5610 Ö REFERENCE

CONTENTS

DESCRIPTION TITLE SHEET

LEGEND (SOIL & ROCK)

SITE PLAN

BORE LOGS

PROFILE

SHEET NO.

5-6

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY <u>DARE</u>

PROJECT DESCRIPTION BRIDGE NO. 8 ON -L- (NC 12) OVER SLASH CREEK AT STA. 15 + 42.50

STATE PROJECT REFERENCE NO. B-5610 6

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (1919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORNDS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU LINE-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE DESTREED HAVE THE VELES OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY YARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS,

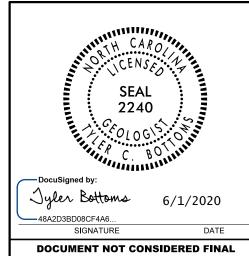
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DIES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OF FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS FOR THE THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- IES:
 THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT
 OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS
 OR CONTRACT FOR THE PROJECT.
 BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS
 FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE
 CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL S.N. ZIMARINO R.E. SMITH D.G. PINTER INVESTIGATED BY __T.C. BOTTOMS DRAWN BY _S.N. ZIMARINO

SUBMITTED BY <u>D.N.</u> ARGENBRIGHT

DATE NOVEMBER 2019



UNLESS ALL SIGNATURES COMPLETED

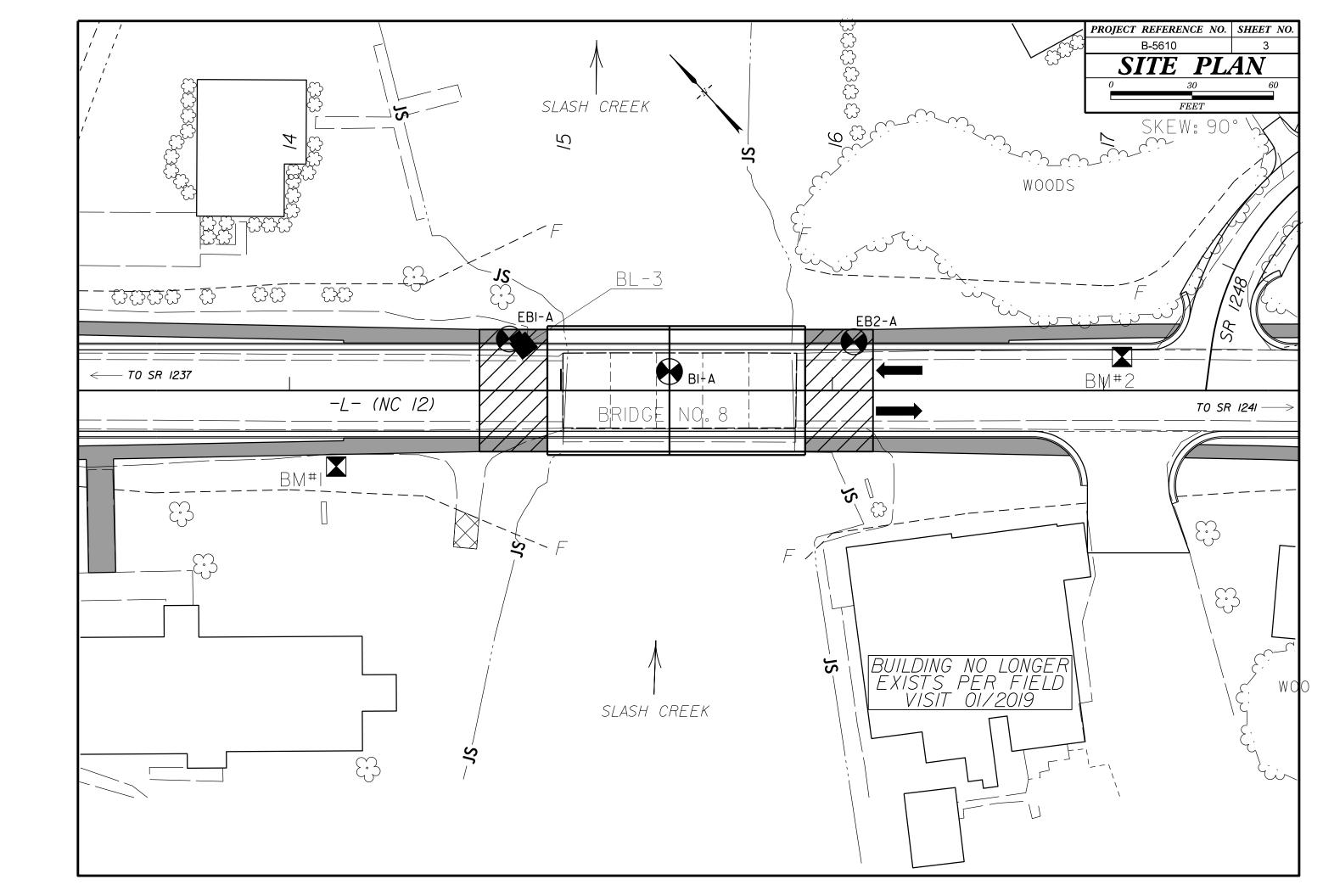
PROJECT REFERENCE NO. SHEET NO. 2

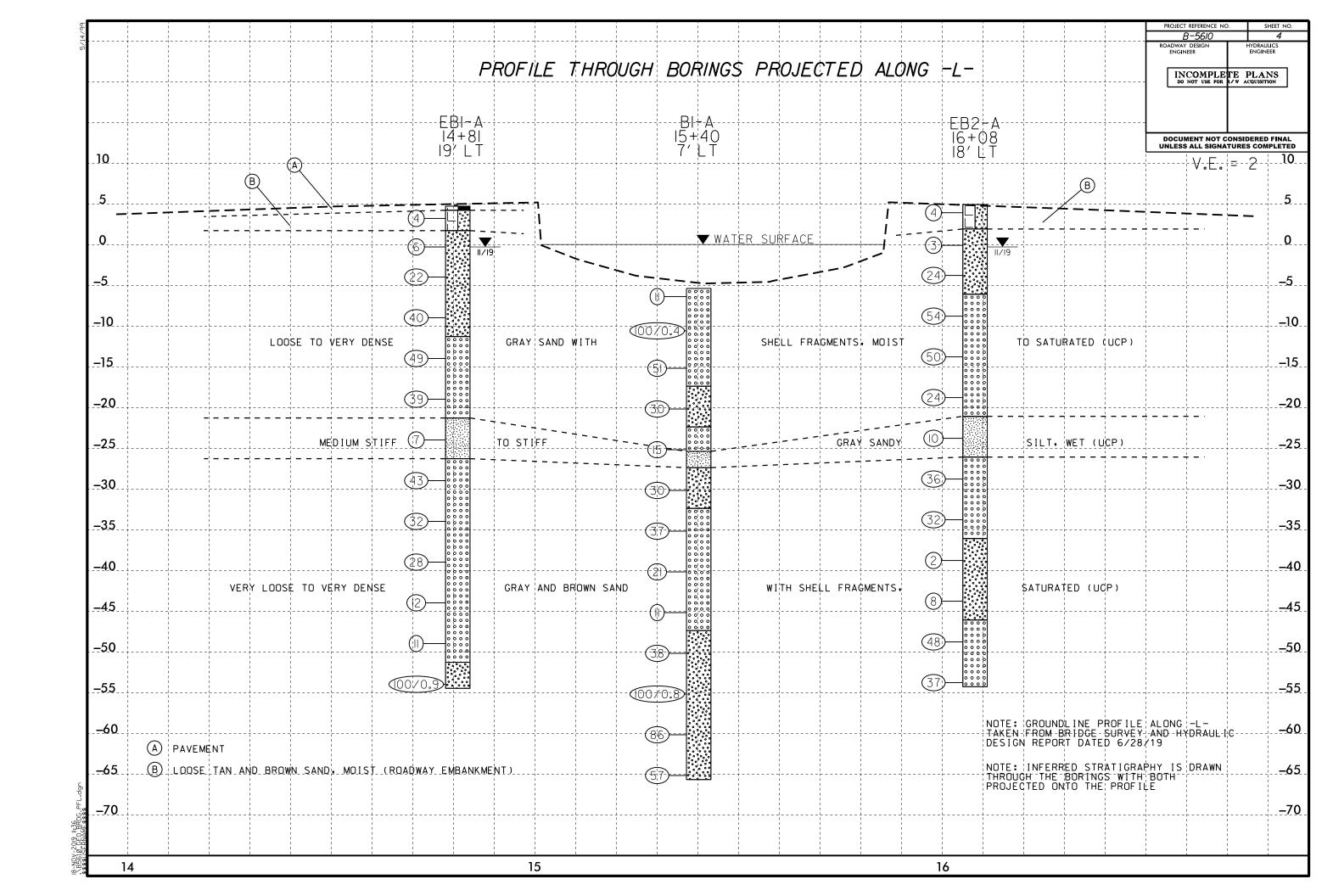
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

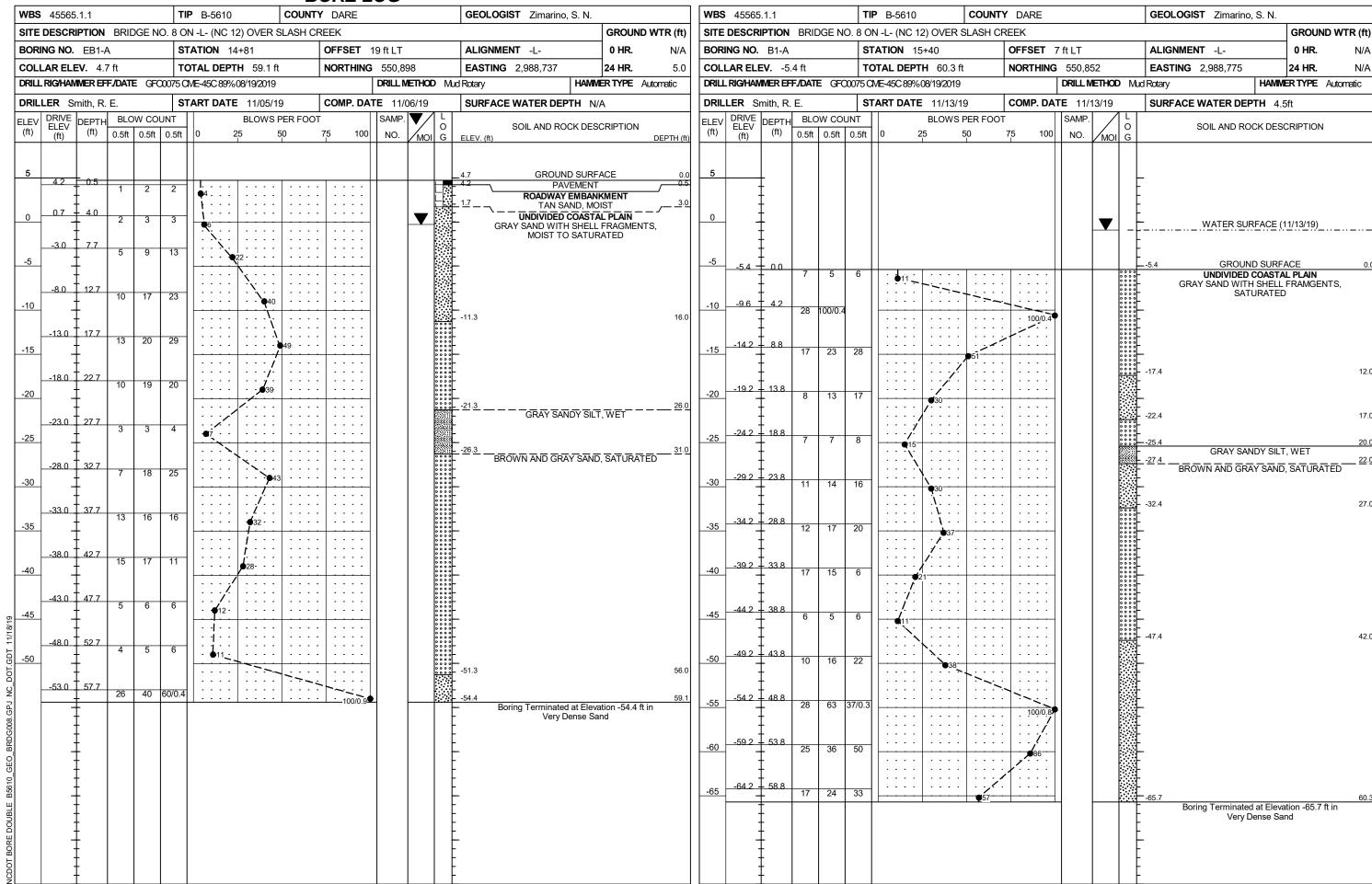
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

| SOIL DESCRIPTION | GRADATION | ROCK DESCRIPTION | TERMS AND DEFINITIONS |
|--|--|---|---|
| SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT | WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. | HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. | ALLUYIUM (ALLUY.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. |
| ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION | GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES. | SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN | ADUIFER - A WATER BEARING FORMATION OR STRATA. |
| IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH | ANGULARITY OF GRAINS | REPRESENTED BY A ZONE OF WEATHERED ROCK. | ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. |
| AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6 | THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: | ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: | ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. |
| SOIL LEGEND AND AASHTO CLASSIFICATION | ANGULAR, <u>SUBANGULAR, SUBROUNDED</u> , OR <u>ROUNDED</u> . | WEATHERED // NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > ROCK (WR) 100 BLOWS PER FOOT IF TESTED. | ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT |
| GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS | MINERALOGICAL COMPOSITION | CRYSTALLINE CRYSTALLINE CRYSTALLINE CRYSTALLINE | WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND |
| LLASS. (≤ 35% PASSING "2001) (> 35% PASSING "2001) | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE. | ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. | SURFACE. <u>CALCAREOUS (CALC.)</u> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. |
| GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 B-2-6 A-2-7 A-4, A-5 A-3 A-6, A-7 | COMPRESSIBILITY | NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN | COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM |
| SYMBOL 000000000000000000000000000000000000 | SLIGHTLY COMPRESSIBLE LL < 31 | ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. | OF SLOPE. |
| 7. PASSING | MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50 | COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED | CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. |
| *10 50 MX GRANULAR SIL1- MUCK, | PERCENTAGE OF MATERIAL | CP) SHELL BEDS. ETC. WEATHERING | DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT |
| #40 30 MX 50 MX 51 MN PEAT SOILS PEAT SOILS SOILS PEAT | GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL | FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER | ROCKS OR CUTS MASSIVE ROCK. |
| MATERIAL | TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% | HAMMER IF CRYSTALLINE. | DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. |
| PASSING *40 SOILS WITH | LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% | VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, | DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE |
| LL 40 MX 41 MN LITTLE OR PI 6 MX NP 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN 11 MN 11 MN MODERATE HIGHLY | HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE | (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. | LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. |
| GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOULS | GROUND WATER | SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO | FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE |
| USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER | ✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING | (SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. | SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. |
| OF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS | $lacktright$ Static water level after $\underline{24}$ hours | MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN | FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM |
| CEN PATING | ∇ PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA | (MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS | PARENT MATERIAL. |
| AS SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE | SPRING OR SEEP | DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. | FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. |
| PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30 | | MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL | FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. |
| CONSISTENCY OR DENSENESS RANGE OF STANDARD RANGE OF UNCONFINED | MISCELLANEOUS SYMBOLS | SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. | JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. |
| PRIMARY SOIL TYPE COMPACIATES OF PENETRATION RESISTENCE COMPRESSIVE STRENGTH | ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION | <u>IF TESTED, WOULD YIELD SPT REFUSAL</u> | LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO |
| (N-VALUE) (TUNS/FT-) | WITH SOIL DESCRIPTION OF ROCK STRUCTURES SPECIAL POPULAR OF SLOPE INDICATOR | SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED | ITS LATERAL EXTENT. |
| GENERALLY VERY LOOSE < 4 GRANULAR LOOSE 4 TO 10 | SOIL SYMBOL SOIL SYMBOL SCOPE INDICATOR VIST PMT SCOPE INDICATOR INSTALLATION | TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. | LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. |
| MATERIAL DENSE 10 10 30 N/A | ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CONE PENETROMETER | IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE | MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. |
| (NON-COHESIVE) VERY DENSE > 50 | THAN ROADWAY EMBANKMENT TEST | SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK | PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE |
| VERY SOFT < 2 < 0.25 | ── INFERRED SOIL BOUNDARY - CORE BORING SOUNDING ROD | (V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u> | OF AN INTERVENING IMPERVIOUS STRATUM. |
| GENERALLY SOFT 2 TO 4 0.25 TO 0.5 SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0 | INFERRED ROCK LINE MN MONITORING WELL TEST BORING WITH CORE | COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND | RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF |
| MATERIAL STIFF 8 TO 15 1 TO 2 COHESIVE) VERY STIFF 15 TO 30 2 TO 4 | THE ALLEMAN SOLUTION A PIEZOMETER COST N. MALLES | SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. | ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE |
| HARD > 30 > 4 | TTT++4 ALLUVIAL SOIL BOUNDARY △ FIEZOMETER INSTALLATION SPT N-VALUE | ROCK HARDNESS | RUN AND EXPRESSED AS A PERCENTAGE. |
| TEXTURE OR GRAIN SIZE | RECOMMENDATION SYMBOLS | VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES | SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. |
| U.S. STD. SIEVE SIZE 4 10 40 60 200 270 | UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE | SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. | SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND |
| OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053 | USED IN THE TOP 2 FEET OF | HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. | RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. |
| BOULDER COBBLE GRAVEL SAND SAND SILI CLAY | ONDERCOT LASS ACCEPTABLE DEGRAPABLE NOCK | MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE | SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT |
| (CSE, SD.) (F SD.) | ABBREVIATIONS | HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. | OR SLIP PLANE. |
| GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3 | AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED | MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. | STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL |
| SOIL MOISTURE - CORRELATION OF TERMS | CL CLAY MOD MODERATELY γ - UNIT WEIGHT | HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE | WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. |
| SOLI MOISTURE SCALE FIELD MOISTURE | CPT - CONE PENETRATION TEST NP - NON PLASTIC 7d - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC | POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS | STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY |
| (ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION | DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK | FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN | TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. |
| - SATURATED - USUALLY LIQUID; VERY WET, USUALLY | DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON | PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH | STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY |
| (SAT.) FROM BELOW THE GROUND WATER TABLE LL _ LIQUID LIMIT | F - FINE SL SILT, SILTY ST - SHELBY TUBE FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK | SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY | THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. |
| PLASTIC SEMISOLID; REQUIRES DRYING TO | FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL | FINGERNAIL. | TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. |
| (PI) PL PLASTIC LIMIT ATTAIN OPTIMUM MOISTURE | FRAGS FRAGMENTS | FRACTURE SPACING BEDDING TERM SPACING TERM THICKNESS | BENCH MARK: BL-3 |
| | EQUIPMENT USED ON SUBJECT PROJECT | VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET | N: 550893.II02 E: 2988739.0994 ELEVATION: 4.83 FEET |
| OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE SL SHRINKAGE LIMIT | DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: | WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET | |
| REQUIRES ADDITIONAL WATER TO | X CME-45C CLAY BITS X AUTOMATIC MANUAL | CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET | NOTES: |
| - DRY - (D) ATTAIN OPTIMUM MOISTURE | CME-55 G* CONTINUOUS FLIGHT AUGER CORE SIZE: | THINLY LAMINATED < 0.008 FEET | U.C.P UNDIVIDED COASTAL PLAIN |
| PLASTICITY | 8' HOLLOW AUGERSBH | INDURATION | |
| PLASTICITY INDEX (PI) DRY STRENGTH | CME-550 HARD FACED FINGER BITS | FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. | |
| NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT | VANE SHEAR TEST UNGCARBIDE INSERTS | FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. | |
| MODERATELY PLASTIC 16-25 MEDIUM | X CASING W/ ADVANCER POST HOLE DIGGER | MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE: | |
| HIGHLY PLASTIC 26 OR MORE HIGH | PORTABLE HOIST X TRICONE 2 15/6 STEEL TEETH HAND AUGER | BREAKS EASILY WHEN HIT WITH HAMMER, | |
| COLOR | TRICONE TUNGCARB. SOUNDING ROD | INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. | |
| DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). | CORE BIT VANE SHEAR TEST | CHARD HAMMED DI ONE DECITIOED TO DREAM CAMBLE. | |
| MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE. | | EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS. | DATE: 8-15-14 |
| | | | |





GEOTECHNICAL BORING REPORT BORE LOG



GEOTECHNICAL BORING REPORT BORE LOG

| | | | | | | | B | UKE L | UG | | | |
|---------------------|----------------|--------------|-------|--------------------|-------------------------|-----------------------------------|-----------------|--------------------------|-------------------|------------------|--|-------------------------|
| WBS | 45565 | 5.1.1 | | | TI | P B-5610 | COUNT | / DARE | | | GEOLOGIST Zimarino, S. N | l. __ |
| SITE | DESCR | IPTION | BRII | DGE N | O. 8 O | N -L- (NC 12) OVER SI | ASH CF | REEK | | | | GROUND WTR (ft) |
| BORING NO. EB2-A | | | | | S | TATION 16+08 | OFFSET 18 ft LT | | | ALIGNMENT -L- | 0 HR. N/A | |
| COLLAR ELEV. 4.9 ft | | | TO | OTAL DEPTH 59.2 ft | NORTHING 550,817 | | 17 | EASTING 2,988,834 | 24 HR. 5.2 | | | |
| DRILL | RIG/HAN | MER EF | F/DAT | E GFC | 20075 C | ME-45C 89% 08/19/2019 | | | DRILL M | IETHOD M. | ud Rotary HAI | VIMER TYPE Automatic |
| DRIL | L ER Si | mith, R. | . E. | | S | TART DATE 11/05/19 | | COMP. DAT | E 11/0 |)5/19 | SURFACE WATER DEPTH | N/A |
| ELEV | | DEPTH | | OW CO | UNT | BLOWS P | ER FOOT | - | SAMP. | V/L | | |
| (ft) | (ft) | (ft) | 0.5ft | 0.5ft | 0.5ft | 0 25 50 |) | 75 100 | NO. | MOI G | SOIL AND ROCK D | ESCRIPTION DEPTH (ft |
| | | | | | | | | | | | | |
| 5 | | | | | | | | | | | 4.9 GROUND SU | RFACE 0.0 |
| | 4.9 | 0.0 | 1 | 1 | 3 | 4 | | | | | ROADWAY EMBA TAN SAND, I | ANKMENT |
| | 0.9 | 4.0 | | | | ;:::: | | | | | | 3.0 |
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