DocuSign Envelope ID: B81CF264-816D-419A-B232-7A7D846A2499

REFERENCE

B

STATE OF NORTH CAROLINA

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

CONTENTS SHEET NO. **DESCRIPTION**

TITLE SHEET LEGEND (SOIL & ROCK) 2A SUPPLEMENTAL LEGEND (GSI) SITE PLAN PROFILE 5-7 CROSS SECTION(S) BORE LOG(S), CORE REPORT(S) & CORE PHOTOGRAPHS

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY GUILFORD

PROJECT DESCRIPTION BRIDGE NO. 225 OVER I-85 BUSINESS ON SR 1115 (REHOBETH CHURCH

SITE DESCRIPTION BRIDGE FROM -L- STA. 17 + 82.09 TO 19 + 82.09

STATE	STATE PROJECT REFERENCE NO.	NO.	SHEETS
N.C.	SF-400225	1	15

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.

CENERAL 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 LABDRATORY 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 NIDICATED 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 SATISTY 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 FOOD THE PROJECT. THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

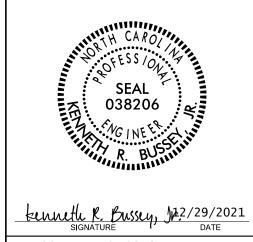
- NOTES:

 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.

DRAWN BY _C. BENHOFF CHECKED BY K. BUSSEY SUBMITTED BY _K. BUSSEY

N. YACOBI



DATE NOVEMBER 2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SF-400225 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.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM DI586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	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	AQUIFER - A WATER BEARING FORMATION OR STRATA.
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	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:	WEATHERED WAS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES >	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, SUBANGULAR, SUBROUNDED, OR ROUNDED. MINERALOGICAL COMPOSITION	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 CLASS. (≤ 35% PASSING *200) (> 35% PASSING *200) ORGANIC MATERIALS	MINERAL DOICHL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAQLIN, ETC.	CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED, ROCK TYPE INCLUDES GRANITE,	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5	ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	GNEISS, GABBRO, SCHIST, ETC.	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CLASS. A-1-0 A-1-6 A-2-4 A-2-5 A-2-6 A-2-7 A-7-6 A-7-6 A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YELLO SPT REFUSAL IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
SYMBOL 000000000000000000000000000000000000	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50	ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	OF SLOPE.
7. PASSING	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	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 SIL' MUCK, SOILS CLAY PEAT	PERCENTAGE OF MATERIAL	WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
#200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN 36 MN	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. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
MATERIAL PASSING *40	TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%	HAMMER IF CRYSTALLINE.	HORIZONTAL.
LL 48 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 11 MN 11 MN LITTLE OR HIGHLY P1 6 MX NP 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN MODERATE	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH,
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF ORGANIC SOILS	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 SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
USUAL TYPES STUNE FRAUS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER		(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.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND 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
GEN. RATING EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE	√PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) 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	PARENT MATERIAL.
AS SUBGRADE POOR P	- SPRING OR SEEP	WITH FRESH ROCK.	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
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH	FIELD.
COMPACTNESS OR RANGE OF STANDARD RANGE OF UNCONFINED	TT 25.025	(MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES 'CLUNK' SOUND WHEN STRUCK, IF TESTED, WOULD YIELD SPT REFUSAL	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH (N-VALUE) (TONS/FT ²)	ROADWAY EMBANKMENT (RE) ### BOIL DESCRIPTION ### DIP DIRECTION OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
GENERALLY VERY LOOSE < 4	SOIL SYMBOL SPI DAT TEST BORING SLOPE INDICATOR INSTALLATION	(SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
GRANULAR LUUSE 4 10 10		TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS
MATERIAL DENSE 30 TO 50 (NON-COHESIVE) VERY DENSE > 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CONE PENETROMETER	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. 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	SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK (V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.5	MW TEST PODING	VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0 MATERIAL STIFF 8 TO 15 1 TO 2	INFERRED ROCK LINE MONITORING WELL WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	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
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD > 30 > 4	TTTTT ALLUVIAL SOIL BOUNDARY A PIEZOMETER INSTALLATION - SPT N-VALUE	ALSO AN EXAMPLE.	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	ROCK HARDNESS	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 ACCEPTABLE, BUT NOT TO BE	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES 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	LICED IN THE TOP 2 FEET OF	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO
BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY	SHALLOW UNCLASSIFIED EXCAVATION - EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
(BLDR.) (COB.) (GR.) (CSE. SD.) (F SD.) (SL.) (CL.)	ABBREVIATIONS	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED	OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	BY MODERATE BLOWS.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY 7 - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE	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
SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE FIELD MOISTURE COURSE FOR THE REPORT OF THE PROPERTY	CPT - CONE PENETRATION TEST NP - NON PLASTIC	POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
(ATTERBERG LIMITS) FIELD MOISTONE GUIDE FOR FIELD MOISTURE DESCRIPTION	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST <u>SAMPLE ABBREVIATIONS</u>	SOFT CAN BE GROVED 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	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY 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.	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	F - FINE SL SILT, SILTY ST - SHELBY TUBE	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH 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 CEMICOL ID DECUMPES DOWNES TO	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
(P) ATTAIN OPTIMUM MOISTURE	FRAGS FRAGMENTS	FRACTURE SPACING BEDDING	BENCH MARK: N/A
" 'PL L PLASTIC LIMIT	EQUIPMENT USED ON SUBJECT PROJECT	TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	ELEVATION: FEET
OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	WIDE	
SL _ SHRINKAGE LIMIT	CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET	NOTES:
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	6' CONTINUOUS FLIGHT AUGER CORE SIZE:	VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET	BORING FLEVATIONS OBTAINED FROM TRIMBLE RI2 GNSS RECEIVER CERTIFIED WITH FCC PART 15 (CLASS B DEVICE), 24, 32; RCM; PTCRB; BT SIG
PLASTICITY	X CME-55	INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH	CME-550 HARD FACED FINGER BITS X -N Q2	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	FIAD - FILLED IMMEDIATELY AFTER DRILLING
NON PLASTIC 0-5 VERY LOW	TUNGCARBIDE INSERTS	RUBBING WITH FINGER FREES NUMEROUS GRAINS; FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM	CASING W/ ADVANCER POST HOLE DIGGER	CDAING CAN BE CERABATED FROM CAMBLE WITH CIFEL BRODE.	
HIGHLY PLASTIC 26 OR MORE HIGH	PORTABLE HOIST TRICONE STEEL TEETH HAND AUGER	MODERATELY INDURATED 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).	X CORE BIT VANE SHEAR TEST	CHARP HAMMER BLOWS REQUIRED TO RREAK SAMPLE.	
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14

PROJECT REFERENCE NO.

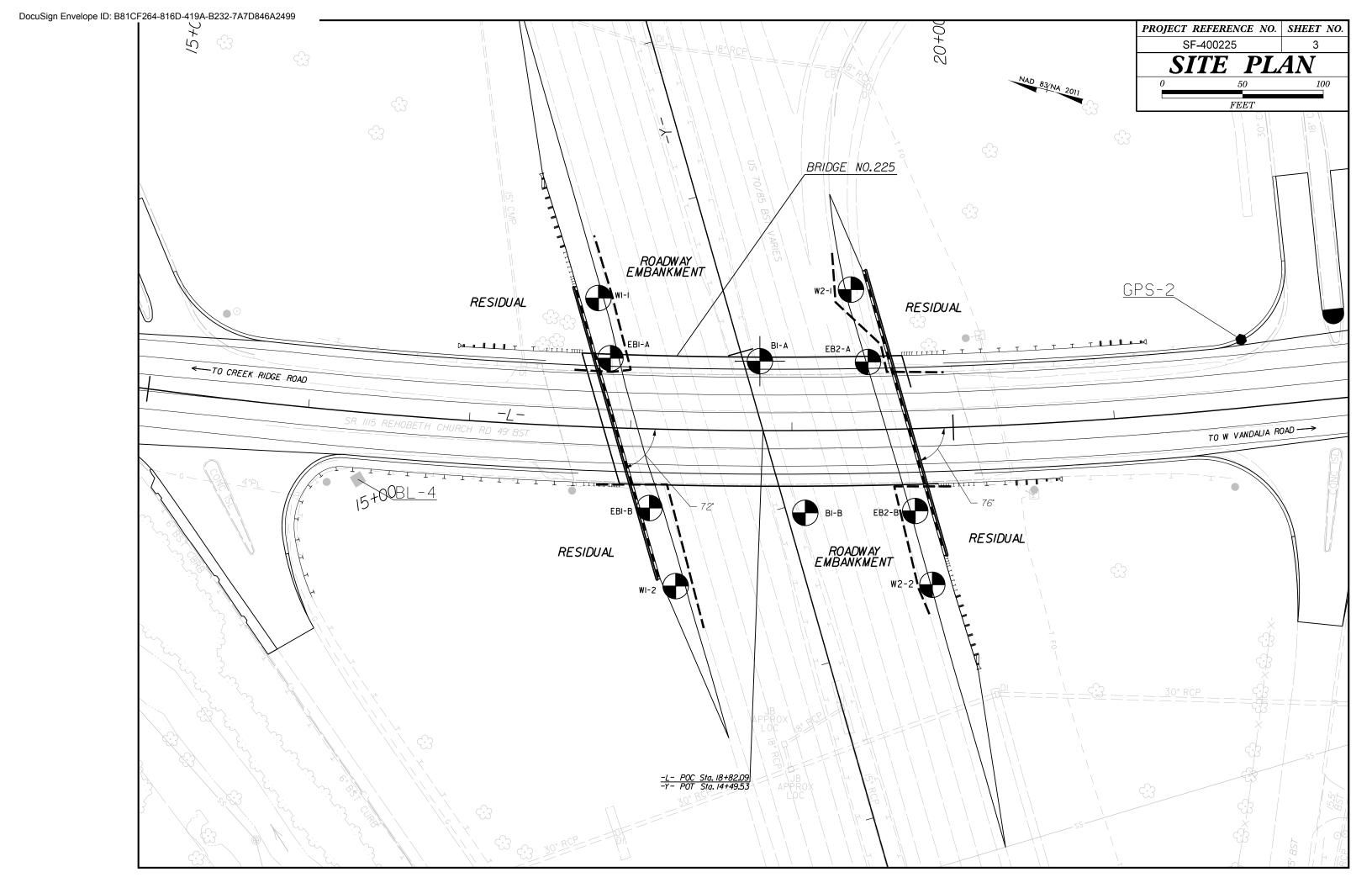
SF-400225

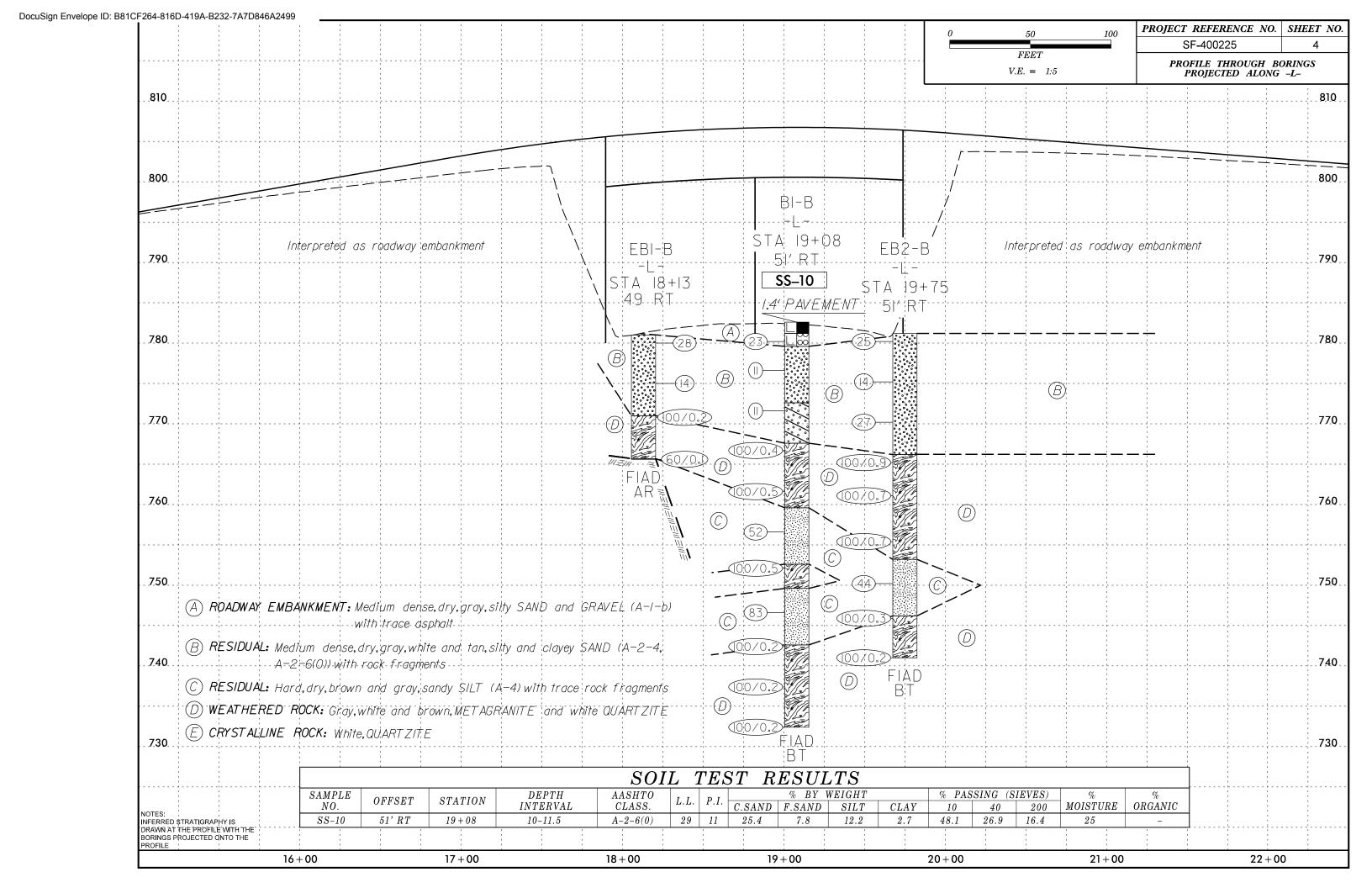
2A

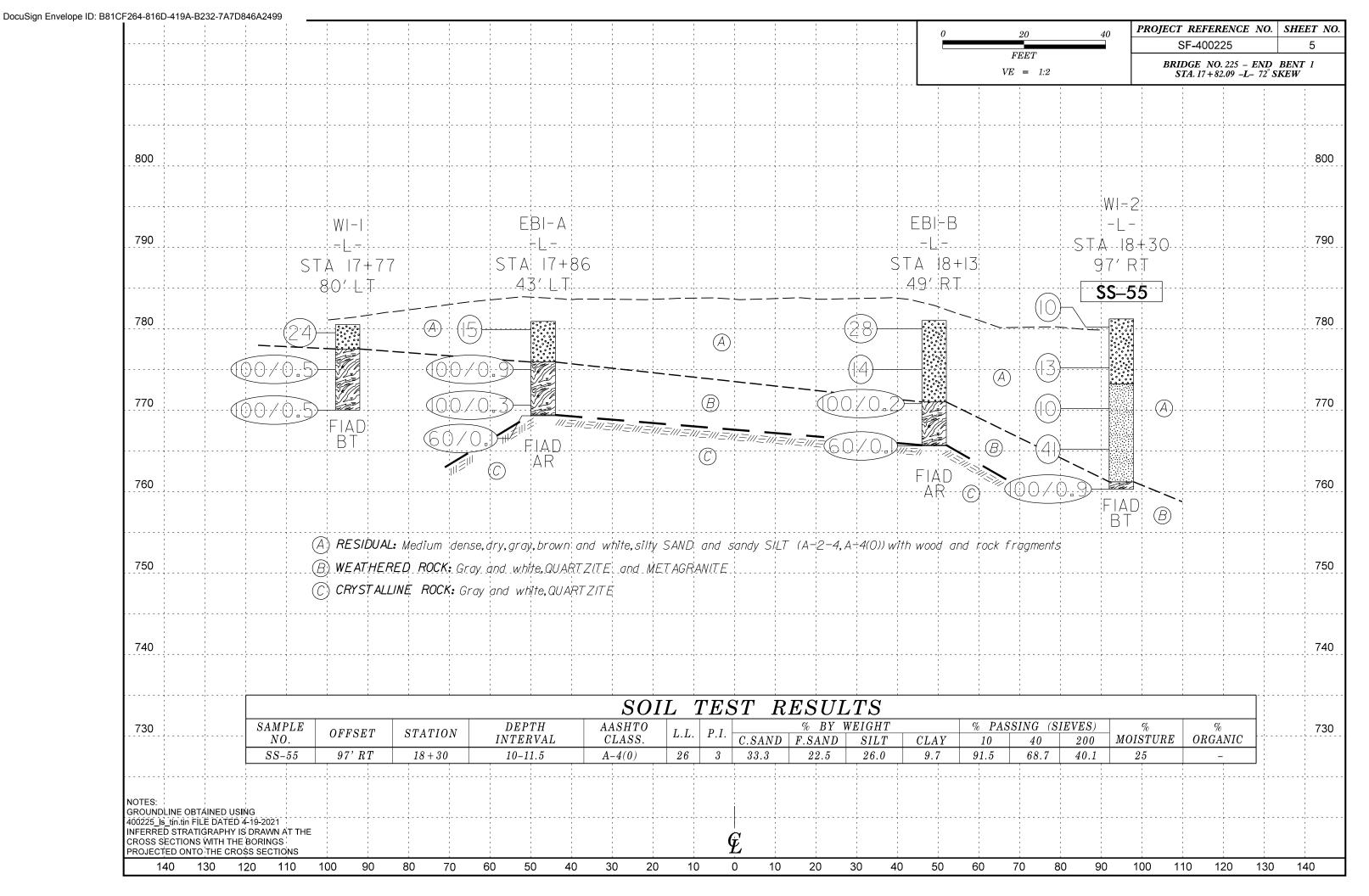
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

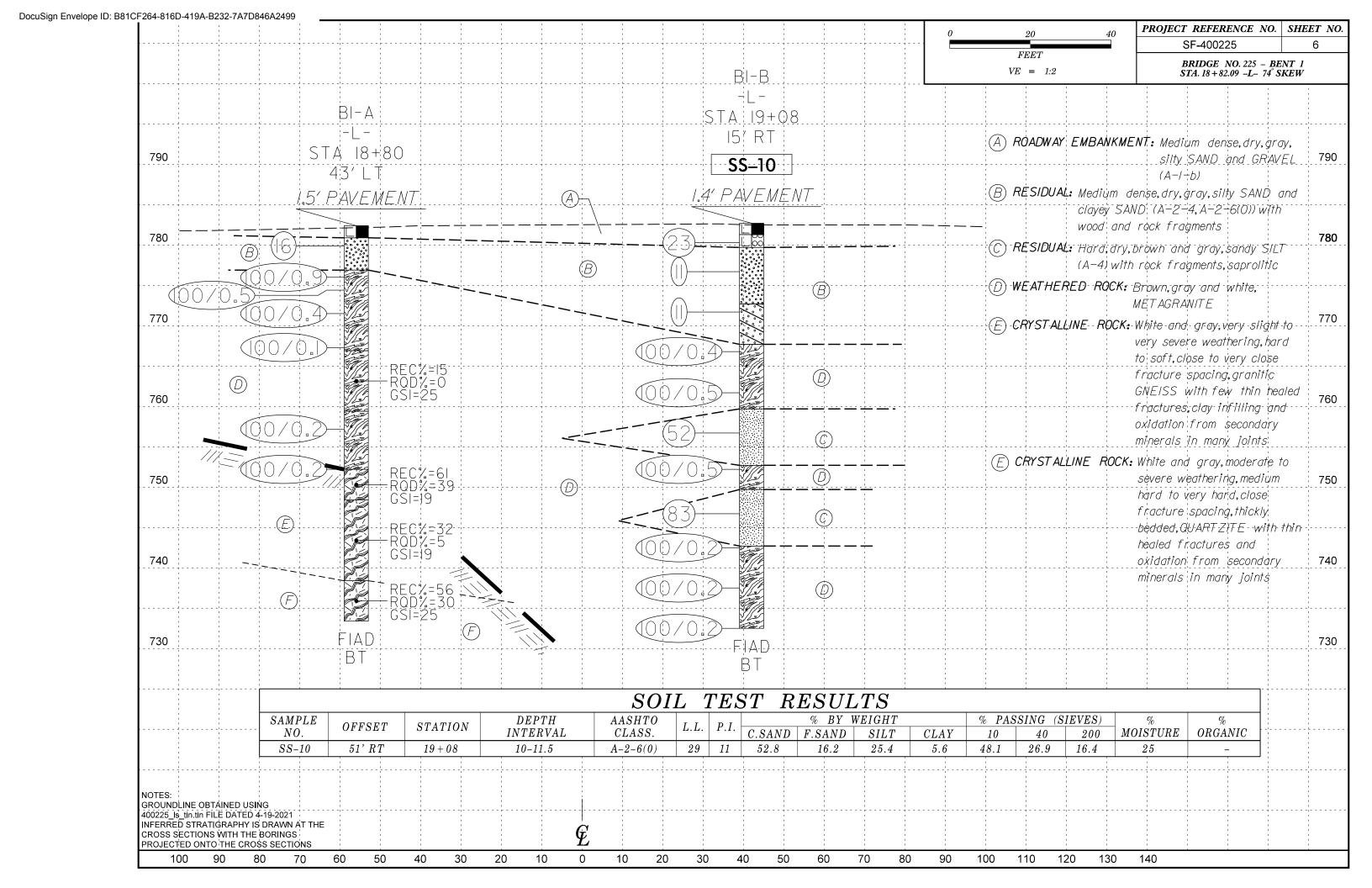
SUBSURFACE INVESTIGATION

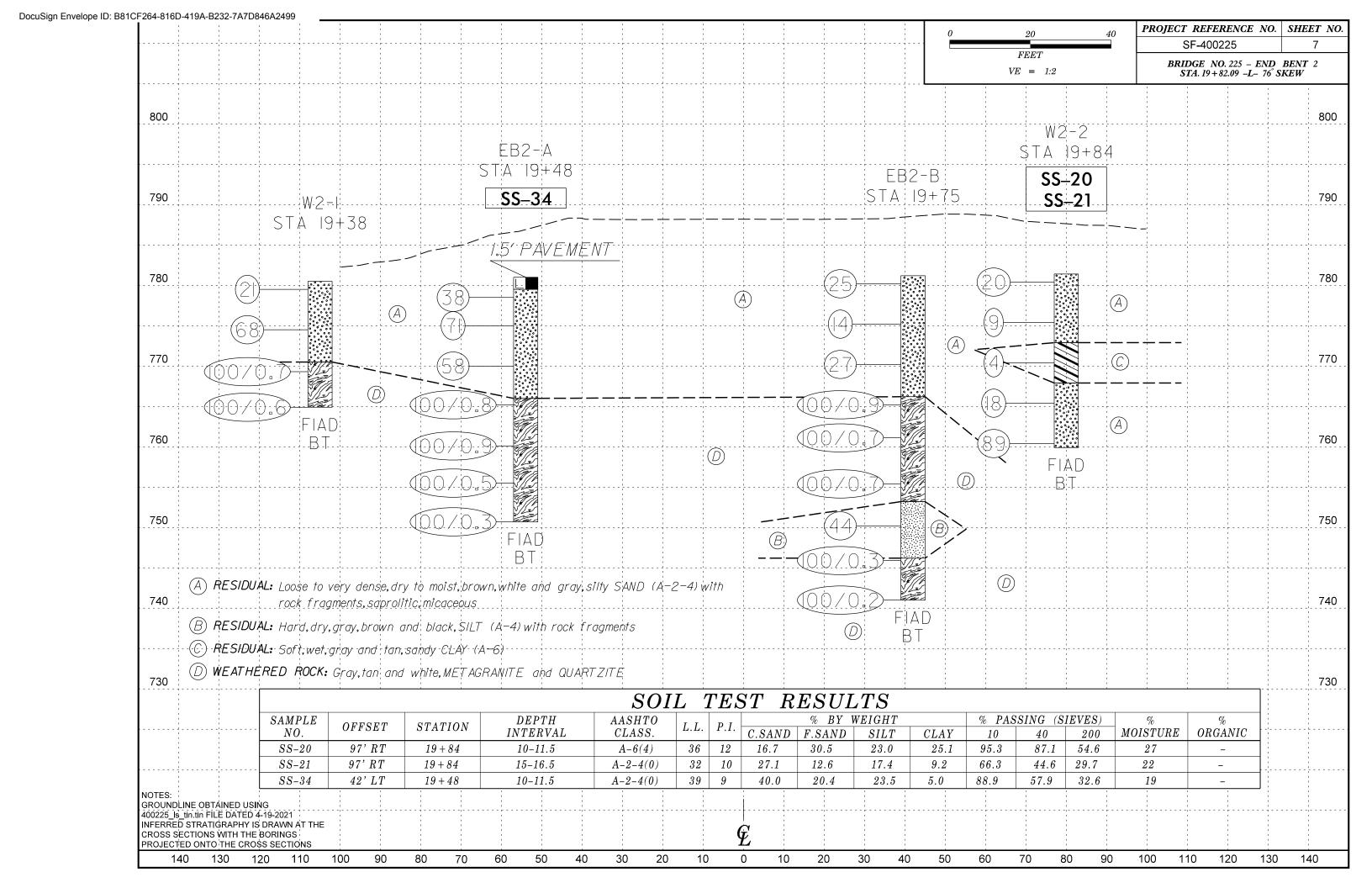
SUPPLEMENTAL LEGEND, GEOLOGICAL STRENGTH INDEX (GSI) TABLES FROM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AASHTO LRFD Figure 10.4.6.4-2 — Determination of GSI for Tectonically Deformed Heterogeneous Rock Masses (Marinos and Hoek, 2000) AASHTO LRFD Figure 10.4.6.4-1 — Determination of GSI for Jointed Rock Mass (Marinos and Hoek, 2000) GEOLOGICAL STRENGTH INDEX (GSI) FOR GSI FOR HETEROGENEOUS ROCK MASSES SUCH JOINTED ROCKS (Hoek and Marinos, 2000) AS FLYSCH (Marinos. P and Hoek E., 2000) From a description of the lithology, structure and ,occasionally es with compact s with angular From the lithology, structure and surface POOR - Very smooth, slicken-l or highly weathered surfaces soft clay coatings or fillings athered sur or fillings conditions of the discontinuities, estimate the average value of GSI. Do not try to surface conditions (particularly of the bedding planes), choose a box in the chart. Locate the planes) be too precise. Quoting a range from 33 to 37 is more realistic than stating that position in the box that corresponds to the condition of the discontinuities and estimate the average value GSI = 35. Note that the table does not of GSI from the contours. Do not attempt to be too apply to structurally controlled failures. Where weak planar structural planes are precise. Quoting a range from 33 to 37 is more realistic than giving GSI = 35. Note that the slightly present in an unfavorable orientation smooth, surface fillings highly coating Hoek-Brown criterion does not apply to structurally with respect to the excavation face, these will dominate the rock mass controlled failures. Where unfavourably oriented behaviour. The shear strength of surfaces continuous weak planar discontinuities are present, in rocks that are prone to deterioration slightly es these will dominate the behaviour of the rock mass. Rough, Slickensided, Fith compact or angular fra as a result of changes in moisture content will be reduced if water is The strength of some rock masses is reduced by the 1 0 GOOD rough, presence of groundwater and this can be allowed for present. When working with rocks in the by a slight shift to the right in the columns for fair, fair to very poor categories, a shift to th, r poor and very poor conditions. Water pressure does the right may be made for wet conditions. GOOD Rough, s surface VERY | sided with s FAIR -weath VERY Slick with VERY Very VERY Water pressure is dealt with by effective FAIR Smooralter not change the value of GSI and it is dealt with by stress analysis. using effective stress analysis. STRUCTURE DECREASING SURFACE QUALITY COMPOSITION AND STRUCTURE INTACT OR MASSIVE - intact A. Thick bedded, very blocky sandstone 90 rock specimens or massive in 7Ó N/A N/A The effect of pelitic coatings on the bedding situ rock with few widely spaced planes is minimized by the confinement of PIECES discontinuities the rock mass. In shallow tunnels or slopes these bedding planes may cause structurally 80 controlled instability. 60 BLOCKY - well interlocked un-70[′] disturbed rock mass consisting of cubical blocks formed by three D. Siltstone B. Sand-stone wi thin inte intersecting discontinuity sets WWW E. Weak 50 C. Sandstone and stone with or silty shale siltstone thin inter siltstone with sandor clayey С shale with layers of an similar stone layers VERY BLOCKY - interlocked. amounts sands tone siltstone 40 partially disturbed mass with 50 multi-faceted angular blocks formed by 4 or more joint sets INTERL $C_{\bullet}D_{\bullet}E_{\bullet}$ and G - may be more or F. Tectonically deformed, BLOCKY/DISTURBED/SEAMY -30 less folded than illustrated but intensively folded/faulted, folded with angular blocks this does not change the strength. sheared clayey shale or siltstone formed by many intersecting Tectonic deformation, faulting and with broken and deformed CREASING loss of continuity moves these discontinuity sets. Persistence sandstone layers forming an 30 categories to F and H. of bedding planes or schistosity almost chaotic structure 20 DISINTEGRATED - poorly interlocked, heavily broken rock mass 20 H. Tectonically deformed silty with mixture of angular and or clayey shale with or clayey shale forming a 10 rounded rock pieces or without a few very chaotic structure with pockets thin sandstone layers of clay. Thin layers of sandstone are transformed into small rock pieces 10 LAMINATED/SHEARED - Lack of blockiness due to close spacing N/A N/A → Means deformation after tectonic disturbance of weak schistosity or shear planes











	BORE LOG	1				1	
WBS 17BP.7.R.142 TIP SF-400225	COUNTY GUILFORD	GEOLOGIST N. Yacobi		WBS 17BP.7.R.142	TIP SF-400225	COUNTY GUILFORD	GEOLOGIST N. Yacobi
SITE DESCRIPTION Bridge No. 225 over I-85 Business or					idge No. 225 over I-85 Business on S		GROUND WTR (ft
BORING NO. EB1-A STATION 17+86	OFFSET 43 ft LT	ALIGNMENT -L- 0 HR.	, l	BORING NO. EB1-B	STATION 18+13	OFFSET 49 ft RT	ALIGNMENT -L- 0 HR. Dry
COLLAR ELEV. 780.9 ft TOTAL DEPTH 11.		EASTING 1,757,884 24 HR .		COLLAR ELEV. 781.0		· · · · · · · · · · · · · · · · · · ·	EASTING 1,757,800 24 HR. FIAD
DRILL RIG/HAMMER EFF/DATE GT18255 CME-55 95%07/24/2019	DRILL METHOD		E Automatic		ATE GT18255 CME-55 95%07/24/2019		DD H.S. Augers HAMMER TYPE Automatic
DRILLER L. Wanstrath START DATE 04/2		SURFACE WATER DEPTH N/A		DRILLER L. Wanstrath			SURFACE WATER DEPTH N/A
ELEV (ft)	S PER FOOT SAMP. V C O NO. MOI G	SOIL AND ROCK DESCRIPTION	ON DEPTH (ft)	ELEV DRIVE ELEV (ft) (ft) 0.5	Sit 0.5ft 0.5ft 0 25	PER FOOT SAMP. 50 75 100 NO. MO	O SOIL AND ROCK DESCRIPTION G
780	100/0.9	780.9 GROUND SURFACE RESIDUAL Medium dense, gray, silty SAND (A contains rock fragments 775.9 WEATHERED ROCK Gray and white, QUARTZITE 769.4 CRYSTALLINE ROCK Gray and white, QUARTZITE		780 781.0 0.0 5 776.0 5.0 4 771.0 10.0 100/	7 7 7	D D	Medium dense, gray and white, silty SAND (A-2-4), contains rock fragments
		Boring Terminated with Standar Penetration Test Refusal at Elevation ft in Crystalline Rock (QUARTZII	ard on 769.3	765.7 15.3 60/0	0.1	60/0.1	765.7 765.6 CRYSTALLINE ROCK White, QUARTZITE Boring Terminated with Standard Penetration Test Refusal at Elevation 765.6 It in Crystalline Rock (QUARTZITE)

GEOTECHNICAL BORING REPORT

BORE LOG

								<u>ORE L</u>	<u> </u>		
VBS	17BP.7	7.R.142	2		TI	IP SF-400225	COUNT	Y GUILFOR	D	GEOLOGIST N. Yacobi	
ITE	DESCRI	PTION	Brid	ge No.	225 ov	ver I-85 Business on Sl	R 1115 (R	Rehobeth Chu	rch Road)		GROUND WTR (ft
ORII	NG NO.	B1-A			S	TATION 18+80		OFFSET 4	3 ft LT	ALIGNMENT -L-	0 HR. Dry
OLL	AR ELE	V . 78	32.3 ft		TO	OTAL DEPTH 49.0 ft		NORTHING	827,944	EASTING 1,757,905	24 HR. FIAD
RILL	RIG/HAM	MER EF	F/DAT	E GTI	8255 CN	VIE-55 95%07/24/2019			DRILL METHOD SP	T Core Boring HAMIN	/IER TYPE Automatic
RILL	ER L.	Wanst	rath		S	TART DATE 04/19/2	1	COMP. DAT	E 04/20/21	SURFACE WATER DEPTH N	/A
LEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	0.5ft	UNT 0.5ft	 	PER FOOT	75 100	SAMP. L O O NO. MOI G	SOIL AND ROCK DES	CCRIPTION DEPTH (
85	780.8	- - - - 1.5	8	8	8				- 500	782.3 GROUND SURF 780.8 1.5' Pavemer	nt 1
	777.3	5.0	26	54	46/0.4	16			D	Medium dense, gray, silty contains clay and rock	SAND (A-2-4), fragments
75	774.8 -	- - 7.5 -	100/0.		40/0.4			100/0.9		. WEATHERED R — Gray, tan, and white, ME	
70	772.3	10.0	42	100/0.4	4			- 100/0.4		• • •	
65	767.3	15.0 -	100/0.	1				100/0.1		. 766.8 Gray, METAGRA	
60	-	-								Strata REC%= Strata RQD% Strata GSI=2	=0
55	757.3	- 25.0	100/0.2	2				100/0.2		Very dense, gray, clayey C ROCK FRAGME	CRYSTALLINE
50	752.3	30.0	100/0.2	2				100/0.2		752.1 CRYSTALLINE F White and gray, granit	
45	- - -	-								748.3 Strata REC%= Strata RQD%= Strata GSI=1 White and gray, granit	=39 9
40	- - - -	-								Strata REC%= Strata RQD% Strata GSI=1	-32 =5
35	-	- - - -								White and gray, QU/ Strata REC%= Strata RQD%=	- 56
	- - - -	- - - -								733.3 Strata RQD%- Strata RQD Strata RQD%- Strata RQD%- Strata RQD Strata RQD S	ation 733.3 ft in GRANITE &
		-									

GEOTECHNICAL BORING REPORT CORFIGG

					1				C	O	RE L	OC)		_								
WBS	17BF	.7.R.142	2		TIP	SF-40	0225	C	OUNT	Y G	UILFOR	D			G	EOLOG	SIST	N. Ya	acobi		_		
SITE	DESC	RIPTION	Brido	ge No. 225	5 over	I-85 Bı	usiness or	n SR 1	115 (F	Reho	beth Chu	rch F	Road)								GRO	JND V	VTR (ft)
BOR	ING NO	. B1-A			STA	TION	18+80			OF	FSET 4	3 ft L	.T		Al	LIGNME	ENT	L-			0 HF	<u>.</u>	Dry
							PTH 49.			NO	RTHING	827	7,944		E/	ASTING	3 1	,757,90)5		24 HF		FIAD
DRILL	.RIG/HA	MIMER EF	F./DAT	E GT1825	5 CME-	55 95%	07/24/2019	1				DRIL	LMETH	OD SP	ΓCor	re Boring				HAM	MER TYP	E Aut	omatic
DRIL	LER L	Wanst	rath		STAI	RT DA	TE 04/1	9/21		CO	MP. DA1	TE (04/20/2	1	SI	URFAC	ΕW	ATER I	DEP.	TH N	N/A		
COR	E SIZE	N-Q2	,		TOTA	AL RUI	N 26.3 ft																
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft)	RQD (ft) %	SAMP. NO.	REC. (ft)	RATA RQD (ft) %	L O G	ELEV. (f	t)		С	ESC	CRIPTIO	N A	ND REM	IARK	s			DEPTH (ft
766.8	766.8	15.5	4.5		(0.7)	(0.0)		(1.1)	(0.0)	S4776	700.0				В	egin Co	ring	@ 15.5	ft ft				45.5
765	762.3	Ŧ	4.5	1:15 0:44 0:49 1:21	16%	0%		15%	0%		_ 766.8 _ _ _ _	G				GRANIT d, few w	ΓE, r /eath	moderate nered gra	e to c		te weathe s/layers	ring,	15.5
760	759.3	23.0	3.0	3:18 1:12 0:48	(0.4) 13%	(0.0) 0%					- - 759.3						GSI		- 00	OL ED	A ON AFRIT	0	23.0
		Ŧ		N=100/0.2							<u>-</u> -		Very d	ense, gra	ay, c	layey CF	RYS	I ALLINE	: RO	CKFR	AGMENT	S	
755		‡									- -												
	752.1	30.2	3.8	<u>N=100/0.2</u> 1:35/0.8	(2.3)	(1.5)		(2.3)	(1.5)		752.1				_			INE ROC					30.2
750	748.3	34.0	5.0	1:29 1:47 1:27 1:28 1:20	61% (1.2) 24%	(0.0)		(3.2) 32%	39% (0.5) 5%			wr [nite and spa	gray, ver icing, gra	y slig	ght to mo	oder S wi	th few, th	herin	ig, har	d, close fr ractures	acture	34.0
745	743.3	39.0	5.0	1:46 1:23 1:31				3270	376		- -		very clos	se fractur	re sp	e to very pacing, g	rani	ere weat	SS w	<i>i</i> ith cla	dium hard y infilling		t,
740	700.0	† † 1,40	5.0	0:48 1:12 1:01 0:49	(2.0) 40%	(0.5) 10%					_ _ 			Oxidation	11101		GSI:		3 111 1	ilally j	Olinto		
735	738.3	44.0	5.0	0:53 0:49 1:01 1:28	(2.8) 56%	(1.5) 30%		(2.8) 56%	(1.5) 30%		738.3 - -	W	, close f	racture s	spaci	ing, thick tion from	kly b 1 sec	edded, C condary r	QUAF	RTZITE	um hard to E with thin many joir	heale	44.0 d
	733.3	49.0		1:23 1:30							733.3		Borir			d at Elev		n 733.3 t			lline Rock		49.0
															IVIE I	AGNAV	WITE	& QUAF	NIZI				

CORE PHOTOGRAPHIC RECORD

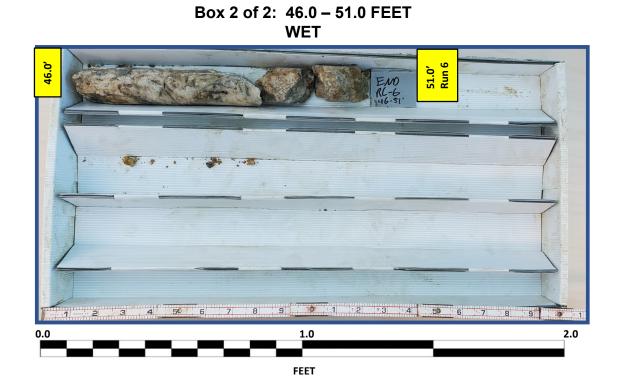
17BP.7.R.142 (225)

Bridge Number 225 Over I-85 Business on SR 1115 (Rehobeth Church Road)

Box 1 of 2: 15.5 – 46.0 FEET WET

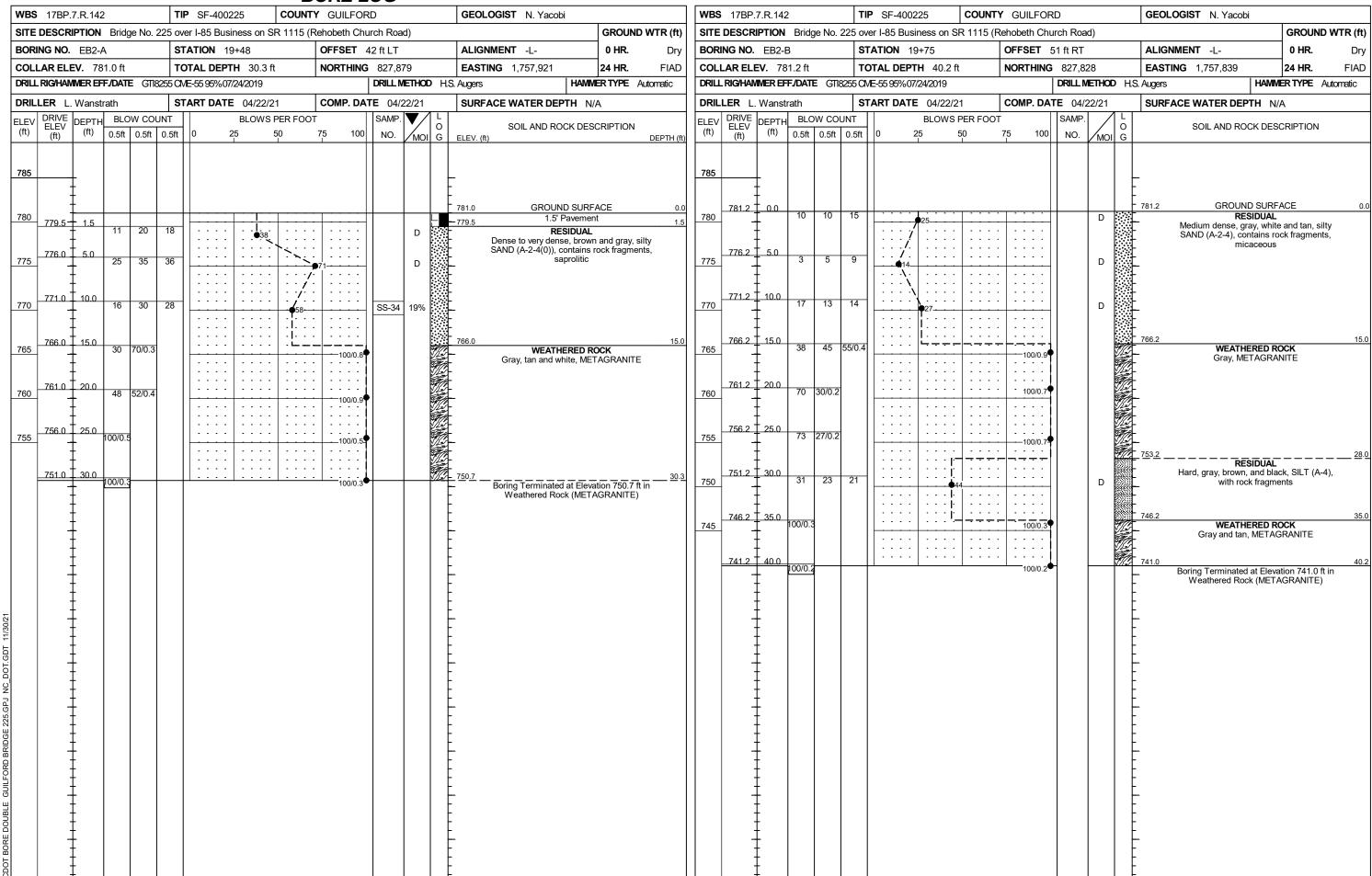
FEET

B1-A



B1-A

								OILL L				T		
	17BP.					1		GUILFOF				GEOLOGIST N. Yacobi		
			Brido	ge No.		er I-85 Business on SF	1115 (R			d)		1	GROUND V	
BORI	ING NO.	B1-B			S	TATION 19+08		OFFSET	51 ft RT			ALIGNMENT -L-	0 HR.	Dry
	LAR ELE					OTAL DEPTH 50.2 ft	NORTHING 827,894				EASTING 1,757,821	24 HR.	FIAD	
DRILL RIG/HAMMER EFF/DATE GT1825					3255 CN	VE-55 95%07/24/2019			DRILL N	IETHO) HS	S. Augers HAMI	MERTYPE Aut	tomatic
DRIL	LER L.	Wanst	rath		S	TART DATE 04/20/21		COMP. DA	TE 04/2	21/21		SURFACE WATER DEPTH	I/A	
ELEV	DRIVE ELEV	DEPTH	BLC	W CO	UNT	BLOWS P	ER FOOT	•	SAMP.	V /	LO	SOIL AND ROCK DE	SCRIPTION	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25 5)	75 100	NO.	МОІ		ELEV. (ft)		DEPTH (ft)
785														
	-	-									l F	- 782.6 GROUND SUR	EACE	0.0
	781.2	- 1.4										781.2 GROUND SUR		1.4
780	701.2	- '· ·	47	16	7	23				D		ROADWAY EMBAI		3.0
	- 777.6 -	- - 5.0				: : :/: : : : :						GRAVEL (A-1-b), ar	nd asphalt	
		- 5.0	4	4	7	. 🎻 -				D	-	RESIDUAL Medium dense, gray, silty		_
775	-	_						1			F	with clay and rock f	ragments	'
	772.6 -	- - 10.0				:::::						772.6		10.0
	_	-	4	4	7				SS-10	25%	//	Medium dense, gray, o (A-2-6(0)), contains ro		
770	-	_				 : j : : : : : : 		 				-	sit iraginionto	
	767.6 -	15.0	34	100/0.4		:::::::::		· · · ·				767.6	2001/	15.0
765	-	-	34	100/0.4				100/0.4	•			WEATHERED F Brown, gray, and white, N		
700	-	-										_		
	762.6	20.0	38	100/0.5										
760	-	-						_ 100/0.5	'			750.6		22.0
] -	-					<u> </u>	+++				-759.6 RESIDUAI		23.0
	757.6 -	- 25.0 -	15	25	27		· · · ·			D		Hard, brown and gray, sa contains rock fragmen	ndy SILT (A-4), its. saprolitic	
755		-					1			-		-	, ,	
	750.0	- 00.0										752.6		30.0
	752.6 -	- 30.0 -	100/0.5	1			'	100/0.5	•			WEATHERED F		30.0
750		-						· · · · ·				Gray, METAGRA - 749.6		33.0
	- 747.6 -	- - 35.0						: : : :				RESIDUAL Hard, brown and gray, sa		
		-	46	46	37			● 83		D		contains rock fragmen	ts, saprolitic	
745	-	_						 				-		
	742.6 -	- 40.0	400/0									742.6		40.0
740		-	100/0.2	1				- 100/0.2	1			WEATHERED F Gray, METAGRA		
740	_	-										-		
	737.6 -	45.0	100/0.2	1				- 100/0.2	,					
735	_	_	100/0.2											
	1 7	-										-		
	732.6 -	- 50.0 -	100/0.2					100/0.2	+			732.4 Boring Terminated at Elev	vation 732 4 ft ir	50.2
	_	-		1							E	Weathered Rock (MET		
	-	-												
] -	-									l F			
	-	_										-		
	_	_									l E			
	-	_												
	-	_									l F	-		
		-												
		_									<u> </u>			
	-	-									F	-		
		-												
	-	<u>-</u> -									<u> </u>			
	-	-									-	-		
		_									F			
		_												



		BORE LOG							
WBS 17BP.7.R.142		TY GUILFORD	GEOLOGIST N. Yacobi		WBS 17BP.7.R.1		<u> </u>	DUNTY GUILFORD	GEOLOGIST N. Yacobi
SITE DESCRIPTION Bridge No. 2		· · · · · · · · · · · · · · · · · · ·	T	GROUND WTR (ft)			25 over I-85 Business on SR 11		· · · · · · · · · · · · · · · · · · ·
BORING NO. W1-1	STATION 17+77	OFFSET 80 ft LT	ALIGNMENT -L-	0 HR. Dry	BORING NO. W1		STATION 18+30	OFFSET 97 ft R	
COLLAR ELEV. 780.5 ft	TOTAL DEPTH 10.5 ft	NORTHING 828,050	EASTING 1,757,919	24 HR. FIAD	COLLAR ELEV.		TOTAL DEPTH 20.9 ft	NORTHING 827,	
DRILL RIG/HAMMER EFF/DATE GT182		DRILL METHOD H.S	S. Augers HAMIN	MER TYPE Automatic			55 CME-55 95%07/24/2019		METHOD H.S. Augers HAMMER TYPE Automatic
DRILLER L. Wanstrath	START DATE 04/22/21	COMP. DATE 04/22/21	SURFACE WATER DEPTH N	/A	DRILLER L. Wan		START DATE 04/22/21	COMP. DATE 04	
ELEV CRIVE COUNTY CRIPT COUNTY COUNTY CRIPT COUNTY COUNTY CRIPT CRIPT COUNTY CRIPT CRIPT COUNTY CRIPT	NT BLOWS PER FO	75 100 NO. MOI G	SOIL AND ROCK DES	SCRIPTION DEPTH (ft)	ELEV DRIVE ELEV (ft) (ft)	0.5ft 0.5ft 0	NT BLOWS PER 0.5ft 0 25 50	FOOT SAME 75 100 NO.	I / I O I SOIL AND ROCK DESCRIPTION
785	12				785		5		- 781.2 GROUND SURFACE D FESIDUAL
775 775.5 + 5.0	24	D D	- M. P	SAND (A-2-4), gments 3.0	776.2 5.0	4 5			Medium dense, gray and brown, silty SAND (A-2-4)
100/0.5		100/0.5	777.5 Niedium dense, gray, silty contains rock frag WEATHERED R Gray, MET AGRA	ANITE	771.2 10.0		13		D 773.2 Stiff to hard, dark gray and green, sandy SILT (A-4(0)), contains wood fragments
770 770.5 + 10.0 100/0.5		100/0.5	770.0 Boring Terminated at Eleva Weathered Rock (META	10.5 ation 770.0 ft in AGRANITE)	770	4 4	10	SS-5	25%
			- -		766.2 15.0	15 19	22 41		D
			- - - - -		761.2 \$\frac{7}{2}\cdot 20.0	40 60/0.4		100/0.9	761.2 2 760.3 WEATHERED ROCK 2 Gray and brown, METAGRANITE Boring Terminated at Elevation 760.3 ft in Weathered Rock (METAGRANITE)
			- - - -		+ + + + + + + + + + + + + + + + + + + +				
 			- - -						
			- - -						
			- - -						
					+				
					+ +				
			- - - -						

BORE LOG				
WBS 17BP.7.R.142 TIP SF-400225 COUNTY GUILFORD	GEOLOGIST N. Yacobi	WBS 17BP.7.R.142	TIP SF-400225 COUNTY GUILFORD	GEOLOGIST N. Yacobi
SITE DESCRIPTION Bridge No. 225 over I-85 Business on SR 1115 (Rehobeth Church Road)	GROUND WTR (ft)	SITE DESCRIPTION Bridge No. 22	25 over I-85 Business on SR 1115 (Rehobeth Chur	rch Road) GROUND WTR (ft)
BORING NO. W2-1 STATION 19+38 OFFSET 87 ft LT	ALIGNMENT -L- 0 HR. Dry	BORING NO. W2-2	STATION 19+84 OFFSET 97	7 ft RT ALIGNMENT -L- 0 HR. 8.0
COLLAR ELEV. 780.5 ft TOTAL DEPTH 15.6 ft NORTHING 827,900	EASTING 1,757,962 24 HR. FIAD	COLLAR ELEV. 781.4 ft	TOTAL DEPTH 21.5 ft NORTHING	
DRILL RIG/HAMMER EFF/DATE GT18255 CIVE-55 95%07/24/2019 DRILL METHOD H.S.	Augers HAMMER TYPE Automatic	DRILL RIG/HAMMER EFF/DATE GT182	55 CME-55 95%07/24/2019	DRILL METHOD H.S. Augers HAMMER TYPE Automatic
DRILLERL. WanstrathSTART DATE04/22/21COMP. DATE04/22/21	SURFACE WATER DEPTH N/A	DRILLER L. Wanstrath	START DATE 04/22/21 COMP. DATE	E 04/22/21 SURFACE WATER DEPTH N/A
ELEV DRIVE ELEV (ft) (ft) DEPTH BLOW COUNT 0 25 50 75 100 NO. MOI G	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)	ELEV (ft) DEPTH BLOW COUNTY (ft) O.5ft O.5ft C	NT BLOWS PER FOOT 0.5ft 0 25 50 75 100	SAMP. L O SOIL AND ROCK DESCRIPTION MOI G
785	SOIL AND ROCK DESCRIPTION ELEV. (ft) ORDITION RESIDUAL Medium dense to very dense, gray, brown, and black, silty SAND (A-2-4), contains trace rock fragments, saprolitic T70.5 WEATHERED ROCK Gray and tan, QUARTZITE T64.9 Boring Terminated at Elevation 764.9 ft in Weathered Rock (QUARTZITE)	785 781.4 + 0.0 780 781.4 + 5.0 775 771.4 + 10.0 770 766.4 + 15.0 766.4 + 15.0	14 20 75 100 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	SOIL AND ROCK DESCRIPTION
BORE DOUBLE GUILFORD BRIDGE 225.GPJ N				