

BORING LOG		Boring No.: B-22	
Project Name		Page No.: 1 of 1	
Knapp Airport		File No.: 965-03	
Berlin, Vermont		Checked By: KEW/AMH	
GEODESIGN INCORPORATED <i>Geotechnical Engineers-Environmental Consultants-Construction Engineers</i> P.O. Box 699 Windsor, VT 05089 Phone: 802-674-2033 Fax: 802-674-5943		1233 Shelburne Rd, Suite 300 South Burlington, VT 05403 Phone: 802-652-5140	
Boring Company: Specialty Drilling & Investigation Foreman: Chris Aldrich Geodesign Rep.: Don Howey Date Started: July 17, 2006 Date Finished: July 17, 2006 N. Coordinate: E. Coordinate:		Castlog Sampler Type: H.S.A. SS I.B.: 2.25 in. 1.38 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Simco 2800 Hammer Type: Safety Hammer	
Ground Surface Elevation (feet): Station: Offset: ft		Groundwater Observations Date Depth (ft) Elev. (ft) Notes None observed	
Sample Information		Sample Description	
Depth (ft)	Castlog Blows/ft	Strata Description	Symbol
	Number Type Penetration (lb/inch) Recovery (lb/inch) Depth (ft)		
	Blows / 6 inch interval		
	0 - 6 6 - 12 12 - 18 18 - 24		
	Coring Time (min./ft) PSD Sampling (yes)		
1	SS 18 14 0.05 17 16 15 -	Pavement Base Course Gravel & Sand Subbase Sand	Dense, Top 5": light gray fine to coarse GRAVEL and fine to coarse SAND, trace Silt, (moist) Bottom 9": brown fine to coarse SAND, little (-) fine Gravel, trace Silt, (moist)
2	SS 24 13 2 18 18 18 18		
3	SS 24 15 4 22 21 22 27	Glacial Till	Dense, brown SILT, some fine to coarse Sand, little (-) fine Gravel, (moist)
4	SS 24 0 6 38 37 36 39		Very dense, no recovery, (may have been driving cobble)
5			
10			
15			
20			
Remarks Notes: 1) Soil Samples screened in the field using a Thermal Environmental Systems Model 500S Photoionization Detector (unless otherwise noted in Remarks). The meter was calibrated relative to a benzene in air standard. N.D. = None Detected; N.R. = Not Recorded; N.A. = Not Applicable; O.R. = Out of Range. 2) Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. A.C. = After coring; N.R. = Not Recorded. 3) Sample Type Coding: A = Auger; C = Core; D = Driven; G = Grab; PS = Piston Sample; SS = Split Barrel (Split Spoon); ST = Shelby Tube; V = Vane; WGR/H = Weight of Rod/Hammer 4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50% 5) Stratification lines represent approximate boundary between material types, transitions may be gradual. 6) Bedrock cores collected at locations c-1, c-2, and c-3 typically consist of gray, soft, moderately weathered phyllite bedrock of very poor to fair quality, the rock was fissile and crumbled with moderate finger pressure. Fractures were typically noted along the fissile planes between approximately 60 and 70 degrees (measured from the horizontal). Rock quality designation (RQD) values ranged between 0 and 55%. The rock type was consistent with mapping data published on the Centennial Geologic Map of Vermont (dott, 1961) and a rock outcrop located approximately 500 feet north of the site (along Airport Road). 7) Bedrock removal for this project can be accomplished using conventional mechanical equipment. Mechanical removal methods can include excavating, ripping, hoe-ramping and splitting. A alternative method of removal is blasting. 8) The effort and difficulty of rock removal will generally increase with the depth once the upper, more weathered rock has been penetrated (estimated up to between 5 and 10 feet deep). 9) Rock Reuse Potential - the type and condition of rock anticipated for removal will be poor aggregate for use in the base course below new pavements.		Boring No.: B-22	

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	Coring Time (min./ft) PSD Sampling (yes)		
1	SS 18 14 0.05 17 16 15 -	Pavement Base Course Gravel & Sand Subbase Sand	Medium dense, Top 5": light gray fine to coarse GRAVEL and fine to coarse SAND, trace Silt, (moist) Bottom 6": brown fine to coarse SAND, trace fine Gravel, (moist)
2	SS 24 12 2 17 12 12 22		
3	SS 24 16 4 23 27 37 29	Glacial Till	Very dense, brown SILT, and (-) medium to coarse SAND, trace fine Gravel, (moist)
4	SS 24 11 6 18 17 50/4"		Very Dense, brown SILT, little fine to coarse Sand, little fine to coarse Gravel, one 1/2" thick fine Sand seam at bottom of sample, (moist)
5			
10			
15			
20			
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	0 - 6 6 - 12 12 - 18 18 - 24		
	Coring Time (min./ft) PSD Sampling (yes)		
1	SS 18 14 0.05 17 16 15 -	Pavement Base Course Gravel & Sand Subbase Sand	Dense, orange to gray fine to coarse SAND and fine to coarse GRAVEL, trace Silt, (moist)
2	SS 24 18 2 16 16 16 14		
3	SS 24 9 4 21 47 16 27	Glacial Till	Very dense, brown to gray SILT, and fine to medium SAND, trace (-) fine Gravel, trace Root fibers, (moist)
4	SS 24 2 6 39 30 26 25		Very dense, brown to gray SILT, little (+) fine to coarse Sand, trace Root fibers, (moist)
5	SS 24 22 8 11 12 13 18		Very stiff, gray Clayey SILT, little (+) fine to coarse Sand, trace fine to coarse Gravel, (moist)
10			
15			
20			
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 - Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. A.C. = After coring; N.R. = Not Recorded.
 - Sample Type Coding: A = Auger; C = Core; D = Driven; G = Grab; PS = Piston Sample; SS = Split Barrel (Split Spoon); ST = Shelby Tube; V = Vane; WGR/H = Weight of Rod/Hammer
 - Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%
 - Stratification lines represent approximate boundary between material types, transitions may be gradual.
 - Bedrock cores collected at locations c-1, c-2, and c-3 typically consist of gray, soft, moderately weathered phyllite bedrock of very poor to fair quality, the rock was fissile and crumbled with moderate finger pressure. Fractures were typically noted along the fissile planes between approximately 60 and 70 degrees (measured from the horizontal). Rock quality designation (RQD) values ranged between 0 and 55%. The rock type was consistent with mapping data published on the Centennial Geologic Map of Vermont (dott, 1961) and a rock outcrop located approximately 500 feet north of the site (along Airport Road).
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 - The effort and difficulty of rock removal will generally increase with the depth once the upper, more weathered rock has been penetrated (estimated up to between 5 and 10 feet deep).
 - Rock Reuse Potential - the type and condition of rock anticipated for removal will be poor aggregate for use in the base course below new pavements.

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PROJECT NAME: E. F. KNAPP STATE AIRPORT
 A.I.P. 3-50-0001-011-2009
 PROJECT NUMBER: BERLIN AIR 04-3216
 FILE NAME: z05h378sh.t.br 1.dgn
 PROJECT LEADER: S. FORTNEY
 DESIGNED BY: S. BOUCHARD
 BORING LOGS B22-B24
 PLOT DATE: 11/22/2011
 DRAWN BY: D. STANDISH
 CHECKED BY: J. DOWNAR
 SHEET 162 OF 173