

PROJECT: 34832.1.1 ID: U2551

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	34832.1.1 (U2551)	1	5

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<u>SHEET</u>	<u>DESCRIPTION</u>
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3	PROFILE
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5	SOIL TEST RESULTS

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34832.1.1 (U2551) F.A. PROJ. STP-1922 (1)

COUNTY BURKE

PROJECT DESCRIPTION Morganton- SR 1922 (Enola Rd.)/SR 1924 (Old NC 18) from South of Pete Brittain Rd. (SR 1940) to NC 18

SITE DESCRIPTION RETAINING WALL-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) 250-4088. 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 (ON-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.

PERSONNEL

MMH

GKR

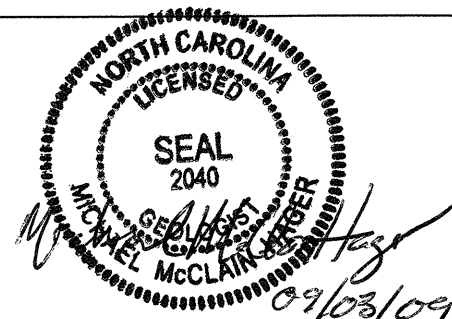
RDC

INVESTIGATED BY MMH

CHECKED BY WDF

SUBMITTED BY WDF

DATE 09/09

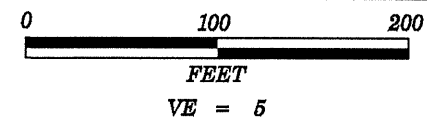


DRAWN BY: MMH

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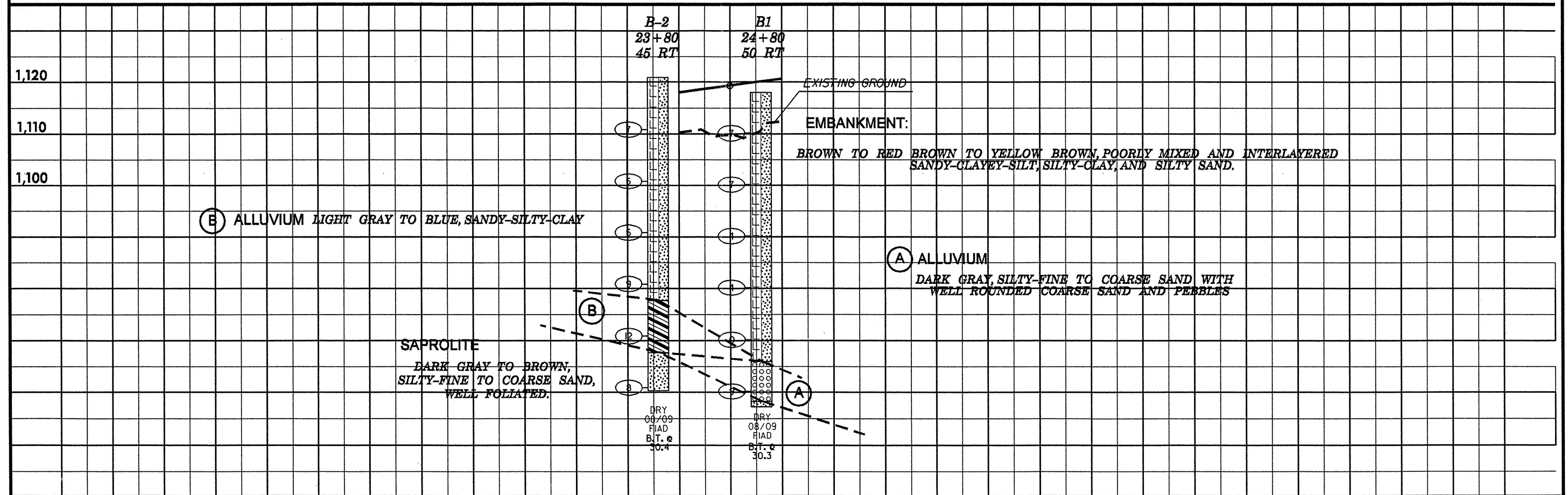
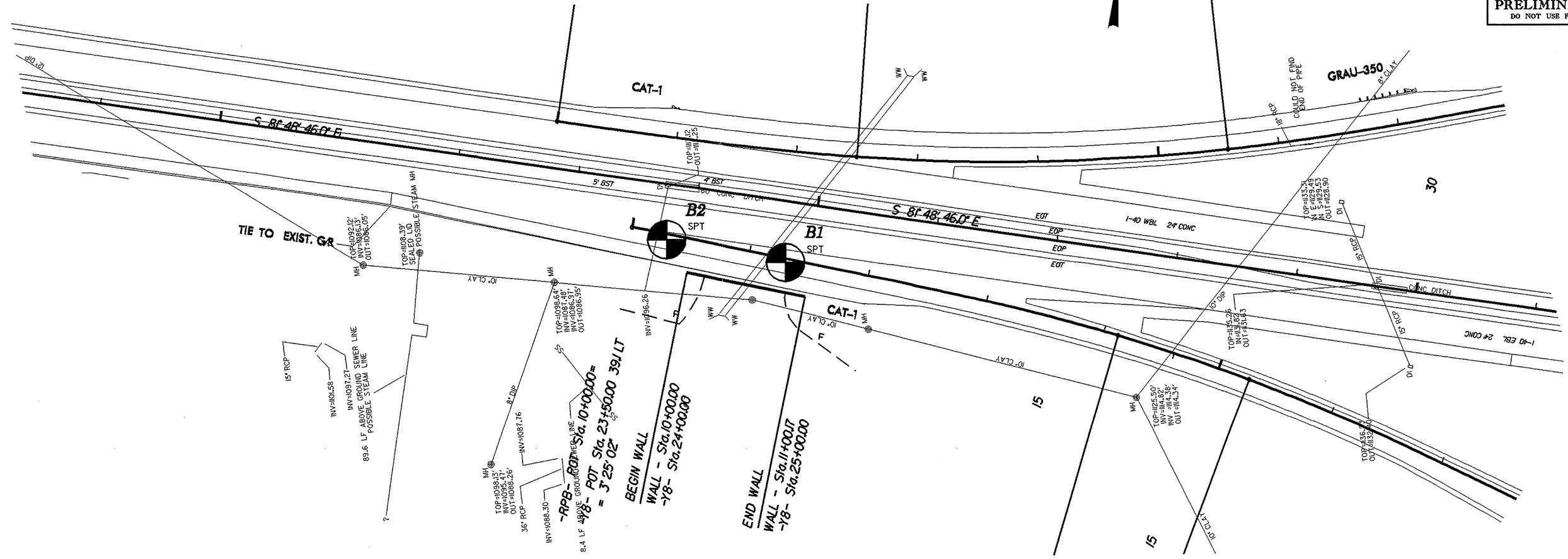
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WALL 1



PROJECT REFERENCE NO.	SHEET
34832.1.1 (U-2551)	3
SR 1922/SR 1924 FROM SR 1940 TO NC18	

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





PROJECT NO. 34832.1.1	ID. U2551	COUNTY Burke	GEOLOGIST Hager, M. M.
SITE DESCRIPTION RETAINING WALL-1			GROUND WTR (ft)
BORING NO. B1	STATION 24+80	OFFSET 50ft RT	ALIGNMENT -Y8-
COLLAR ELEV. 1,120.9 ft	TOTAL DEPTH 30.4 ft	NORTHING 726,776	EASTING 1,205,517
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 08/10/09	COMP. DATE 08/10/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
1125													GROUND SURFACE	0.0
1120													ROADWAY EMBANKMENT	
1115	1,117.0	3.9	2	3	4						SS-100	M	Brown to red-brown to yellow-brown, poorly mixed and interlayered sandy-clayey-silt, silty-clay, and silty-sand.	
1110	1,112.0	8.9	2	3	4							M		
1105	1,107.0	13.9	1	2	2						SS-101	D		
1100	1,102.0	18.9	1	2	2							D		
1095	1,097.0	23.9	0	0	0						SS-102	M		
1090	1,092.0	28.9	3	7	2							D	ALLUVIAL	26.0
													Dark gray, silty-fine to coarse sand with rounded coarse sand and pebbles.	29.9
													SAPROLITE	30.4
													Gray to green to white, silty-sand.	
													Boring Terminated at Elevation 1,090.5 ft Sapolite	

PROJECT NO. 34832.1.1	ID. U2551	COUNTY Burke	GEOLOGIST Hager, M. M.
SITE DESCRIPTION RETAINING WALL-1			GROUND WTR (ft)
BORING NO. B2	STATION 23+80	OFFSET 45ft RT	ALIGNMENT -Y8-
COLLAR ELEV. 1,118.0 ft	TOTAL DEPTH 30.3 ft	NORTHING 726,795	EASTING 1,205,418
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 08/10/09	COMP. DATE 08/10/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
1120													GROUND SURFACE	0.0
1115	1,114.2	3.8	1	3	4							D	ROADWAY EMBANKMENT	
1110	1,109.2	8.8	1	2	3							D	Brown to red-brown to yellow-brown, poorly mixed and interlayered sandy-clayey-silt, silty-clay, and silty-sand.	
1105	1,104.2	13.8	1	2	3							D		
1100	1,099.2	18.8	2	3	6							D		
1095	1,094.2	23.8	2	5	7						SS-103	M	ALLUVIAL	21.6
1090	1,089.2	28.8	1	4	4							M	Light gray to Blue, sandy-silty-clay.	26.6
1085												M	SAPROLITE	30.3
													Dark gray to brown, silty-fine to coarse sand, well foliated.	
													Boring Terminated at Elevation 1,087.7 ft Sapolite	

NCDOT BORE DOUBLE U2551.GPJ NC DOT.GDT 9/2/09

JCS

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #: U-2551

REPORT ON SAMPLES OF: Soils for Quality

PROJECT:	34832.1.1	COUNTY:	Burke	Owner:	NCDOT
DATE SAMPLED:	8.09	DATE RECEIVED:	8.14.09	DATE REPORTED:	8.18.09
SAMPLED FROM:	Retaining Wall	SAMPLED BY:	M. M. Hager		
SUBMITTED BY:	W. D. Frye	2002	STANDARD SPECIFICATION		
LABORATORY:	Asheville				

TEST RESULTS

Project Sample No.	SS-100	SS-101	SS-102	SS-103				
Lab Sample No. A	161556	161557	161558	161559				
HiCAMS Sample #	--	--	--	--				
Retained #4 Sieve %	0.0	0.0	0.0	0.0				
Passing #10 Sieve %	99	99	99	99				
Passing #40 Sieve %	90	85	89	84				
Passing #200 Sieve %	66	47	61	57				

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	17	26	19	25				
Fine Sand - Ret. #270	17	33	29	20				
Silt 0.05-0.005 mm %	36	31	28	23				
Clay < 0.005 mm %	30	10	24	32				
Passing # 40 Sieve %	--	--	--	--				
Passing # 200 Sieve %	--	--	--	--				

Liquid Limit	50	34	46	37				
Plastic Index	16	NP	NP	18				
AASHTO Classification	A-7-5 (10)	A-4 (2)	A-5 (6)	A-6 (7)				
Quantity								
Texture								
Station	24+80	24+80	24+80	23+80				
Hole No.								
Depth (ft) From:	4.4	9.4	24.4	24.3				
To:	5.4	10.4	25.4	25.3				
	OK	OK	OK	OK				

Remarks:

A-161556 - 161559

CC:

M. M. Hager	
File	

SOILS ENGINEER:

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

STRUCTURE
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34832.1.1 (U-2551) F.A. PROJ. STP-1922(1)
 COUNTY BURKE
 PROJECT DESCRIPTION BRIDGE NO. 134 ON SR-1922 OVER I-40

SITE DESCRIPTION _____

CONTENTS

<u>SHEET</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5	CROSS SECTIONS
7	BORE LOGS
16	SOIL TEST RESULTS

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PROJECT: 34832.1.1 ID: U-2551

PERSONNEL

D C ELLIOT

D O CHEEK

R D CHILDERS

L E RIDDLE

INVESTIGATED BY C A DUNNAGAN

CHECKED BY W D FRYE Jr

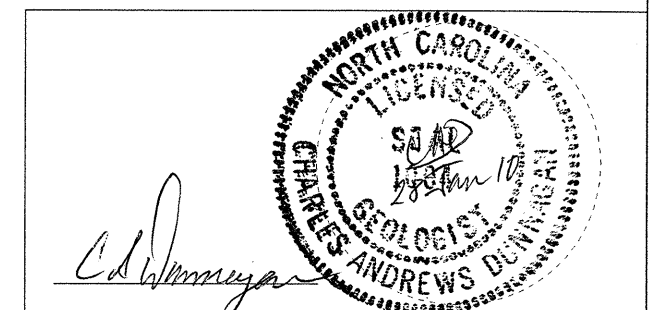
SUBMITTED BY W D FRYE Jr

DATE JANUARY 2010

DRAWN BY: C A DUNNAGAN

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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			
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 T206, 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: <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>				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.				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 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:				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 (CAL.C.) - 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 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 (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.			
SOIL LEGEND AND AASHTO CLASSIFICATION				MINERALOGICAL COMPOSITION				WEATHERING							
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS				MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.				FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.							
COMPRESSIBILITY				GROUND WATER				VERY SLIGHT (V SLI.)				MODERATE (MOD.)			
SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE				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				SLIGHT (SLI.)				SEVERE (SEV.)			
PERCENTAGE OF MATERIAL				MISCELLANEOUS SYMBOLS				SEVERE (SEV.)				VERY SEVERE (V SEV.)			
ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL				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 SOUNDING ROD				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				COMPLETE			
TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC >10%				SPT REFUSAL TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE SPT REFUSAL				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, YIELDS SPT N VALUES > 100 BPF				VERY HARD			
LIQUID LIMIT PLASTIC INDEX				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				ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. IF TESTED, YIELDS SPT N VALUES < 100 BPF				HARD			
GROUP INDEX				25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES				VERY SEVERE (V SEV.)				MODERATELY HARD			
USUAL TYPES OF MAJOR MATERIALS				25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES				COMPLETE				MEDIUM HARD			
GEN. RATING AS A SUBGRADE				25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES				COMPLETE				SOFT			
PI OF A-7-5 SUBGROUP IS <= LL - 30 ; PI OF A-7-6 SUBGROUP IS >= LL - 30				25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES				COMPLETE				VERY SOFT			
CONSISTENCY OR DENSENESS				ABBREVIATIONS				ROCK HARDNESS							
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)				HI. - HIGHLY MED. - MEDIUM MICA - MICA MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL				VERY HARD							
GENERALY GRANULAR MATERIAL (NON-COHESIVE)				w - MOISTURE CONTENT v - VERY VST - VANE SHEAR TEST WEA. - WEATHERED W _u - UNIT WEIGHT W _d - DRY UNIT WEIGHT FIAD - FILLED IMMEDIATELY AFTER DRILLING WOH - WEIGHT OF HAMMER				HARD							
GENERALY SILT-CLAY MATERIAL (COHESIVE)				w - MOISTURE CONTENT v - VERY VST - VANE SHEAR TEST WEA. - WEATHERED W _u - UNIT WEIGHT W _d - DRY UNIT WEIGHT FIAD - FILLED IMMEDIATELY AFTER DRILLING WOH - WEIGHT OF HAMMER				MODERATELY HARD							
TEXTURE OR GRAIN SIZE				EQUIPMENT USED ON SUBJECT PROJECT				FRACTURE SPACING				BEDDING			
U.S. STD. SIEVE SIZE OPENING (MM)				DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST				TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET				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			
BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE, SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)				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 N H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST				INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED			
SOIL MOISTURE - CORRELATION OF TERMS				PLASTICITY				INDURATION							
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION				NONPLASTIC PLASTICITY INDEX (PI) DRY STRENGTH VERY LOW SLIGHT MEDIUM HIGH				FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED							
LL - LIQUID LIMIT PL - PLASTIC LIMIT OM - OPTIMUM MOISTURE SHRINKAGE LIMIT				PLASTICITY INDEX (PI) DRY STRENGTH VERY LOW SLIGHT MEDIUM HIGH				FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED							
COLOR				INDURATION											
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.				INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED											

BRIDGE NO. 134 ON SR-1922 OVER I-40

PROJECT REFERENCE NO. SHEET

34832.1.1 (U-2551)

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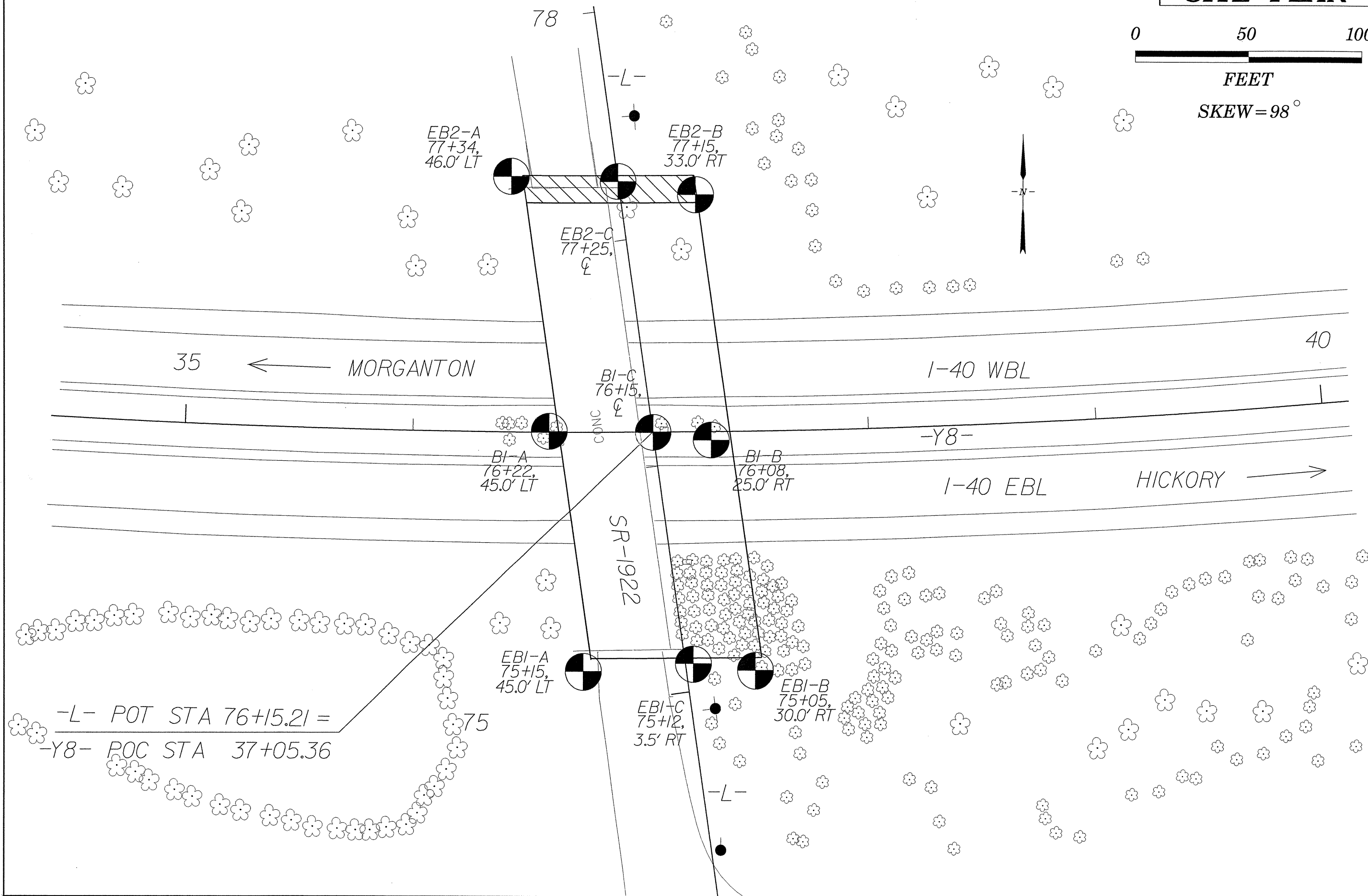
SITE PLAN

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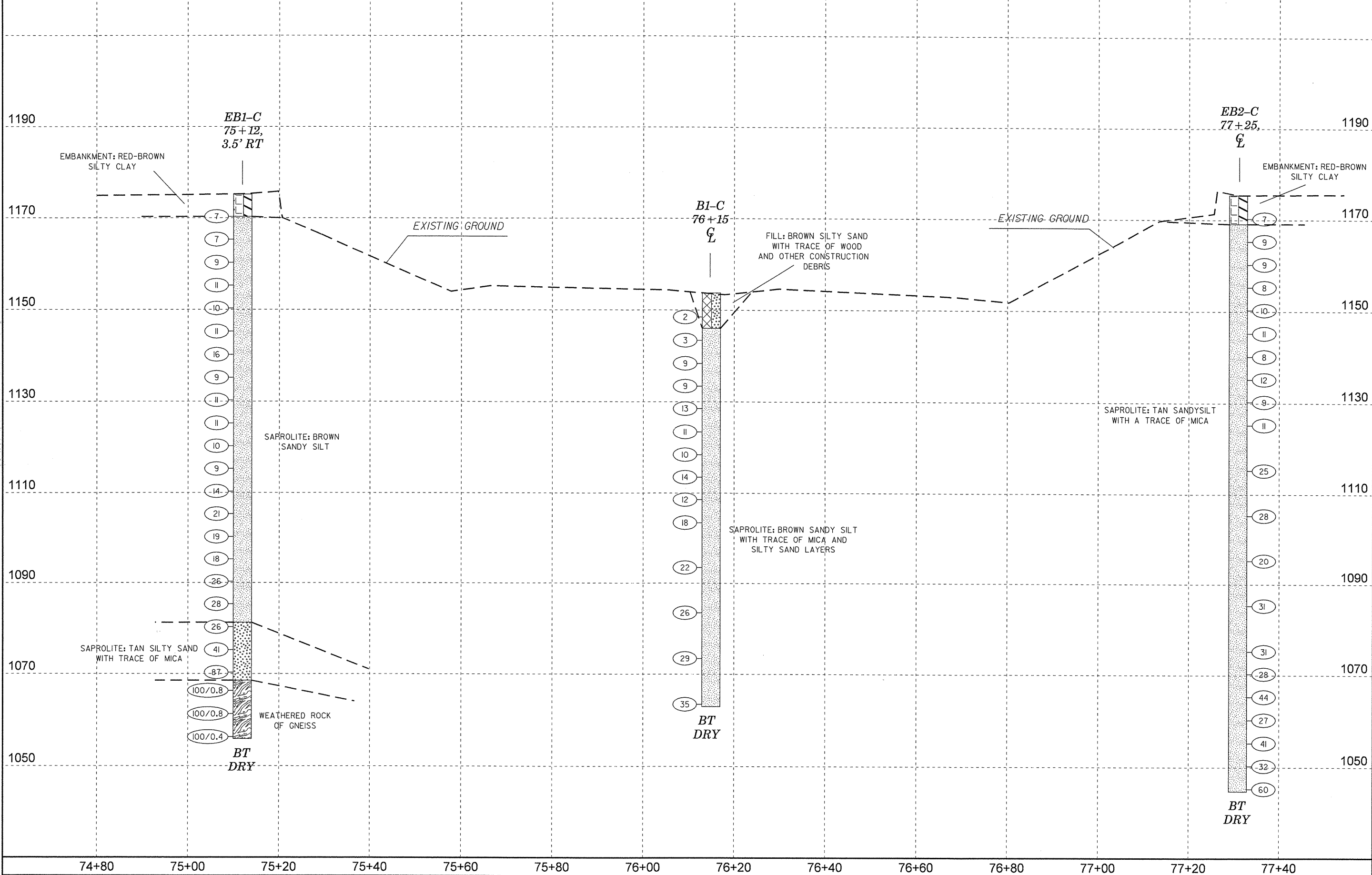
FEET

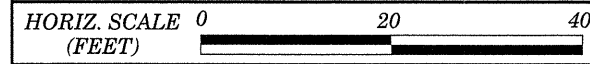
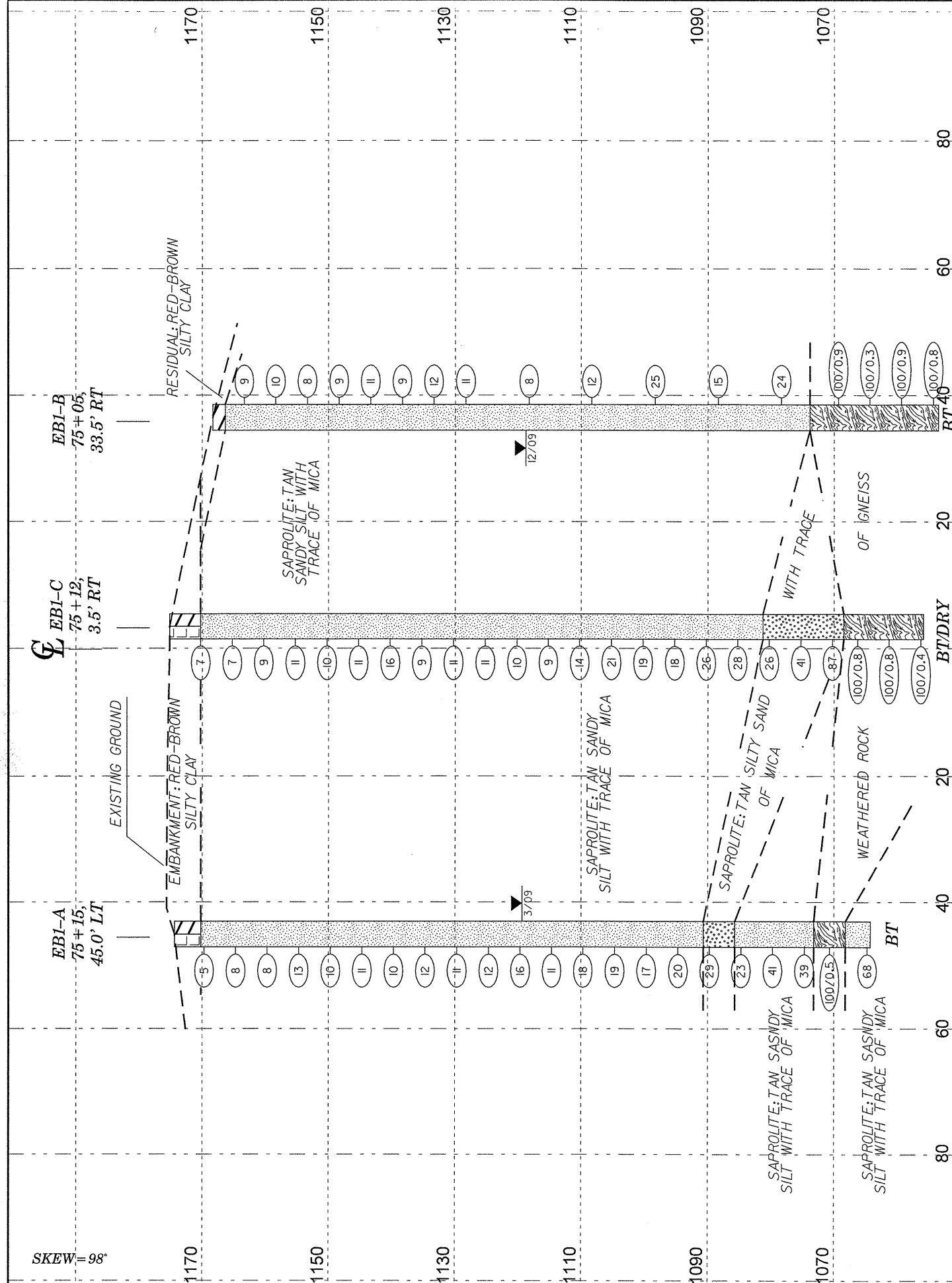
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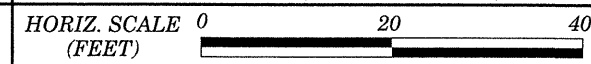
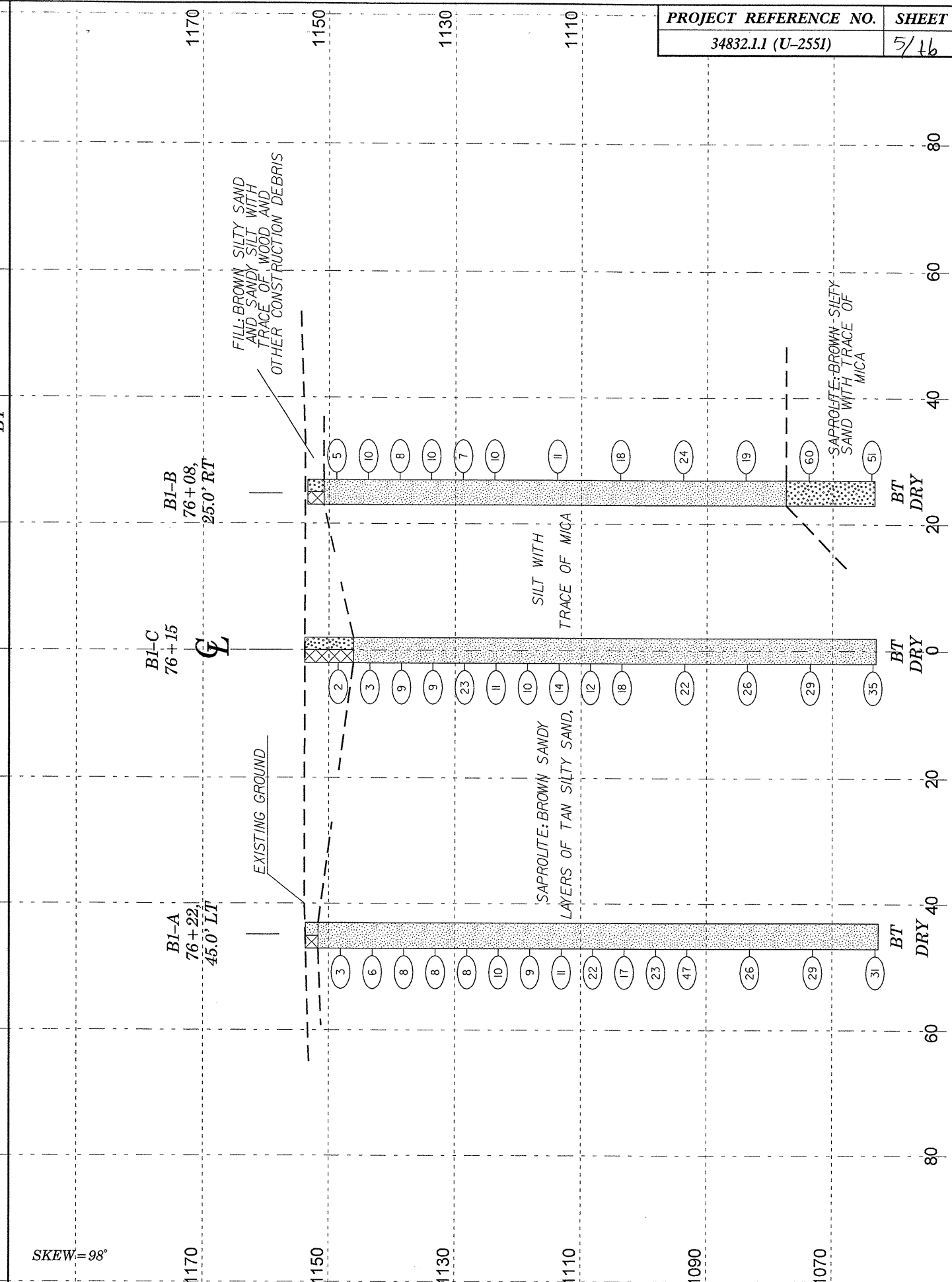
BRIDGE NO. 134 ON SR-1922 OVER I-40

<p>0 20 40 FEET VE = 1</p>	PROJECT REFERENCE NO.	SHEET
	34832.1.1 (U-2551)	4/16
CENTERLINE PROFILE		

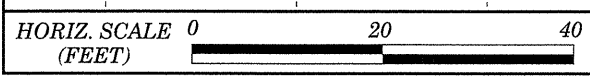
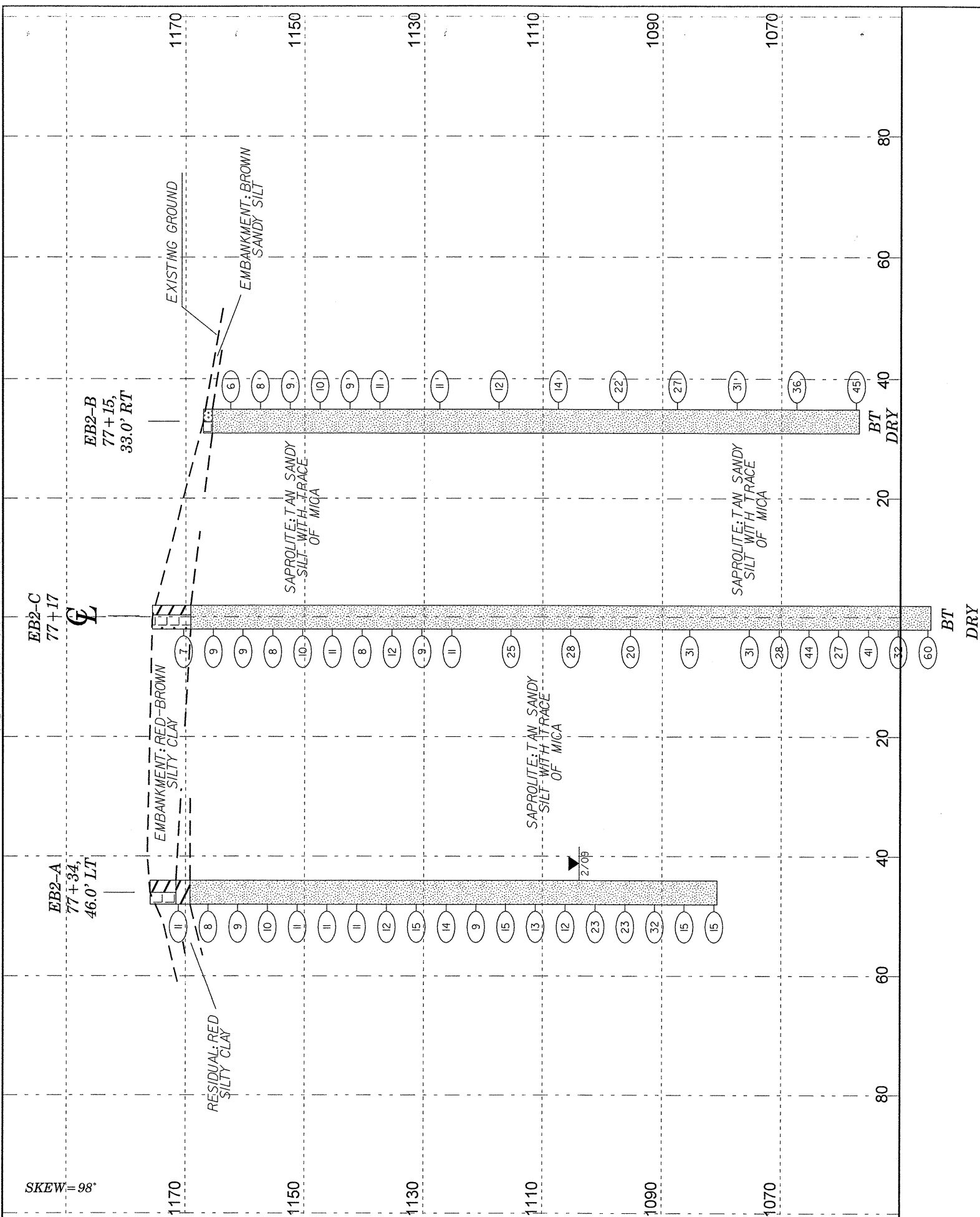




VE = 1



VE = 1



VE = 1

END BENT TWO

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB1-A	STATION 75+15	OFFSET 45ft LT	ALIGNMENT -L-
COLLAR ELEV. 1,174.4 ft	TOTAL DEPTH 110.2 ft	NORTHING 726,558	EASTING 1,206,710
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 03/06/09	COMP. DATE 03/06/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
1175													GROUND SURFACE	0.0
													ROADWAY EMBANKMENT Red-brown silty clay.	4.2
1170	1,170.7	3.7	1	2	3							M	SAPROLITE Tan sandy silt with trace of mica.	
1165	1,165.7	8.7	1	3	5							M		
1160	1,160.7	13.7	2	3	5							M		
1155	1,155.7	18.7	2	4	9							M		
1150	1,150.7	23.7	2	3	7							M		
1145	1,145.7	28.7	2	5	6							M		
1140	1,140.7	33.7	2	3	7							M		
1135	1,135.7	38.7	3	5	7							M		
1130	1,130.7	43.7	2	4	7							M		
1125	1,125.7	48.7	3	5	7							M		
1120	1,120.7	53.7	3	6	10							M		
1115	1,115.7	58.7	4	4	7							M		
1110	1,110.7	63.7	4	8	10							M		
1105	1,105.7	68.7	4	8	11							M		
1100	1,100.7	73.7	4	7	10							M		
1095	1,095.7	78.7												

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/25/10

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB1-A	STATION 75+15	OFFSET 45ft LT	ALIGNMENT -L-
COLLAR ELEV. 1,174.4 ft	TOTAL DEPTH 110.2 ft	NORTHING 726,558	EASTING 1,206,710
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 03/06/09	COMP. DATE 03/06/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
1095														
1090	1,090.7	83.7	4	8	12							M	SAPROLITE Tan sandy silt with trace of mica. (continued)	83.7
1085	1,085.7	88.7	15	15	14							M	SAPROLITE Tan silty sand with trace of mica.	88.7
1080	1,080.7	93.7	7	10	13							M	SAPROLITE Tan sandy silt with trace of mica.	
1075	1,075.7	98.7	10	16	25							M		
1070	1,070.7	103.7	80	18	21							M	WEATHERED ROCK Weathered rock of gneiss.	101.2
1065	1,065.7	108.7	100/0.5										SAPROLITE Tan sandy silt with trace of mica.	106.2
1060			19	28	40								Boring Terminated at Elevation 1,064.2 ft in hard saprolite.	110.2
1055														
1050														
1045														
1040														
1035														
1030														
1025														
1020														
1015														

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/25/10

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB1-B	STATION 75+05	OFFSET 34ft RT	ALIGNMENT -L-
COLLAR ELEV. 1,168.3 ft	TOTAL DEPTH 114.8 ft	NORTHING 726,589	EASTING 1,206,790
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 12/08/09	COMP. DATE 12/10/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

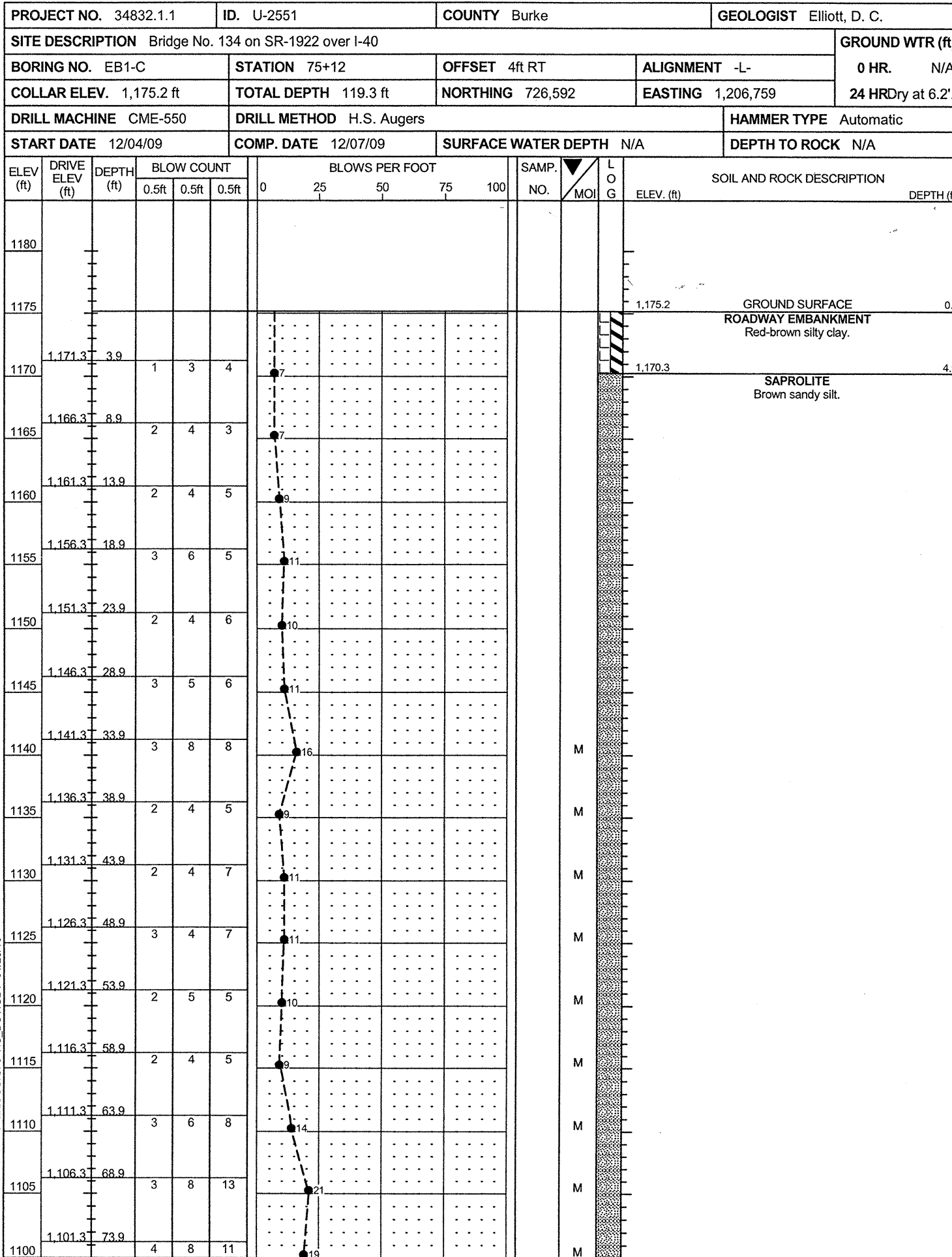
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1170																
														1,168.3	GROUND SURFACE	0.0
1165	1,164.3	4.0	2	4	5									1,166.3	RESIDUAL Red-brown silty clay.	2.0
1160	1,159.3	9.0													SAPROLITE Tan sandy silt with trace of mica.	
1155	1,154.3	14.0														
1150	1,149.3	19.0														
1145	1,144.3	24.0														
1140	1,139.3	29.0														
1135	1,134.3	34.0														
1130	1,129.3	39.0														
1125																
1120	1,119.3	49.0	1	3	5											
1115																
1110	1,109.3	59.0	2	5	7											
1105																
1100	1,099.3	69.0	7	10	15											
1095																
1090																

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB1-B	STATION 75+05	OFFSET 34ft RT	ALIGNMENT -L-
COLLAR ELEV. 1,168.3 ft	TOTAL DEPTH 114.8 ft	NORTHING 726,589	EASTING 1,206,790
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 12/08/09	COMP. DATE 12/10/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 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						
1090																
	1,089.3	79.0	2	6	9											
1085																
1080	1,079.3	89.0	4	8	16											
1075																
1070	1,069.3	99.0	39	59	41/0.4											
1065	1,064.3	104.0														
1060	1,059.3	109.0														
1055	1,054.3	114.0	78	22/0.3												
1050																
1045																
1040																
1035																
1030																
1025																
1020																
1015																
1010																

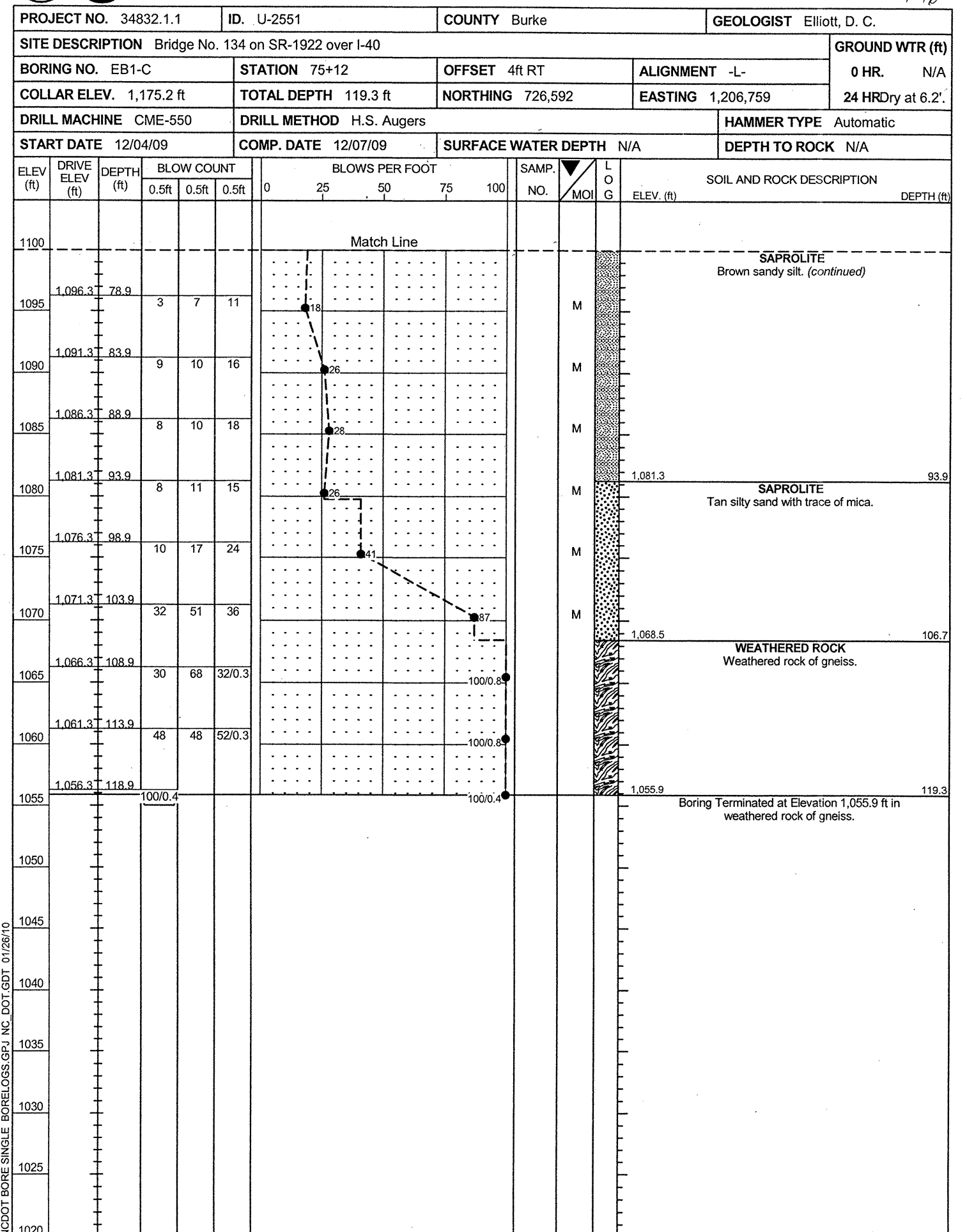
NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/26/10

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/26/10



NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/26/10

a/16



NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/26/10

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. B1-A	STATION 76+22	OFFSET 45ft LT	ALIGNMENT -L-
COLLAR ELEV. 1,153.7 ft	TOTAL DEPTH 91.1 ft	NORTHING 726,694	EASTING 1,206,695
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 01/07/10	COMP. DATE 01/11/10	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1155														1,153.7 GROUND SURFACE	0.0
														1,151.7 ARTIFICIAL FILL	2.0
														1,151.7 Brown sandy silt with trace of organic matter.	
1150	1,149.1	4.6		1	1	2							M	SAPROLITE	
														Tan sandy silt with trace of mica and interlayers of silty sand.	
1145	1,144.1	9.6		1	3	3							M		
1140	1,139.1	14.6		1	4	4							M		
1135	1,134.1	19.6		2	4	4							M		
1130	1,129.1	24.6		1	3	5							M		
1125	1,124.1	29.6		2	6	4							M		
1120	1,119.1	34.6		1	3	6							M		
1115	1,114.1	39.6		4	5	6							M		
1110	1,109.1	44.6		6	10	12							M		
1105	1,104.1	49.6		4	8	9							M		
1100	1,099.1	54.6		7	11	12							M		
1095	1,094.1	59.6		11	19	28							M		
1090															
1085	1,084.1	69.6		8	11	15							M		
1080															
1075															

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/25/10

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PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. B1-A	STATION 76+22	OFFSET 45ft LT	ALIGNMENT -L-
COLLAR ELEV. 1,153.7 ft	TOTAL DEPTH 91.1 ft	NORTHING 726,694	EASTING 1,206,695
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 01/07/10	COMP. DATE 01/11/10	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1075	1,074.1	79.6		8	12	17									
														Match Line	
1070														SAPROLITE	
														Tan sandy silt with trace of mica and interlayers of silty sand. (continued)	
1065	1,064.1	89.6		6	11	20							M		
														1,062.6	91.1
1060														Boring Terminated at Elevation 1,062.6 ft in hard saprolite.	
1055															
1050															
1045															
1040															
1035															
1030															
1025															
1020															
1015															
1010															
1005															
1000															
995															

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/25/10

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. B1-B	STATION 76+08	OFFSET 25ft RT	ALIGNMENT -L-
COLLAR ELEV. 1,153.4 ft	TOTAL DEPTH 90.1 ft	NORTHING 726,691	EASTING 1,206,766
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 01/14/10	COMP. DATE 01/14/10	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
1155													GROUND SURFACE	0.0
													ARTIFICIAL FILL	
													Brown silty sand.	2.6
1150	1,149.8	3.6	1	2	3							M	SAPROLITE	
													Brown sandy silt with trace of mica.	
1145	1,144.8	8.6	2	5	5							M		
1140	1,139.8	13.6	2	3	5							M		
1135	1,134.8	18.6	2	4	6							M		
1130	1,129.8	23.6	3	3	4							M		
1125	1,124.8	28.6	3	5	5							M		
1120														
1115	1,114.8	38.6	2	5	6							M		
1110														
1105	1,104.8	48.6	4	5	13							M		
1100														
1095	1,094.8	58.6	4	10	14							M		
1090														
1085	1,084.8	68.6	5	8	11							M		
1080														
1075													SAPROLITE	76.0
													Brown silty sand with trace of mica.	

NCDOT BORE SINGLE BORELOGS.GPJ NC DOT.GDT 01/25/10

11/16

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. B1-B	STATION 76+08	OFFSET 25ft RT	ALIGNMENT -L-
COLLAR ELEV. 1,153.4 ft	TOTAL DEPTH 90.1 ft	NORTHING 726,691	EASTING 1,206,766
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 01/14/10	COMP. DATE 01/14/10	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
1075	1,074.8	78.6	10	24	36							M	SAPROLITE	
													Brown silty sand with trace of mica.	
													(continued)	
1070														
1065	1,064.8	88.6	15	17	34							M		
													Boring Terminated at Elevation 1,063.3 ft in hard saprolite.	90.1
1060														
1055														
1050														
1045														
1040														
1035														
1030														
1025														
1020														
1015														
1010														
1005														
1000														
995														

NCDOT BORE SINGLE BORELOGS.GPJ NC DOT.GDT 01/25/10

PROJECT NO. 34832.1.1		ID. U-2551		COUNTY Burke		GEOLOGIST Elliott, D. C.										
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40							GROUND WTR (ft)									
BORING NO. B1-C		STATION 76+15		OFFSET CL		ALIGNMENT -L-										
COLLAR ELEV. 1,153.8 ft		TOTAL DEPTH 90.8 ft		NORTHING 726,694		EASTING 1,206,741										
DRILL MACHINE CME-550		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
START DATE 01/12/10		COMP. DATE 01/14/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1155																1,153.8
1150	1,149.5	4.3	WOH	1	1											
1145	1,144.5	9.3	WOH	1	2											1,146.1
1140	1,139.5	14.3		1	4	5										
1135	1,134.5	19.3		2	5	4										
1130	1,129.5	24.3		2	8	5										
1125	1,124.5	29.3		5	5	6										
1120	1,119.5	34.3		2	3	7										
1115	1,114.5	39.3		4	7	7										
1110	1,109.5	44.3		3	5	7										
1105	1,104.5	49.3		3	8	10										
1100																
1095	1,094.5	59.3		4	8	14										
1090																
1085	1,084.5	69.3		7	9	17										
1080																
1075																

PROJECT NO. 34832.1.1		ID. U-2551		COUNTY Burke		GEOLOGIST Elliott, D. C.										
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40							GROUND WTR (ft)									
BORING NO. B1-C		STATION 76+15		OFFSET CL		ALIGNMENT -L-										
COLLAR ELEV. 1,153.8 ft		TOTAL DEPTH 90.8 ft		NORTHING 726,694		EASTING 1,206,741										
DRILL MACHINE CME-550		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
START DATE 01/12/10		COMP. DATE 01/14/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1075	1,074.5	79.3														
1070																
1065	1,064.5	89.3		10	13	22										1,063.0
1060																
1055																
1050																
1045																
1040																
1035																
1030																
1025																
1020																
1015																
1010																
1005																
1000																
995																

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/25/10

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/25/10

PROJECT NO. 34832.1.1		ID. U-2551		COUNTY Burke		GEOLOGIST Elliott, D. C.										
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 77+34		OFFSET 46ft LT		ALIGNMENT -L-										
COLLAR ELEV. 1,175.9 ft		TOTAL DEPTH 95.2 ft		NORTHING 726,805		EASTING 1,206,679										
DRILL MACHINE CME-550		DRILL METHOD H.S. Augers			HAMMER TYPE Automatic											
START DATE 02/23/09		COMP. DATE 02/23/09		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1180																
1175															1,175.9	0.0
1170	1,172.2	3.7	2	5	6										1,171.6	4.3
1165	1,167.2	8.7	WOH	3	5										1,169.2	6.7
1160	1,162.2	13.7	2	4	5											
1155	1,157.2	18.7	2	4	6											
1150	1,152.2	23.7	2	5	6											
1145	1,147.2	28.7	3	5	6											
1140	1,142.2	33.7	3	6	5											
1135	1,137.2	38.7	3	5	7											
1130	1,132.2	43.7	4	7	8											
1125	1,127.2	48.7	5	6	8											
1120	1,122.2	53.7	WOH	4	5											
1115	1,117.2	58.7	3	6	9											
1110	1,112.2	63.7	4	6	7											
1105	1,107.2	68.7	2	5	7											
1100	1,102.2	73.7	5	10	13											

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/25/10

PROJECT NO. 34832.1.1		ID. U-2551		COUNTY Burke		GEOLOGIST Elliott, D. C.										
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 77+34		OFFSET 46ft LT		ALIGNMENT -L-										
COLLAR ELEV. 1,175.9 ft		TOTAL DEPTH 95.2 ft		NORTHING 726,805		EASTING 1,206,679										
DRILL MACHINE CME-550		DRILL METHOD H.S. Augers			HAMMER TYPE Automatic											
START DATE 02/23/09		COMP. DATE 02/23/09		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1100																
1095	1,097.2	78.7	8	10	13											
1090	1,092.2	83.7	8	14	18											
1085	1,087.2	88.7	2	6	9											
1080	1,082.2	93.7	2	6	9											
															1,080.7	95.2
															Boring Terminated at Elevation 1,080.7 ft in stiff saprolite.	
1075																
1070																
1065																
1060																
1055																
1050																
1045																
1040																
1035																
1030																
1025																
1020																

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/25/10

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB2-B	STATION 77+15	OFFSET 33ft RT	ALIGNMENT -L-
COLLAR ELEV. 1,167.1 ft	TOTAL DEPTH 110.1 ft	NORTHING 726,797	EASTING 1,206,759
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 12/28/09	COMP. DATE 12/29/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1170																
1165																
	1,163.5	3.6	1	3	3											
1160																
	1,158.5	8.6	1	4	4											
1155																
	1,153.5	13.6	2	4	5											
1150																
	1,148.5	18.6	3	5	5											
1145																
	1,143.5	23.6	3	4	5											
1140																
	1,138.5	28.6	3	4	7											
1135																
	1,128.5	38.6	3	4	7											
1125																
	1,118.5	48.6	3	5	7											
1115																
	1,108.5	58.6	3	6	8											
1110																
	1,098.5	68.6	5	8	14											
1095																
1090																

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB2-B	STATION 77+15	OFFSET 33ft RT	ALIGNMENT -L-
COLLAR ELEV. 1,167.1 ft	TOTAL DEPTH 110.1 ft	NORTHING 726,797	EASTING 1,206,759
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 12/28/09	COMP. DATE 12/29/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1090																
1085																
	1,088.5	78.6	5	12	15											
1080																
	1,078.5	88.6	9	14	17											
1075																
	1,068.5	98.6	10	14	22											
1070																
	1,058.5	108.6	4	15	30											
1065																
1060																
1055																
1050																
1045																
1040																
1035																
1030																
1025																
1020																
1015																
1010																

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/25/10

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 01/25/10

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB2-C	STATION 77+25	OFFSET CL	ALIGNMENT -L-
COLLAR ELEV. 1,175.6 ft	TOTAL DEPTH 130.7 ft	NORTHING 726,803	EASTING 1,206,725
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 12/11/09	COMP. DATE 12/14/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1180															
1175														GROUND SURFACE ROADWAY EMBANKMENT Red-brown silty clay.	0.0
1170	1,171.4	4.2	1	3	4								M		
1165	1,166.4	9.2	1	3	6								M	SAPROLITE Tan sandy silt with trace of mica.	6.4
1160	1,161.4	14.2	2	4	5								M		
1155	1,156.4	19.2	3	3	5								M		
1150	1,151.4	24.2	3	4	6								M		
1145	1,146.4	29.2	3	4	7								M		
1140	1,141.4	34.2	2	4	4								M		
1135	1,136.4	39.2	4	5	7								M		
1130	1,131.4	44.2	1	4	5								M		
1125	1,126.4	49.2	3	4	7								M		
1120															
1115	1,116.4	59.2	4	8	17								M		
1110															
1105	1,106.4	69.2	8	12	16								M		
1100															

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/26/10

15/16

PROJECT NO. 34832.1.1	ID. U-2551	COUNTY Burke	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 134 on SR-1922 over I-40			GROUND WTR (ft)
BORING NO. EB2-C	STATION 77+25	OFFSET CL	ALIGNMENT -L-
COLLAR ELEV. 1,175.6 ft	TOTAL DEPTH 130.7 ft	NORTHING 726,803	EASTING 1,206,725
DRILL MACHINE CME-550	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 12/11/09	COMP. DATE 12/14/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1100															
1095	1,096.4	79.2	7	8	12								M		
1090															
1085	1,086.4	89.2	11	13	18								M		
1080															
1075	1,076.4	99.2	8	14	17								M		
1070	1,071.4	104.2	6	13	15								M		
1065	1,066.4	109.2	8	17	27								M		
1060	1,061.4	114.2	10	12	15								M		
1055	1,056.4	119.2	10	18	23								M		
1050	1,051.4	124.2	7	15	17								M		
1045	1,046.4	129.2	15	25	35								M		
1040															
1035															
1030															
1025															
1020															

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT_01/26/10

Match Line

SAPROLITE
Tan sandy silt with trace of mica. (continued)

Boring Terminated at Elevation 1,044.9 ft in hard saprolite.

JCS
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-MATERIALS AND TESTS UNIT
SOILS TEST REPORT-SOILS LABORATORY

T.I.P. ID #: N/A

REPORT ON SAMPLES OF: Soils for Quality

PROJECT:	U-2551	COUNTY:	Burke	Owner:	NCDOT
DATE SAMPLED:	2.09	DATE RECEIVED:	2.27.09	DATE REPORTED:	3.5.09
SAMPLED FROM:	Roadway	SAMPLED BY:	P. Q. Lockamy		
SUBMITTED BY:	W. D. Frye	2002	STANDARD SPECIFICATION		
LABORATORY:	Asheville				

TEST RESULTS

Project Sample No.	S-1	SS-1	S-2	SS-2	S-3	SS-3	S-4	SS-4
Lab Sample No. A	159940	159941	159942	159943	159944	159945	159946	159947
HiCAMS Sample #	--	--	--	--	--	--	--	--
Retained #4 Sieve %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passing #10 Sieve %	99	100	100	100	100	100	100	99
Passing #40 Sieve %	89	98	92	86	87	91	94	81
Passing #200 Sieve %	73	85	73	45	37	52	83	45

MINUS #10 FRACTION

Soil Mortar - 100%								
Coarse Sand -Ret. #60	16	5	15	28	28	18	10	30
Fine Sand - Ret. #270	11	15	14	35	41	40	8	32
Silt 0.05-0.005 mm %	13	32	21	29	27	34	14	30
Clay < 0.005 mm %	60	48	50	8	4	8	68	8
Passing # 40 Sieve %	--	--	--	--	--	--	--	--
Passing # 200 Sieve %	--	--	--	--	--	--	--	--

Liquid Limit	57	60	58	34	38	34	57	38
Plastic Index	25	24	25	NP	NP	NP	28*	NP
AASHTO Classification	A-7-5 (17)	A-7-5 (18)	A-7-5 (17)	A-4 (2)	A-4 (0)	A-4 (3)	A-7-6 (19)	A-4 (2)
Quantity								
Texture								
Station	29+00	77+34	52+00	77+35	52+00	77+35	21+12	77+35
Hole No.								
Depth (ft) From:	1.8	4.3	1.0	8.7	9.5	18.7	0.0	38.7
To:	3.5	5.2	4.0	10.2	10.5	20.2	4.5	40.2
	OK	OK	OK	OK	OK	OK	See Remarks	OK

Remarks:

A-159940 – 159947; * Acceptable, but not to be used in top 2 feet of embankment or backfill.

CC:

P. Q. Lockamy	
File	

SOILS ENGINEER: