NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

 ID
 STATE PROJECT NO. SHEET NO. TOTAL SHEETS

 B-4044
 33410.1.1
 2
 25

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

	•			SOIL AND ROC	K LEGEND, TERM	S, SYMBOLS, A	ND ABBREV	IATIONS		
MHICH CAN BE PENETRATED WITH A CT 180 BLOWS PER FOOT ACCORDING TO S CLASSIFICATION IS BASED ON THE ARC CONSISTENCY, COLOR, TEXTURE, MOISTUR AS MINERALOGICAL COMPOSITION, AND STIPLE AS MINERALOGICAL COM	1 285% PASSING "2860" A-2	CH YIELDS LESS THAN BR, ASTM D-1686, SOIL ENERALLY SHALL INCLUDE: ERTINENT FACTORS SUCH PLE: PLASTIC A76 CATION ORGANIC MATERIALS A-1, A-2 A-4, A-5 A-3 A-6, A-7 GRANLLAR SOILS SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER FAIR TO PORG MAGNITABLE INCLUDE: HACK, SOILS SOILS SOILS ORGANIC MATTER	INICIONAL INDICATES THAT SOIL PP POORLY CRADED GAP-CRADED- INDICATES A MIXTURE THE ANGULARITY OR ROUNDNESS O SUBANGULAR, SUBROUNDED, OR ROU MINERAL NAMES SUCH AS QUARTZ, WHENEVER THEY ARE CONSIDERED IN SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE TRACE OF ORGANIC MATTER 2 LITTLE ORGANIC MATTER 2 LITTLE ORGANIC MATTER 3 MODERATELY ORGANIC 5 HIGHLY ORGANIC 5 HIGHLY ORGANIC 5 WATER LEVE	GRADATION REPRESENTATION OF PARTICLE SIZES FRO RETICLES ARE ALL APPROXIMATELY THE SI DE UNIFORM PARTICLES OF TWO OR MOR ANGULARITY OF GRAINS F SOIL GRAINS ARE DESIGNATED BY THE NOED. INERALOGICAL COMPOSITION FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE US DESIGNIFICANCE. COMPRESSIBILITY BLE LIQUID LIMIT D LIQUID LIMIT G PERCENTAGE OF MATERIAL MEAR SILT-DIAY	DM FINE TO COARSE AME SIZE. (ALSO RE SIZES. TERPISE AMGULAR, N SED IN DESCRIPTIONS LESS THAN 38 31-58 REATER THAN 58 DIHER MATERIAL E 1 - 18% LE 19 - 28% LE 28 - 35% LY 35% AND ABOVE DRILLING.	HARD ROCK IS NON-COME ROCK LINE INDICATES SPT REFUSAL IS PENET IN NON-COASTAL PLAIN OF WEATHERED ROCK. ROCK MATERIALS ARE WEATHERED ROCK (WRD) CRYSTALLINE ROCK (WRD) CRYSTALLINE ROCK (MCR) COASTAL PLAIN SEDIMENTARY ROCK (WCR) FRESH ROCK FRESH HAMMER IF VERY SLIGHT ROCK GENET ROCK GENT ROCK GENET ROCK GENET ROCK GENET ROCK GENET ROCK GENET ROCK GE	ROCK ASTAL PLAIN MATERIAL THE THE LEVEL AT WHICH NON- INTATION BY A SPLIT SPON IN MATERIAL. THE TRANSITI TYPICALLY DIVIDED AS FOR MON-COASTAL IS PER FOOT. FINE TO COARS SCIMENTARY R INCLUDES PHYL COASTAL PLAIN SPET REFUSAL. SHELL BEDS. ET CRYSTALS BRIGHT, FEW. CRYSTALLINE. CRALLY FRESH, JOINTS STAL EN JOINTS MAY CONTAIN CO ARE DULL AND DISCOLORE ET AT PORTIONS OF ROCK SHOO TO PORTIONS OF ROCK SHOO	DESCRIPTION AT WHEN TESTED, WOULD YIELD SP COASTAL PLAIN MATERIAL WOULD IN SAMPLER EQUAL TO DR LESS TH ON BETWEEN SOIL AND ROCK IS OF DWS: PLAIN MATERIAL THAT YIELDS SPT E GRAIN IGNEOUS AND METAMORPH IPT REFUSAL IF TESTED, ROCK TH	VIELD SPT REFUSAL. N BL FOOT PER 68 BLDWS. TEN REPRESENTED BY A ZONE N VALUES > 100 BLDWS C ROCK THAT E INCLUDES CRANITE, MASTAL PLAIN MASTAL PLAIN BUT MAY NOT YIELD ANDSTONE, CEMENTED CLAY COATINGS IF OPEN, NOER HAMMER BLOWS IF INTO ROCK UP TO CASIONAL FELDSPAR HAMMER BLOWS. EFFECTS. IN DOW CLAY, ROCK HAS	TERMS AND DEFINITIONS ALLUVIUM (ALLUV) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER, AQUIFER - A WATER BEARING FORMATION OR STRATA, ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND, ARGULACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MIDERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC., ARTESIAN - GROUND WATER THAT IS LINDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL. AT WHICH IS IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO DR ABOVE THE CROUND SURFACE. CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE, COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY BREC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABLAR BODY OF ICKNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKNISE FROM NORTH, FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO DNE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRACHENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL.
SUBCRANCE P.I. OF A-7- COI PRIMARY SOIL TYPE COMPACT CONSI CENERALLY CRANULAR MATERIAL (NON-COHESIVE) CENERALLY SOF MATERIAL (COHESIVE) U.S. STO. SIEVE SIZE OPENING (MM) BOULDER USLORJ COMBLE (COB.)	5 ≤ L.L 30 : P.I. OF A-7-6 > L. NSISTENCY OR DENSENESS TNESS OR STEENCY PENETRATION RESISTENCE ON-VALUE) LOOSE SE	POOR	ROADWAY EMBANKMEN WITH SOIL DESCRIPTION OF SOIL SYMBOL ARTIFICIAL FILL OTH ROADWAY EMBANKMEN INFERRED SOIL BOUND INFERRED ROCK LINE TTTTTT ALLUVIAL SOIL BOUND INFERRED ROCK STRUCTURES O SOUNDING ROD AR - AUGER REFUSAL BT - BORING TERMINATED CL CLAY	TON TON AUGER BORING OARIES OARIES DARY F ABBREVIATIONS TOPT OPT OPT OPT OPT OPT OPT OPT OPT OPT	SAMPLE DESIGNATIONS S- BULK SAMPLE SS- SPLIT SPOON SAMPLE ST- SHELBY TUBE SAMPLE RS- ROCK SAMPLE RT- RECOMPACTED TRICKIAL SAMPLE CBR - CBR SAMPLE W - MOISTURE CONTENT V, - VERY VST - VANE SHEAR TEST	WITH FRES MODERATELY SEVERE AND DISCO PHOD. SEV.) AND CAN B IF TESTED. SEVERE ALL ROCKS (SEV.) IN STRENG EXTENT. SI CHESTED. VERY SEVERE ALL ROCK (V. SEV.) THE MASS REMAINING. VESTICES COMPLETE ROCK REDU SCATTERED ALSO AN E VERY HARD CANNOT B SEVERAL HARD CAN BE S TO DETAC MODERATELY CAN BE S HARD EXCAVATE BY MODER	HI ROCK. EXCEPT QUARTZ DISCOLORE LORGO AND A MAJORITY SHE EXCAVATED WITH A CEOL LORGO AND A MAJORITY SHE EXCAVATED WITH A CEOL LORGO YELLO SPT REFUSA STATE TO STRONG SOIL. IN GE SOME FRAGMENTS OF STRONG LYIELDS SPT. N. YALUES. J. EXCEPT QUARTZ DISCOLORE EXCEPT QUARTZ DISCOLORE IS SEPECTIVELY REQUICED. SAPPOLITE IS AN EXAMPL OF THE ORIGINAL ROCK FABRIC D CONCENTRATIONS. QUARTZ EXAMPLE. ROCK BE SCRATCHED BY KNIFE OF PI CHAND SPECIMEN. SCRATCHED BY KNIFE OR PI CHAND SPECIMEN. SCRATCHED BY KNIFE OR PI CHAND SPECIMEN.	O OR STAINED. IN GRANITOID ROCK OM KAOLINIZATION, ROCK SHOWS S OGIST'S PICK, ROCK GIVES "CLUAK" L RED OR STAINED, ROCK FABRIC CLE- IANITOID ROCKS ALL FELDSPARS AL G ROCK USUALLY REMAIN, IND BPF TO SOIL STATUS, WITH DWLY FRAGE E OF ROCK WEATHERED TO A DECR SIRIC REMAIN, IF TESTED, YIELDS THOS DISCERNIBL MAY BE PRESENT AS DIKES OR ST K SHARP PICK, BREAKING OF HAND	S, ALL FELDSPARS DULL EVERE LOSS OF STRENGTH SOUND WHEN STRUCK. AR AND EVIDENT BUT REDUCED E KAOLINIZED TO SOME ENTS ARE DISCERNIBLE BUT ENTS OF STRONG ROCK EE SUCH THAT ONLY MINOR SPT. N. VALUES & LOB BPF E ONLY IN SMALL AND RINGERS. SAPROLITE IS SPECIMENS REQUIRES MANNER BLOWS REQUIRED INCHES DEEP CAN BE	ITS LATERAL EXTENT. LEMS - A BODY OF SOIL OR ROCK THAT THINS DUT IN ONE OR MORE DIRECTIONS. MOTTLED MOTJ. IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USWALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION BROODJ - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SECPHENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AN EXPRESSED AS A PERCENTAGE. SAPROLITE ISAPJ - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THEORIESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, WHICH HAS BEEN EMPLACED PARALLEL TO THE BEDOING OR SCHISTOSITY OF THE INTRUCED ROCKS SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
GRAIN MM 305 75 SIZE IN. 12" 3" SOIL MOISTURE SCALE (ATTERBERG LIMITS) LIL PLASTIC RANGE (P) PL OPTIMUM MOISTURE SL OPTIMUM MOISTURE SL SHRIMKAGE LIMIT NOMPLASTIC LOW PLASTICITY HIGH PLASTICITY HIGH PLASTICITY	- SATURATED - USUALLY FROM BEI - WET - (M) SEMISOLI ATTAIN D - MOIST - 040 SOLID; A REDUIRES	R.85 8.895 TERMS R FIELD MOISTURE DESCRIPTION LIQUID; VERY WET, USUALLY LOW THE GROUND WATER TABLE D; REQUIRES DRYING TO PTIMUM MOISTURE AT OR NEAR OPTIMUM MOISTURE G ADDITIONAL WATER TO PTIMUM MOISTURE ORY STRENGTH VERY LOW SLIGHT MEDIUM HIGH	CPT - COME PENETRATION TEST CSE COARSE CT - CORING TERMINATED DMT - DILATOMETER TEST DPT - DYMANIC PENETRATION T O - VOID RATIO F FINE FOSS FOSSILIFEROUS FRAC FRACTURED FRACS FRACTURED ORILL UNITS: MOBILE B- DRE-45 CME-45 CME-558 PORTABLE HOIST	PMT - PRESSUREMETER TEST SO SAND, SANDY SL SILT, SILTY SLI SLIGHTLY TCR - TRICOME REFUSAL 7 - UNIT MEIGHT 7 - DRY UNIT MEIGHT MENT USED ON SUBJECT PF ADVANCING TOOLS: CLAY BITS 6 CONTINUOUS FLIGHT AUGER X 6 HOLLOW AUGERS HARD FACED FINGER BITS TUMGCARBIDE INSERTS CASING V ADVANCER TRICOME STEEL TEETH TRICOME TUMGCARB.	.0 VOH - WEIGHT OF HAMMER	MEDIUM CAN BE DE HARD CAN BE E POINT OF SOFT CAN BE CE FROM CHI PIECES C VERY CAN BE CE SOFT OR MORE FINCERNAL FRACTURE TERM VERY VIDE WIDE MODERATELY CLOSE CLOSE VERY CLOSE	CROOVED OR COUGED 8.85 I EXCAVATED IN SMALL CHIPS FA CEOLOGISTS PICK. CROVED OR COUGED READILY IPS TO SEVERAL INCHES IN CAN BE BROKEN BY FINGER CARRYED WITH KNIFE. CAN BE IN THICKNESS CAN BE BRO ILL E SPACING MORE THAN 18 FEET 3 TO 18 FEET 1 TO 3 FEET LESS THAN 8.16 FEET LESS THAN 8.16 FEET INDURATION IS THE HARDE RUBBIN GENTLE MOURATED ROLL ROLL ROLL ROLL ROLL ROLL ROLL ROL	EXCAVATED READILY WITH POINT KEN BY FINGER PRESSURE. CAN BE BEOD! IERM VERY THICKLY BEDOED THICKLY BEDOED THICKLY BEDDED OF THINLY BEDDED THICKLY LAMINATED THINLY LAMINATED DURATION NING OF THE MATERIAL BY CEMEN. G WITH FINGER FREES NUMEROUS C BLOW BY MAMMER DISINTEGRATES CAN BE SEPARATED FROM SAMPLE EASILY WHEN HIT WITH MAMPER. ARE DIFFICULT TO SEPARATE WIT	BY HARD BLOWS OF THE VATED IN FRACHENTS PICK POINT. SHALL, THIN OF PICK, PIECES 1 INCH SCRATCHED READILY BY NG THICKNESS > 4 FEET 1.5 - 4 FEET 8.83 - 8.16 FEET 8.83 - 8.16 FEET 8.80 - 8.83 FEET 4 8.806 FEET 1.50, HEAT, PRESSURE, ETC. RAINS; SAMPLE. WITH STEEL PROBE;	STANDARD PENETRATION TEST DENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS ON OR R.P.F.D.CF A 148 LB, HAMMER FALLING 38 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS LESS THAN BLI FOOT PENETRATION WITH 68 BLOWS. STRATA CORE RECOVERY (SRCL) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (S.R.O.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS MITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY TH TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. IOPSOIL (T.S.J SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: BM *2 = No.11 to Poplor = Sto 15+58.1, 106.2* RT -BL- ELEVATION: 1022.75 ft NOTES:
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.				CORE BIT OTHER	WHE SHEAR TEST	EXTREMELY IM	OURATED SHARP	JLT TO BREAK WITH HAMMER. HAMMER BLOWS REQUIRED TO BREA BREAKS ACROSS GRAINS.	K SAMPLE:	#EVISED 09/15/00
										ME AJOUR ON DAYOR