REFERENCE: I-5987B

PROJECT: 47533

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5987B	1	13

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 NO. 100 ON -Y1B- (US 301) OVER -L- (I-95) AT -L- STA. 702+75.43*

CONTENTS

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 (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN 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.

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PERSONNEL

F&R, INC.

GOODNIGHT, D.J.

WEIS, J.M.

INVESTIGATED BY *FALCON ENG..*

DRAWN BY *CROCKETT, S.C.*

CHECKED BY *HAMM, J. R.*

SUBMITTED BY *FALCON*

DATE *DECEMBER 2021*

NORTH CAROLINA PROFESSIONAL SEAL 48207 ENGINEER STEPHEN C CROCKETT

DocuSigned by:
Stephen C Crockett
C5CA5FED48F0435...
SIGNATURE

Dec 16, 2021
DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
I-5987B	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

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.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LL < 31
MODERATELY COMPRESSIBLE	LL = 31 - 50
HIGHLY COMPRESSIBLE	LL > 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT, DPT, DMT, VST, PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

RECOMMENDATION SYMBOLS

- UNDERCUT
- SHALLOW UNDERCUT
- UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE
- UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK
- UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

S - BULK
SS - SPLIT SPOON
ST - SHELBY TUBE
RS - ROCK
RT - RECOMPACTED TRIAXIAL
CBR - CALIFORNIA BEARING RATIO

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [X] CME-45C
- [X] CME-55
- [ ] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [ ] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [X] CASING [ ] W/ ADVANCER
- [X] TRICONE 2 15/16" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [ ] -N _____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

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:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	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.
SLIGHT (SLI.)	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.
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.
MODERATELY SEVERE (MOD. SEV.)	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*
SEVERE (SEV.)	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*
VERY SEVERE (V 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. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
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.
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 PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
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 PIECES CAN BE BROKEN BY FINGER PRESSURE.
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 FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

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 DISLODGED 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 (RQD) - 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 (SRQD) - 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.

BENCH MARK: ELEVATIONS TAKEN FROM I5987_LS_TIN2.TIN
DATED 05/21

ELEVATION: FEET

NOTES:

FIAD - FILLED IMMEDIATELY AFTER DRILLING

DATE: 8-15-14

PROJECT REFERENCE NO.	SHEET NO.
I-5987B	3

0 50 100
FEET

NC GRID NAD 83/95

S4_RWAL1-1

END BENT 1
-YIB- Sta.28+32.29

BENT 1
-YIB- Sta.29+51.04
-L- Sta.702+75.43

S4_RWAL2-1

END BENT 2
-YIB- Sta.30+69.79

160'
INSCRIBED CIRCLE

27+00
28+00
29+00
30+00
31+00
700+00
705+00

BRIDGE #510
CONC BRIDGE DECK
CONC BARRIER WALL

US 301 26' BST
US 301 25' BST
BY29-B36
-YIB-
-L-
MTL
CONC
GRASS

S4_EB1-C
S4_B1-A
S4_EB2-B
S4_EB1-B
S4_EB2-C
S4_RWAL1-2
S4_RWAL2-2

BRIDGE SKEW: 45°00.0'

DATE: 9-15-14

Ⓐ **ROADWAY EMBANKMENT:** ORANGE, GRAY, TAN, AND BROWN, MOIST TO WET, LOOSE TO MEDIUM DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE ORGANICS AND QUARTZ FRAGS.

Ⓑ **ROADWAY EMBANKMENT:** BROWN, MOIST, STIFF, SILTY SANDY CLAY (A-6) WITH TRACE ORGANICS

Ⓒ **UNDIVIDED COASTAL PLAIN:** GRAY, ORANGE, RED, TAN, AND BROWN, MOIST TO SATURATED, V. SOFT TO STIFF, SANDY AND HIGHLY PLASTIC SILTY CLAY (A-6, A-7-5, A-7-6)

Ⓓ **UNDIVIDED COASTAL PLAIN:** ORANGE, RED, TAN, GRAY, WHITE, AND BROWN, WET TO SATURATED, V. LOOSE TO DENSE, CSE. SAND, SAND, AND SILTY AND CLAYEY SAND (A-1-b, A-3, A-2-4, A-2-6) WITH TRACE ORGANICS AND GRAVEL

Ⓔ **COASTAL PLAIN:** DARK GRAY, GRAY, AND TAN, SATURATED, MED. DENSE TO DENSE, CSE. SAND, SAND, AND SILTY AND CLAYEY SAND (A-1-b, A-3, A-2-4, A-2-6) WITH TRACE ORGANICS AND MICA (BLACK CREEK FORMATION)

Ⓕ **COASTAL PLAIN:** DARK GRAY AND GRAY, MOIST TO SATURATED, V. STIFF TO HARD, CLAYEY SILT AND SANDY AND SILTY CLAY (A-5, A-6, A-7) WITH TRACE ORGANICS AND MICA

0 100 200

FEET

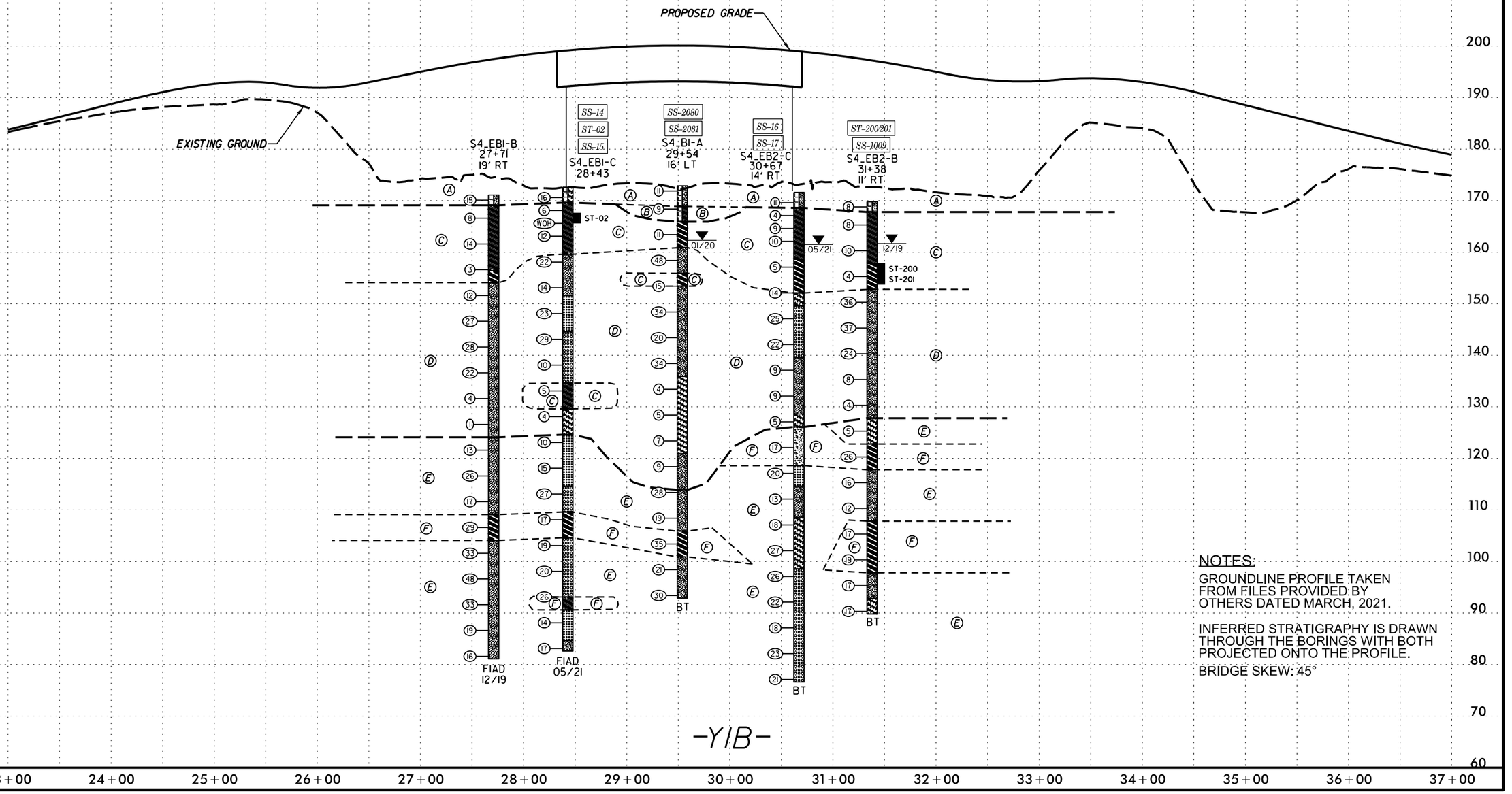
VE = 2.5

PROJECT REFERENCE NO.	SHEET NO.
I-5987B	4

BRIDGE NO. 100 ON –YIB– (US–301) OVER –L– (I–95) AT –L– STA. 702 + 75.43

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-14	CL	28+43	3.5'-5.0'	A-7-6	41	15	27	19	10	44	100	83	57	24	–
ST-02	CL	28+43	5.0'-7.0'	A-7-6	51	24	39	19	14	28	100	76	44	22	–
SS-15	CL	28+43	8.5'-10.0'	A-7-6	43	17	42	21	5	32	100	74	39	23	–
SS-2080	16 FT LT	29+54	4.0'-5.0'	A-6	33	19	37	20	10	32	100	76	46	11	–
SS-2081	16 FT LT	29+54	8.5'-10.0'	A-7-6	65	45	44	18	4	34	100	72	40	20	–
SS-16	14 FT RT	30+67	3.5'-5.0'	A-6	38	12	34	19	8	39	99	78	49	20	–
SS-17	14 FT RT	30+67	13.5'-15.0'	A-7-6	93	67	14	8	14	64	100	91	80	34	–
ST-200201	11 FT RT	31+33	12.0'-16.0'	A-7-6	72	49	11	11	20	59	100	95	81	25	–
SS-1009	11 FT RT	31+38	13.5'-15.0'	A-7-5	93	62	6	6	18	70	100	96	90	41	–



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: 45°

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
I-5987B	5

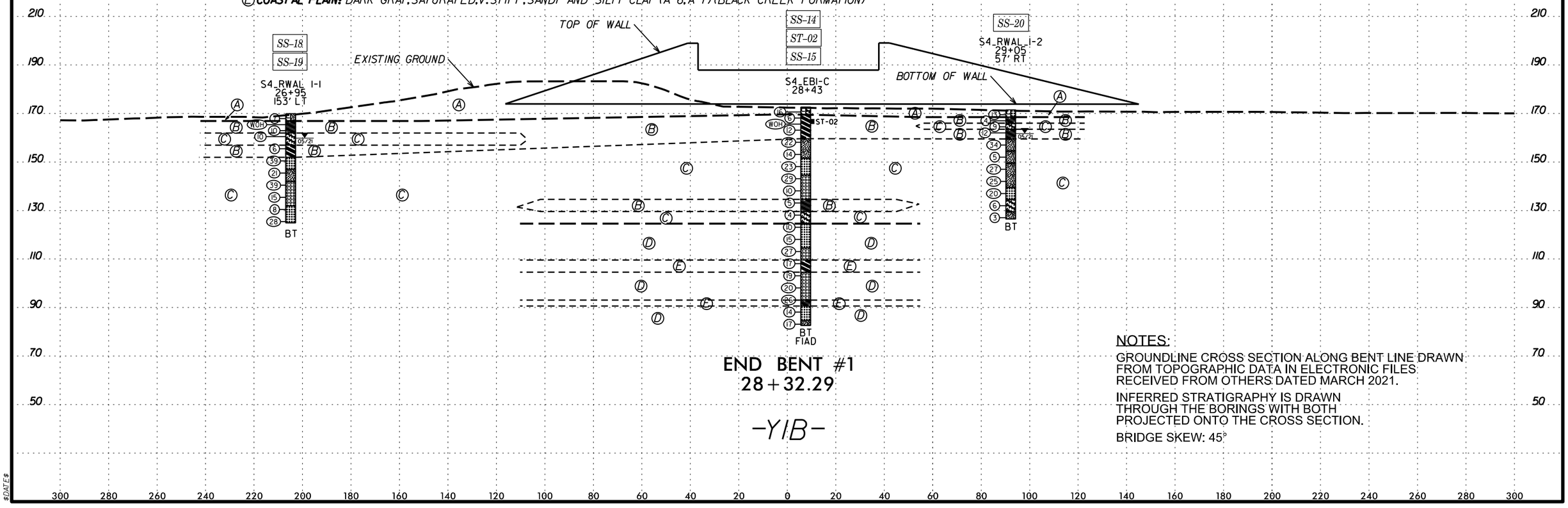
0 10 20

0 40 80
FEET

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-18	153 FT LT	26+95	3.5'-5.0'	A-6	36	19	41	20	9	30	98	71	41	23	-
SS-19	153 FT LT	26+95	13.5'-15.0'	A-7-6	62	37	12	8	22	58	100	91	81	29	-
SS-14	153 FT LT	26+95	3.5'-5.0'	A-7-6	41	15	27	19	10	44	100	83	57	24	-
ST-02	CL	28+43	5.0'-7.0'	A-7-6	51	24	39	19	14	28	100	76	42	22	-
SS-15	CL	28+43	8.5'-10.0'	A-7-6	43	17	42	21	5	32	100	74	39	23	-
SS-20	57 FT RT	29+05	3.5'-5.0'	A-6	34	15	34	21	11	34	100	79	49	24	-

Ⓐ **ROADWAY EMBANKMENT:** BROWN AND TAN, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) AND SAND (A-3) WITH TRACE QUARTZ FRAGMENTS
Ⓑ **UNDIVIDED COASTAL PLAIN:** BROWN, GRAY, TAN, AND RED, MOIST TO SATURATED, V. SOFT TO STIFF, SANDY AND HIGHLY PLASTIC SILTY CLAY (A-6, A-7-6)
Ⓒ **UNDIVIDED COASTAL PLAIN:** TAN, BROWN, RED, ORANGE, GRAY, AND PINK, WET TO SATURATED, V. LOOSE TO DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) COARSE SAND (A-1-b) AND SAND (A-3)
Ⓓ **COASTAL PLAIN:** GRAY AND DARK GRAY, SATURATED, MED. DENSE, COARSE SAND (A-1-b) AND SAND (A-3) (BLACK CREEK FORMATION)
Ⓔ **COASTAL PLAIN:** DARK GRAY, SATURATED, V. STIFF, SANDY AND SILTY CLAY (A-6, A-7) (BLACK CREEK FORMATION)



END BENT #1
28+32.29

-YIB-

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: 45°

$DATE$

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
I-5987B	6

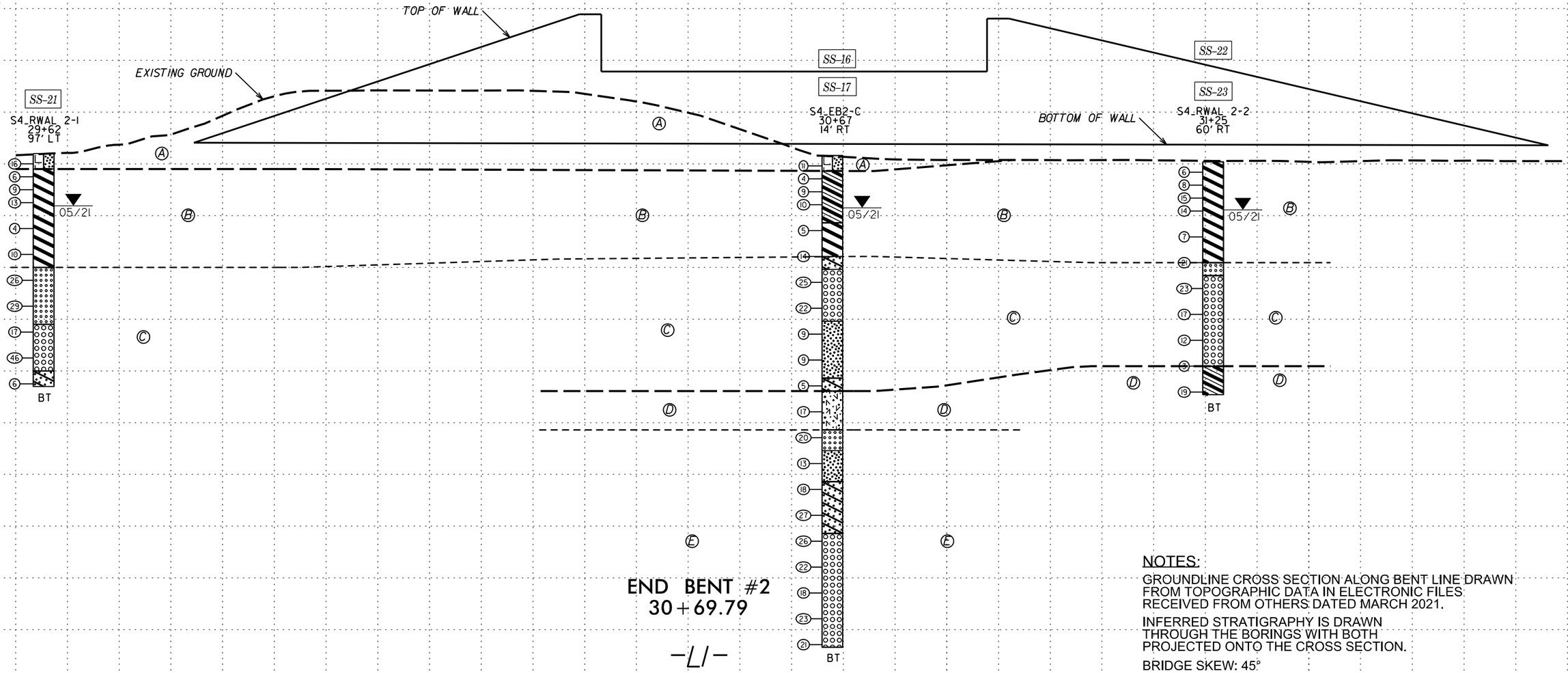
0 5 10

0 20 40
FEET

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS-21	97 FT LT	29+62	6.0'-7.5'	A-7-6	43	19	40	20	8	32	99	76	42	20	–
SS-16	14 FT RT	30+67	3.5'-5.0'	A-6	38	12	34	19	8	39	99	78	49	20	–
SS-17	14 FT RT	30+67	13.5'-15.0'	A-7-6	93	67	14	8	14	64	100	91	80	24	–
SS-22	60 FT RT	31+25	3.5'-5.0'	A-7-6	44	21	34	19	11	36	100	79	50	22	–
SS-23	60 FT RT	31+25	38.5'-40.0'	A-6	34	12	8	18	27	47	100	95	77	30	–

Ⓐ **ROADWAY EMBANKMENT:** TAN AND LIGHT BROWN, MOIST, MED. DENSE, SILTY SAND (A-2-4)
Ⓑ **UNDIVIDED COASTAL PLAIN:** LIGHT BROWN, TAN, GRAY, AND RED, MOIST TO WET, MED. STIFF TO STIFF, SANDY AND HIGHLY PLASTIC SILTY CLAY (A-6, A-7-6)
Ⓒ **UNDIVIDED COASTAL PLAIN:** TAN, SATURATED, LOOSE TO MED. DENSE, COARSE SAND (A-1-b) FINE SAND (A-3) AND SILTY AND CLAYEY SAND (A-2-4, A-2-6)
Ⓓ **COASTAL PLAIN:** BROWN AND DARK GRAY, MOIST, SOFT TO V. STIFF, CLAYEY SILT AND SANDY CLAY (A-5, A-6) (BLACK CREEK FORMATION)
Ⓔ **COASTAL PLAIN:** GRAY, SATURATED, MED. DENSE, COARSE SAND (A-1-b) FINE SAND (A-3) AND SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE ROCK FRAGMENTS (BLACK CREEK FORMATION)



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: 45°

$DATE$

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Q. Esteban/W. Pesl	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB1-B	**STATION** 27+71	**OFFSET** 19 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** N/A
COLLAR ELEV. 171.1 ft	**TOTAL DEPTH** 90.0 ft	**NORTHING** 394,505	**EASTING** 2,006,344	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE RFO0074 CME-55 80% 03/08/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER R. Smith	**START DATE** 12/09/19	**COMP. DATE** 12/10/19	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
175											
170	171.1	0.0	2	5	10	15		M		171.1 GROUND SURFACE	0.0
										ROADWAY EMBANKMENT ORANGE-GRAY, CLAYEY SILTY F. TO CSE. SAND (A-2-4)	
	167.6	3.5								169.1 **UNDIVIDED COASTAL PLAIN** GRAY-ORANGE-RED, F. TO CSE. SANDY CLAY (A-6)	2.0
165			3	4	4	8		M			
	162.6	8.5									
160			5	6	8	14		M			
	157.6	13.5									
155			WOH	2	1	3		M		156.4 GRAY-ORANGE, SILTY CLAY (A-7)	14.7
	152.6	18.5								154.1 ORANGE-TAN, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE CLAY AND ORGANICS	17.0
150			4	6	6	12		Sat.			
	147.6	23.5									
145			12	13	14	27		Sat.			
	142.6	28.5									
140			8	12	16	28		Sat.			
	137.6	33.5									
135			6	10	12	22		Sat.			
	132.6	38.5									
130			1	2	2	4		Sat.			
	127.6	43.5									
125			WOH	WOH	1	1		Sat.			
	122.6	48.5								124.1 **COASTAL PLAIN** DARK GRAY, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE CLAY AND ORGANICS (BLACK CREEK FORMATION)	47.0
120			7	6	7	13		Sat.			
	117.6	53.5									
115			8	11	15	26		Sat.			
	112.6	58.5									
110			6	8	9	17		Sat.			
	107.6	63.5								109.1 GRAY, SILTY CLAY (A-7) (BLACK CREEK FORMATION)	62.0
105			5	14	15	29		M			
	102.6	68.5								104.1 GRAY, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE MICA AND CLAY (BLACK CREEK FORMATION)	67.0
100			10	15	18	33		Sat.			
	97.6	73.5									
95			12	23	25	48		Sat.			

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Q. Esteban/W. Pesl	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB1-B	**STATION** 27+71	**OFFSET** 19 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** N/A
COLLAR ELEV. 171.1 ft	**TOTAL DEPTH** 90.0 ft	**NORTHING** 394,505	**EASTING** 2,006,344	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE RFO0074 CME-55 80% 03/08/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER R. Smith	**START DATE** 12/09/19	**COMP. DATE** 12/10/19	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
95						Match Line					
	92.6	78.5	15	17	16	33		Sat.		GRAY, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE MICA AND CLAY (BLACK CREEK FORMATION) *(continued)*	
90											
	87.6	83.5	5	8	11	19		Sat.			
85											
	82.6	88.5	6	8	8	16		Sat.		81.1	90.0
										Boring Terminated at Elevation 81.1 ft IN COASTAL PLAIN: SILTY SAND (BLACK CREEK FORMATION)	
										Notes: 1. Surficial Organic Soil: 0.0-0.1'	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB1-C	**STATION** 28+43	**OFFSET** CL	**ALIGNMENT** -Y1B-	**0 HR.** 13.0
COLLAR ELEV. 172.6 ft	**TOTAL DEPTH** 90.0 ft	**NORTHING** 394,438	**EASTING** 2,006,376	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/18/21	**COMP. DATE** 05/18/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
175											
										172.6	0.0
										GROUND SURFACE	
	171.6	1.0	11	8	8	16		W		**ROADWAY EMBANKMENT** BROWN, CLAYEY SAND (A-2-6) WITH TRACE QUARTZ FRAGMENTS	
170	169.1	3.5	3	3	3	6	SS-14	24%		169.6	3.0
	166.6	6.0	WOH	WOH	WOH	0		22% W		**UNDIVIDED COASTAL PLAIN** BROWN, SANDY SILTY CLAY (A-7-6)	
165	164.1	8.5	4	6	6	12	SS-15	23%			
160	159.1	13.5	4	10	12	22		Sat.		159.6	13.0
										TAN, SILTY SAND (A-2-4) WITH INTERMITTENT CLAY LENSES	
155	154.1	18.5	2	6	8	14		Sat.			
150	149.1	23.5	8	11	12	23		Sat.		151.6	21.0
										TAN, SAND (A-3)	
145	144.1	28.5	8	11	18	29		Sat.		144.6	28.0
										TAN, CSE. SAND (A-1-b)	
140	139.1	33.5	3	5	5	10		Sat.			
135	134.1	38.5	2	4	1	5		Sat.		134.6	38.0
										DARK GRAY, SANDY CLAY (A-6)	
130	129.1	43.5	2	2	2	4		Sat.		129.6	43.0
										LIGHT BROWN, CLAYEY SAND (A-2-6)	
125	124.1	48.5	4	4	6	10		Sat.		124.6	48.0
										COASTAL PLAIN DARK GRAY, F. SAND (A-3) WITH INTERMITTENT CLAY LENSES (BLACK CREEK FORMATION)	
120	119.1	53.5	4	5	10	15		Sat.			
115	114.1	58.5	8	8	19	27		Sat.		114.6	58.0
										DARK GRAY, CSE. SAND (A-1-b) WITH INTERMITTENT CLAY LENSES (BLACK CREEK FORMATION)	
110	109.1	63.5	3	7	10	17		Sat.		109.6	63.0
										DARK GRAY, SILTY CLAY (A-7) (BLACK CREEK FORMATION)	
105	104.1	68.5	1	6	13	19		Sat.		104.6	68.0
										GRAY, CSE. SAND (A-1-b) (BLACK CREEK FORMATION)	
100	99.1	73.5	6	9	11	20		Sat.			
95											

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB1-C	**STATION** 28+43	**OFFSET** CL	**ALIGNMENT** -Y1B-	**0 HR.** 13.0
COLLAR ELEV. 172.6 ft	**TOTAL DEPTH** 90.0 ft	**NORTHING** 394,438	**EASTING** 2,006,376	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/18/21	**COMP. DATE** 05/18/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
95						Match Line					
	94.1	78.5	8	11	15	26		Sat.		93.1	79.5
										DARK GRAY, SANDY CLAY (A-6) (BLACK CREEK FORMATION)	
90	89.1	83.5	5	5	9	14		Sat.		90.6	82.0
										GRAY, F. SAND (A-3) (BLACK CREEK FORMATION)	
85	84.1	88.5	6	7	10	17		Sat.		84.6	88.0
										DARK GRAY, CLAYEY SAND (A-2-4) (BLACK CREEK FORMATION)	
										82.6	90.0
										Boring Terminated at Elevation 82.6 ft IN COASTAL PLAIN: SILTY SAND (BLACK CREEK FORMATION)	
										Other Samples: ST-02 (5.0 - 7.0)	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** B. Painter	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_B1-A	**STATION** 29+54	**OFFSET** 16 ft LT	**ALIGNMENT** -Y1B-	**0 HR.** N/A
COLLAR ELEV. 172.9 ft	**TOTAL DEPTH** 80.0 ft	**NORTHING** 394,332	**EASTING** 2,006,411	**24 HR.** 10.6
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** 01/20/20	**COMP. DATE** 01/21/20	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
180											
175											
	172.9	0.0								172.9 GROUND SURFACE	0.0
170	169.4	3.5	2	4	7	11		M		**ROADWAY EMBANKMENT** DARK GRAY-BROWN, SILTY F. SAND (A-2-4) WITH TRACE ORGANICS	
			7	4	5	9	SS-2080	11%		168.9 BROWN, SILTY F. TO CSE. SANDY CLAY (A-6) WITH TRACE ORGANICS	4.0
165	164.4	8.5								165.9 **UNDIVIDED COASTAL PLAIN**	7.0
			3	4	7	11	SS-2081	20%		RED-BROWN-GRAY, SILTY F. TO CSE. SANDY CLAY (A-7-6), HIGHLY PLASTIC	
160	159.4	13.5								160.9	12.0
			12	22	26	48		W		BROWN-PINK, CLAYEY SILTY F. TO CSE. SAND (A-2-4)	
155	154.4	18.5								155.9	17.0
			5	9	6	15		W		PINK-ORANGE, F. SANDY SILTY CLAY (A-7)	
150	149.4	23.5								153.4	19.5
			13	14	20	34		W		WHITE-GRAY-BROWN, CLAYEY SILTY F. TO CSE. SAND (A-2-4) WITH TRACE GRAVEL FROM 33.5'-35.0'	
145	144.4	28.5									
			7	9	11	20		W			
140	139.4	33.5									
			16	17	17	34		Sat.			
135	134.4	38.5								135.9	37.0
			4	2	2	4		Sat.		BROWN-GRAY-PINK, SILTY CLAYEY F. TO CSE. SAND (A-2-6) WITH TRACE GRAVEL	
130	129.4	43.5									
			3	3	2	5		Sat.			
125	124.4	48.5									
			3	3	4	7		Sat.			
120	119.4	53.5								120.9	52.0
			3	4	5	9		Sat.		ORANGE-GRAY-RED, CLAYEY SILTY F. SAND (A-2-4), MICACEOUS	
115	114.4	58.5									
			7	12	16	28		Sat.		113.9 **COASTAL PLAIN** DARK GRAY, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE MICA AND ORGANICS (BLACK CREEK FORMATION)	59.0
110	109.4	63.5									
			5	8	11	19		W			
105	104.4	68.5								105.9	67.0
			6	15	20	35		M		GRAY, SILTY CLAY (A-7), WITH TRACE MICA AND GRAVEL (BLACK CREEK FORMATION)	
100										100.9	72.0

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** B. Painter	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_B1-A	**STATION** 29+54	**OFFSET** 16 ft LT	**ALIGNMENT** -Y1B-	**0 HR.** N/A
COLLAR ELEV. 172.9 ft	**TOTAL DEPTH** 80.0 ft	**NORTHING** 394,332	**EASTING** 2,006,411	**24 HR.** 10.6
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** 01/20/20	**COMP. DATE** 01/21/20	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
100						Match Line					
	99.4	73.5	5	7	14	21		W		GRAY, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE MICA (BLACK CREEK FORMATION) *(continued)*	
95	94.4	78.5	10	15	15	30		W		92.9	80.0
										Boring Terminated at Elevation 92.9 ft IN COASTAL PLAIN: SILTY SAND (BLACK CREEK FORMATION)	

Notes:
1. Surficial Organic Soil: 0.0-0.3'

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** R. French	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB2-B	**STATION** 31+38	**OFFSET** 11 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** N/A
COLLAR ELEV. 169.8 ft	**TOTAL DEPTH** 80.0 ft	**NORTHING** 394,146	**EASTING** 2,006,417	**24 HR.** 8.1
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** 12/09/19	**COMP. DATE** 12/10/19	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
185											
180											
175											
170	169.8	0.0								169.8 GROUND SURFACE	0.0
			2	3	5	8		M		167.8 **ROADWAY EMBANKMENT** BROWN, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE ORGANICS	2.0
165	166.3	3.5	2	3	5	8		M		**UNDIVIDED COASTAL PLAIN** ORANGE-BROWN-GRAY, SILTY F. TO CSE. SANDY CLAY (A-6)	
160	161.3	8.5	4	4	6	10		M		157.8	12.0
155	156.3	13.5	2	1	3	4	SS-1009	41%		RED-GRAY, F. TO CSE. SANDY SILTY CLAY (A-7-5), HIGHLY PLASTIC	
150	151.3	18.5	14	17	19	36		Sat.		152.8 RED-GRAY-BROWN, SILTY F. SAND (A-2-4) WITH TRACE GRAVEL FROM 38.5'-40.0'	17.0
145	146.3	23.5	11	16	21	37		Sat.			
140	141.3	28.5	11	12	12	24		Sat.			
135	136.3	33.5	2	2	6	8		Sat.			
130	131.3	38.5	2	1	3	4		Sat.			
125	126.3	43.5	3	2	3	5		Sat.		127.8 **COASTAL PLAIN** GRAY, SILTY CLAYEY F. SAND (A-2-6) WITH TRACE ORGANICS AND MICA (BLACK CREEK FORMATION)	42.0
120	121.3	48.5	7	10	16	26		Sat.		122.8 DARK GRAY, F. SANDY SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION)	47.0
115	116.3	53.5	4	7	9	16		Sat.		117.8 DARK GRAY, SILTY F. TO CSE. SAND (A-2-4), MICACEOUS WITH TRACE CLAY AND ORGANICS (BLACK CREEK FORMATION)	52.0
110	111.3	58.5	3	5	7	12		Sat.			
105	106.3	63.5	4	7	10	17		Sat.		107.8	62.0

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** R. French	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB2-B	**STATION** 31+38	**OFFSET** 11 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** N/A
COLLAR ELEV. 169.8 ft	**TOTAL DEPTH** 80.0 ft	**NORTHING** 394,146	**EASTING** 2,006,417	**24 HR.** 8.1
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** 12/09/19	**COMP. DATE** 12/10/19	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
105						Match Line					
100	101.3	68.5	4	7	12	19		Sat.		DARK GRAY, F. SANDY SILTY CLAY (A-7), MICACEOUS (BLACK CREEK FORMATION) *(continued)*	
										97.8	72.0
95	96.3	73.5	10	7	10	17		Sat.		GRAY, SILTY F. TO CSE. SAND (A-2-4) WITH TRACE MICA AND GRAVEL	
										92.8	77.0
90	91.3	78.5	4	7	10	17		Sat.		DARK GRAY, SILTY CLAYEY SAND (A-2-6), MICACEOUS WITH TRACE GRAVEL (BLACK CREEK FORMATION)	
										89.8	80.0
										Boring Terminated at Elevation 89.8 ft IN COASTAL PLAIN: CLAYEY SAND (BLACK CREEK FORMATION)	

Notes:
1. Surficial Organic Soil: 0.0-0.2'
2. Shelby Tubes pushed in Offset Boring 31+33, 11' RT; ST-200: 12.0'-14.0', ST-201: 14.0'-16.0', Both Lab Tested

Other Samples:
ST-200 (12.0 - 14.0)
ST-201 (14.0 - 16.0)

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB2-C	**STATION** 30+67	**OFFSET** 14 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** 12.4
COLLAR ELEV. 171.6 ft	**TOTAL DEPTH** 95.0 ft	**NORTHING** 394,215	**EASTING** 2,006,401	**24 HR.** 10.1
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/19/21	**COMP. DATE** 05/19/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
175											
										171.6	0.0
	170.6	1.0								3 INCHES TOPSOIL	
170			3	5	6	11		M		**ROADWAY EMBANKMENT** TAN, SILTY SAND (A-2-4)	
	168.1	3.5								168.6	3.0
			2	2	2	4	SS-16	20%		**UNDIVIDED COASTAL PLAIN** LIGHT BROWN, SANDY CLAY (A-6)	
165	165.6	6.0									
			4	4	5	9		W			
	163.1	8.5									
			4	4	6	10		W			
160											
	158.1	13.5								158.6	13.0
			1	2	3	5	SS-17	34%		TAN AND GRAY, SILTY CLAY (A-7-6)	
155											
	153.1	18.5									
			1	5	9	14		W		152.1	19.5
150										TAN, CLAYEY SAND (A-2-6)	
	148.1	23.5								149.6	22.0
			7	10	15	25		Sat.		TAN, CSE. SAND (A-1-b)	
145											
	143.1	28.5									
			8	10	12	22		Sat.			
140											
	138.1	33.5								139.6	32.0
			9	5	4	9		Sat.		TAN, SILTY SAND (A-2-4)	
135											
	133.1	38.5									
			6	4	5	9		Sat.			
130											
	128.1	43.5								128.6	43.0
			4	2	3	5		Sat.		GRAY AND BROWN, CLAYEY SAND (A-2-6)	
125										126.1	45.5
	123.1	48.5								**COASTAL PLAIN** DARK GRAY, CLAYEY SILT (A-5) (BLACK CREEK FORMATION)	
			4	6	11	17		M			
120											
	118.1	53.5								118.6	53.0
			4	8	12	20		Sat.		TAN, F. SAND (A-3) (BLACK CREEK FORMATION)	
115										114.6	57.0
	113.1	58.5								GRAY, SILTY SAND (A-2-4) TRACE GRAVEL (BLACK CREEK FORMATION)	
			5	5	8	13		Sat.			
110											
	108.1	63.5								108.6	63.0
			9	8	10	18		Sat.		GRAY, CLAYEY SAND (A-2-6) (BLACK CREEK FORMATION)	
105											
	103.1	68.5									
			5	9	18	27		Sat.			
100											
	98.1	73.5								98.6	73.0
			9	11	15	26		Sat.		GRAY, CSE. SAND (A-1-b) TRACE ROCK FRAGS. (BLACK CREEK FORMATION)	
95											

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_EB2-C	**STATION** 30+67	**OFFSET** 14 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** 12.4
COLLAR ELEV. 171.6 ft	**TOTAL DEPTH** 95.0 ft	**NORTHING** 394,215	**EASTING** 2,006,401	**24 HR.** 10.1
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/19/21	**COMP. DATE** 05/19/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
95						Match Line					
	93.1	78.5	10	11	11	22		Sat.		GRAY, CSE. SAND (A-1-b) TRACE ROCK FRAGS. (BLACK CREEK FORMATION) *(continued)*	
90											
	88.1	83.5	6	9	9	18		Sat.			
85											
	83.1	88.5	6	10	13	23		Sat.			
80											
	78.1	93.5	9	11	10	21		Sat.		76.6	95.0
										Boring Terminated at Elevation 76.6 ft IN COASTAL PLAIN: SAND (BLACK CREEK FORMATION)	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_RWAL 1-1	**STATION** 26+95	**OFFSET** 153 ft LT	**ALIGNMENT** -Y1B-	**0 HR.** 10.0
COLLAR ELEV. 169.9 ft	**TOTAL DEPTH** 45.0 ft	**NORTHING** 394,611	**EASTING** 2,006,499	**24 HR.** 10.1
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/18/21	**COMP. DATE** 05/18/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
170										169.9	0.0
	168.9	1.0	6	5	2	7		M		**ROADWAY EMBANKMENT** BROWN, SILTY SAND (A-2-4)	
	166.4	3.5								166.9	3.0
165			WOH	WOH	WOH	0	SS-18	23%		**UNDIVIDED COASTAL PLAIN** LIGHT BROWN TO RED, SANDY CLAY (A-6)	
	163.9	6.0	3	4	6	10		W			
	161.4	8.5								161.9	8.0
160			5	5	5	10		W		BROWN-RED, CLAYEY SAND (A-2-6)	
	156.4	13.5	2	2	4	6	SS-19	29%		156.9	13.0
155										RED AND GRAY, SILTY CLAY (A-7-6)	
	151.4	18.5	8	16	23	39		Sat.		151.9	18.0
150										TAN, F. SAND (A-3)	
	146.4	23.5	10	11	10	21		Sat.		146.9	23.0
145										TAN, SILTY SAND (A-2-4)	
	141.4	28.5	15	19	20	39		Sat.		141.9	28.0
140										TAN AND PINK, CSE. SAND (A-1-b)	
	136.4	33.5	7	8	7	15		Sat.			
135											
	131.4	38.5	3	3	5	8		Sat.		131.9	38.0
130										TAN, F. SAND (A-3) WITH INTERMITTENT CLAY LENSES	
	126.4	43.5	8	13	15	28		Sat.		124.9	45.0
125										Boring Terminated at Elevation 124.9 ft IN COASTAL PLAIN: SAND (BLACK CREEK FORMATION)	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Goodnight, D.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_RWAL 1-2	**STATION** 29+05	**OFFSET** 57 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** 8.4
COLLAR ELEV. 171.5 ft	**TOTAL DEPTH** 45.0 ft	**NORTHING** 394,366	**EASTING** 2,006,330	**24 HR.** 9.8
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 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
175										171.5	0.0
	170.5	1.0	5	6	7	13		M		**ROADWAY EMBANKMENT** TAN, SLI. SILTY SAND (A-3)	
170	168.0	3.5	WOH	2	2	4	SS-20	24%		168.5	3.0
	165.5	6.0	2	3	6	9		M		**UNDIVIDED COASTAL PLAIN** TAN, SANDY CLAY (A-6)	
165	163.0	8.5	3	5	7	12		M		166.0	5.5
	158.0	13.5	13	16	18	34		W		TAN, CLAYEY SAND (A-2-6)	
160	153.0	18.5	6	2	3	5		Sat.		163.5	8.0
	148.0	23.5	10	12	15	27		Sat.		GRAY AND TAN, SANDY CLAY (A-6)	
155	143.0	28.5	11	12	13	25		Sat.		159.5	12.0
	138.0	33.5	6	8	12	20		W		ORANGE-TAN, SILTY F. TO CSE. SAND (A-2-4)	
150	133.0	38.5	WOH	2	4	6		Sat.		154.5	17.0
	128.0	43.5	1	1	2	3		Sat.		RED-TAN, SILTY CLAYEY F. TO CSE. SAND (A-2-5)	
145										149.5	22.0
										TAN, SILTY SAND (A-2-4)	
140										139.5	32.0
										RED-TAN, F. SAND (A-3)	
135										134.5	37.0
										ORANGE-TAN, CLAYEY SAND (A-2-6)	
130										129.5	42.0
										TAN, SILTY SAND (A-2-4)	
										126.5	45.0
										Boring Terminated at Elevation 126.5 ft IN COASTAL PLAIN: SILTY SAND (BLACK CREEK FORMATION)	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_RWAL 2-1	**STATION** 29+62	**OFFSET** 97 ft LT	**ALIGNMENT** -Y1B-	**0 HR.** 8.9
COLLAR ELEV. 172.0 ft	**TOTAL DEPTH** 45.0 ft	**NORTHING** 394,338	**EASTING** 2,006,492	**24 HR.** 10.1
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/19/21	**COMP. DATE** 05/19/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
										172.0	0.0
										3 INCHES TOPSOIL	
	171.0	1.0								**ROADWAY EMBANKMENT**	
			4	8	8	16		M		LIGHT BROWN, SILTY SAND (A-2-4)	
	168.5	3.5								169.0	3.0
			3	3	3	6		M		**UNDIVIDED COASTAL PLAIN**	
	166.0	6.0								LIGHT BROWN, SILTY CLAY (A-7-6)	
			3	4	5	9	SS-21	20%			
	163.5	8.5									
			4	5	8	13		M			
	158.5	13.5									
			2	2	2	4		M			
	153.5	18.5									
			7	5	5	10		M			
	148.5	23.5								150.0	22.0
			10	14	12	26		Sat.		TAN, F. SAND (A-3)	
	143.5	28.5									
			10	12	17	29		Sat.			
	138.5	33.5								139.0	33.0
			7	8	9	17		Sat.		TAN, CSE. SAND (A-1-b) TRACE GRAVEL	
	133.5	38.5									
			12	20	26	46		Sat.			
	128.5	43.5								130.0	42.0
			1	3	3	6		Sat.		LIGHT BROWN AND RED, CLAYEY SAND (A-2-6) TRACE GRAVEL	
										127.0	45.0
										Boring Terminated at Elevation 127.0 ft IN COASTAL PLAIN: CLAYEY SAND (BLACK CREEK FORMATION)	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 47533.1.1	**TIP** I-5987B	**COUNTY** ROBESON	**GEOLOGIST** Weis, J. M.	
SITE DESCRIPTION Bridge No. 100 on -Y1B- (US 301) over -L- (I-95) at -L- Sta. 702+75.43				**GROUND WTR (ft)**
BORING NO. S4_RWAL 2-2	**STATION** 31+25	**OFFSET** 60 ft RT	**ALIGNMENT** -Y1B-	**0 HR.** 10.0
COLLAR ELEV. 170.4 ft	**TOTAL DEPTH** 45.0 ft	**NORTHING** 394,150	**EASTING** 2,006,367	**24 HR.** 9.3
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 91% 02/21/2019		**DRILL METHOD** Mud Rotary	**HAMMER TYPE** Automatic	
DRILLER Powell, B.	**START DATE** 05/19/21	**COMP. DATE** 05/19/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
										170.4	0.0
										3 INCHES TOPSOIL	
	169.4	1.0								**UNDIVIDED COASTAL PLAIN**	
			7	3	3	6		M		LIGHT BROWN, GRAY, AND RED, SILTY CLAY (A-7-6)	
	166.9	3.5									
			3	3	5	8	SS-22	22%			
	164.4	6.0									
			4	7	8	15		M			
	161.9	8.5									
			4	7	7	14		M			
	156.9	13.5									
			2	3	4	7		M			
	151.9	18.5									
			6	8	13	21		Sat.		150.9	19.5
	146.9	23.5								TAN, F. SAND (A-3)	
			5	10	13	23		Sat.		148.4	22.0
	141.9	28.5								RED AND TAN, CSE. SAND (A-1-b)	
			6	10	7	17		Sat.			
	136.9	33.5									
			5	5	7	12		Sat.			
	131.9	38.5									
			3	1	2	3	SS-23	30%		130.9	39.5
	126.9	43.5								**COASTAL PLAIN**	
			4	7	12	19		M		BROWN AND DARK GRAY, SANDY CLAY (A-6) (BLACK CREEK FORMATION)	
										125.4	45.0
										Boring Terminated at Elevation 125.4 ft IN COASTAL PLAIN: SANDY CLAY (BLACK CREEK FORMATION)	

NCDOT BORE SINGLE B04_I5987_GEO_BRDG_Y1B.GPJ NC_DOT.GDT 12/9/21