

REFERENCE: B-5318

PROJECT: 46032.1.1

SEE SHEET 3 FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5318	1	14

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<u>LINE</u>	<u>STATION</u>	<u>PLAN</u>	<u>PROFILE</u>
-L-	10+25 TO 29+50	4-6	7-8
-YI-	10+00 TO 14+48	5	9
-DRWI-	10+00 TO 13+41	5	9
-MUTI-	10+00 TO 13+35	5	9

**CROSS SECTIONS**

<u>LINE</u>	<u>STATION</u>	<u>SHEETS</u>
-L-	18+50	10
-L-	19+50 TO 20+50	11-13

**APPENDICES**

<u>APPENDIX</u>	<u>TITLE</u>	<u>SHEETS</u>
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# ROADWAY SUBSURFACE INVESTIGATION

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

## INVENTORY

**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.

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

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

PERSONNEL

- 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



DocuSigned by:  
*Jacob C. Wessell* 7/28/2021  
676F8AF4678B46E SIGNATURE DATE

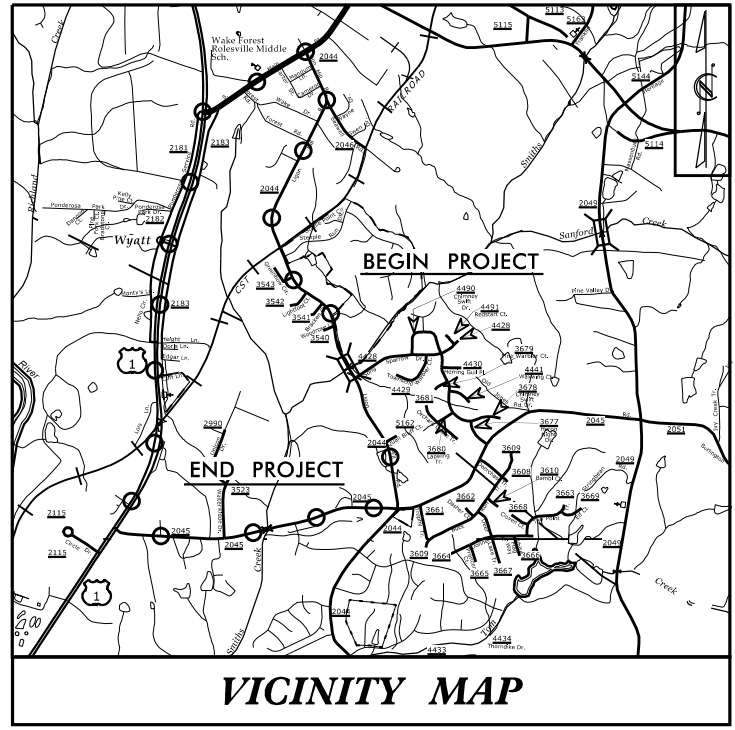
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

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

Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSION, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION.

**TIP PROJECT: B-5318**

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols



**VICINITY MAP**

OFF SITE DETOUR

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

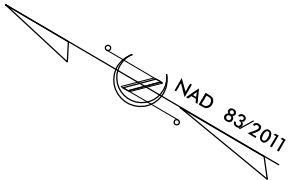
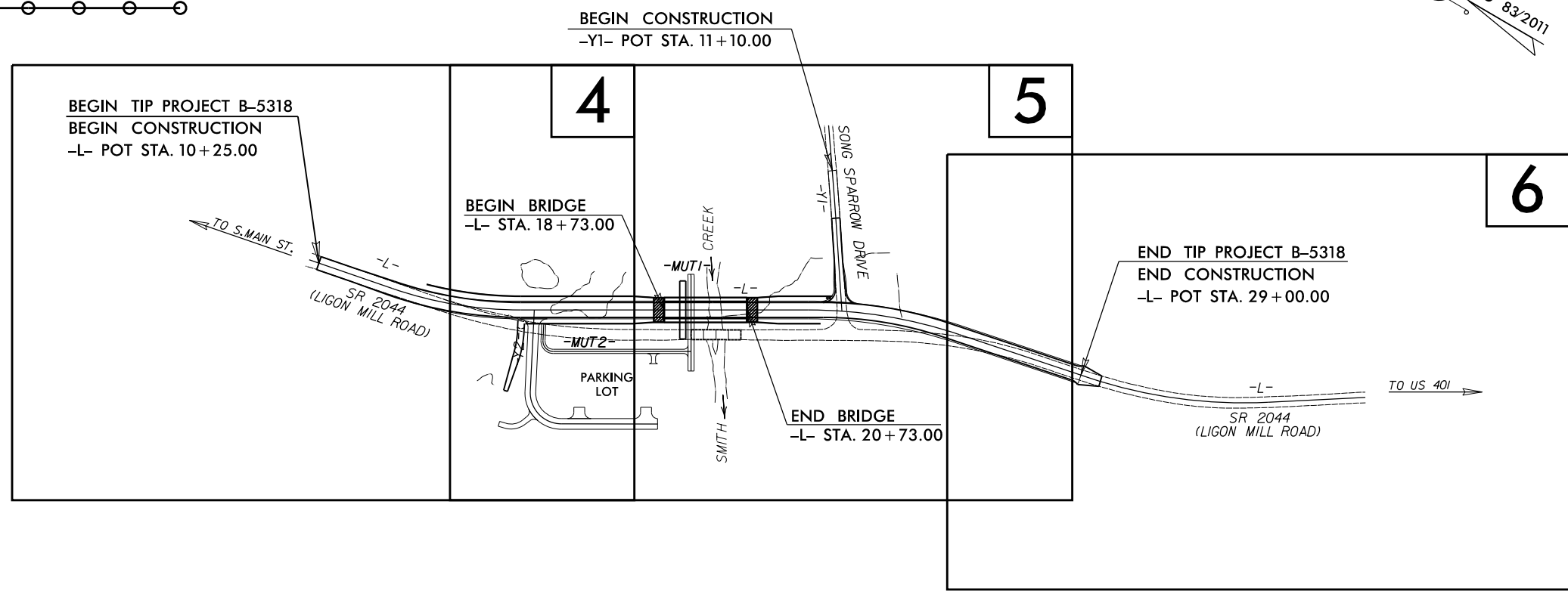
**WAKE COUNTY**

**LOCATION: REPLACE BRIDGE #126 OVER SMITH CREEK  
ON SR 2044 (LIGON MILL ROAD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5318	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
		P.E.	
		RW	
		CONST.	

**25% PLANS**

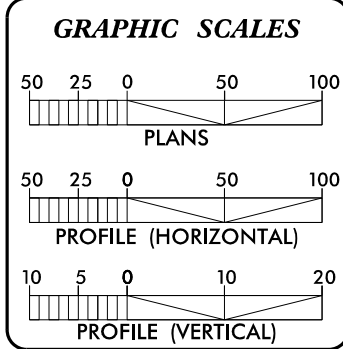


THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WAKE FOREST.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD XXXX.

NCDOT CONTACT: LISA GILCHRIST, E.I.

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UNLESS ALL SIGNATURES COMPLETED**

**CONTRACT:**



**DESIGN DATA**

ADT 2020 =	8,700
ADT 2040 =	12,400
K =	10 %
D =	55 %
T =	2 % *
V =	40 MPH
* TTST =	1 DUAL 3
FUNC CLASS =	MAJOR COLLECTOR

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5318	=	0.317 MILES
LENGTH STRUCTURE TIP PROJECT B-5318	=	0.038 MILES
TOTAL LENGTH TIP PROJECT B-5318	=	0.355 MILES

**PLANS PREPARED FOR NCDOT BY:**

2610 WYCLIFF ROAD  
SUITE 410  
RALEIGH, NC 27607  
PHONE: 919.881.9939  
NC COA No. F-0929

**RIGHT OF WAY DATE:**  
JULY 8, 2019

**LETTING DATE:**  
AUGUST 12, 2020

**DENNIS J. MORY, P.E.**  
PROJECT ENGINEER

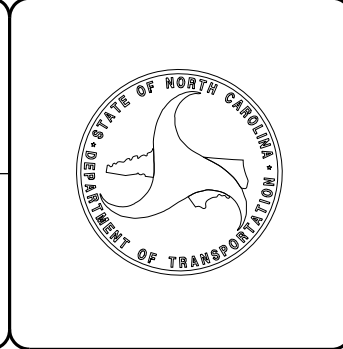
**ANNE MARIE PRIETO, P.E.**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

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
<b>Total =</b>		<b>3,049 (~0.58 miles)</b>

### 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**

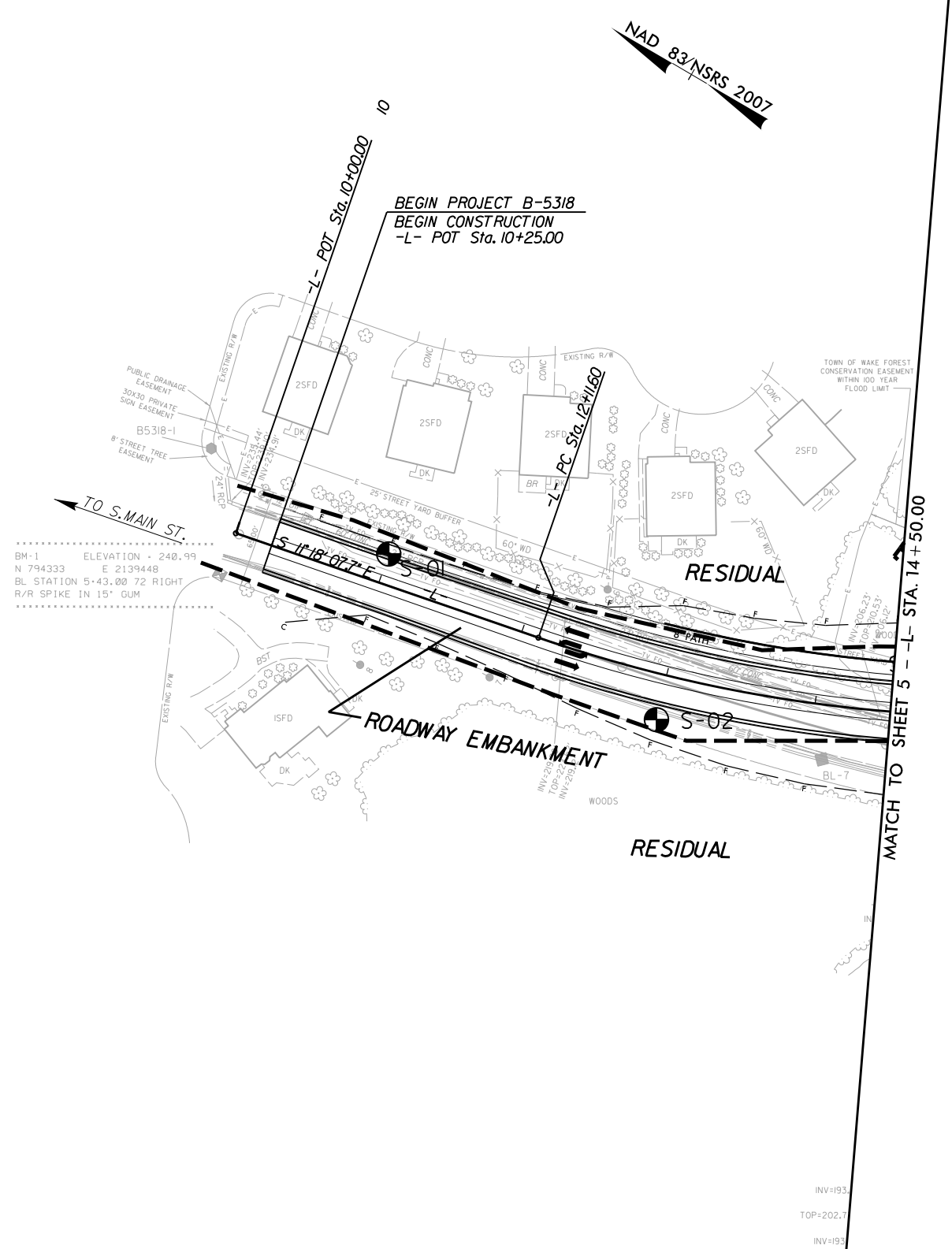
- 1) Streams: Smith Creek intersects the project corridor at approximately -L- Sta. 20+00.

8/17/99



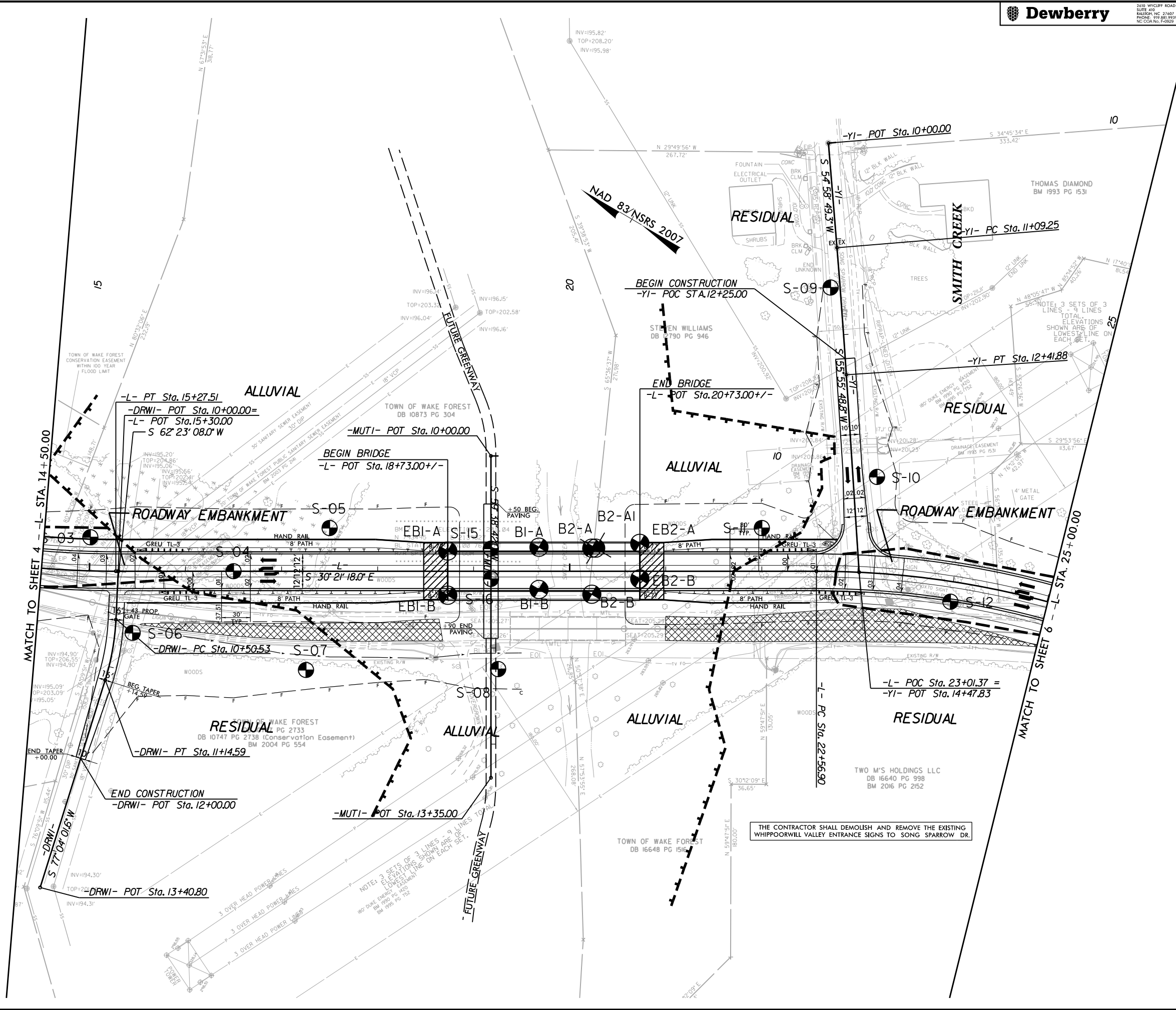
300 WILBY ROAD  
SUITE 410  
RALEIGH, NC 27607  
PHONE: 919 881 9939  
NC CDR No. F-0809

PROJECT REFERENCE NO.		SHEET NO.	
B-5318		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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THE CONTRACTOR SHALL DEMOLISH AND REMOVE THE EXISTING WHIPPOORWILL VALLEY ENTRANCE SIGNS TO SONG SPARROW DR.

NOTE: 3 SETS OF 3 LINES - 9 LINES TOTAL  
ELEVATIONS SHOWN ARE OF LOWEST LINE ON EACH SET.  
800 DIVE ENERGY  
BM 1990 PG 420  
BM 1995 PG 754

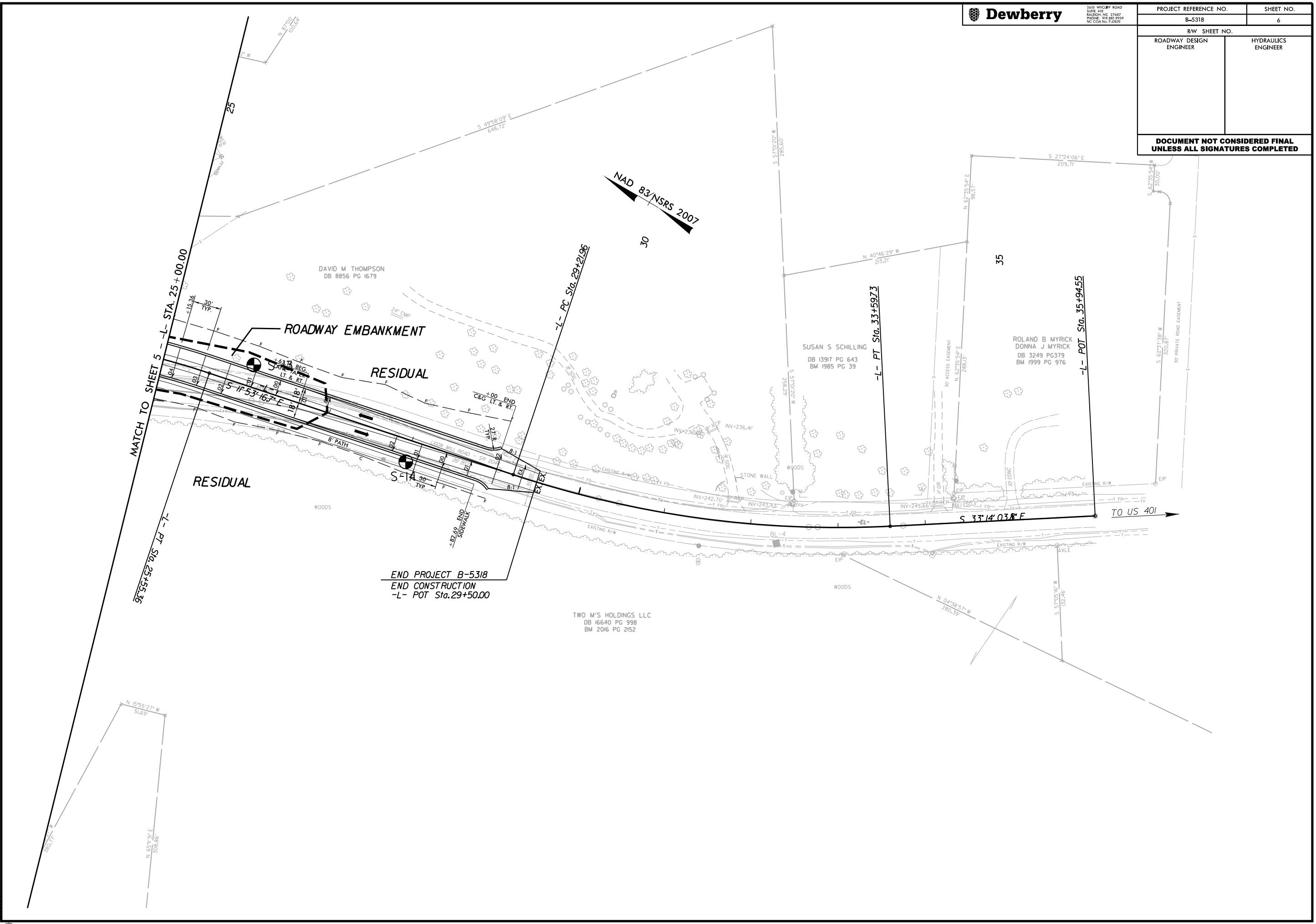
NOTE: 3 SETS OF 3 LINES - 9 LINES TOTAL  
ELEVATIONS SHOWN ARE OF LOWEST LINE ON EACH SET.

8/17/99



2610 WYCLIFF ROAD  
SUITE 410  
RALEIGH, NC 27607  
PHONE: 919.881.9339  
NC CDA No. F-2929

PROJECT REFERENCE NO.		SHEET NO.	
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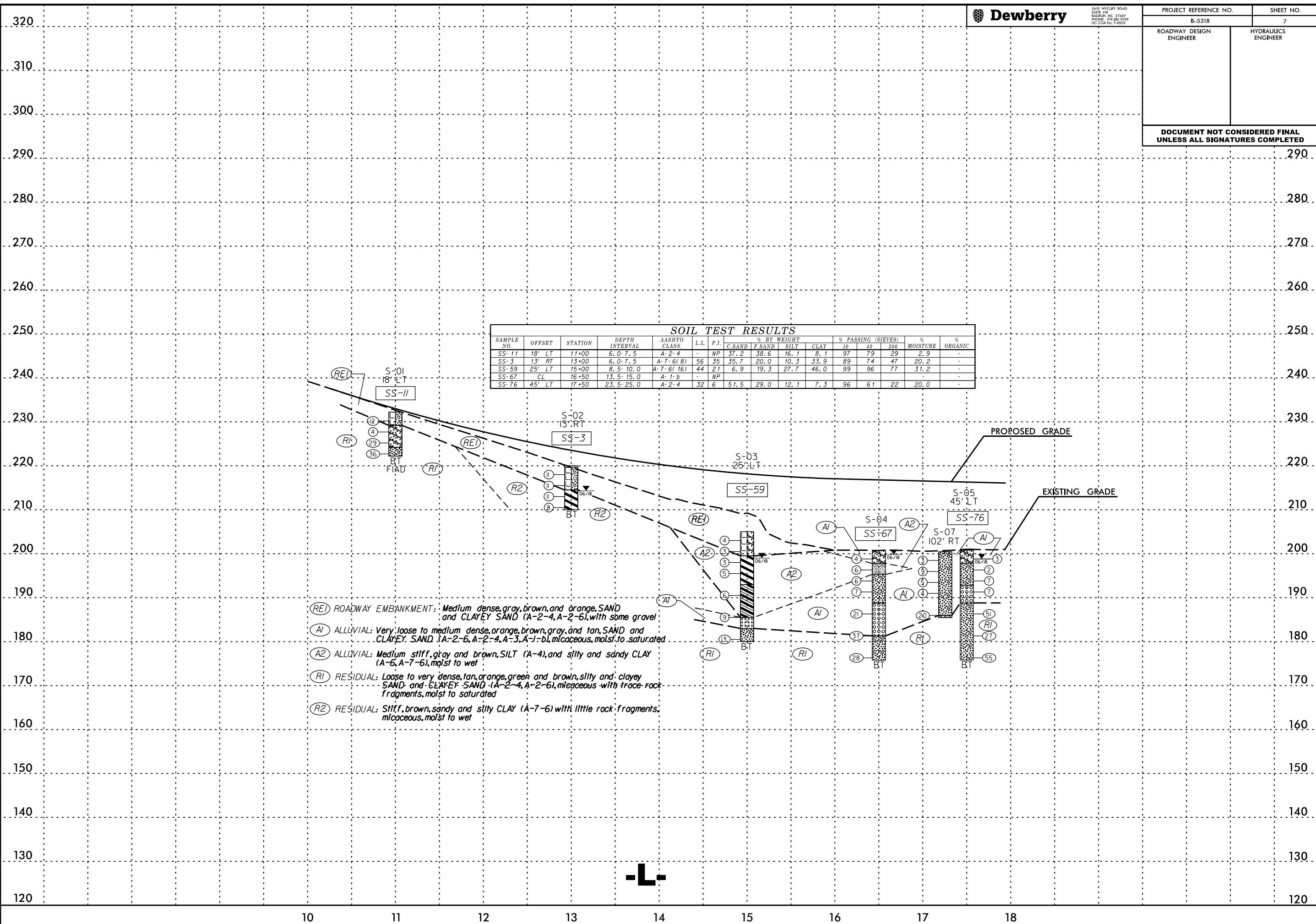
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PROJECT REFERENCE NO.	SHEET NO.
B-5318	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

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-11	18' LT	11+00	6.0-7.5	A-2-4	-	NP	37.2	38.6	16.1	8.1	97	79	29	2.9	-
SS-3	13' RT	13+00	6.0-7.5	A-2-4	56	35	35.7	20.0	10.3	33.9	89	74	47	20.2	-
SS-59	25' LT	15+00	8.5-10.0	A-7-6(16)	44	21	6.9	19.3	27.7	46.0	99	96	77	31.2	-
SS-67	CL	16+50	13.5-15.0	A-1-b	-	NP	-	-	-	-	-	-	-	-	-
SS-76	45' LT	17+50	23.5-25.0	A-2-4	32	6	51.5	29.0	12.1	7.3	96	61	22	20.0	-



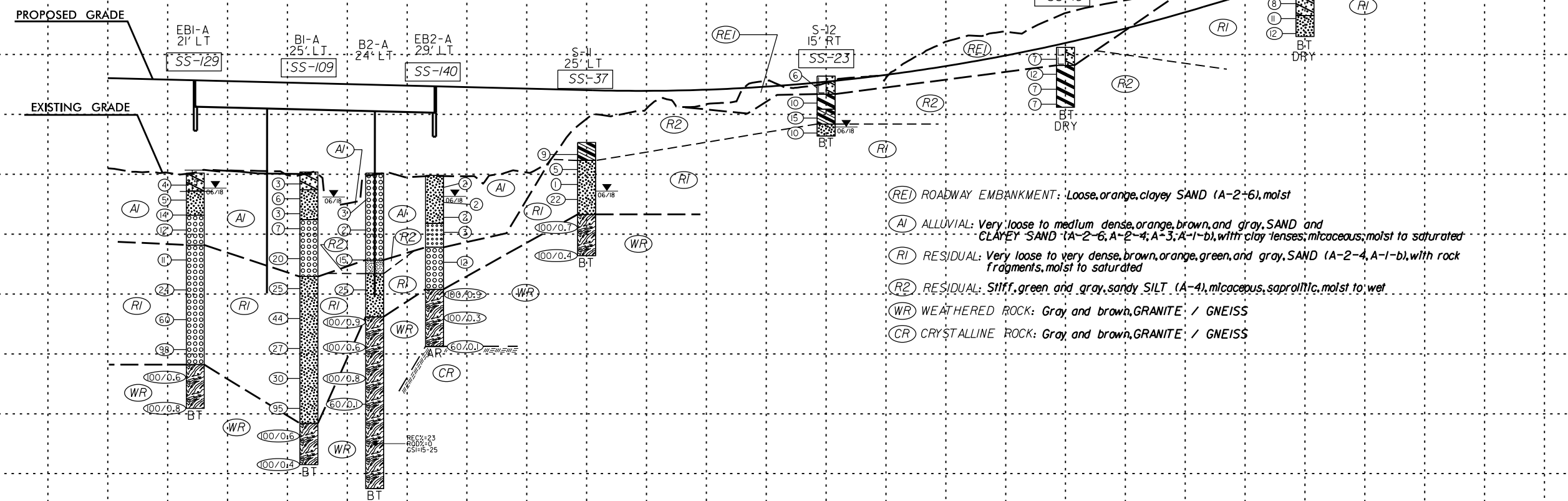
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PROJECT REFERENCE NO. B-5318	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS															
SAMPLE	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)		% MOISTURE	% ORGANIC		
							C. SAND	F.SAND	SILT	10	40				
SS-129	21' LT	18+73	6.0'-7.5'	A-1-b	-	NP	82.9	8.5	3.1	5.5	86	28	10	23.8	-
SS-109	25' LT	19+68	23.5'-25.0'	A-2-4	-	NP	56.5	25.8	11.2	6.5	85	60	21	18.3	-
SS-140	29' LT	20+73	8.5'-10.0'	A-3	-	NP	57.4	36.4	3.4	2.8	97	68	8	34.9	-
SS-37	25' LT	22+00	8.5'-10.0'	A-2-4	28	7	51.7	19.7	16.4	12.2	88	58	32	11.2	-
SS-23	15' RT	24+00	6.0'-7.5'	A-6(2)	30	15	41.8	21.1	14.1	23.1	98	68	40	12.1	-
SS-18	15' LT	26+00	3.5'-5.0'	A-7-6(7)	53	30	44.3	15.8	11.7	28.2	99	65	42	19.2	-



- (RE) ROADWAY EMBANKMENT: Loose, orange, clayey SAND (A-2-6), moist
- (AI) ALLUVIAL: Very loose to medium dense, orange, brown, and gray, SAND and CLAYEY SAND (A-2-6, A-2-4, A-3, A-1-b), with clay lenses; micaceous; moist to saturated
- (RI) RESIDUAL: Very loose to very dense, brown, orange, green, and gray, SAND (A-2-4, A-1-b), with rock fragments; moist to saturated
- (R2) RESIDUAL: Stiff, green and gray, sandy SILT (A-4), micaceous, saprotitic; moist to wet
- (WR) WEATHERED ROCK: Gray and brown, GRANITE / GNEISS
- (CR) CRYSTALLINE ROCK: Gray and brown, GRANITE / GNEISS

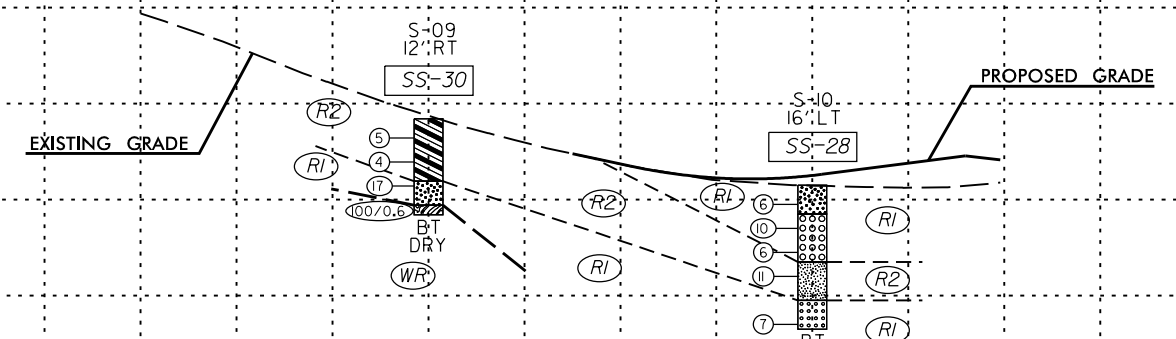
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-30	12' RT	11+50	1.0-2.5	A-6(2)	32	14	38.8	18.0	18.8	24.4	84	69.7	46.0	14.8	-
SS-28	16' LT	13+50	8.5-10.0	A-4	21	4	36.4	25.4	22.0	16.2	99	76	42	17.0	-

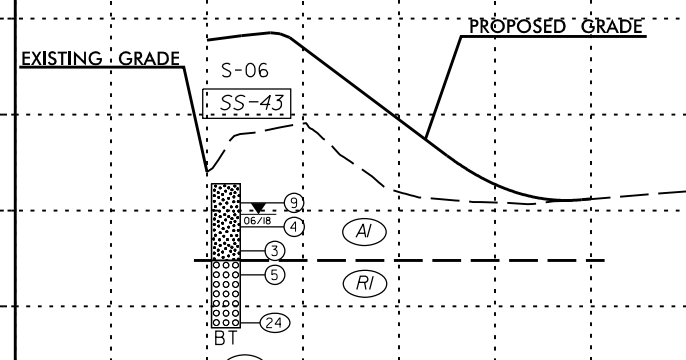


- (R1) RESIDUAL: Loose to medium dense, green, tan, gray, brown, and orange, SAND (A-2-4, A-3, A-1-b), with trace rock fragments, moist
- (R2) RESIDUAL: Medium stiff to stiff, gray and orange, sandy SILT and CLAY (A-4, A-6), with some rock fragments, moist
- (WR) WEATHERED ROCK: Gray and brown, GRANITE / GNEISS

**-Y1-**

10 11 12 13 14 15

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-43	12' RT	10+65	8.5-10.0	A-1-b	-	NP	-	-	-	-	-	-	-	-	-

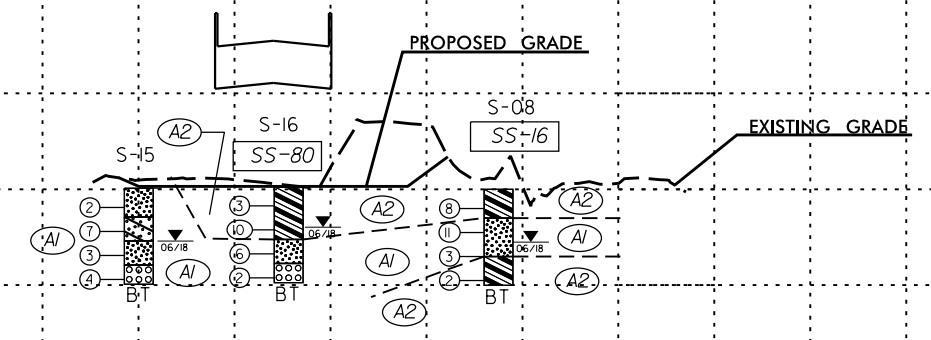


- (A1) ALLUVIAL: Very loose to loose, gray, SAND (A-1-b), with trace silt and rock fragments, micaceous, moist to saturated
- (R1) RESIDUAL: Loose to medium dense, orange, gray, and brown, silty SAND (A-2-4), micaceous, saturated

**-DRW1-**

10 11 12

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-80	20' RT	10+83	3.5-5.0	A-6(4)	29	12	7.3	40.9	24.1	27.7	99	98	57	20.5	-
SS-16	11' LT	13+00	8.5-10.0	A-6(2)	26	12	15.7	44.7	14.7	24.8	99	94	43	20.5	-



- (A1) ALLUVIAL: Very loose to medium dense, orange, brown, gray, and tan, SAND, and CLAYEY SAND (A-2-6, A-2-4, A-3, A-1-b), micaceous, moist to saturated
- (A2) ALLUVIAL: Soft to stiff, orange and gray, sandy CLAY (A-6), moist to wet

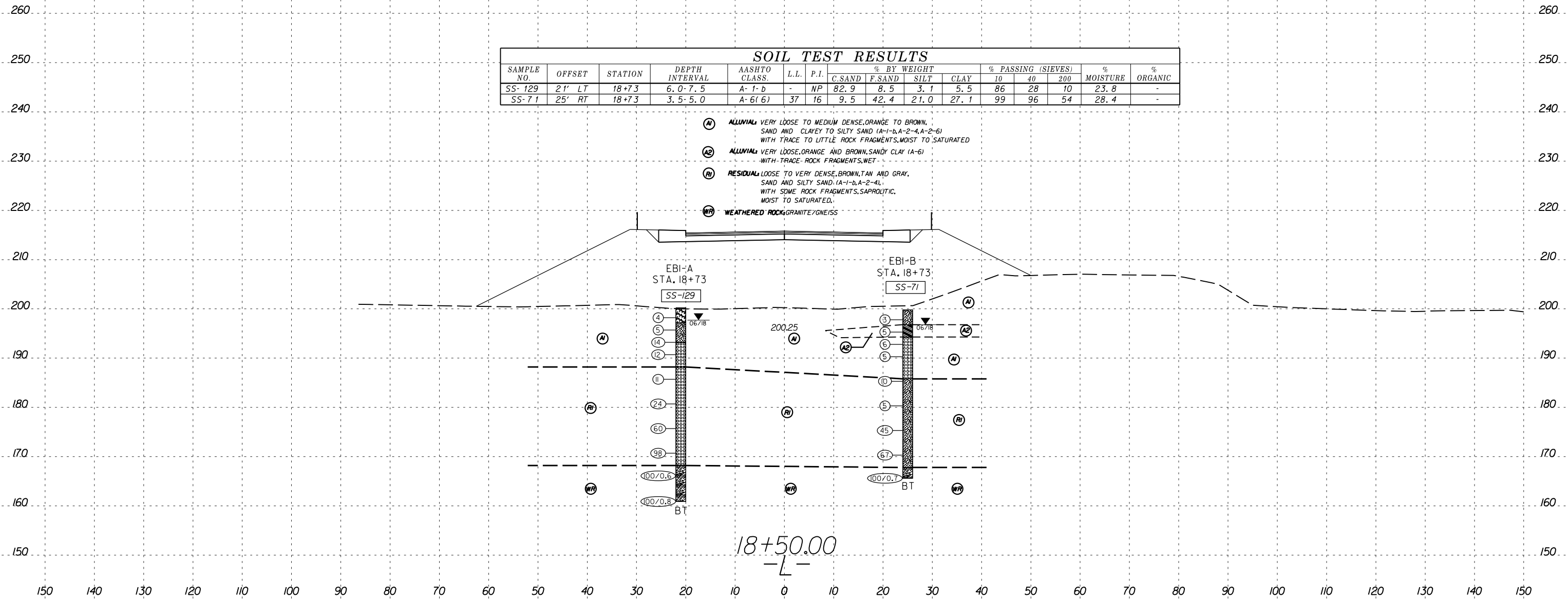
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-129	2' LT	18+73	6.0-7.5	A-1-b	-	NP	82.9	8.5	3.1	5.5	86	28	10	23.8	-
SS-71	25' RT	18+73	3.5-5.0	A-6(6)	37	16	9.5	42.4	21.0	27.1	99	96	54	28.4	-

- (A) ALLUVIAL VERY LOOSE TO MEDIUM DENSE, ORANGE TO BROWN, SAND AND CLAYEY TO SILTY SAND (A-1-b, A-2-4, A-2-6) WITH TRACE TO LITTLE ROCK FRAGMENTS, MOIST TO SATURATED
- (A2) ALLUVIAL VERY LOOSE, ORANGE AND BROWN, SANDY CLAY (A-6) WITH TRACE ROCK FRAGMENTS, WET
- (R) RESIDUAL LOOSE TO VERY DENSE, BROWN, TAN AND GRAY, SAND AND SILTY SAND (A-1-b, A-2-4), WITH SOME ROCK FRAGMENTS, SAPROLITIC, MOIST TO SATURATED
- (WR) WEATHERED ROCK GRANITE/GNEISS

EBI-A  
STA. 18+73  
SS-129

EBI-B  
STA. 18+73  
SS-71

BT

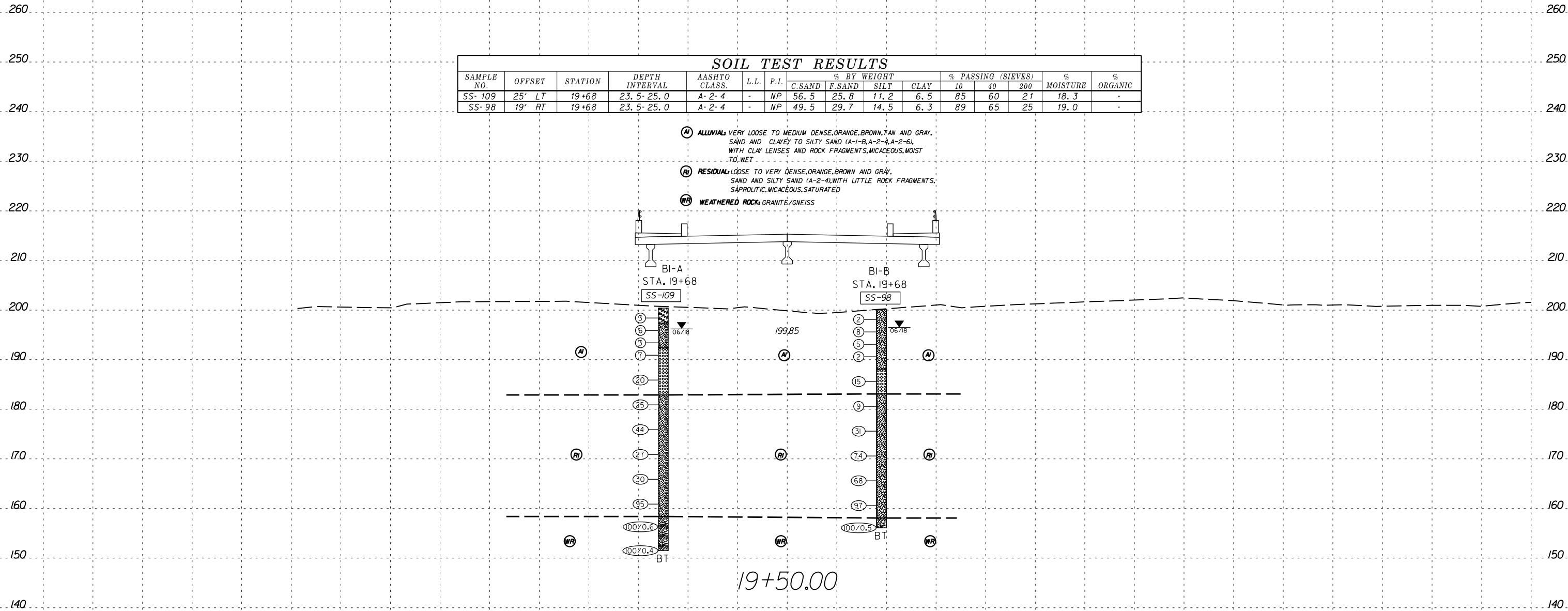
100/0.6  
100/0.8

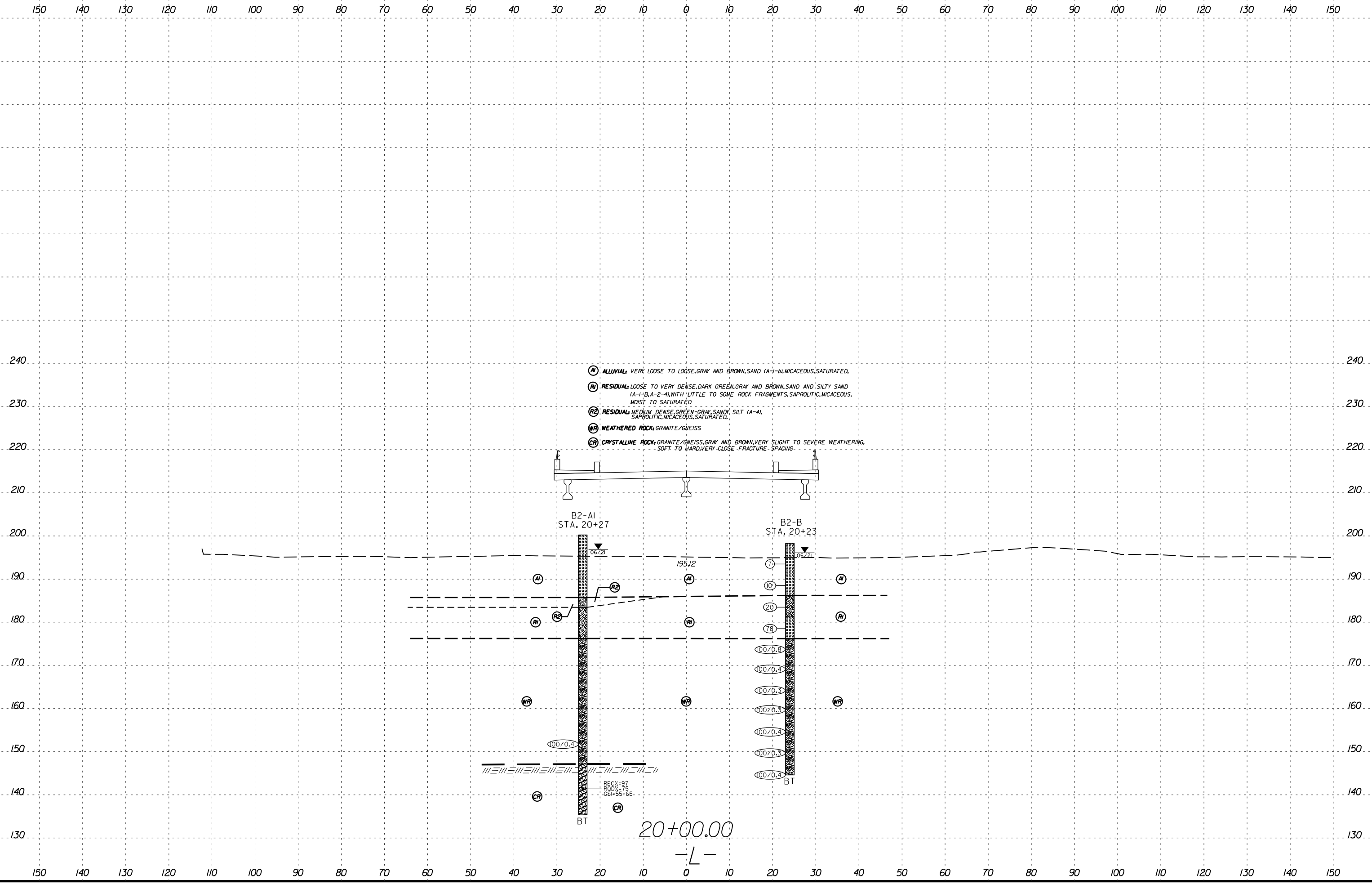
100/0.7

18+50.00  
-L-

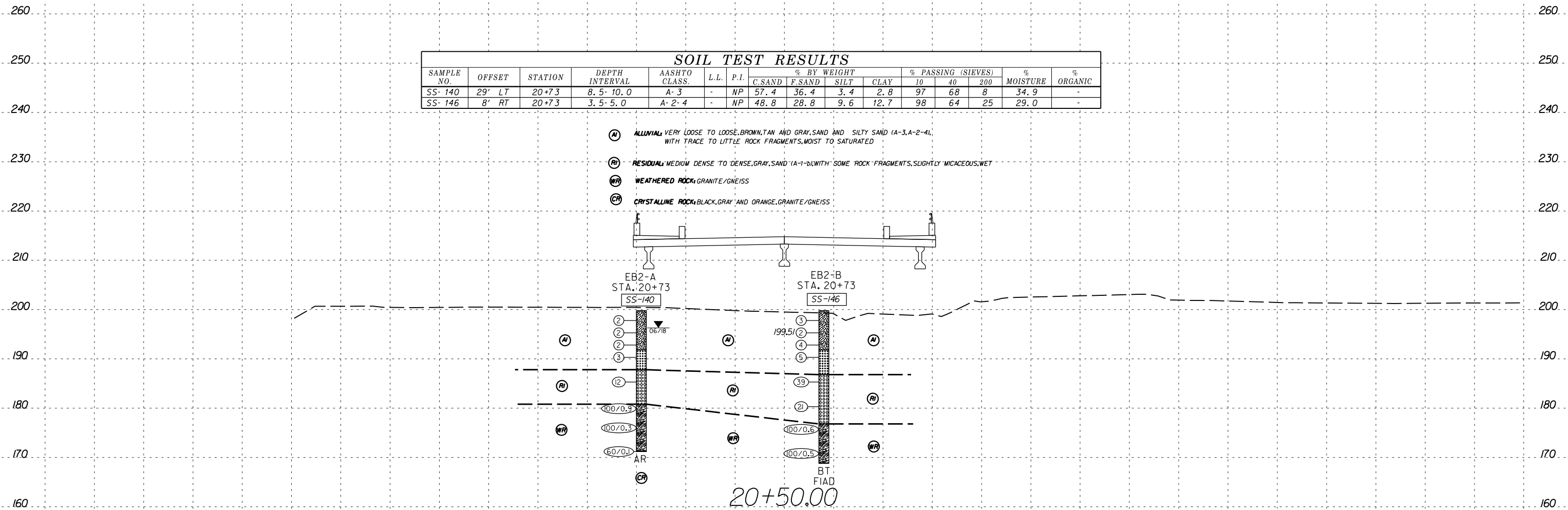
18 PM  
18+50-20+50.dgn  
NAME\$\$\$\$\$

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150





150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



**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-140	29' LT	20+73	8.5-10.0	A-3	-	NP	57.4	36.4	3.4	2.8	97	68	8	34.9	-
SS-146	8' RT	20+73	3.5-5.0	A-2-4	-	NP	48.8	28.8	9.6	12.7	98	64	25	29.0	-

- (A) ALLUVIAL, VERY LOOSE TO LOOSE, BROWN, TAN AND GRAY SAND AND SILTY SAND (A-3, A-2-4), WITH TRACE TO LITTLE ROCK FRAGMENTS, MOIST TO SATURATED
- (R) RESIDUAL, MEDIUM DENSE TO DENSE, GRAY SAND (A-1-D), WITH SOME ROCK FRAGMENTS, SLIGHTLY MICACEOUS, WET
- (WR) WEATHERED ROCK, GRANITE/GNEISS
- (CR) CRYSTALLINE ROCK, BLACK, GRAY AND ORANGE, GRANITE/GNEISS

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	-	-	-