


GEOTECHNICAL UNIT

SOIL AND ROCK CLASSIFICATION, LEGEND, AND ABBREVIATIONS

SOIL LEGEND AND AASHTO CLASSIFICATION										CONSISTENCY OR DENSENESS				
GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)			ORGANIC MATERIALS		PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (N - VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (qu) (kN / m ²)
GROUP CLASS.	A-1	A-3	A-2			A-4	A-5	A-6	A-7	A-1,A-2 A-3	A-4,A-5 A-6,A-7			
SYMBOL														
% PASSING	#10 #30 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX 35 MX	35 MX 35 MX	35 MX 35 MX	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
(PASSING #40) LL PI		6 MX	N.P.	40 MX 10 MX	41 MN 10 MX	41 MN 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX						
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS GRAVEL & SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND		SILTY SOILS		CLAYEY SOILS							
* PI OF A-7-5 ≤ (LL-30); PI OF A-7-6 > (LL-30)														
TEXTURE OR GRAIN SIZE														
BOULDER	COBBLE	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY								
GRAIN (mm)	305	75	2	0.25	0.05	0.005								
SIZE (IN)	12	3												
SOIL MOISTURE - CORRELATION OF TERMS														
SOIL MOISTURE SCALE (ATTERBERG LIMITS)			FIELD MOISTURE DESCRIPTION			GUIDE FOR FIELD MOISTURE DESCRIPTION								
LL	LIQUID LIMIT		-SATURATED- (SAT.)			USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE								
PL	PLASTIC LIMIT		-WET- (W)			SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE								
OM	OPTIMUM MOISTURE		-MOIST- (M)			SOLID; AT OR NEAR OPTIMUM MOISTURE								
SL	SHRINKAGE LIMIT		-DRY- (D)			REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE								
ROCK DESCRIPTION														
IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:														
TERM	SYMBOLS				DESCRIPTION									
HARD ROCK (HR)	CORED ROCK		INFERRED ROCK LINE		MATERIAL THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE									
WEATHERED ROCK (WR)	HARD WEATHERED ROCK (HWR)		SOFT WEATHERED ROCK (SWR)		MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGERS AND YIELDS SPT REFUSAL									
¹ SPT REFUSAL ≤ 2.5 cm of PENETRATION PER 50 BLOWS IN SPT. ² AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. THE HARD ROCK SYMBOL IS SHOWN WHEN ROCK IS CORED AND ONLY TO THAT DEPTH CORED. A DESCRIPTION OF ROCK IS GIVEN, INCLUDING: CORE RECOVERY (REC.) - TOTAL LENGTH OF ROCK RECOVERED IN THE CORE BARREL DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%. ROCK QUALITY DESIGNATION (ROQ) - TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 0.1 m DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.														
GROUND WATER														
▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING (I.A.D.) ▽ L SOON AFTER DRILLING (____ HRS.) ▽ STATIC WATER LEVEL (AFTER 24 HRS.) ▽ PERCHED WATER (PW), SATURATED ZONE, OR WATER BEARING STRATA ◊ SPRING OR SEEPAGE														
MISCELLANEOUS SYMBOLS AND ABBREVIATIONS														
LL	ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				SPT TEST BORING		SAMPLE DESIGNATIONS							
X	SOIL SYMBOL				⊕ AUGER BORING		S-BULK SAMPLE							
X	ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS				⊙ CORE BORING		SS-SPLIT SPOON SAMPLE							
-	INFERRED SOIL BOUNDARIES				△ PIEZOMETER INSTALLATION		ST-SHELBY TUBE SAMPLE							
25°	STRIKE AND DIP				○ SLOPE INDICATOR INSTALLATION		RS-ROCK SAMPLE							
↘	APPARENT DIP (NORMAL TO _____)				○ SPT N-VALUE									
●	ROD SOUNDING				○ MONITORING WELL									
ABBREVIATIONS														
ALLUV.	ALLUVIUM				MIC.	MICACEOUS								
AR	AUGER REFUSAL				MOT.	MOTTLED								
BLDR.	BOULDER				N	BLOWS / 30 CM								
CALC.	CALCAREOUS				NS	NO SAMPLE TAKEN								
CL.	CLAY				ORG.	ORGANIC								
CLY.	CLAYEY				P.P.	POCKET PENETROMETER								
COB.	COBBLE				REF.	REFER TO								
CSE.	COARSE				RES.	RESIDUAL								
DPT	DYNAMIC PENETRATION TEST				S.	SOFT								
EST.	ESTIMATED				SAT.	SATURATED								
F.	FINE				SD.	SAND								
FIAD	FILLED IMMED. AFTER DRILLING				SDY.	SANDY								
FOSS.	FOSSILIFEROUS				SED(S).	SEDIMENT(S)								
FRAC.	FRACTURED				SL.	SILT, SILTY								
FRAG(S).	FRAGMENT(S)				SLL.	SLIGHTLY								
GR.	GRAVEL				SPT	STANDARD PENETRATION TEST								
GS	SPECIFIC GRAVITY				TS.	TOPSOIL								
GW	GROUND WATER				VST	VANE SHEAR TEST								
MED.	MEDIUM				V.	VERY								
					W/	WITH								
BENCH MARK: NCCS MON. 'W109' 4.5 m LT OF STA. 182+02 ELEV. 10.862														
STATE PROJECT NO. 8.1190301														
T.I.P. NO. R-2514A F.A. NO. NHF-17(17)														
COUNTY ONSLOW ROUTE US 17														
SITE DESCRIPTION -L- (US 17) OVER STARKY'S CREEK														
PROJECT GEOLOGIST SSB SUBMITTED BY RRW														
PERSONNEL WTH MBO CRB DATE SUBMITTED 9/99														
 SEAL Signature <i>Robert Ray White</i>														