

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP5.R103	1	9

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY GRANVILLE  
 PROJECT DESCRIPTION BRIDGE NO.107 OVER  
NORTH FORK TAR RIVER ON SR 1303  
(GRAHAM HOBGOOD ROAD)  
 SITE DESCRIPTION BRIDGE ON -L- FROM  
STA 14+50.00 TO STA 19+00.00

**CONTENTS**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	BRIDGE PROFILE
5-6	CROSS SECTIONS
7-9	BORE LOGS

**REFERENCE: BP5.R103**

**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 1919 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

S. SORTE

F&R

W. Shenberger

J. Salas

INVESTIGATED BY HDR

DRAWN BY S. SORTE

CHECKED BY K. BUSSEY

SUBMITTED BY HDR

DATE JULY 2024

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Kenneth R. Bussey Jr.  
 SIGNATURE

10/9/2024  
 DATE

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

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

# SUBSURFACE INVESTIGATION

**SOIL LEGEND AND AASHTO CLASSIFICATION**

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																			
<p>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, GRAV. SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</p>										<p>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.</p>										<p>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:</p>										<p>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 (ROD) - 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 INTRODUCED 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 IN 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 (SROD) - 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.</p>																			
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										WEATHERED ROCK (WR)										NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.																			
<p>GENERAL CLASS. GRANULAR MATERIALS (&lt;= 35% PASSING #200) SILT-CLAY MATERIALS (&gt; 35% PASSING #200) ORGANIC MATERIALS</p>										<p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>										<p>CRYSTALLINE ROCK (CR)</p>										<p>FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</p>																			
<p>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</p>										MINERALOGICAL COMPOSITION										<p>NON-CRYSTALLINE ROCK (NCR)</p>										<p>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.</p>																			
<p>SYMBOL</p>										COMPRESSIBILITY										<p>COASTAL PLAIN SEDIMENTARY ROCK (CP)</p>										<p>COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p>																			
<p>% PASSING #10 #40 #200</p>										PERCENTAGE OF MATERIAL										WEATHERING										FRESH																			
<p>MATERIAL PASSING #40 LL PI</p>										<p>ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL</p>										<p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p>										<p>VERY SLIGHT (V SLI.)</p>										<p>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.</p>									
<p>GROUP INDEX</p>										GROUND WATER										<p>SLIGHT (SLI.)</p>										<p>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.</p>																			
<p>USUAL TYPES OF MAJOR MATERIALS</p>										MISCELLANEOUS SYMBOLS										<p>MODERATE (MOD.)</p>										<p>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.</p>																			
<p>GEN. RATING AS SUBGRADE</p>										RECOMMENDATION SYMBOLS										<p>MODERATELY SEVERE (MOD. SEV.)</p>										<p>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</p>																			
<p>PI OF A-7-5 SUBGROUP IS &lt;= LL - 30 ; PI OF A-7-6 SUBGROUP IS &gt; LL - 30</p>										ABBREVIATIONS										<p>SEVERE (SEV.)</p>										<p>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 &gt; 100 BPF</p>																			
CONSISTENCY OR DENSENESS										EQUIPMENT USED ON SUBJECT PROJECT										<p>VERY SEVERE (V SEV.)</p>										<p>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 &lt; 100 BPF</p>																			
<p>PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT<sup>2</sup>)</p>										<p>DRILL UNITS: CME-45C, CME-55, CME-550, VANE SHEAR TEST, PORTABLE HOIST, CME-550X</p>										<p>VERY COMPLETE</p>										<p>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.</p>																			
<p>GENERALLY GRANULAR MATERIAL (NON-COHESIVE)</p>										FRACTURE SPACING										<p>COMPLETE</p>										<p>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.</p>																			
<p>GENERALLY SILT-CLAY MATERIAL (COHESIVE)</p>										BEDDING										<p>VERY HARD</p>										<p>CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</p>																			
<p>TEXTURE OR GRAIN SIZE</p>										INDURATION										<p>HARD</p>										<p>CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</p>																			
<p>U.S. STD. SIEVE SIZE OPENING (MM)</p>										SOIL MOISTURE - CORRELATION OF TERMS										<p>MODERATELY HARD</p>										<p>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.</p>																			
<p>BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE. SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)</p>										<p>SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION</p>										<p>MEDIUM HARD</p>										<p>CAN BE GROUDED 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.</p>																			
<p>GRAIN SIZE MM 305 75 2.0 0.25 0.05 0.005</p>										<p>LL - LIQUID LIMIT PL - PLASTIC LIMIT OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT</p>										<p>SOFT</p>										<p>CAN BE GROUDED 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.</p>																			
<p>SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION</p>										<p>PLASTICITY PLASTICITY INDEX (PI) DRY STRENGTH</p>										<p>VERY SOFT</p>										<p>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.</p>																			
<p>NON PLASTIC SLIGHTLY PLASTIC MODERATELY PLASTIC HIGHLY PLASTIC</p>										<p>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.</p>										<p>EXTREMELY SOFT</p>										<p>SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																			

PROPERTY LINE IS CENTER OF NORTH FORK TAR RIVER AS IT MEANDERS



<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
BP5.R103	3
<b>SITE PLAN</b>	

BEGIN PROJECT BP5.R103

-L- POC Sta. 14+50.00

# BRIDGE NO. 107

RESIDUAL WOODS

15+00

WOODS

18+00

20+00

-L- PT Sta. 14+97.87

RESIDUAL

ROADWAY EMBANKMENT

GREU-TL3  
EBI-A  
EBI-B  
N 6° 47' 29.8" W

ROADWAY EMBANKMENT

GREU-TL3

TO SR 1304 (SUNSET ROAD)

TO US 158

RESIDUAL

RESIDUAL

RESIDUAL WOODS

3' DRY DITCH

NORTH FORK TAR RIVER

BLUE SKIN CREEK

136" BARBED WIRE

40" BARBED WIRE

-L- PC Sta. 19+61.22

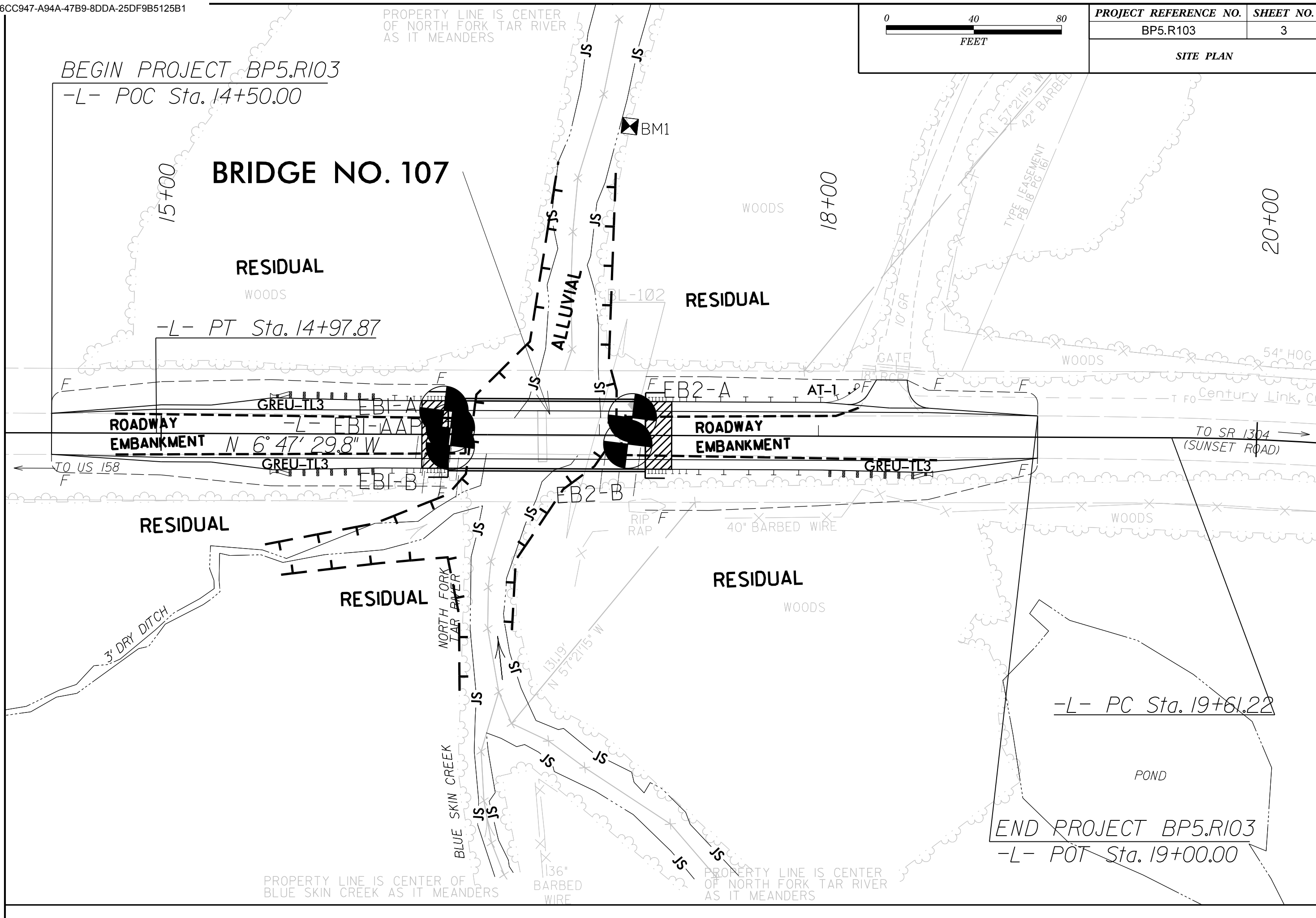
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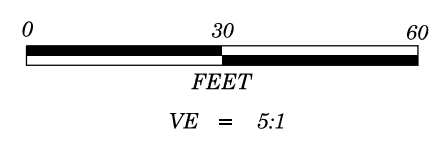
END PROJECT BP5.R103

-L- POT Sta. 19+00.00

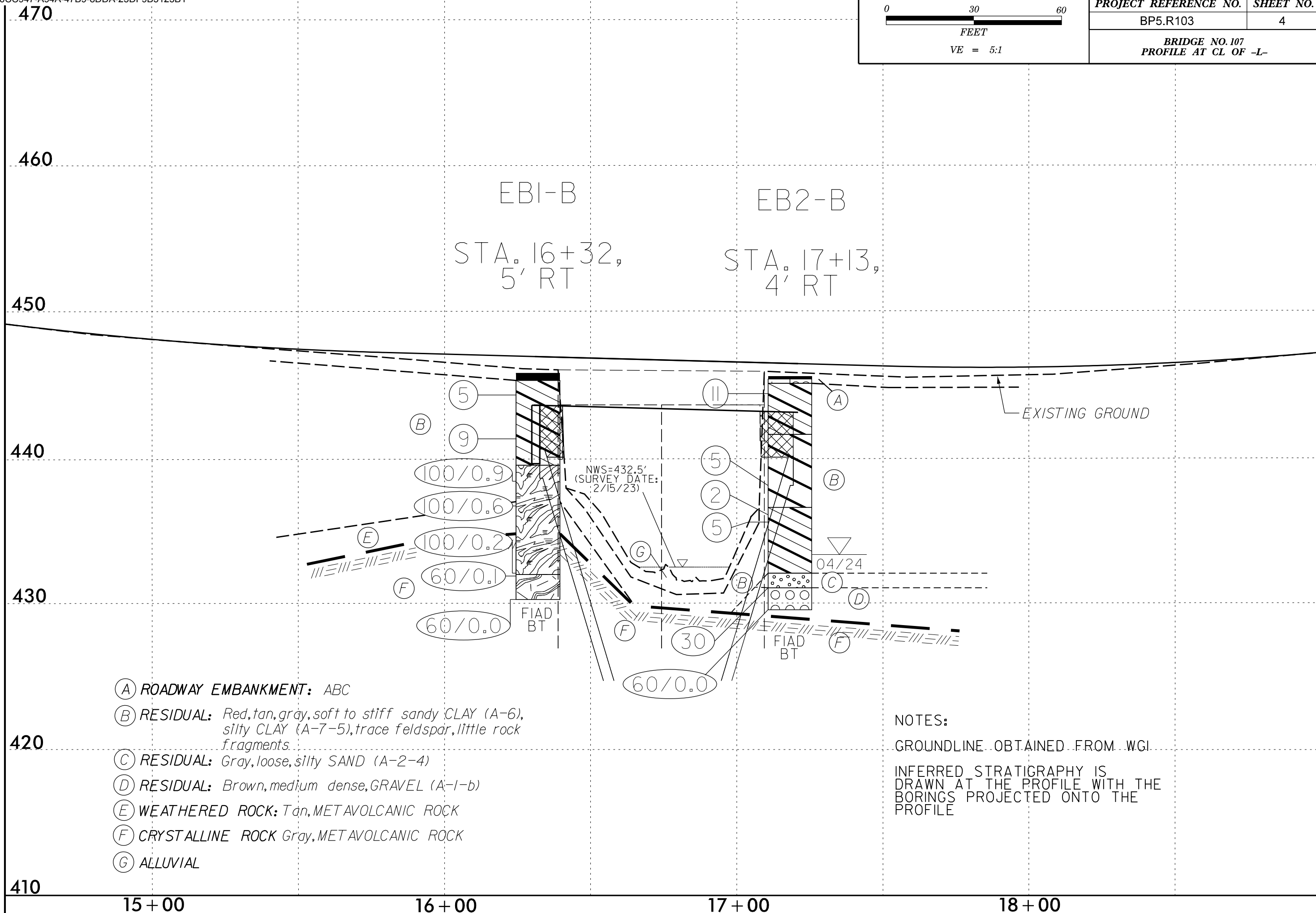
PROPERTY LINE IS CENTER OF BLUE SKIN CREEK AS IT MEANDERS

PROPERTY LINE IS CENTER OF NORTH FORK TAR RIVER AS IT MEANDERS



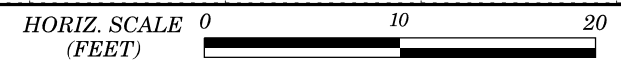
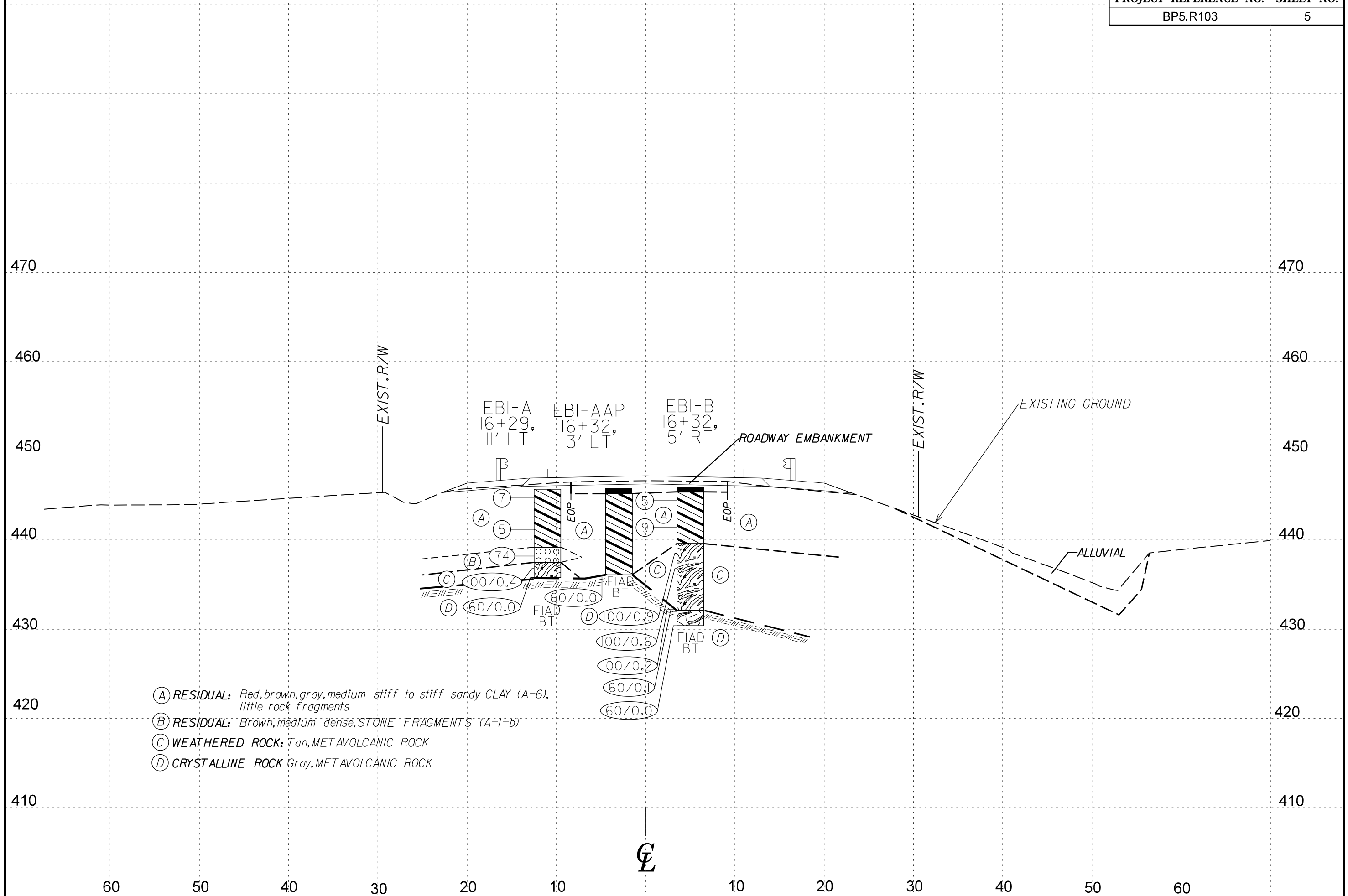


<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
BP5.R103	4
<b>BRIDGE NO. 107</b>	
<b>PROFILE AT CL OF -L-</b>	

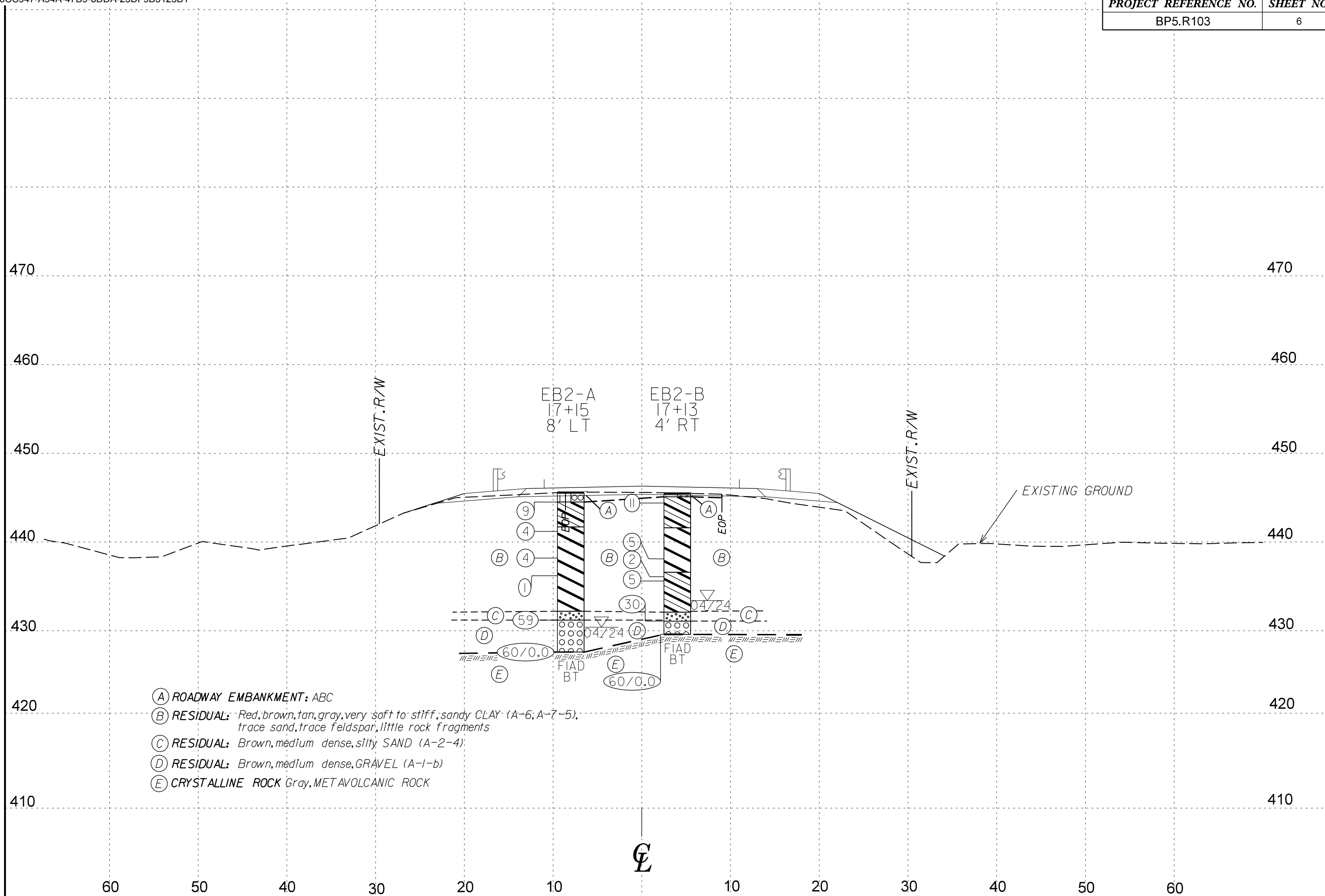


- (A) ROADWAY EMBANKMENT: ABC
- (B) RESIDUAL: Red, tan, gray, soft to stiff sandy CLAY (A-6), silty CLAY (A-7-5), trace feldspar, little rock fragments.
- (C) RESIDUAL: Gray, loose, silty SAND (A-2-4)
- (D) RESIDUAL: Brown, medium dense, GRAVEL (A-1-b)
- (E) WEATHERED ROCK: Tan, METAVOLCANIC ROCK
- (F) CRYSTALLINE ROCK Gray, METAVOLCANIC ROCK
- (G) ALLUVIAL

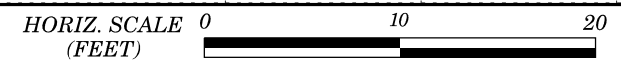
NOTES:  
 GROUNDLINE OBTAINED FROM WGI  
 INFERRED STRATIGRAPHY IS DRAWN AT THE PROFILE WITH THE BORINGS PROJECTED ONTO THE PROFILE



VE = 1:1



- (A) ROADWAY EMBANKMENT: ABC
- (B) RESIDUAL: Red, brown, tan, gray, very soft to stiff, sandy CLAY (A-6; A-7-5), trace sand, trace feldspar, little rock fragments
- (C) RESIDUAL: Brown, medium dense, silty SAND (A-2-4)
- (D) RESIDUAL: Brown, medium dense, GRAVEL (A-1-b)
- (E) CRYSTALLINE ROCK Gray, METAVOLCANIC ROCK



VE = 1:1



# GEOTECHNICAL BORING REPORT BORE LOG

WBS BP5.R103		TIP		COUNTY GRANVILLE		GEOLOGIST Sorte, S.											
SITE DESCRIPTION Replace Bridge No. 107 on SR 1303 (Graham Hobgood Road) over N. Fork Tar River							GROUND WTR (ft)										
BORING NO. EB2-A		STATION 17+15		OFFSET 8 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 445.7 ft		TOTAL DEPTH 18.1 ft		NORTHING 944,961		EASTING 2,097,269											
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 88% 07/28/2023			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic											
DRILLER Shenberger, W.		START DATE 04/16/24		COMP. DATE 04/16/24		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				ELEV. (ft)	DEPTH (ft)		
450																	
445	445.5	0.2	9	6	3											GROUND SURFACE 445.7 Asphalt - 2 in 444.5	
440	442.2	3.5	2	2	2											ROADWAY EMBANKMENT ABC 441.7	
435	439.2	6.5	1	2	2											RESIDUAL Red, medium stiff, sandy CLAY (A-6) Tan, brown, gray, very soft to medium stiff, silty CLAY (A-7-5), trace sand	
430	437.2	8.5	1	0	1												
	432.2	13.5	5	14	45											Brown, medium dense, silty SAND (A-2-4) 432.2 Brown, dense, GRAVEL (A-1-b) 431.2	
	427.6	18.1	60/0.0														CRYSTALLINE ROCK Gray, METAVOLCANIC Boring Terminated with Standard Penetration Test Refusal at Elevation 427.6 ft on Crystalline Rock: gray METAVOLCANIC

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# GEOTECHNICAL BORING REPORT BORE LOG

WBS BP5.R103		TIP		COUNTY GRANVILLE		GEOLOGIST Sorte, S.											
SITE DESCRIPTION Replace Bridge No. 107 on SR 1303 (Graham Hobgood Road) over N. Fork Tar River							GROUND WTR (ft)										
BORING NO. EB2-B		STATION 17+13		OFFSET 4 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 445.6 ft		TOTAL DEPTH 16.0 ft		NORTHING 944,961		EASTING 2,097,281											
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 88% 07/28/2023			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic											
DRILLER Shenberger, W.		START DATE 04/16/24		COMP. DATE 04/16/24		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				ELEV. (ft)	DEPTH (ft)		
450																	
445	445.4	0.2	7	6	5											GROUND SURFACE 445.6 Asphalt - 2 in 445.1	
440	442.1	3.5	2	2	3											ROADWAY EMBANKMENT ABC 441.6	
435	439.1	6.5	3	3	2											RESIDUAL Red, stiff, sandy CLAY (A-6) Tan, medium stiff, silty CLAY (A-7-5) trace feldspar	
	437.1	8.5	0	1	1												
	432.1	13.5	1	5	25											Gray, soft, sandy CLAY (A-6) 436.6 Gray, loose, silty SAND (A-2-4) 432.1 Brown, medium dense, GRAVEL (A-1-b) 431.1	
	429.6	16.0	60/0.0														CRYSTALLINE ROCK Gray, METAVOLCANIC Boring Terminated with Standard Penetration Test Refusal at Elevation 429.6 ft on Crystalline Rock: gray METAVOLCANIC

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# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS BP5.R103	TIP	COUNTY GRANVILLE	GEOLOGIST Sorte, S.
SITE DESCRIPTION Replace Bridge No. 107 on SR 1303 (Graham Hobgood Road) over N. Fork Tar River			GROUND WTR (ft)
BORING NO. EB1-AAP	STATION 16+32	OFFSET 3 ft LT	ALIGNMENT -L-
COLLAR ELEV. 445.7 ft	TOTAL DEPTH 9.7 ft	NORTHING 944,880	EASTING 2,097,283
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 88% 07/28/2023		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Shenberger, W.	START DATE 04/16/24	COMP. DATE 04/16/24	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
450																
445														445.7	GROUND SURFACE	0.0
														445.1	Asphalt - 6 in	0.6
440															<b>RESIDUAL</b> Red, gray, brown, medium stiff to stiff, sandy CLAY (A-6)	
	436.0	9.7												436.0	<b>CRYSTALLINE ROCK</b> Gray, METAVOLCANIC Boring Terminated with Standard Penetration Test Refusal at Elevation 436.0 ft on Crystalline Rock: gray METAVOLCANIC	9.7

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