

REFERENCE: B-5165

PROJECT: 42341

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY DAVIDSON
 PROJECT DESCRIPTION REPLACE BRIDGE NO. 42 OVER
MUDDY CREEK ON SR 1485 (HAMPTON ROAD)

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5165	1	10

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF 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.

PERSONNEL

STICKNEY, J. K.

SMITH, C. L.

MOORE, M. R.

INVESTIGATED BY STICKNEY, J. K.

DRAWN BY ALEXANDER, M. J.

CHECKED BY MILLER, K. B.

SUBMITTED BY MILLER, K. B.

DATE AUGUST 2016



DocuSigned by:

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8/2/2016

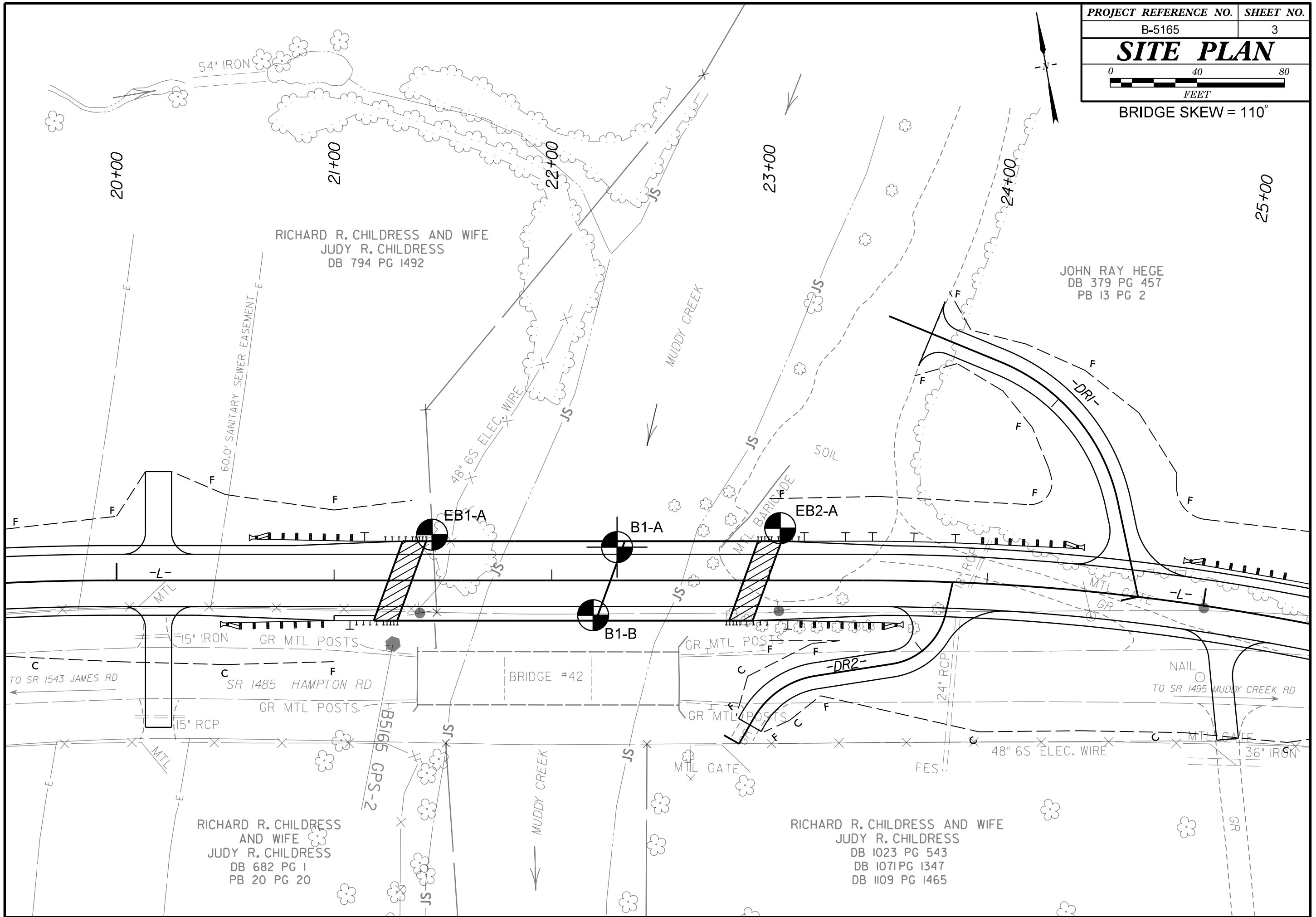
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DATE

**DOCUMENT NOT CONSIDERED FINAL
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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 UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <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. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.					HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:					ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS					WEATHERED ROCK (WR)					CRYSTALLINE ROCK (CR)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="6">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="6">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="3">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1</th> <th>A-3</th> <th>A-2</th> <th>A-2-4</th> <th>A-2-5</th> <th>A-2-6</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> </tr> </thead> <tbody> <tr> <td>GROUP CLASS.</td> <td>A-1-a</td> <td>A-1-b</td> <td>A-2-4</td> <td>A-2-5</td> <td>A-2-6</td> <td>A-2-7</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> <td>A-1, A-2</td> <td>A-3</td> <td>A-4, A-5</td> <td>A-6, A-7</td> </tr> <tr> <td>SYMBOL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% PASSING #10 #40 #200</td> <td>50 MX 30 MX 15 MX</td> <td>50 MX 25 MX</td> <td>51 MN 35 MX 35 MX</td> <td>40 MX 41 MN 10 MX 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>36 MN 36 MN</td> <td>36 MN 36 MN</td> <td>36 MN 36 MN</td> <td>36 MN 36 MN</td> <td>GRANULAR SOILS</td> <td>SILT-CLAY SOILS</td> <td>MUCK, PEAT</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MATERIAL PASSING #40 LL PI</td> <td>-</td> <td>-</td> <td>40 MX 41 MN NP</td> <td>40 MX 41 MN 10 MX 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER</td> <td>HIGHLY ORGANIC SOILS</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GROUP INDEX</td> <td>0</td> <td>0</td> <td>0</td> <td>4 MX</td> <td>8 MX</td> <td>12 MX</td> <td>16 MX</td> <td>NO MX</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td colspan="2">STONE FRAGS. GRAVEL, AND SAND</td> <td>FINE SAND</td> <td colspan="2">SILTY OR CLAYEY GRAVEL AND SAND</td> <td>SILTY SOILS</td> <td>CLAYEY SOILS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GEN. RATING AS SUBGRADE</td> <td colspan="6">EXCELLENT TO GOOD</td> <td colspan="3">FAIR TO POOR</td> <td>FAIR TO POOR</td> <td>POOR</td> <td>UNSATURABLE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="10">PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30</td> <td colspan="5"></td> <td colspan="5"></td> <td colspan="5"></td> </tr> <tr> <td colspan="10" style="text-align: center;">CONSISTENCY OR DENSENESS</td> <td colspan="5" style="text-align: center;">MISCELLANEOUS SYMBOLS</td> <td colspan="5" style="text-align: center;">ROCK HARDNESS</td> <td colspan="5" style="text-align: center;">RECOMMENDATION SYMBOLS</td> </tr> <tr> <td colspan="10"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <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> </thead> <tbody> <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 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4</td> </tr> </tbody> </table> </td> <td colspan="5"> ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY </td> <td colspan="5"> DIP & DIP DIRECTION OF ROCK STRUCTURES SPT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION </td> <td colspan="5"> SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD TEST BORING WITH CORE SPT N-VALUE </td> <td colspan="5"> UNDERCUT SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL </td> </tr> <tr> <td colspan="10" style="text-align: center;">TEXTURE OR GRAIN SIZE</td> <td colspan="5" style="text-align: center;">ABBREVIATIONS</td> <td colspan="5" style="text-align: center;">FRACATURE SPACING</td> <td colspan="5" style="text-align: center;">BEDDING</td> </tr> <tr> <td colspan="10"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>U.S. STD. SIEVE SIZE OPENING (MM)</th> <th>4</th> <th>10</th> <th>40</th> <th>60</th> <th>200</th> <th>270</th> </tr> </thead> <tbody> <tr> <td></td> <td>4.76</td> <td>2.00</td> <td>0.42</td> <td>0.25</td> <td>0.075</td> <td>0.053</td> </tr> <tr> <td>BOULDER (BLDR.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COBBLE (COB.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GRAVEL (GR.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COARSE SAND (CSE. SD.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FINE SAND (F SD.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SILT (SL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLAY (CL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </td> <td colspan="5"> AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HI. - HIGHLY </td> <td colspan="5"> MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILTY, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY </td> <td colspan="5"> VST - VANE SHEAR TEST WEA. - WEATHERED U - UNIT WEIGHT U_G - DRY UNIT WEIGHT </td> <td colspan="5"> TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FOOT VERY CLOSE LESS THAN 0.16 FEET </td> <td colspan="5"> 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 </td> </tr> <tr> <td colspan="10" style="text-align: center;">SOIL MOISTURE - CORRELATION OF TERMS</td> <td colspan="5" style="text-align: center;">EQUIPMENT USED ON SUBJECT PROJECT</td> <td colspan="5" style="text-align: center;">INDURATION</td> <td colspan="5" style="text-align: center;">NOTES:</td> </tr> <tr> <td colspan="10"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SOIL MOISTURE SCALE (ATTERBERG LIMITS)</th> <th>FIELD MOISTURE DESCRIPTION</th> <th>GUIDE FOR FIELD MOISTURE DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>LL - LIQUID LIMIT</td> <td>- SATURATED - (SAT.)</td> <td>USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</td> </tr> <tr> <td>PLASTIC RANGE (PI)</td> <td>- WET - (W)</td> <td>SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> </tr> <tr> <td>OM - OPTIMUM MOISTURE SHRINKAGE LIMIT</td> <td>- MOIST - (M)</td> <td>SOLID; AT OR NEAR OPTIMUM MOISTURE</td> </tr> <tr> <td>SL - SHRINKAGE LIMIT</td> <td>- DRY - (D)</td> <td>REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> </tr> </tbody> </table> </td> <td colspan="5"> DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input checked="" type="checkbox"/> CME-550X <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST </td> <td colspan="5"> ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input checked="" type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE *STEEL TEETH <input type="checkbox"/> TRICONE *TUNG-CARB. <input checked="" type="checkbox"/> CORE BIT </td> <td colspan="5"> HAMMER TYPE: <input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> -B <input type="checkbox"/> -H <input checked="" type="checkbox"/> -N X HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST </td> <td colspan="5"> FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. 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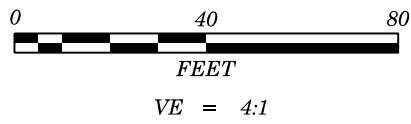


RICHARD R. CHILDRESS AND WIFE
 JUDY R. CHILDRESS
 DB 794 PG 1492

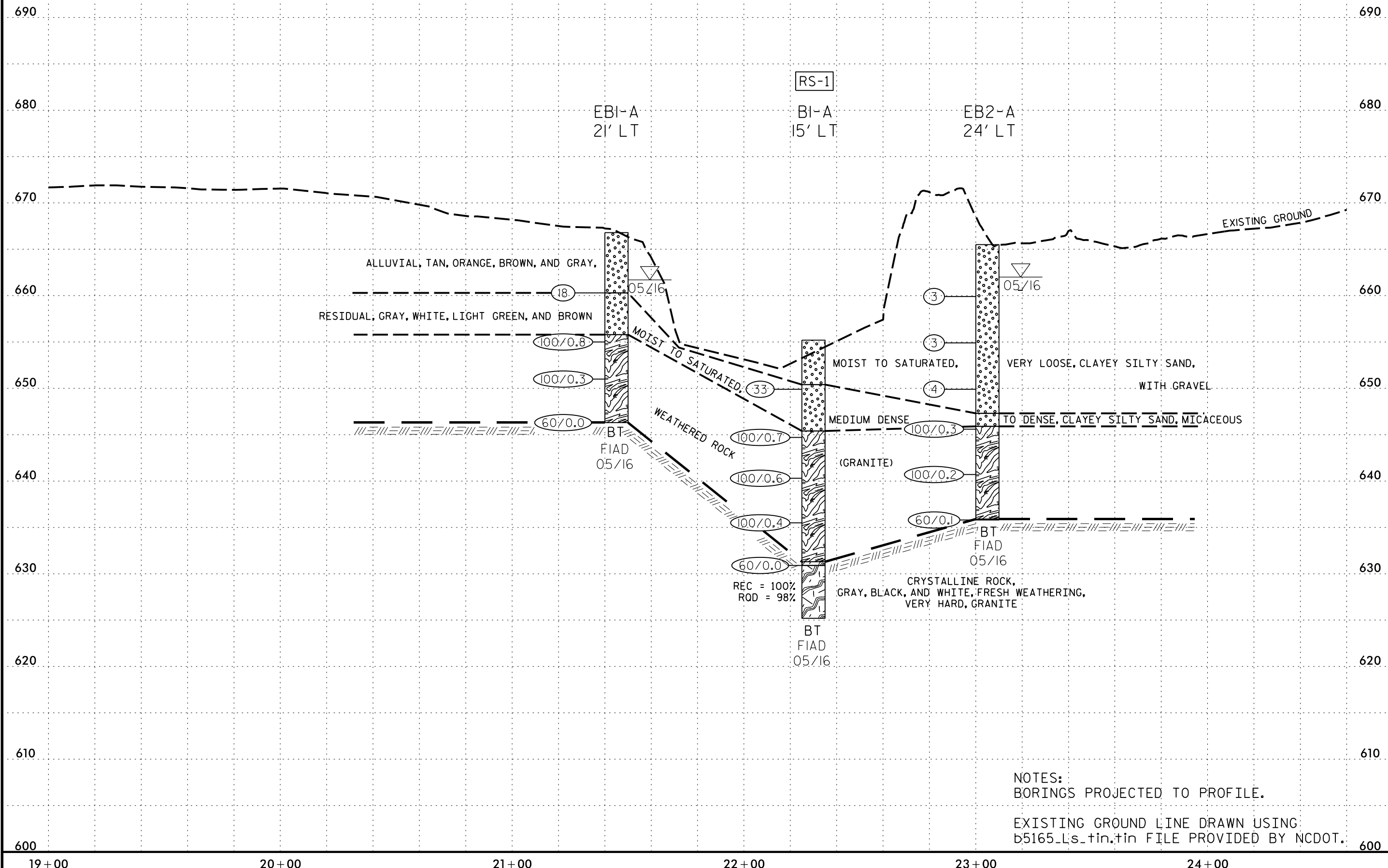
JOHN RAY HEGE
 DB 379 PG 457
 PB 13 PG 2

RICHARD R. CHILDRESS
 AND WIFE
 JUDY R. CHILDRESS
 DB 682 PG 1
 PB 20 PG 20

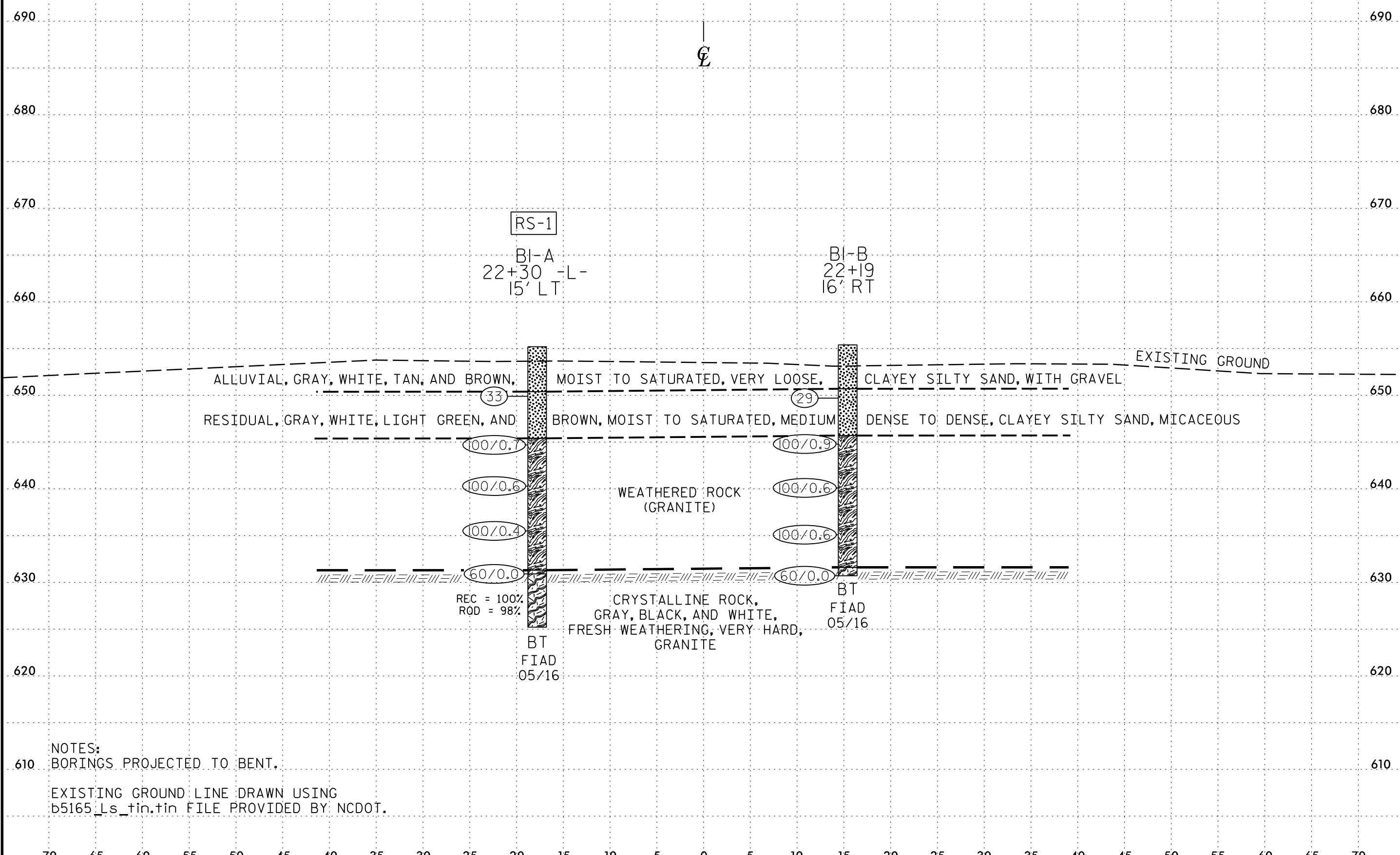
RICHARD R. CHILDRESS AND WIFE
 JUDY R. CHILDRESS
 DB 1023 PG 543
 DB 1071 PG 1347
 DB 1109 PG 1465



PROJECT REFERENCE NO.	SHEET NO.
B-5165	4
PROFILE ALONG -L- AT BRIDGE NO. 42	



NOTES:
BORINGS PROJECTED TO PROFILE.
EXISTING GROUND LINE DRAWN USING
b5165_Ls_tin.tin FILE PROVIDED BY NCDOT.



NOTES:
 BORINGS PROJECTED TO BENT.
 EXISTING GROUND LINE DRAWN USING
 b5165_Ls_tin.tin FILE PROVIDED BY NCDOT.

HORIZ. SCALE 0 10 20
 (FEET)

VE = 1:1

CROSS SECTION ALONG BENT 1
 AT STA. 22+27.00 -L-

GEOTECHNICAL BORING REPORT BORE LOG

WBS 42341	TIP B-5165	COUNTY DAVIDSON	GEOLOGIST Stickney, J. K.
SITE DESCRIPTION BRIDGE NO. 42 OVER MUDDY CREEK ON SR 1485 (HAMPTON ROAD)			GROUND WTR (ft)
BORING NO. EB1-A	STATION 21+45	OFFSET 21 ft LT	ALIGNMENT -L-
COLLAR ELEV. 666.8 ft	TOTAL DEPTH 20.5 ft	NORTHING 799,904	EASTING 1,598,047
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 85% 05/20/2016		DRILL METHOD NW Casing w/ SPT	HAMMER TYPE Automatic
DRILLER Smith, C. L.	START DATE 05/16/16	COMP. DATE 05/16/16	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)			
670															666.8	GROUND SURFACE	0.0	
665																ALLUVIAL TAN, BROWN, AND ORANGE, SILTY SAND		
660	661.3	5.5	5	2	16										660.3	RESIDUAL BROWN AND WHITE, CLAYEY SILTY SAND, WITH SOME MICA	6.5	
655	656.3	10.5	8	64	36/0.3										655.8	WEATHERED ROCK (GRANITE)	11.0	
650	651.3	15.5	100/0.3															
	646.3	20.5	60/0.0												646.3	Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 646.3 ft ON CRYSTALLINE ROCK (GRANITE)	20.5	

NCDOT BORE SINGLE B5165 BRDG0042_BH.GPJ NC_DOT.GDT 7/28/16

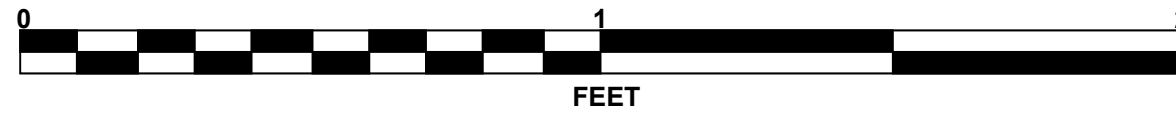
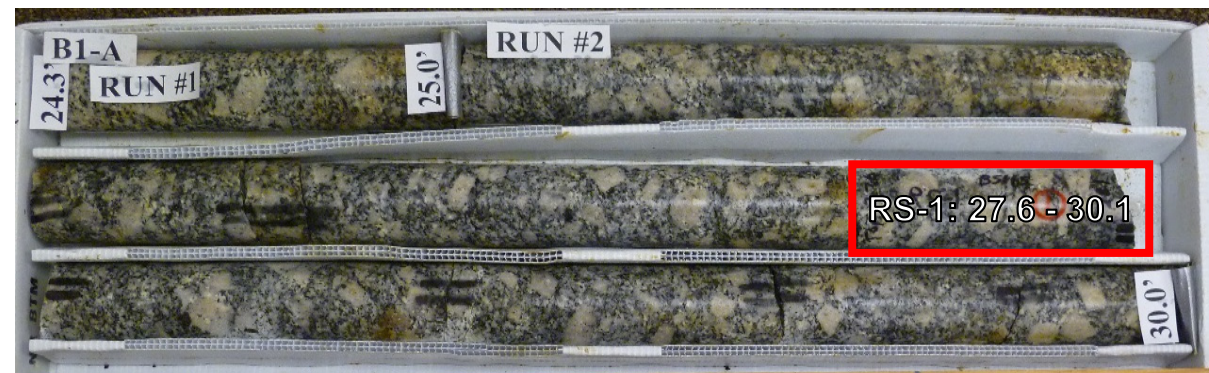
CORE PHOTOGRAPHS

42341 (B-5165)

BRIDGE NO. 42 OVER MUDDY CREEK ON SR 1485 (HAMPTON ROAD)

B1-A

BOX 1: 24.3 - 30.0 FEET



GEOTECHNICAL BORING REPORT BORE LOG

WBS 42341		TIP B-5165		COUNTY DAVIDSON		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 42 OVER MUDDY CREEK ON SR 1485 (HAMPTON ROAD)						GROUND WTR (ft)										
BORING NO. B1-B		STATION 22+19		OFFSET 16 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 655.4 ft		TOTAL DEPTH 24.7 ft		NORTHING 799,933		EASTING 1,598,063										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 85% 05/20/2016		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 05/10/16		COMP. DATE 05/10/16		SURFACE WATER DEPTH 4.9ft										
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						
660																
655															655.4	GROUND SURFACE 0.0
650	650.7	4.7	13	15	14										650.7	4.7
645	645.7	9.7	41	59/0.4											645.7	9.7
640	640.7	14.7	68	32/0.1											640.7	14.7
635	635.7	19.7	63	37/0.1											635.7	19.7
	630.7	24.7	60/0.0												630.7	24.7
															631.6	23.8
															630.7	24.7

NCDOT BORE SINGLE B5165_BRDG0042_BH.GPJ NC_DOT.GDT 7/28/16

GEOTECHNICAL BORING REPORT BORE LOG

WBS 42341		TIP B-5165		COUNTY DAVIDSON		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 42 OVER MUDDY CREEK ON SR 1485 (HAMPTON ROAD)						GROUND WTR (ft)										
BORING NO. EB2-A		STATION 23+05		OFFSET 24 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 665.5 ft		TOTAL DEPTH 29.7 ft		NORTHING 799,928		EASTING 1,598,138										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 85% 05/20/2016		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 05/06/16		COMP. DATE 05/06/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
670																
665															665.5	GROUND SURFACE 0.0
660	660.9	4.6	1	1	2										660.9	4.6
655	655.9	9.6	1	1	2										655.9	9.6
650	650.9	14.6	1	2	2										650.9	14.6
645	645.9	19.6	100/0.3												645.9	19.6
640	640.9	24.6	100/0.2												640.9	24.6
	635.9	29.6	60/0.1												635.9	29.6
															635.8	29.6

NCDOT BORE SINGLE B5165_BRDG0042_BH.GPJ NC_DOT.GDT 7/28/16

