REFERENCE: BP.7.R.001

PROJECT:

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *ROCKINGHAM*

PROJECT DESCRIPTION *BRIDGE NO. 23 ON US 28 BUSINESS OVER US 29*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP.7.R.001	1	

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:
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

WEIS, J. M.

TROGON EXP.

INVESTIGATED BY *WEIS, J. M.*

DRAWN BY *HUNSBERGER, W. S.*

CHECKED BY *CROCKETT, S. C.*

SUBMITTED BY *FALCON ENG.*

DATE *JANUARY 2026*

NORTH CAROLINA PROFESSIONAL SEAL 36283 ENGINEER W. SCOTT HUNSBERGER

Signed by: W. Scott Hunsberger 1/29/2026

5A469AC80ECD49E...

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
BP.7.R.001	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		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	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL — SHRINKAGE LIMIT		
	- 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:
- ☐ CME-45C
- ☐ 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
- ☐ CASING ☐ W/ ADVANCER
- ☐ TRICONE _____" STEEL TEETH
- ☐ TRICONE _____" TUNG.-CARB.
- ☐ CORE BIT
- ☐ _____

HAMMER TYPE:
- ☐ 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.

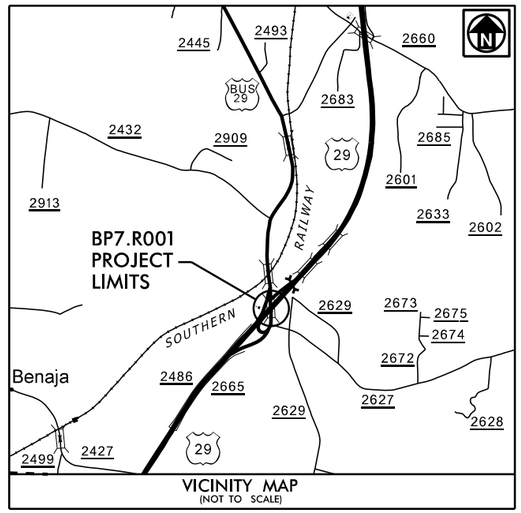
BENCH MARK: BORING ELEVATIONS TAKEN FROM 78023_LS_tin_180123.tin
DATED 1/23/2018
ELEVATION: FEET

NOTES:
FIAD - FILLED IMMEDIATELY AFTER DRILLING

DATE: 8-15-14

PROJECT: BP7.R001

CONTRACT:



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROCKINGHAM COUNTY

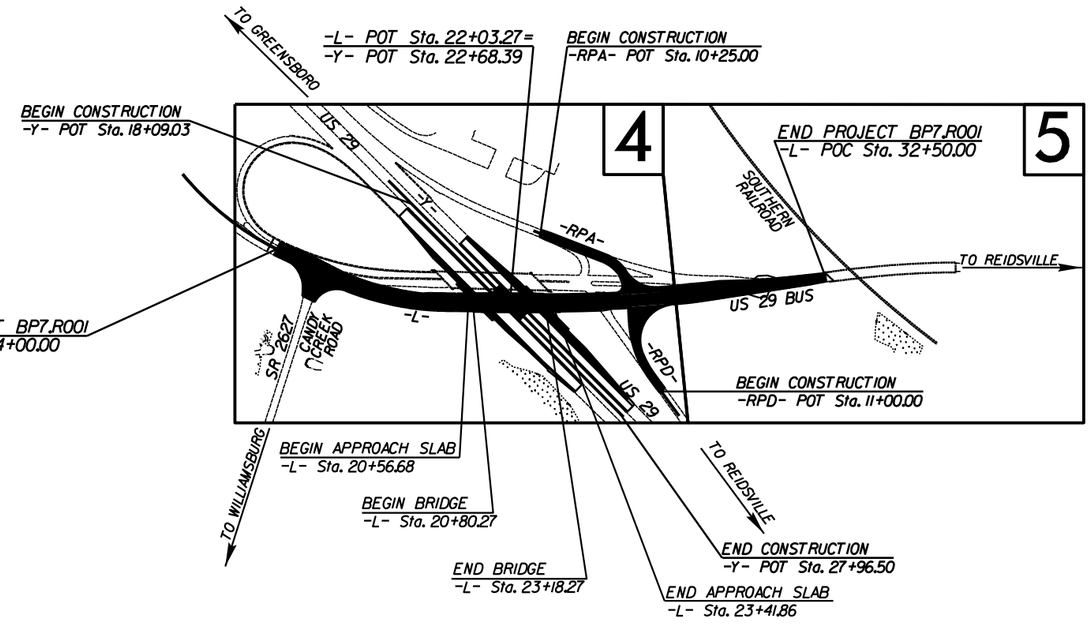
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP7.R001	3	

STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION
BP7.R001.1		PE
BP7.R001.2		ROW
BP7.R001.3		CONSTR.

LOCATION: BRIDGE NO. 23 OVER US 29 ON US 29 BUSINESS

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

R/W PLANS

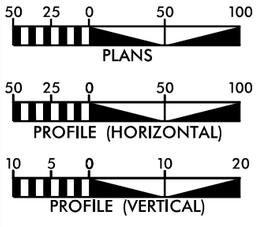


NAD 83/NA 2011

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2026 = 9,720

ADT 2040 = 14,250

V = 45 MPH

SUB REGIONAL TIER
MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.305 MILES

LENGTH STRUCTURE PROJECT = 0.045 MILES

TOTAL LENGTH PROJECT = 0.350 MILES

Prepared in the Office of Mott MacDonald for

DIVISION 7

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 17, 2025

LETTING DATE: JUNE 16, 2026

TIM JORDAN, PE
PROJECT ENGINEER

TRENTON J. CORMIER, PE
HYDRAULICS ENGINEER

NCDOT CONTACT: DANIEL DAGENHART
DIVISION BRIDGE PROGRAM MANAGER

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

PLANS PREPARED BY:

MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
www.mottmac.com

LICENSE NO. F-0669

tomo ENGINEERING
Tomo Engineering, PLLC
2319 Cardinal Drive, Durham, N.C. 27707
N.C.B.E.L.S. License Number: P-2066

$$DATE$$
13-JAN-2026 15:55
C:\Users\cadmachine\falconengineering\GEO - Documents\General_Projects\2025\G25008.00 MM BP7.R.001 Bridge 23 Rockingham County\7800023.GEO.BRDG0023\CADD.GEOTECH\PlanProf\7800023_rdy_tsh.dgn
cadmachine AT CAD10

Roadway Subsurface Investigation Report - Inventory

Bridge No. 23 over US 29 on US 29 Business
Rockingham County, North Carolina
TIP: BP7.R001
Falcon Project No.: G25008.00

Prepared for:
Mott MacDonald
930 Mian Campus Drive, Suite 200
Raleigh, NC 27606

Submitted by:
Falcon Engineering, Inc.
1210 Trinity Road, Suite 110
Cary, North Carolina 27513
(919) 871-0800
www.falconengineers.com

January 29, 2026

TIP: BP7.R001
COUNTY: Rockingham
DESCRIPTION: Bridge No. 23 Over US 29 over US 29 Business
SUBJECT: Roadway Subsurface Investigation – Inventory

PROJECT DESCRIPTION

This project consists of 0.35 miles of proposed new grading, new paving, and new structure construction along US 29 Business in Rockingham County. The existing bridge over US 29 on US 29 Business will be replaced. The structure investigation and recommendations can be found under separate cover.

The investigation was conducted between October 1st through 10th, 2018. The information provided in this report are based solely on our site reconnaissance, soil test borings and laboratory test data, engineering evaluation of these data, and generally accepted soil and foundation engineering practices and principles.

A total of five (5) Standard Penetration Test (SPT) borings were performed for the proposed roadway alignment. All mechanical borings were drilled using a CME 55 ATV rig equipped with 2 ¼-inch inside diameter hollow-stem augers, and SPT testing was performed with an automatic hammer. Representative soil samples, collected with a split-barrel sampler, were selected for laboratory testing to verify visual field classifications.

The following alignment, totaling approximately 0.35 miles was explicitly investigated.

Alignment	Station (ft)
-L- (US 29 Business)	14+00 — 32+50

AREAS OF SPECIAL GEOTECHNICAL INTEREST

I. Shallow ground water within 4 feet of existing ground surface were not encountered at the locations explored.

II. Alluvial soils were not encountered at the locations explored.

III. Highly Plastic soils (PI value > 25) were found at or near the ground surface at the following locations:

Alignment	Station (ft)
-L-	19+00
-L-	24+00 to 26+00

PHYSIOGRAPHY AND GEOLOGY

The project site is in the Carolina Slate Belt Physiographic Province of North Carolina. According to the ***Geologic Map of North Carolina*** (1985), the site is underlain by Granitic Rock (**PPg**) – Megacrystic to equigranular. Churchland Plutonic Suite (Western group) - Churchland, Landis, and Mooresville intrusives.

Existing site topography is typical of North Carolina's Piedmont Region. Topography along the project corridor generally slopes down from the southwest to the northeast. The existing ground surface has elevations ranging from a high of around 720 feet to a low of around 670 feet.

Existing land use within the project corridor is generally undeveloped with some residential development to the west of the corridor.

SOIL PROPERTIES

A variety of soils were encountered along the project corridor, including existing roadway embankments, residual soils, and weathered rock. Areas where soils at the ground surface are of a unique origin (i.e. not residual soils) are approximately delineated on the boring location plans based on subsurface conditions encountered in nearby borings, and various topographical, vegetative, or other visual surface features.

Topsoil was encountered in grassy, brushy and wooded areas ranging in thickness from 0.3 to 0.5 feet, and typically on the order of 0.3 feet.

Roadway Embankment soils were encountered at the ground surface adjacent to and beneath existing roadways. These consist of up to 5.5 feet of stiff to very stiff, sandy and silty clay (A-6, A-7-6).

Residual soils were encountered at the ground surface, or beneath roadway embankments. These soils consist of moist to dry, loose to very dense, silty sands (A-2-4) and medium stiff to very stiff, sandy and clayey silt and silty clay (A-4, A-5, A-7-5).

Weathered Rock (WR) is a very hard material with properties intermediate of soil and rock. WR is classified as having an N-value of greater than 100 blows per one foot. WR encountered on the project generally consists of tan, granite. WR was encountered at one location explored at approximately elevation 658.4 ft, msl.

GROUNDWATER PROPERTIES

Groundwater levels were measured at the time of boring completion, and in many cases after a waiting period of at least 24 hours. Borings drilled within and in close proximity to existing roadways, and within residential or commercial areas likely to see pedestrian traffic were backfilled immediately after completion due to safety considerations.

Groundwater levels across the site were generally deep. Detailed measurements are included in the attached profiles.

CLOSING

Falcon appreciates the opportunity to have provided our geotechnical engineering services for the above referenced project. If you have any questions concerning the contents of this report or need additional information, please do not hesitate to contact our office.

FALCON ENGINEERING, INC.

Report Prepared By:

W. Scott Hunsberger, PE
Geotechnical Engineer

Report Reviewed By:

Jeremy R. Hamm, PE
Geotechnical Engineering Manager

PROJECT REFERENCE	SHEET NO.
BP7.R001 – ROCKINGHAM 23	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	TOMO ENGINEERING, PLLC LICENSE NO. P-2066

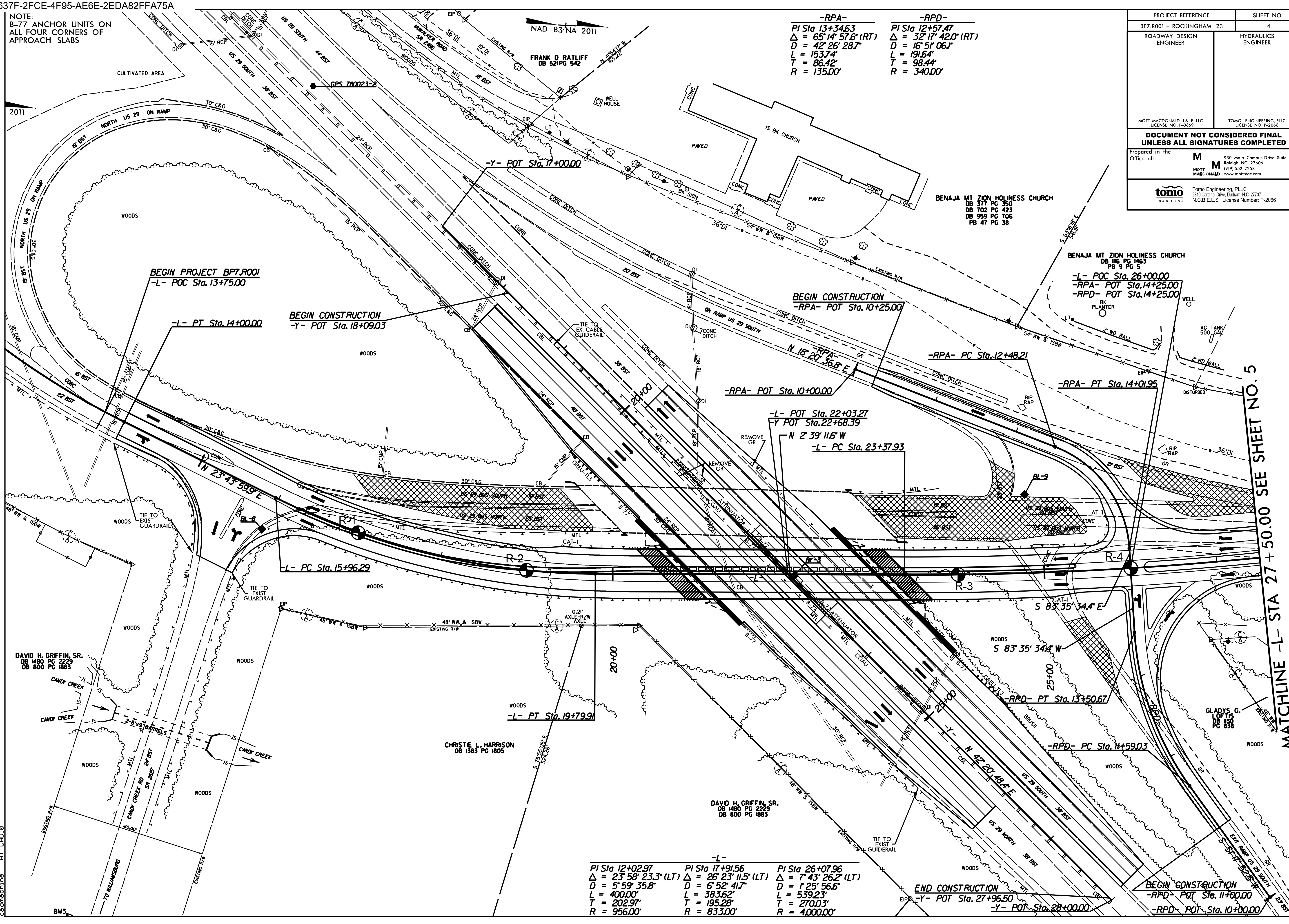
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: MOTT MACDONALD, 930 Main Campus Drive, Suite 200, Raleigh, NC 27606, (919) 552-2253, www.mottmac.com

tomo ENGINEERING — Tomo Engineering, PLLC, 2319 Cardinal Drive, Durham, N.C. 27707, N.C.B.E.L.S. License Number: P-2066

NOTE:
B-77 ANCHOR UNITS ON ALL FOUR CORNERS OF APPROACH SLABS

-RPA-	-RPD-
PI Sta 13+34.63	PI Sta 12+57.47
Δ = 65° 14' 57.6" (RT)	Δ = 32° 17' 42.0" (RT)
D = 42° 26' 28.7"	D = 16° 51' 06.5"
L = 153.74'	L = 191.64'
T = 86.42'	T = 98.44'
R = 135.00'	R = 340.00'



-L-		
PI Sta 12+02.97	PI Sta 17+91.56	PI Sta 26+07.96
Δ = 23° 58' 23.3" (LT)	Δ = 26° 23' 11.5" (LT)	Δ = 7° 43' 26.2" (LT)
D = 5° 59' 35.8"	D = 6° 52' 41.7"	D = 1° 25' 56.6"
L = 400.00'	L = 383.62'	L = 539.23'
T = 202.97'	T = 195.28'	T = 270.03'
R = 956.00'	R = 833.00'	R = 4,000.00'

$$DATE$$ 14-JAN-2026 10:25
C:\Users\cadmachine\falconengineering\GEO - Documents\General_Projects\2025\G25008.00 MM BP7.R001 Bridge 23 Rockingham County\780023_GEO_BRDG0023\CADD_GEOTECH\PlanProf\780023_GEO_psh4.dgn
cadmachine AT CADIO

PROJECT REFERENCE	SHEET NO.
BP7.R001 – ROCKINGHAM 23	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	TOMO ENGINEERING, PLLC LICENSE NO. P-2066

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
www.mottmac.com

tomo ENGINEERING
Tomo Engineering, PLLC
2319 Cardinal Drive, Durham, N.C. 27707
N.C.B.E.I.S. License Number: P-2066

NAD 83/NA 2011

MATCHLINE -L- STA 27+50.00 SEE SHEET NO. 4

S 63°56'18" E 54.53

BENAJA MT ZION HOLINESS CHURCH
DB 116 PG 1463
PB 9 PG 5

EXISTING RR R/W

200.00'

N 16°10'02" W 259.92

SHARON ENOCK-HESTER
WARREN ENOCH
DB 1308 PG 1523
PB 9 PG 5

SOUTHERN RAIL ROAD

WILLIAM E HOPKINS, ET AL
DB 1042 PG 276

WOODS

ARCHIE COBB
LORENE COBB
LESTER COBB
DB 398 PG 565
PB 9 PG 5

N 83°30'45" W 98.50'

EXISTING R/W

HAW RIVER

BL-11

TO REIDSVILLE

4" WD WALL
4X4 WD POST
8" WD CURB
SOIL/GR PARKING
14" SOIL
8" WD CURB
SIGN
54" WW & ISBW
LT
WD POST
GR
CONC
BL-10
3" CMP
GREU-TL3
+MTLT
CURB
TYPE III
US 29 BUS
TYPE VII
29' BST
27' BST
19' BST
CONC
+MTC
N 10°22'31.8" W
R-5
GREU-TL3
36"DI
BRUSH
EXISTING R/W
EIP
30+00
48" WW & ISBW
BM
S 85°52'04" E 26.70'
SOUTHERN STATES COOPERATIVE, INC.
DB 1468 PG 179
N 22°37'56" E 155.00'
N 37°39'56" E 97.39'
N 58°19'52" E 117.24'
N 05°04'27" W 311.70'
200.00'
EXISTING RR R/W

-L- PT Sta. 28+77.16

BEGIN PROJECT BP7.R001
-L- POT Sta. 32+50.00

GLADYS G. LOFTIS
DB 130 PG 838

EXISTING R/W

48" WW

-L-
PI Sta 26+07.96
Δ = 1° 43' 26.2" (LT)
D = 1° 25' 56.6"
L = 539.23'
T = 270.03'
R = 4,000.00'

$$DATE$$ 13-JAN-2026 15:35
C:\Users\cadmachine\falconengineering\GEO - Documents\General_Projects\2025\G25008.00 MM BP7.R.001 Bridge 23 Rockingham County\780023.GEO.BRDG0023\CADD.GEOTECH\PlanProf\780023.GEO_psh5.dgn
cadmachine AT CADD

PROJECT REFERENCE	SHEET NO.
BP7.R001 – ROCKINGHAM 23	6

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	TOMO ENGINEERING, PLLC LICENSE NO. P-2066

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

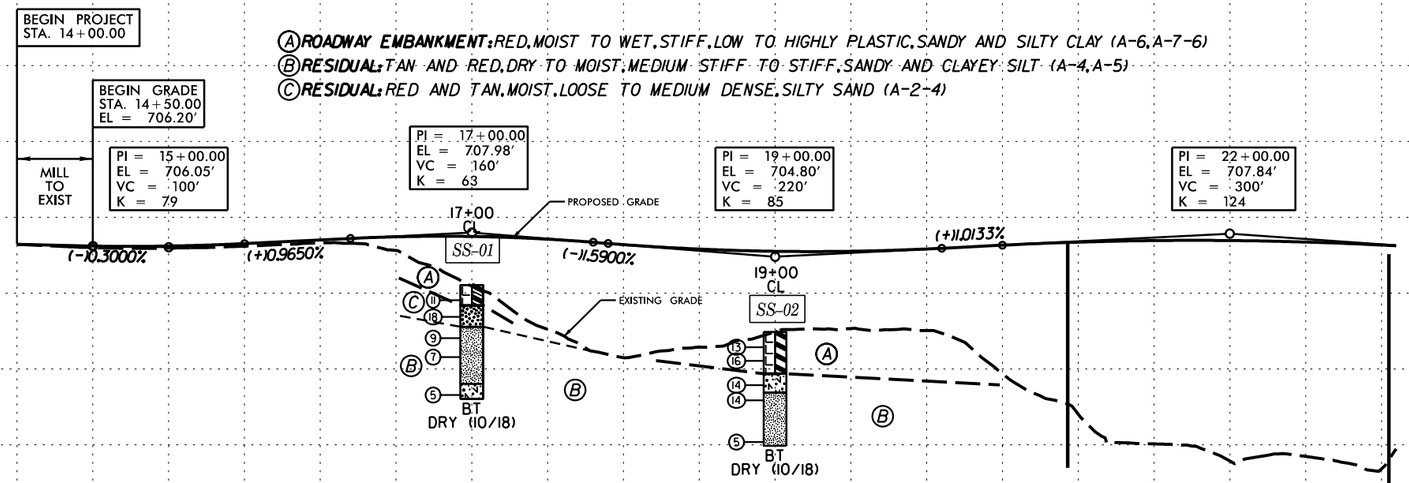
Prepared in the Office of:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
www.mottmac.com

tomo ENGINEERING
Tomo Engineering, PLLC.
2219 Central Drive, Durham, N.C. 27707
N.C.B.E.L.S. License Number: P-2066

VERTICAL SCALE 5' 0 5' 10'
HORIZONTAL SCALE 25' 0 25' 50'

-L-

(A) **ROADWAY EMBANKMENT:** RED, MOIST TO WET, STIFF, LOW TO HIGHLY PLASTIC, SANDY AND SILTY CLAY (A-6, A-7-6)
(B) **RESIDUAL:** TAN AND RED, DRY TO MOIST, MEDIUM STIFF TO STIFF, SANDY AND CLAYEY SILT (A-4, A-5)
(C) **RESIDUAL:** RED AND TAN, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND (A-2-4)

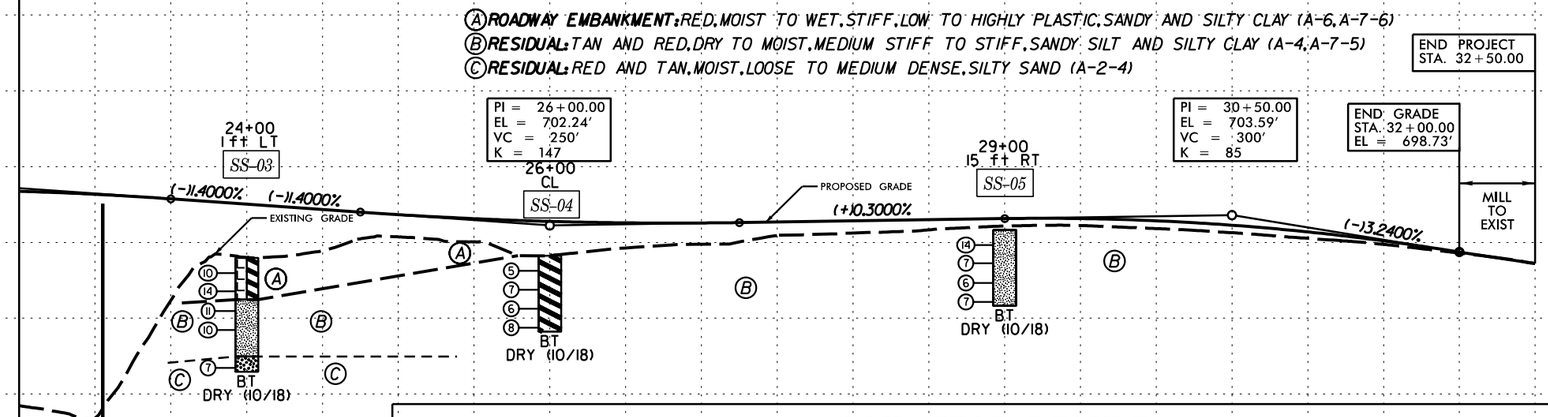


SOIL TEST RESULTS

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-01	CL	17+00	1.0'-2.5'	A-6	31	14	27	25	15	33	99	84	50	13	–
SS-02	CL	19+00	1.0'-2.5'	A-7-6	51	27	20	17	16	47	100	88	65	22	–

-L-

(A) **ROADWAY EMBANKMENT:** RED, MOIST TO WET, STIFF, LOW TO HIGHLY PLASTIC, SANDY AND SILTY CLAY (A-6, A-7-6)
(B) **RESIDUAL:** TAN AND RED, DRY TO MOIST, MEDIUM STIFF TO STIFF, SANDY SILT AND SILTY CLAY (A-4, A-7-5)
(C) **RESIDUAL:** RED AND TAN, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND (A-2-4)

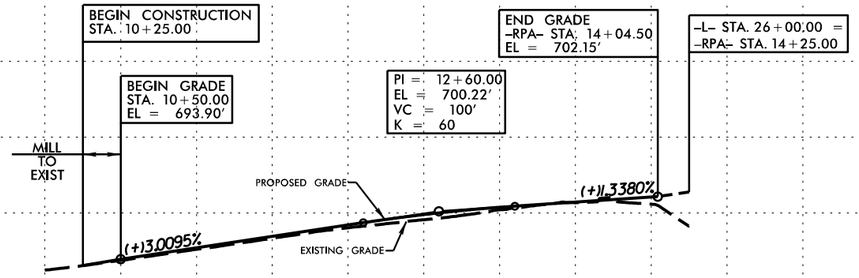


SOIL TEST RESULTS

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-03	1 FT LT	16+31	1.0'-2.5'	A-7-6	50	30	20	18	10	52	100	87	65	20	–
SS-04	CL	19+09	1.0'-2.5'	A-7-5	43	11	38	30	20	12	96	71	37	18	–
SS-05	15 FT RT	21+05	3.4'-4.9'	A-4	34	8	32	30	23	15	100	79	45	20	–

-RPA-

NO BORINGS ON THIS ALIGNMENT



PROJECT REFERENCE	SHEET NO.
BP7.R001 – ROCKINGHAM 23	7

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
MOTT MACDONALD I & E, LLC LICENSE NO. F-0669	TOMO ENGINEERING, PLLC LICENSE NO. P-2066

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

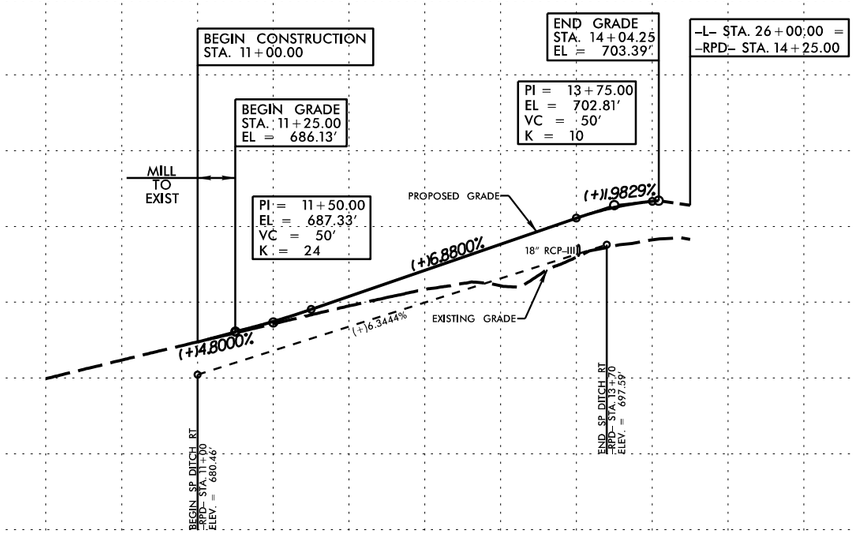
Prepared in the Office of:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
www.mottmac.com

tomo ENGINEERING
Tomo Engineering, PLLC
2219 Central Drive, Durham, N.C. 27707
N.C.B.E.L.S. License Number: P-2066

VERTICAL SCALE 5' 0 5' 10'
HORIZONTAL SCALE 25' 0 25' 50'

-RPD-

NO BORINGS ON THIS ALIGNMENT



$$DATE$$ 14-JAN-2026 10:29
C:\Users\cadmachine\falconengineering1\GEO - Documents\General_Projects\2025\G25008.00 MM BP7.R.001 Bridge 23 Rockingham County\780023.GEO.BRDG0023\CADD.GEOTECH\PlanProf\780023.GEO_psh_pf1.dgn
cadmachine AT CAD10

LABORATORY TEST RESULTS

Bridge No. 23 over US 29 on US 29 Business

Rockingham County, NC

NCDOT Project: BP7.R001

Falcon Engineering Project No: G25008..00

SAMPLE		DEPTH	AASHTO	ATTERBERG LIMITS		PERCENT BY WEIGHT				PERCENT PASSING SIEVE			MOISTURE	BULK DENSITY	ORGANICS
NO.	LOCATION	INTERVAL	CLASS.	LL	PI	C.SAND	F.SAND	SILT	CLAY	#10	#40	#200	(%)	(pcf)	(%)
SS-1	R-1	1.0-2.5	A-6(4)	31	14	27	25	15	33	99	84	50	13	N/A	N/A
SS-2	R-2	1.0-2.5	A-7-6(16)	51	27	20	17	16	47	100	88	65	22	N/A	N/A
SS-3	R-3	1.0-2.5	A-7-6(18)	50	30	20	18	10	52	100	87	65	20	N/A	N/A
SS-4	R-4	1.0-2.5	A-7-5(1)	43	11	38	30	20	12	96	71	37	18	N/A	N/A
SS-5	R-5	3.4-4.9	A-4(1)	34	8	32	30	23	15	100	79	45	20	N/A	N/A

Reviewed By

Patrick Clark

Certification: 105-01-0803