

REFERENCE: I-5987B

PROJECT: 47533

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ROBESON
PROJECT DESCRIPTION I-95 IMPROVEMENTS FROM
US 301 (EXIT 22) IN ROBESON COUNTY TO NC 59
(EXIT 41) IN CUMBERLAND COUNTY
SITE DESCRIPTION BRIDGE ON -L- (I-95)
OVER LITTLE MARSH SWAMP AT -L- STA.
803+15.00

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| 5-7 | CROSS SECTIONS |
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| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C. | I-5987B | 1 | 16 |

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 T07-6850. 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 BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS 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 VARY 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 DOES 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 OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. 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.
 2. 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

F&R, INC.

GOODNIGHT, D.J.

INVESTIGATED BY F&R /FALCON

DRAWN BY CROCKETT, S.C.

CHECKED BY HAMM, J. R.

SUBMITTED BY FALCON

DATE DECEMBER 2021



DocuSigned by:
Stephen C. Crockett

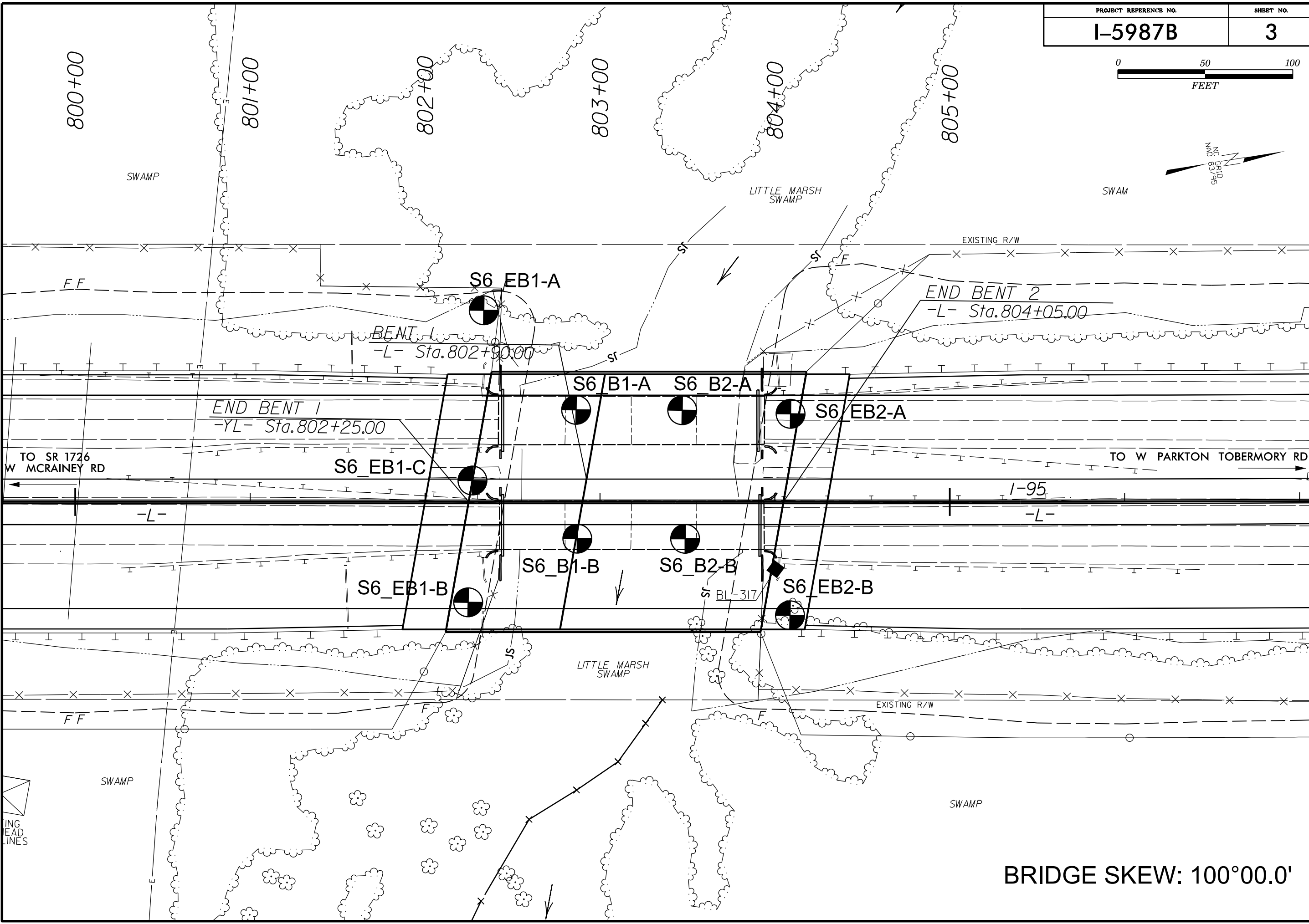
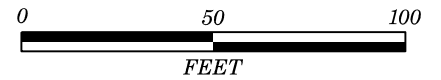
Dec 16, 2021

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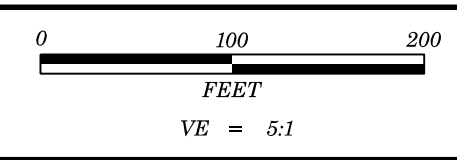
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**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

| 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 ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH 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 | | | | | | | | | | 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. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES. | | | | | | | | | | 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. 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 REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: | | | | | | | | | | ALLUVIUM (ALLUV.) - SOILS THAT 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. 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. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. 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. DIKE - A TABULAR BODY OF IGNEOUS 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 CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY 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 (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 ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. 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 WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. 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 THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. | | | | | | | | | |
| SOIL LEGEND AND AASHTO CLASSIFICATION | | | | | | | | | | ANGULARITY OF GRAINS | | | | | | | | | | WEATHERED ROCK (WR) | | | | | | | | | | CRYSTALLINE ROCK (CR) | | | | | | | | | |
| GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS | | | | | | | | | | THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED. | | | | | | | | | | NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED. | | | | | | | | | | FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. | | | | | | | | | |
| MINERALOGICAL COMPOSITION | | | | | | | | | | COMPRESSION | | | | | | | | | | NON-CRYSTALLINE ROCK (NCR) | | | | | | | | | | COASTAL PLAIN SEDIMENTARY ROCK (CP) | | | | | | | | | |
| MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE. | | | | | | | | | | SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50 | | | | | | | | | | FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. | | | | | | | | | | COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC. | | | | | | | | | |
| PERCENTAGE OF MATERIAL | | | | | | | | | | GROUND WATER | | | | | | | | | | WEATHERING | | | | | | | | | | | | | | | | | | | |
| ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL | | | | | | | | | | WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING | | | | | | | | | | FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. | | | | | | | | | | | | | | | | | | | |
| TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC > 10% | | | | | | | | | | STATIC WATER LEVEL AFTER 24 HOURS | | | | | | | | | | VERY SLIGHT (V SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA | | | | | | | | | | SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | SPRING OR SEEP | | | | | | | | | | MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. | | | | | | | | | | | | | | | | | | | |
| MISCELLANEOUS SYMBOLS | | | | | | | | | | RECOMMENDATION SYMBOLS | | | | | | | | | | SEVERE (MOD. SEV.) | | | | | | | | | | SEVERE (SEV.) | | | | | | | | | |
| ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION | | | | | | | | | | UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE | | | | | | | | | | ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. IF TESTED, WOULD YIELD SPT REFUSAL | | | | | | | | | | ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF | | | | | | | | | |
| SOIL SYMBOL | | | | | | | | | | UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK | | | | | | | | | | ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF | | | | | | | | | | ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. FABRIC MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. | | | | | | | | | |
| ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT | | | | | | | | | | DIP & DIP DIRECTION OF ROCK STRUCTURES | | | | | | | | | | VERY SEVERE (IV SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF | | | | | | | | | | COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. FABRIC MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. | | | | | | | | | |
| INFERRED SOIL BOUNDARY | | | | | | | | | | SLOPE INDICATOR INSTALLATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INFERRED ROCK LINE | | | | | | | | | | CONE PENETROMETER TEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALLUVIAL SOIL BOUNDARY | | | | | | | | | | SOUNDING ROD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | TEST BORING WITH CORE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | SPT N-VALUE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEXTURE OR GRAIN SIZE | | | | | | | | | | ABBREVIATIONS | | | | | | | | | | ROCK HARDNESS | | | | | | | | | | | | | | | | | | | |
| U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 | | | | | | | | | | AR - AUGER REFUSAL MED. - MEDIUM VST - VANE SHEAR TEST | | | | | | | | | | VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. | | | | | | | | | | | | | | | | | | | |
| BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE. SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.) | | | | | | | | | | BT - BORING TERMINATED MICA - MICACEOUS WEA. - WEATHERED | | | | | | | | | | HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. | | | | | | | | | | | | | | | | | | | |
| GRAIN SIZE MM 305 75 2.0 0.25 0.05 0.005 | | | | | | | | | | CL. - CLAY MOD. - MODERATELY UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL | | | | | | | | | | MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. | | | | | | | | | | | | | | | | | | | |
| SOIL MOISTURE - CORRELATION OF TERMS | | | | | | | | | | SOIL MOISTURE SCALE (ATTERBERG LIMITS) | | | | | | | | | | MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. | | | | | | | | | | | | | | | | | | | |
| SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION | | | | | | | | | | CPT - CLAY NP - NON PLASTIC CSE. - COARSE DPT - DILATOMETER TEST PMT - PRESSUREMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE | | | | | | | | | | SOFT CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. | | | | | | | | | | | | | | | | | | | |
| LL - LIQUID LIMIT - SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE | | | | | | | | | | FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES SLI. - SILTY, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY | | | | | | | | | | VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL. | | | | | | | | | | | | | | | | | | | |
| PL - PLASTIC LIMIT - WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE | | | | | | | | | | EQUIPMENT USED ON SUBJECT PROJECT | | | | | | | | | | FRACTURE SPACING | | | | | | | | | | BEDDING | | | | | | | | | |
| OM - OPTIMUM MOISTURE SHRINKAGE LIMIT - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE | | | | | | | | | | DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: | | | | | | | | | | VERY CLOSE MORE THAN 10 FEET | | | | | | | | | | VERY THICKLY BEDDED 4 FEET | | | | | | | | | |
| SL - SLIGHTLY PLASTIC - DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE | | | | | | | | | | CME-45C CLAY BITS AUTOMATIC | | | | | | | | | | MODERATELY CLOSE 3 TO 10 FEET | | | | | | | | | | THICKLY BEDDED 1.5 - 4 FEET | | | | | | | | | |
| PLASTICITY | | | | | | | | | | CME-55 6" CONTINUOUS FLIGHT AUGER | | | | | | | | | | CLOSE 1 TO 3 FEET | | | | | | | | | | THINLY BEDDED 0.16 - 1.5 FEET | | | | | | | | | |
| NON PLASTIC 0-5 VERY LOW | | | | | | | | | | CME-550 8" HOLLOW AUGERS | | | | | | | | | | VERY CLOSE LESS THAN 0.16 FEET | | | | | | | | | | VERY THINLY BEDDED 0.03 - 0.16 FEET | | | | | | | | | |
| SLIGHTLY PLASTIC 6-15 SLIGHT | | | | | | | | | | VANE SHEAR TEST HARD FACED FINGER BITS | | | | | | | | | | | | | | | | | | | | THICKLY LAMINATED 0.008 - 0.03 FEET | | | | | | | | | |
| MODERATELY PLASTIC 16-25 MEDIUM | | | | | | | | | | PORTABLE HOIST TUNG-CARBIDE INSERTS | | | | | | | | | | | | | | | | | | | | THINLY LAMINATED < 0.008 FEET | | | | | | | | | |
| HIGHLY PLASTIC 26 OR MORE HIGH | | | | | | | | | | CASING w/ ADVANCER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COLOR | | | | | | | | | | TRICONE 2 1/16" STEEL TEETH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-BROWN). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE. | | | | | | | | | | TRICONE TUNG-CARB. CORE BIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

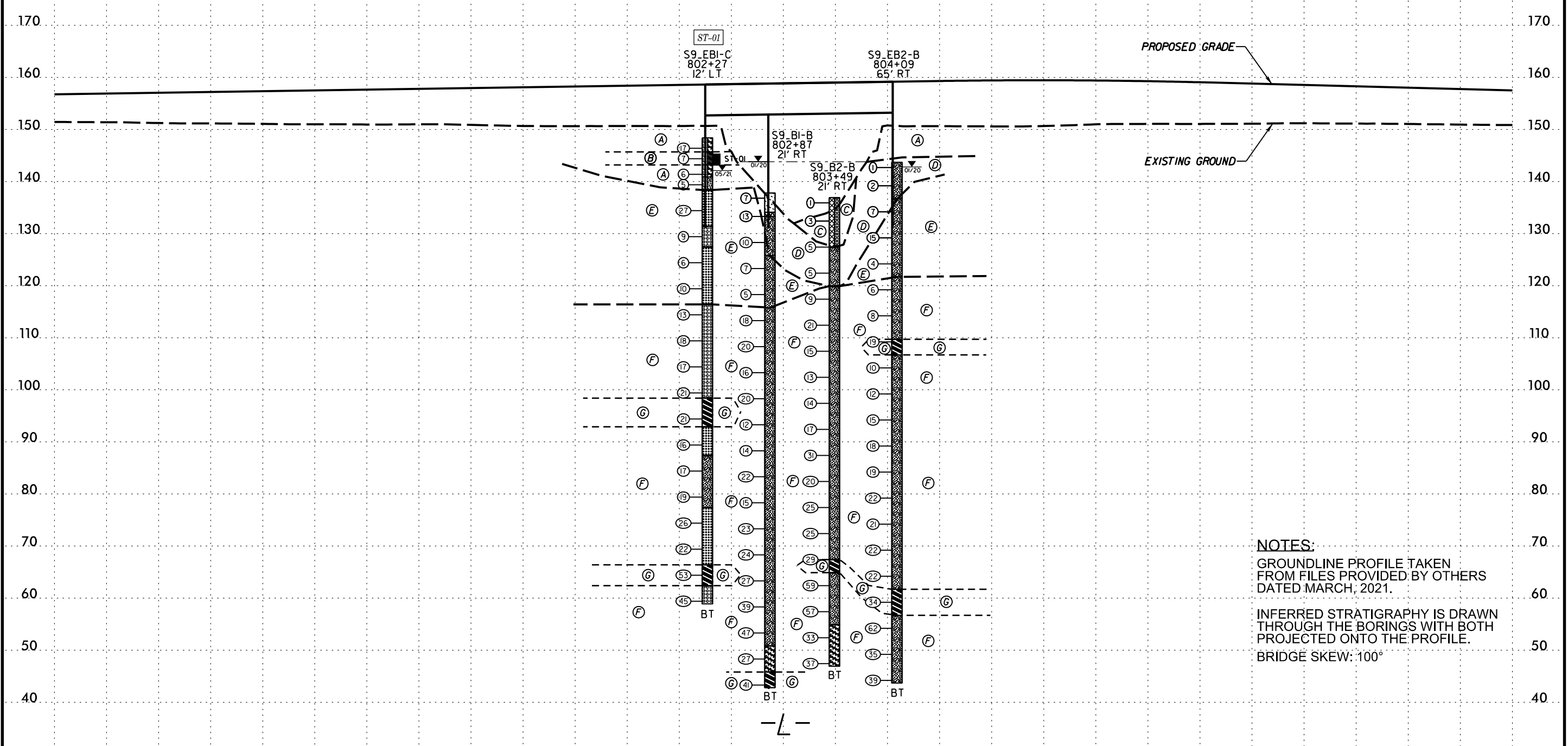


BRIDGE SKEW: 100°00.0'



- 220 (A) ROADWAY EMBANKMENT: TAN AND GRAY, MOIST TO WET, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6)
- (B) ROADWAY EMBANKMENT: TAN, MOIST, MED. STIFF, SANDY CLAY (A-6)
- 210 (C) ARTIFICIAL FILL: GRAY, SATURATED, V. LOOSE, F. TO CSE, GRAVEL (A-1-o)
- (D) ALLUVIAL: BROWN, TAN, AND GRAY, SATURATED, V. LOOSE TO MED. DENSE, SILTY SAND (A-2-4) WITH TRACE ORGANICS, LITTLE GRAVEL, AND LITTLE WOOD FRAGS.
- (E) UNDIVIDED COASTAL PLAIN: BROWN, TAN, AND GRAY, SATURATED, LOOSE TO MED. DENSE, CSE, SAND (A-1-o) F. SAND (A-3) AND SILTY SAND (A-2-4) WITH TRACE CLAY, ORGANICS, AND GRAVEL
- 200 (F) COASTAL PLAIN: GRAY, SATURATED, MED. DENSE TO V. DENSE, F. TO CSE, SAND (A-1-b) SAND (A-3) AND SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE MICA, CLAY, AND WOOD FRAGS. (BLACK CREEK FORMATION)
- (G) COASTAL PLAIN: GRAY, WET TO SATURATED, V. STIFF TO HARD, SANDY SILTY CLAY (A-7) WITH TRACE MICA AND WOOD FRAGS. (BLACK CREEK FORMATION)

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|----------|---------|----------------|---------------|-----|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | LL. | P.I. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| ST-01 | 12 FT LT | 802+27 | 3.0'-5.0' | A-7-6 | 51 | 24 | 39 | 19 | 14 | 28 | 100 | 76 | 42 | 22 | - |



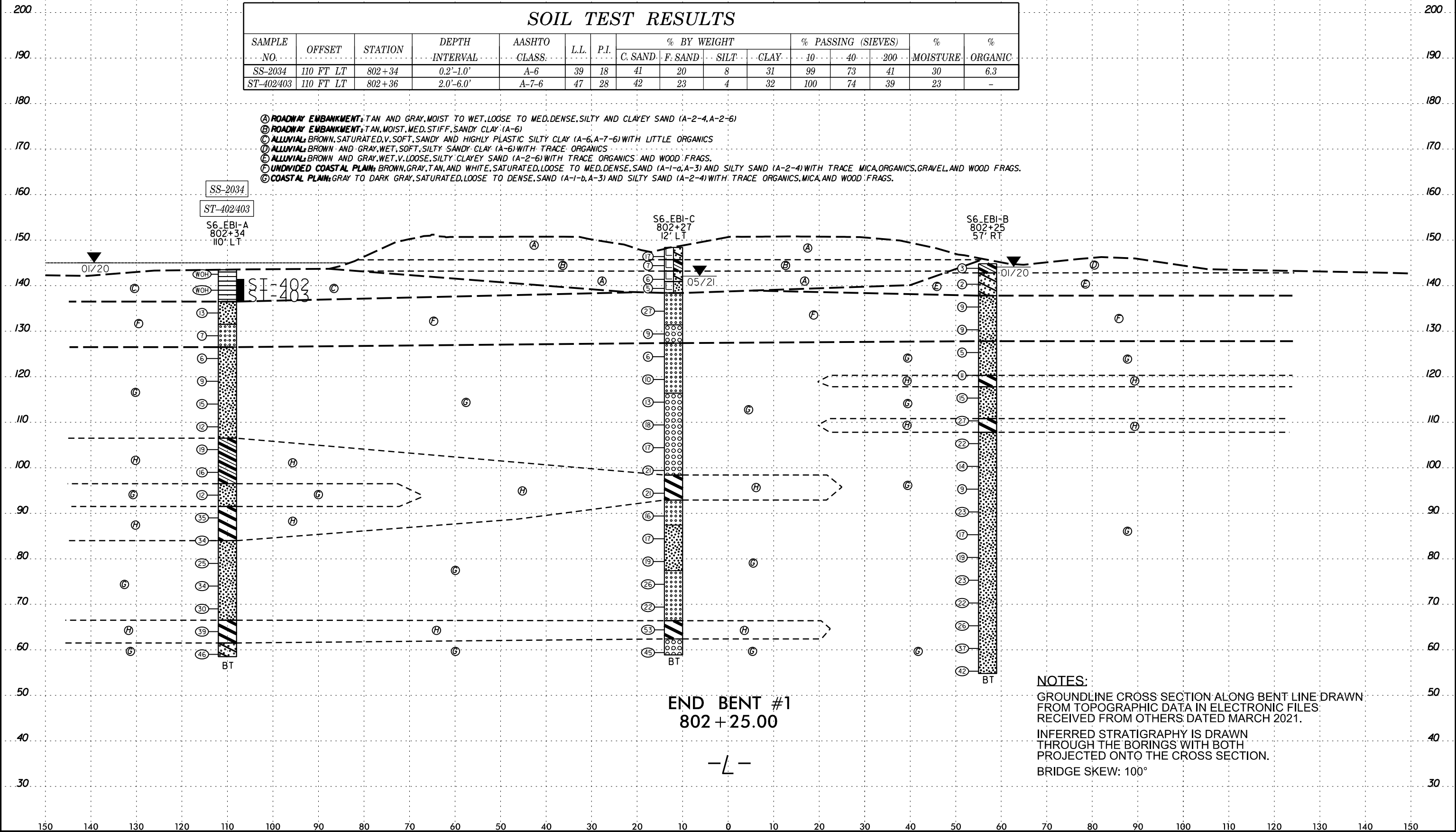
NOTES:
 GROUNDLINE PROFILE TAKEN FROM FILES PROVIDED BY OTHERS DATED MARCH, 2021.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.
 BRIDGE SKEW: 100°

8/23/99

SOIL TEST RESULTS

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS | L.L. | P.I. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
|------------|-----------|---------|----------------|--------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| SS-2034 | 110 FT LT | 802+34 | 0.2'-1.0' | A-6 | 39 | 18 | 41 | 20 | 8 | 31 | 99 | 73 | 41 | 30 | 6.3 |
| ST-402/403 | 110 FT LT | 802+36 | 2.0'-6.0' | A-7-6 | 47 | 28 | 42 | 23 | 4 | 32 | 100 | 74 | 39 | 23 | - |

- Ⓐ ROADWAY EMBANKMENT: TAN AND GRAY, MOIST TO WET, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6)
- Ⓑ ROADWAY EMBANKMENT: TAN, MOIST, MED. STIFF, SANDY CLAY (A-6)
- Ⓒ ALLUVIAL: BROWN, SATURATED, V. SOFT, SANDY AND HIGHLY PLASTIC SILTY CLAY (A-6, A-7-6) WITH LITTLE ORGANICS
- Ⓓ ALLUVIAL: BROWN AND GRAY, WET, SOFT, SILTY SANDY CLAY (A-6) WITH TRACE ORGANICS
- Ⓔ ALLUVIAL: BROWN AND GRAY, WET, V. LOOSE, SILTY CLAYEY SAND (A-2-6) WITH TRACE ORGANICS AND WOOD FRAGS.
- Ⓕ UNDIVIDED COASTAL PLAIN: BROWN, GRAY, TAN, AND WHITE, SATURATED, LOOSE TO MED. DENSE, SAND (A-1-a, A-3) AND SILTY SAND (A-2-4) WITH TRACE MICA, ORGANICS, GRAVEL, AND WOOD FRAGS.
- Ⓖ COASTAL PLAIN: GRAY TO DARK GRAY, SATURATED, LOOSE TO DENSE, SAND (A-1-b, A-3) AND SILTY SAND (A-2-4) WITH TRACE ORGANICS, MICA, AND WOOD FRAGS.



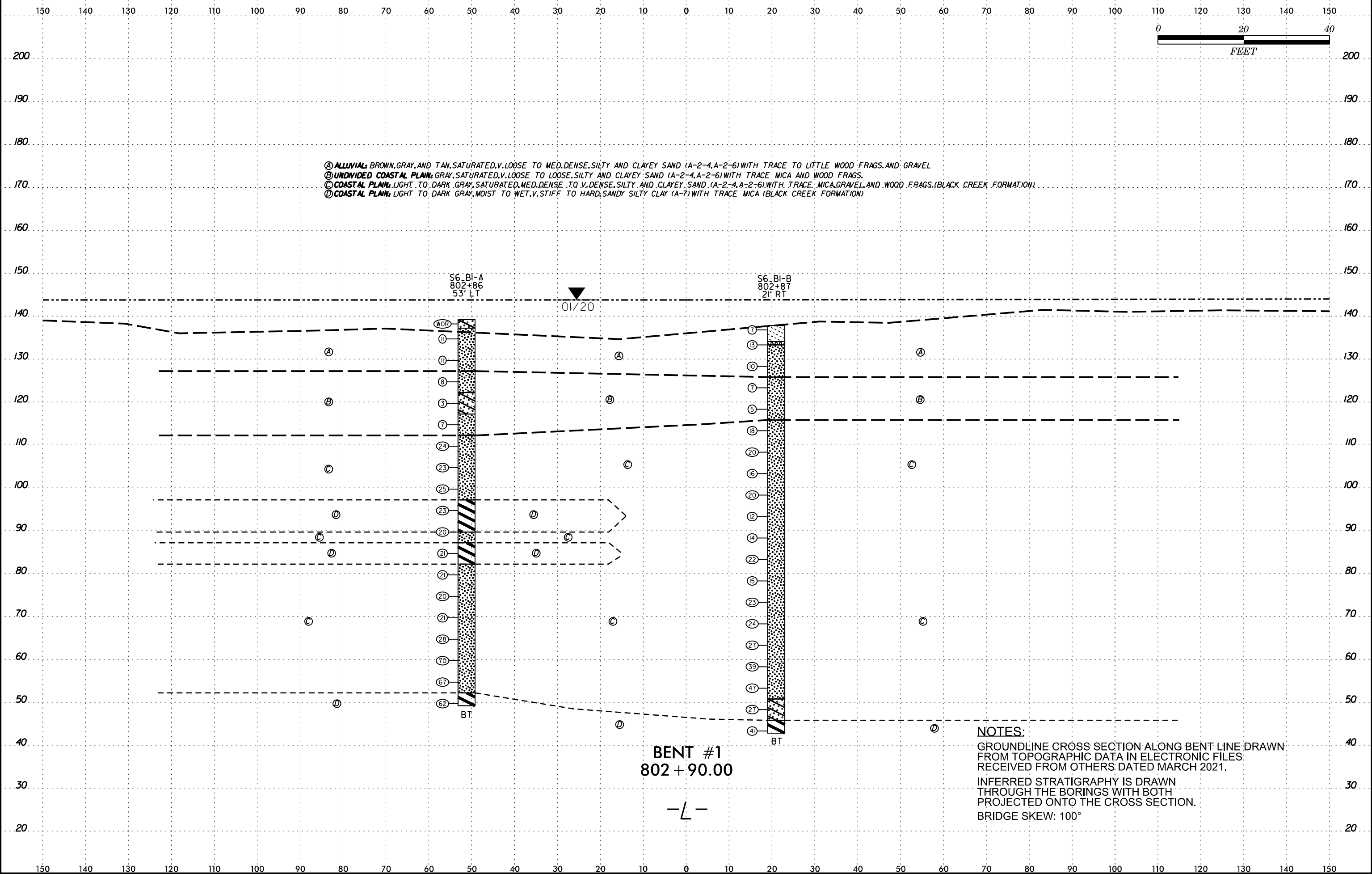
END BENT #1
802 + 25.00

-L-

NOTES:
 GROUNDLINE CROSS SECTION ALONG BENT LINE DRAWN FROM TOPOGRAPHIC DATA IN ELECTRONIC FILES RECEIVED FROM OTHERS DATED MARCH 2021.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.
 BRIDGE SKEW: 100°

8/23/99

8/23/99



(A) ALLUVIAL: BROWN, GRAY, AND TAN, SATURATED, V. LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE TO LITTLE WOOD FRAGS. AND GRAVEL
 (B) UNDIVIDED COASTAL PLAIN: GRAY, SATURATED, V. LOOSE TO LOOSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE MICA AND WOOD FRAGS.
 (C) COASTAL PLAIN: LIGHT TO DARK GRAY, SATURATED, MED. DENSE TO V. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE MICA, GRAVEL, AND WOOD FRAGS. (BLACK CREEK FORMATION)
 (D) COASTAL PLAIN: LIGHT TO DARK GRAY, MOIST TO WET, V. STIFF TO HARD, SANDY SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION)

S6_BI-A
802+86
53' LT

01/20

S6_BI-B
802+87
21' RT

BENT #1
802+90.00

-L-

NOTES:
 GROUNDLINE CROSS SECTION ALONG BENT LINE DRAWN FROM TOPOGRAPHIC DATA IN ELECTRONIC FILES RECEIVED FROM OTHERS DATED MARCH 2021.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.
 BRIDGE SKEW: 100°

SCALE\$

8/23/99

SOIL TEST RESULTS

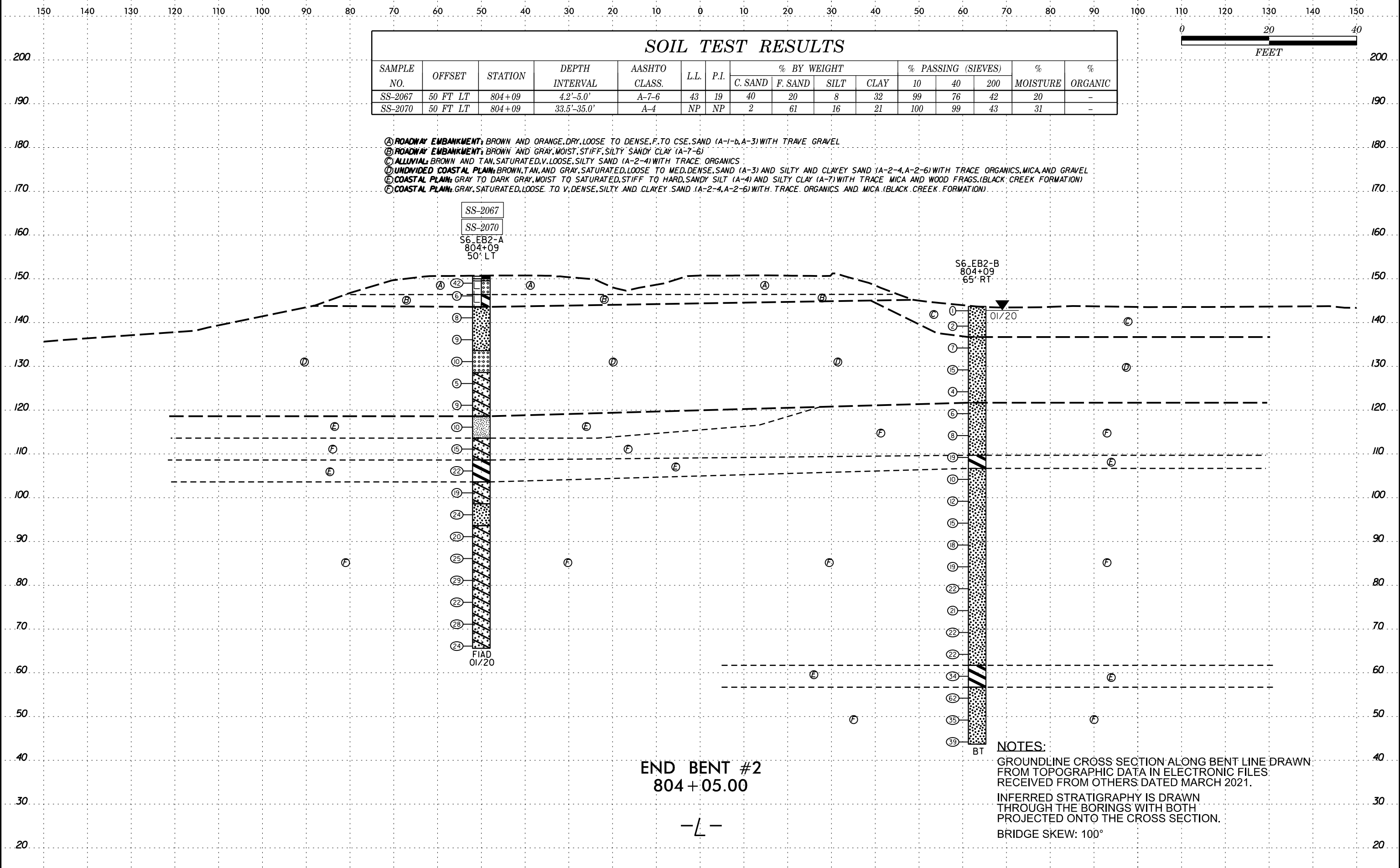
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING (SIEVES) | | | % MOISTURE | % ORGANIC |
|------------|----------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| SS-2067 | 50 FT LT | 804+09 | 4.2'-5.0' | A-7-6 | 43 | 19 | 40 | 20 | 8 | 32 | 99 | 76 | 42 | 20 | - |
| SS-2070 | 50 FT LT | 804+09 | 33.5'-35.0' | A-4 | NP | NP | 2 | 61 | 16 | 21 | 100 | 99 | 43 | 31 | - |



- Ⓐ ROADWAY EMBANKMENT: BROWN AND ORANGE, DRY, LOOSE TO DENSE, F. TO CSE. SAND (A-1-b, A-3) WITH TRACE GRAVEL
- Ⓑ ROADWAY EMBANKMENT: BROWN AND GRAY, MOIST, STIFF, SILTY SANDY CLAY (A-7-6)
- Ⓒ ALLUVIAL: BROWN AND TAN, SATURATED, V. LOOSE, SILTY SAND (A-2-4) WITH TRACE ORGANICS
- Ⓓ UNDIVIDED COASTAL PLAIN: BROWN, TAN, AND GRAY, SATURATED, LOOSE TO MED. DENSE, SAND (A-3) AND SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE ORGANICS, MICA, AND GRAVEL
- Ⓔ COASTAL PLAIN: GRAY TO DARK GRAY, MOIST TO SATURATED, STIFF TO HARD, SANDY SILT (A-4) AND SILTY CLAY (A-7) WITH TRACE MICA AND WOOD FRAGS. (BLACK CREEK FORMATION)
- Ⓕ COASTAL PLAIN: GRAY, SATURATED, LOOSE TO V. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE ORGANICS AND MICA (BLACK CREEK FORMATION)

SS-2067
SS-2070
S6_EB2-A
804+09
50' LT

S6_EB2-B
804+09
65' RT



END BENT #2
804+05.00

-L-

NOTES:
GROUNDLINE CROSS SECTION ALONG BENT LINE DRAWN FROM TOPOGRAPHIC DATA IN ELECTRONIC FILES RECEIVED FROM OTHERS DATED MARCH 2021.
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.
BRIDGE SKEW: 100°

8/23/99

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST B. Painter | | | | | | | | | | |
|--|-----------------|---------------------|-------------------------|---------------------|-----------------------|---------------------------|-----------------|----|----|-----|-----------|-----|-----|---------------------------|------------|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_EB1-A | | STATION 802+34 | | OFFSET 110 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 143.5 ft | | TOTAL DEPTH 85.0 ft | | NORTHING 403,424 | | EASTING 2,010,186 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R5785 CME-55 73% 03/01/2019 | | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | |
| DRILLER D. Tignor | | START DATE 01/07/20 | | COMP. DATE 01/07/20 | | SURFACE WATER DEPTH 0.3ft | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | |
| 150 | | | | | | | | | | | | | | | | |
| 145 | 143.5 | 0.0 | | | | | | | | | | | | | | |
| 140 | 140.0 | 3.5 | WOH | WOH | WOH | | | | | | | | | | | |
| 135 | 135.0 | 8.5 | 3 | 6 | 7 | | | | | | | | | | | |
| 130 | 130.0 | 13.5 | 3 | 4 | 3 | | | | | | | | | | | |
| 125 | 125.0 | 18.5 | 3 | 3 | 3 | | | | | | | | | | | |
| 120 | 120.0 | 23.5 | 4 | 4 | 5 | | | | | | | | | | | |
| 115 | 115.0 | 28.5 | 4 | 6 | 9 | | | | | | | | | | | |
| 110 | 110.0 | 33.5 | 5 | 6 | 6 | | | | | | | | | | | |
| 105 | 105.0 | 38.5 | 4 | 8 | 11 | | | | | | | | | | | |
| 100 | 100.0 | 43.5 | 5 | 6 | 10 | | | | | | | | | | | |
| 95 | 95.0 | 48.5 | 4 | 6 | 6 | | | | | | | | | | | |
| 90 | 90.0 | 53.5 | 8 | 15 | 20 | | | | | | | | | | | |
| 85 | 85.0 | 58.5 | 8 | 16 | 18 | | | | | | | | | | | |
| 80 | 80.0 | 63.5 | 7 | 12 | 13 | | | | | | | | | | | |
| 75 | 75.0 | 68.5 | 14 | 16 | 18 | | | | | | | | | | | |
| 70 | 70.0 | 73.5 | | | | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST B. Painter | | | | | | | | | | |
|--|-----------------|---------------------|-------------------------|---------------------|-----------------------|---------------------------|-----------------|----|----|-----|-----------|-----|-----|---------------------------|------------|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_EB1-A | | STATION 802+34 | | OFFSET 110 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 143.5 ft | | TOTAL DEPTH 85.0 ft | | NORTHING 403,424 | | EASTING 2,010,186 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R5785 CME-55 73% 03/01/2019 | | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | |
| DRILLER D. Tignor | | START DATE 01/07/20 | | COMP. DATE 01/07/20 | | SURFACE WATER DEPTH 0.3ft | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | |
| 70 | | | | | | | | | | | | | | | | |
| 65 | 65.0 | 78.5 | 10 | 17 | 22 | | | | | | | | | | | |
| 60 | 60.0 | 83.5 | 9 | 19 | 27 | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

Match Line

66.5 --- 77.0
DARK GRAY, FINE TO COARSE SANDY SILTY CLAY (A-7), MICACEOUS (BLACK CREEK FORMATION)

61.5 --- 82.0
DARK GRAY, SILTY CLAYEY FINE TO COARSE SAND (A-2-6), MICACEOUS (BLACK CREEK FORMATION)

58.5 --- 85.0
Boring Terminated at Elevation 58.5 ft IN CLAYEY SAND (COASTAL PLAIN) (BLACK CREEK FORMATION)

Notes:
1. Shelby Tubes pushed in Offset Boring 802+26, 93' Lt; ST-402: 2.0'-4.0', ST-403: 4.0'-6.0', Both Lab Tested

Other Samples:
ST-402 (2.0 - 4.0)
ST-403 (4.0 - 6.0)

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | | | | | | | | | | |
|--|-----------------|-------------------------|------------|-----------------------|-------|-------------------------|-----------------|----|----|-----|-----------|-----|--------|---------------------------|------------|---|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_EB1-B | | STATION 802+25 | | OFFSET 57 ft RT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 144.8 ft | | TOTAL DEPTH 90.0 ft | | NORTHING 403,391 | | EASTING 2,010,350 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER S. Davis | | START DATE 01/08/20 | | COMP. DATE 01/08/20 | | SURFACE WATER DEPTH N/A | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | ELEV. (ft) | DEPTH (ft) | |
| 145 | 144.8 | 0.0 | 2 | 1 | 2 | | | | | | | | | 144.8 | 0.0 | GROUND SURFACE |
| 140 | 141.3 | 3.5 | 1 | 1 | 1 | | | | | | | | W | 142.8 | 2.0 | ALLUVIAL BROWN-GRAY, SILTY FINE TO COARSE SANDY CLAY (A-6) WITH TRACE ORGANICS |
| | 137.8 | 8.5 | 3 | 4 | 5 | | | | | | | | Sat. | 137.8 | 7.0 | BROWN-GRAY, SILTY CLAYEY FINE TO COARSE SAND (A-2-6) WITH TRACE ORGANICS AND WOOD FRAGMENTS |
| 135 | 136.3 | 8.5 | 3 | 4 | 5 | | | | | | | | Sat. | | | UNDIVIDED COASTAL PLAIN GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE ORGANICS AND GRAVEL |
| 130 | 131.3 | 13.5 | 4 | 4 | 5 | | | | | | | | Sat. | | | |
| 125 | 126.3 | 18.5 | 3 | 2 | 3 | | | | | | | | Sat. | 127.8 | 17.0 | COASTAL PLAIN DARK GRAY, CLAYEY SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA (BLACK CREEK FORMATION) |
| 120 | 121.3 | 23.5 | 3 | 5 | 6 | | | | | | | | Sat. W | 120.3 | 24.5 | DARK GRAY, FINE TO COARSE SANDY SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION) |
| 115 | 116.3 | 28.5 | 5 | 7 | 8 | | | | | | | | Sat. | 117.8 | 27.0 | GRAY, SILTY FINE TO COARSE SAND (A-2-4) (BLACK CREEK FORMATION) |
| 110 | 111.3 | 33.5 | 9 | 10 | 17 | | | | | | | | Sat. W | 110.8 | 34.0 | DARK GRAY, FINE TO COARSE SANDY SILTY CLAY (A-7) WITH TRACE MICA AND WOOD FRAGMENTS (BLACK CREEK FORMATION) |
| 105 | 106.3 | 38.5 | 7 | 10 | 12 | | | | | | | | Sat. | 107.8 | 37.0 | GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA, CLAY, AND WOOD FRAGMENTS (BLACK CREEK FORMATION) |
| 100 | 101.3 | 43.5 | 7 | 7 | 7 | | | | | | | | Sat. | | | |
| 95 | 96.3 | 48.5 | 2 | 4 | 5 | | | | | | | | Sat. | | | |
| 90 | 91.3 | 53.5 | 8 | 10 | 13 | | | | | | | | Sat. | | | |
| 85 | 86.3 | 58.5 | 6 | 7 | 10 | | | | | | | | Sat. | | | |
| 80 | 81.3 | 63.5 | 9 | 10 | 9 | | | | | | | | Sat. | | | |
| 75 | 76.3 | 68.5 | 9 | 10 | 13 | | | | | | | | Sat. | | | |
| 70 | 71.3 | 73.5 | 10 | 9 | 13 | | | | | | | | Sat. | | | |
| 65 | 66.3 | 78.5 | 7 | 12 | 14 | | | | | | | | Sat. | | | Boring Terminated at Elevation 54.8 ft IN SILTY SAND (COASTAL PLAIN) (BLACK CREEK FORMATION) |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | | | | | | | | | | | |
|--|-----------------|-------------------------|------------|-----------------------|-------|-------------------------|-----------------|----|----|-----|-----------|-----|------|---------------------------|------------|---|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | | |
| BORING NO. S6_EB1-B | | STATION 802+25 | | OFFSET 57 ft RT | | ALIGNMENT -L- | | | | | | | | | | | |
| COLLAR ELEV. 144.8 ft | | TOTAL DEPTH 90.0 ft | | NORTHING 403,391 | | EASTING 2,010,350 | | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | | |
| DRILLER S. Davis | | START DATE 01/08/20 | | COMP. DATE 01/08/20 | | SURFACE WATER DEPTH N/A | | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | ELEV. (ft) | DEPTH (ft) | | |
| 65 | | | | | | | | | | | | | | | | Match Line | |
| 60 | 61.3 | 83.5 | 15 | 16 | 21 | | | | | | | | Sat. | | | GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA, CLAY, AND WOOD FRAGMENTS (BLACK CREEK FORMATION) (continued) | |
| 55 | 56.3 | 88.5 | 13 | 19 | 23 | | | | | | | | Sat. | | | | |
| | | | | | | | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST Goodnight, D. | | | | | | | | | | |
|--|-----------------|-------------------------|------------|-----------------------|-------|-------------------------|-----------------|----|----|-----|-----------|-----|---------------------------|---|-------|------|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_EB1-C | | STATION 802+27 | | OFFSET 12 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 148.4 ft | | TOTAL DEPTH 89.5 ft | | NORTHING 403,403 | | EASTING 2,010,281 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER Powell, B. | | START DATE 05/17/21 | | COMP. DATE 05/17/21 | | SURFACE WATER DEPTH N/A | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | |
| 150 | | | | | | | | | | | | | | | | |
| | 147.4 | 1.0 | 7 | 11 | 6 | | | | | | | | M | ROADWAY EMBANKMENT | 148.4 | 0.0 |
| | 145.4 | 3.0 | 2 | 3 | 4 | | | | | | | | M | TAN, CLAYEY SAND (A-2-6) | 145.7 | 2.7 |
| 145 | | | | | | | | | | | | | | TAN, SANDY CLAY (A-6) | | |
| | 142.4 | 6.0 | 2 | 3 | 3 | | | | | | | | W | TAN AND GRAY, CLAYEY SAND (A-2-6) | 143.2 | 5.2 |
| | 140.4 | 8.0 | 4 | 3 | 2 | | | | | | | | W | TAN-GRAY, CLAYEY SILTY SAND (A-2-5) | 140.9 | 7.5 |
| 140 | | | | | | | | | | | | | | UNDIVIDED COASTAL PLAIN | 138.4 | 10.0 |
| | 135.4 | 13.0 | 10 | 13 | 14 | | | | | | | | Sat. | LIGHT GRAY, FINE SAND (A-3) | | |
| 135 | | | | | | | | | | | | | | | | |
| | 130.4 | 18.0 | 4 | 4 | 5 | | | | | | | | Sat. | TAN, COARSE SAND (A-1-a) WITH TRACE PEBBLES | 131.4 | 17.0 |
| 130 | | | | | | | | | | | | | | | | |
| | 125.4 | 23.0 | 2 | 3 | 3 | | | | | | | | Sat. | COASTAL PLAIN | 127.4 | 21.0 |
| 125 | | | | | | | | | | | | | | GRAY, SLIGHTLY SILTY FINE SAND (A-3) | | |
| | 120.4 | 28.0 | 3 | 4 | 6 | | | | | | | | Sat. | (BLACK CREEK FORMATION) | | |
| 120 | | | | | | | | | | | | | | | | |
| | 115.4 | 33.0 | 4 | 6 | 7 | | | | | | | | Sat. | GRAY, SLIGHTLY SILTY FINE TO COARSE SAND (A-1-b) WITH INTERMITTENT LENSES OF CLAYEY SAND | 116.4 | 32.0 |
| 115 | | | | | | | | | | | | | | | | |
| | 110.4 | 38.0 | 6 | 9 | 9 | | | | | | | | Sat. | | | |
| 110 | | | | | | | | | | | | | | | | |
| | 105.4 | 43.0 | 6 | 8 | 9 | | | | | | | | Sat. | | | |
| 105 | | | | | | | | | | | | | | | | |
| | 100.4 | 48.0 | 6 | 9 | 12 | | | | | | | | Sat. | | | |
| 100 | | | | | | | | | | | | | | | | |
| | 95.4 | 53.0 | 6 | 11 | 10 | | | | | | | | M | DARK GRAY, FINE SANDY SILTY CLAY (A-7) WITH INTERMITTENT LENSES OF COARSE SAND AND TRACE MICA | 98.4 | 50.0 |
| 95 | | | | | | | | | | | | | | | | |
| | 90.4 | 58.0 | 5 | 8 | 8 | | | | | | | | Sat. | GRAY, SAND (A-3) | 92.9 | 55.5 |
| 90 | | | | | | | | | | | | | | | | |
| | 85.4 | 63.0 | 5 | 8 | 9 | | | | | | | | Sat. | GRAY, SILTY FINE SAND (A-2-4) | 87.4 | 61.0 |
| 85 | | | | | | | | | | | | | | | | |
| | 80.4 | 68.0 | 6 | 9 | 10 | | | | | | | | Sat. | | | |
| 80 | | | | | | | | | | | | | | | | |
| | 75.4 | 73.0 | 8 | 11 | 15 | | | | | | | | Sat. | | | |
| 75 | | | | | | | | | | | | | | | | |
| | 70.4 | 78.0 | | | | | | | | | | | Sat. | | | |
| 70 | | | | | | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST Goodnight, D. | | | | | | | | | | |
|--|-----------------|-------------------------|------------|-----------------------|-------|-------------------------|-----------------|----|----|-----|-----------|-----|---------------------------|--|------|------|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_EB1-C | | STATION 802+27 | | OFFSET 12 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 148.4 ft | | TOTAL DEPTH 89.5 ft | | NORTHING 403,403 | | EASTING 2,010,281 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER Powell, B. | | START DATE 05/17/21 | | COMP. DATE 05/17/21 | | SURFACE WATER DEPTH N/A | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | |
| 70 | | | | | | | | | | | | | | | | |
| | | | 8 | 10 | 12 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | 65.4 | 83.0 | 10 | 23 | 30 | | | | | | | | W | GRAY, SLIGHTLY SILTY SAND (A-3) | 66.4 | 82.0 |
| 65 | | | | | | | | | | | | | | (continued) | | |
| | | | | | | | | | | | | | | GRAY, SANDY SILTY CLAY (A-7) WITH INTERMITTENT LENSES OF COARSE SAND AND A LITTLE MICA | 62.4 | 86.0 |
| | 60.4 | 88.0 | 15 | 20 | 25 | | | | | | | | Sat. | GRAY, SLIGHTLY SILTY FINE TO COARSE SAND (A-1-b) | 58.9 | 89.5 |
| 60 | | | | | | | | | | | | | | Boring Terminated at Elevation 58.9 ft IN SAND (COASTAL PLAIN) (BLACK CREEK FORMATION) | | |
| | | | | | | | | | | | | | | Other Samples: ST-01 (3.0 - 5.0) | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| | | | | | | | |
|--|--|-------------------------|--|-----------------------|--|---------------------------|-----------------|
| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | |
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) |
| BORING NO. S6_B1-A | | STATION 802+86 | | OFFSET 53 ft LT | | ALIGNMENT -L- | |
| COLLAR ELEV. 139.2 ft | | TOTAL DEPTH 90.0 ft | | NORTHING 403,468 | | EASTING 2,010,250 | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | |
| DRILLER S. Davis | | START DATE 01/15/20 | | COMP. DATE 01/16/20 | | SURFACE WATER DEPTH 4.5ft | |

| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) |
|-----------|-----------------|------------|------------|-------|-------|----------------|----|----|----|-----|-----------|------|--|------------|
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | |
| 140 | 139.2 | 0.0 | | | | | | | | | | | 139.2 GROUND SURFACE | 0.0 |
| 135 | 135.7 | 3.5 | 4 | 6 | 5 | | | | | | | Sat. | 137.2 ALLUVIAL BROWN-GRAY, SILTY CLAYEY FINE TO COARSE SAND (A-2-6) GRAY-TAN, SILTY FINE SAND (A-2-4) WITH TRACE WOOD FRAGMENTS | 2.0 |
| 130 | 130.7 | 8.5 | 5 | 5 | 6 | | | | | | | Sat. | | |
| 125 | 125.7 | 13.5 | 3 | 3 | 5 | | | | | | | Sat. | 127.2 UNDIVIDED COASTAL PLAIN GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA | 12.0 |
| 120 | 120.7 | 18.5 | 1 | 1 | 2 | | | | | | | Sat. | 122.2 GRAY, SILTY CLAYEY FINE TO COARSE SAND (A-2-6) WITH TRACE MICA | 17.0 |
| 115 | 115.7 | 23.5 | 3 | 3 | 4 | | | | | | | Sat. | 117.2 GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA | 22.0 |
| 110 | 110.7 | 28.5 | 7 | 10 | 14 | | | | | | | Sat. | 112.2 COASTAL PLAIN DARK GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA AND CLAY (BLACK CREEK FORMATION) | 27.0 |
| 105 | 105.7 | 33.5 | 7 | 10 | 13 | | | | | | | Sat. | | |
| 100 | 100.7 | 38.5 | 7 | 11 | 14 | | | | | | | Sat. | | |
| 95 | 95.7 | 43.5 | 6 | 9 | 14 | | | | | | | M | 97.2 DARK GRAY, FINE SANDY SILTY CLAY (A-7) WITH TRACE COARSE SAND AND MICA (BLACK CREEK FORMATION) | 42.0 |
| 90 | 90.7 | 48.5 | 6 | 8 | 12 | | | | | | | Sat. | 89.7 GRAY, SILTY FINE SAND (A-2-4) WITH TRACE CLAY AND MICA (BLACK CREEK FORMATION) | 49.5 |
| 85 | 85.7 | 53.5 | 6 | 8 | 13 | | | | | | | W | 87.2 DARK GRAY, FINE SANDY SILTY CLAY (A-7) WITH TRACE COARSE SAND AND MICA (BLACK CREEK FORMATION) | 52.0 |
| 80 | 80.7 | 58.5 | 8 | 10 | 11 | | | | | | | Sat. | 82.2 GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE CLAY, GRAVEL, AND MICA (BLACK CREEK FORMATION) | 57.0 |
| 75 | 75.7 | 63.5 | 7 | 9 | 11 | | | | | | | Sat. | | |
| 70 | 70.7 | 68.5 | 9 | 10 | 11 | | | | | | | Sat. | | |
| 65 | 65.7 | 73.5 | 8 | 14 | 14 | | | | | | | Sat. | | |
| 60 | 60.7 | 78.5 | | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| | | | | | | | |
|--|--|-------------------------|--|-----------------------|--|---------------------------|-----------------|
| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | |
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) |
| BORING NO. S6_B1-A | | STATION 802+86 | | OFFSET 53 ft LT | | ALIGNMENT -L- | |
| COLLAR ELEV. 139.2 ft | | TOTAL DEPTH 90.0 ft | | NORTHING 403,468 | | EASTING 2,010,250 | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | |
| DRILLER S. Davis | | START DATE 01/15/20 | | COMP. DATE 01/16/20 | | SURFACE WATER DEPTH 4.5ft | |

| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) |
|-----------|-----------------|------------|------------|-------|-------|----------------|----|----|----|-----|-----------|------|--|------------|
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | |
| 60 | | | | | | | | | | | | | | |
| 55 | 55.7 | 83.5 | 14 | 25 | 42 | | | | | | | Sat. | Match Line | |
| 50 | 50.7 | 88.5 | 16 | 26 | 36 | | | | | | | Sat. | 52.2 GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE CLAY, GRAVEL, AND MICA (BLACK CREEK FORMATION) (continued) | 87.0 |
| | | | | | | | | | | | | W | 49.2 LIGHT GRAY, FINE SANDY SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION) | 90.0 |
| | | | | | | | | | | | | | Boring Terminated at Elevation 49.2 ft IN SILTY CLAY (COASTAL PLAIN) (BLACK CREEK FORMATION) | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | | | | | | | | | | |
|--|-----------------|-------------------------|------------|-----------------------|-------|---------------------------|-----------------|----|----|-----|-----------|-----|-----|---------------------------|------------|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_B2-A | | STATION 803+47 | | OFFSET 52 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 134.4 ft | | TOTAL DEPTH 85.0 ft | | NORTHING 403,528 | | EASTING 2,010,259 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER S. Davis | | START DATE 01/16/20 | | COMP. DATE 01/17/20 | | SURFACE WATER DEPTH 9.6ft | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | ELEV. (ft) | DEPTH (ft) | |
| 155 | | | | | | | | | | | | | | | | |
| 150 | | | | | | | | | | | | | | | | |
| 145 | | | | | | | | | | | | | | | | |
| 140 | | | | | | | | | | | | | | | | |
| 135 | 134.4 | 0.0 | | | | | | | | | | | | | | |
| 130 | 130.9 | 3.5 | WOR | WOR | WOR | | | | | | | | | | | |
| 125 | 125.9 | 8.5 | 3 | 1 | 2 | | | | | | | | | | | |
| 120 | 120.9 | 13.5 | 4 | 2 | 2 | | | | | | | | | | | |
| 115 | 115.9 | 18.5 | 3 | 3 | 2 | | | | | | | | | | | |
| 110 | 110.9 | 23.5 | 3 | 5 | 8 | | | | | | | | | | | |
| 105 | 105.9 | 28.5 | 3 | 6 | 9 | | | | | | | | | | | |
| 100 | 100.9 | 33.5 | 5 | 6 | 9 | | | | | | | | | | | |
| 95 | 95.9 | 38.5 | 10 | 10 | 13 | | | | | | | | | | | |
| 90 | 90.9 | 43.5 | 6 | 10 | 12 | | | | | | | | | | | |
| 85 | 85.9 | 48.5 | 9 | 12 | 14 | | | | | | | | | | | |
| 80 | 80.9 | 53.5 | 11 | 12 | 17 | | | | | | | | | | | |
| 75 | 75.9 | 58.5 | 12 | 15 | 14 | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | | | | | | | | | | |
|--|-----------------|-------------------------|------------|-----------------------|-------|---------------------------|-----------------|----|----|-----|-----------|-----|-----|---------------------------|------------|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. S6_B2-A | | STATION 803+47 | | OFFSET 52 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 134.4 ft | | TOTAL DEPTH 85.0 ft | | NORTHING 403,528 | | EASTING 2,010,259 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER S. Davis | | START DATE 01/16/20 | | COMP. DATE 01/17/20 | | SURFACE WATER DEPTH 9.6ft | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | ELEV. (ft) | DEPTH (ft) | |
| 75 | | | | | | | | | | | | | | | | |
| 70 | 70.9 | 63.5 | 12 | 14 | 16 | | | | | | | | | | | |
| 65 | 65.9 | 68.5 | 12 | 17 | 20 | | | | | | | | | | | |
| 60 | 60.9 | 73.5 | 9 | 23 | 28 | | | | | | | | | | | |
| 55 | 55.9 | 78.5 | 10 | 17 | 27 | | | | | | | | | | | |
| 50 | 50.9 | 83.5 | 13 | 16 | 29 | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

Match Line

COASTAL PLAIN

DARK GRAY, SILTY FINE SAND (A-2-4) WITH TRACE CLAY AND MICA (BLACK CREEK FORMATION) (continued)

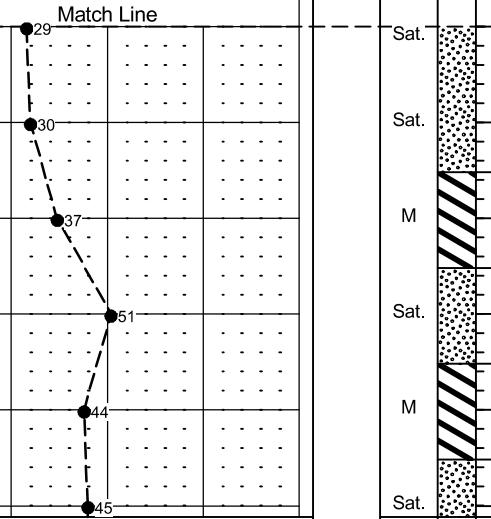
DARK GRAY, FINE SANDY SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION)

GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE MICA (BLACK CREEK FORMATION)

GRAY, FINE TO COARSE SANDY SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION)

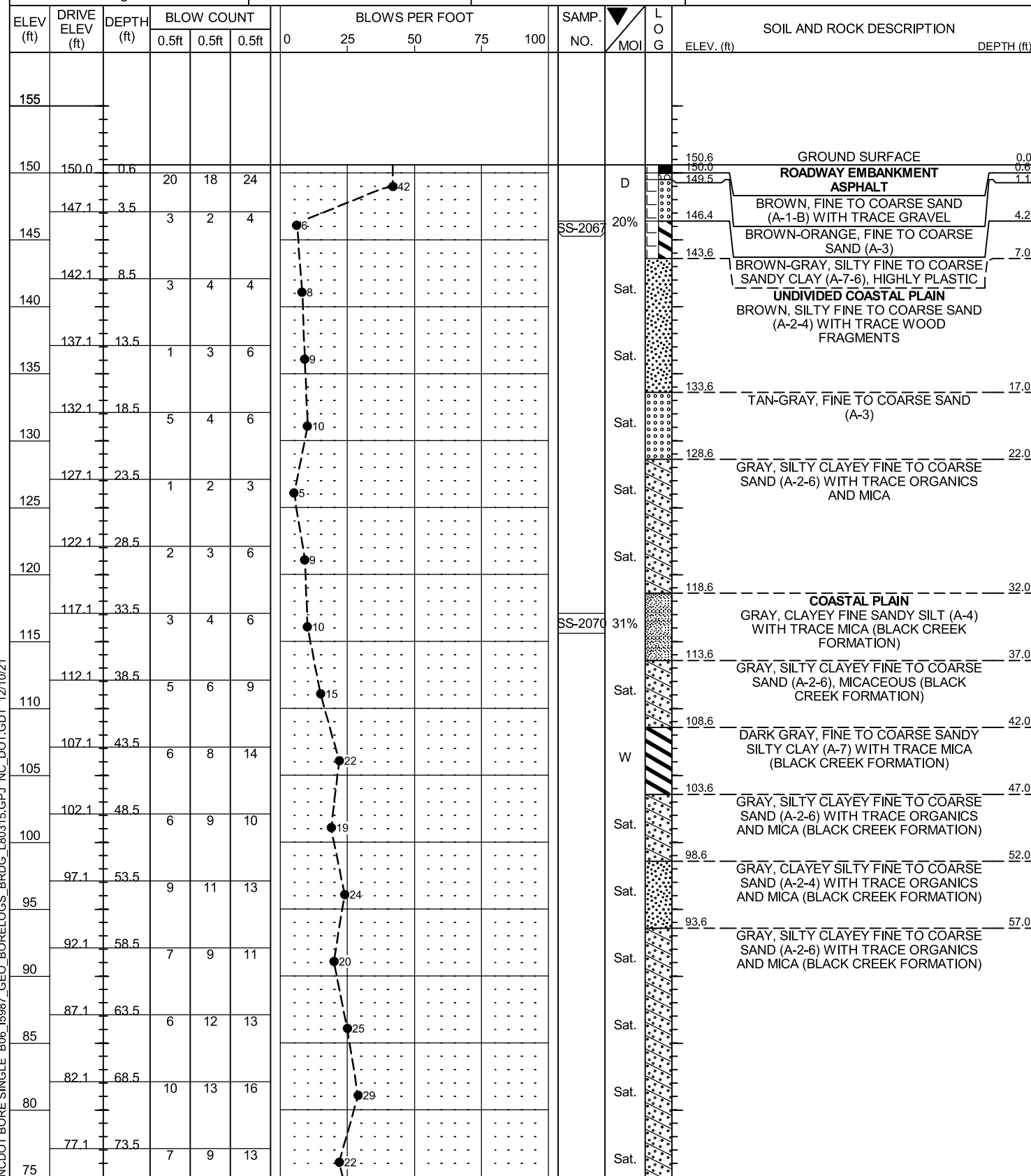
GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE CLAY AND MICA (BLACK CREEK FORMATION)

Boring Terminated at Elevation 49.4 ft IN SILTY SAND (COASTAL PLAIN) (BLACK CREEK FORMATION)



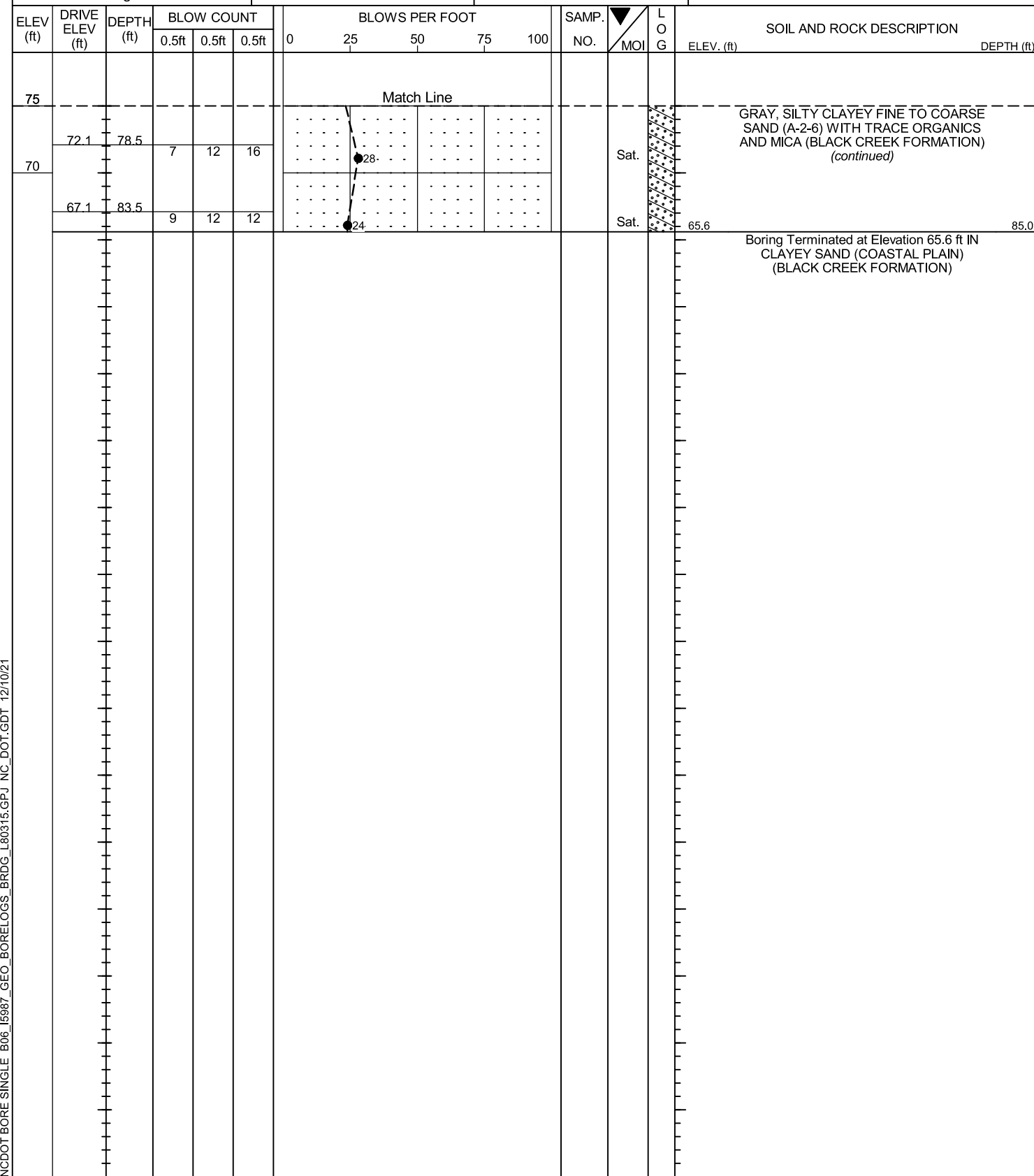
GEOTECHNICAL BORING REPORT BORE LOG

| | | | |
|---|----------------------------|--------------------------------|--------------------------------|
| WBS 47533.1.1 | TIP I-5987B | COUNTY ROBESON | GEOLOGIST B. Painter |
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | GROUND WTR (ft) |
| BORING NO. S6_EB2-A | STATION 804+09 | OFFSET 50 ft LT | ALIGNMENT -L- |
| COLLAR ELEV. 150.6 ft | TOTAL DEPTH 85.0 ft | NORTHING 403,589 | EASTING 2,010,270 |
| DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 82% 03/01/2019 | | DRILL METHOD Mud Rotary | HAMMER TYPE Automatic |
| DRILLER D. Tignor | START DATE 01/15/20 | COMP. DATE 01/17/20 | SURFACE WATER DEPTH N/A |



GEOTECHNICAL BORING REPORT BORE LOG

| | | | |
|---|----------------------------|--------------------------------|--------------------------------|
| WBS 47533.1.1 | TIP I-5987B | COUNTY ROBESON | GEOLOGIST B. Painter |
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | GROUND WTR (ft) |
| BORING NO. S6_EB2-A | STATION 804+09 | OFFSET 50 ft LT | ALIGNMENT -L- |
| COLLAR ELEV. 150.6 ft | TOTAL DEPTH 85.0 ft | NORTHING 403,589 | EASTING 2,010,270 |
| DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 82% 03/01/2019 | | DRILL METHOD Mud Rotary | HAMMER TYPE Automatic |
| DRILLER D. Tignor | START DATE 01/15/20 | COMP. DATE 01/17/20 | SURFACE WATER DEPTH N/A |



GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | | | | | | | | | | | | |
|--|-----------------|----------------------|-------------------------|---------------------|-----------------------|-------------------------|-----------------|----|----|-----|-----------|-----|-----|---------------------------|------------|-------|-----|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | | | |
| BORING NO. S6_EB2-B | | STATION 804+09 | | OFFSET 65 ft RT | | ALIGNMENT -L- | | | | | | | | | | | | |
| COLLAR ELEV. 143.7 ft | | TOTAL DEPTH 100.0 ft | | NORTHING 403,572 | | EASTING 2,010,384 | | | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | | |
| DRILLER S. Davis | | START DATE 01/08/20 | | COMP. DATE 01/08/20 | | SURFACE WATER DEPTH N/A | | | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | | | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | ELEV. (ft) | DEPTH (ft) | | | |
| 145 | 143.7 | 0.0 | | | | | | | | | | | | | | 143.7 | 0.0 | |
| | | | WOH | | | 1 | 0 | | | | | | | | | | | |
| 140 | 140.2 | 3.5 | 1 | 1 | 1 | | | | | | | | | | | | | |
| 135 | 135.2 | 8.5 | 3 | 3 | 4 | | | | | | | | | | | | | |
| 130 | 130.2 | 13.5 | 6 | 7 | 8 | | | | | | | | | | | | | |
| 125 | 125.2 | 18.5 | 1 | 1 | 3 | | | | | | | | | | | | | |
| 120 | 120.2 | 23.5 | 2 | 3 | 3 | | | | | | | | | | | | | |
| 115 | 115.2 | 28.5 | 2 | 4 | 4 | | | | | | | | | | | | | |
| 110 | 110.2 | 33.5 | 3 | 8 | 11 | | | | | | | | | | | | | |
| 105 | 105.2 | 38.5 | 2 | 4 | 6 | | | | | | | | | | | | | |
| 100 | 100.2 | 43.5 | 6 | 6 | 6 | | | | | | | | | | | | | |
| 95 | 95.2 | 48.5 | 6 | 7 | 8 | | | | | | | | | | | | | |
| 90 | 90.2 | 53.5 | 7 | 7 | 11 | | | | | | | | | | | | | |
| 85 | 85.2 | 58.5 | 7 | 9 | 10 | | | | | | | | | | | | | |
| 80 | 80.2 | 63.5 | 10 | 11 | 11 | | | | | | | | | | | | | |
| 75 | 75.2 | 68.5 | 10 | 10 | 11 | | | | | | | | | | | | | |
| 70 | 70.2 | 73.5 | 9 | 11 | 11 | | | | | | | | | | | | | |
| 65 | 65.2 | 78.5 | | | | | | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21

GEOTECHNICAL BORING REPORT BORE LOG

| WBS 47533.1.1 | | TIP I-5987B | | COUNTY ROBESON | | GEOLOGIST W. Pesl | | | | | | | | | | | |
|--|-----------------|----------------------|-------------------------|---------------------|-----------------------|-------------------------|-----------------|----|----|-----|-----------|-----|-----|---------------------------|------------|--|--|
| SITE DESCRIPTION Bridge on -L- (I-95) over Little Marsh Swamp at -L- Sta. 803+15 | | | | | | | GROUND WTR (ft) | | | | | | | | | | |
| BORING NO. S6_EB2-B | | STATION 804+09 | | OFFSET 65 ft RT | | ALIGNMENT -L- | | | | | | | | | | | |
| COLLAR ELEV. 143.7 ft | | TOTAL DEPTH 100.0 ft | | NORTHING 403,572 | | EASTING 2,010,384 | | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 84% 03/01/2019 | | | DRILL METHOD Mud Rotary | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER S. Davis | | START DATE 01/08/20 | | COMP. DATE 01/08/20 | | SURFACE WATER DEPTH N/A | | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | ELEV. (ft) | DEPTH (ft) | | |
| 65 | | | | | | | | | | | | | | | | | |
| | | | 9 | 10 | 12 | | | | | | | | | | | | |
| 60 | 60.2 | 83.5 | 8 | 12 | 22 | | | | | | | | | | | | |
| 55 | 55.2 | 88.5 | 24 | 37 | 25 | | | | | | | | | | | | |
| 50 | 50.2 | 93.5 | 10 | 15 | 20 | | | | | | | | | | | | |
| 45 | 45.2 | 98.5 | 11 | 16 | 23 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

NCDOT BORE SINGLE B06_15987_GEO_BORELOGS_BRDG_L80315.GPJ_NC_DOT.GDT 12/10/21