

TEST PIT LOGS

TEST PITS PERFORMED BY ENGINEERING VENTURES ON 8/10/09 AND 8/12/09.

PIT NUMBER	SOIL HORIZON	DEPTH	TEXTURE	NOTE
3	A	0-4"	BRN LOAM	SHWT-20"
	B	4-17"	BRN SILT LOAM	
	C	17-36"	REDDISH SILT LOAM	
4	A	0-5"	BRN LOAM	SHWT-15"
	B	5-14"	BRN SILT LOAM	
	C	14-32"	REDDISH SILT LOAM	
5	A	0-6"	BRN LOAM	SHWT-13"
	B	6-12"	BRN SILT LOAM	
	C	12-33"	GREY BROWN SILT	WATER AT 32"

PLAN NOTES

- EXISTING SEPTIC TANK TO REMAIN, IF IN ACCEPTABLE CONDITION. RETROFIT w/ EFFLUENT FILTER. CONTRACTOR TO PROVIDE ADD/ALT PRICE TO PROVIDE & INSTALL 1,000 GALLON CONCRETE SEPTIC TANK PER DETAIL 4/C2.1.
- INSTALL NEW DRAIN IN-KIND. INSTALL DRAIN TO DAY LIGHT AT A MIN SLOPE OF 2%. PROVIDE 18" CLEARANCE BETWEEN SEWER AT CROSSING.
- NEW 1,000 GALLON PUMP STATION. SEE DETAIL 5/C2.1.
- NEW MOUND LEACHFIELD w/ 126 LF OF 4' WIDE TRENCH. SEE DETAIL 1 & 3 ON C2.2.
- CONTRACTOR TO VERIFY LOCATION OF EXIST. FUEL TANK AND ROUTE NEW DRAIN TO PREVENT DISTURBANCE OF TANK.
- REMOVE EXISTING DRAIN LINE.
- CONTRACTOR TO GRADE THE SITE PER THIS SITE PLAN, TAKING CARE TO TAPER SLOPES ON THE NORTH AND EAST SIDES OF THE MOUND GENTLY TO EXISTING GRADE.

BASIS OF DESIGN FOR MOUND SYSTEM

KNOWN:

- PERCOLATION RATE = 52 MIN/INCH (UTILIZE SECOND SLOWEST RATE)
- ONE SINGLE FAMILY RESIDENCE TO BE CONNECTED TO INDIVIDUAL MOUND WASTEWATER DISPOSAL SYSTEM
- SINGLE FAMILY RESIDENCE WILL BE LIMITED TO 4 BEDROOMS

DESIGN FLOW:

- 70 GAL/CA/DAY
- 70 GAL/CA/DAY[(3 BR)(2 CA/BR)+(1 BR)(1 CA/BR)] = 490 GAL/DAY

SEPTIC TANK:

- DESIGN FLOW IS: 490 GPD < 667 GPD -> USE 1,000-GALLON CAPACITY TANK

DESIGN APPROACH:

- UTILIZE PERFORMANCE BASED APPROACH
- MUST HAVE A MINIMUM OF 18" OF NATURALLY OCCURRING SOIL ABOVE BEDROCK
- THE GROUND SLOPE SHALL NOT EXCEED 20% FOR THE WASTEWATER SYSTEM
- SIMPLIFIED PROCEDURE FOR PRESCRIPTIVE DESKTOP MOUNDING ANALYSIS

- DESIGN FLOW = 490 GPD
- SOIL TEXTURE = SILT LOAM
- DEPTH TO SHWT = 15"
- GROUNDWATER INDUCED TO WITHIN 6" OF NATURALLY OCCURRING GROUND SURFACE
- GROUND SLOPE = 6.6% USE RANGE (6.1-8%)
- H = 15" - 6" = 9" = 0.75 FT
- F = 5.2 (TABLE 1)
- LLR = 0.75' x 5.2 = 3.9 GPD/LF
- MINIMUM SYSTEM LENGTH = 490 GPD / 3.9 GPD/LF = 126 FT MIN. SYSTEM LENGTH.

MOUND DESIGN (FOR SEPTIC TANK EFFLUENT):

- PROVIDE 48" OF SEPARATION BETWEEN BOTTOM OF DISPOSAL TRENCH AND BEDROCK.
- PROVIDE 36" OF SEPARATION BETWEEN BOTTOM OF DISPOSAL TRENCH AND INDUCED SHWT.
- INDUCED SHWT > 6" BELOW SURFACE. THEREFORE PROVIDE 30" OF FILL SAND UNDER TRENCH.
- MAXIMUM APPLICATION RATE = 1.0 GPD/SF WITH 4 FT WIDE TRENCH, 490 GPD / [(1.0 GPD/SF)(4 SF/LF)] = 122.5 LF REQUIRED, USE 126 LF OF TRENCH
- SYSTEM LENGTH TO WIDTH RATIO IS: 126 FT / 4 FT = 31 > 2 -> OK

BASAL AREA:

- APPLICATION RATE: PERCOLATION RATE IS 0 < 52 MIN/INCH < 60 MIN/INCH => USE 0.74 GPD/SF
- REQUIRED BASAL AREA = 490 GPD / 0.74 GPD/SF = 662 SF
- MINIMUM BASAL WIDTH = 662 SF / 126 FT = 5.25 FT
- PROVIDED BASAL WIDTH = [(1+0.7)(5)+0.7*0.7*3][4 FT + 1 FT + (3-1)2.5 FT] = 15.25 FT > 5.25 FT -> OK

PERCOLATION TESTS

PERCOLATION TESTS PERFORMED BY ENGINEERING VENTURES ON (P-1 TO P-3 ON 8/10/09).

- P-1 45 MIN/INCH
- P-2 54 MIN/INCH
- P-3 52 MIN/INCH

STANDARD ABBREVIATIONS

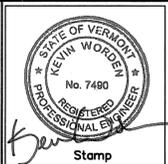
CAST IRON	CI	MINIMUM	MIN
CATCH BASIN	CB	MONITORING WELL	MW
CENTERLINE	CL	NOT TO SCALE	NTS
CLEAN OUT	C/O	PERCOLATION TEST	PT
CORRUGATED METAL PIPE	CMP	POLYVINYL CHLORIDE	PVC
DISTRIBUTION BOX	D-BOX	POND	PND
DUCTILE IRON	DI	RADIUS	R=
ELECTRIC	ELEC	REINFORCED CONCRETE PIPE	ROP
ELEVATION	ELEV	SANITARY	SAN
EDGE OF PAVEMENT	EOP	SANITARY MANHOLE	SMH
EXISTING	EX	SEPTIC TANK	ST
FIELD INLET	FI	SLOPE	S=
HEADWALL	HW	STORM MANHOLE	DMH
HIGH DENSITY POLYETHYLENE	HDPE	TEST PIT	TP
HYDRANT	HYD	TYPICAL	TYP
INVERT	INV	VERIFY IN FIELD	VIF
LENGTH	L=	WATER VALVE	WV
MAXIMUM	MAX		

LEGEND

EXISTING FEATURES	
	PROPERTY LINE
	CONTOUR
	STREAM
	TEST PIT
	PERC TEST
	WELL
PROPOSED FEATURES	
	FORCE MAIN
	SEWER LINE
	DRAIN LINE

NOTES

- TOPO SURVEY CONDUCTED BY ENGINEERING VENTURES 8/12/09.
- PROPERTY LINES ARE APPROXIMATE AS PROVIDED BY LINDA SAMPTER. THIS IS NOT A BOUNDARY SURVEY.



Date	Description	Rev. No.
9/14/09 <td>MOUND RELOCATED TO MIN. FILL <td>1 </td></td>	MOUND RELOCATED TO MIN. FILL <td>1 </td>	1

ENGINEERING VENTURES PC
 208 Flynn Avenue, Suite 2A Burlington, VT 05401
 Tel: 802.863.6225 • Fax: 802.863.6306
 85 Mechanic Street, Suite 350A, Lebanon, NH 03766
 Tel: 603.442.3333 • Fax: 603.442.3351
 www.engineeringventures.com

Client: Thomas Hengelsberg and Linda Samter
 988 Prindle Road
 Charlotte, VT 05445

Sheet Title: **Septic Plan**
 Project Title: **Septic System Improvements**
 Charlotte, VT

Designed By: JZ
 Checked By: KW
 Drawn By: WC
 Scale: As Noted
 Date: Sept. 3, 2009

C1.0
 EV#9596