

BORING LOG		Boring No.:	B-53		
Project Name		Page No.:	1 of 1		
Knapp Airport		File No.:	965-03		
Berlin, Vermont		Checked By:	KEW/AMH		
<p>GEODESIGN INCORPORATED Geotechnical Engineers-Environmental Consultants-Construction Engineers P.O. Box 699 Windsor, VT 05089 Phone: 802-674-2033 Fax: 802-674-5943 1233 Shelburne Rd, Suite 360 South Burlington, VT 05403 Phone: 802-652-5140</p>					
Boring Company: Seaboard Drilling Foreman: Chris Aldrich GeoDesign Rep.: Jake Wilmatt Date Started: July 21, 2006 Date Finished: July 21, 2006 N. Coordinate: E. Coordinate: Ground Surface Elevation (feet): Station: Offset: ft		Casting: Samplers: Groundwater Observations Type: H.S.A. SS Date Depth (ft) Elev. (ft) Notes L.D.: 2.25 in. 1.38 in. Hammer Wt.: NA 140 lbs. 7/21/06 0:00 None observed Hammer Fall: NA 30 in. Rig Type: Simpson 2800 Hammer Type: Safety Hammer			
Sample Information		Strata Description		Sample Description	
Depth (ft)	Coring Interval (ft)	Strata Description	Symbol	Classification System:	Notes
1	0 - 2	Topsoil	1	Loose, brown	
2	2 - 4	Sandy Silt	2	Top 4": TOPSOIL Bottom 13": fine SAND, little (+) Silt, trace coarse Sand, (moist)	
3	4 - 5			Medium dense, tannish brown fine SAND and SILT, trace coarse Sand and fine Gravel, trace Root fibers, (moist)	
4	5 - 8			Dense, brownish gray SILT, some fine Sand, little fine to coarse Gravel, trace Root fibers, (with pieces of fractured Rock throughout sample), (moist)	
5	8 - 10	Glacial Till	5	Very dense, brownish gray fine to medium SAND, little Silt, little fine Gravel, (moist)	
6	10 - 20	Bottom of Exploration at 8.0 ft			
Auger grinding and chatter at 3.5 feet below grade. Stopped augers at 3.8 feet below grade; grinding on inferred rock; auger refusal at 5.8 feet below grade; relocated borehole 5 feet west. Continued sampling with S-3 at 4 feet below grade.					
Notes: 1) Soil Samples screened in the field using a Thermal Environmental Systems Model 5805 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. 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; W/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.					
				Boring No.: B-53	

BORING LOG		Boring No.:	HA-1		
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Boring Company: Foreman: GeoDesign Rep.: Date Started: N. Coordinate: Ground Surface Elevation (feet): Station: Offset: ft		Casting: Samplers: Groundwater Observations Type: Date Depth (ft) Elev. (ft) Notes Hammer Wt.: Hammer Fall: Rig Type: Hammer Type:			
Sample Information		Strata Description		Sample Description	
Depth (ft)	Coring Interval (ft)	Strata Description	Symbol	Classification System:	Notes
5	5 - 5.5				
5	5.5 - 10				
10	10 - 15				
15	15 - 20				
20	20 - 25				
Notes: 1) Soil Samples screened in the field using a Thermal Environmental Systems Model 5805 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. 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; W/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.					
				Boring No.: HA-1	

BORING LOG		Boring No.:	HA-3B		
Project Name		Page No.:	1 of 1		
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<p>GEODESIGN INCORPORATED Geotechnical Engineers-Environmental Consultants-Construction Engineers P.O. Box 699 Windsor, VT 05089 Phone: 802-674-2033 Fax: 802-674-5943 1233 Shelburne Rd, Suite 360 South Burlington, VT 05403 Phone: 802-652-5140</p>					
Boring Company: Foreman: GeoDesign Rep.: Date Started: N. Coordinate: Ground Surface Elevation (feet): Station: Offset: ft		Casting: Samplers: Groundwater Observations Type: Date Depth (ft) Elev. (ft) Notes Hammer Wt.: Hammer Fall: Rig Type: Hammer Type:			
Sample Information		Strata Description		Sample Description	
Depth (ft)	Coring Interval (ft)	Strata Description	Symbol	Classification System:	Notes
5	5 - 5.5				
5	5.5 - 10				
10	10 - 15				
15	15 - 20				
20	20 - 25				
Notes: 1) Soil Samples screened in the field using a Thermal Environmental Systems Model 5805 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. 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; W/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.					
				Boring No.: HA-3B	

- Notes: 1) Soil Samples screened in the field using a Thermal Environmental Systems Model 5805 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; W/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 th e 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 (dell, 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.

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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: z05h378shf.br 1.dgn
 PROJECT LEADER: S. FORTNEY
 DESIGNED BY: S. BOUCHARD
 BORING LOGS B53-HA-3B
 PLOT DATE: 11/22/2011
 DRAWN BY: D. STANDISH
 CHECKED BY: J. DOWNAR
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