4B(EREFERENC **CONTENTS**

DESCRIPTION

TITLE SHEET

BORE LOGS SITE PHOTOGRAPHS

CROSS SECTIONS

LEGEND SITE PLAN

SHEET NO.

4-6

7-13

4820 3

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY _GUILFORD

PROJECT DESCRIPTION GREENSBORO WESTERN LOOP (I-73 CONNECTOR) FROM I-73/I-840 TO SR 2085 (BRYAN BOULEVARD) INTERCHANGE

SITE DESCRIPTION BRIDGE NO. 743 OVER SR 2085 (BRYAN BOULEVARD) ON SR 2140 (INMAN ROAD)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524BC	1	14

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSES OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARBIOLS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR MSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1991 707-6550. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

CENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A CEOTECHNICAL 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 STIU 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 NDICATED 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 HINSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:

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

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

B. WORLEY, PG B. SMITH, PG J. ELLIOTT, PE J. BARE T. BRIGMAN INVESTIGATED BY _B. WORLEY, PG

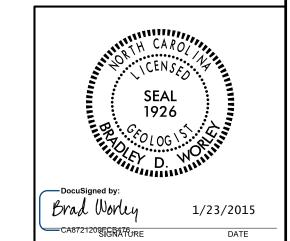
PERSONNEL

CHECKED BY _D. DEWEY, PE

Summit Design and SUBMITTED BY Engineering Services, PLLC

DRAWN BY ____B. WORLEY & M. BRANDON

DATE __JANUARY, 2015



PROJECT REFERENCE NO. SHEET NO.

U-2524BC 2

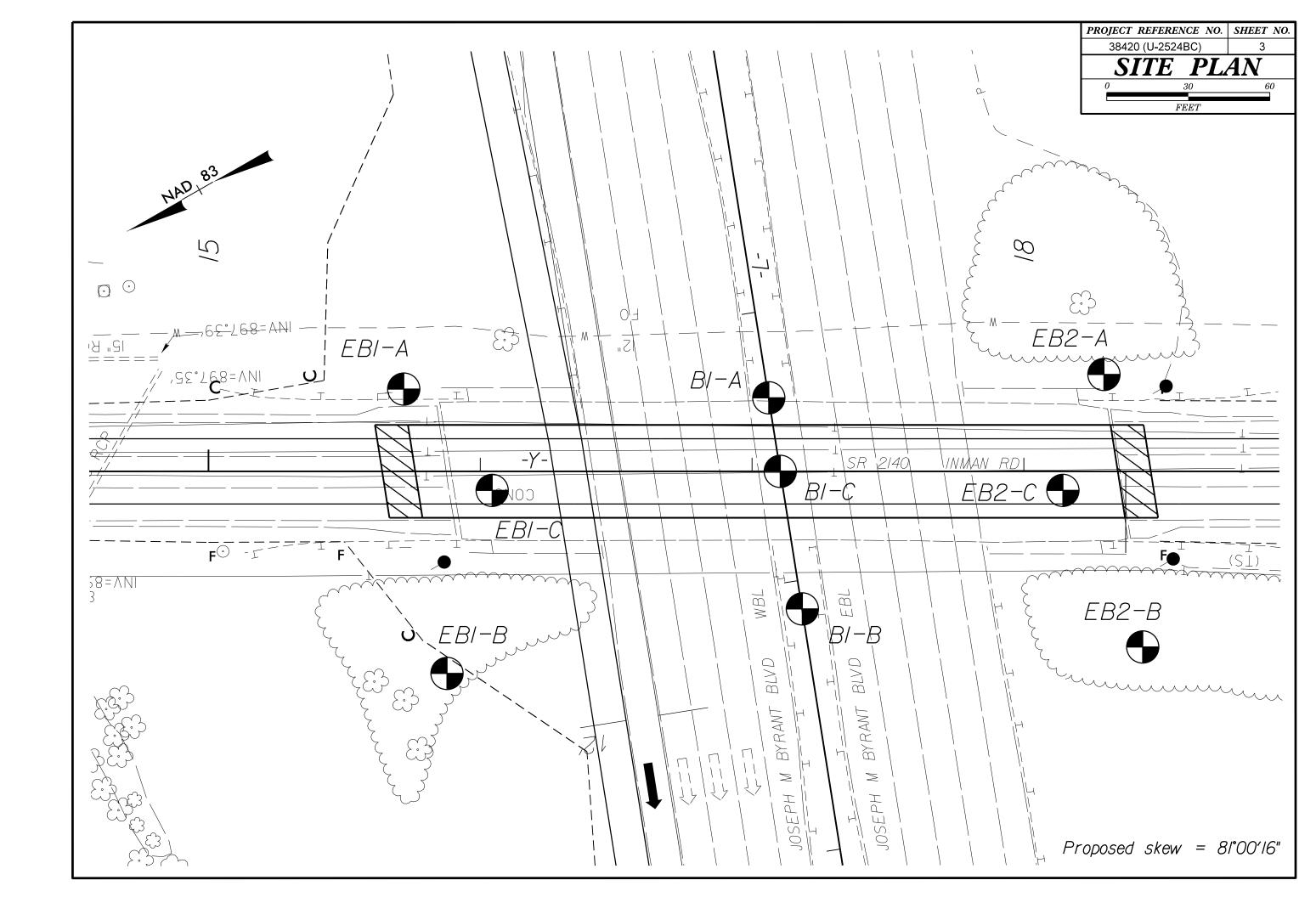
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

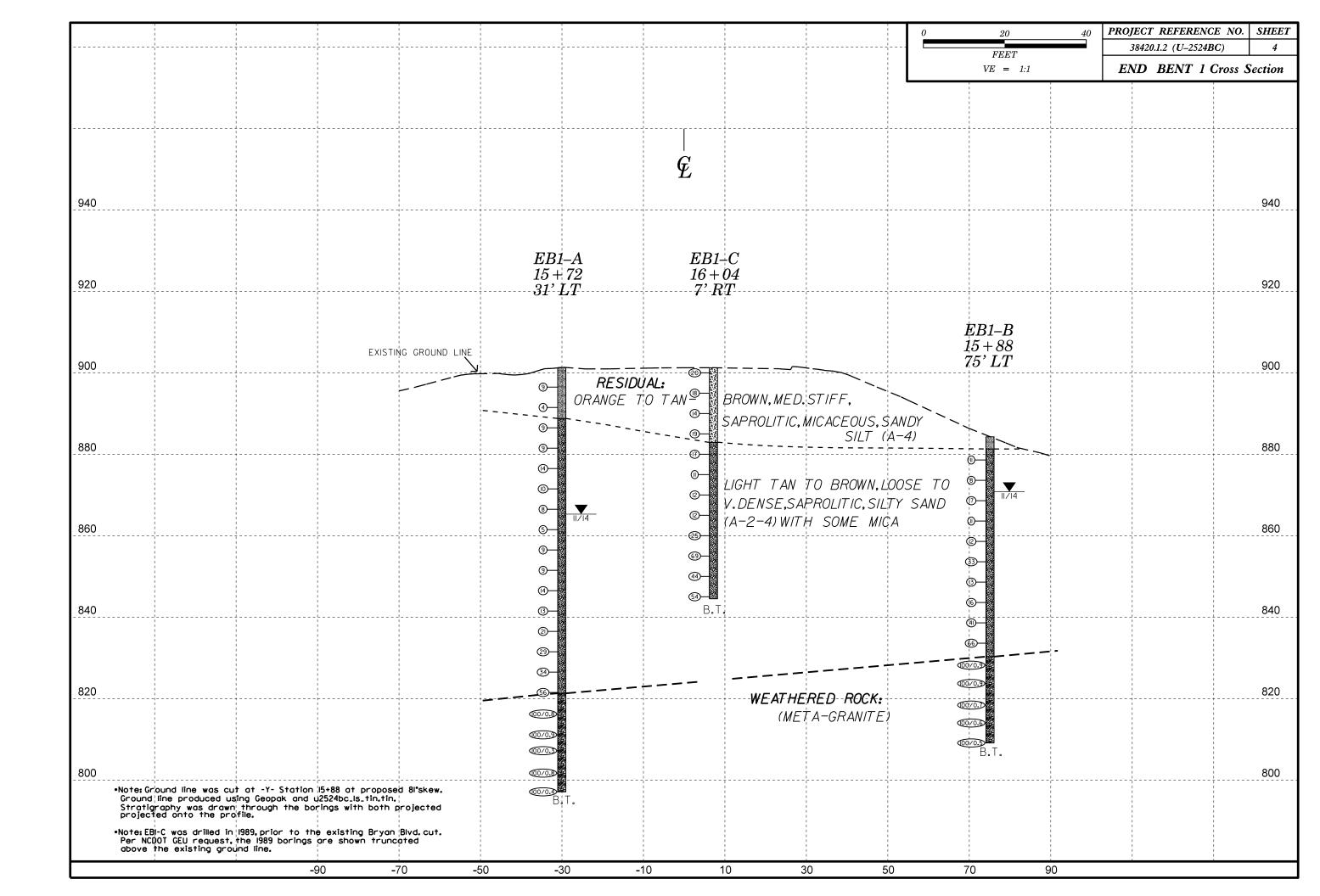
GEOTECHNICAL ENGINEERING UNIT

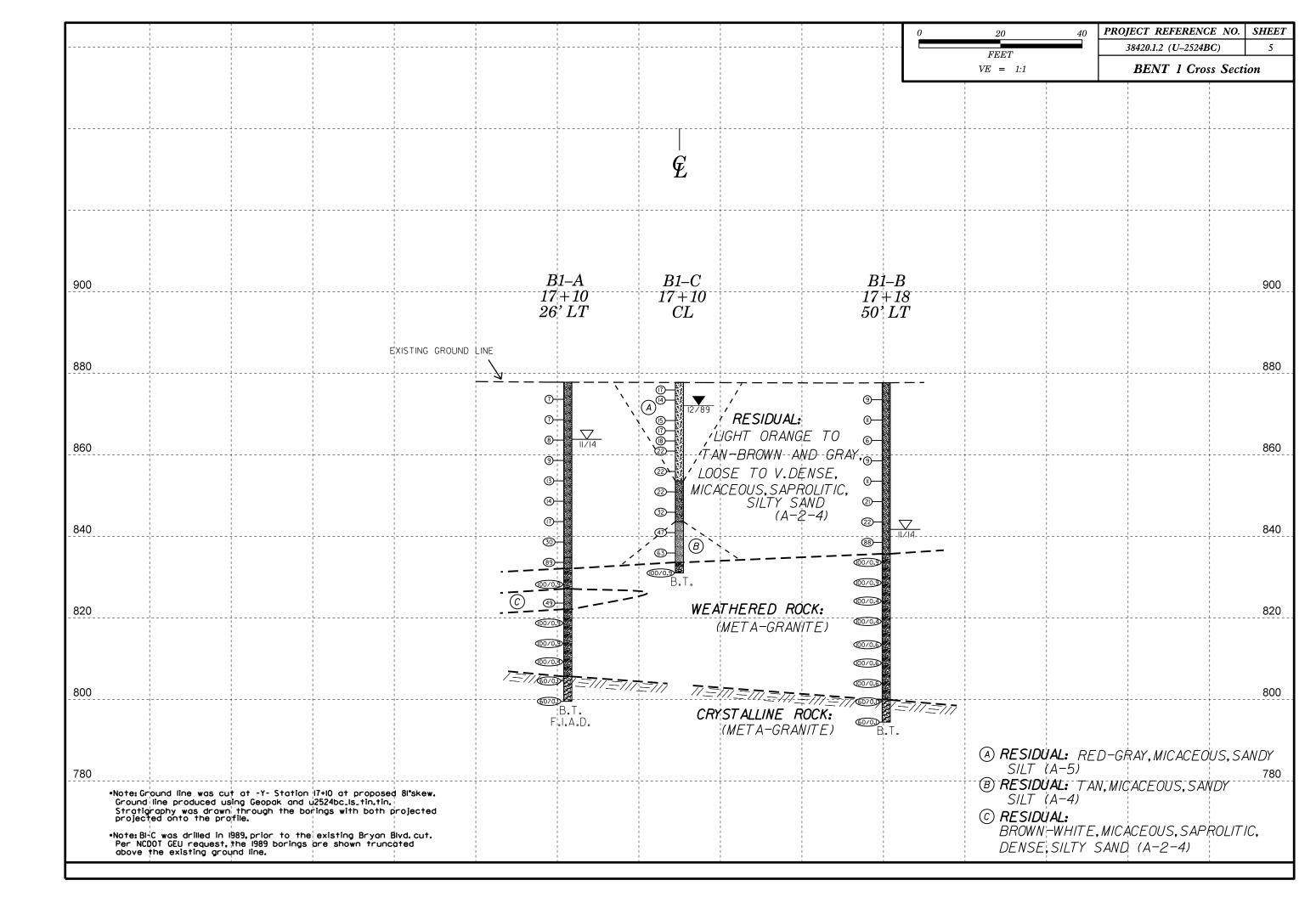
SUBSURFACE INVESTIGATION

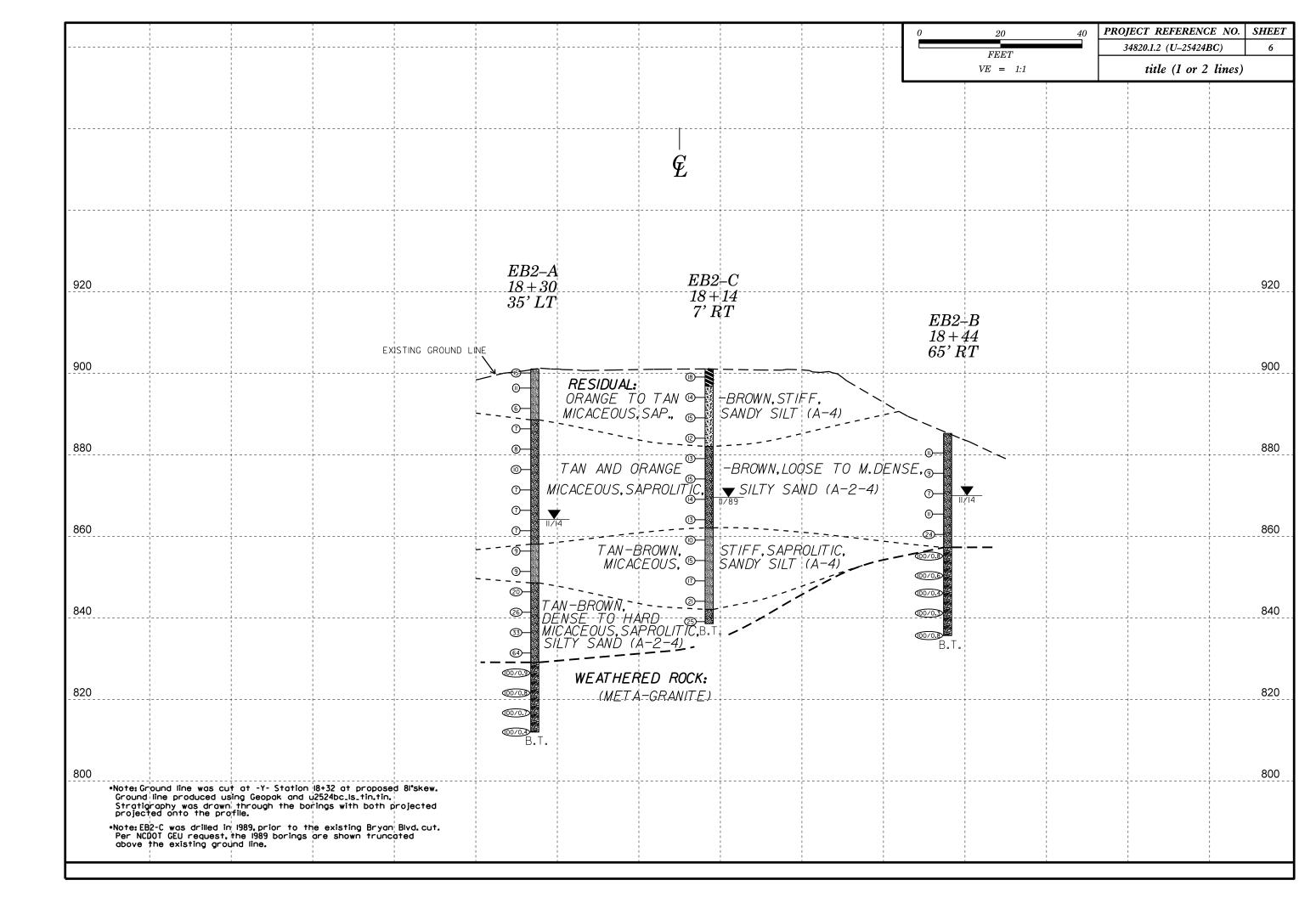
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED 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 DISBG). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES TAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES. ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	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 Ø.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES >	ALLUYIUM (ALLUY.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. ADUIFER - 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.
SOIL LEGEND AND AASHTO CLASSIFICATION	MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	ROCK (WR) 1000 BLOWS PER FOOT IF TESTED. CRYSTALLINE ROCK (CR) FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, CONSISTS CAMPAGE COLUMN TO THE PROPERTY OF THE PROPERTY	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.
GROUP 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 CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-3 A-6, A-7 A-3 A-6, A-7 A-1, A-2 A-4, A-5 A-6, A-7 A-1, A-1, A-2 A-4, A-5 A-6, A-7 A-1, A-1, A-2 A-4, A-5 A-6, A-7 A-1, A-1, A-1, A-1, A-1, A-1, A-1, A-1,	ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE. COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LL < 31	ONEISS, GABBRO, SCHIST, ETC. NON-CRYSTALLINE ROCK (NCR) GNEISS, GABBRO, SCHIST, ETC. FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	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.
SYMBOL 8383888888	MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50 PERCENTAGE OF MATERIAL	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	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
*48 38 MX 58 MX 51 MN ** 18 MX 25 MX 18 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN S0ILS SOILS SOILS PEAT PEAT	ORGANIC MATERIAL GRANULAR SILT - CLAY SOILS SOILS SOILS TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	WEATHERING FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.	ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
PASSING *40	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.	<u>DIP DIRECTION (DIP AZIMUTH)</u> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH,
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF ORGANIC SOILS USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER OF MAJOR GRAVEL, AND CANE ORDER OF ORDER OF ORGANIC SOILS	GROUND WATER WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO (SLI.) I INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	<u>FAULT</u> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <u>FISSILE</u> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SAND GRAVEL AND SAND SOILS SOILS GEN. RATING AS SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR POOR UNSUITABLE	▼ STATIC WATER LEVEL AFTER 24 HOURS ▼PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	MODERATE MOD.) MODERATE MOD.) MODER HAMMER BLOWS AND SHOWN SIGNIFICANT LOSS OF STRENGTH AS COMPARED	F <u>LOAT</u> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIG _I NAL POSITION AND DISLODGED FROM PARENT MATERIAL. F <u>LOOD PLAIN (FP)</u> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30 CONSISTENCY OR DENSENESS	SPRING OR SEEP MISCELLANEOUS SYMBOLS	WITH FRESH ROCK. MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH	$\underline{\text{FORMATION (FM.)}}$ - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)	ROADWAY EMBANKMENT (RE) 25/825 DIP & DIP DIRECTION OF ROCK STRUCTURES	(MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. IF TESTED, WOULD YIELD SPT REFUSAL SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT	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.
GENERALLY VERY LOOSE	SOIL SYMBOL SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST TEST AUGER BORING CONE PENETROMETER TEST	(SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTRENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	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.
(NON-COHESIVE) VERY DENSE > 50 VERY SOFT < 2	THAN ROADWAY EMBANKMENT TEST	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK (V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTICES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES \(\circ\) 100 BPF	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.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	INFERRED ROCK LINE MONITORING WELL TEST BORING WITH CORE PIEZOMETER INSTALLATION SPT N-VALUE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS ALSO AN EXAMPLE.	ROCK GUALITY 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.
HARD 30 > 4 TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	ROCK HARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270 OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053 COARSE FINE	UNDERCUT UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE UNCLASSIFIED EXCAVATION - ACCEPTABLE OF BADABLE ROCK UNDERCUT	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	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.
BOULDER COBBLE GRAVEL SAND SAND SILT CLAY (CDL.) (CDL.) (CDL.) (CSE. SD.) (F SD.) (SL.) (CL.)	UNDERCUT ACCEPTABLE DEGRADABLE ROCK ABBREVIATIONS	MODERATELY 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	${ m SLICKENSIDE}$ - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3 SOIL MOISTURE - CORRELATION OF TERMS	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY 7 - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7 - DRY UNIT WEIGHT	BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE)(SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE GUIDE FOR FIELD MOISTURE DESCRIPTION (ATTERBERG LIMITS) DESCRIPTION	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.	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
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY (SAT.) FROM BELOW THE GROUND WATER TABLE PLASTIC - USUALLY LIQUID; VERY WET, USUALLY (SAT.) FROM BELOW THE GROUND WATER TABLE	e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON F - FINE SL SILT, SILTY ST - SHELBY TUBE FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRACL - FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.	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 (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
RANGE - WET - (W) SEMISOLID, REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE	FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING HI HIGHLY V - VERY RATIO	FRACTURE SPACING BEDDING	BENCH MARK: See NOTE
OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE SL	EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	ELEVATION: FEET
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	CME-45C □ CLAY BITS □ AUTOMATIC X MANUAL G* CONTINUOUS FLIGHT AUGER CORE SIZE: X 6* HOLLOW AUGERS □ -B	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET INDURATION	Boring collar elevations obtained using TIN file. (u2524bc_ls_tin.tin)
PLASTICITY PLASTICITY INDEX (PI) DRY STRENGTH	X 6' HOLLOW AUGERS	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	F.I.A.D. = Filled In After Drilling
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM	VANE SHEAR TEST TUNGCARBIDE INSERTS CASING W/ ADVANCER POST HOLE DIGGER	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDUBATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	Borings EBI-C,BI-C, and EB2-C are from the original1989 Inman Rd.Bridge Inventory,completed by the NCDOT GEU
HIGHLY PLASTIC 26 OR MORE HIGH COLOR	PORTABLE HOIST TRICONE STEEL TEETH HAND AUGER TRICONE TRICONE TRICONE SOUNDING ROD	MODERATELY INDURATED WHO HIT WITH SHEEL FROM: WHEN HIT WITH HAMMER. ORAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.	Raleigh GeotechnicalField Office.Boring names were changed to reflect current proposed bent designations.
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.	CORE BIT VANE SHEAR TEST	EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14





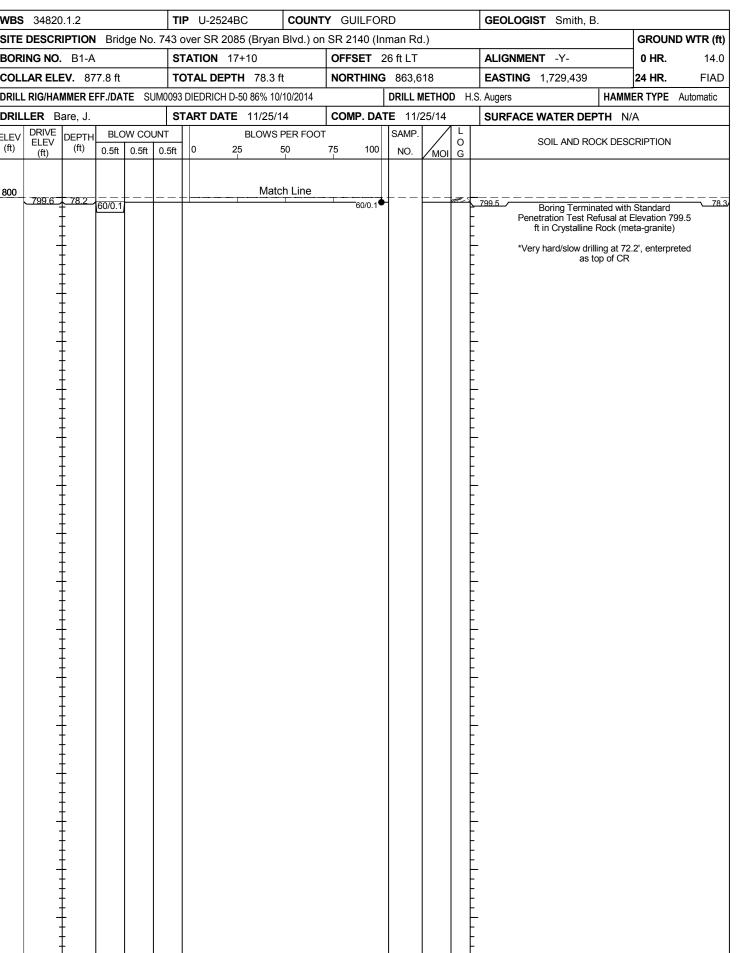




WB	3482					REI P U-252			NTY GUIL	FORE)		GEO	LOGIST Worley, B.				WB	S 3482	0.1.2			TII	P U-2524BC	COUNT	Y GUILFO	RD		GEOLO	OGIST Worley,	 В.	
-			l Bric	lge N					on SR 214)		,,		GROUND V	NTR (ft)	l			N Brid	dge No		over SR 2085 (Br				Rd.)				JND WTR (ft)
		0 . EB1-				TATION			OFFSE				ALIG	NMENT -Y-		0 HR.	36.5	l	RING NO					TATION 15+72	,	OFFSET			ALIGNI	MENT -Y-	0 HR.	
COL	LAR EL	LEV . 90)1.3 ft		т	OTAL DEP	PTH 104	.2 ft	NORTI	HING	863,73	3	EAS	TING 1,729,508	2	4 HR.	36.0	COL	LAR EL	.EV . 9	01.3 ft		тс	OTAL DEPTH 10	4.2 ft	NORTHIN	G 863,	,733	EASTIN	IG 1,729,508	24 HR.	
DRIL	L RIG/H	AMMER E	FF./DA	TE S	UM0093	DIEDRICH	D-50 86%	10/10/2014			ORILL ME	THOD	H.S. Auger	s I	HAMMER	R TYPE Au	tomatic	DRIL	L RIG/HA	MMER	EFF./DA	ATE S	UM0093	DIEDRICH D-50 86%	10/10/2014	1	DRILL	. METHC	D H.S. Augers		HAMMER TYPE	E Automatic
DRI	LER	Bare, J.			S	TART DAT	E 11/19)/14	СОМР	. DATE	= 11/19	9/14	SUR	FACE WATER DEPT	H N/A			DRI	LLER E	Bare, J.	-		ST	TART DATE 11/	9/14	COMP. DA	TE 11	1/19/14	SURFA	CE WATER DE	PTH N/A	
ELE\	DRIVE	DEPTH	-		TNUC			S PER FO			SAMP.	V L	5	SOIL AND ROCK	K DESCR	RIPTION		ELE\	DRIVE	DEPTI	H BLO	ow co		BLO	VS PER FOOT		SAMP	P. /	16	SOIL AND RO	OCK DESCRIPTION	N
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 	100	NO.		ELEV. (ft)	T D L O O I I		DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25	50	75 100	NO.	МО		001271110711	OK BEGORII TIO	
905		+											-					825	 	 		<u> </u>			latch Line		∤		<u> </u>	Light tan to brow	n, saprolitic, silty S	
		‡											F		0110540				822.5	78.8	10	23									ne mica. (continue	ed)
900						 . j					_		901.3	GROUND :	DUAL		0.0	820		Ŧ	19	23	33		56		<u> </u>	D	821.3		ERED ROCK	80.0
		Ī.,											E	Orange-brown, micae (A-	aceous, f. -4).	sandy SILT				Ξ										(me	a-granite)	
		3.8	2	4	5	. 						D	E							83.8	27	55	45/0.3				<u>.</u>	D				
895	1	+				- <i>j</i>							F					815	-	†						100/0.0						
	892.5	8.8	2	2	2	1::::						D	}						812.5	88.8	27	41	59/0.4					D				
890		‡				Q 4												810		‡						100/0.9	•					
	887.5	13.8				:\::::				D				Light tan to brown, s	saprolitic,	silty SAND	12.5		807.5	93.8							$\parallel \parallel$	D				
885		‡	2	4	5	. •9				D D				(A-2-4) with	some mi	ica.		805		‡	100/0.3	3				. 100/0.3	!					
		Ŧ																		Ŧ]					
		18.8	1	3	6							D								98.8	52	48/0.3	3			. 100/0.8	.	D				
880	-	\pm																800	-	Ŧ							{					
	877.5	23.8	2	5	9	: :/: :						_							797.5	103.8	100/0.4				I	.	Ĺ	D	797.1			104.2
875		Ī	-			•14						D								Ī	100/0.	7				100/0.4			1 E	Boring Terminate Weathered F	l at Elevation 797. lock (meta-granite	1 ft in)
	972.5	28.8																		<u> </u>												
070		7 20.0	2	4	6	. • 10 :						D								‡												
870	1	‡				 	1													‡									-			
	867.5	33.8	2	3	5	· · · ·														‡												
865	-	‡				- , - ·			-		-									‡												
	862.5	38.8				; ; ; ;														‡												
860		†	2	2	3	∮ 5						М								Ŧ												
5		Ī.,,				1													,	Ŧ									l E			
/6/		43.8	2	3	6	9.						М								1												
855	-	+																		‡									-			
	852.5	48.8	2	3	6					: :		М								‡												
ව <u>් 850</u>		‡				. 👎						101	::- ::-							‡												
J.GP.	847.5	53.8				/				: :										‡									-			
845		‡	3	6	8	•14						М								‡												
0743		Ť																	,	Ŧ												
BKDC		58.8	4	5	8	• · · • · · · · · · · · · · · · · · · ·						М								Ŧ									F			
의 <u>840</u>	-	\pm				· · · / ·														Ŧ									<u> </u>			
) 	837.5	63.8	4	9	12	/														Ī												
835		<u></u>			'-		21	-				М								<u> </u>									<u> </u>			
BLE		68.8					\ : : :													‡												
000		+ 00.0	11	13	16		Q 29					D								‡												
830	1	†					1													‡									-			
	827.5	73.8	9	14	20		./					D								‡												
825		+	1				. •34	.					:: <u>}</u>							+		1							1 -			

WBS 34820.1.2	TIP U-2524BC COUN	TY GUILFORD	GE	OLOGIST Pilipchuk,	J.L.	V	VBS 34820.1	.2	Т	TIP U-2524BC CO	OUNTY GUILFO	RD		GEOLOGIST Worley, B		
SITE DESCRIPTION Bridge No.	. 743 over SR 2085 (Bryan Blvd.) o	n SR 2140 (Inman Ro	d.)		GROUND W	TR (ft)	SITE DESCRIP	TION Brid	dge No. 743	over SR 2085 (Bryan Blv	/d.) on SR 2140 (I	nman Rd.)			GROU	ND WTR (
BORING NO. EB1-C	STATION 16+04	OFFSET 7 ft RT	AL	IGNMENT -Y-	0 HR.	36.0 E	BORING NO.	EB1-B	S	STATION 15+88	OFFSET	75 ft RT		ALIGNMENT -Y-	0 HR.	18
COLLAR ELEV. 904.9 ft	TOTAL DEPTH 60.4 ft	NORTHING 863,5		STING 1,729,335	24 HR.		COLLAR ELEV	. 884.3 ft	: Т	OTAL DEPTH 75.2 ft	NORTHIN	G 863,771		EASTING 1,729,409	24 HR.	13
DRILL RIG/HAMMER EFF./DATE CM	/IE 45B	DRILL I	METHOD H.S. Aug	jers	HAMMER TYPE Man	ual [ORILL RIG/HAM	ER EFF./DA	ATE SUM009	3 DIEDRICH D-50 86% 10/10/2		DRILL MET		S. Augers	HAMMER TYPE	Automatio
DRILLER Conley, H. R.	START DATE 11/30/89	COMP. DATE 12/		RFACE WATER DEPT	TH N/A		DRILLER Bar	<u> </u>	S	START DATE 11/20/14	COMP. DA	TE 11/20/	4	SURFACE WATER DEPT	H N/A	
ELEV (ft) DEPTH BLOW COL	UNT BLOWS PER FOO 25 50	75 100 NO.	MOI G ELEV		CK DESCRIPTION D		LEV DRIVE ELEV (ft) (ft)	(ft) 0.5ft	OW COUNT 0.5ft 0.5ft	BLOWS PER 0 25 50	75 100	SAMP. NO.	L O O O O O O O O O	SOIL AND ROC	K DESCRIPTION	I
905 904.9 0.0 1 3			904.9		SURFACE	0.0	885							-884.3 GROUND	SURFACE	
904.9 1 0.0 1 1 3	° . •		M 902.2	Red micaceous silty	IDUAL y sandy CLAY (A-7-6).	2.7								RESI Orange-brown, s	DUAL sandy SILT (A-4)	
900 901.0 3.9 5 9	11			Red, white, and brov	wn, micaceous, sandy (A-5).		880 70 0							881.3 Light tan to brown,		
+ " "	20		M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	OIL1	(110).		879.6	4.7	4 7	I I • 11 I I					some mica.	
896.0 1 8.9							‡			: [: : : : :						
895 5 7	11 18		M			8	875 874.6	9.7	1 2 5					-		
							1 ‡	2	3 5	. \P^8 .						
891.0 13.9 4 6	8 1		M 12.5				870									
T	14						869.6	4	6 11	1 •1/] [•		
886.0 18.9																
885 5 8	11 19 19		M N			3 8	864.6	19.7	5 6	 				-		
			882.9		micaceous saprolitic	22.0				11 . 11						
80 881.0 23.9 5 7	10		M	silty SAN	, micaceous, saprolitic, ND (A-2-4).		860 859.6									
\neg \top \mid \mid \mid	7''						859.6 —	24.7	5 7	I			ı			
876.0 1 28.9																
75 3 5	6 11		w			8	854.6	9.7	12 21					-		
			00000					'		33						
70 871.0 7 33.9 3 6	6		l w				850			::::/:::: :						
T 1 1 1	12-		VV				849.6	34.7	4 9	13			ı 🔛	•		
866.0 38.9																
55 3 5	7 12-		w			8	845 844.6			<u> </u>				-		
			6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 %				‡	3	5 11	16			1			
60 861.0 43.9 5 10	15		W				840									
<u> </u>	25		VV				839.6	10	17 24	1			ı 🔛	-		
856.0 48.9							‡									
55 14 23	46	●69	w			8	835 834.6	19.7		.				-		
			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				‡	13	28 38) 66		1			
50 851.0 53.9 17 21	23		W				830				:::::\ <u>``\\</u>			830.3		
─ │	1		V V				829.6	24	38 62/0.4					WEATHER (meta-	RED ROCK granite)	
846.0 58.9			6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 %				‡				100/0.9	[,	- ,	
45 18 19	35 • • • • • • • • • • • • • • • • • • •		W 844.5			60.4	825 824.6	59.7	70/0 4					-		
				Boring Terminated a micaceous Silt	at Elevation 844.5 ft in ty SAND (A-2-4)		‡	30	70/0.4		100/0.9					
					during original (1989)		820									
				investigation for exis	isting Inman Rd. over Boring originally called		819.6	23	47 53/0.2					-		
			‡	"EB2-CR" because	e of different design.		‡				· · · · · 100/0.7 ⁴	[
						8	815 814.6	69.7	1.5%					-		
			‡				‡	85	15/0.1		100/0.6	•				
			‡				810									
							809.6	74.7 100/0.	5		100/0.5	니		809.1 Boring Terminated a	t Flevation 900 4	ft in
			‡				‡]		.55.5.6			Weathered Roc	k (meta-granite)	1.111
+			1 -				+						1 -			

WR	3482						REP U-2524E			COUNT	Υ (31	JII FOF	 RD			GEOLOGIST Smith, B.		
			l Bric	lae Na			r SR 208							1)		JESESSIOI OIIIIII, D.	GROUND W	/TR (ff)
	ING NO			ige Ne			FION 17		and	174.) 011			26 ft LT	••)		ALIGNMENT -Y-	0 HR.	14.0
	LAR EL						AL DEPT		2 ft				863,6	10		EASTING 1,729,439	24 HR.	FIAD
							DRICH D-			1/2014	NON	THING			n ⊔		MMER TYPE Aut	
			.FF./DA	IL 3			RT DATE				COM	ID DA	TE 11/		υ п.	T -		omatic
	LER E	T .	. DIC	OW CO		IAR	TIDATE			R FOOT		IP. DA	SAMP.	25/14	1 L T	SURFACE WATER DEPTH	N/A	
ELEV (ft)	ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft	-		2	5 5	50 50		75	100	NO.	MOI	0	SOIL AND ROCK D		SEPTU (#)
	(11)		5.5.1	0.0.0	0.0.0	H							110.	/ WOI	G	ELEV. (ft)	L	DEPTH (ft)
000																		
880		‡														<u>-</u> -		
		╆──				H	.l				Τ.					_ 877.8 GROUND SU - RESIDU		0.0
875	874.6	<u> </u>					.									 Light orange-brown, micaceous, saprolitic, si 	brown, white,	
	8/4.6	7 3.2	3	3	4	İГ								М		- micaceous, saprointe, si	ity OAIND (A-2-4).	
		Ŧ														- -		
870	869.6	8.2				┞					-				<u> </u>	- -		
		‡	3	3	4		7							M		- -		
865		‡					1	: : :								- -		
500	864.6	13.2	2	3	5			<u> </u>			+-			M		<u>-</u> -		
		‡					· T° · ·		: :							- -		
860	859.6-	+ + 18.2					<u>: i: : : : : : : : : : : : : : : : : : </u>									- -		
	055.0	10.2	2	4	5		. .		· ·		- :			w	_	- -		
		<u>†</u>					$\cdot i \cdot \cdot $.					-		
855	854.6	23.2	2	4	9	∤⊢					+-					- -		
		Ŧ		7	"		● 13							Sat.	_	- -		
850		Ŧ														- -		
000	849.6	+ 28.2 +	3	5	9	╁	1 14							Sat.		- -		
		‡							: :							- -		
845	844.6	+ 33.2					I . 		• •							• -		
		‡	3	6	11				: :		: :			Sat.		<u>-</u> -		
040		‡					· · · · · · · · · · · · · · · · · · ·									- -		
840	839.6	38.2	6	12	18	╟		\			+-			Sat.		- -		
		‡						30	: : <u> </u>					Out.		<u>-</u> -		
835	8346-	43.2								````						- 834.8		43.0
	0.0-4.0	1 70.2	16	37	52				· ·			9 89		Sat.	_	Brown, orange-brown, and saprolitic, silty SA	d white, micaceous ND (A-2-4).	
		İ							: :			. i			77	WEATHERED	ROCK	45.7
830	829.6	48.2	22	42	58/0.4	∤├					-					(meta-grai	nite)	
		 		'-	00/0.1				· ·]			100/0.9				827.1		50.7
825		Ŧ														RESIDUA brown and white, micace		
-	824.6	+ 53.2 +	13	17	32					19	-			Sat.		SAND (A-2	2-4).	
		Ŧ						: : :	: :		+-					822.1 WEATHERED	ROCK	55.7
820	819.6	† 58.2	L.	00/0							+:-					(meta-grai		
		‡	32	68/0.4				: : :			:	100/0.9				- -		
815		‡										: : :				- -		
010	814.6	63.2	31	69/0.4				<u> </u>			+-	100/00				<u>-</u> -		
		‡							: :			100/0.9				- -		
810	800 6 -	68.2							· ·							- -		
	008.0	1 30.2	100/0.4	1					: :			100/0.4	1			- -		
		İ							: :			: : :				- - 805.6		72.2
805	804.6	73.2	60/0.1					<u> </u>			+-	. 60/0.1	.[- CRYSTALLIN		12.2
		Ŧ	00/0.1					: : :								- (meta-grai -	iile)	
		İ						: : :	: :			: : :	1			- -		



WBS	34820).1.2			Т	ΊP	U-2524BC COUNT	Y GUI	LFOF	RD			GEOLOGIST Pilipchuk, J.L.	
SITE	DESCR	IPTION	Brid	ge No	. 743	ove	ver SR 2085 (Bryan Blvd.) or	SR 214	10 (In	ıman Ro	d.)			GROUND WTR (ft)
BOR	ING NO.	. B1-C			s	STA	ATION 17+10	OFFS	ET (CL			ALIGNMENT -Y-	0 HR. 36.0
COL	LAR ELE	EV . 90	5.6 ft		Т	ОТ	TAL DEPTH 74.6 ft	NORT	HING	863,6	828		EASTING 1,729,413	24 HR. 33.5
DRIL	L RIG/HAI	MMER E	FF./DA	TE CI	ME 45E	3				DRILL I	METHO	D H.	S. Augers HAMM	ER TYPE Manual
DRIL	LER C	onley, I	H. R.		s	STA	ART DATE 11/30/89	COMP	. DA	TE 11/	30/89		SURFACE WATER DEPTH N/	A
LEV	DRIVE	DEPTH	BLC	W CO	JNT		BLOWS PER FOO	Γ		SAMP.	V /	1 L	COIL AND DOCK DECK	PRINTION
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	7	0 25 50	75	100	NO.	MO	O G	SOIL AND ROCK DESC ELEV. (ft)	DEPTH (ft)
910														
	-	Ŧ											- ·	
	-	‡												
905	905.6 -	0.0	3	3	5	+					М		- 905.6 GROUND SURFA - RESIDUAL	ACE 0.0
	-	‡						.	: :		'''		Red-brown, highly plastic, mid CLAY (A-7-6).	caceous, sandy
	901.9	3.7	6	11	14	+		: : :	: :		М		- -	
900	-	ł				1	725	+			'*'		- - 898.6	7.0
	896.9	8.7					: : : ;		: :				 Red, tan, gray, and white, min 	
895	696.9 -	- 0./	7	8	8	11	· · · / · · · · · · · · · · · · ·	.	: :		D	1 V	SILT (A-5).	
<u> </u>	-	‡				1	1					1,1	- ·	
	891.9	13.7					::: : :::: ::::	.					• •	
890		1	4	8	8]	• 16	.			D		-	
] -	Ŧ											- ·	
	886.9	18.7				41		.	: :			1, 1	- -	
885	_	‡	4	6	9		15	<u> </u>			D		- -	
	-	ŧ					: : <u> </u> : : : : : : : : :						- -	
	881.9	23.7	4	5	7	$\ \ $.			D	;\!\!	-	
880	-	Ŧ		-		-	12				"		- -	
	0=0 =	‡ <u></u>					: : : : : : : : : :					1.1.1	- -	
075	876.9 -	28.7	4	7	10	$\parallel \parallel$: : : : : : : : : :				М	13.1	•	
375	874.4	31.2	3	6	8	<u> </u>		+ : :					-	
	-	ł		"	ľ		• 14	.					-	
870	-	Ŧ					: : [: : : : : : : :						•	
J. J	869.4	36.2	4	6	9	 †	15	.			w	1, 1,	- -	
	866.9	38.7				$\rfloor $	· · • • • · · · · · · · ·		: :		"	1, 1,	•	
865	- 064.4	<u> </u>	3	7	10		17	.			W		-	
	864.4	41.2	4	6	12	$+ \lceil$	1	.]		w	,	<u>-</u>	
	861.9	43.7	10	11	11			.				1,11	•	
860		‡	'	''	''		· · · • • • • · · · · · · · · · · · ·				W		• -	
		‡							: :			1.1	- •	
	856.9	48.7	6	9	13	$\ \ $: : :	: :		l w		• •	
855	-	ł				1	V 22				''		- - - 853.6	52.0
	0510	F2 7							: :				 Tan and white, micaceous 	
850	851.9 ₋	53.7	6	10	12	$\parallel \parallel$: :		w		(A-2-4).	
JJU	-	‡				1							- ·	
	846.9	58.7					: : : : `\ : : : : : :	: : :	: :				• •	
345		+	7	12	20]	32	.			w		-	
] -	Ŧ											- 843.6	62.0
	841.9	63.7	20	24	22								Tan and white, micaceous, sa	inay SIL1 (A-4).
340	_	‡	22	24	23		47	<u> </u>			М		-	
	-	ŧ					: : : : : : : : \	.	: :				- -	
	836.9	68.7	14	25	38	$ \cdot $.					-	
835	_	Ŧ	' '			-					M		- 	
	-	t						: \ : : : : :	∸∸∣			an	- 833.6 - WEATHERED RO	72.0
	831.9	73.7	l .								1	17///-	· WEATHERED KU	

WBS	34820	.1.2			ТІ	I P U-2	524BC		COUNT	ry Guilfo	ORD			GEOLOGIST Pilipchu	k, J.L.		
SITE	DESCRI	PTION	Bric	ge No	. 743	over SF	R 2085 (Bryan	Blvd.) or	n SR 2140 (Inman R	d.)				GROUN	ID WTR (ft
BOR	NG NO.	B1-C	;		S.	TATION	l 17+1	0		OFFSET	CL			ALIGNMENT -Y-		0 HR.	36.0
COLI	AR ELE	V . 90	5.6 ft		T	OTAL D	DEPTH	74.6 f	t	NORTHIN	G 863,	528		EASTING 1,729,413		24 HR.	33.5
	. RIG/HAN			TE CI	<u> </u>								D H	S. Augers	HAMN	JER TYPE	Manual
	LER Co						DATE 1	1/30/8		COMP. DA				SURFACE WATER DE			
		DEPTH		W COI					PER FOO		SAMP		1 [CONTACE WATER DE	111 1		
ELEV (ft)	DRIVE ELEV (ft)	(ft)	0.5ft		0.5ft	0	25		50	75 100		MOI	O I G	SOIL AND RO	CK DES	CRIPTION	
	(11)		-		-				1		1101	7 IVIO					
830_	-					 		_ Matc	h Line				+-+	Weathered R	ock (met	a-granite)	
	1	-												*Boring complete			20)
	‡	-												investigation for e	xistina Ir	nman Rd. o	ver
		-												Byran Blvd. bridge"B2-C" because	. Boring e of diffe	originally ca rent design.	alled
	1	-												- -			
	£	-												<u>-</u>			
	7	_												-			
	‡	-												- -			
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BUF	RELOG REPORT								
WBS 34820.1.2	TIP U-2524BC	COUNTY GUILFORD	GEOLOGIST Worley, B.		WBS 34820.1.2	TIP U-2524BC COUN	TY GUILFORD	GEOLOGIST Worley, B.	
SITE DESCRIPTION Bridg	je No. 743 over SR 2085 (Bryar	n Blvd.) on SR 2140 (Inman Rd.)		GROUND WTR (ft)	SITE DESCRIPTION Bridge No. 7	743 over SR 2085 (Bryan Blvd.) o	n SR 2140 (Inman Rd.)		GROUND WTR (ft)
BORING NO. B1-B	STATION 17+18	OFFSET 50 ft RT	ALIGNMENT -Y-	0 HR. 36.0	BORING NO. B1-B	STATION 17+18	OFFSET 50 ft RT	ALIGNMENT -Y-	0 HR. 36.0
COLLAR ELEV. 877.7 ft	TOTAL DEPTH 83.3	oft NORTHING 863,646	EASTING 1,729,365	24 HR . Dry	COLLAR ELEV. 877.7 ft	TOTAL DEPTH 83.3 ft	NORTHING 863,646	EASTING 1,729,365	24 HR . Dry
DRILL RIG/HAMMER EFF./DAT	E SUM0093 DIEDRICH D-50 86% 10	0/10/2014 DRILL METHOD	H.S. Augers HAMI	MER TYPE Automatic	DRILL RIG/HAMMER EFF./DATE SUM	M0093 DIEDRICH D-50 86% 10/10/2014	DRILL METHOD	H.S. Augers H.	AMMER TYPE Automatic
DRILLER Bare, J.	START DATE 11/24/		SURFACE WATER DEPTH N	N/A	DRILLER Bare, J.	START DATE 11/24/14	COMP. DATE 11/24/14	SURFACE WATER DEPTH	I N/A
F FV · · ·			O SOIL AND ROCK DES	SCRIPTION DEPTH (ft)	ELEV CHI DEPTH BLOW COUNTY (ft) DEPTH (ft) 0.5ft 0.5ft 0.5ft		75 100 NO. MOI G	SOIL AND ROCK	DESCRIPTION
880			877.7 GROUND SURF		800 799.5 78.2 60/0.1	Match Line	60/0.1	CRYSTALLII (meta-gr	NE ROCK anite)
875 874.5 3.2			RESIDUAL - Tan-brown to gray, saprol - (A-2-4) with some	litic, silty SAND	795 794.5 83.2			CRYSTALLII - (meta-gr	83.3
870 869.5 8.2	4 5	D	- - - - - -		60/0.1		60/0.1	Boring Terminated Penetration Test Refus ft in Crystalline Roc	al at Elevation 794.4
865 864.5 13.2	5 6							- - -	
860 859.5 18.2	2 4 6	D						- - -	
855 854 5 23 2		D D						-	
850 849 5 28 2	3 8 . 11	D						-	
845 844.5 = 33.2	8 13							-	
840 839.5 38.2	8 14	M						-	
835 834.5 43.2	36 52	M	835.7 WEATHERED R	42.0				- - -	
830	58/0.4		(meta-granit					-	
829.5 T 48.2 20 8	30/0.4							-	
824.5 + 53.2 100/0.4								-	
819.5 58.2 100/0.4		100/0.4						-	
B14.5 + 63.2 23 + 23 + 23 + 23 + 23 + 23 + 23 + 2	53 47/0.1							- - -	
809.5 + 68.2 59 4	41/0.1	100/0.6						- - -	
804.5 + 73.2 48 1	52/0.1		799.9	77.8				- - - -	

37.0

36.9

GROUND WTR (ft)

HAMMER TYPE Automatic

WBS	s 3482	0.1.2			_ T	IP U-2524	BC	COUNT	Y GUILFO	ORD			GEOLOGIST Worley, B.		WBS	S 34820.1	.2		1	ΓΙΡ U-2524Β0	c cc	DUNTY G	SUILFOR	RD			GEOLOGIST Worley, I	В.	
SITE	E DESCI	RIPTIC	ON Bi	ridge N	o. 743	over SR 20	85 (Bryan	Blvd.) or	SR 2140 (Inman Rd	l.)		•	GROUND WTR (ft)	SITE	E DESCRIP	TION	Bridge	No. 743	over SR 2085	(Bryan Blv	d.) on SR	2140 (In	ıman Ro	d.)		•	GROUND WT	F
	RING NO			-		TATION 1			OFFSET				ALIGNMENT -Y-	0 HR. 37.0	BOF	RING NO.	EB2-A	A		STATION 18+	-30	OF	FSET 3	35 ft LT	,		ALIGNMENT -Y-	0 HR.	;
	LAR EL			ft		OTAL DEP		ft	NORTHIN				EASTING 1,729,385	24 HR. 36.9		LAR ELEV				TOTAL DEPTH			RTHING				EASTING 1,729,385	24 HR.	:
						B DIEDRICH [DRILL N		D HS	·	ER TYPE Automatic						3 DIEDRICH D-5						D HS	S. Augers	HAMMER TYPE Auton	n:
	LLER E					TART DAT			COMP. DA				SURFACE WATER DEPTH N/			LLER Bare		,_,		START DATE			MP. DA				SURFACE WATER DEP		_
LEV	T			LOW CO				PER FOOT		SAMP.		L	1			DRIVE DE		BLOW (BLOWS PER		- III . DA	SAMP.		1 - 1	-		_
(ft)	ELEV (ft)	(ft)	0.5	ft 0.5ft		0		50	75 100	11	/	0	SOIL AND ROCK DESC	CRIPTION DEPTH (ft)	(ft)	ELEV Control (ft)	(ft)	0.5ft 0.5				75	100	NO.	MOI		SOIL AND RO	CK DESCRIPTION	
	(11)						ı	1			VIVIOI		LLL V. (II)	DEF III (II)		(10)				 	I				7 WICH				_
005															005						Match Li	no							
905		‡											•		825	823.4	- — — 70 7	<u>+</u> -		+						70	WEATHE	ERED ROCK	_
	902.1	100				<u> </u>	,					-	902.1 GROUND SURFA	ACE 0.0		023.4	70.7	56 44/	0.3				100/0.8	,			_ (meta-gran -	ite) (continued)	
900		<u> </u>	2	'	8	• 15						ĿŁ	RESIDUAL Orange-brown, sandy SILT (A	A-4) with f. sand	820												-		
	898.4	3.7	7 2		7			: : :	.			E.	and some mica	a.		818.4	83.7	53 47/	<u>/0.2</u>			: : : :					-		
		Ŧ	3	4	'	11 .					D	F						53 477	0.2			.	100/0.7)			-		
895		Ŧ				 		+				F			815	T T											-		
	893.4	† 8.7	7 2	2	4				.		D	F				813.4	88.7	100/0.4		11 1		• • • • •		\dashv				at Elevation 813.0 ft in	_
890		‡							.							‡											Weathered Ro	ock (meta-granite)	
000	888.4	† † 13 7	7			1					Light tan-brown to light gra	y, silty SAND		‡										F	- -				
		Ī	2	2	5	† † 7			.		D		(A-2-4) with some i	mica.		‡											.		
885		‡				.										‡											<u>. </u>		
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870		‡				:i · · ·							-													ΙĿ	- -		
	868.4	33.7	7 2	3	4				.		١					1 1										<u> </u>	- -		
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500	858.4	‡ _{43.7}	7			- ;		1					859.1 Tan-brown, sandy SILT (A-4	43.0		‡										F	- -		
		Ī	2	3	6] . •.9			.		М		saprolitic.	i), micaceous,		‡											•		
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	853.4	48.7	7 2	3	6				.		١., ا	l l														1	- -		
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850		±	_				<u> </u>	+	 	+		<u> </u>	-849.6 Tan-brown, micaceous, sapro	52.5		1 +										<u> </u>	_		
	848.4	53.7	7 5	8	12		20		.		М		(A-2-4).	ontic, siny SAND												l F	-		
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0.0	843.4	‡ _{58.7}	7				\	1					•			‡											- -		
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840		‡					<u> `````</u>	: : :								‡											-		
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550	828.4	‡ _{73 7}	7				1	<u> </u>		1			WEATHERED RO	OCK		‡											_ -		
	J20.4	‡ ′ ′ ′	31	69/0.4	4					,∳			(meta-granite)	'		‡										1	- -		
925		+							.							+								1		1 -	-		

	3482						U-2524					GUIL					(GEOLOGIST Pilipchuk, J.L.		—— I I	WBS 34820.1.2			IP U-252			ITY GUILFO					GEOLOGIST Worley,			
				idge N			er SR 20			Blvd.)					d.)				GROUND WTR	`	SITE DESCRIPTION					an Blvd.) o	 						GF	ROUND W	
BOF	ING N) . EB:	2-C			STA	TION	18+14	1			OFFSE	T 7	ft RT			/	ALIGNMENT -Y-	0 HR . 34	4.5	BORING NO. EB2-	В	S	TATION	18+44		OFFSET	65 ft F	RT			ALIGNMENT -Y-	0	HR.	17.0
COL	LAR E	LEV. 9	905.1 f	ft		тот	AL DEP	TH	65.5 f	t	1	NORTH	IING	863,	724		E	EASTING 1,729,460	24 HR . 34	1.5	COLLAR ELEV. 88	6.3 ft	T	OTAL DE	PTH 49.	6 ft	NORTHIN	IG 86	3,545	5	I	EASTING 1,729,291	24	HR.	15.3
DRIL	RIG/H	AMMER	EFF./D	ATE (ME 4	5B								DRILL	METH	HOD	H.S. <i>F</i>	Augers HAMI	MER TYPE Manual		DRILL RIG/HAMMER E	FF./DAT	E SUM0093	3 DIEDRICH	D-50 86%	10/10/2014		DRIL	L ME	THOD	H.S. <i>I</i>	Augers	HAMMER 1	TYPE Autor	matic
DRII		Conley					RT DAT					COMP.				89	!	SURFACE WATER DEPTH N	I/A		DRILLER Bare, J.			TART DA			COMP. DA			/14	!	SURFACE WATER DE	PTH N/A		
ELEV (ft)	DRIVE ELEV (ft)	DEPT (ft)	•••	OW CC	_	_)	25 		PER FO	OOT 7:	5	100	SAMP NO.	1 /			SOIL AND ROCK DES	SCRIPTION DEPTH		ELEV DRIVE ELEV (ft) DEPTH		V COUNT 0.5ft 0.5ft	0	BLOW 25	/S PER FOO	OT 75 100	SAN	. I.	MOI	O G	SOIL AND RO	OCK DESCRIP	TION	
910		+															-				890										-				
905	905.1	10.0	1	1													90	05.1 GROUND SURF		0.0	885			1 . 1 .						0,00	- 88	RE	ND SURFACE		0
		<u> </u>	'	2	4		6	:					1 1		M		<u> </u>	Red-brown, highly plastic sandy-CLAY (A-	c, micaceous,		882.5 3.8	2	5 6		· · · · · · · · · · · · · · · · · · ·					D		Tan to orange-brov silty SA	AND (A-2-4).	, saproinic,	
900	_901.1	4.0	5	7	11	\dashv	1	18					-		M		<u>}</u>			-	880			∮ 11				_		ט					
	896.1	9.0						:		: :						7.2	N	97.9 Red, yellow, tan, and whit sandy-SILT (A	te, micaceous,	7.2	877.5 8.8	2	2 7							D					
895		Ŧ	5	7	7	\prod	14	+:		: :					M	1		Sundy Oil 1 (A	<i>0</i>).		875							-		•					
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000		‡					—— ∳ 15 ∴								10	์ • • • •				-	867.5 + 18.8			- 1											
885	886.1	19.0	4	6	6	+	[[—— ⊕ 12–	<u> </u>	· · ·	::					M	۱ ^۱	N				865	4	5 6	11						D					
		‡														. A	88	Tan and white, micaceous	, saprolitic, silty	22.0	862.5 23.8	5	9 15	: : : ` \						м					
880	881.1	24.0	5	6	7	1	 ∳13- 	+:	· · ·	· ·			-		M	1		fine to coarse SAND) (A-2-4).	-	860				. •24			+		IVI					00
	876.1	29.0					· · ·														857.5 28.8	11	28 72/0.3		. <u>`-</u>	-+: : :::	1			<u>كاالد < 44.</u>	8		HERED ROCK ta-granite)		
875		Ŧ	4	7	8	\parallel	15				- 1				M	1				-	855							1		2 2 4 8 1 1 1 1					
870	871.1	34.0	3	6	8	41										7					852.5 + 33.8 850	7	42 58/0.1					11		الدحيوالة					
		Ŧ						:													847.5 + 38.8														
865	866.1	39.0	2	6	7	\dashv	· . 13-	<u>:</u>		::					w	/					845	100/0.4					100/0.4			الإخلاقالاه					
9/15		‡					 										<u>+</u> 86	Red, tan, and brown, high	nly micaceous.	42.0	842.5 + 43.8	100/0.3								24 - 24 - 25 - 25 - 25 - 25 - 25 - 25 -					
860	861.1	44.0	2	4	6	1	10-	+ :	· · ·				$\frac{\cdot}{\cdot}$		w	/	Ł	sandy-SILT (A	-4).	-	840							-		גלצטוגל					
DOT	856.1	49.0					1	:									ŧ				837.5 + 48.8	46	54/0.3				100/0.8	,		\$ \ \ \ \	83	Boring Terminated	d at Flevation 8	836 7 ft in	49
855 2		+	3	6	9	╟		 -		 					W	/	-				‡										-	Weathered F	Rock (meta-gra	anite)	
OINT.	851.1	54.0															ŧ				1 ‡										Ė	*Harder drilling at 2	28.0' interprete of WR	d to be top	
850		†	2	6	11		♦ 1 \-	7		: :					W	/	E				1 ‡										E				
0 845	846.1	59.0	4	7	14		<i>[]</i>								_w	,	+														+				
BC_GE		Ŧ						1					•				84	13.1 Tan and white, micaceous		62.0											F				
840 840	841.1	64.0	6	11	14		· · · · ·	25_	· · · ·						\ w	/	83	fine to coarse SAND 39.6	(A-2-4).	65.5	‡										F				
OUBLE		Ŧ															F	Boring Terminated at Elevi coarse SAND (A	2-4)		‡										F				
T BORE D		‡															-	*Boring completed during investigation for existing l Byran Blvd. bridge. Boring "EB1-CR" because of dif	nman Rd. over		‡										F				

SITE PHOTOGRAPHS

Bridge No. 743 over SR 2085 (Bryan Blvd.) on SR 2140 (Inman Rd.)



Looking East along -L- (Bryan Blvd.)



Looking West along -L- (Bryan Blvd.)



Looking South along -Y- (Inman Rd.)