

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	38433.1.2 (B-4608)	1	17

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

STRUCTURE
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 38433.1.2 (B-4608) F.A. PROJ. BRZ-1003(118)
 COUNTY RANDOLPH
 PROJECT DESCRIPTION BRIDGE NO. 208 ON SR 1003 (ERECT ROAD)
OVER FORK CREEK

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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. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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 THIS 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.

ID: B-4608

PROJECT: 38433.1.2

PERSONNEL
C. V. NORVILLE

J. R. HAMM

T. E. EVANS

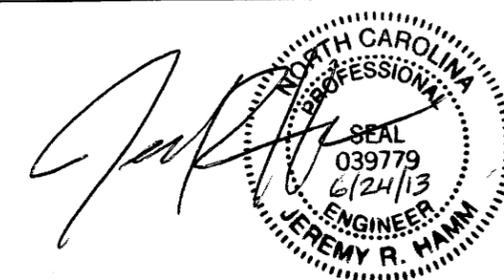
SOIL DRILLING SERVICES

INVESTIGATED BY TEE

CHECKED BY JRH

SUBMITTED BY FALCON

DATE JUNE 2013



DRAWN BY: T. E. EVANS

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

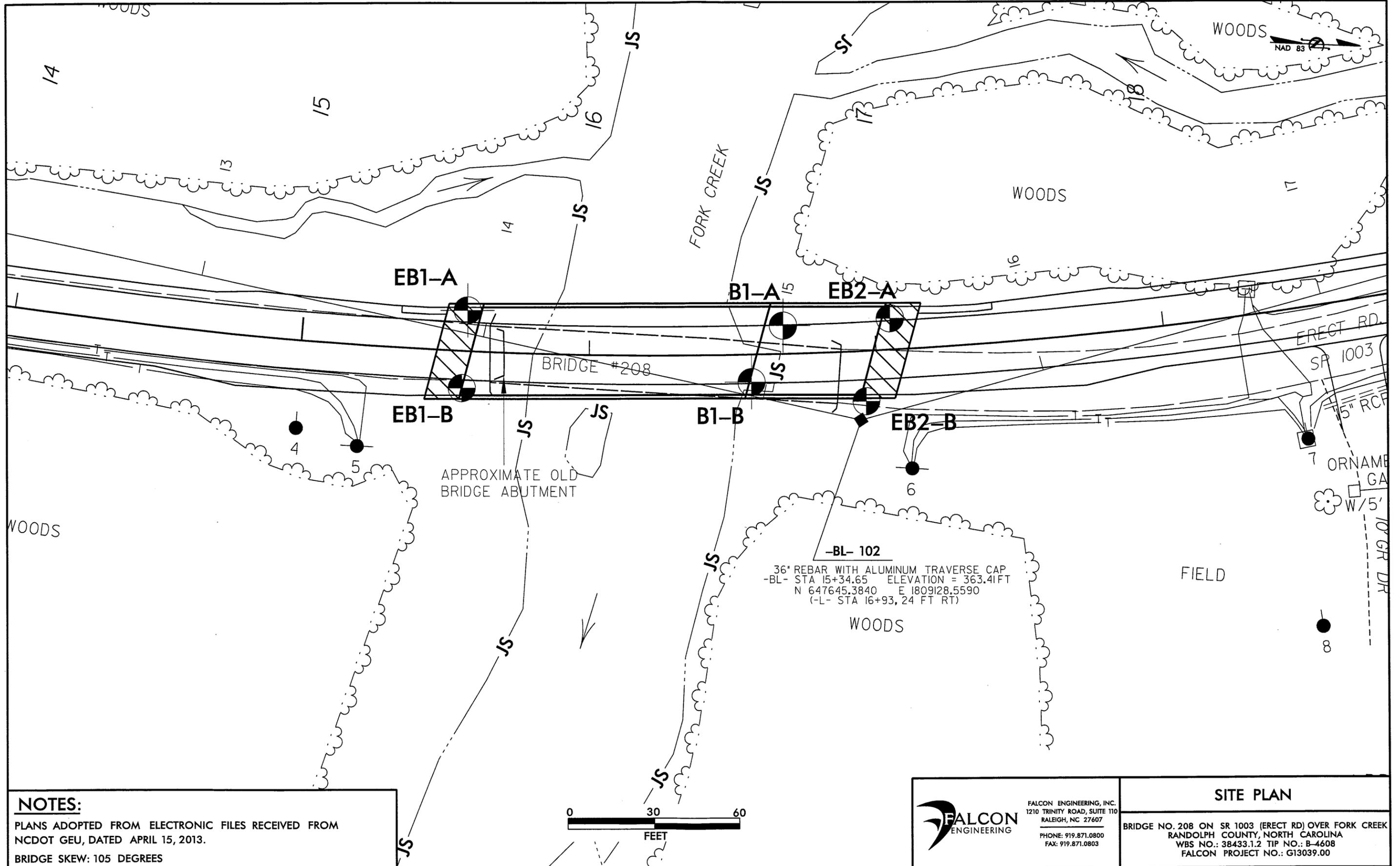
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																												
<p>SOIL IS CONSIDERED TO BE THE 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 STANDARD PENETRATION TEST (AASHTO T205, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:</p> <p>VERY STIFF, GRAY, SILTY CLAY, MOST 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. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p>ANGULARITY OF GRAINS</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPON 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>WEATHERED ROCK (WR)</p> <p>CRYSTALLINE ROCK (CR)</p> <p>NON-CRYSTALLINE ROCK (NCR)</p> <p>COASTAL PLAIN SEDIMENTARY ROCK (CP)</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, 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 DISLOGED 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 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 SPON 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>																																																												
<p>SOIL LEGEND AND AASHTO CLASSIFICATION</p> <table border="1"> <tr> <th>GENERAL CLASS.</th> <th colspan="4">GRANULAR MATERIALS (<= 35% PASSING #200)</th> <th colspan="4">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="2">ORGANIC MATERIALS</th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1</td> <td>A-3</td> <td>A-2</td> <td>A-4</td> <td>A-5</td> <td>A-6</td> <td>A-7</td> <td>A-1, A-2</td> <td>A-4, A-5</td> <td>A-6, A-7</td> </tr> <tr> <td>SYMBOL</td> <td></td> </tr> </table>										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-4, A-5	A-6, A-7	SYMBOL											<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p>COMPRESSIBILITY</p> <p>SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE</p> <p>LIQUID LIMIT LESS THAN 31 LIQUID LIMIT EQUAL TO 31-50 LIQUID LIMIT GREATER THAN 50</p>										<p>WEATHERING</p> <p>FRESH VERY SLIGHT (V SLI.) SLIGHT (SLI.) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V SEV.) COMPLETE</p>										<p>CONCONSISTENCY OR DENSENESS</p> <table border="1"> <tr> <th>PRIMARY SOIL TYPE</th> <th>COMPACTNESS OR CONSISTENCY</th> <th>RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)</th> <th>RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)</th> </tr> <tr> <td>GENERALLY GRANULAR MATERIAL (NON-COHESIVE)</td> <td>VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE</td> <td><4 4 TO 10 10 TO 30 30 TO 50 >50</td> <td>N/A</td> </tr> <tr> <td>GENERALLY SILT-CLAY MATERIAL (COHESIVE)</td> <td>VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD</td> <td><2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 >30</td> <td><0.25 0.25 TO 0.50 0.5 TO 1.0 1 TO 2 2 TO 4 >4</td> </tr> </table>										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 0.50 0.5 TO 1.0 1 TO 2 2 TO 4 >4						
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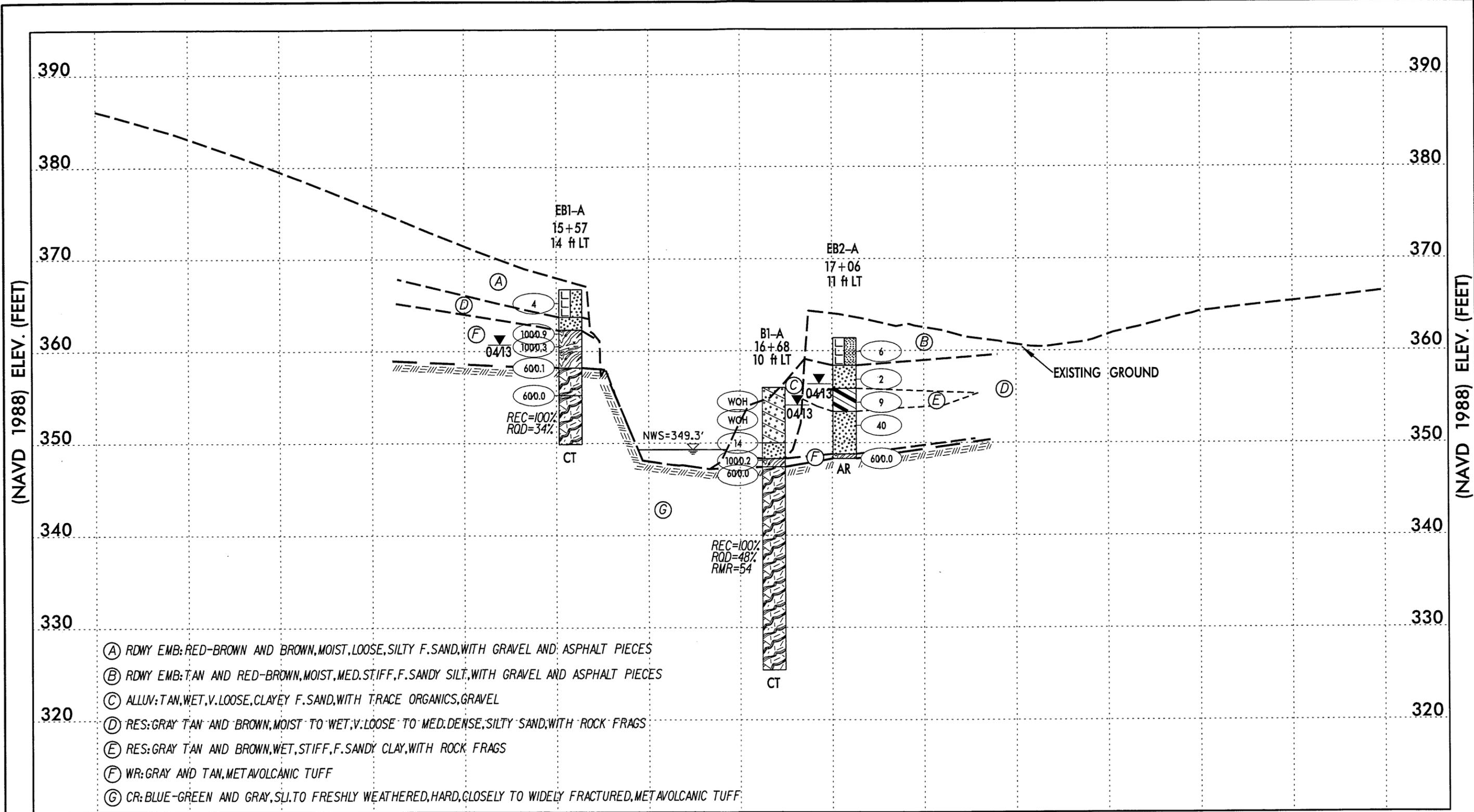
PLANS ADOPTED FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU, DATED APRIL 15, 2013.
BRIDGE SKEW: 105 DEGREES



FALCON ENGINEERING, INC.
1210 TRINITY ROAD, SUITE 110
RALEIGH, NC 27607
PHONE: 919.871.0800
FAX: 919.871.0803

SITE PLAN

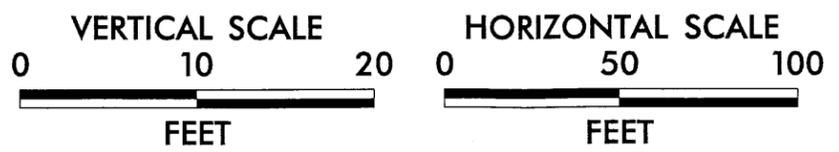
BRIDGE NO. 208 ON SR 1003 (ERECT RD) OVER FORK CREEK
RANDOLPH COUNTY, NORTH CAROLINA
WBS NO.: 38433.1.2 TIP NO.: B-4608
FALCON PROJECT NO.: G13039.00



- (A) RDWY EMB: RED-BROWN AND BROWN, MOIST, LOOSE, SILTY F. SAND, WITH GRAVEL AND ASPHALT PIECES
- (B) RDWY EMB: TAN AND RED-BROWN, MOIST, MED. STIFF, F. SANDY SILT, WITH GRAVEL AND ASPHALT PIECES
- (C) ALLUV: TAN, WET, V. LOOSE, CLAYEY F. SAND, WITH TRACE ORGANICS, GRAVEL
- (D) RES: GRAY TAN AND BROWN, MOIST TO WET, V. LOOSE TO MED. DENSE, SILTY SAND, WITH ROCK FRAGS
- (E) RES: GRAY TAN AND BROWN, WET, STIFF, F. SANDY CLAY, WITH ROCK FRAGS
- (F) WR: GRAY AND TAN, METAVOLCANIC TUFF
- (G) CR: BLUE-GREEN AND GRAY, SLT. TO FRESHLY WEATHERED, HARD, CLOSELY TO WIDELY FRACTURED, METAVOLCANIC TUFF

NOTES:

- GROUNDLINE PROFILE OF -L- TAKEN FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU DATED APRIL 15TH, 2013.
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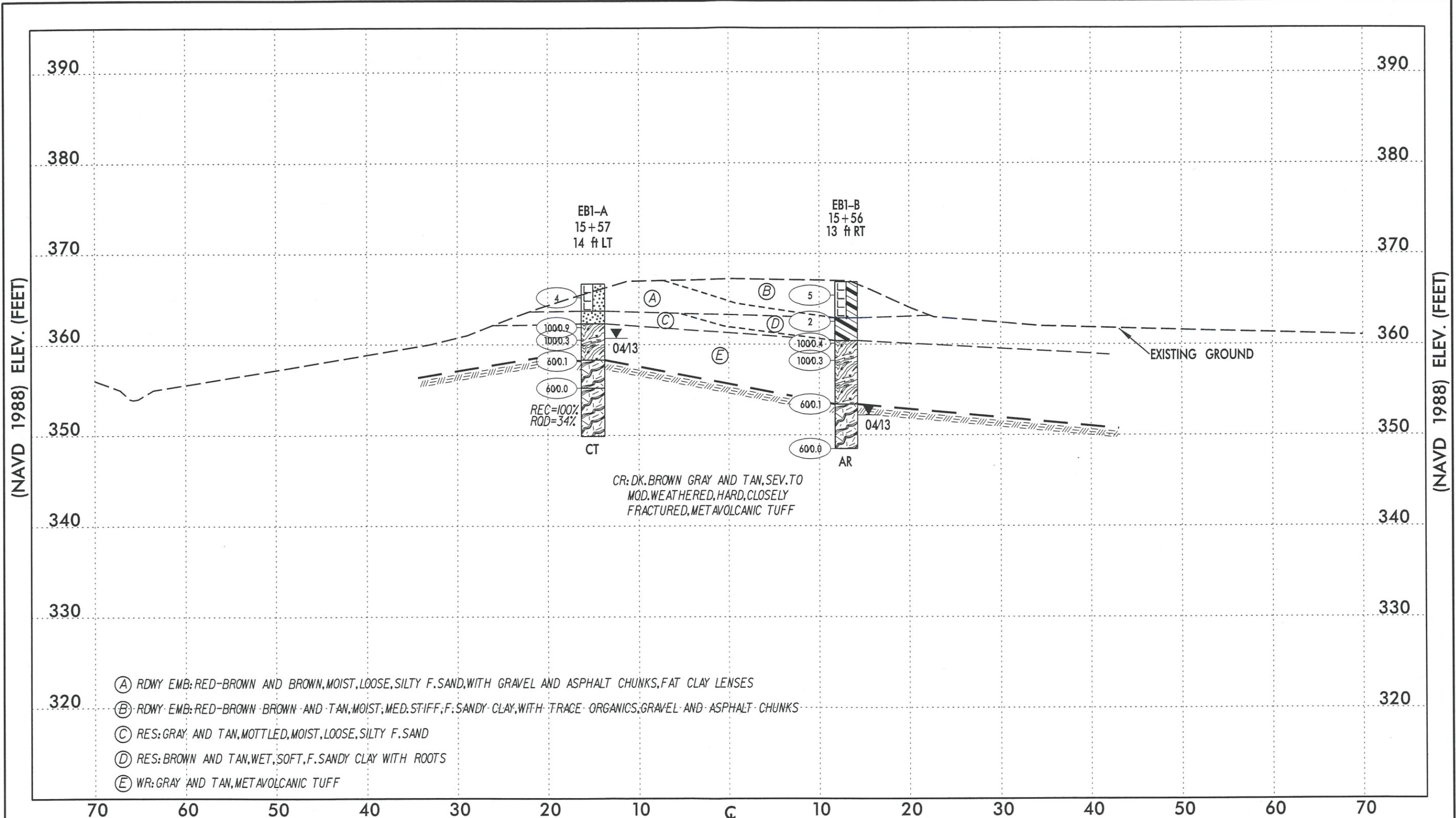


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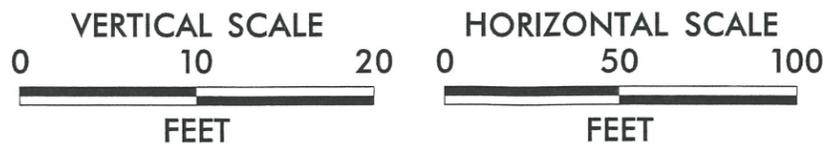
SUBSURFACE PROFILE -L-

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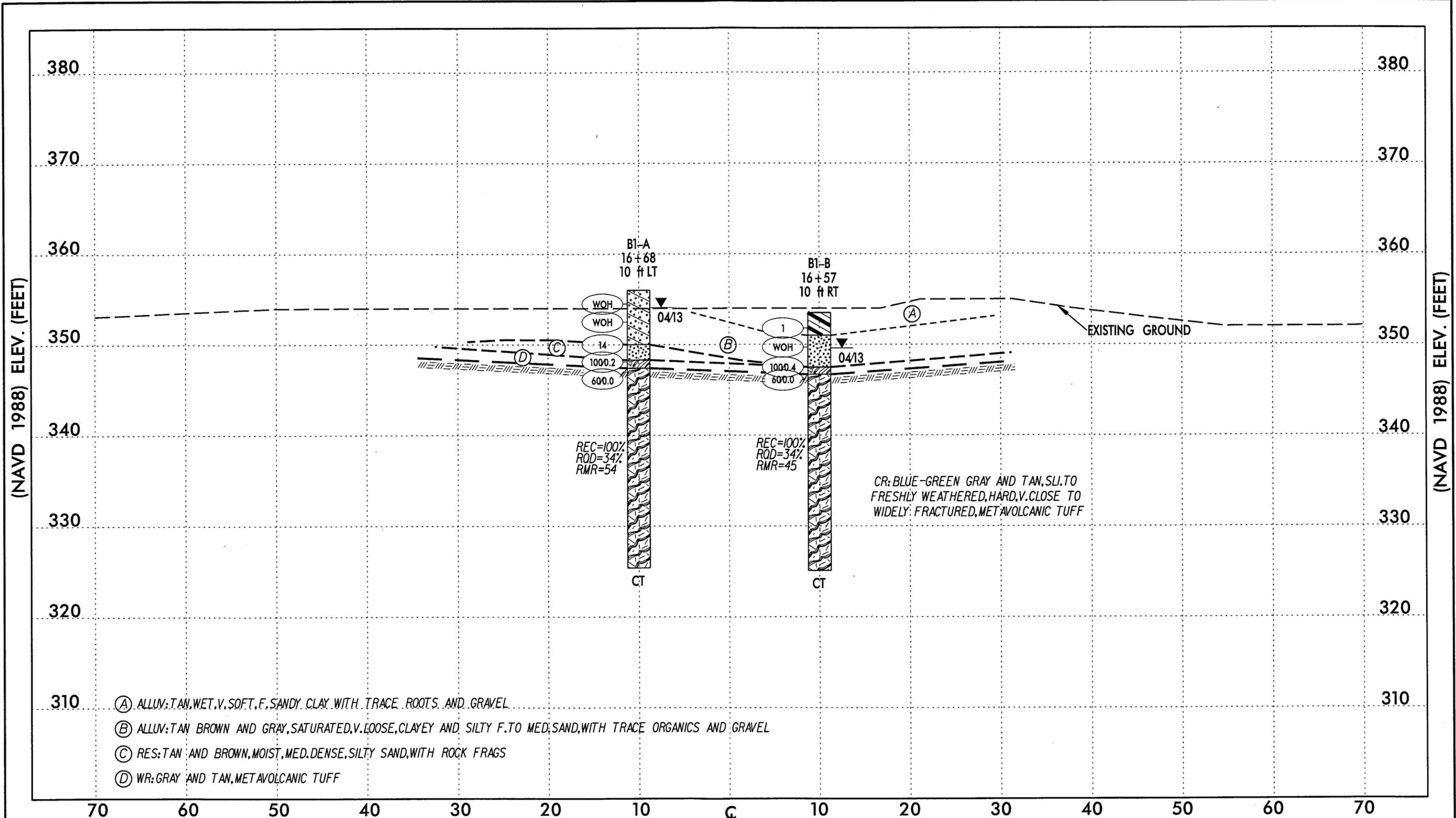
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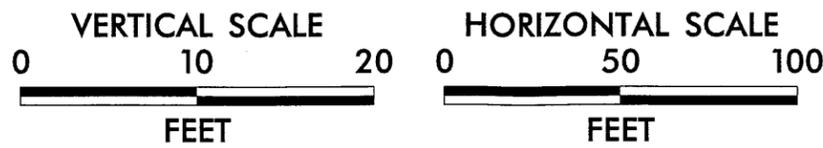
SUBSURFACE CROSS SECTION (END BENT 1)

BRIDGE NO. 208 ON SR 1003 (ERECT RD) OVER FORK CREEK
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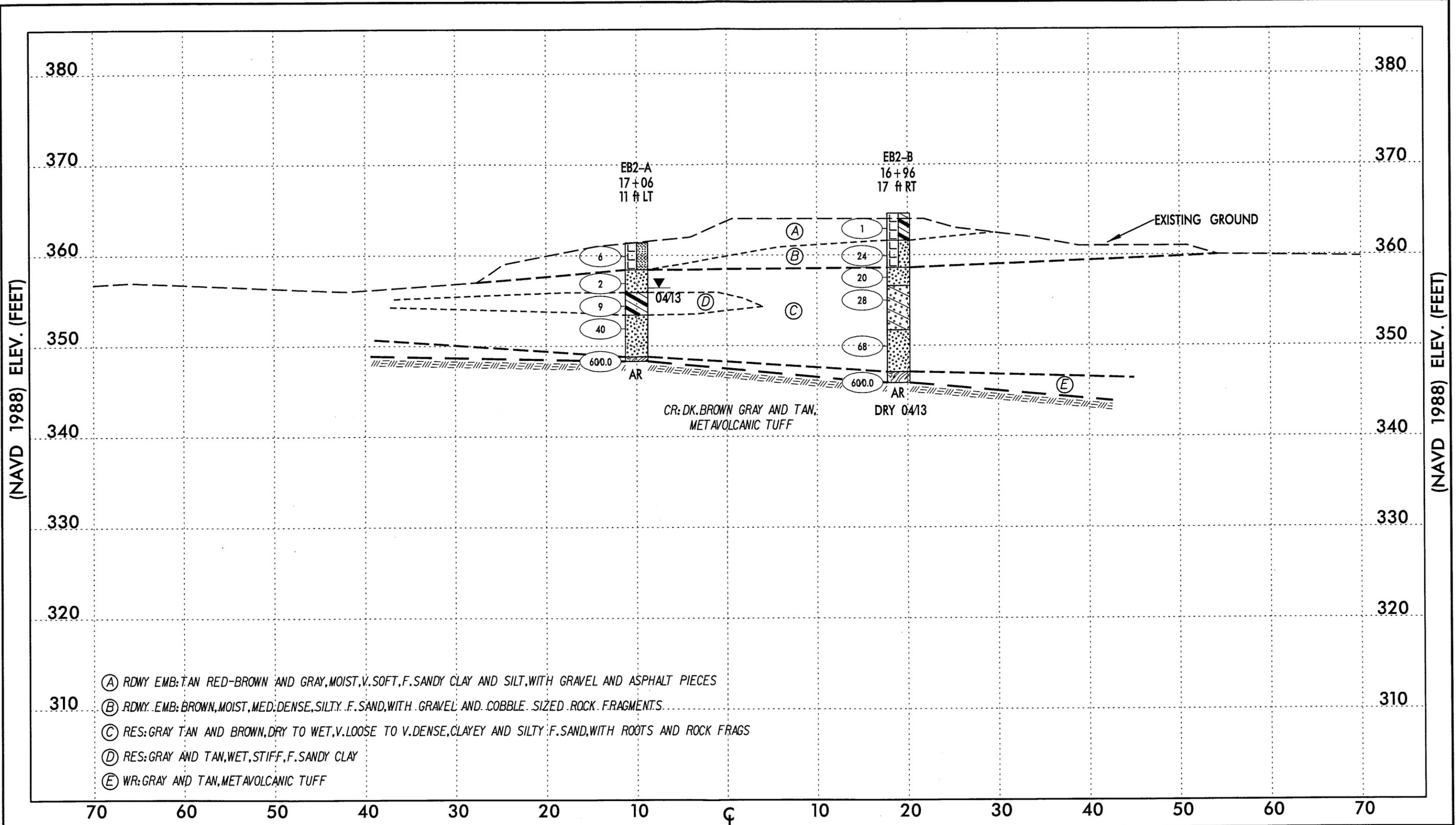
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SUBSURFACE CROSS SECTION (INTERIOR BENT 1)

BRIDGE NO. 208 ON SR 1003 (ERECT RD) OVER FORK CREEK
RANDOLPH COUNTY, NORTH CAROLINA
WBS.: 38433.1.2, TIP.: B-4608
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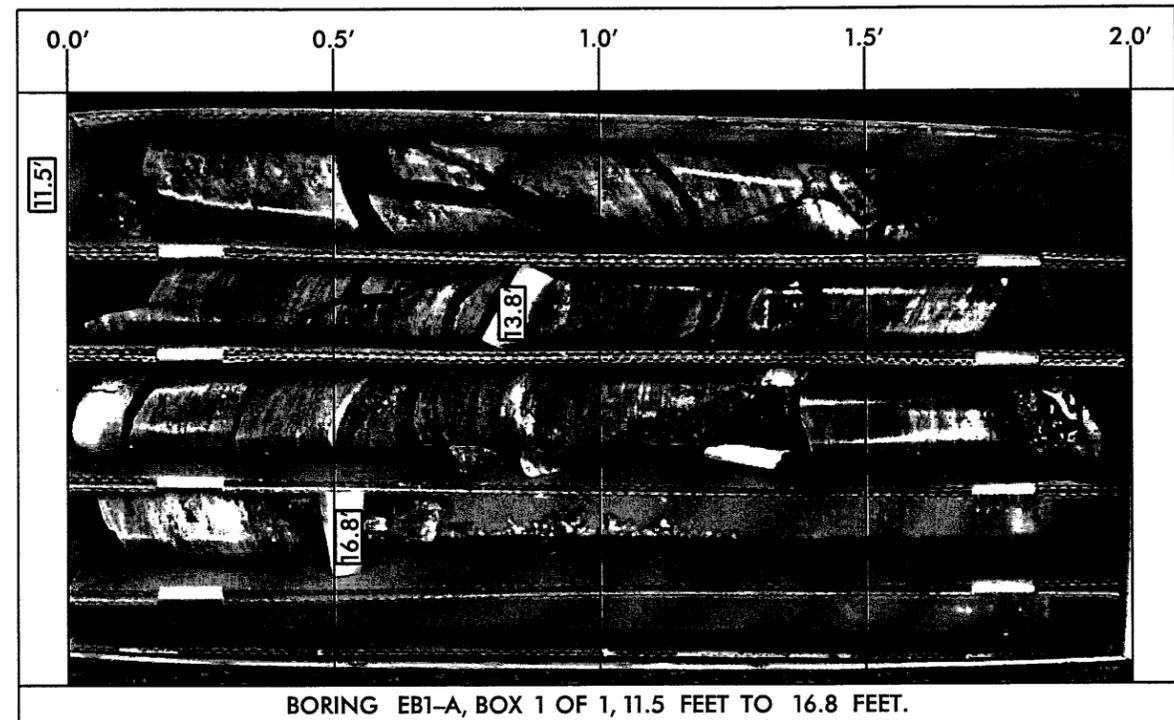
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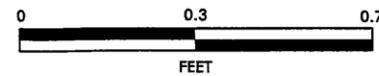
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SUBSURFACE CROSS SECTION (END BENT 2)

BRIDGE NO. 208 ON SR 1003 (ERECT RD) OVER FORK CREEK
RANDOLPH COUNTY, NORTH CAROLINA
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BORING EB1-A, BOX 1 OF 1, 11.5 FEET TO 16.8 FEET.



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ROCK CORE PHOTOGRAPHS

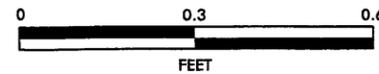
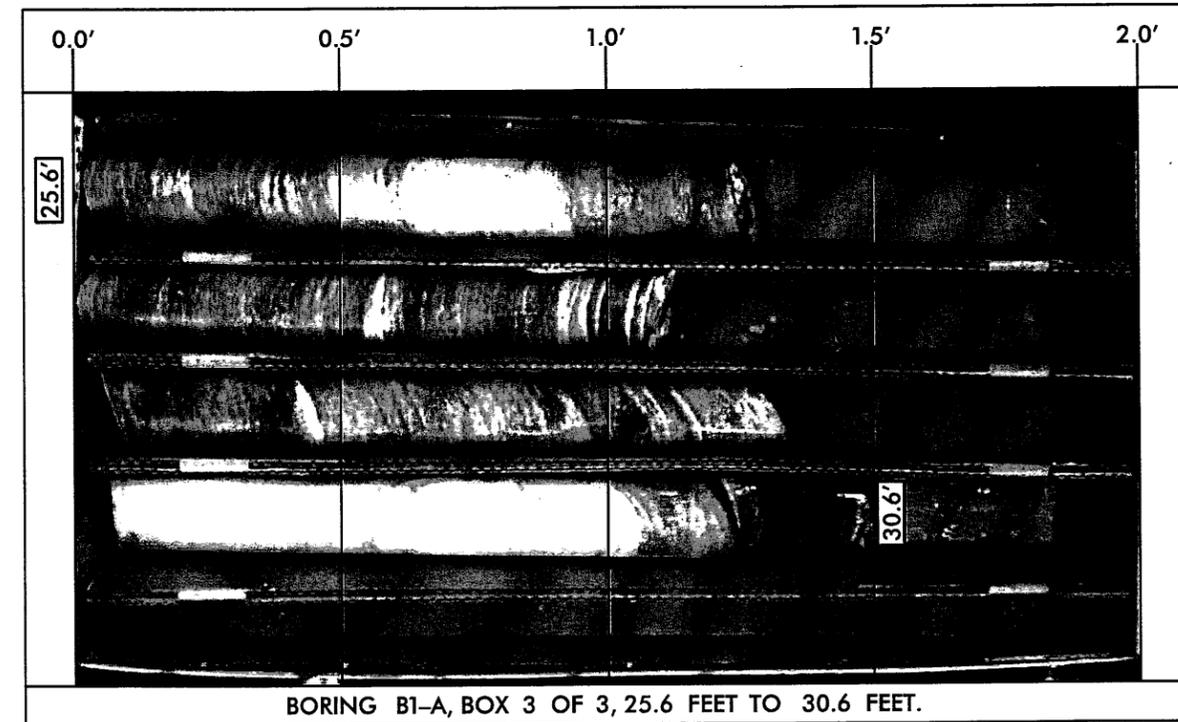
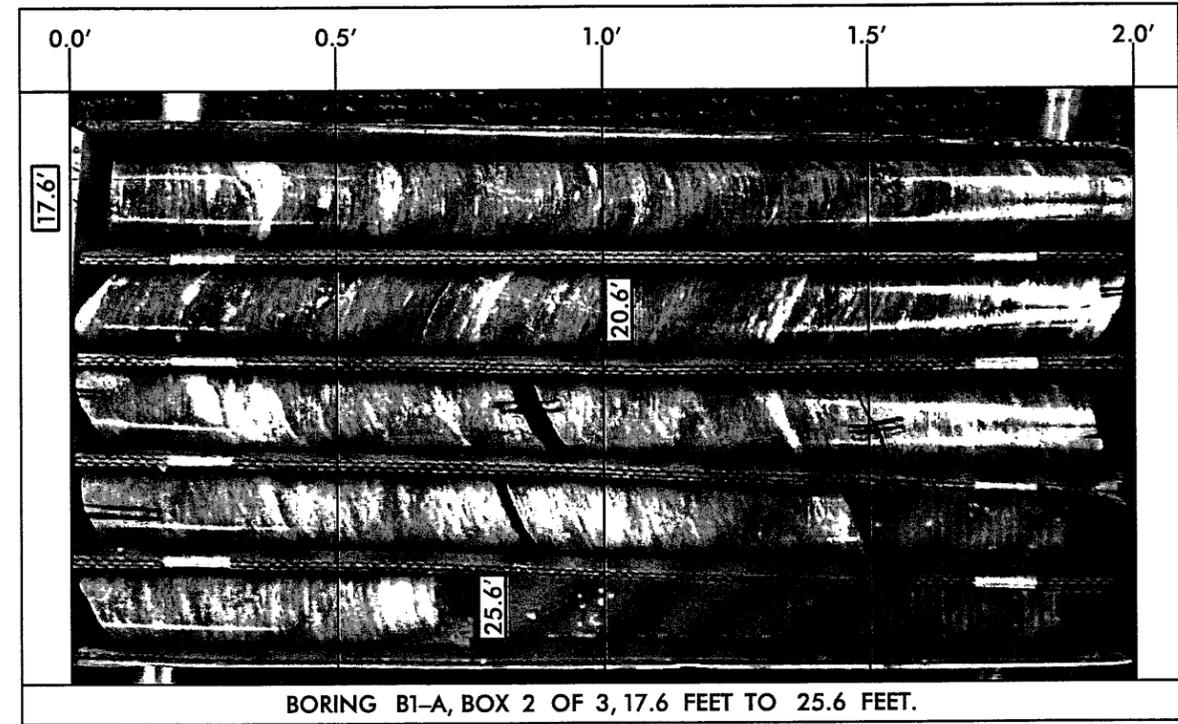
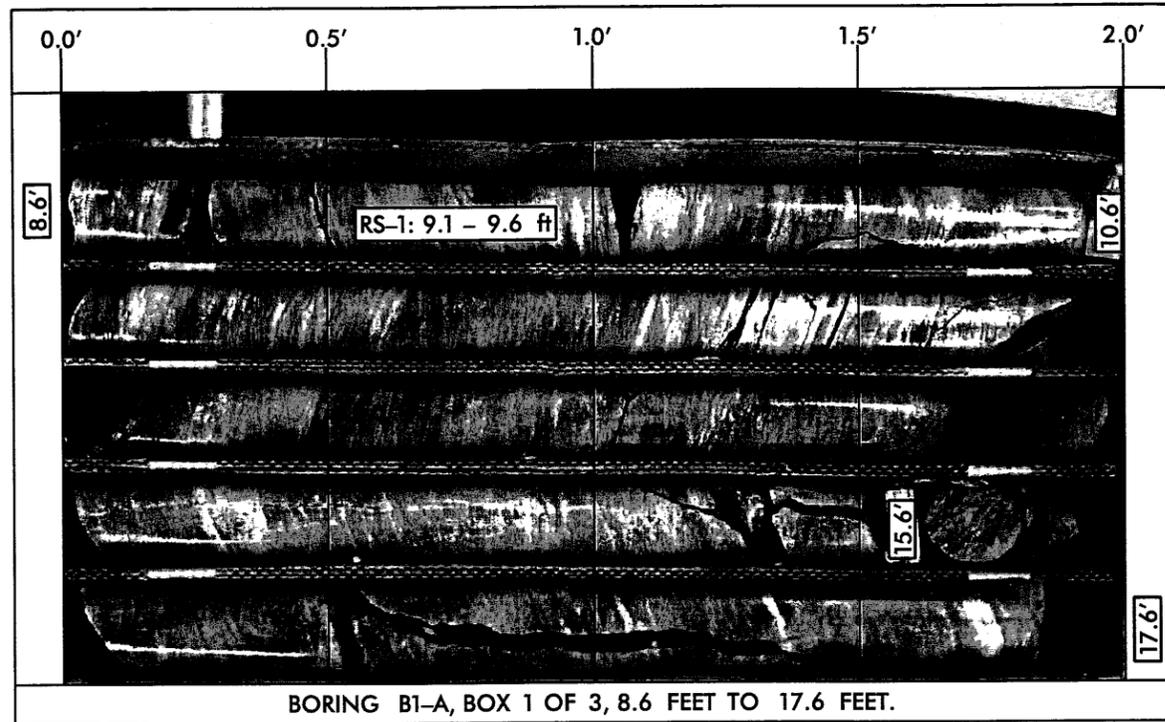
BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK
RANDOLPH COUNTY, NORTH CAROLINA
WBS NO.: 38433.1.2, TIP NO.: B-4608
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WBS 38433.1.2	TIP B-4608	COUNTY RANDOLPH	GEOLOGIST Evans, T. E.
SITE DESCRIPTION BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK			GROUND WTR (ft)
BORING NO. EB1-B	STATION 15+56	OFFSET 13 ft RT	ALIGNMENT -L-
COLLAR ELEV. 366.9 ft	TOTAL DEPTH 18.4 ft	NORTHING 647,506	EASTING 1,809,123
DRILL RIG/HAMMER EFF./DATE SOI8513 CME-550X 97% 08/08/2012		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER White, J. D.	START DATE 04/26/13	COMP. DATE 04/26/13	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
370															
														366.9	0.0
	366.4	0.5	1	3	2								M	ROADWAY EMBANKMENT RED BROWN AND TAN, F. SANDY CLAY (A-6) W/ TRACE ORGANICS, GRAVEL AND ASPHALT PIECES	
365															
	363.5	3.4	2	1	1								W	RESIDUAL BROWN AND TAN, F. SANDY CLAY (A-6) W/ TRACE ROOTS	4.0
	361.0	5.9	10	100/0.4											
360															
	358.5	8.4	100/0.3											WEATHERED ROCK GRAY AND TAN, METAVOLCANIC TUFF	6.5
355															
	353.5	13.4	60/0.1											CRYSTALLINE ROCK GRAY AND TAN, METAVOLCANIC TUFF	13.5
350															
	348.5	18.4	60/0.0											Boring Terminated with Standard Penetration Test Refusal at Elevation 348.5 ft in CR: Metavolcanic Tuff	18.4

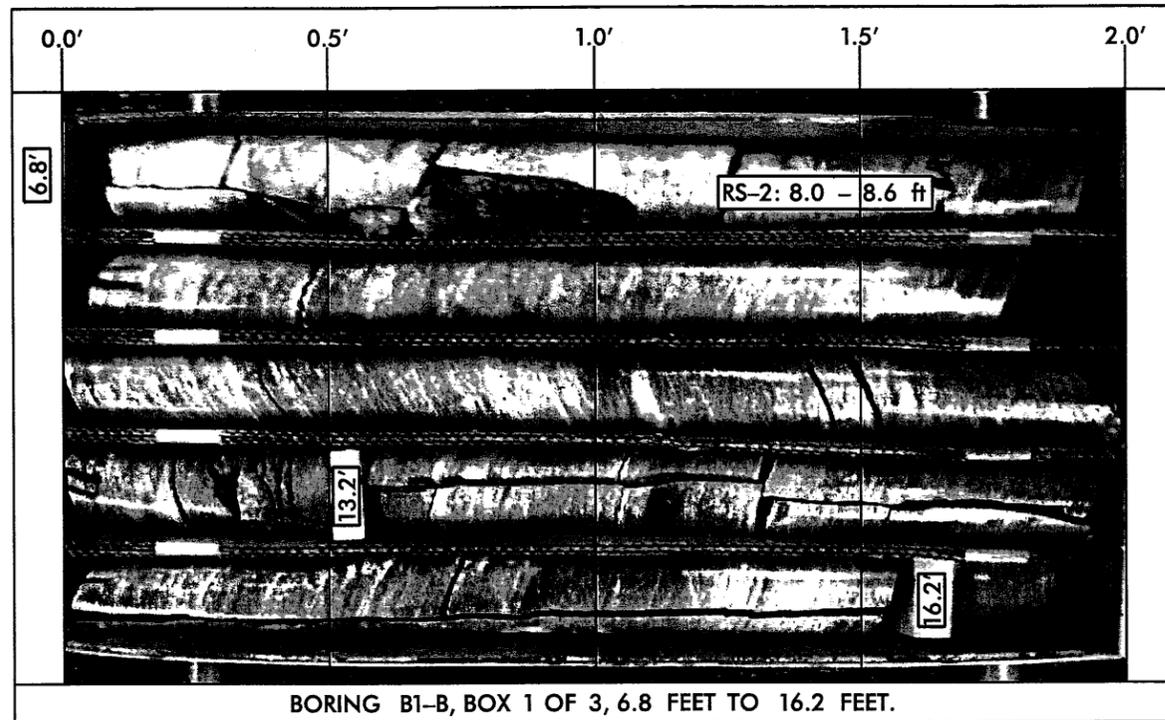
NCDOT BORE SINGLE B4608 GEO BRDG0208_GINT.GPJ NC_DOT.GDT 6/24/13



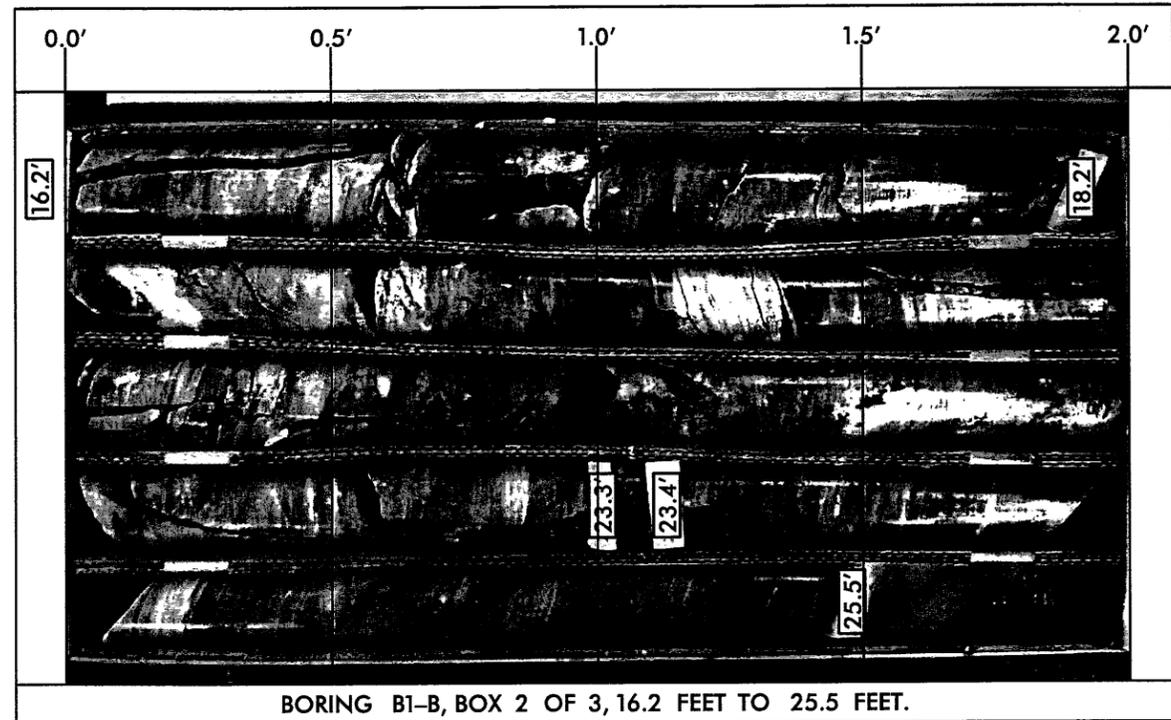
FALCON ENGINEERING, INC.
1210 TRINITY ROAD, SUITE 110
RALEIGH, NC 27607
PHONE: 919.871.0800
FAX: 919.871.0803

ROCK CORE PHOTOGRAPHS

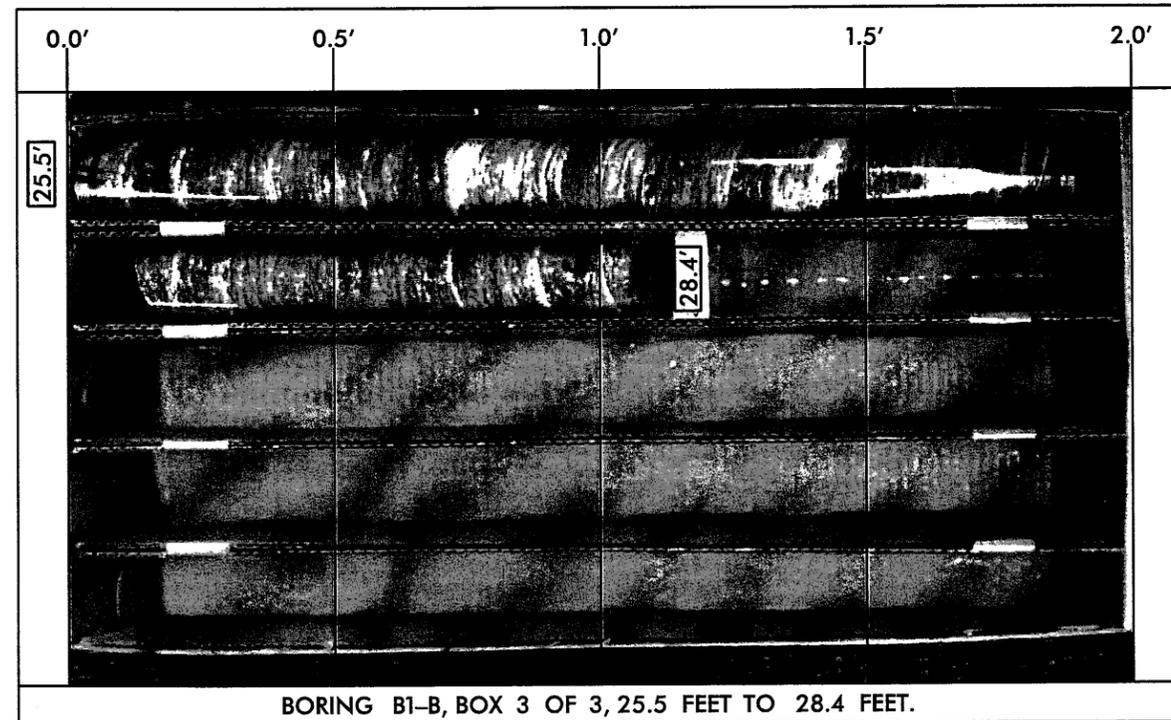
BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK
RANDOLPH COUNTY, NORTH CAROLINA
WBS NO.: 38433.1.2, TIP NO.: B-4608
FALCON PROJECT NO.: G13039.00



BORING B1-B, BOX 1 OF 3, 6.8 FEET TO 16.2 FEET.



BORING B1-B, BOX 2 OF 3, 16.2 FEET TO 25.5 FEET.



BORING B1-B, BOX 3 OF 3, 25.5 FEET TO 28.4 FEET.



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ROCK CORE PHOTOGRAPHS

BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK
RANDOLPH COUNTY, NORTH CAROLINA
WBS NO.: 38433.1.2, TIP NO.: B-4608
FALCON PROJECT NO.: G13039.00

WBS 38433.1.2		TIP B-4608		COUNTY RANDOLPH		GEOLOGIST Evans, T. E.									
SITE DESCRIPTION BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK							GROUND WTR (ft)								
BORING NO. EB2-A		STATION 17+06		OFFSET 11 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 361.4 ft		TOTAL DEPTH 13.1 ft		NORTHING 647,654		EASTING 1,809,093									
DRILL RIG/HAMMER EFF./DATE SOI8513 CME-550X 97% 08/08/2012		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER White, J. D.		START DATE 04/25/13		COMP. DATE 04/25/13		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
365															
360.9		0.5	3	4	2										
357.9		3.5	1	1	1										
355.4		6.0	2	3	6										
352.9		8.5	9	16	24										
348.3		13.1	60/0.0												60/0.0
361.4 GROUND SURFACE: 3" TOPSOIL 0.0 ROADWAY EMBANKMENT TAN AND RED-BROWN, F. SANDY SILT (A-4) W/ GRAVEL, ASPHALT PIECES 358.4 RESIDUAL TAN AND BROWN, SILTY F. SAND (A-2-4) W/ TRACE ROOTS 3.0 355.9 GRAY AND TAN, F. SANDY CLAY (A-6) 5.5 353.4 GRAY AND TAN, SILTY F. SAND (A-2-4) W/ ROCK FRAGS 8.0 HARD DRILLING @ 10.1-11.0 FT 348.8 WEATHERED ROCK GRAY, METAVOLCANIC TUFF 12.6 348.3 Boring Terminated by Auger Refusal at Elevation 348.3 ft on CR: Metavolcanic Tuff 13.1															

NCDOT BORE SINGLE B4608_GEO_BRDG0208_GINT.GPJ_NC_DOT.GDT 6/24/13

WBS 38433.1.2		TIP B-4608		COUNTY RANDOLPH		GEOLOGIST Evans, T. E.									
SITE DESCRIPTION BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 16+96		OFFSET 17 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 364.5 ft		TOTAL DEPTH 18.7 ft		NORTHING 647,647		EASTING 1,809,122									
DRILL RIG/HAMMER EFF./DATE SOI8513 CME-550X 97% 08/08/2012		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER White, J. D.		START DATE 04/24/13		COMP. DATE 04/24/13		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
365															
363.8		0.7	1	1	WOH										
360.8		3.7	7	6	18										
358.4		6.1	26	11	9										
355.9		8.6	7	12	16										
350.8		13.7	12	30	38										
345.8		18.7	60/0.0												60/0.0
364.5 EXISTING PAVEMENT 0.0 363.8 7.5" BITUMINOUS CONCRETE (NO AGGREGATE BASE COURSE) 0.6 ROADWAY EMBANKMENT RED-BROWN TAN AND GRAY, F. SANDY CLAY (A-6) W/ GRAVEL 381.5 BROWN, SILTY F. SAND (A-2-4) 3.0 GRAVEL / COBBLE SIZED ROCK FRAGS FROM 5.1 - 6.0 FT 358.5 RESIDUAL GRAY AND TAN, SILTY F. SAND (A-2-4) W/ ROCK FRAGS, TRACE ROOTS 6.0 356.5 GRAY BROWN AND TAN, CLAYEY F. SAND (A-2-6) 8.0 351.6 TAN AND BROWN, SILTY MED. SAND (A-2-4) W/ ROCK FRAGS 12.9 347.0 WEATHERED ROCK GRAY, METAVOLCANIC TUFF 17.5 345.8 Boring Terminated by Auger Refusal at Elevation 345.8 ft on CR: Metavolcanic Tuff 18.7															

NCDOT BORE SINGLE B4608_GEO_BRDG0208_GINT.GPJ_NC_DOT.GDT 6/24/13

SUMMARY OF ROCK CORE TEST RESULTS

BRIDGE NO. 208 ON SR 1003 (ERECT ROAD) OVER FORK CREEK

WBS NO.: 38433.1.2, TIP NO.: B-4608

RANDOLPH COUNTY, NORTH CAROLINA

FALCON ENGINEERING, INC. PROJECT NO: G13039.00

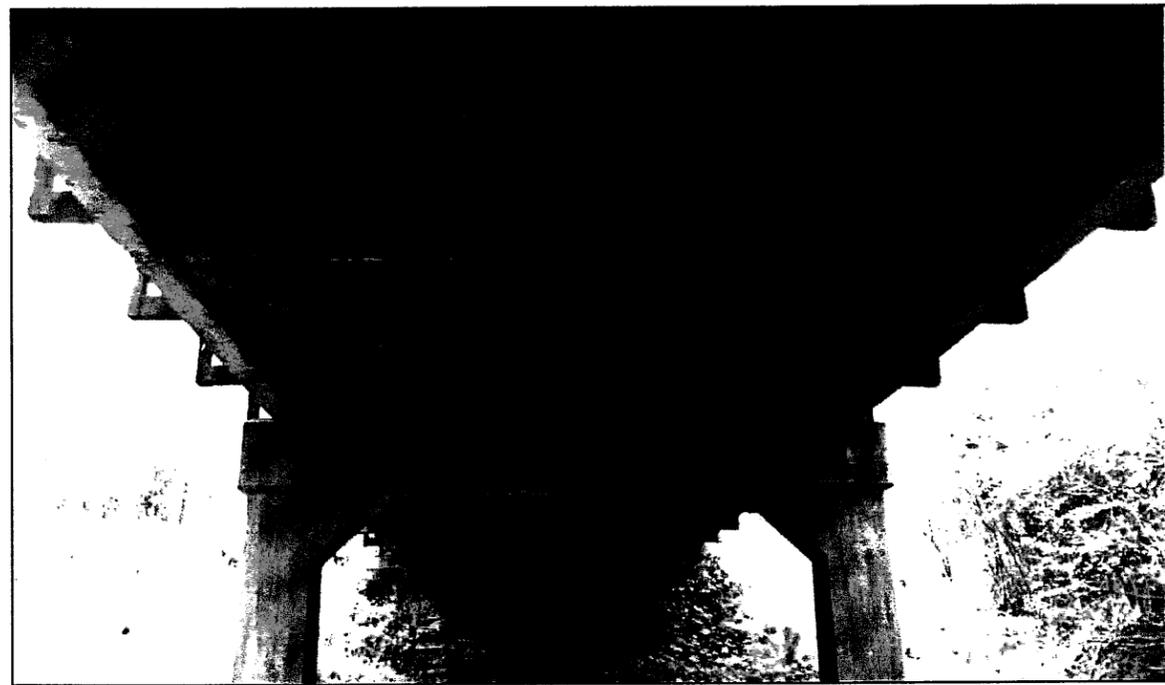
Sample No.	Boring	Depth (ft)	Rock Type	Geologic Map Unit	Run RQD	Length (ft)	Diameter (ft)	Unit Weight (PCF)	Unconfined Compressive Strength (PSI)	Young's Modulus (PSI)	Rock Mass Rating (RMR)
RS-1	B1-A	9.1-9.6	METAVOLCANIC-EPICLASTIC ROCK	CZe	45%	0.34	0.16	171.4	4,953	1,347,558	54
RS-2	B1-B	8.0-8.6	METAVOLCANIC-EPICLASTIC ROCK	CZe	79%	0.36	0.16	173.5	9,221	1,869,134	45

SIGNATURE: *[Signature]* NCDOT No.: 123-01-0509

Notes: LL = Liquid limit
 PL = Plastic limit
 PI = Plasticity index = LL - PL



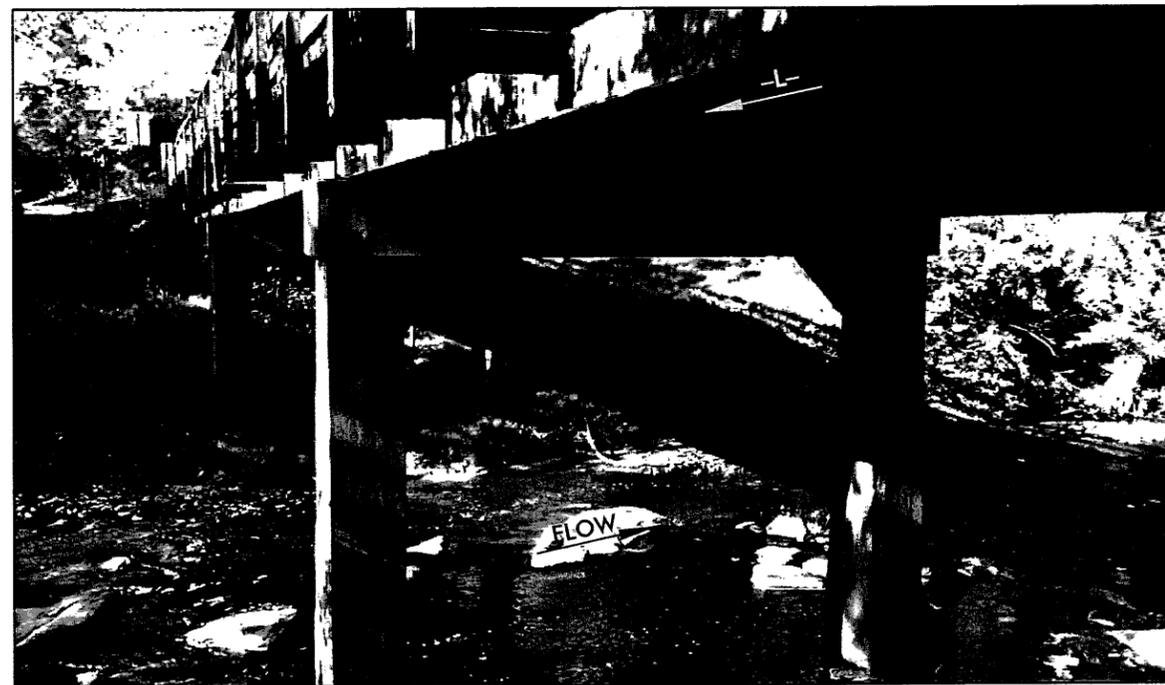
LOOKING DOWNSTATION ALONG -L- FROM NEAR RIGHT HAND SIDE OF END BENT NO. 2



LOOKING DOWNSTATION ALONG -L- AT UNDERSIDE OF EXISTING BRIDGE STRUCTURE



LOOKING DOWNSTATION ALONG -L- FROM NEAR LEFT HAND SIDE OF END BENT NO. 2



LOOKING UPSTATION AT EXISTING BRIDGE BENTS AND CHANNEL OF FORK CREEK



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SITE PHOTOGRAPHS

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