

REFERENCE: BR-0098

PROJECT: 67098

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	13+00 TO 27+00	4	5
-RPA-	27+00 TO 39+00	4	-
-RPB-	27+00 TO 39+00	4	-
-RPC-	27+00 TO 39+00	4	-

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	19+50, 20+50	6
-L-	21+50	7
-L-	22+50, 25+50	8

BORE LOGS AND LABORATORY RESULTS

DESCRIPTION	SHEETS
HAND AUGER BORE LOGS	9-11
SUMMARY OF LAB TEST RESULTS	12

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

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY ROCKINGHAM
PROJECT DESCRIPTION BRIDGE 780183 ON SR 1767
(MAYFIELD ROAD) OVER US 29 BYPASS

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0098	1	12

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
- 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.
 - 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

J. ROWENHORST

C.T. TANG

E. OSWALD

J. WHITE

S. PUGH

D. STEWART

INVESTIGATED BY WSP E&I

DRAWN BY C.T. TANG

CHECKED BY J. ROWENHORST

SUBMITTED BY C.T. TANG

DATE SEPTEMBER 2024



DocuSigned by:
Chien-Ting Tang
4074910370EE41F
SIGNATURE

10/04/2024
DATE

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, ROCKY 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	A-1	A-3	A-2		A-4	A-5	A-6	A-7	A-1, A-2	A-4, A-5		
CLASS.	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7		A-3	A-6, A-7		
SYMBOL												
% PASSING												
#10	50 MX	30 MX	50 MX	51 MN	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN
#40	15 MX	25 MX	10 MX	10 MX	10 MX	11 MN	11 MN	10 MX	11 MN	11 MN		
#200												
MATERIAL												
PASSING #40												
LL												
PI												
GROUP INDEX												
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL, AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS		SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER	
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD				FAIR TO POOR				FAIR TO POOR	POOR	UNSATISFACTORY	

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (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 OPENING (MM)	4	10	40	60	200	270
	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
LL PLASTIC RANGE (PI) PL	LIQUID LIMIT	- SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
	PLASTIC LIMIT	- WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
	OM SL	OPTIMUM MOISTURE SHRINKAGE LIMIT

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
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY

GROUND WATER

WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING

STATIC WATER LEVEL AFTER 24 HOURS

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

DIP & DIP DIRECTION OF ROCK STRUCTURES

TEST BORING

AUGER BORING

CORE BORING

MONITORING WELL

PIEZOMETER INSTALLATION

SLOPE INDICATOR INSTALLATION

CONE PENETROMETER TEST

SOUNDING ROD

TEST BORING WITH CORE

SPT N-VALUE

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)

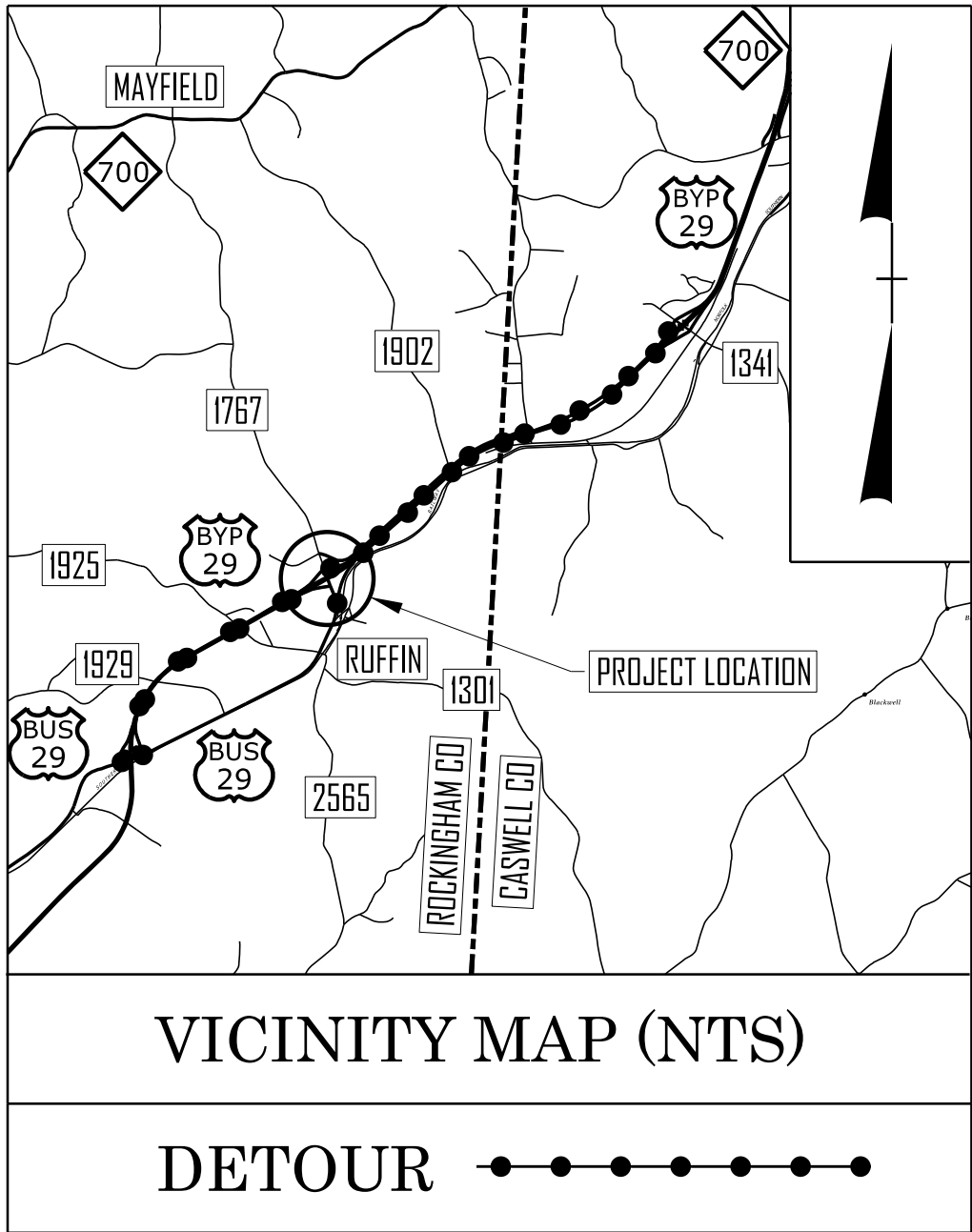
FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.

COASTAL PLAIN SEDIMENTARY ROCK (CP)

TIP PROJECT: BR-0098

CONTRACT:

See Sheet 1A For Index of Sheets



VICINITY MAP (NTS)

DETOUR

DESIGN RECOMMENDATION PLAN SET

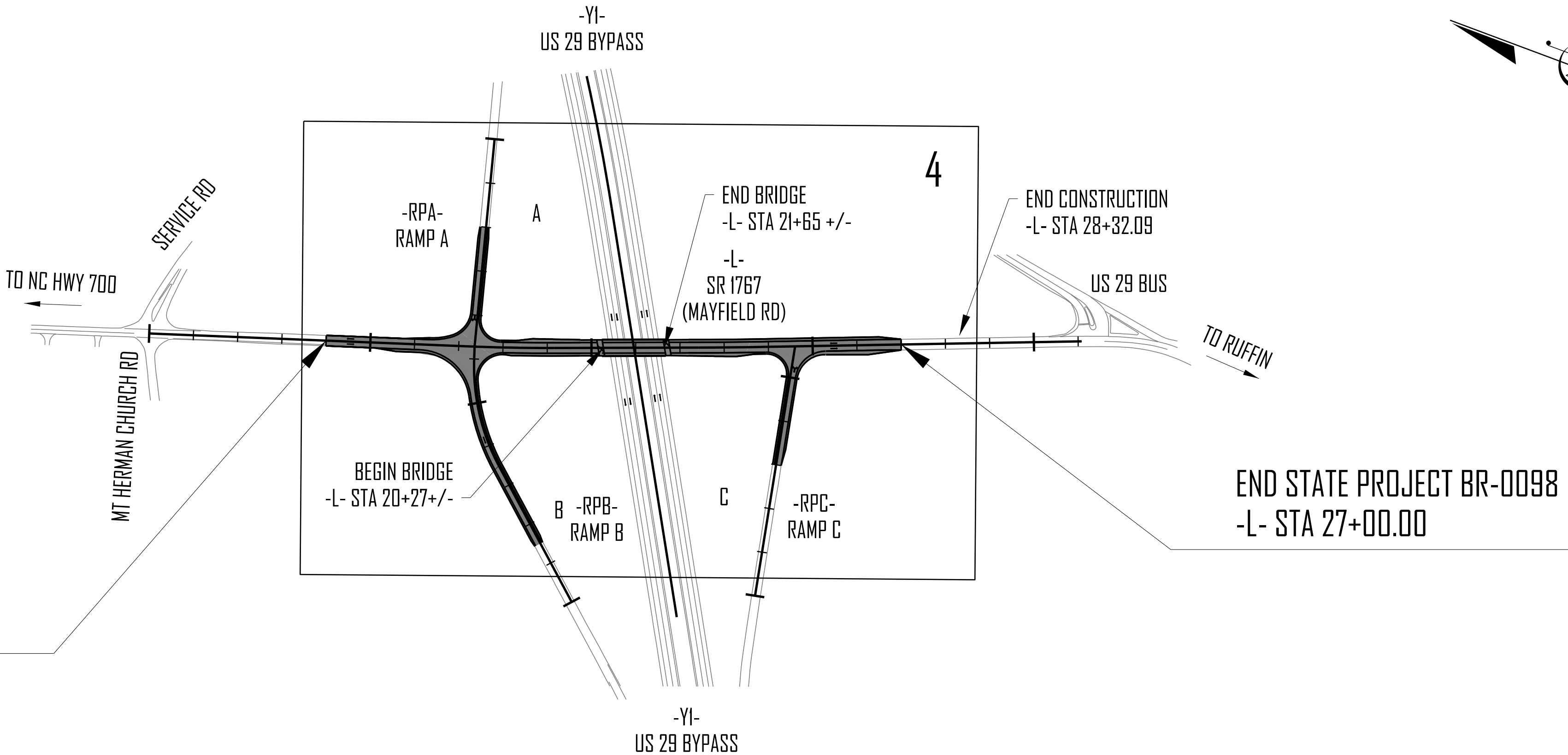
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROCKINGHAM COUNTY

LOCATION: *REPLACE BRIDGE #780183 ON
SR 1767 (MAYFIELD RD) OVER
US 29 BYPASS*

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0098	3	12
STATE PROJ. NO.		F. A. PROJ. NO.	DESCRIPTION
67098.1.1		N/A	PE

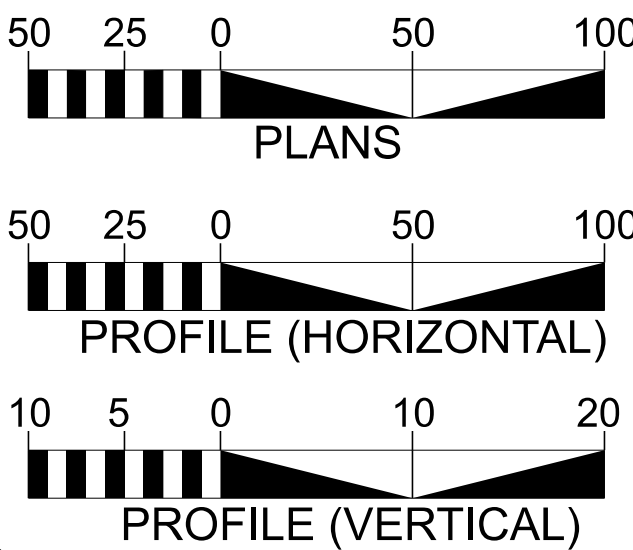
BEGIN STATE PROJECT BR-0098
BEGIN CONSTRUCTION -L- STA 13+00.00



NCDOT CONTACT : XXXXXXXX - DIVISION 7
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 1,600
ADT 2040 = 1,800
K = 8 %
D = 55 %
T = 3 % *
V = 45 MPH
* TTST =1% DUAL 2%
FUNC CLASS =
MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BR-0098 = 0.239 MILES
LENGTH OF STRUCTURE TIP PROJECT BR-0098 = 0.026 MILES
TOTAL LENGTH OF TIP PROJECT BR-0098 = 0.265 MILES



Prepared in the Office of:
moffatt & nichol

4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-4828 VOICE (919) 781-4889 FAX
NC LICENSE NO.: F-0105

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 14, 2024

LETTING DATE:
OCTOBER 21, 2025

TRENT E. HUFFMAN, P.E.
PROJECT ENGINEER

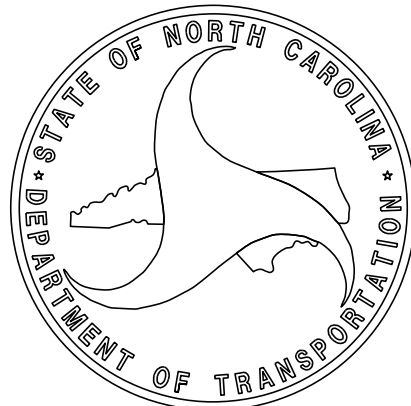
GRAY MODLIN, P.E.
PROJECT DESIGN ENGINEER

LINDSAY CROCKER
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____
ROADWAY DESIGN ENGINEER

SIGNATURE: _____
P.E.



August 5, 2024

WBS Number:

TIP Number:

COUNTY:

DESCRIPTION:

WSP Number:

SUBJECT:

67098.1.1

BR-0098

Rockingham

Replacement of Bridge No. 183 on US 29 Bus over US 29 Bypass

US0037375.9748

Geotechnical Inventory Report

Project Description

The project area lies on the existing SR 1767 (Mayfield Road) alignment on both sides of Bridge No. 183 over US-29 and is also located approximately 0.3 miles to the north of Ruffin, NC. The proposed construction is associated with the replacement of Bridge No. 183 and will consist of a 0.3-mile roadway.

The geotechnical field investigation for the project was conducted from July 8 to July 11, 2021. The subsurface investigation was performed using hand auger tools and a Mobile Drill B-57 drill rig equipped with an automatic hammer. Hollow-stem auger and mud-rotary drilling procedures were used to advance borings to the required depths. Standard Penetration Tests (SPT) were performed at approximately 2.5-foot to 5.0-foot intervals to termination in selected borings. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis.

The following alignments, totalling approximately 2,420 feet, were explored. Subsurface profile and representative cross sections of main alignment, -L-, is included in this report.

Alignment	Station (±)
-L-	13+00 to 27+00
-RPA-	12+00 to 14+71
-RPB-	11+50 to 16+28
-RPC-	13+00 to 15+71

Physiography and Geology

The project site is located within the Piedmont Physiographic Province. Topography in the region is typified by northeast–southwest trending ridges that exhibit structural control and are cut by trellis drainage pattern. The project area is on a ridge between two creeks of the Dan River sub-basin of the Roanoke River Basin. Elevations along the project alignments range from a low of 667± feet below Bridge No. 183 to a high of 693.66± at the high point of Bridge No. 183. A mixture of small commercial farms, a substation and wooded areas are present along the project corridor.

Geologically, the project is located in the central Piedmont physiographic region and is underlain by residual soils and rocks of the Milton Belt. Residual soils within the Milton Belt are derived from in-situ weathering of the underlying Palaeozoic aged gneiss and schist.

Soil Properties

Soils encountered during this investigation have been divided into two categories based on origin, including roadway embankment and residual soils.

Roadway embankment soils were observed along the entire project corridor. The soils for the existing roadway embankment generally consist of brown, light brown, red-brown, and tan, soft to very stiff, dry to wet, sandy silt, silt, clayey silt and clay (A-4, A-5, A-7). These soils typically contain some gravel near surface, and trace mica in most samples. The roadway embankment clays exhibit low to medium plasticity with plastic indices ranging from 9 to 24. A layer of asphalt fragments was observed in roadway borings L_1960 and L_2240, at elevations close to top of current US-29, which indicates the layer may be the pavement of old Mayfield Road.

Milton Belt residual soils are derived from the weathering of the underlying crystalline rocks. Milton Belt residual soils were encountered underlying roadway embankment. These soils primarily consist of Light brown, brown, dark brown, red brown, and gray, soft to hard, moist to wet, sandy silt, silt, and sandy/silty clay (A-4, A-5, A-7). Lesser amount of coarse-grained soil was encountered near the transition to Weathered Rock, consists of light brown, brown, dark brown, gray, and tan, very dense, moist, silty, fine sand (A-2-4). The Milton Belt residual clayey soils exhibit medium to high plasticity with plastic indices ranging from 13 to 41.

Rock Properties

Weathered rock and crystalline rock occur in several areas of the project. The weathered rock and crystalline rock encountered on this project were identified by SPT sampling and SPT refusal. Where encountered, the depths to weathered rock ranged from approximately 26± to 39± feet below existing ground surface (Elevations of approximately 630.2 to 642.8 feet MSL). Crystalline rock was encountered in boring EB2-A, at an approximate depth of 33.5 feet below existing ground surface (Elevation of approximately 635.3 feet MSL). Where encountered, the weathered rock and crystalline rock consists of gray to gray-brown schist belonging to the Milton Belt.

Groundwater

Ground water data was collected at the time of the geotechnical field investigation (July 8 to July 11, 2024). Stabilized ground water level (after 24-hours stabilization period) was measured in four bridge end bent borings, ranging from approximately 8.6± to 10.0± feet below existing ground surface (Elevations of approximately 658.4 to 660.2 feet MSL)

Prepared By

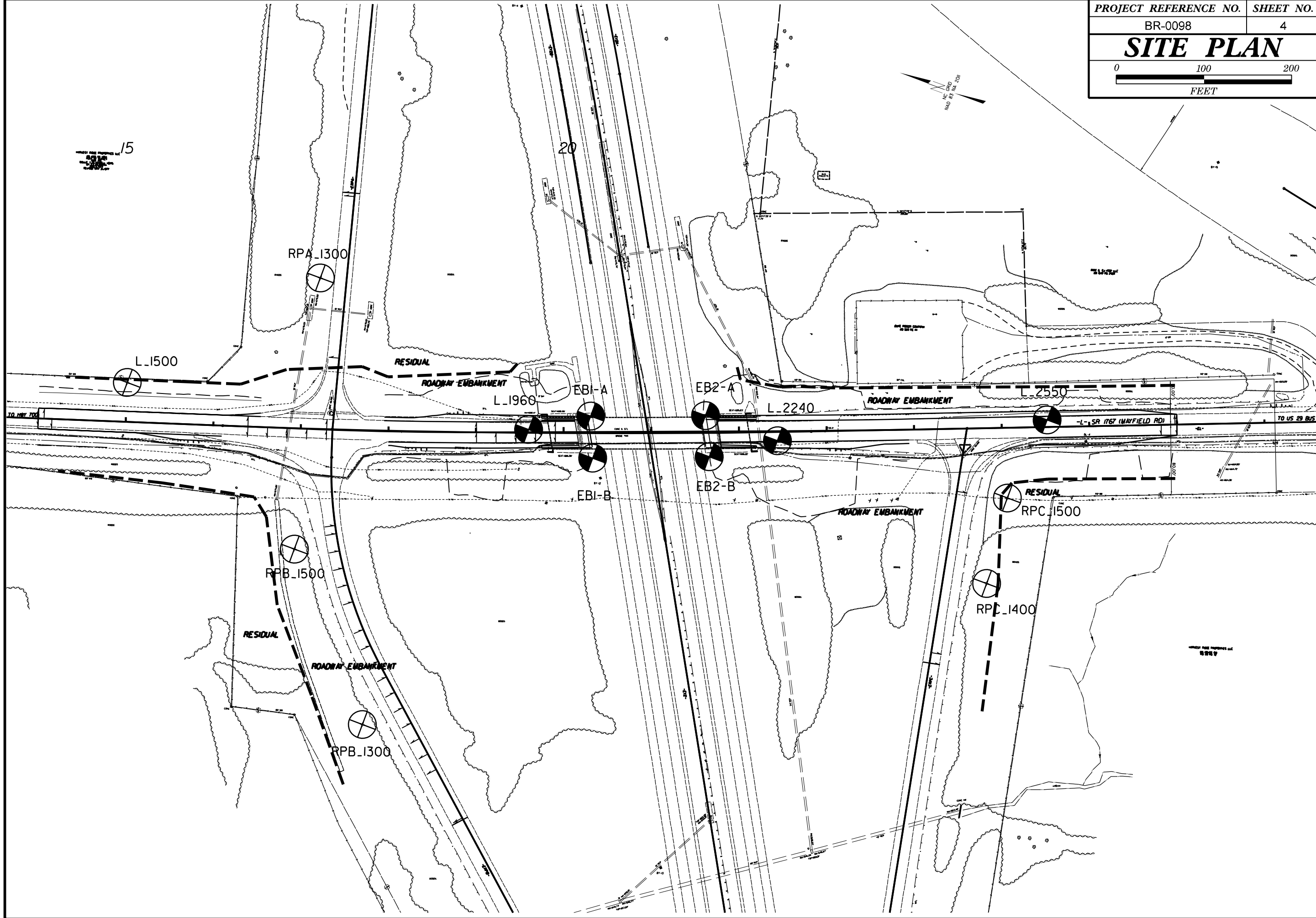


Jack Rowenhorst
Geotechnical Engineer

Reviewed By



Chien-Ting Tang
Senior Engineer -Geotechnical



5/14/99

PROJECT REFERENCE NO. BR-0098		SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

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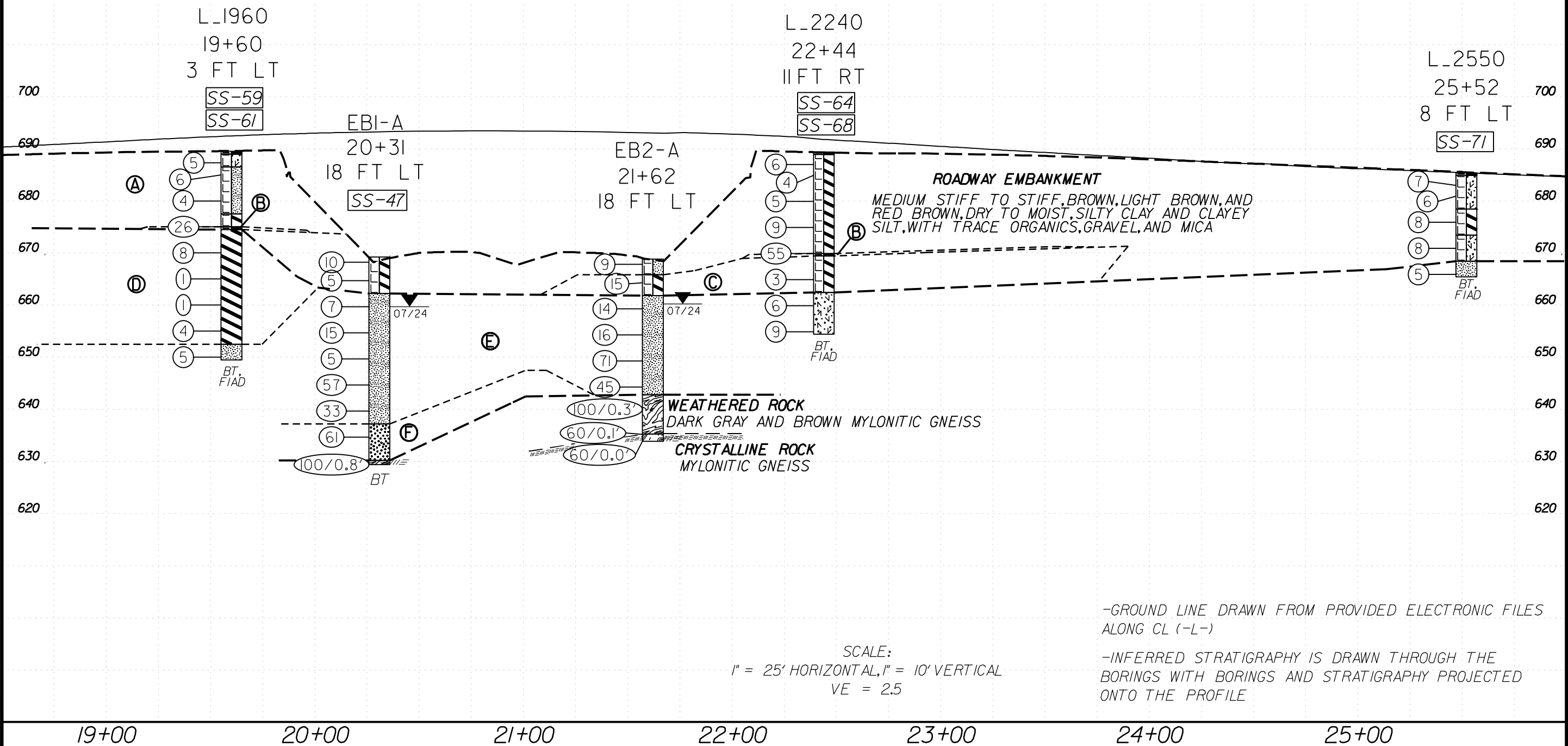
- (A) ROADWAY EMBANKMENT** MEDIUM STIFF TO STIFF, BROWN AND RED-BROWN, MOIST, SANDY AND CLAYEY SILT, AND SILTY CLAY, WITH TRACE GRAVEL AND MICA

(B) ROADWAY EMBANKMENT OLD ASPHALT

(C) ROADWAY EMBANKMENT SOFT TO STIFF, LIGHT BROWN AND BROWN, MOIST, SILTY CLAY, WITH TRACE MICA, MODERATELY PLASTIC
- (D) RESIDUAL** VERY SOFT TO MEDIUM STIFF, RED-BROWN TO TAN, MOIST TO WET, SILTY CLAY, WITH TRACE MICA, HIGHLY TO SLIGHTLY PLASTIC

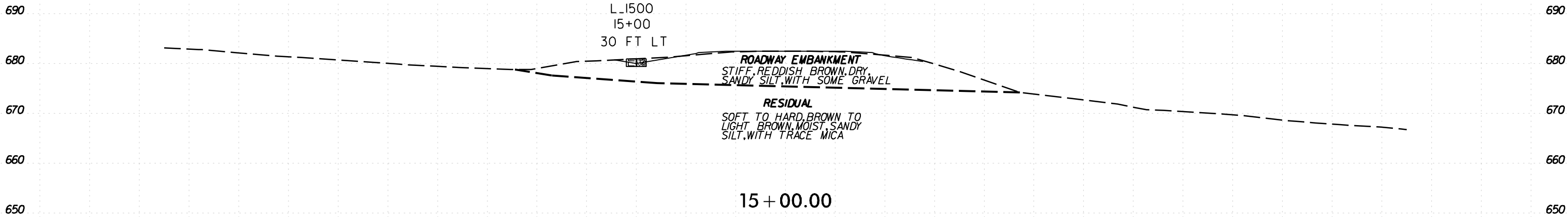
(E) RESIDUAL MEDIUM STIFF TO HARD, BROWN, LIGHT BROWN, AND TAN, MOIST TO WET, SANDY AND CLAYEY SILT, WITH TRACE MICA AND ROCK FRAGMENTS

(F) RESIDUAL VERY DENSE, LIGHT BROWN, MOIST, SILTY SAND, WITH TRACE MICA



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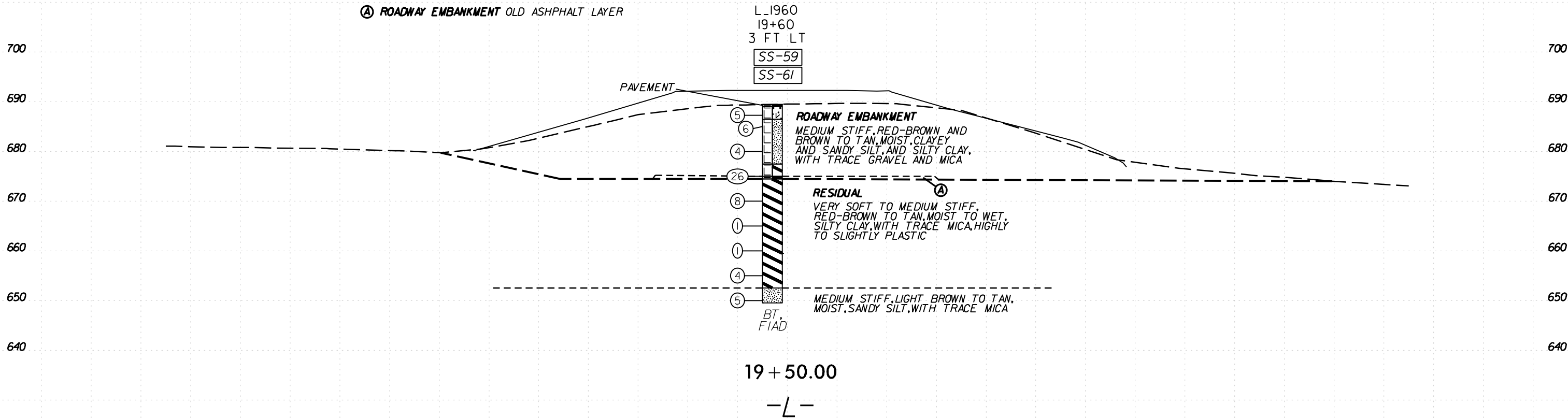
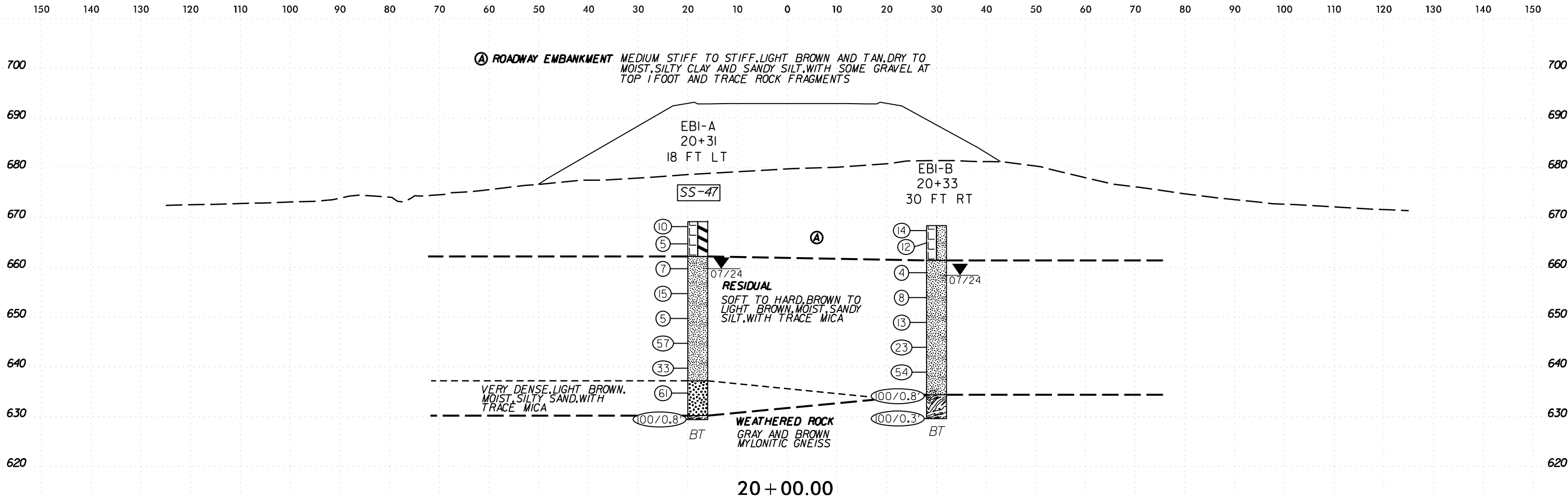


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BR-0098

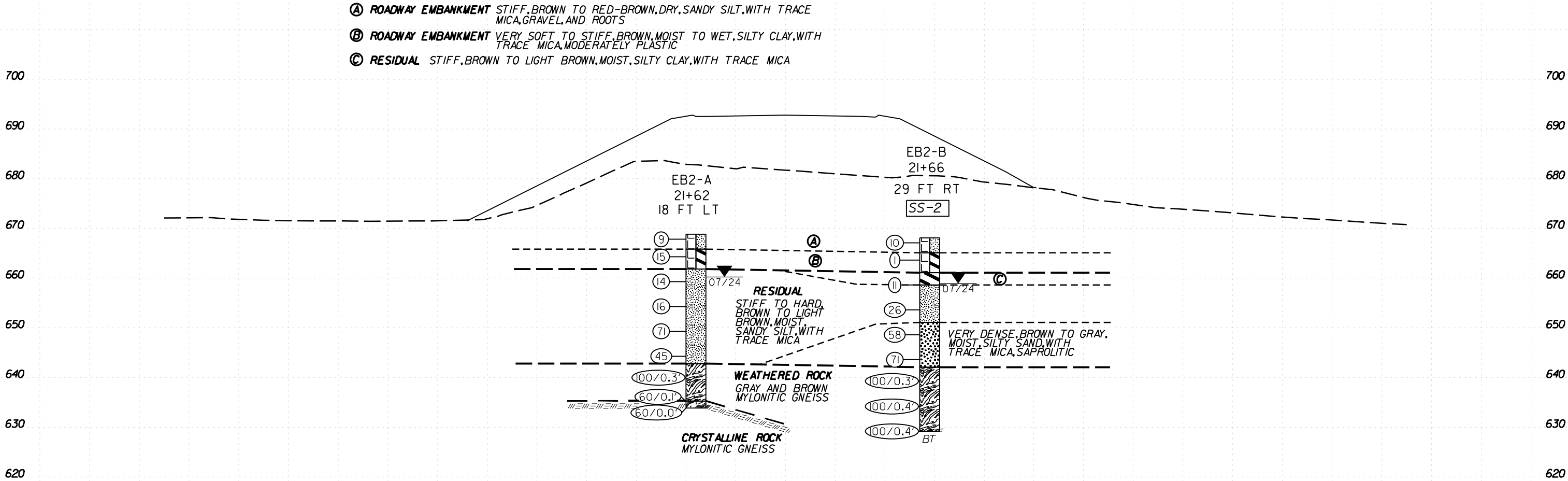
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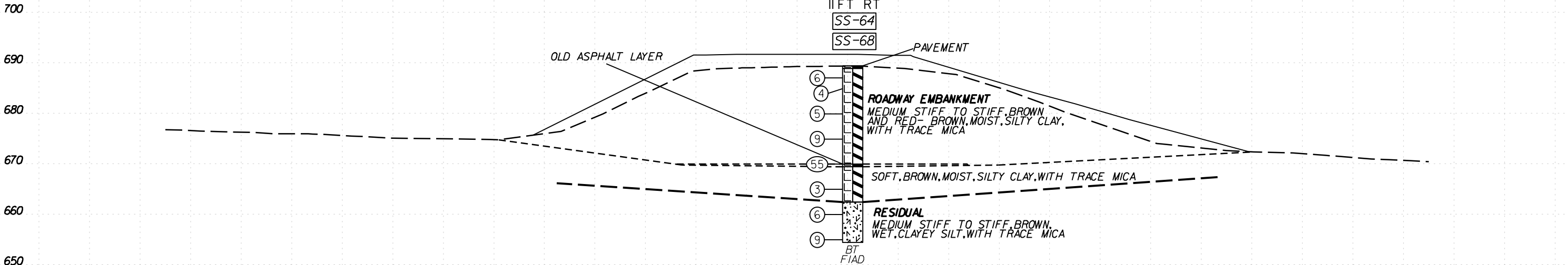
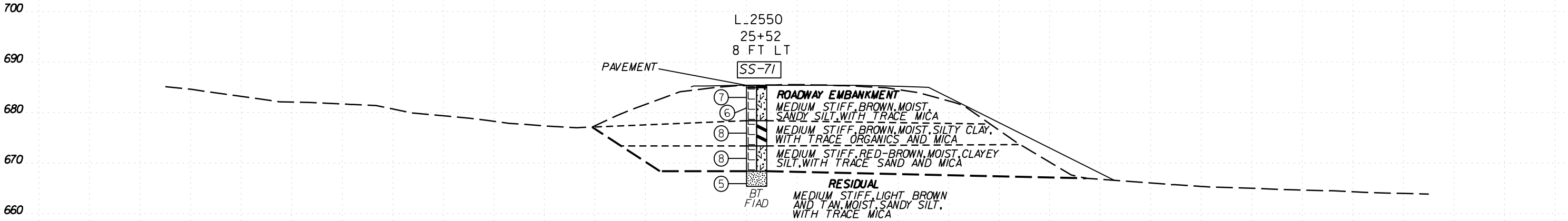
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 67098.1.1				TIP BR-0098				COUNTY ROCKINGHAM				GEOLOGIST J. Rowenhorst					
SITE DESCRIPTION Bridge 780183 on SR 1767 (Mayfield Road) over US 29 Bypass												GROUND WTR (ft)					
BORING NO. RPA_1300				STATION 13+00				OFFSET 30 ft RT				ALIGNMENT -RPA-				0 HR. Dry	
COLLAR ELEV. 684.2 ft				TOTAL DEPTH 5.0 ft				NORTHING 985,863				EASTING 1,840,139				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE N/A								DRILL METHOD Hand Auger				HAMMER TYPE N/A					
DRILLER J. Rowenhorst				START DATE 07/11/24				COMP. DATE 07/11/24				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	<div>▼</div> <div>MOI</div>	L O G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
685														684.2	GROUND SURFACE	0.0	
680						<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><di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WBS 67098.1.1				TIP BR-0098		COUNTY ROCKINGHAM		GEOLOGIST J. Rowenhorst					
SITE DESCRIPTION Bridge 780183 on SR 1767 (Mayfield Road) over US 29 Bypass								GROUND WTR (ft)					
BORING NO. RPB_1300		STATION 13+00		OFFSET 50 ft LT		ALIGNMENT -RPB-		0 HR. Dry					
COLLAR ELEV. 668.5 ft		TOTAL DEPTH 4.5 ft		NORTHING 985,640		EASTING 1,839,678		24 HR. FIAD					
DRILL RIG/HAMMER EFF./DATE N/A				DRILL METHOD Hand Auger		HAMMER TYPE N/A							
DRILLER J. Rowenhorst		START DATE 07/10/24		COMP. DATE 07/10/24		SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	<div>LOG</div>	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100	MOI		
670													
665													668.5 GROUND SURFACE 0.0
													ROADWAY EMBANKMENT
													Medium Stiff, Reddish Brown, Moist, Sandy Silt (A-4), with Trace Roots 3.0
													665.5
													RESIDUAL
													Stiff to Very Stiff, Red, Moist, Sandy Silt (A-4) 4.5
													Boring Terminated at Elevation 664.0 ft In Residual Soil (A-4)

NCDOT BORE DOUBLE BR0098_GEO_BRDG_BORINGS.GPJ NC_DOT.GDT 10/1/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 67098.1.1				TIP BR-0098				COUNTY ROCKINGHAM				GEOLOGIST J. Rowenhorst					
SITE DESCRIPTION Bridge 780183 on SR 1767 (Mayfield Road) over US 29 Bypass												GROUND WTR (ft)					
BORING NO. RPB_1500				STATION 15+00				OFFSET 50 ft LT				ALIGNMENT -RPB-				0 HR. Dry	
COLLAR ELEV. 675.8 ft				TOTAL DEPTH 1.4 ft				NORTHING 985,782				EASTING 1,839,839				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE N/A								DRILL METHOD Hand Auger				HAMMER TYPE N/A					
DRILLER J. Rowenhorst				START DATE 07/10/24				COMP. DATE 07/10/24				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	<div>▼ MOI</div>	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
680																	
675														675.8	GROUND SURFACE	0.0	
														674.8	ROADWAY EMBANKMENT	1.0	
														674.4	Medium Stiff, Reddish Brown, Dry to Moist, Sandy Silt (A-4)	1.4	
															RESIDUAL		
															Stif to Very Stiff, Red-Brown, Moist, Sandy Silt (A-4)		
															Boring Terminated at Elevation 674.4 ft In Residual Soil (A-4)		

WBS 67098.1.1				TIP BR-0098				COUNTY ROCKINGHAM				GEOLOGIST J. Rowenhorst					
SITE DESCRIPTION Bridge 780183 on SR 1767 (Mayfield Road) over US 29 Bypass												GROUND WTR (ft)					
BORING NO. RPC_1400				STATION 14+00				OFFSET 50 ft RT				ALIGNMENT -RPC-				0 HR. Dry	
COLLAR ELEV. 670.0 ft				TOTAL DEPTH 5.0 ft				NORTHING 985,028				EASTING 1,840,078				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE N/A								DRILL METHOD Hand Auger				HAMMER TYPE N/A					
DRILLER J. Rowenhorst				START DATE 07/11/24				COMP. DATE 07/11/24				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
670														670.0 GROUND SURFACE 0.0			
665														669.0 ROADWAY EMBANKMENT 1.0			
														668.0 Light Brown, Moist, Silty Sand (A-2-4), with Trace Gravel and Mica 2.0			
														665.0 RESIDUAL 5.0			
														Light Brown to Light Gray, Moist, Sandy Clay (A-7), with Trace Mica			
														Light Gray, Moist, Silty Sand (A-2-4), with Trace Mica			
														Boring Terminated at Elevation 665.0 ft In Residual Soil (A-4)			

NCDOT BORE DOUBLE BR0098_GEO_BRDG_BORINGS.GPJ NC_DOT.GDT 10/1/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 67098.1.1				TIP BR-0098		COUNTY ROCKINGHAM				GEOLOGIST J. Rowenhorst						
SITE DESCRIPTION Bridge 780183 on SR 1767 (Mayfield Road) over US 29 Bypass										GROUND WTR (ft)						
BORING NO. RPC_1500				STATION 15+00			OFFSET 58 ft RT			ALIGNMENT -RPC-			0 HR. Dry			
COLLAR ELEV. 670.0 ft				TOTAL DEPTH 5.0 ft			NORTHING 985,040			EASTING 1,840,177			24 HR. FIAD			
DRILL RIG/HAMMER EFF./DATE N/A							DRILL METHOD Hand Auger				HAMMER TYPE N/A					
DRILLER J. Rowenhorst				START DATE 07/11/24			COMP. DATE 07/11/24			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
670														670.0	GROUND SURFACE 0.0	
665														668.5	RESIDUAL 1.5	
															Brown, Moist, Sandy Silt (A-4)	
														666.5	Tan, Moist, Sandy Clay (A-7), with Trace Mica 3.5	
														665.0	Light Gray, Moist to Wet, Sandy Silt (A-4), with Trace Mica 5.0	
Boring Terminated at Elevation 665.0 ft In Residual Soil (A-4)																

NCDOT BORE DOUBLE BR0098_GEO_BRDG_BORINGS.GPJ NC_DOT.GDT 10/1/24

LABORATORY TESTS COMPLETED ON 7-29-2024

SUMMARY OF LABORATORY TEST RESULTS																			
SAMPLE NO.	BORING	STATION	OFFSET	ALIGN- MENT	NORTHING	EASTING	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% BY PASSING SEIVES			% MOISTURE	% ORGANIC
											GRAVEL	SAND	SILT	CLAY	10	40	200		
SS-59	L_I960	19+60	3 FT LT	-L-	985,579	1,840,060	23.5'-25.0'	A-7-6	69	41	0	7	64	29	100	98	93	77.9	-
SS-61	L_I960	19+60	3 FT LT	-L-	985,579	1,840,060	33.5'-35.0'	A-7-6	51	13	0	37	63	0	100	97	63	59.4	-
SS-64	L_2240	22+44	11 FT RT	-L-	985,308	1,840,147	5.0'-5.4'	A-7-5	51	14	0	30	64	6	99	96	70	34.5	-
SS-68	L_2240	22+44	11 FT RT	-L-	985,308	1,840,147	23.5'-25.0'	A-7-6	47	24	2	36	18	44	96	91	62	25.1	-
SS-71	L_2550	25+52	8 FT RT	-L-	985,022	1,840,262	1.5'-3.0'	A-5	41	9	1	34	48	17	97	93	65	22.3	-
SS-2	EB2-B	21+66	29 FT RT	-L-	985,376	1,840,103	3.5'-5.0'	A-7-6	45	24	0	37	55	18	100	95	73	26.8	-
SS-47	EB1-A	20+31	18 FT LT	-L-	985,518	1,840,099	3.5'-5.0'	A-7-5	60	14	n/a*	n/a*	n/a*	n/a*	n/a*	n/a*	n/a*	n/a*	-

*DUE TO INSUFFICIENT SAMPLE AMOUNT, ONLY ATTERBERG LIMIT TEST WAS PERFORMED. BASED ON VISUAL CLASSIFICATION THAT INDICATES SS-47 BEING FINE MATERIAL, THE AASHTO SOIL CLASSIFICATION TYPE OF SS-47 IS LIKELY A-7.