CREEPING RED FESCUE AND 10% ANNUAL RYE GRASS MAY BE THE DESIRED VEGETATIVE COVER. SHRUBS CAN BE PLANTED AROUND THE BASE AND UP THE SIDESLOPES. THEY SHOULD BE SOMEWHAT MOISTURE TOLERANT SINCE THE TOE OF THE MOUND MAY BE SOMEWHAT MOIST DURING VARIOUS TIMES OF THE YEAR. KEEP ALL TREES AND SHRUBS AWAY FROM THE TOP OF THE MOUND, AS ROOT SYSTEMS CAN DESTROY THE DISTRIBUTION NETWORK.

13. MOUND MAINTENANCE INVOLVES PUMPING THE SEPTIC TANK AND PUMP CHAMBER EVERY 1 TO 3 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 SHOULD BE AVOIDED TO MINIMIZE FROST PENETRATION. INSPECT PUMP CHAMBER AND SEPTIC TANK EACH YEAR TO DETERMINE THE LEVEL OF SLUDGE ACCUMULATION. MOW TWICE A YEAR.

14. UTILITIES INFORMATION SHOWN ON THIS PLAN WAS OBTAINED FROM AVAILABLE SOURCES AND MAY OR MAY NOT BE EITHER ACCURATE 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.

15. ALL FILL AROUND THE STRUCTURES SHALL BE PLACED IN 12" LIFTS AND THOROUGHLY COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.

16. THIS DESIGN MUST BE INSPECTED BY LINCOLN APPLIED GEOLOGY, INC., LINCOLN, VERMONT, TO ENSURE COMPLIANCE WITH THESE PLANS. LINCOLN APPLIED GEOLOGY, INC., 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.



PROPOSED MOUND DISPOSAL SYSTEM - PLAN VIEW

NOT TO SCALE

NOT TO SCALE

THE CONTRACTOR SHALL NOTIFY "DIGSAFE" AT 1-888-DIG-SAFE PRIOR TO ANY EXCAVATION.

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

Jeremy Revell — 3/8/16
Licensed Class B Designer #611 — Date

STATE OF VERMONT — JEREMY REVELL NO. 611-B — LICENSED DESIGNER

LINCOLN APPLIED GEOLOGY, INC.
ENVIRONMENTAL CONSULTANTS
163 Revell Drive, Lincoln, Vermont 05443
(802) 453-4384 · (802) 453-5399 (fax)
Web: www.lagvt.com · E-Mail: lagvt@lagvt.com

Golek Property

287 Upper Old Town Trail Road
Charlotte, Vermont

Existing & Proposed Wastewater System Design Details

LAG PROJECT #	16009
DATE:	March 2016
SURVEYORS:	TAM/JR
DRAWN BY:	TAM
FIGURE #:	2