

SOIL CLASSIFICATION

AASHTO

- A1 GRAVEL AND SAND
- A2 SILTY OR CLAYEY GRAVEL AND SAND
- A3 FINE SAND
- A4 SILTY SOIL - LOW COMPRESSIBILITY
- A5 SILTY SOIL - HIGHLY COMPRESSIBLE
- A6 CLAYEY SOIL - LOW COMPRESSIBILITY
- A7 CLAYEY SOIL - HIGHLY COMPRESSIBLE

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	VERY POOR
25 to 50	POOR
51 to 75	FAIR
76 to 90	GOOD
>90	EXCELLENT

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	VERY SOFT
250-500	SOFT
500-1000	MED. STIFF
1000-2000	STIFF
2000-4000	VERY STIFF
>4000	HARD

CORRELATION GUIDE OF "N" TO DENSITY /CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	VERY LOOSE	<2	VERY SOFT
5-10	LOOSE	2-4	SOFT
11-24	MED. DENSE	5-8	MED. STIFF
25-50	DENSE	9-15	STIFF
>50	VERY DENSE	16-30	VERY STIFF
		31-60	HARD
		>60	VERY HARD

COMMONLY USED SYMBOLS

- ▼ WATER ELEVATION
- ⊙ STANDARD PENETRATION BORING
- ⊕ AUGER BORING
- ⊖ ROD SOUNDING
- S SAMPLE
- N STANDARD PENETRATION TEST
- BLOW COUNT PER FOOT FOR:
 - 2" O.D. SAMPLER
 - 1 1/2" I.D. SAMPLER
 - HAMMER WEIGHT OF 140 LBS.
 - HAMMER FALL OF 30"
- VS FIELD VANE SHEAR TEST
- US UNDISTURBED SOIL SAMPLE
- B BLAST
- DC DIAMOND CORE
- MD MUD DRILL
- WA WASH AHEAD
- HSA HOLLOW STEM AUGER
- AX CORE SIZE 1/8"
- BX CORE SIZE 1/4"
- NX CORE SIZE 3/8"
- M DOUBLE TUBE CORE BARREL USED
- LL LIQUID LIMIT
- PL PLASTIC LIMIT
- PI PLASTICITY INDEX
- NP NON PLASTIC
- W MOISTURE CONTENT (DRY WGT. BASIS)
- D DRY
- M MOIST
- MTW MOIST TO WET
- W WET
- SAT SATURATED
- BO BOULDER
- GR GRAVEL
- SA SAND
- SI SILT
- CL CLAY
- HP HARDPAN
- LE LEDGE
- NLTD NO LEDGE TO DEPTH
- CNPF CAN NOT PENETRATE FURTHER TO LEDGE OR BOULDER
- TLOB TO LEDGE OR BOULDER
- NR NO RECOVERY
- REC. RECOVERY
- %REC. PERCENT RECOVERY
- ROD ROCK QUALITY DESIGNATION
- CBR CALIFORNIA BEARING RATIO
- < LESS THAN
- > GREATER THAN
- R REFUSAL (N>100)

COLOR

blk	BLACK	pnk	PINK
bl	BLUE	pu	PURPLE
brn	BROWN	rd	RED
dk	DARK	tn	TAN
gry	GRAY	wh	WHITE
gn	GREEN	yel	YELLOW
lt	LIGHT	mltc	MULTICOLORED
or	ORANGE		



STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: B-101
SHEET 1 of 1
DATE STARTED: 8/10/07
DATE COMPLETED: 8/10/07

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
		PROJECT NAME: ESSEX TOWN SITE NAME: VT117/TH4 STATION: 173+46.24 OFFSET: 30.64 VTSPG: N 721767.45 ft E 1497074.31 ft							
		PROJECT NUMBER: STP 5400(5) SITE NUMBER: POLE BASE GROUND ELEVATION: 303.44 ft GROUNDWATER DEPTH: Hole Cave in at 16.0 ft PROJECT PIN NUMBER: 97D002							
		BORING CREW CREW CHIEF: PORTER DRILLER: PORTER LOGGER: WERNER							
		BORING RIG: LAG TRACK RIG w/AUTO HAMMER BORING TYPE: HOLLOW STEM AUGER SAMPLE TYPE: SPLIT BARREL CHECKED BY: CAA							
0		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft	16	8.6	13.6	65.7	20.7		
1		Field Note, No Recovery, Stone in end of sampler	6						
2		A-3, Sa, brn, Moist, Rec. = 1.6 ft	5	7.2	1.8	91.5	6.7		
3		A-3, Sa, brn, Moist, Rec. = 1.6 ft	7	8.4	1.3	89.4	9.3		
4		A-2-4, Sa, gry, Moist, Rec. = 1.5 ft	8	9.9	2.3	79.1	18.6		
5		A-2-4, SiSa, gry, Moist, Rec. = 1.4 ft	9	15.8	2.0	68.2	29.8		
6		A-2-4, Sa, gry, Wet, Rec. = 1.3 ft	8	23.1	1.1	86.1	12.8		
7		A-2-4, SiSa, brn, Wet, Rec. = 1.3 ft	7	23.4	2.2	76.7	21.1		
8		A-3, Sa, brn, Wet, Rec. = 2.0 ft	6	22.2	1.5	94.1	4.4		
9		A-3, Sa, brn, Wet, Rec. = 2.0 ft	6	26.1	0.2	97.5	2.3		
10		A-1-b, Sa, brn, Wet, Rec. = 0.7 ft	3	23.5	9.5	84.4	6.1		
11		Field Note, Tough drilling in Cobbles and gravel material at 22.5 ft.							
12		A-3, Sa, brn, Wet, Rec. = 0.5 ft	11	20.0	5.6	90.8	3.6		
13		A-4, SaSi (HP), gry, Moist, Rec. = 1.3 ft		10.1	18.9	29.2	51.9	16	4
14									
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25									
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28									
29									
30		A-1-b, GrSa, gry, Wet, Rec. = 1.1 ft	39	14.1	32.4	54.5	13.1		
31		Hole stopped @ 32.0 ft							
32		DRILLER'S NOTE: 1. Possible water table at 12.0 ft							

LOG OF BORING ESSEX TOWN STP 5400(5).GPJ VT AOT.GBT 6/30/09

GENERAL NOTES

- THE SUBSURFACE EXPLORATIONS SHOWN HEREIN WAS MADE ON AUGUST 10, 2007 BY THE AGENCY.
- SOIL AND ROCK CLASSIFICATIONS, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION FROM AVAILABLE SUBSURFACE INFORMATION BY THE AGENCY AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
- OBSERVED WATER LEVELS AND/OR CONDITIONS INDICATED ARE AS RECORDED AT THE TIME OF EXPLORATION AND MAY VARY ACCORDING TO THE PREVAILING RAINFALL, METHODS OF EXPLORATION AND OTHER FACTORS.
- ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREIN. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTERPRETED FOR AGENCY DESIGN AND ESTIMATING PURPOSES. PRESENTATION OF THE INFORMATION IN THE CONTRACT IS INTENDED TO PROVIDE THE CONTRACTOR ACCESS TO THE SAME DATA AVAILABLE TO THE AGENCY. THE SUBSURFACE INFORMATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION, INDEPENDENT INTERPRETATION, INDEPENDENT ANALYSIS OR JUDGEMENT BY THE CONTRACTOR.

DEFINITIONS (AASHTO)

- BEDROCK (LEDGE)** - ROCK IN ITS NATIVE LOCATION OF INDEFINITE THICKNESS.
- BOULDER** - A ROCK FRAGMENT WITH AN AVERAGE DIMENSION >12 INCHES.
- COBBLE** - ROCK FRAGMENTS WITH AN AVERAGE DIMENSION BETWEEN 3" AND 12 INCHES.
- GRAVEL** - ROUNDED PARTICLES OF ROCK <3" AND > 0.075" (#10 SIEVE).
- SAND** - PARTICLES OF ROCK < 0.075" (#10 SIEVE) AND > 0.0029" (#200 SIEVE).
- SILT** - SOIL < 0.0029" (#200 SIEVE), NON OR SLIGHTLY PLASTIC AND EXHIBITS NO STRENGTH WHEN AIR-DRIED.
- CLAY** - FINE GRAINED SOIL, EXHIBITS PLASTICITY WHEN MOIST AND CONSIDERABLE STRENGTH WHEN AIR-DRIED.
- VARVED** - ALTERNATE LAYERS OF SILT AND CLAY.
- HARDPAN** - EXTREMELY DENSE SOIL, CEMENTED LAYER, NOT SOFTENED WHEN WET.
- MUCK** - SOFT ORGANIC SOIL (CONTAINING > 10% ORGANIC MATERIAL).
- MOISTURE CONTENT** - WEIGHT OF WATER DIVIDED BY DRY WEIGHT OF SOIL.
- FLOWING SAND** - GRANULAR SOIL SO SATURATED (LOOSE) THAT IT FLOWS INTO DRILL CASING DURING EXTRACTION OF WASH ROD.
- STRIKE** - ANGLE FROM MAGNETIC NORTH TO LINE OF INTERSECTION OF BED WITH A HORIZONTAL PLANE.
- DIP** - INCLINATION OF BED WITH A HORIZONTAL PLANE.

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002frm.dgn PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
BORING SHEET SHEET 43 OF 64