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Ò REFERENCE

46032

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

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ROADWAY SUBSURFACE INVESTIGATION

CROSS SECTIONS

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COUNTY WAKE

PROJECT DESCRIPTION REPLACE BRIDGE NO. 126 OVER SMITH CREEK ON SR 2044 (LIGON MILL RD.)

INVENTORY

STATE PROJECT REFERENCE NO. B-531814

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 1991 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 INTERRETATIONS 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.

C. BUTLER

M. EDWARDS

F. WESCOTT

N. MOORE

CAROLINA DRILLING

C. WALKER

INVESTIGATED BY __F. WESCOTT

DRAWN BY __J. CRENSHAW

CHECKED BY J. WESSELL

SUBMITTED BY _SCHNABEL ENG.

DATE __**JULY 2021**



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. SHEET NO.

B-5318

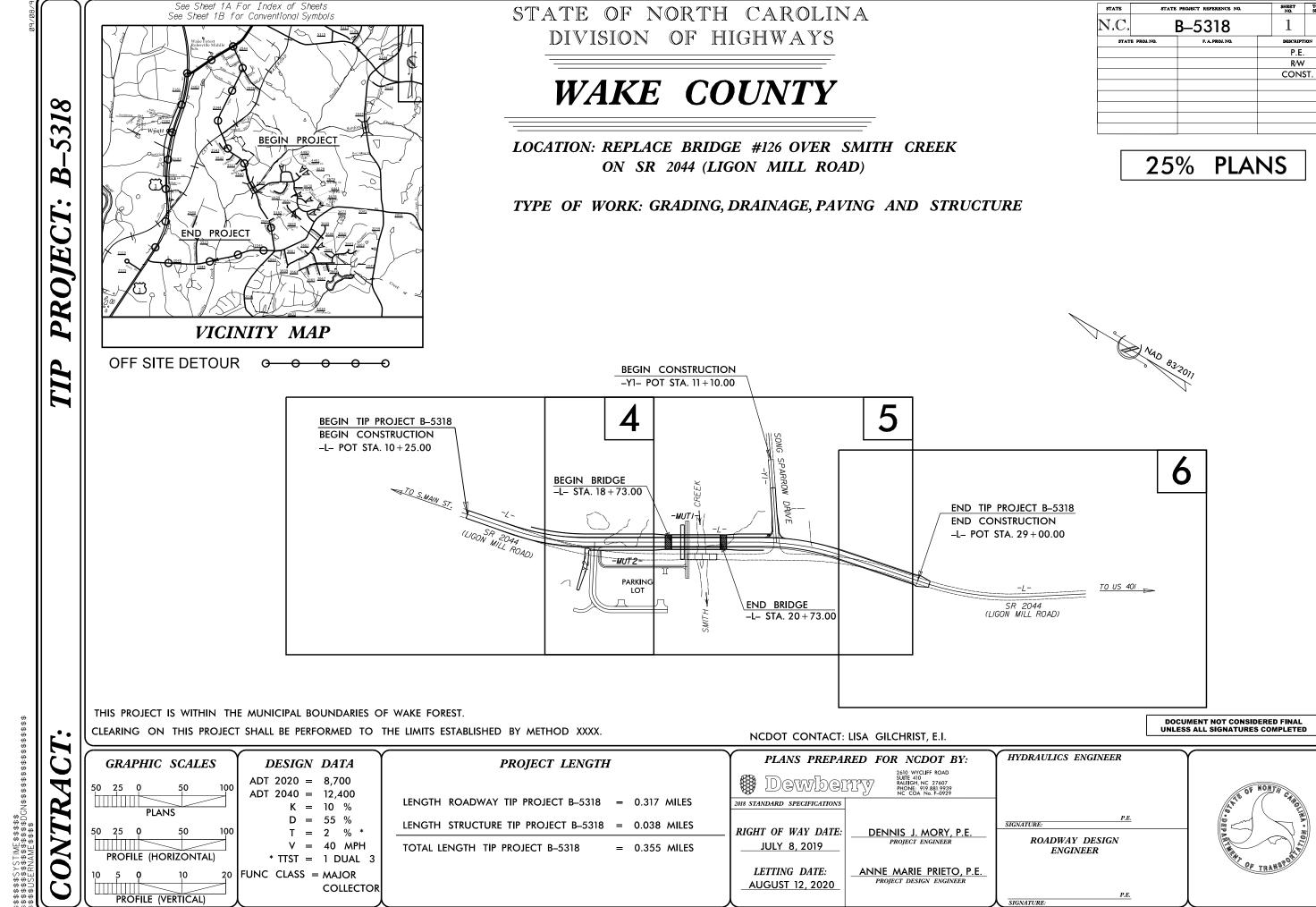
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

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	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 D1586), 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.	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:	NI//ASI//A	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.			
SOIL LEGEND AND AASHTO CLASSIFICATION		ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT			
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS		CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT	WHICH IT IS ENCOUNTERED BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND			
ULASS. (\$\leq 35% PASSING "2001) (> 35% PASSING "2001)		ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.				
		NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN				
000000000000000000000000000000000000000	SLIGHTLY COMPRESSIBLE LL < 31	ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	OF SLOPE.			
5555d6565d53333333333333333333333333333	MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE			
■10 50 MX GRANULAR SIL1- MUCK,	PERCENTAGE OF MATERIAL		DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT			
So the South Street	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL		ROCKS OR CUTS MASSIVE ROCK.			
MATERIAL	TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	HAMMER IF CRYSTALLINE.				
PASSING *40 AR MY AT MN AR MY AT MN AR MY AT MN AR MY AT MN SOILS WITH	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,				
PI 6 MX NP 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN LITTLE UK HIGHLY	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.			
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOULS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE			
USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER	✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING					
DF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS	extstyle ext	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 FYELL FUT TO COOD FAIR TO DOOD FAIR TO DOOD UNCLUTABLE		(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	PARENT MATERIAL.			
AS SUBURADE PURK	SPRING OR SEEP	WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.			
		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL				
PANCE OF STANDARD DANCE OF LINCONFINED	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK.				
PRIMARY SOIL TYPE CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	<u>IF TESTED, WOULD YIELD SPT REFUSAL</u>	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO			
IN-VALUE/ (TUNS/FT=)		SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT (SEV.) REDUCED IN STRENGTH TO STRONG SOIL IN GRANITOID ROCKS ALL FELDSPARS ARE KADLINIZED.				
GENERALLY LOOSE 4 TO 10	SOIL SYMBOL OPT DAT TEST BORING SLOPE INDICATOR INSTALLATION	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.				
MATERIAL MEDIUM DENSE 10 10 30 N/A	ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER		USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.			
(NON-COHESIVE) VERY DENSE > 50	THAN RUADWAY EMBANKMENT 1	SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE			
VERY SOFT < 2 < 0.25	- INFERRED SOIL BOUNDARY - CORE BORING SOUNDING ROD					
SILT-CLAY SUFF 2 10 4 0.25 10 0.5	INFERRED ROCK LINE MN MONITORING WELL TEST BORING					
MATERIAL STIFF 8 TO 15 1 TO 2	A PIEZOMETER	SCATTERED CONCENTRATIONS, QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE			
STATE STAT						
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS					
	LICED IN THE TOP 2 FEET OF					
BOULDER COBBLE GRAVEL SAND SAND SILI CLAY						
Company Comp						
The content of the						
	CL CLAY MOD MODERATELY 7- UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL			
SOU MOISTURE SCALE FIFLD MOISTURE						
	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN				
			STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM FOUND TO OR GREATER THAN 4 INCHES DIVIDED BY			
PLASTIC CEMICOL ID DECUIPES DOVING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL		TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.			
		VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET				
OM _ OPTIMUM MOISTORE						
	X CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET				
	6° CONTINUOUS FLIGHT AUGER CORE SIZE:		FIAD = FILLED IN AFTER DRILLING			
PLASTICITY	1 A CME-33					
NON PLASTIC 0-5 VERY LOW	TUNGCARBIDE INSERTS					
	X CASING W/ ADVANCER	CDAING CAN BE CEDADATED FROM CAMBLE WITH CIFEL BRODE.				
	PORTABLE HOIST X 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).	Manual Control 1985					
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.			DATE: 8-15-1-			



T 910.769.1621

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July 8, 2021 File No. 17C19068.00

STATE PROJECT: B-5318 PROJECT ID: 43032.1.1 COUNTY: Wake

DESCRIPTION: Replace Bridge No. 126 over Smith Creek on SR 2044 (Ligon Mill Road)

SUBJECT: **GEOTECHNICAL REPORT - INVENTORY**

PROJECT DESCRIPTION

The project consists of replacing the existing Bridge No. 126 on SR 2044 at a new location east of the existing bridge. The roadway elevation of the new bridge will be approximately 6 feet higher than the existing to accommodate a future Town of Wake Forest greenway below. In addition, the selected alternative includes a greenway connector from the new sidewalk to the future greenway beneath the new bridge, along with a new parking lot adjacent to the greenway. Other minor improvements will also be made to the existing roadways (Ligon Mill Road and Song Sparrow Drive) to accommodate the new roadway alignment and bridge replacement.

The geotechnical investigation was conducted during June of 2018 and May/June of 2021. Standard Penetration Test borings were advanced using CME-45C and CME-55 drill rigs, each equipped with an automatic hammer. Standard Penetration Test borings were performed at specific locations to provide subsurface information for design and construction of the proposed roadway. Representative soil samples were collected and submitted to a NCDOT approved laboratory for testing.

The following alignments were investigated. Plan sheets, subsurface profiles and cross sections for these alignments are included in this report.

<u>LINE</u>	<u>STATION</u>	<u>Length (ft)</u>
-L-	10+25 to 29+50	1,925
-Y1-	10+00 to 14+48	448
-DRW1-	10+00 to 13+41	341
-MUT1-	10+00 to 13+35	335

Total = 3,049 (~0.58 miles)

PHYSIOGRAPHY AND GEOLOGY

The project is located in the Piedmont Physiographic Province. The project corridor is comprised primarily of isolated wooded areas on both sides of SR 2044. The general topography of the site is relatively flat to gently sloping along the existing roadways.

Geologically, the project is located within the Raleigh Belt. Soils are derived from the underlying rock consisting of biotite, gneiss, schist, and granite.

Surface water is drained from the corridor by the existing roadway ditches.

SOIL PROPERTIES

Soils encountered during this investigation are separated into three categories based on origin. They consist of roadway embankment, alluvial soils and residual soils.

Roadway Embankment soils consisting of medium stiff, low plasticity, sandy clays (A-6) and very loose to medium dense, sands and clayey sands (A-2-4, A-2-6). These soils range in moisture from moist to saturated and in thickness from 3 feet to 5.5 feet.

Alluvial soils were encountered consisting of slightly plastic to medium plastic, soft to hard, sandy silty clay (A-6 and A-7-6), and sandy silt (A-4), very loose to very dense, clayey, silty fine to coarse sand (A-2-4 and A-2-6) and very loose to medium dense, fine to coarse sand (A-3, A-2-4, A-1-b). The plasticity index of the alluvial cohesive soils tested ranged from 12 to 21.

Residual soils were encountered consisting of moist to wet, medium stiff to stiff, non-plastic to slightly plastic, sandy silt (A-4), and sandy and silty clay (A-7, A-7-6) with varying amounts of rock fragments, as well as dry to moist to wet, loose to very dense, non-plastic to slightly plastic, silty and clayey, fine to coarse sand (A-2-4, A-2-6, A-1-b). The plasticity index of the residual cohesive soils tested ranged from 0 to 35.

ROCK PROPERTIES

Weathered rock was encountered at elevations ranging from ~144 to ~192 feet above sea level. The weathered rock encountered was brown to gray and most likely derived from gneiss and granite.

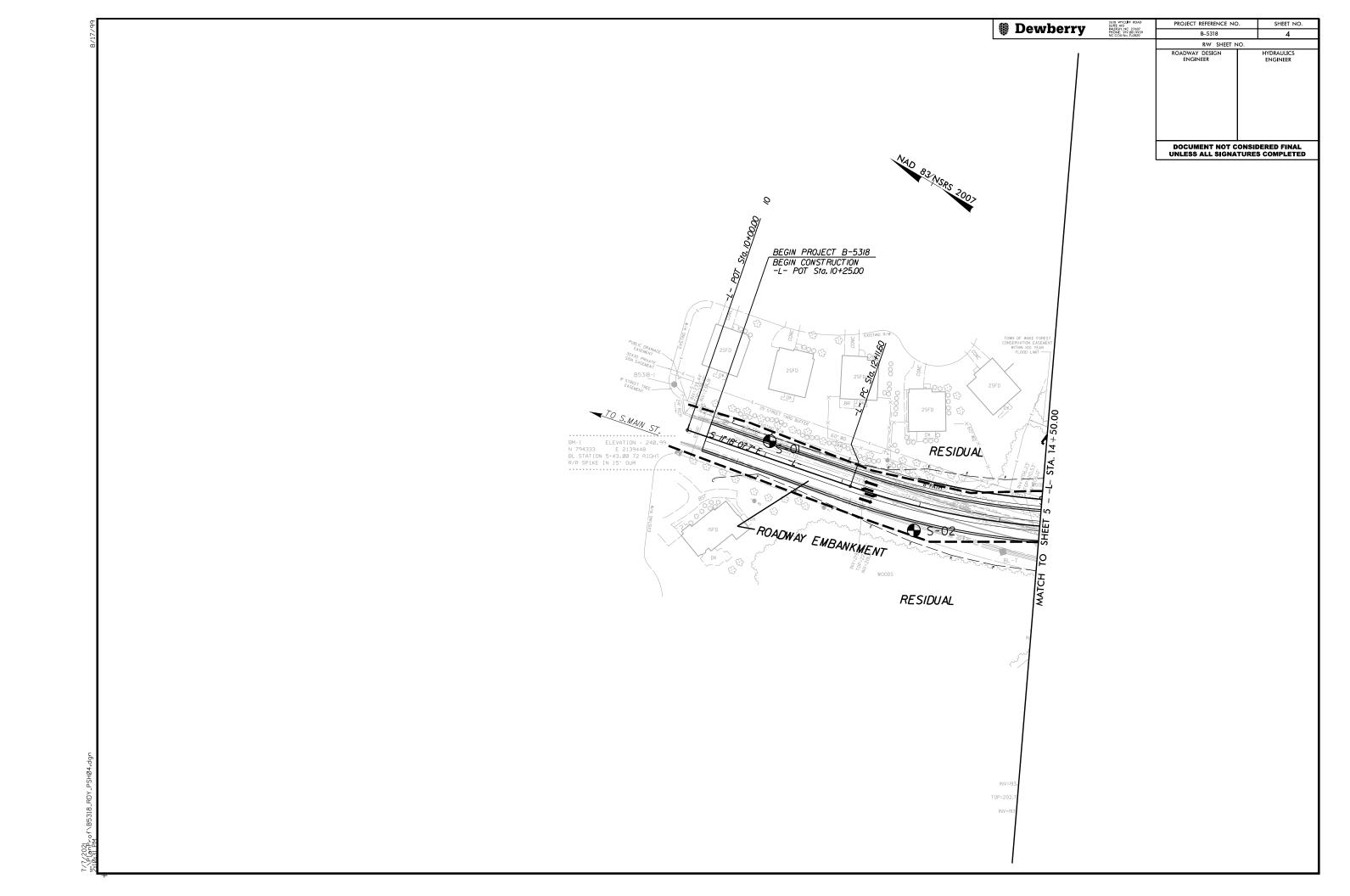
The top of crystalline rock was encountered at elevations ranging from ~147 to ~171 feet above sea level. At boring B2-A1, black, gray, and orange, slightly weathered, moderately hard to hard, moderate to closely fractured Granite/Gneiss was cored.

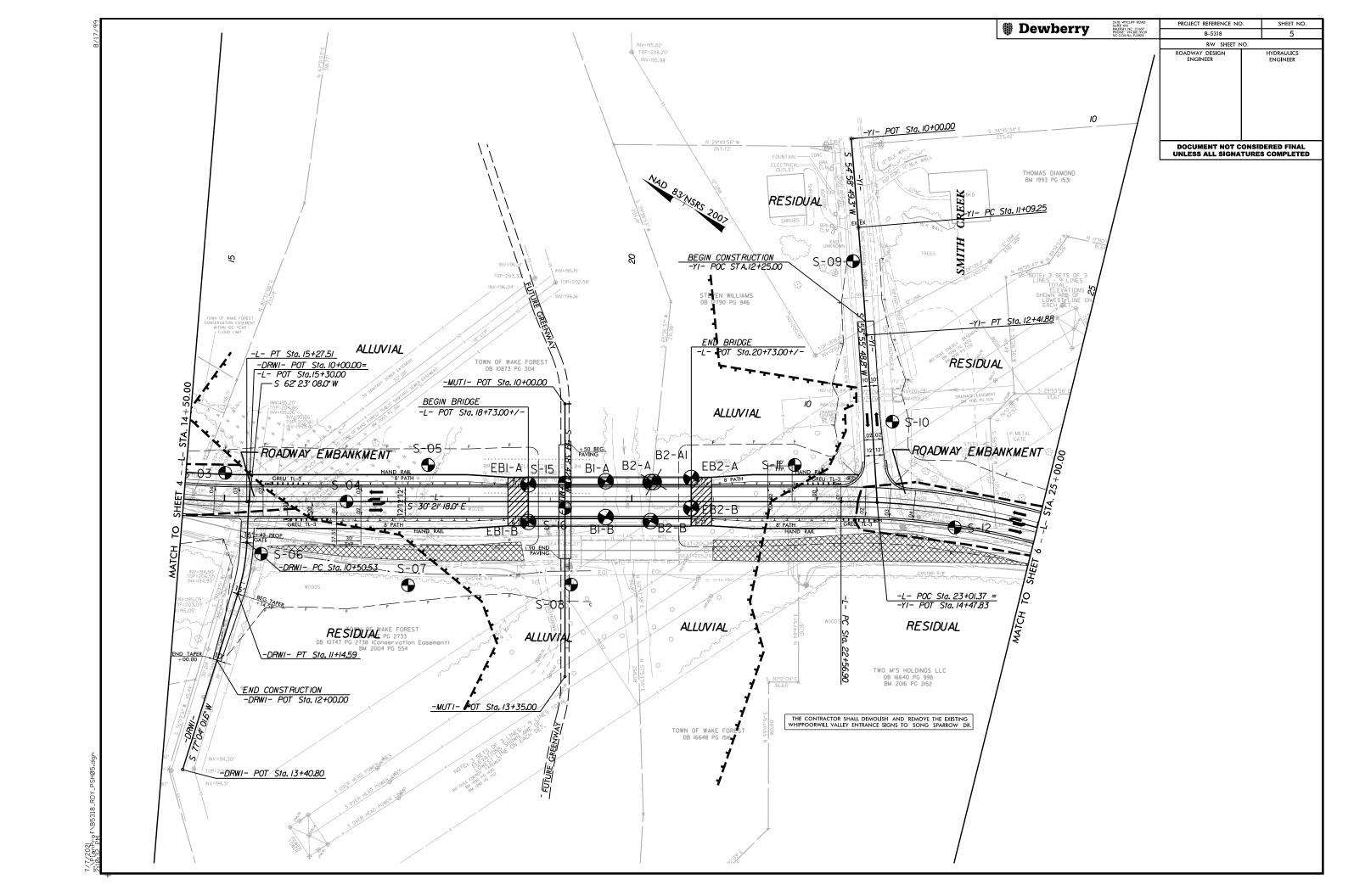
GROUNDWATER

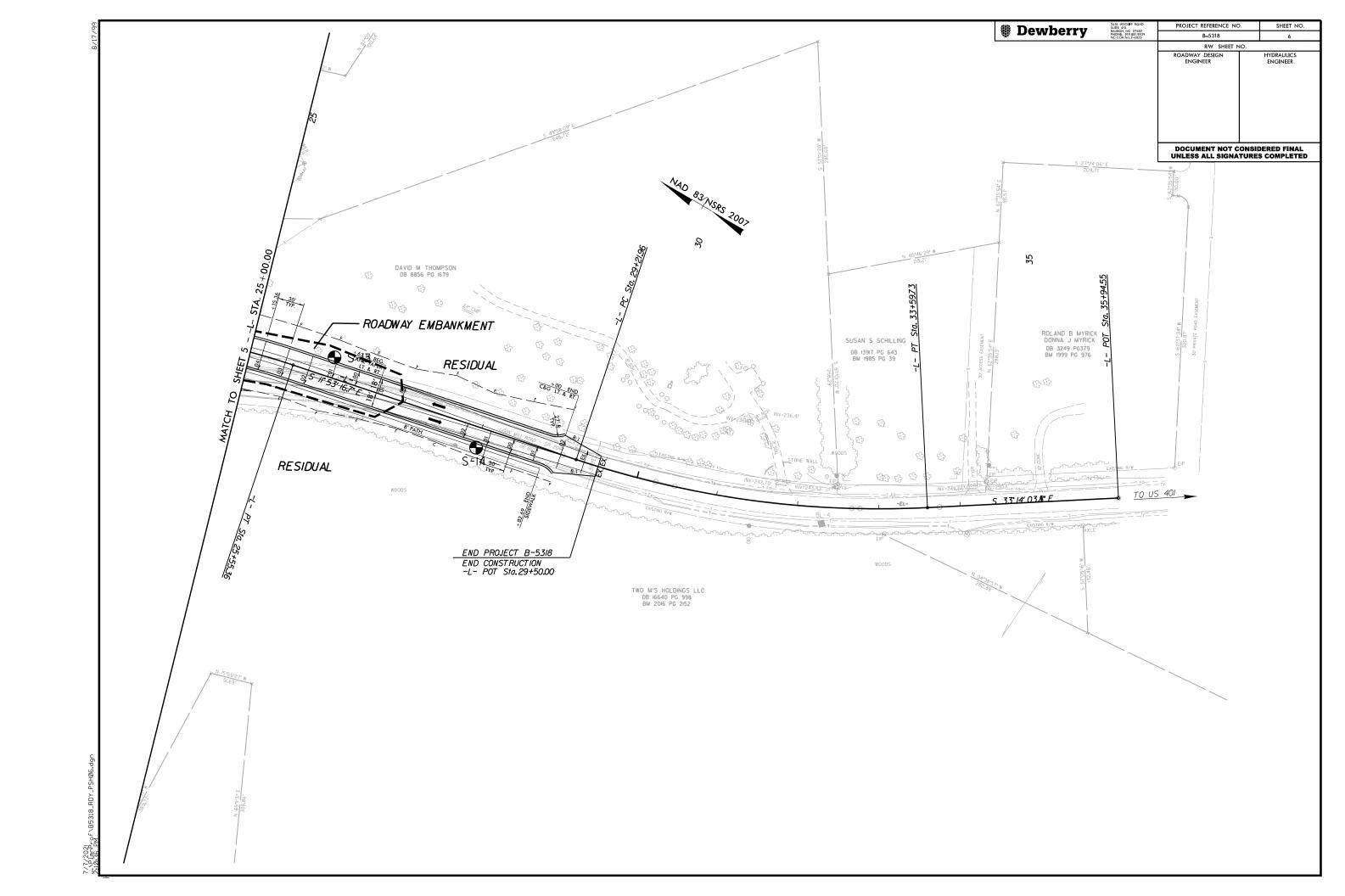
Water levels across the project can vary due to topographic relief and soil permeability. The groundwater measurements taken 24 hours after drilling varied between ~196 feet and ~214 feet above sea level.

Areas of Special Geotechnical Interest

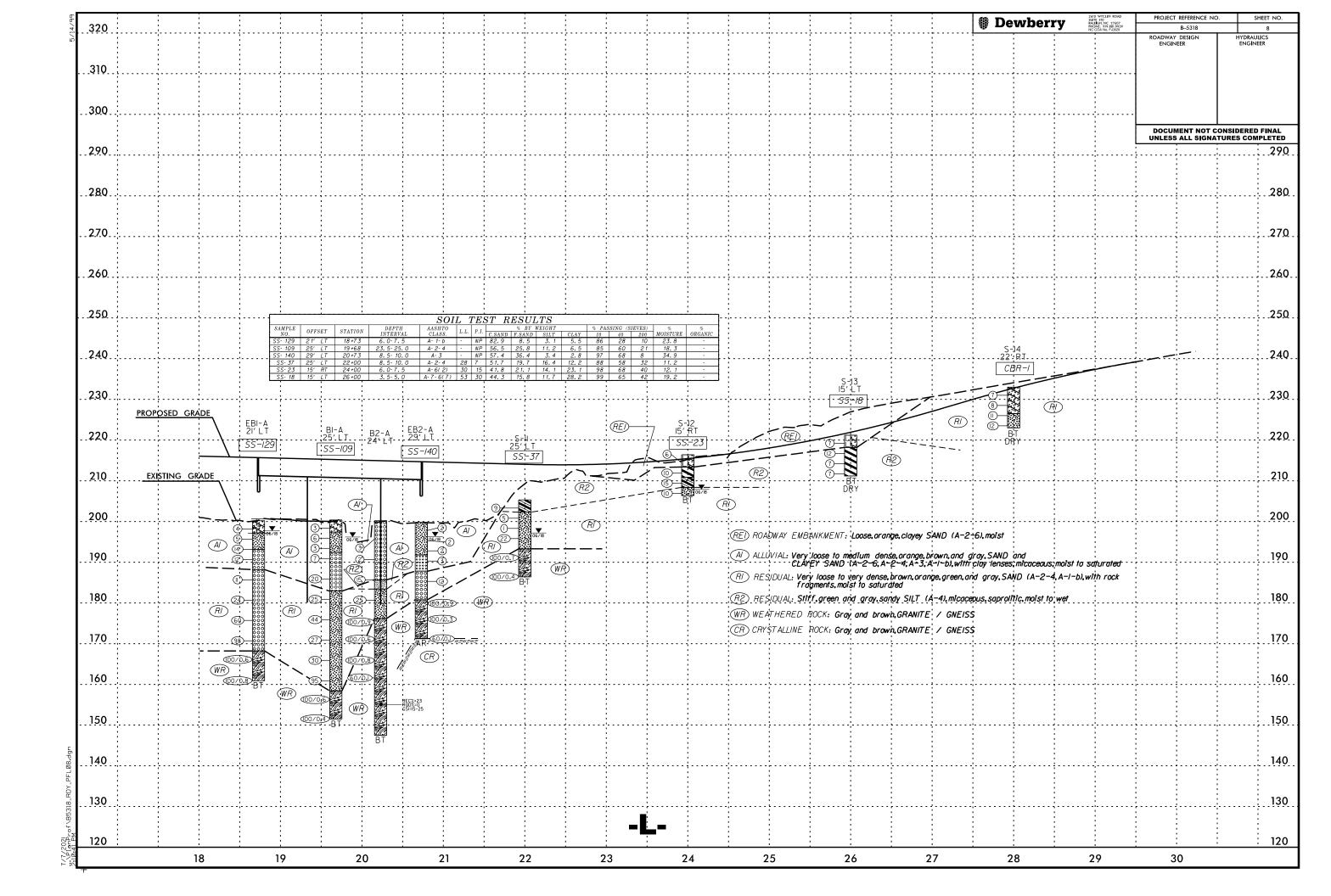
1) Streams: Smith Creek intersects the project corridor at approximately -L- Sta. 20+00.

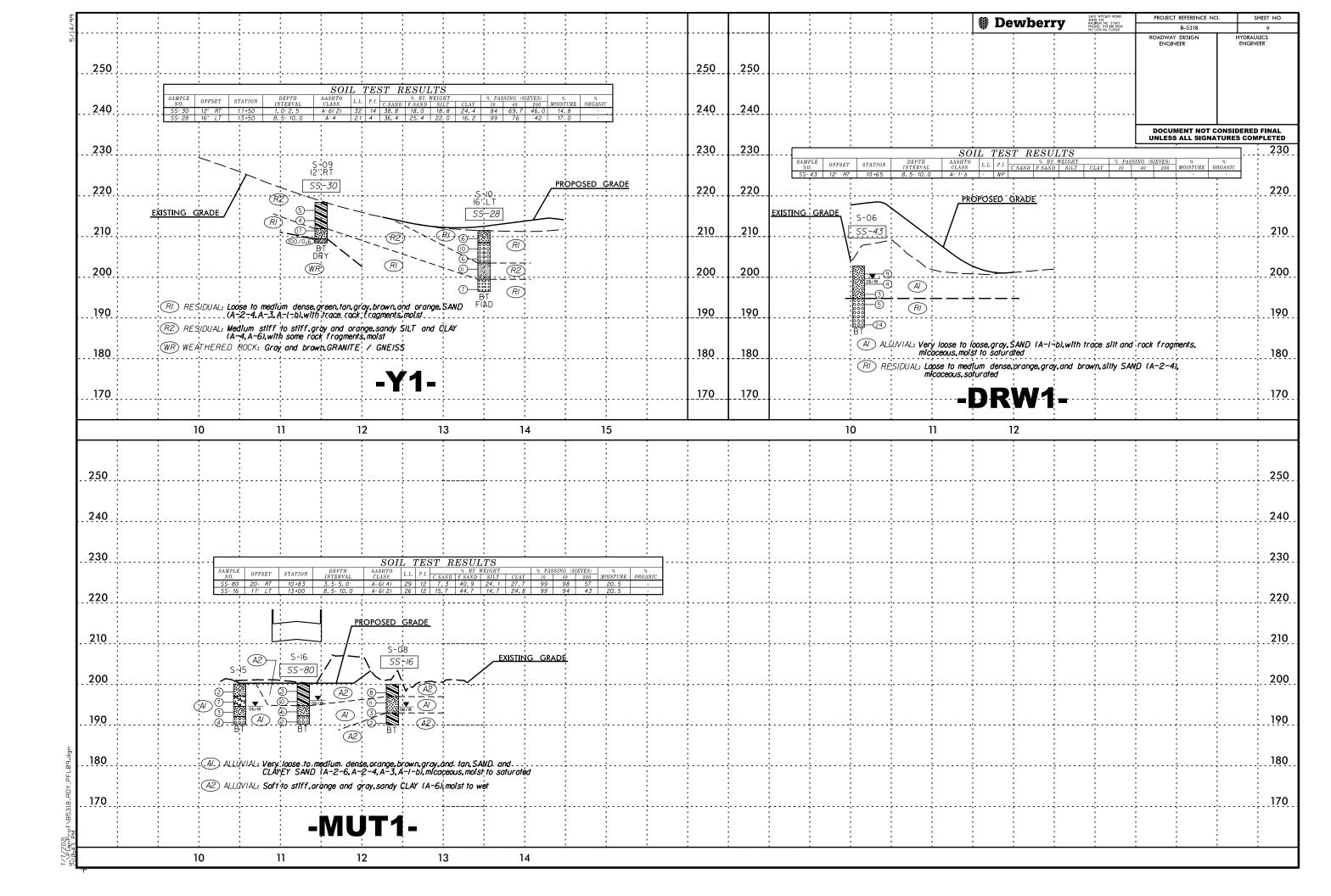


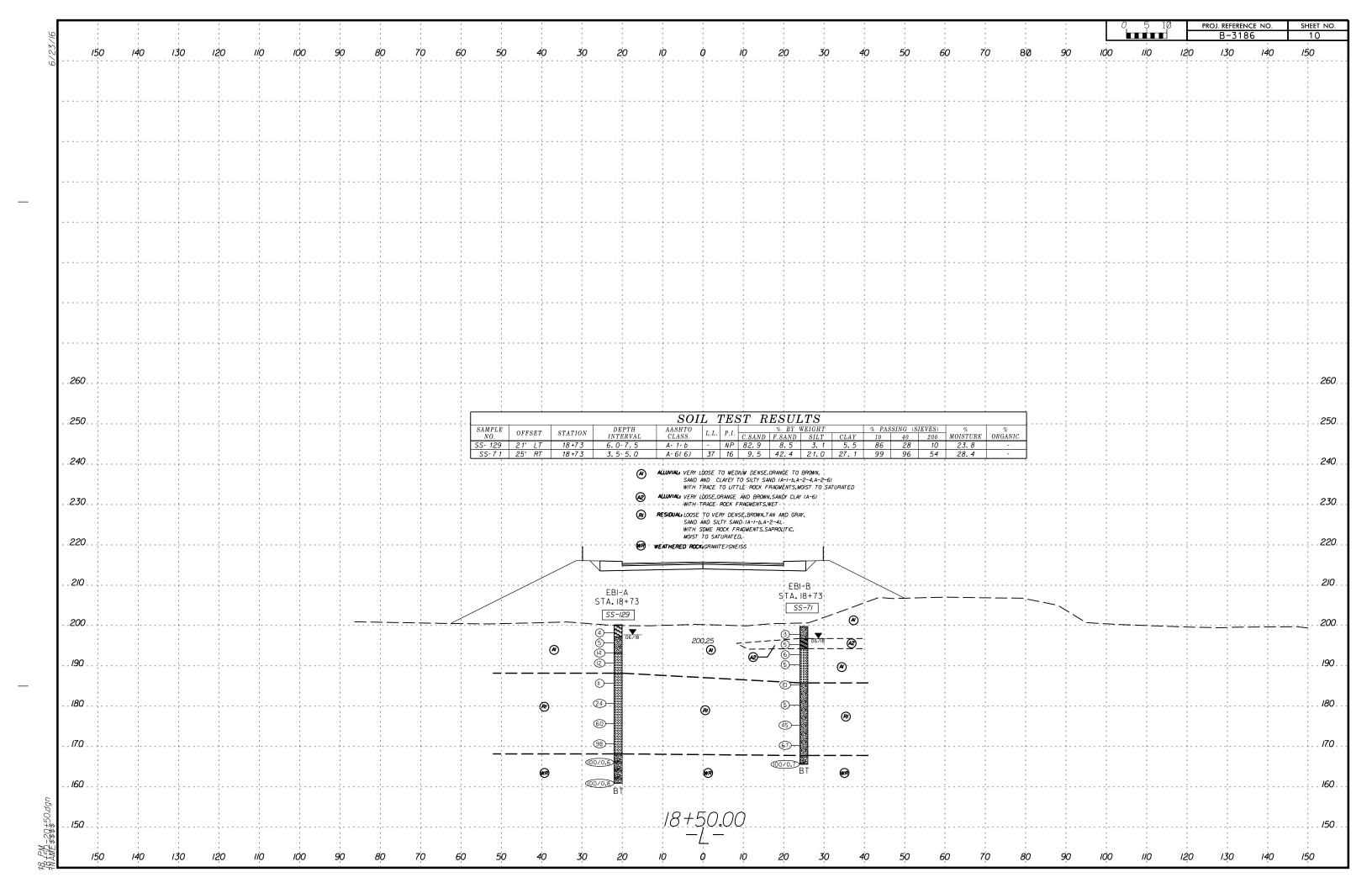


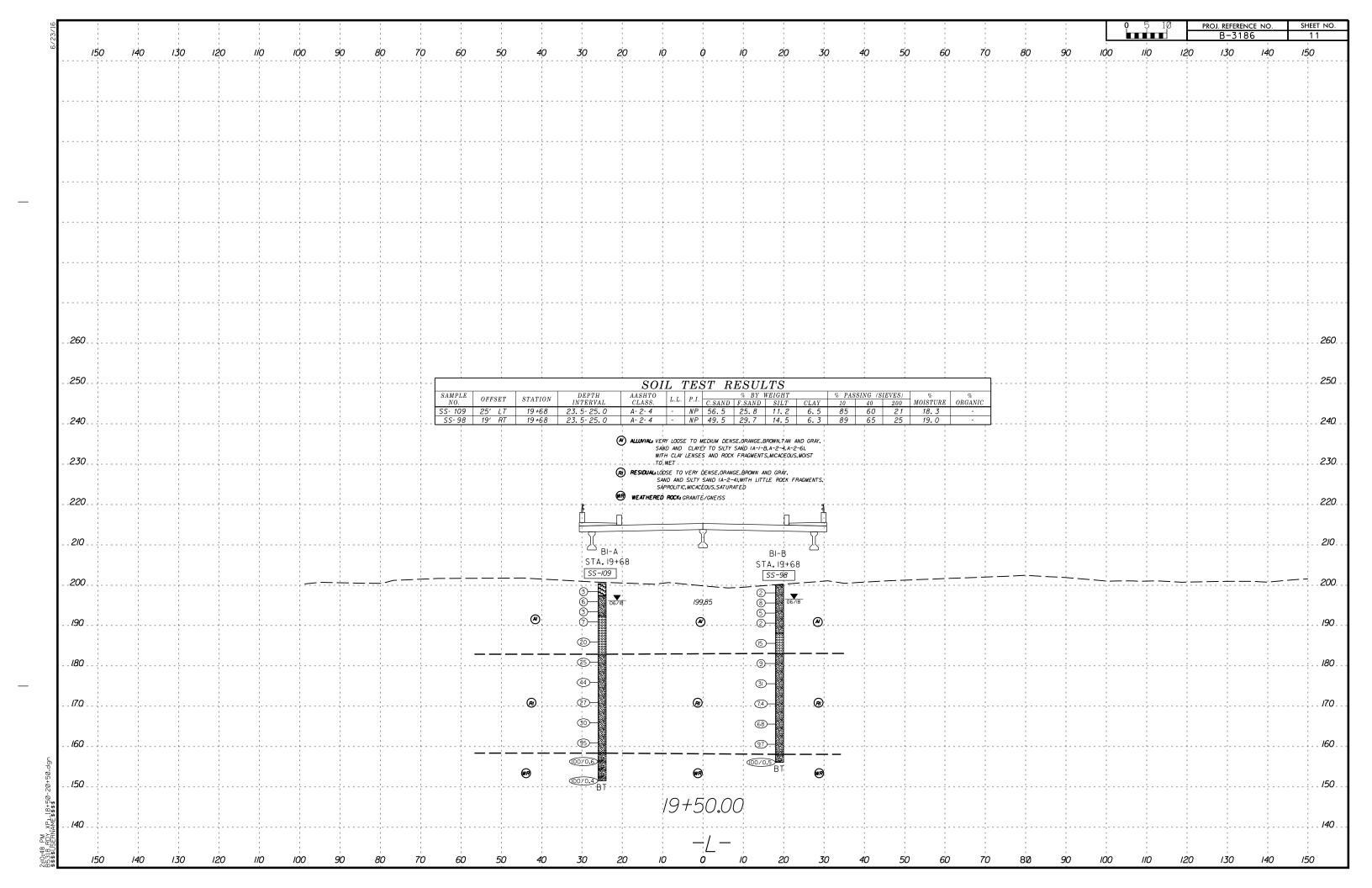


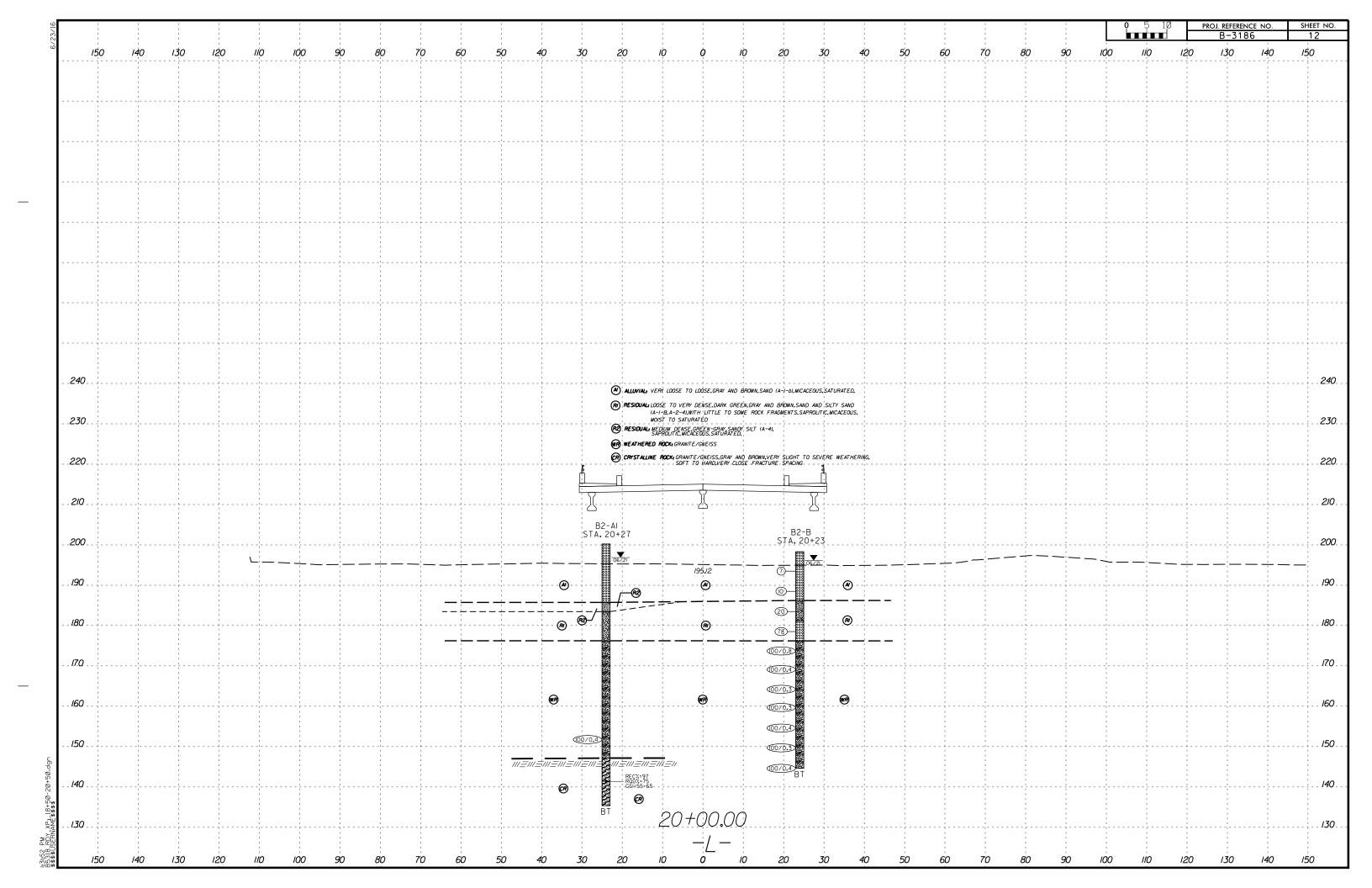
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250			SAMPLE	, , , , , , , , , , , , , , , , , , ,	SOI.	$\frac{1}{L TEST}$	$\frac{1}{RESULT}$: TS	% PASSING (SIEVES		<u>.</u>				25
			SAMPLE NO. SS- 11 SS- 3	OFFSET STATION DEPT INTER 18' LT 11+00 6.0-7 13' RT 13+00 6.0-7	VAL CLASS 5 A- 2- 4	L.L. P.I. C.SAN - NP 37. 2 56 35 35. 7	D F.SAND :	SILT CLAY 16. 1 8. 1 10. 3 33. 9	10 40 200 97 79 29 89 74 47	MOISTURE ORG 9 2.9 7 20.2	ANIC - -	!			! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
240	 RED	S-01 - 18' LT	SS- 59 SS- 67 SS- 76			44 21 6.9 - NP 32 6 51.5	19.3 2	12. 1 7. 3	99 96 77	31. 2	· · ·				24
		SS-11						:							
230			; >=================================	\$-02 3':RT S\$-3				ļ				; POSED GR	ADE		23
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		FIAD RI					_	:			/:				
210			\ \RZ	(I) 06/18 (B)			S-59	<u>;</u>			5-05 5′LT 	EXI	STING GRADE		210
				BT (<i>R2</i>)		RED _	<u> </u>	i A	S-04 S5÷67		SS-76				
200	 					(A2) (3)		<u>-</u> ->	06/	102' R					20
						\\ \(\bar{3}{\text{-}}\)	06/18	<u>A</u> 2		·	06/18				
190	 (DE) DOADWAY	EUDANKUENT Hodi	um doce arau h	rayo and Arango SANO	: AI		 .			$A \cup \emptyset$	7				190
	(A) ALLUVIAL:	Verviloose to medium	CLAYEY SAND (c. dense.oranae.b	rown.and orange.SAND A-2-4.A-2-6).with some rown.arav.and tan.SAND	gravel		****	(A/)	21 00000		(S) (R)				10
180				rown.gray.and tan.SAND -I-b).micaceous.moist.to A-4).and silty and sandy		(RI)	3. 3.T	(RI)	31)	(<i>Rţ</i>)					180
170	(RI) RESIDUAL	(A-6, A-7-6), moist to L: Loose to very dense.	wet tan.orange.greei	and brown silty and clo	nyey		:		BT		BT :	· · ·			170
		SAND- and - CLAY-EY- fragments, moist to	-SAND -(A-2-4,) saturated	and brown silty and clo 1-2-6) micaceous with tr	ac e -rock		:								
160	(RZ) RESIDUAL	L: Stitt, brown, sandy of micaceous, moist to v	and slify CLAY (A wet	-7-6) with little rock fro	agmenīs , 							:			160
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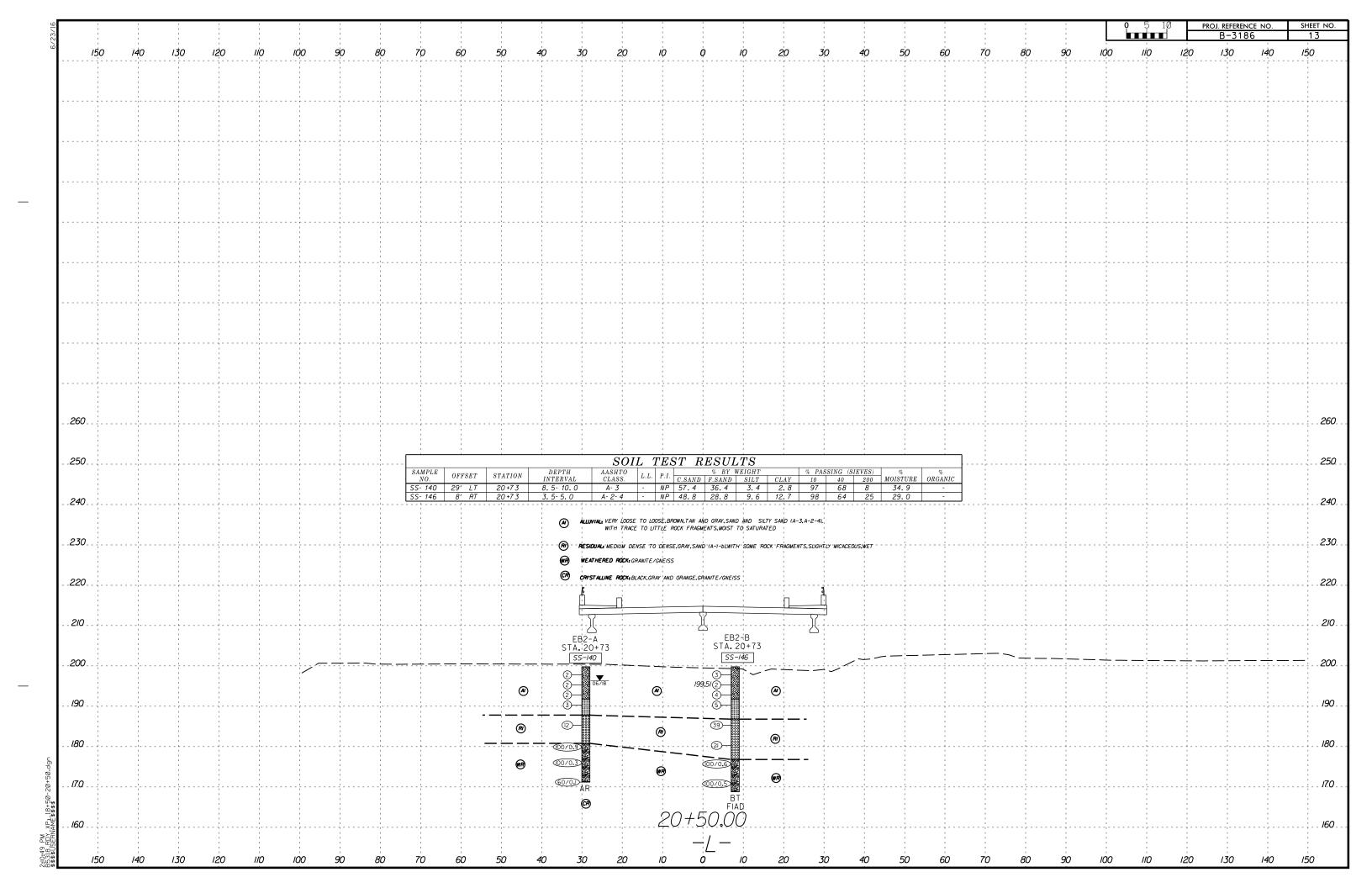












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SHEET 14



PROJECT NO.: 43032.1.1 PROJECT ID: B-5318

REPORT ON SAMPLES OF: ROCK QUALITY

PROJECT DESCRIPTION: BRIDGE NO. 126 ON SR 2044 (LIGON MILL ROAD) OVER SMITH CREEK

DATE SAMPLED: 6/8/2021 COUNTY: WAKE

SUBMITTED BY: N.O. MOORE

BORING NO.	SAMPLE NO.	DEPTH (FT)	ROCK TYPE	GEOLOGIC MAP UNIT	LENGTH (IN)	DIAMETER (IN)	UNIT WEIGHT (PCF)	UNCONFINED COMPRESSIVE STRENGTH (PSI)	YOUNG'S MODULUS (PSI)	SPLITTING TENSILE STRENGTH (PSI)	REMARKS
B2-A1	RS-1	53.1-54.2	Injected Gneiss	CZig	13	1.86	164.2	29,700	-	-	-
B2-A1	RS-2	57.8-58.2	Injected Gneiss	CZig	5	1.86	154.2	6,430	-	-	-