CONTENTS:

WRITTEN REPORT

CROSS SECTIONS

SITE PHOTOS

LABORATORY SUMMARY

PROFILE

SITE VICINITY MAP

NCDOT SOIL AND ROCK LEGEND

BORING LOCATION DIAGRAM

LOGS, CORE REPORT, CORE PHOTOS

DRAWN BY: T. CALLOWAY

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STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT

STATE PROJECT 33066.1.1 I. D.	N□, <u>B-344</u> 6
F. A. PROJECT BRSTP-1243 (2)	
COUNTY DAVIDSON	
PROJECT DESCRIPTION BRIDGE NO.	415 OVER
NSRR DN SR 1243 (CENTER STREET)	
SITE DESCRIPTION	

STATE STATE PROJECT REFERENCE NO N.C. 1 36 B - 3446STATE PROJ. NO. | F. A. PROJ. NO. | DESCRIPTION BRSTP-1243 (2)

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THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BERING LOGS, ROCK COPES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEDTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS. NOR THE FIFTD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS 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 METHIN THE BORCHOLE. THE LABORATORY SAMPLED DATA AND THE IN STU (IN-PLACE) TEST DATA CAN BE RELIED DN DNLY TO THE DEGREE DE RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE DEGREE DR SDIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION THESE WATER LEVELS OR SDIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES. DEFECTIONS TO CONDITIONS AND VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES. 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 DNLY 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
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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. THOSE INDICATED IN THE SUBSURFACE INFORMATION.

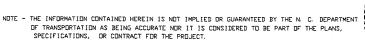
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INVESTIGATED BY ECS, LTD. PERSONNEL J. WHITE T. CALLOWAY CHECKED BY T. J. ROBERSON S. ZIRPOLO SUBMITTED BY JAMES D. HOSKINS, III, P.E. DATE 8/25/05 M. SANDERS



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



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND. TERMS, SYMBOLS, AND ABBREVIATIONS

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WHEN 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 DR LESS THAN D.I FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS DETEN REPRESENTED BY A ZONE SDIL DESCRIPTION TERMS AND DEFINITIONS <u>/ELL GRADED</u>- INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE <u>INIFORM</u>- INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO SDIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR VEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN ALLUVIUM (ALLUV.) - SDILS WHICH HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. GAP-GRADED- INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES 100 BLDWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SDIL ARENACEDUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE ANGULARITY DF GRAINS CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLOWS: ARGILLACEDUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. AS MINERALDGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, NON-COASTAL PLAIN MATERIAL THAT YIELDS SPT N VALUES > 100 BLOWS WEATHERED ROCK (WR) SUBANGULAR, SUBROUNDED, OR ROUNDED. VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6 ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL MINERALDGICAL COMPOSITION SDIL LEGEND AND AASHTO CLASSIFICATION T WHICH IS IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THA CRYSTALLINE RDCK (CR) MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KADLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE. GRANULAR MATERIALS SILT-CLAY MATERIALS WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE,

GNEETS, GABBRO, SCHIST, ETC.

FINE TO CDARSE GRAIN METAMORPHIC AND NON-CDASTAL PLAIN

SEDIMENTARY ROCK HAIT VOILD YELLD SPT REFUSAL IF TESTED. ROCK TYPE

INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.

CDASTAL PLAIN SEDIMENTS CREMENTED INTO ROCK, BUT MAY NOT YIELD

SPT REFUSAL ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED

SHELL BETS ETC. ORGANIC MATERIALS (≤35% PASSING #200 35% PASSING #200) CALCAREDUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 A-6, A-7 A-7-6 A-3 A-6, A-7 A-1 A-3 NON-CRYSTALLINE ROCK (NCR) COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT ROTTOM GROUP CLASS. SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 CDASTAL PLAIN SEDIMENTARY ROCK MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 LIQUID LIMIT GREATER THAN 50 ORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL ENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SYMBOL HIGHLY COMPRESSIBLE PERCENTAGE OF MATERIAL DAISSAG <u>DIKE</u> - A TABULAR BODY OF IGNEDUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. WEATHERING MUCK, PEAT GRANULAR GRANUI AR SILT- CLAY CLAY DRGANIC MATERIAL DTHER MATERIAL 2 1102 2011.2 SDILS SDILS RDCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER DIP - THE ANGLE AT WHICH A STRATUM DR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. # 200 | 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 RACE DF DRGANIC MATTER 3 - 5% 5 - 12% TRACE 1 - 10% N.P. 10 MX 11 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN N.P. 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN LITTLE 10 - 20% TIMI I GRIGIT VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, <u>DIP DIRECTION (DIP AZIMUTH)</u> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKVISE FROM NORTH. HTIW 2 IITI2 MODERATELY DRGANIC 5 - 10% 12 - 20% HIGHLY DRGANIO (V. SLI.) CRYSTALS DN A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF 35% AND ABOVE DF A CRYSTALLINE NATURE. GROUP INDEX 0 MODERATE 0 0 4 MX 8 MX 12 MX 16 MX NO MX GROUND WATER FAULT - A FRACTURE DR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE DRGANIC SDILS AMPLINTS DE ROCK GENERALLY FRESH. JOINTS STAINED AND DISCOLORATION EXTENDS INTO POCK UP TO USUAL TYPES STONE FRAGS. FINE SILTY DR CLAYEY GRAVEL AND SAND GRAVEL AND SAND SIDES RELATIVE TO DNE ANDTHER PARALLEL TO THE FRACTURE 1 INCH DPEN JOINTS MAY CONTAIN CLAY, IN GRANITOID ROCKS SOME DCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING. SILTY CLAYEY FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. SDILS SDILS MATTER V STATIC WATER LEVEL AFTER 24 HOURS. MATERIALS SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN MODERATE F<u>LDAT</u> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. GEN. RATING **▽**PW GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLDRED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA EXCELLENT TO GOOD POOR FAIR TO POOR UNSUITABL POOR SUBGRADE FLOOD PLAIN (F.P.) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. WITH FRESH ROCK. SPRING OR SEEPAGE P.I. DE A-7-5< 1.1. - 30 : P.I. DE A-7-6 1.1. - 30 ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL MODERATELY AND DISCOLURED AND A MAJURITY SHOW KADLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGT AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SDUND WHEN STRUCK. CONSISTENCY OR DENSENES MISCELLANEDUS SYMBOLS FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN (MDD. SEV.) COMPACTNESS OR RDADWAY EMBANKMENT DPT DMT TEST BORING PRIMARY SOIL TYPE PENETRATION RESISTENCE COMPRESSIVE STRENGTH (TONS/F#) IF TESTED, WOULD YIELD SPT REFUSAL JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. CONSISTENCY (N-VALUE) WITH SOIL DESCRIPTION ALL RDCKS EXCEPT QUARTZ DISCOLORED OR STAINED. RDCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SDIL. IN GRANITOID RDCKS ALL FELDSPARS ARE KADLINIZED TO TIS LATERAL EXTENT. VERY LODSE \oplus AUGER BORING (SEV.) S- BULK SAMPLE LDOSE 4 TO 10 SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. GRANULAR MEDIUM DENSE N/A LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. ARTIFICIAL FILL DTHER THAN IF TESTED, YIELDS SPT N VALUES > 100 BPF MATERIAL (NON-COHESIVE) SS- SPLIT SPOON CORE BORING VERY SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MOTTLED (MOT) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. 30 TD 50. RDADWAY EMBANKMENTS VERY DENSE >50 ST- SHELBY TUBE THE MASS IS EFFECTIVELY REDUCED TO SDIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINDR INFERRED SOIL BOUNDARIES VERY SOFT On PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. MONITORING WELL (0.25 GENERALLY 2 TD 4 VESTIGES OF THE DRIGINAL ROCK FABRIC REMAIN. IF TESTED, YIELDS SPT N VALUES (100 BPF 0.25 TD 0.5 INFERRED ROCK LINE RS- ROCK SAMPLE 4 TD 8 8 TD 15 SILT-CLAY MEDIUM STIFF PIEZDMETER 0.5 TD 1 Δ ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. INSTALLATION MATERIAL TD 2 RT- RECOMPACTED ALLUVIAL SDIL BOUNDARY SCATTERED CONCENTRATIONS. QUARTY MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS VERY STIFF RDCK QUALITY DESIGNATION (R.O.D.) - A MEASURE OF RDCK QUALITY DESCRIBED BY: TOTAL LENGTH OF RDCK SEGMENTS EQUAL TO DR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND (COHESIVE) 15 TD 30 TRIAXIAL SAMPLE SLIDE INDICATOR \bigcirc DIP/DIP DIRECTION OF CBR - CBR SAMPLE ROCK HARDNES ROCK STRUCTURES EXPRESSED AS A PERCENTAGE. TEXTURE OR GRAIN SIZE - SPT N-VALUE SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES • - SOUNDING ROD U.S. STD. SIEVE SIZE REF - SPT REFUSAL SEVERAL HARD BLOWS OF THE GEOLOGISTS PICK. 0.42 0.25 0.075 SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED HARD RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, WHICH HAS BEEN EMPLACED PARALLEL TO DETACH HAND SPECIMEN. CDARSE TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS GRAVEL SILT CLAY AR - AUGER REFUSAL PMT - PRESSUREMETER TEST SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES DR. GRODVES TO 0.25 INCHES DEEP CAN BE (SL.) (BLDR.) (CDB.) (GR.) (CL.) (CSE, SD.) BT - BORING TERMINATED SD. - SAND. SANDY HARD EXCAVATED BY HARD BLOW OF A GEOLOGISTS PICK. HAND SPECIMENS CAN BE DETACHED SL. - SILT, SILTY SLI. - SLIGHTLY CLAY GRAIN MM 305 SIZE IN 12' 2.0 0.25 0.05 0.005 BY MODERATE BLOWS CPT - CONE PENETRATION TEST CSE. - CDARSE STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR B.P.F.) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH MEDIUM CAN BE GRODVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT TCR - TRICDNE REFUSAL EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE SDIL MOISTURE - CORRELATION OF TERMS - DILATOMETER TEST A 2 INCH DUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS LESS THAN 0.1 FOOT PENETRATION 7 - UNIT WEIGHT POINT OF A GEOLOGISTS PICK. DYNAMIC PENETRATION TEST SOIL MOISTURE SCALE FIELD MOISTURE WITH 60 BLOWS. √a - DRY UNIT WEIGHT GUIDE FOR FIELD MOISTURE DESCRIPTION e - VOID RATIO F. - FINE FDSS. - FOSSILIFEROUS CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS SDFT STRATA CORE RECOVERY (SREC.) - TOTAL LENGTO OF STRATUM AND EXPRESSED AS A PERCENTAGE. CATTERBERG LIMITS TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH W - MDISTURE CONTENT FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THI VERY PIECES CAN BE BROKEN BY FINGER PRESSURE. - SATURATED USUALLY LIQUID; VERY WET, USUALLY STRATA ROCK QUALITY DESIGNATION (S.R.O.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY:
TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO DR GREATER THAN 4 INCHES DIVIDED BY THE
TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. FRAC. - FRACTURED VST - VANE SHEAR TEST CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 IN FROM BELOW THE GROUND WATER TABLE (LTAS) FRAGS. - FRAGMENTS MED. - MEDIUM LIQUID LIMIT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY ASTIC SEMISOLID; REQUIRES DRYING TO - WET - (W) TOPSOIL (T.S.) - SURFACE SDILS USUALLY CONTAINING DRGANIC MATTER. RANGE EQUIPMENT USED ON SUBJECT PROJECT FRACTURE SPACING ATTAIN OPTIMUM MOISTURE PLASTIC LIMIT TERM THICKNESS TERM BENCH MARK: CONCRETE MON. STAMPED NCGS/USGS 1898, SW QUAD.

OF INTERSECTION OF S. MAIN AND E. CENTER STREET IN

LEXINGTON, APPROX. 20 FEET EAST FROM CONFEDERATE SOLDER SPACING HAMMER TYPE DRILL UNITS: ADVANCING TOOLS: VERY THICKLY REDDED > 4 FEET 1.5 - 4 FEET VERY WIDE MORE THAN 10 FEET DPTIMUM MOISTURE CM) - TZIOM -SOLID; AT OR NEAR OPTIMUM MOISTURE AUTOMATIC MANUAL THICKLY BEDDED CLAY BITS 3 TO 10 FEET MOBILE B-SHRINKAGE LIMIT THINLY REDDED 0.16 - 1.5 FEET MDDERATELY CLOSE 1 TD 3 FEET VERY THINLY BEDDED THICKLY LAMINATED 0.03 - 0.16 FEET 0.008 - 0.03 FEET 6' CONTINUOUS FLIGHT AUGER CORE SIZE: 0.16 TD 1 FEET ELEVATION: 808.44 FT. REQUIRES ADDITIONAL WATER TO - DRY - (D) BK-51 VERY CLOSE LESS THAN 0.16 FEET NUTES ATTAIN DRIMLING MOISTURE 8' HOLLOW AUGERS -B____ THINLY LAMINATED PLASTICITY INDURATION HARD FACED FINGER BITS CME-45 -N____ FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC PLASTICITY INDEX (PI) DRY STRENGTH TUNG.-CARBIDE INSERTS ⊠-H<u>Q</u> VERY LOW RUBBING WITH FINGER FREES NUMEROUS GRAINS; CASING W/ ADVANCER LOW PLASTICITY SLIGHT 6-15 GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. HAND TOOLS: MED. PLASTICITY 16-25 26 DR MORE MEDIUM PORTABLE HOIST TRICONE_____ STEEL TEETH GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; HIGH POST HOLF DIGGER MODERATELY INDURATED BREAKS FASILY WHEN HIT WITH HAMMER _____ TUNG.-CARB. HAND AUGER TRICONE DTHER GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE: INDURATED SOUNDING ROD CORE BIT DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN. RED. YEL-BRN. BLUE-GRAY) DIFFICULT TO BREAK WITH HAMMER VANE SHEAR TEST DTHER MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE SHARP HAMMER BLDWS REQUIRED TO BREAK SAMPLE; EXTREMELY INDURATED DTHER SAMPLE BREAKS ACROSS GRAINS

SUBMITTED TO:

State of North Carolina

Department of Transportation

Geotechnical Engineering Unit

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ATTENTION:

Mr. Njoroge Wainaina, PE

State Geotechnical Engineer

Geotechnical Engineering Unit

SUBMITTED BY:

Engineering Consulting Services, Ltd.

6909 International Drive, Suite 103

Greensboro, North Carolina 27409

ECS Project No. G-11256

DATE:

August 25, 2005

STATE PROJECT:

33066.1.1 (B-3446)

FA. PROJECT:

BRSTP -1243(2)

COUNTY:

Davidson

DESCRIPTION:

Bridge 415 over NSRR on SR 1243 (Center Street)

SUBJECT:

Report of Structure Subsurface Investigation

Z

TABLE OF CONTENTS

Geotechnical Report & Heading

1.0 SITE DESCRIPTION	1
2.0 PROJECT DESCRIPTION	1
3.0 SCOPE OF INVESTIGATION	1
3.1 FIELD TESTING.	1
3.2 LABORATORY TESTING	2
3.3 GEOLOGY	2
3.4 FOUNDATION MATERIALS	2
3.5 GROUNDWATER.	2
4.0 NOTES TO THE DESIGNER	3
5.0 CLOSURE	3

- 1. Site Location Map
- 2. Boring Location Diagram
- 3. Subsurface Profile
- 4. Subsurface Cross-Sections
- 5. Subsurface Boring Logs
- 6. Core Boring Reports
- 7. Core Photographs
- 8. AASHTO/ASTM Test Results
- Site Photographs

Appendix B (Rock Data – Issued Under Separate Cover)

Appendix C (Supportive Documents - Issued Under Separate Cover)

- 1. Boring Quantity Sheet
- 2. Boring Logs
- 3. Survey Notes
- 4. Checklist
- 5. Property Owner Contact

STATE PROJECT:

33066.1.1 (B-3446)

FA. PROJECT:

BRSTP -1243(2)

COUNTY:

Davidson

DESCRIPTION:

Bridge 415 over NSRR on SR 1243 (Center Street)

SUBJECT:

Report of Structure Subsurface Investigation

Engineering Consulting Services, Ltd. has completed the authorized geotechnical investigation for the above referenced project in Davidson County, North Carolina. The purpose of this exploration was to investigate the subsurface conditions at the proposed bridge bent locations. The work was performed in general accordance with our cost estimate dated July 27, 2005. This report presents the field data and findings of the geotechnical explorations with regard to the proposed bride replacement.

1.0 SITE DESCRIPTION

The project site is located in Davidson County and within the Lexington city limits at the approximate location shown on the Site Location Map (Drawing No. 1) located in Appendix A. The site is located at Bridge 415 over NSRR on SR 1243 (Center Street) between NC 8 and SR 2212. The site topography is relatively level terrain including commercial and residential properties. A cut embankment with steep slopes is located at the railroad crossing. The existing ground cover consists of roadway pavement, sidewalk, and trees bordering the railroad, grassed and landscaped areas.

2.0 PROJECT DESCRIPTION

Information for the proposed structures was obtained from Preliminary General Drawings, dated April 27, 2005. The proposed bridge will be a three span structure, 237 feet in length and 70 feet wide. Skew angles of 105° 57' 52", 104° 28' 29", 103° 12' 52", 102° 01' 21" and 100° 31' 58" are proposed for end bent-1, bent-1, railroad crossing, bent-2, and end bent-2, respectively. Existing slopes will be regarded to tie into the ditch at the toe of the slope near the railroad.

The Preliminary General Drawings are in English units with feet (ft) as the primary unit of length. All distances and elevations in this report are feet unless noted otherwise.

3.0 SCOPE OF INVESTIGATION

3.1 FIELD TESTING

The subsurface exploration was conducted on July 27 through August 11, 2005. The exploration consisted of ten (10) soil test borings. The soil test borings were advanced with a CME-55 truck mounted drilling machine utilizing hollow stem auger and rotary drilling techniques and using a 140 pound automatic hammer to perform the standard penetration tests. Water for rotary drilling was obtained from tap water; no drilling mud was added to the water.

Standard Penetration Tests were performed in general accordance with NCDOT guidelines. In conjunction with testing, split-barrel soil samples were recovered for visual classification and laboratory testing.

Six borings were extended below auger refusal and SPT refusal depths to obtain weathered rock and crystalline rock core samples. The core samples were nominally 2.5 inches in diameter and were obtained using HQ size wireline drilling techniques. The core samples were returned to our laboratory for visual classification and testing.

Using existing site features and bench marks established by the NCDOT, the borings were surveyed for elevation and location by personnel from ECS. As-drilled boring locations are shown on the Boring Location Diagram (Drawing No. 2). The majority of the boriong locations were offset from planned locations due to overhead utilities.

3.2 LABORATORY TESTING

Laboratory testing was performed on fourteen (14) representative split-barrel samples to aid in the assessment of AASHTO soil classification and to provide data for evaluation of engineering properties. The laboratory testing consisted of natural moisture content determinations, Atterberg Limits testing, and grain size analysis with hydrometer. Rock core specimens were obtained for unconfined compressive strength testing. As requested, two Shelby tubes were obtained from Bent-1 between elevations 773.4 feet to 770.5 feet (depths from 8 to 12 feet) in B1-A and B1-B. The tubes will be delivered to the NCDOT for their testing. Laboratory tests were performed in general accordance with AASHTO and NCDOT specifications.

3.3 GEOLOGY

The project site is located in the Piedmont Physiographic Province of North Carolina. According to the 1985 Geologic Map of North Carolina, the site is located in an area consisting of Metamorphosed Gabbro and Diorite, Metamorphosed Mafic Rock, Metavolcanic Rock, Metamorphosed Granitic Rock and Granitic Rock of the Charlotte Belt dating from Cambrian to Paleozoic ages. The overlying residual soils are the product of the physical and chemical weathering of the underlying bedrock. Based on the rock core specimens obtained at the site the rock type consisted of tan white to white black Granite. Rock outcrops were not evident within the immediate area of the bridge.

3.4 FOUNDATION MATERIALS

Foundation materials at the end bents and interior bent locations include residual soil, weathered rock, and rock.

Residual soil was encountered at elevations ± 784 feet to ± 718 feet and consisted of very stiff to stiff fine to coarse sandy clay and silty clay (A-7-5), stiff to medium stiff fine to coarse sandy clayey silty (A-5), stiff fine to coarse sandy silt (A-4), and very loose to very dense silty fine to coarse sand (A-2-4, A-2-5). Weathered rock was encountered from elevations ± 731 feet to ± 707 feet and consisted of tan white weathered Granite. Crystalline rock was encountered below elevations ± 731 feet to ± 706 feet and consisted of a tan, white, and black Granite.

3.5 GROUNDWATER

Groundwater was present in all boring locations at elevations of ± 749 feet to ± 745 feet. Fluctuation of groundwater levels can occur with seasonal and climatic variations.

4

4.0 NOTES TO THE DESIGNER

Residual sandy soils and sandy weathered rock were encountered at the interior borings. A weathered rock seam was encountered in boring B1-C at 69.7 to 70.4 feet.

5.0 CLOSURE

The geotechnical investigation is based on the Preliminary General Drawings, dated July 27, 2005 and the data obtained from our field and laboratory testing program. If the proposed location and geometry, or finished grades are changed or are different from those outlined above, it may be necessary to obtain additional data about foundation materials for the structure.

Cross-sections and profiles are generalized interpretations of soil conditions between borings and should not be considered accurate other than at the boring locations. Subsurface conditions between boring locations or elsewhere on the site may vary, and subsurface anomalies may exist which were not detected.

Engineering Consulting Services, Ltd. appreciates this opportunity to be of service to the NCDOT on this project. Should you have any questions concerning this report, please feel free to contact the undersigned.

Respectfully submitted,

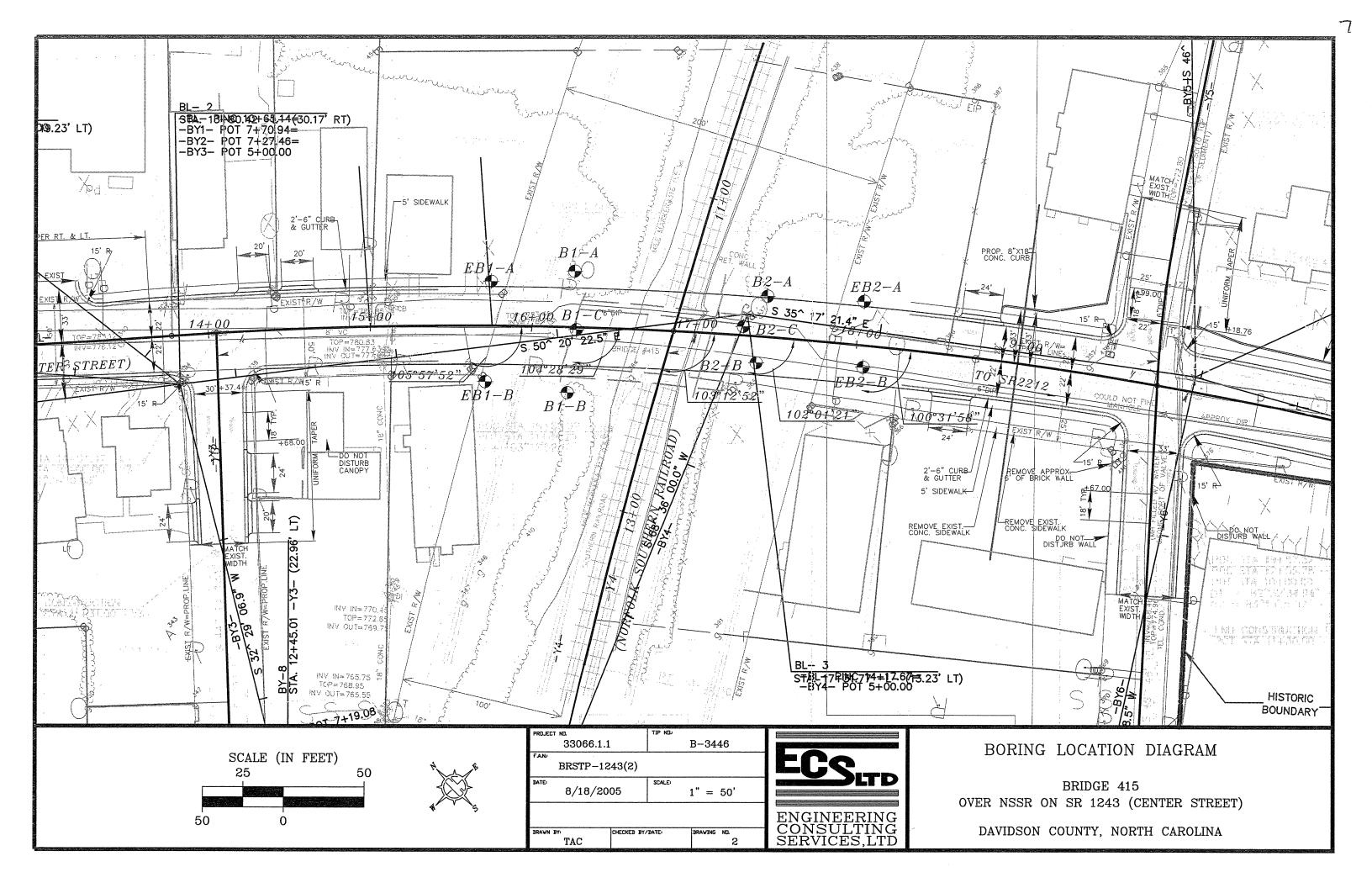
ENGINEERING CONSULTING SERVICES, LTD.

Todd J. Roberson Project Manager

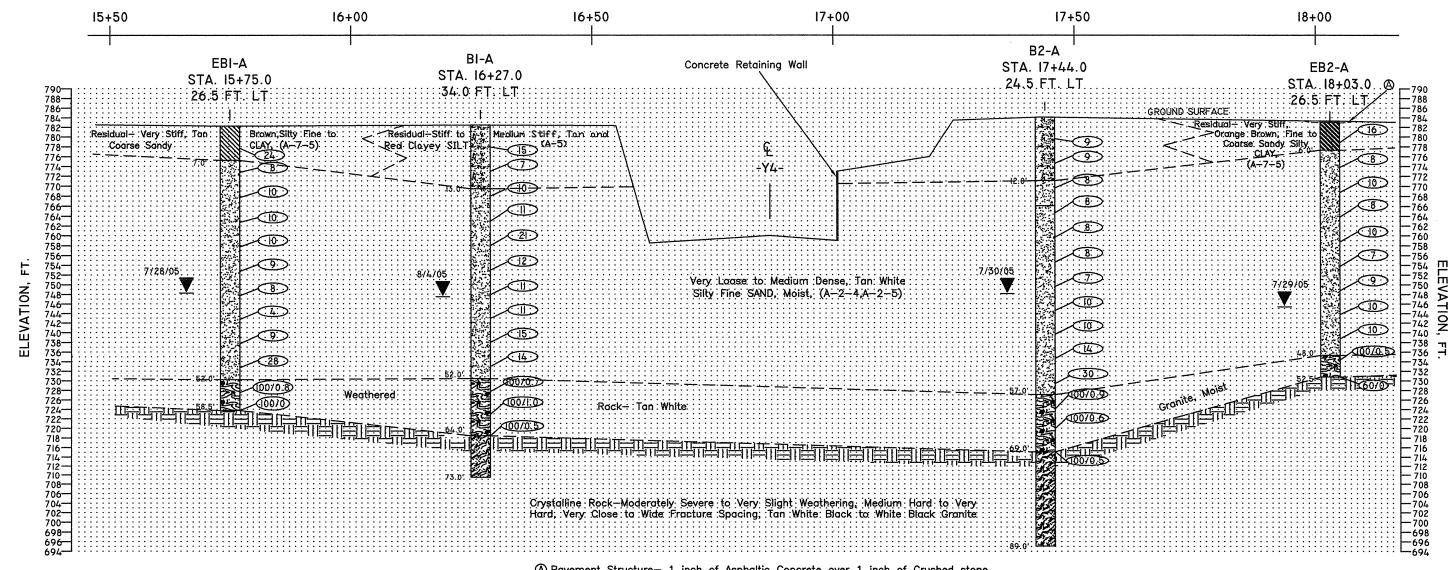
James D. Hoskins, III, P.E.

Chief Engineer Licensed NC 18493

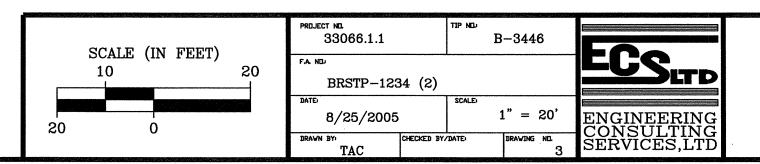
Attachments



PROFILE ALONG -L- 25.0 FT. LT



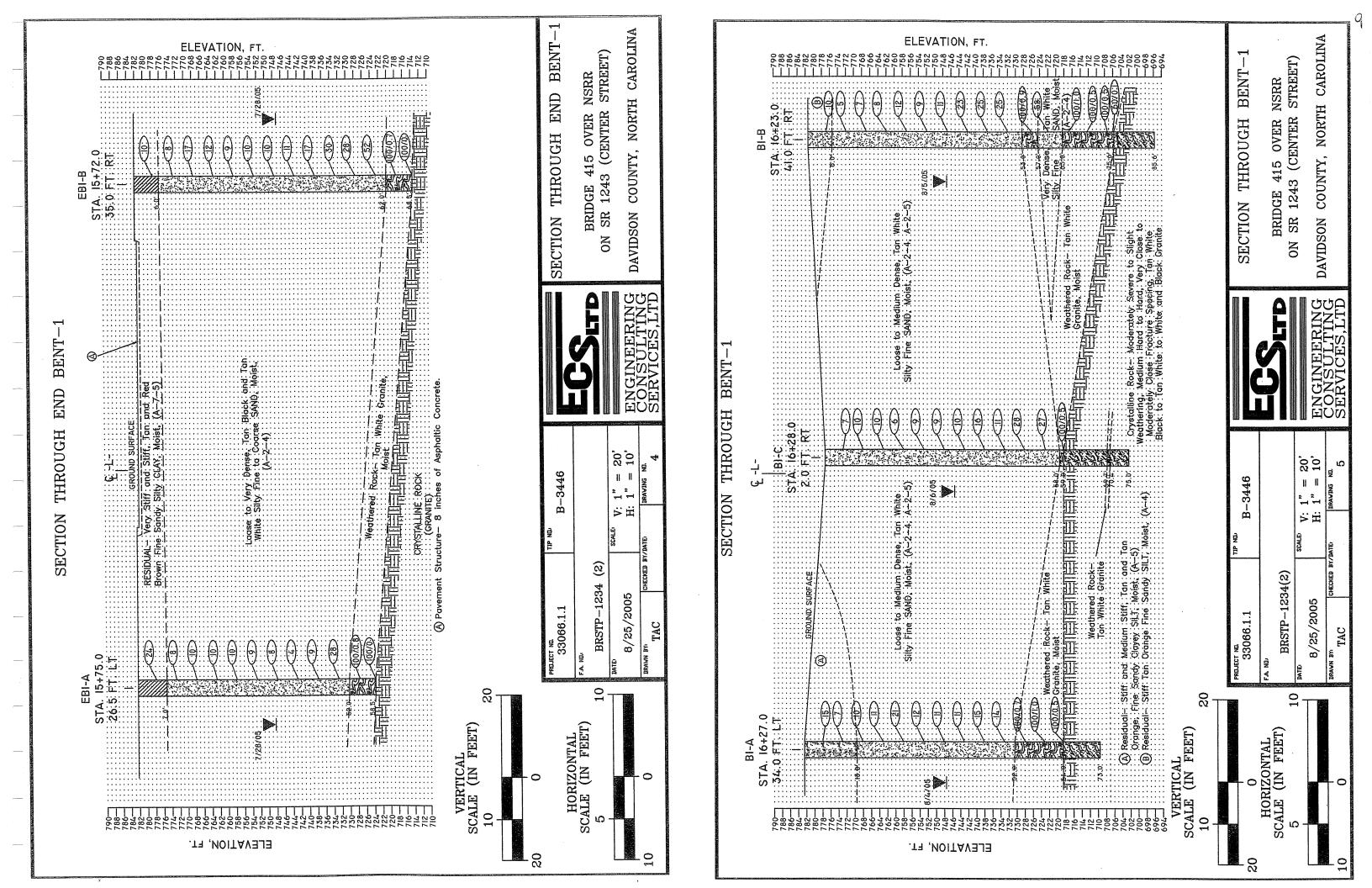


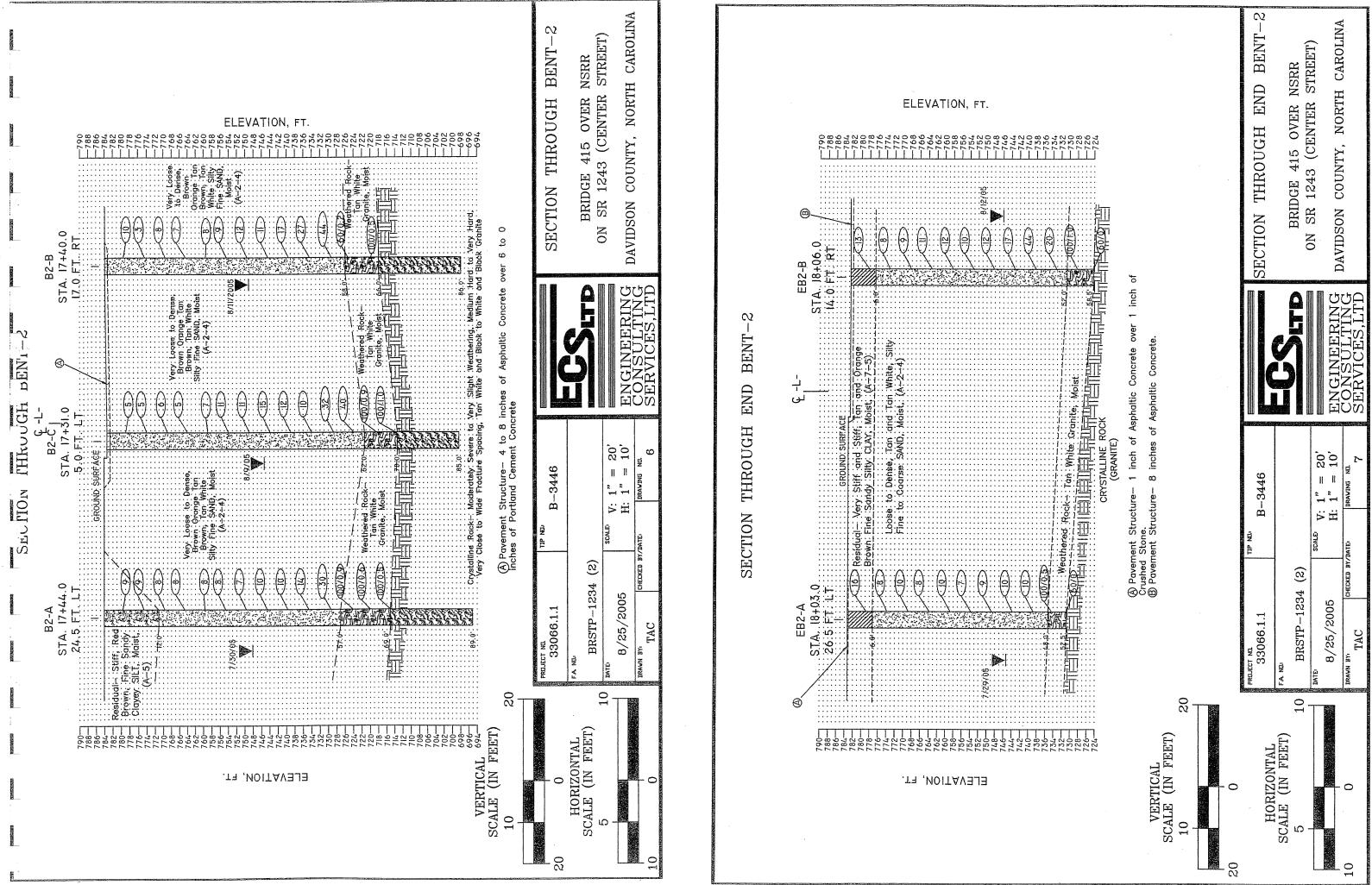


PROFILE ALONG -L- 25.0 FT. LT

BRIDGE 415 OVER NSRR ON SR 1243 (CENTER STREET)

DAVIDSON COUNTY, NORTH CAROLINA





SHEET 1 OF 2

PROJECT NO.	3306					B-3446 COUNTY DAVIDSON GEOLOGIST TJ ROBERSON
SITE DESCRIPT						R NSRR ON SR 1243 (CENTER STREET) GROUND WATER
BORING NO. E				ORING	LOCA	ATION 15+75.0 OFFSET 26.5 LT ALIGNMENT -L- 0 Hr. 37.4
COLLAR ELEVA			32.2			ORTHING 756335.3 EASTING 1629393.9 24 HR. 34.0
TOTAL DEPTH	58.					INE CME 55 TM DRILL METHOD HSA 2.25 INCH HAMMER TYPE 1401b. AUTO
START DATE		-27				LETION DATE 07-27-05 SURFACE WATER DEPTH NA DEPTH TO ROCK 58.5
					PEN.	BLOWS PER FOOT SAMP SAMP SOIL AND ROCK DESCRIPTION
(r	.) (<u>).5'₁</u>	<u>0.5'₁</u>	0.5'	(FT.)	0 25 50 75 100 NUM. MOI. 8 DESCRIPTION
782.2						RESIDUAL: Very Stiff, Tan,
l						Brown, Silty Fine to Coarse Sandy
780.0 +	l					CLAY, Moist, (A-7-5)
‡ 3.	5	7	11	13	1.5	SS-1 11.5%
l ‡			İ			7-24
l ‡				•		
l						775.2
775.0 🕇		1	l			Loose, Tan, White, Silty Fine
‡8.	5	3	3	5	1.5	to Coarse SAND, Moist to Wet,
1 ‡						(A-2-4)
‡	l					
l		1				
770.0 🛨						
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765.0 🛨	- 1	.				
‡18	.5	4	4	6	1.5	
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760.0 士		- 1				
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1 ±						
1		l				
755.0 🛨						
T 28	5	3	4	5	1.5	
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L						

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

/					r=		SHEET 2 OF 2						
PROJECT							LOGIST TJ ROBERSON						
SITE DE						NSRR ON SR 1243 (CENTER STREET)	GROUND WATER						
BORING							NMENT -L- 0 HR. 37.4						
COLLAR			782.2	***			393.9 24 HR. 34.0						
TOTAL I		58.5		DRILL									
START I		07-2				ETION DATE 07-27-05 SURFACE WATER DEPTH							
ELEV.		H BLO			PEN.	BLOWS PER FOOT SAMP. NUM. MOI. G	SOIL AND ROCK DESCRIPTION						
	<u> (FT.</u>	<u> 10.5</u>	<u>′ , 0.5</u>	<u>, 0.5'</u>	<u>(FI.)</u>		DESCIVILION 52.2' 30.0'						
	+		1				Loose, Tan, White, Silty Fine						
	#						to Coarse SAND, Moist to Wet,						
750.0	‡						(A-2-4)						
	‡ 33.5	5 2	4	4	1.5								
	± 33	1 -		-	1.5	-1-8							
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745.0	#	1	1										
	#												
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740.0	‡												
	‡ _{43.}	5 2	4	5	1.5								
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	Ŧ												
735.0	Ŧ					\$2.72	35.2° 47.0°						
	Ŧ	.	١		١. ـ		Medium Dense, Tan, White, Silty Fine to Coarse SAND, Moist,						
	± 48.5	5 11	12	16	1.5		(A-2-4)						
	±						, ,						
	土												
770.0	Ŧ						30.2' 52.0'						
730.0	丰						WEATHERED ROCK- Tan, White,						
	‡ _{53.5}	5 30	37	63/0.3	1.3		Granite, Moist, (WR)						
	± ***		"		""	100/0.8							
	土			1									
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725.0	Ŧ		l	1									
	+	5 100/	2.0		100	100/08	23.7 58.5'						
	T 58 - 58.		1	+	10.0		36.3						
	<u> </u>			<u></u>	I	DRING TERMINATED WITH STANDARD							
	PENETRATION TEST REFUSAL AT ELEVATION 723.7 ON CRYSTALLINE ROCK												
L						(GRANITE)							

SHEET 1 OF 3

PROJECT	NO. 330	66.1.	1		ID.	B-3446	COUNTY	DAV	DSON	THE PERSON NAMED OF THE PE		GE	OLOGIST	TJ ROBERSON	
SITE DES			IDGE			R NSRR ON				STREE	THE RESERVE OF THE PERSON NAMED IN				GROUND WATER
BORING N	₹0. EB1-	-B	В	ORING	F LOCA	ATION 15+72		0	ffset	35.0			IGNMENT		0 HR. 30.0
COLLAR E			82.2				6295.7			EAS*			9346.4		24 HR. 35.0
TOTAL DE		3.5				NE CME 55			METH		ISA 2.			HAMMER TYP	
START DA		7-27				ETION DATE	07-27		SUR			DEP	TH NA		ROCK 68.5
ELEV.	DEPTH				PEN.	BLOWS		FOOT	400	SAMP.		ğ		SOIL AND DESCRIPT	ROCK
<u> </u>	(FT.)	0.5'	0.5	<u>0.5'</u>	(FT.)	0 25	50	75	100	NUM.	∕MOI.	G	782.2	DESCRIPTION	0.0
782.2 -	+												RES	SIDUAL: Stiff, Red,	Brown, Silty
:	‡												Fine	e to Coarse Sandy (A-7-5)	CLAY, Moist,
780.0 -	‡										-			(A-/-5)	
	‡ 3.5	3	5	5	1.5					SS-3	18.5%				
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	±												778.2	Loose, Tan, Black,	Silty Fine
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	Ξ														
765.0 -	\pm														
	T + 18.5	5	6	6	1.5						м	7			
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	± 28.5	4	5	5	1.5					SS-4	M	1992	1		
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 3

ITE DE	SCRIPTION	BRI	DGE	415	OVE	NSRR ON SR 1243 (CENTER	STREET)		GROUND WATER
ORING	NO. EB1-			ORING				GNMENT -L-	0 HR. 30.0
OLLAR	ELEVATION		32.2			HING 756295.7		9346.4	24 HR. 35.0
OTAL I		3.5				CME 55 TM DRILL METH			
iart i		7-27					FACE WATER DEPT		0 ROCK 68.5
ELEV.	DEPTH				PEN.	BLOWS PER FOOT 25 50 75 100	SAMP. MOI. G	SOIL AND DESCRIF	
	<u> (FT.)</u>	0.5 ₁	<u>0.5′</u>	0.5	(FT.)	25 50 75 100	NUM. MOI. & -	752.2°	30.0
750.0	33.5	3	5	5	1.5	* 10	w	Loose, Tan, Black to Coarse SA (A-2-4	ND, Wet,
'45.0	38.5	3	5	6	1.5	<u> </u>		Medium Dense, Tai Fine to Coarse S (A-2-	AND, Moist,
740.0	43.5	6	7	10	1.5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	M		
735.0	48.5	6	12	18	1.5	30	M		
730.0	53.5	15	12	16	1.5	28	26		
725.0	+ + 58.5 +	8	20	32	1.5	52	M	Very Dense, Tan, Wi Coarse SAND, Ma	ite, Silty Fine to sist, (A-2-4)

PROJECT 1	NO. 330	66.1	.1		ID.	B-3446	lo	OUNTY	DAVIDS	ON			GE	OLOGIST	TJ I	ROBERSO	SHEET N	J VE	
SITE DESC				415		R NSRR				_	TREE	T)						IND W	ATER
BORING N						ATION 15					35.0		AL	IGNMENT	' -L-		0 HR	. 30.	0
COLLAR E	LEVATION	7	82.2			ORTHING	7562				EAS	TING	162	29346.4	•		24 H	R. 35.	.0
IOTAL DE	PTH 68	3.5	D	RILL	MACH	NE CME	55 TA	A	DRILL MI			HSA 2			H	AMMER TY		0lb. <i>A</i>	
START DA	TE O	7-27	' - 05		COMP	LETION DA	TE O	7-27-0)5 ន	SURF	PACE 1	WATER	DEP	TH NA		DEPTH T			;
ELEV.	DEPTH								OOT		SAMP	V /	٦		S	OIL AND		(
ELEV.	(FT.)	0.5'	0.5	0.5	(FT.)	<u> </u>	5	50	75	100	NUM.	MOI.	Ğ			DESCRI	TIUN		60
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-	Ļ							#===							Coars	e SAND, Moi	st, (A-2-	4)	
720.0 -	L							. 		_				720.2	WEATH	ERED ROCK-	- Tan. Whi	ite.	62
-	63.5	75	25/0.2		0.7					<u></u>		м	S.		(Franite, Mois	t, (₩R)	,	
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SHEET 1 OF 3

	' NO. 330					-3446 COUNTY DAVIDSON GEOLOGIST TJ ROBERSON	SEI OF 5
						1101111 011 011 12.10 (02111211 0111221)	GROUND WATER
	NO. B1-			ORIN		1012110	HR. 36.4'
	ELEVATIO		82.5				24 HR. 35.0'
TOTAL D		3.0					140lb. AUTO
START D		8-03				TION DATE 08-03-05 SURFACE WATER DEPTH NA DEPTH TO R BLOWS PER FOOT SAMP VICE SOIL AND F	ROCK
ELEV.	DEPTH (FT.)				PEN. (FT.)	DECODIDETO	
782.5	1, 1.7	0.0	ν.υ	0.5	1	782.5'	o.or
	#					RESIDUAL: Stiff to M	
	#					SILT, Moist, (A-5	i)
780.0	‡ <u>.</u> _	_	_				
	‡ 3.5	5	7	-8	1.5	SS-5 10.0% 2.1	
	#						
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775 0	Ŧ						
775.0	Ŧ , ,	,			4.5		
	+ 8.5	3	3	4	1.5	M <	
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	‡					ST-1 2	
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770.0	‡	١_	١.	_		∴V 769.5'	13.0'
	± 13.5	3	4	6	1.5	Medium Dense, Tan, Wh	ite, Silty (A-2-5)
	‡						4 (1. 2 0)
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765.0	+	1	l				
	± 18.5	3	5	6	1.5	SS-6 M	
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	± 23.5	7	7	14	1.5	M M	
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755.0	±						
	<u>+</u> 28.5	4	6	6	1.5		
	<u>+</u>	<u> </u>					
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

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	r NO. 33(COUNTY	DAVIDSON		1	GEOLOG	DI UK	OBERSON		YOU A STATE OF
L	SCRIPTION	R	RIDGE	415	OVE	R NSRR ON S	SR 1243				T			GROUND	
	NO. B1-					ATION 16+27.		OFFSEI			ALIGNMI			0 HR. 3	
	ELEVATIO		782.5				294.9			TING	1629420			24 HR. 3	
TOTAL I		3.0				NE CME 55		DRILL METH			25 INCH		MMER TYP		
START I			3-05				08-03-		·	T	DEPTH N	I		ROCK 64	·.U
ELEV.	DEPTH				PEN.	BLOWS		00T	SAMP	MOI.	լի	50	IL AND DESCRIPT	ROCK	
	(FT.)	0.5	<u>' 1 0,5'</u>	0.5	(+1.)	0 25	50	75 100	NUM.	MOI.	G		DESCINI I	IOIA	30.0
	+		1									Medium	Dense, Tan,	White, Silty	
	‡											Fine S	AND, Moist,	(A-2-5)	
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730.0	+										2	WEATHE	RED ROCK- anite, Moist,	Tan, White	
	+ 53.5	17	38	62/0.2	1.2					M		G	anite, Moist,	(駅)	
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20.0	+ 58.5	32	68/0.5		1.0					 					
	± 30.3	1 32	"]	'.'		- 1	100/1.0		M	E				
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SHEET 3 OF 3

PROJEC	T NO. 3	3066.	1.1		ID.	B-3446	C	YTYUC	DAVI	OSO	1		GI	EOLOGIST	TJ ROBERSON	
SITE DI	ESCRIPTI	ON B	RIDGE	415	OVE	R NSRR	ON SR	1243	(CEN	TER	STREE	T)				GROUND WATER
BORING	NO. B1	-A	E	ORIN	G LOC	CATION 1	6+27.0		OF	TSEI	34.0	LT	AI	IGNMENT	-L-	0 HR. 36.4'
COLLAR	ELEVAT	ION 7	782.5		N	ORTHING	75629	4.9			EAS	TING	162	29426.9		24 HR. 35.0'
TOTAL	DEPTH	73.0	I	RILL	MACH	INE CME	55 TM		DRILL	METE	IOD	ISA 2	.25	INCH	HAMMER TYP	E 140lb. AUT
START	DATE	08-0	3-05		COMP	LETION D	ATE 08	-03-	05	SUF	RFACE Y	VATER	DEP	TH NA	DEPTH TO	ROCK 64.0
E.O.	DEPT	H BLO	W CO	UNT	PEN.	BL	OWS P	ER F	00T		SAMP	W/	٦٢			ROCK
ELEV.	(FT.	0.5	<u>', 0.5'</u>	، 0.5	(FT.)	Q 2	25 5	iQ	75	100	NUM.	MOI.	Ğ G		DESCRIPT	
			\vdash										र्ट	722.5	WEATHERED ROCK-	Tan White
	Ŧ														Granite, Moist,	
720.0	Ŧ						1	ļ					G		,	` ,
/20.0	Ŧ.,	-]		0.5		ļ	ļ							•	
	± 63.	5 100/0.	3		0.5		ļ	1	100	/0. 5		D		718.5'	INC DOOL M. J	64.0
	‡						ļ	1							INE KUCK—Moderatery Neathering, Medium H	Severe to Moderate
	#						ļ	ļ					-		Close Fracture Spo	ıcing Tan
	#						ļ	ļ 							White and Black Gro	inite, (CR)
715.0	‡						ļ							714.5		68.0
	#							ļ			RS-1		1	CRYSTALLI	NE ROCK—Moderate M	leathering, Moderately
	#							ļ					4		Hard, Very Close to Close Fracture Space	moderatery cina White
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700.0	‡	l						ļ								
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695.0	Ŧ]								
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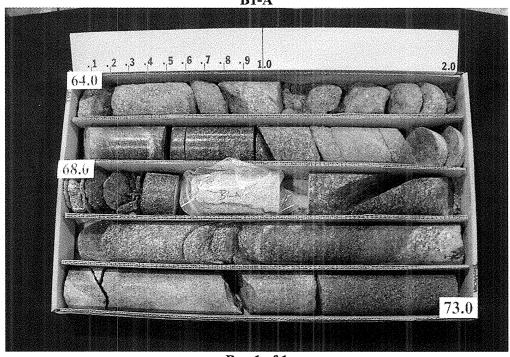
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT CORE BORING REPORT

	The second section will be second as the second									SHEET 1 OF	1	
PROJECT	NO.: 3306	66.1.1	***************************************	ID.:	B-3446		`		COUNTY: D	avidson	GEOI	LOGIST: TJ Roberson
SITE DES	CRIPTION	V: Bridge	415 Over NSF	RR on SR	1243 (Cent	er Street)						GROUNDWATER (Ft.)
BORING 1	NO.: B1	-A	BORING LO	CATION:	16+27.0	OFF	SET: 34.0) LT	ALIGNMEN	ΙΤ: -L-		0 Hr.: 36.4
COLLAR	ELEV.: 78	32.5		NORT	HING:7562	294.9			EASTING:1	629426.9		24 Hr.: 35.0
TOTAL D	EPTH: 73	3.0		DRILL	MACHIN	E: CME 55	5 TM		DRILL MET	HOD: Rotary	1	AMMER TYPE: 140 lb
DATE STA	ARTED: 8-	-3-05		DATE	COMPLET	ËD: 8-3-	05			SURFACE WA		
CORE SIZ	E: HQ			TOTAL	L RUN: 9.	.0	,			DRILLER: Am	eridrill	
ELEV.	DEPTH	RUN	DRILL RATE		RUN ROD	SAMP.		RATA		DESCRIPTION	I ANI) REMARKS
(Ft.)	(Ft.)	(Ft.)	(Min/Ft.)	REC %	%	NO.	REC %	RQD %	718.5			64.0
718.5	64.0	1	2:25	3.7	1.9		3.7	1.9				e Weathering, Medium pacing, Tan, White
			1:19	1					and Black	Granite (CR)	iure s	pacing, ran, write
			2:31						4 jts. @ 0-	10 dea		
			2.12	-					1 jt. @ 10-	20 deg.		
			2:42						5 jts @ 30	-45 deg.		
714.5	68.0	4.0		93	48		93	48	714.5			68.0
714.5		2	1:17	5.0	3.8	RS-1	5.0	3.9	Moderate	Weathering, M	lodera	tely Hard, Very Close
			2.01						to Modera Black Gra	tely Close Frac nite (CR)	cture S	pacing, White and
			2:01							5-69.0 feet)		
			2:06	1					4 jts. @ 0-	10 deg.		
									2 jts. @ 10)-20 deg.		
			2:12						1 jt. @ 20- 1 jt @ 30-			
			2:19	1					2 jts. @ 45			
709.5	73.0	5.0		100	76		100	76	709.5			73.0
									Coring Ter Rock (Gra	minated at Ele	evation	709.5 in Crystalline
									ROCK (Gra	inic)		,
									-			
					-							

CORE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446) Bridge 415 over NSRR on SR 1243 (Center Street) DAVIDSON COUNTY, NORTH CAROLINA B1-A



Box 1 of 1

SHEET 1 OF 3

BORING NO. B1-C BORING LOCATION 16+28.0 OFFSET 2.0 RT ALIGNMENT -L- OCILAR ELEVATION 777.3 NORTHING 756276.7 EASTING 1629408.4 2 TOTAL DEPTH 75.0 DRILL MACHINE CME 55 TM DRILL METHOD HSA 2.25 INCH HAMMER TYPE	OCK 59.0
COLLAR ELEVATION 777.3 NORTHING 756276.7 EASTING 1629408.4 2 TOTAL DEPTH 75.0 DRILL MACHINE CME 55 TM DRILL METHOD HSA 2.25 INCH HAMMER TYPE START DATE 08-05-05 COMPLETION DATE 08-05-05 SURFACE WATER DEPTH NA DEPTH TO RO ELEV. DEPTH BLOW COUNT PEN. BLOWS PER FOOT SAMP NUM. MOI. C 777.3 TOTAL DEPTH BLOW COUNT PEN. BLOWS PER FOOT NUM. MOI. C 777.3 TOTAL DEPTH BLOW COUNT PEN. BLOWS PER FOOT NUM. MOI. C 777.3 TOTAL DEPTH ROSON TOTAL DEPTH NA DEPTH TO ROSON TOTAL DEPTH TOTAL D	24 HR. 32.0 140lb. AUTO OCK 59.0
TOTAL DEPTH 75.0 DRILL MACHINE CME 55 TM DRILL METHOD HSA 2.25 INCH HAMMER TYPE	140lb. AUTO OCK 59.0
START DATE 08-05-05 COMPLETION DATE 08-05-05 SURFACE WATER DEPTH NA DEPTH TO ROUSE ELEV. DEPTH (FT.) BLOWS PER FOOT SAMP NUM. SOIL AND R DESCRIPTION 777.3 RESIDUAL: Loose, Tan	OCK 59.0
ELEV. DEPTH BLOW COUNT PEN. BLOWS PER FOOT SAMP NUM. MOI. G DESCRIPTION 777.3 T T T T T T T T T	
777.3 - RESIDUAL: Loose, Tan	KOCK
7/7.3 RESIDUAL: Loose, Tan	σα. N
RESIDUAL: LOOSE, IGN	
	White, laist (A—2—5)
775.0 +	0.00, (11 2 0)
+ 3.5 3 3 4 1.5	
‡ 	
770.0 ‡	
+ 8.5 3 4 6 1.5	
765.0 	
760.0 +	
755.0 +	
+ 23.5 3 4 5 1.5	
	-
750.0 	
+ 28.5 4 4 5 1.5	
	,

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 3

DDOIDOR	1 NO 770	VCC 1	4		TD I	D 744C	COLINE	W DAY	#DCON			CEO	POTON		SHEET 2	OF J
	NO. 330					B-3446	COUNT		IDSON	TOCC	۲\	GEU	LOGIST	TJ ROBERSON	GROUND	WATED
	SCRIPTION NO. B1-(R NSRR ON ATION 16+28			OFFSET			ATTO	NMENT	-L-	$\begin{array}{c c} - & GROUND \\ \hline 0 & HR. & 3 \end{array}$	
	ELEVATION		<u> </u>	ORM			6276.7		JP P DE 1	LEAS'		<u> </u>	408.4	-L-	24 HR. 3	
TOTAL D		5.0		DIII		NE CME 55			METH		SA 2.			HAMMER TYPE		
START D		3.0 8-05				ETION DATE	08-05			FACE W					ROCK 59	
SIAKI L	DEPTH				PEN.	BLOWS	PER	F00T	DOIL		AIEM I	TT	I IAV	SOIL AND	ROCK	7.0
ELEV.					L		50	75	100	SAMP. NUM.	MOI.	\bar{b}{B}		DESCRIP		
	(FT.)	0.5	0.5	0.5	11.7	Ĭ	Ť			140141.	/ MUI.		7.3			30.0
	土													RESIDUAL: Loose,1		
	\pm										T		;	Silty Fine SAND, Moi	st, (A-2-5)	
745.0	Ŧ										*	03				
	+ 33.5	2	4	6	1.5						M					
	#					 					ӯ					
	#										¥	7.				
	#															
740.0	#												10.3°	Medium Dense, Tan,	White Silty	37.0
7 40.0	± 38.5	5	7	9	1.5						м			Fine SAND, Moist,	(A-2-4)	
	T 30.3		′	"	'.5						m				•	
	Ŧ					1-7-1-										
	Ŧ															
	‡															
735.0																
	± 43.5	4	5	6	1.5						M					
	±					···*										
	Ŧ					\										
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730.0	#															
	‡ _{48.5}	7	11	17	1.5						м	37.				
	± 10.0			l ''	''"		28									
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725.0																
	± 53.5	3	9	18	1.5		· · · · ·				M					
	+		1			<u> </u>	÷ /					2.4				
	Ŧ															
	Ŧ										1					
720.0	+												no t			בם א
	‡ _{58.5}	100/0.5			0.5			ym	יחילתים		М		<u> 19.3'</u>	WEATHERED ROCK-	Tan. White.	58.0
	± 30.0				"				10/0.3 			P	M8.3'	Granite, Mois STALLINE ROCK— Mo	L, (WR)	
	<u> </u>		<u></u>	<u> </u>	<u> </u>	LL	i		L	L	<u> </u>	1.8/.		STALLINE ROCK— Mo	derate Weathe	ring, /
													/ Mo	oderately Hard, Clos se Fracture Spacing,	to moderate White and Al	ay /
													/00	Granite	CR)	/

SHEET 3 OF 3

	ROUND WATER HR. 35.0
	HR. 32.0
	140lb. AUTO
START DATE 08-05-05 COMPLETION DATE 08-05-05 SURFACE WATER DEPTH NA DEPTH TO RO	
LILY In the second seco	OCK
ELEV. (FT.) 0.5', 0.5', 0.5' (FT.) 0 25 50 75 100 NUM. MOI. & DESCRIPTION	50.0°
CRYSTALLINE ROCK-Moderate Weath	
Hard, Close to Moderate	y Close
715.0 Fracture Spacing, White a	nd Black
715.0 + Granite, (CR)	
1 72.3	65.0°
CRYSTALLINE ROCK—Slight Weather to Moderately Close Fro	ing, Hard, Close
A Spacing White and Black	
710.0 + (CR)	,
T	69.7
Tos.g. Severe Weathering, Soft	Very
Close Fracture Spacing, White Granite, (WR	, ^{idn} , /
705 0 🛨	
+	
to Moderately Close Fro	Cronite
75.0	75.0'
± LIEVATION 702.3 IN	
700.0 TOURYSTALLINE ROCK (GRANITE). TO THE ROCK OF ANITE OF THE ROCK OF ANITE OF THE ROCK	
700.0 —	
695.0 	
<u> </u>	
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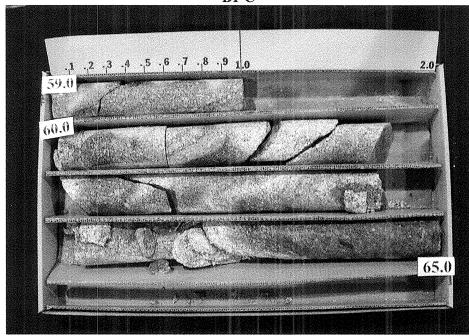
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT CORE BORING REPORT

National Confederation of Confederation	abeau convento, a									SHEET 1 OF	7 1			
PROJEC'	T NO.: 330	56.1.1		ID.:	B-3446				COUNTY: D	avidson	GEOLG	OGIST: TJ Roberson	1	
SITE DE	SCRIPTION	V: Bridge	415 Over NSF	RR on SR	1243 (Cent	er Street)						GROUNDWATE	R (Ft.)	
BORING	NO.: BI	-C	BORING LO	CATION:	16+28.0	OFF	SET: 41.	0 LT	ALIGNMEN	VT: -L-		0 Hr.: 35.0		
COLLAR	ELEV.: 7	77.3	,	NORT	HING: 756	276.7			EASTING:	1629408.4		24 Hr.: 32.0		
TOTAL I	DEPTH: 75	0.0	***	DRILL	MACHIN	E: CME 55	5 TM		DRILL MET	THOD: Rotary	HAI Aut	MMER TYPE: 140 I	lb	
DATE ST	ARTED: 8	-5-05		DATE	COMPLET	TED: 8-5-	05	٧.		SURFACE WA	TER DEF	TH: N/A		
CORE SI	ZE: HQ			TOTAI	L RUN: 16	i.0				DRILLER: Am	eridrill			
ELEV.	DEPTH	RUN	DRILL RATE		RUN	SAMP.		RATA	I	DESCRIPTIO	N AND	REMARKS		
(Ft.)	(Ft.)	(Ft.)	(Min/Ft.)	REC %	%	NO.	REC %	RQD %	718.3	•		5!	9.0	
718.3	59.0	1	2:13	1.0	1.0	RS-3	5.9	4.4				ely Hard, Close t		
				1					Granite (C		ire Spac	ing, White and I	3 lack	
717.3	60.0	1.0		100	100				RS-3 (60.3	3-60.7 feet)				
717.3	60.0	2	2:01	4.9	3.4		1		1 jt. @ 0-1	0 deg.				
									4 jts. @ 10)-20 deg.				
			2:51						2 jts. @ 20 1 jt. @ 50-					
			2:45	-					1 jt. @ 60- 1 jt. @ 70-					
			2:53	-					1 jt. @ 70-	-oo deg.				
			2:33											
712.3	65.0	5.0	3:02	98	68		98	73						
712.3	65.0	3	3:10	9	4.7	4.7		4.7	4.7	712.3 Slight Wea	athering Hard	Close to	o Moderately Cl	65.0
,														ck Granite (CR)
	,		2:51						2jts. @ 0-1	10 deg. 1 it.	. @ 10-2	20 deg.		
			3:11				100	100	707.6	S J	0		69.7	
707.3	70.0	5.0	3:17	94	94		0.0	0.0	707.6	athorina Coff	Vomi		69.7	
707.3	70.0	4	3:04	4.6	4.4					eathering, Soft pacing Tan, W				
							0.0 4.6	0.0	706.9	l jts. @ 0-10 d	leg.		70.4 70.4	
			3:12					1.7	Slight Wea			o Moderately Cl		
			3:21						Fracture S	pacing White	and Blac	ck Granite (CR)		
			3:17						3 jts. @ 0-	10 deg.				
702.3	75.0	5.0	3:24	92	88		100	96	702.3				75.0	
			·											
									Rock (Grain		evation	702.3 in Crystall	ine	
										,				
					many and the same same a second						Carl Carlon with 1974 #17	and the description of the other configuration of the first beautiful to	***	

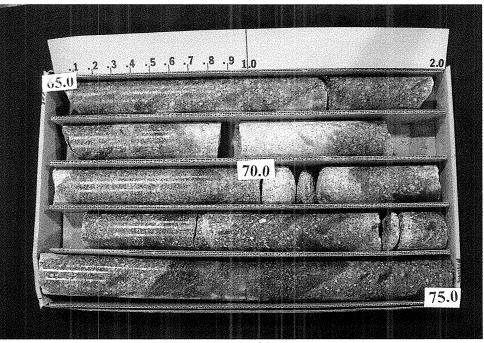
18

CORE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446)
Bridge 415 over NSRR on SR 1243 (Center Street)
DAVIDSON COUNTY, NORTH CAROLINA
B1-C



Box 1 of 2



Box 2 of 2

SHEET	1	of	3

PROJECT	' NO. 33	066.1	.1		ID.	3-3446	COUNTY	DAVIDSON			GEOL	OGIST	TJ ROBERSO	N
	SCRIPTION					R NSRR ON SI								GROUND WATER
	NO. B1-			ORIN		TION 16+23.0		OFFSET			ALIGN		-L-	0 HR. 40.0'
	ELEVATIO		781.4			RTHING 7562					16293			24 HR. 34.2'
TOTAL D	.01	5.6				WE CME 55 T							RYHAMMER TY	
START I			4-05				8-04-0			VATER I)EPIH	NA		ROCK 75.6
ELEV.	DEPTH						PER FO		SAMP. NUM.	V	[S]_		SOIL AND DESCRIP	
781.4	<u> </u>	10.5	$\frac{0.5}{1}$	0.5	(FT.)	25	30	75 100	IAOM.	MOI.	G 781	<u>4'</u>		0.0'
701.4	\mathbf{F}											_	RESIDUAL: Stiff, T	an, Orange,
780.0	\pm											Fine	to Coarse Sandy S	ILI, MOIST, (A-4)
	\mathbf{E}_{i}													
	士 3.5	4	5	5	1.5				SS-7	10.2%				
	±					<u></u> ⊁-10								
	#					<u> </u>					775	<u>'8'</u>		8.0
775.0	±												Loose, Tan, White SAND, Moist, (, Silty Fine
	#	1				<u> </u>							JUAN, MOISH /	N-2-4)
	± 8.5	2	2	3	1.5				ST-2	М				
	± 1		l			<u> *</u>			-					
	#	-	1											
770.0	+	.												
	±		1											
	± 13.5	3	3	4	1.5					M				
	±					<u> </u>								
	\pm	1				<u> </u>								
765.0	\pm	-				<u>L-1</u>								
	\pm					<u> </u>			1					
1	+ 18.5	4	4	4	1.5					. M				
	\pm .					<u> </u>								
	\pm	1 .	1	'										
760.0	\pm									l	75	9.4'		22.0*
	\pm												Medium Dense, Tar	, White, Silty
	= 23.5	4	5	7	1.5					M			Fine SAND, Mois	t, (A-2-4)
	\mathbf{H}													
	\pm	*									N.			
755.0	· Ŧ	~ " (2)												
	\mathbf{L}										75	3.4'		28.0
	\pm 28.5	3	4	5	1.5					М			Loose, Tan' White	e, Silty Fine
	+		() - V	<u> </u>	<u> </u>	*	<u> </u>		<u> </u>	<u></u>			SAND, Moist,	(A-Z-4)
1		7												

20

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 3

	₹0. B1-E			ORING		NTION 16+2			OFFSET				GNMENT	<u>-L-</u>	-	0 HR.	
	ELEVATION		81.4				6254				TING		9376.2	A DLATA	3 (3 (1707) (1887)		. 34.2°
OTAL DE		5.6				NE CME 55							TH NA		MMER TY DEPTH TO		lb. AU
TART DA	DEPTH	3-04				ETION DATE BLOWS	PER	04-05 F00T				111	IN NA		IL AND		73.0
ELEV.		1		1	(FT.)		50 50	75		SAMP. NUM.	MOI	Ğ.			DESCRIP	TION	
													751.4'	Loose,	, Tan, White	, Silty Fine	
750.0 -	‡												749.4	SA	ND, Moist, (A-2-4)	
•	‡													Medium	Dense, Tan	, Black, Sill	
	‡ 33.5	3	4	7	1.5						M			Fine :	SAND, Moist	, (A-2-4)	
	‡			:							*						
,	Ŧ											1					
745.0 -	‡																
	‡																
	‡ 38.5	5	.9	14	1.5						M						
	‡					2	<u> </u>				₹						
	#										*						
740.0 -	‡																
	#																
	± 43.5	8	11	14	1.5						M						
	# "				'''		5										
	#																
735.0 -	<u> </u>	<u> </u>															
, 00.0	±																
	± 48.5	7	8	17	1.5						,	77.					
	± 70.5	′	١	''	"."		5				**						
	\pm					<u> </u>											
730.0 -	Ŧ																
/30.0	Ŧ						<u></u>					-					
	Ŧ.,.	50	50.00										728.4'	MEAT	HERED ROCK	(Ton Whit	Δ
	± 53.5	50	50/0.4		0.9				100/0.9		"	2		WLA II	Granite, Moi:	st, (WR)	.c
	‡											1			·	,	
705.0	‡																
725.0	‡											<u>y</u>	724.4	Von	Dence To-	Marita Car	······································
	Ŧ	100	00	70	4 =						l k	183		Fine	Dense, Ton, SAND, Mois	it, (A-2-4))
	+ 58.5	16	26	32	1.5			58				7,142			•	. ,	

SHEET 3 OF 3

PROJECT N	0. 330	66.1.	.1		D.	B-3446	CO	UNTY	DAVIDSON	1		GE	OLOGIST	TJ R	OBERSO		
SITE DESCI	RIPTION	BR	IDGE	415	OVE	R NSRR	ON SR	1243 ((CENTER	STREE	T)						D WATER
BORING NO	. B1-E	3	В	ORIN	G LOCA	ATION 16	+23.0		OFFSEI				GNMENT	<u>-L</u> -	-	0 HR.	
COLLAR EL	EVATION	7	81.4		N	ORTHING	75625				STING		9376.2			24 HR.	
TOTAL DEP	TH 85	5.6	D	RILL	MACHI	NE CME	55 TM		RILL METI						MMER TYI		b. AUTO
START DAT	E 08	3-04	-05		COMPI	ETION DA	TE 08	-04-0	5 SUI	RFACE	WATER	DEP	H NA		DEPTH TO		75.6
[[DEPTH				PEN.	BLC		ER FO		SAMP		6		SC	OLCOBIO	ROCK	
ELEV.	(FT.)	0.5	0.5	0.5	(FT.)	Q 2	5 5	50	75 100	NUM.	MOI.	Ğ			DESCRIP	TION	60.0
1				-	\vdash			<u> </u>		\dagger	†		721.4'	Verv [ense, Tan,	Mhite, Silty	- CHAO
720.0								1							SAND, Moist,		
1/20.0	•			ľ				<u> </u>									
1 ±	- - 63.5	32	68/0.5		1.0			<u> </u>			M	世	718.4	WFATH	RED ROCK-	Tan. White	63.0
1 T	- 00.0	32	,		'."			<u> </u>	100/1.0		"	33			te, Moist to		
1 T	-							<u> </u>	1	Ì		泛					
1-45 0 F	-											믴					
715.0 +	-	l															
1 ‡	-				ا م			1		l	,						
1 1	- 68.5 -	100/0.5	1		0.5			ļ	-100/0.5		י ן	2					
‡	-									9		밁					
‡	-																
710.0	-																
1 ‡	-											72					
1 ±	- 73.5	00/0.5	i		0.5				100/0.5	d	D		707.4"				74.0°
1 ±	-							<u> </u>		1					Weathering		
1 1	- 75.5	60/0.1			0.1			<u> </u>	60/0.1	<			705.8	Close	Fracture Sp Mhite Granite	idcing, ron, i, (WR)	<u> 75.8°</u>
705.0	_	1								RS-2			CDVCTAL				Waatharing
1 ±	_	1						<u></u>				1			CK— Modera to Moderate		
-	_							1				17.5		Clos	se to Modero	itely Close	
]	-	1									ŀ			Frac	ture Spacing		
	-											737	700.8		Granite, (uk)	80.6
700.0	_							1				6/1	CRYSTALL				, Moderately
			1				 					3			ird to Hard,		
							†					N.S.		00M nna?	lerately Clos	e rracture ite Granite.	
1 1	L										Ì			фи	ing, Tán, Wh (CR)		
]	E						 	1				1	695.8				85.6
695.0	85.6						NG TE	RMINATE	D AT			T					
030.0	E					E	LEVATIO	N 695.8	<u> </u>								
] -	E								GRANITE)								
-	F						.	1									
	Γ	1				11:	1	1		Ц			<u> </u>				

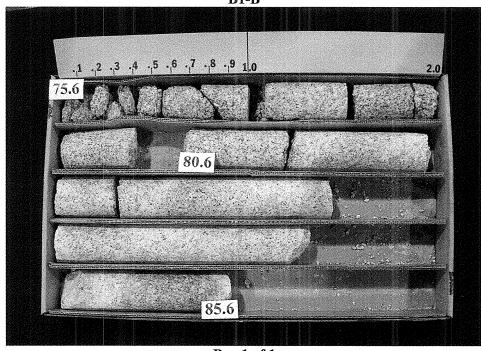
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT CORE BORING REPORT

SHEET LOF L

				and the second second second second					SHEET 1 OF	1		
PROJECT	NO.: 3306	6.1.1		ID.:	B-3446				COUNTY: Davidson	GEOL	OGIST: TJ Roberson	
SITE DES	CRIPTION	: Bridge	415 Over NSR	R on SR	1243 (Cente	er Street)					GROUNDWATER (Ft.)	
BORING 1	VO.: В1-	В	BORING LOC	ATION:	16+23.0	OFF	SET: 41.0	LT	ALIGNMENT: -L-		0 Hr.: 40.0	
COLLAR	ELEV.: 78	1.4		NORTH	HING: 7562	254.1			EASTING:1629376.2		24 Hr.: 34.2	
TOTAL D	EPTH: 85.	6		DRILL	MACHINE	E: CME 55	TM		DRILL METHOD: Rotary	НА	MMER TYPE: 140 lb auto	
DATE STA	ARTED: 8-	4-05		DATE	COMPLET	ED: 8-4-0)5		SURFACE WA	TER DE	PTH: N/A	
CORE SIZ	E: HQ			TOTAL RUN: 11.5					DRILLER: Am	eridrill		
ELEV. (Ft.)	DEPTH (Ft.)	RUN (Ft.)	DRILL RATE (Min/Ft.)	REC	RQD %	SAMP. NO.	REC	RATA	DESCRIPTION 707.4	ON AND REMARKS 74.0		
707.4	74.0	1	0:42	0.0	0.0		0.0	0.0	Severe Weathering, Soft	Very		
707,4	74.0	1		0.0	0.0		0.0	0.0	Spacing, Tan, White Gra			
			0.5/0:27						No Recovery			
									110 100001019			
	75.5	1,5							705.0			
705.9 705.9	75.5 75.5	1.5 NA	-	0	0		0	0	705.9 (SPT-6	75.5 75.5		
705.8	75.6	, and							705.8		75.6	
705.8	75.6	2	0:57	2.2	1.4	RS-2	2.2	1.4	705.8 Moderately Severe Wea	thering	75.6	
			1:05						Moderately Hard, Very	Close to	o Moderately Close	
									Fracture Spacing, Tan, V RS-2 (76.6-77.0 feet)	White C	Franite (CR)	
			1:19									
			1:12						7 jts. @ 0-10 deg. 1 jt @ 10-20 deg.			
									l jt. @ 30-40 deg.			
700.8	80.6	5.0	1:15	44	28		44	28	700.8		80.6	
700.8	80.6	3	1:51	4.7	4.4		4.7	4.4	Moderate Weathering, N		tely Hard to Hard,	
			2:02				-		Close to Moderately Clo White Granite (CR)	se Frac	cture Spacing, Tan,	
			2:11						` '			
			2:16						1 jt. @ 0-10 deg.			
695.8	85.6	5.0	2:28	94	88		94	88	695.8		85.6	
									Coring Terminated at El Rock (Granite)	levation	1 695.8 in Crystalline	
									Took (Granite)			
				CONTRACTOR OF THE PARTY OF THE		A Contract of the Section		The state of the s		marketin market street being mark		

CORE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446)
Bridge 415 over NSRR on SR 1243 (Center Street)
DAVIDSON COUNTY, NORTH CAROLINA
B1-B



Box 1 of 1

SHEET 1 OF 3

BORING NO. B2—A BORING LOCATION 17+44.0 OFFSET 24.5 LT ALIGNMENT —L— 0 HI COLLAR ELEVATION 784.1 NORTHING 756205.0 EASTING 1629503.9 24 H TOTAL DEPTH 89.0 DRILL MACHINE CME 55 TM DRILL METHODHSA 2.25 INCH/ROTAR HAMMER TYPE 14 START DATE 07—28—05 COMPLETION DATE 07—28—05 SURFACE WATER DEPTH NA DEPTH TO ROCK	und water 2. 40.0 ir. 36.0
COLLAR ELEVATION 784.1 NORTHING 756205.0 EASTING 1629503.9 24 E TOTAL DEPTH 89.0 DRILL MACHINE CME 55 TM DRILL METHODHSA 2.25 NCH/ROTAR HAMMER TYPE 14 START DATE 07-28-05 COMPLETION DATE 07-28-05 SURFACE WATER DEPTH NA DEPTH TO ROCK	1
TOTAL DEPTH 89.0 DRILL MACHINE CME 55 TM DRILL METHODHSA 2.25 INCH/ROTAR HAMMER TYPE 14 START DATE 07-28-05 COMPLETION DATE 07-28-05 SURFACE WATER DEPTH NA DEPTH TO ROCK	TRIAN I
START DATE 07-28-05 COMPLETION DATE 07-28-05 SURFACE WATER DEPTH NA DEPTH TO ROCK	
	Olb. AUTO
IDENTIFICATION OF THE PROPERTY	
ELEV. (FT.) 0.51 0.51 0.51 (FT.) 0.25 50 75 100 NUM (FT.) 0.51 0.51 0.51 0.51 0.51 0.51 0.51 0.51	K
[(F1.) [0.5, 0.5, 0.5] (F1.) 27 30 77 109 100M. MOLL G	0.00
784.1 RESIDUAL: Stiff, Red, Brow	
±	
1 1 1 1 1 1 1+	,
T 75 7 4 5 45 1	
780.0 + 3.5 3 4 5 1.5	
	:
775.0 + 0.0 2 7 0 1.0 - 1 - 1 - 1 - 1 - 1 0.0 2 1.0	
+	12.0
Loose, Tan, Brown, Silty	
135 2 4 4 15 Tine SAND, Moist, (A-2-	4)
770.0 	
T	
T	
767.1°	17.0
Loose, Tan, White, , Silty I	·me
765.0 + 18.5 3 4 4 1.5 -1 M (3)	
	*
760 0 7 23.5 3 4 4 1.5	
760.0 = 23.3 3 4 4 1.3	
755 0 + 28.5 2 3 5 1.5	
755.0 + 26.3 2 3 3 1.3 - 8 " 3	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 3

PROJECT NO. 33066.1.1 ID. B-3446 COUNTY DAMDSON GEOLOGIST TJ ROGERSON STREED STREED COUNTY STREED CO	DDATEAT	NO 770	NGG 1	4		ID.	B-3446	COUNT	FV DA	MDCON			GEOLOGIST	TJ ROBERSON	HEET 2 OF 3
BORING NO. B2-A BORING LOCATION 17+44.0 OFFSET 24.5 LT ALIGNMENT _ L											STREET	r)	GEOLOGIOI	TO NODENSON	
COLLAR BLEVATION 784.1 NORTHING 756205.0 BASTING 1629503.9 24 IRL 36.0													ALIGNMENT	-L-	
START DATE 07-28-05 COMPLETION DATE 07-28-05 SURFACE WATER DEPTH NA DEPTH TO BOCK 69.0 ELEV. DEPTH BLOW COUNT PEN BLOWS PER FOOT SAMP ▼						_							1629503.9		24 HR. 36.0
ELEV. DEPTH BLOW COUNT PEN. BLOWS PER FOOT SAMP WILL COSE, Inc., White, Sity Fine to Course SMUD, Most, (A-2-4) 750.0 33.5 2 3 4 1.5 77.	COTAL DI	epth 89	9.0	D	RILL	MACHI	NE CME 5	5 TM	DRII						
ELEV. (FT.) 0.5' 0.5' 0.5' 0.5' (FT.) 9 25 50 75 100 NUM. MOI & DESCRIPTION	START DA									SUR	FACE W	ATER	DEPTH NA		
750.0 33.5 2 3 4 1.5 7. 10 7.45.0 48.5 4 5 9 1.5 7. 10 7.55.0 48.5 4 5 9 1.5 7. 10 7.55.0 58.5 6 11 19 1.5 7.50 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 58.5 19 45 55/0.4 1.4 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Moist, (A-2-4) 7.55.0 MM Medium Dense, Ton, White, Sity Fine to Coarse SAND, Mo	FLEV											V /	0		
750.0	LLLV.	(FT.)	0.5	0.5	0.5'	(FT.)	0 25	50	 	100	NUM.	<u>∕MOI.</u>	Ğ 754.1°	DESCRIFT	
740.0 43.5 2 4 6 1.5 10 M 735.0 48.5 4 5 9 1.5 19 1.5 SS-10 M 730.0 53.5 6 11 19 1.5 30 M 730.0 58.5 19 45 55/0.4 1.4 M		+ + + + + + + + + + + + + + + + + + +			,		7 7 10					*		Loose, Tan, White, SAND, Moist, (A	Silty Fine
735.0 48.5 4 5 9 1.5 SS-10 M Fine to Coarse SAND, Moist, (A-2-4) 730.0 53.5 6 11 19 1.5 SS-10 M Fine to Coarse SAND, Moist, (A-2-4) 730.0 58.5 19 45 55/0.4 1.4 SS-10 M Fine to Coarse SAND, Moist, (A-2-4)		43.5	2	4	6	1.5	10					-	757.1		
730.0 — 30 — 30 — 30 — 31 — 32.1' — 32	735.0	48.5	4	5	9	1.5	* 14				SS-10	M		Fine to Coarse SA	ND, Moist,
705 0 + 58.5 19 45 55/0.4 1.4	730.0 ·	53.5	6	11	19	1.5		30				M	mı	META PARTIES - DAGGE	
	725.0	58.5 +	19	45	55/0.4	1.4				00.\0'a		м		WEATHERED ROCK— Granite, Moist	ion, white, (WR)

SHEET 3 OF 3

BORING NO. B2—A BORING LOCATION 17-44.0 OFFSET 24.5 LT ALIGNMENT —L O HR. 40.0	PROJECT				445		B-3446		UNTY	DAVID			7 \	GE	OLOGIST	TJ ROBERSON	GROUND	BEATED OF
COLLAR ELEVATION 784.1 NORTHING 756205.0 EASTING 1629503.9 24 HR. 36.0									1243					LATI	CHMENT	_1_	4	
107/10 1					OTHING				5.0	OF	THE							
START DATE 07-28-05 COMPLETION DATE 07-28-05 SURPACE WATER DEPTH NA DEPTH TO ROCK 69.0					RIII.					DRILL 1	иптн					ARIYHAMMER TYP		
ELEV. DEPTH BLOW COUNT (FT.) 0.5' 0.5' 0.5' 0.5' (FT.) 0 25 50 75 100 NUM. MOI. 278.1' NEATHERED ROCK—Ton, White, Granite, Moist, (WR) 720.0 63.5 70 80/ks 0.6 1000/0.5 0.5 1000/0.5 DESCRIPTION 715.0 68.5 00/0.s 0.5 0.5 1000/0.5 DESCRIPTION 710.0 705.0 0.6 1000/0.5 DESCRIPTION 710.0 705.0 0.6 1000/0.5 DESCRIPTION 710.0 0.6 1000/0.5 DESCRIPTION																		
ELEV. (FT.) 0.5' 0.5' 0.5' (FT.) 0 25 50 75 100 NUM. MIOL 8 DESCRIPTION 720.0 63.5 70 30/as 0.6 1000/0.8 D											0020		W	ILI				
720.0 63.5 70 so/as 0.6 100/0.5 D	ELEV.	1									100		MOL	8				
715.0 68.5 60/as 0.5 70 so/as 0.5 100/		+	0.5	0.5	0.0						#		7 10101		724.1*			80.0
695.0 89.0 CORING TERMINATED AT	715.0 - 710.0 - 705.0 -	† + + + + + + + + + +								100/	70.5	RS-4	D		CRYSTAL	LINE ROCK— Moderate Medium Hard, Very Close Fracture Spo White and Black Gro LINE ROCK—Moderate Hard, Close to Moder Fracture Spacing White Granite, (CI (STALLINE ROCK—Sligh Weathering, Hard to Moderately Close Fracture Spacing White	ly Severe Wec Close to acing Tan anite, (CR) to Slight Wec rately Close e and Black R) to Very Slig Very Hard, to Wide e and Black	
	695.0 ·							NO TEC	MINIATO	ED AT				1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	695.1'			89.
89.0		十 09.0		<u></u>	<u>L</u>	1	FI	EVATIO	N 695.	1 N		<u> </u>	<u> </u>					

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT CORE BORING REPORT

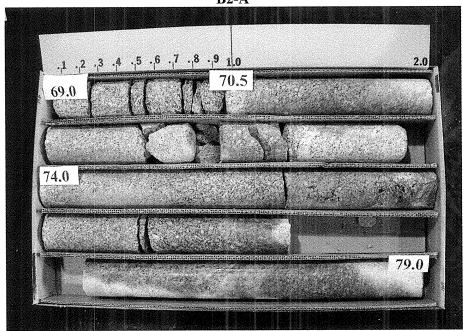
SHEET LOF L

					and the second s				SHEET 1 OF	1	
PROJECT	NO.: 3306	6.1.1		ID.:	B-3446				COUNTY: Davidson	GEOL	OGIST: TJ Roberson
SITE DES	CRIPTION	: Bridge	415 Over NSR	R on SR	1243 (Cente	er Street)					GROUNDWATER (Ft.)
BORING 1	NO.: B2-	·A	BORING LOC	ATION:	17+44.0	OFF	SET: 24.5	LT	ALIGNMENT: -L-		0 Hr.: 40.0
COLLAR	ELEV.: 78	4.1		NORTH	HING: 7562	205.0			EASTING: 1629503.9		24 Hr.: 36.0
TOTAL D	EPTH: 89.	0		DRILL	MACHINE	E: CME 55	TM		DRILL METHOD: Rotary	HA. Aut	MMER TYPE: 140 lb
DATE STA	ARTED: 7-	28-05	Principal de la companya de la compa	DATE	COMPLET	ED: 7-29	-05		SURFACE WA		
CORE SIZ	E: HQ			TOTAL	RUN: 20	.0			DRILLER: An	neridrill	
ELEV.	DEPTH	RUN	DRILL	R	UN	SAMP.	STF	RATA	DESCRIPTIO	N AND	REMARKS
(Ft.)	(Ft.)	(Ft.)	RATE (Min/Ft.)	REC %	RQD %	NO.	REC %	RQD %	715.1		69.0
715.1	69.0	1	1:12	0.95	0.0		0.95	0.0	Moderately Severe Wea		Medium Hard, Very
			:36 /0.5						Close to Close Fracture Black Granite (CR)	Spacing	g, Tan, White and
									7 jts. @ 0-10 deg.		
713.6	70.5	1.5		63	0						
713.6	70.5	2	1:27	2.9	2.2		45	0	713.0		71.1
			1:31				2.9	2.2	713.0	***************************************	71.1
			1:52	-					Moderate to Slight Wea		
			1:01/0.5						Moderately Close to William Black Granite (CR)		ture spacing, white
			1.01/0.3				100	76	4 its @ 0 10doc	2 :ta (20 40 40 -
710.1	74.0	3.5		83	63		100	/0	4 jts @ 0-10deg.	2 Jis. (c	9 30-40 deg. 74.0
710.1	74.0	3	2:42	5.0	4.9	RS-4	14.9	14.7	Slight to Very Slight W		
			2:51	1	-				Moderately Close to Wand Black Granite (CR)		ture Spacing, White
			2:58								
			3:11	1					RS-4 (77.0-77.7 feet)		
705.1	79.0	5.0	3:16	100	98						
705.1	79.0	4	4:34	4.9	4.9				12 jts. @ 0-10 deg.		
			4:12								
			4:26								
700.1	84.0	5.0	4:30	98	98						
700.1	84.0	5	4:24	5.0	5.0						
			4:34								
			4:28								
695.1	89.0	5.0	4:32	100	100						
	07.0	15.0	7.42	100	100		99	98	695.1 Coring Terminated at E		89.

Coring Terminated at Elevation 695.1 in Crystalline Rock (Granite)

CORE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446)
Bridge 415 over NSRR on SR 1243 (Center Street)
DAVIDSON COUNTY, NORTH CAROLINA
B2-A



Box 1 of 2



Box 2 of 2

SHEET 1 OF 3

PROJECT 1	₹0. 330	66.1	.1		D.	3-3446	COUN	TY D	AVIDSON			GE	OLOGIST	' TJ F	ROBER			
SITE DESC	RIPTION	BR				R NSRR ON		243 (C									GROUND	i
BORING NO	0. B2-(ORING		LTION 17+3			OFFSET				GNMEN.	<u>' -L-</u>			HR. 42	1
COLLAR EI			83.4				6203.	3		EAS			9480.1				4 HR. 38	
TOTAL DEI		5.0				NE CME 55			IIL METH						AMMER	TYPE	140lb.	
START DAT			-05			ETION DATE		8-05		FACE W		T	M H				OCK 70. ROCK	0
ELEV.	DEPTH					BLOWS		F00 ⁻		SAMP.		ğ		2	OIL A DESC	RIPTIO		
	(FT.)	0.5	0.5	0.5	(FT.)	0 25	50		100	NUM.	MOI.		783.4"					0.0'
783.4 -	_												782.6'				inches of	0.8
=	-											*	\	Asphalt of Pa	ic Concre ortland Co	ete over ement C	6 inches oncrete	
-	-												L					
780.0	3.5	1	2	3	1.5						W			KESID	WAL: LO	ose, lan Moist	, white, (A-2-4)	
-			_			×-5								July 11	IIC SAND	, muisc	(n-2-+)	
_	E																	
-	<u> </u>																	
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_ 775.0 —	8.5	1	2	3	1.5						м							
775.0	E 0.3	'	-	١	'	5-1-									•			
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	‡				1									Mediu	m Dense	, Tan, W	hite, Silty	
755.0 -	± 28.5	5	5	6	1.5					SS-11	1 м			Fine to	Coarse S	AND, Mo	ist, (A-2-4	+)
7.00.0	±				1							17.]					
	<u> </u>		Ь		<u> </u>	<u> </u>			LL	1	_L	1:4						
L																		

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 3

PROJEC	TN	0. 330)66.1	.1		ID.	B-3446	COUR	NTY C	AVIDSO	N	AVOIGN-10-10-10-10-10-10-10-10-10-10-10-10-10-	GE	EOLOGIST TJ ROBERSON
				_			R NSRR ON					T)		GROUND WATER
BORING	NO	. B2-	С	B	ORING	LOCA	ATION 17+3	1.0		OFFSE	T 5.0	LT	AL	LIGNMENT _L 0 HR. 42.2
COLLAF	EL.	EVATION	N 7	83.4				56203.				STING		29480.1 24 HR. 38.1
TOTAL			5.0				NE CME 5							ICH/ROTARYHAMMER TYPE 1401b. AUTO
START			8-08				ETION DATE		08-05		RFACE	·	DEP	
ELEV	[DEPTH					BLOWS				SAMP	MOI	<u>ا</u> م	SOIL AND ROCK DESCRIPTION
LLLV		(FT.)	0.5	0.5	0.5	(FT.)	0 25	50	7.	5 10	NUM.	MOI	. Ğ	DESCRIPTION 753.4' 30.0'
	#		 									1		Medium Dense, Tan, White, Silty
	#													Fine to Coarse SAND, Moist, (A-2-4)
	#												1	
750.0	、土	335	3	5	6	1.5						l M		
1,00.0	′ ±		"			'''	11					l m		1
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740.0	7 7	- 43.5 -	4	5	7	1.5	-1-12-				41	M	1	
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735.0) 🕇	- 48.5 -	4	4	6	1.5	10					M		
	‡	- -					-*-							
	#	-			l						11			
1 .	4	- -												731.4' 52.0'
1		-		İ			 		,, ,,, ,,, ,,,	ļ	11			Dense, Ton, White, Silty Fine SAND, Moist, (A-2-4)
730.	ᄓ	- 53.5	4	11	21	1.5				ļ	11	M	1	Shirt, moist, (A-2-4)
	1	_					<u> </u>				<u>:</u>]]		4.7	u }_
1.	-	-						<u> </u>		<u> </u>]			S. Carlotte and the second sec
	7	_						f	er 140 140 14	<u> </u>	<u>.] </u>			7
	4	-						7-7		J				4
725.	ᇬᅱ	- 58.5	15	19	21	1.5		1-1			-[]			
	7	-						**	<u> </u>] [
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SHEET 3 OF 3

STED DESCRIPTION BRIDGE 415 OVER NSRR ON SR 1243 (CENTER SIREET) GROUND MATER OPEN BORING IDCATION 17+31.0 OFFSET 5.0 LT ALIGNMENT -L- 24 kB. 38.1 COLLAR ELEVATION 783.4 NORTHING 756203.3 RASTING 1629480.1 24 kB. 38.1 COLLAR ELEVATION 783.6 DRILL MACRING CME 55 TM DRILL METHODHSA 2.25 INCH/ROTAR/HAMMEN TYPE 1401b. AUTO START DATE 08-08-08-05 COMPLETION DATE 08-08-08-05 SURPACE NATER DEPTH NA DEPTH NO FOCK 70.0 ELEV. DEPTH BLOW COUNT PEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT SAMP WILL MACRING CME 55 TM OPEN BLOWS PER FOOT BLOWS P	PROJEC	r no. ;	33066	5.1.1			ID.	В	3446	C	YTNUC	D	AVIDSON			G	EC	DLOGIST	TJ	ROBE	RSON		
COLLAR ELEVATION 783.4 NORTHING 755203.3 BASTING 1629480.1 24 HR 38.1	SITE DE	SCRIPT	ION	BRID							1243	(0	ENTER	STREE	(T)							GROUND	WATER
TOTAL DEPTH 85.0 DRILL MACHINE CME 55 TM DRILL METHODHSA 2.25 INCH/ROTAR HAMMER TYPE 140lb. AUTO START DATE 08-08-05 COMPLETION DATE 08-08-05 SURFACE WATER DEPTH NA DEPTH TO ROCK 70.0 ELEV. DEPTH BLOW COUNT PEN. BLOWS PER FOOT SAMP MILE	BORING	NO. B	2-C		B	ORING	3 LOC	A.	MON 17	+31.0			OFFSET	5.0	LT	A	LI(GNMENT	-L	_		0 HR. 4	2.2
START DATE 08-08-05 COMPLETION DATE 08-08-05 SURFACE WATER DEPTH NA DEPTH TO BOCK 70.0 ELEV. DEPTH BLOW COUNT PEN BLOWS PER FOOT SAMP MILE SOIL AND ROCK (FT.) 0.5' 0.5' 0.5' (FT.) 0 25 50 75 100 NUM. MILE SOIL AND ROCK 720.0 63.5 15 45 65/04 1.4 103/0.3 715.0 68.5 24 76/05 1.0 103/0.3 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 710.0 85.0 RS-6	COLLAR	ELEVA'	MOL	783																		<u> </u>	
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Moderately Close to Wide Fracture Spacing White and Black Granite, (CR) 700.0 85.0 CORING- TERMINATED AT ELEVATION 698.4 N CRYSTALLINE ROCK (GRANITE)		Ŧ						Ш						RS-6		199	7	URIS					nt
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700.0		#						Ш									7	F	ractur	e Spaci	ing Whit	e and Black	
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT CORE BORING REPORT

SHEET LOF 1

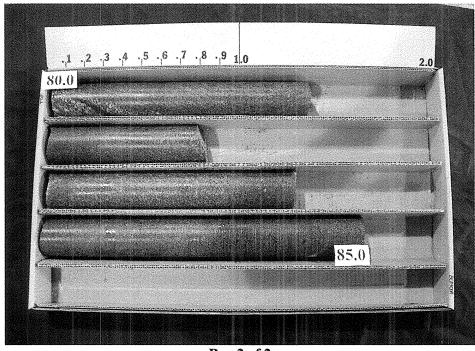
		O September 1985			Capatha and Andrew China and Andrew		en de la composition de la composition de la composition de la composition de la composition de la composition		SHEET 1 O	- l					
PROJECT	`NO.: 3306	6.1.1		ID.:	B-3446				COUNTY: Davidson	GEOL	OGIST: TJ Roberson				
SITE DES	CRIPTION	: Bridge	415 Over NSR	R on SR	1243 (Cente	r Street)					GROUNDWATER (Ft.)				
BORING	NO.: B2-	С	BORING LOC	CATION:	17+31.0	OFF:	SET: 5.0 I	LT	ALIGNMENT: -L-	-	0 Hr.: 42.2				
COLLAR	ELEV.: 78	3.4		NORTH	HING: 7562	03.3			EASTING: 1629480.1		24 Hr.: 38.1				
TOTAL D	EPTH: 85.	0		DRILL	MACHINE	: CME 55	TM		DRILL METHOD: Rotary	HA Au	MMER TYPE: 140 lb to				
DATE ST	ARTED: 8-	8-05		DATE	COMPLET	ED: 8-8-0	05		SURFACE WA	ATER DE	PTH: N/A				
CORE SIZ	ZE: HQ			TOTAL	_RUN: 15.	0			DRILLER: A	meridrill					
ELEV.	DEPTH	RUN	DRILL	ļ	RUN RQD	SAMP.		ATA	DESCRIPTIO	N AND	REMARKS				
(Ft.)	(Ft.)	(Ft.)	RATE (Min/Ft.)	REC %	%	NO.	REC %	RQD %	713.4		70.0				
713.4	70.0	1	1:36	2.8	0.7		2.8	0.7	Moderately Severe We		, Moderately Hard to				
			1:32						Hard, Very Close to Cl and Black Granite (CR)		ture Spacing, White				
			1:19						and Diack Granic (CK)	,					
									13 jts. @ 0-10 deg.						
			1:25						3 jjts. @ 10-20 deg. 2 jts. @ 30-40 deg.						
708.4	75.0	5.0	1:41	56	14		56	14	708.4	708.4					
708.4	75.0	2	1:58	4.7	4.6	RS-6	9.7	9.6	Slight to Very Slight W Moderately Close to W						
			2:05						and Black Granite (CR		cture spacing, write				
			2:13	1					DG ((7() 7(7 f)						
			2:17						RS-6 (76.3-76.7 feet)						
									7 jts. @ 0-10 deg.						
703.4	80.0	5.0	2:21	94	92				1 jt. @ 10-20 deg. 2 jts. @ 40-50 deg.						
703.4	80.0	3	2:18	5.0	5.0				2 just 69 10 20 40g.						
			2:25												
			2:29												
			3:01												
698.4	85.0	5.0	2:57	100	100		97	96	698.4		85.0				
								,	Coring Terminated at E	Elevation	n 698.4 in Crystalline				
									Rock (Granite)						
				-											
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CORE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446)
Bridge 415 over NSRR on SR 1243 (Center Street)
DAVIDSON COUNTY, NORTH CAROLINA
B2-C



Box 1 of 2



Box 2 of 2

SHEET 1 OF 3

PROJECT 1	NO. 330	66.1	.1		ID.	B-3446	COUNTY	DAVIDSO	V		GF	COLOGIST TJ ROBERSON	
SITE DESC	RIPTION	BR				R NSRR ON							OUND WATER
BORING NO			В	ORIN(ATION 17+40).0	OFFSE	17.0		AL		HR. 37.0
COLLAR EI		7	84.0				6182.0						HR. 34.8
TOTAL DEF	PTH 86	5.0	D	RILL	MACHI	NE CME 55							140lb. AUTO
START DAT		3 10				ETION DATE	08-10-	05 SU	RFACE 1	WATER	DEP		
ELEV.	DEPTH					BLOWS	PER F	00T	SAMP	\mathbf{V}	ᅵ	SOIL AND RO	CK
	(FT.)	0.5	0.5	0.5	(FT.)	0 25	50	75 100	NUM.	MOI.	Ğ	DESCRIPTION	
783.9	_					 			 			784.0° 783.3° PAVEMENT STRUCTURE— 8 in	nches of <u>a.z.</u>
	_											Asphaltic Concrete	iciles of
1 7												<u> </u>	
7	- , -				ا ـ ـ ا							RESIDUAL: Very Loose and	
780.0	- 3.5 -	.1	2	8	1.5					M		Brown, Orange and Tan, Fine SAND, Moist, (A-2	-4)
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

	CRIPTION		DGE	415	OVE	R NSRR ON	SR 1243	(CEN	ITER :	STREE"	T)				GROUND WAT
	Ю. В2—			ORING		ATION 17+40		0	FFSET	17.0				<u>L-</u>	_0 HR. 37.0
LLAR E	LEVATION	78	34.0				6182.0						9469.1	-	24 HR. 34.8
TAL DE		5.0				NE CME 55								HAMMER TYP	
ART DA		3 -10 -				ETION DATE	08-10-	.05	SUR	FACE V	TATER	DEPT			ROCK 66.0
LEV.	DEPTH (FT.)				PEN. (FT.)	BLOWS Q 25	PER 1	75 75	100	SAMP. NUM.	MOI.	ğ		SOIL AND DESCRIP	ROCK TION
-	1	0.0	0.0	0.0) WO.		753.9'		
•	33.5	4	E	7	1 =	£					М		Loo Silty 750.9'	ESIDUAL: Very L se,Brown, Orang Fine SAND, Moi ium Dense, Tan,	e and Tan, st, (A-2-4)
0.0	7,55.5	4	5	7	1.5						∑			ne SAND, Moist,	
5.0 -	38.5	3	4	7	1.5						M				
-0.0	43.5	5	8	9	1.5	× 17					м				
5.0 -	48.5	10	12	15	1.5		27-				M				
60.0 -	53.5	11	20	24	1.5		\ 44				M		.731. 9 De	ense, Tan, White SAND, Moist, (, Silty Fine A-2-4)
5.0 -	58.5	60/0.2			0.2			60)/0,2		M	ונגעינונו	725.8° 胜	ATHERED ROCK- Granite, Mois	

BORING NO. B2-B BORIN	ID. B-3446 COUNTY DAVIDSON 5 OVER NSRR ON SR 1243 (CENTER S IG LOCATION 17+40.0 OFFSET	
COLLAR ELEVATION 784.0	NORTHING 756182.0	EASTING 1629469.1 24 HR. 34.8
		ODHSA 2.25 INCH/ROTAR HAMMER TYPE 1401b. AUTO
START DATE 08-10-05	L ₁	FACE WATER DEPTH NA DEPTH TO ROCK 66.0
ELEV. DEPTH BLOW COUNT (FT.) 0.5', 0.5', 0.5		DECODIDATION
720.0 - 63.5 100/0.5	0.5	WEATHERED ROCK— Tan, White, Granite, Moist, (WR) D 277.5' 66.0'
715.0		RS-5 CRYSTALLINE ROCK- Moderate to Moderately Severe Weathering, Moderately Hard to Medium Hard, Moderately Close to Very Close Fracture Spacing Tan, White and Black Granite, (CR)
710.0		CRYSTALLINE ROCK—Moderate to Slight, Weathering, Moderately Hard, Close to Moderately Close Fracture Spacing, Tan White and Black to 202.9' White and Black Granite, (CR) CRYSTALLINE ROCK—Slight to Very Slight
705.0		Weathering, Hard, Moderately Close to Wide Fracture Spacing, White and Black Granite, (CR)
700.0	1 1 1 1 1 1 1 1 1 1	697.9' 86.0
695.0 + 86.0	CORING TERMINATED AT	

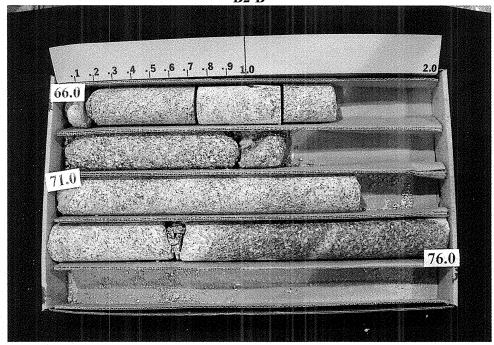
30

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT CORE BORING REPORT

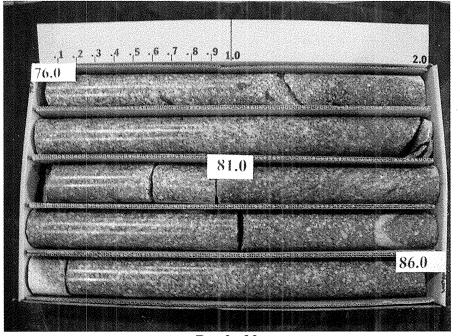
			The Control of State of State of the State of St						SHEET 1 OF 1	and the second of the second o
PROJECT	NO.: 33066	5.1.1		ID.:	B-3446				COUNTY: Davidson GEOLOGIST: 7	ΓJ Roberson
SITE DES	CRIPTION	: Bridge 4	15 Over NSR	R on SR 1	243 (Cente	r Street)			GROU	NDWATER (Ft.)
BORING 1	NO.: B2-	В	BORING LOC	CATION:	17+40.0	OFF:	SET: 17.0	RT	ALIGNMENT: -L- 0 Hr. :	37.0
COLLAR	ELEV.: 78	4.0		NORTH	ING: 7561	82.0			EASTING: 1629469.1 24 Hr.	: 34.8
TOTAL D	EPTH: 86.	0		DRILL	MACHINE	E: CME 55	TM		DRILL METHOD: Rotary HAMMER Auto	TYPE: 140 lb
DATE STA	ARTED: 8-	10-05		DATE	COMPLET	ED: 8-10	-05		SURFACE WATER DEPTH: N/A	Ą
CORE SIZ	E: HQ			TOTAL	RUN: 20.	0			DRILLER: Ameridrill	
ELEV.	DEPTH	RUN	DRILL	 	UN	SAMP.	STR	ATA	DESCRIPTION AND REMA	ARKS
(Ft.)	(Ft.)	(Ft.)	RATE (Min/Ft.)	REC %	RQD %	NO.	REC %	RQD %	717.9	66.0
717.9	66.0	1	1:36	2.6	2.2	RS-5	2.6	2.2	Moderate to Moderately Severe Weath	ering,
			1:42						Moderately Hard to Medium Hard, Mo to Very Close Fracture Spacing, Tan, V	
			2:21						Black Granite (CR)	THE COLIT
			2:19	-					RS-5 (66.5-66.9) feet	
7100	71.0	5.0	2:25	52	44				4 jts. @ 0-10 deg.	
712.9 712.9	71.0	2	1:02	3.6	3.5					
		-	0:55	-			41	34	711.5	72.4
			0.55						711.6	
			1:13				3.6	3.5	Moderate to Slight Weathering, Mode Close to Moderately Close Fracture Sp	
			1:17	-					White and Black to White and Black (
			1:22	-					2 jts. @ 0-10 deg.	
707.9	76.0	5.0		72	70		100	97	707.9	76.0
707.9	76.0	3	2:27	5.0	5.0		10.0	10.0	Slight to Very Slight Weathering, Har- Close to Wide Fracture Spacing, Whit	
			2:05						Granite (CR)	е апо втаск
			2:19						4 jts. @ 0-10 deg.	
			3:05						1 jt. @ 20-30 deg.	
702.9 702.9	81.0	5.0	4:12 2:59	5.0	5.0		4		1 jt. @ 40-50 deg.	
702.9	81.0	4		3.0	3.0					
			3:02	_						
			3:10							
			3:19							
697.9	86.0	5.0	4:17	100	100		100	100		
									697.9	060
				-	-	-	 		Coring Terminated at Elevation 697.9	86.0 in Crystalline
	1			_]	1		1		Rock (Granite)	•
									Rock (Granne)	

CORE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446)
Bridge 415 over NSRR on SR 1243 (Center Street)
DAVIDSON COUNTY, NORTH CAROLINA
B2-B



Box 1 of 2



Box 2 of 2

SHEET 1 OF 2

PROJECT	NO. 330	066.1	.1		ID.	B-3446 COUNTY DAVIDSON GEOLOGIST TJ ROBERSON	
SITE DES						R NSRR ON SR 1243 (CENTER STREET) GROUND W	
BORING N				ORIN		ATION 18+03.0 OFFSET 26.5 LT ALIGNMENT -L- 0 HR. DR	1
COLLAR E			83.1			ORTHING 756159.6 EASTING 1629542.3 24 HR. 38	
TOTAL DE		2.5				INE CME 55 TM DRILL METHOD HSA 2.25 INCH HAMMER TYPE 1401b.	
START DA			3-05			LETION DATE 07-28-05 SURFACE WATER DEPTH NA DEPTH TO ROCK 52.5	5
ELEV.	DEPTH (FT.)				PEN. (FT.)	BLOWS PER FOOT SAMP SAMP SOIL AND ROCK DESCRIPTION	
783.1 -			0.0			783.1 PAVEMENT STRUCTURE— 1 inch of	89
780.0	3.5	4	7	9	1.5	Asphaltic Concrete over 1 inch of Crushed Stone RESIDUAL: Very Stiff, Orange, Brown, Fine to Coarse Sandy Silty CLAY Moist, (A-7-5)	<i>]</i>
775.0	8.5	3	3	5	1.5	Loose, Tan, White, Silty Fine to Coarse SAND, Moist, (A-2-4)	6.0'
770.0	13.5	4	5	5	1.5	M 4	
765.0	18.5	4	4	4	1.5	M	
760.0	23.5	3	4	6	1.5	X 10	
755.0	28.5	3	3	4	1.5		

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 2

PROJECT NO	0. 330	066.1.	1		D.	B-3446 COUNTY DAVIDSON GEOLOGIST TJ ROBERSO	SHEET Z OF Z
				415		R NSRR ON SR 1243 (CENTER STREET)	GROUND WATER
BORING NO.						ATION 18+03.0 OFFSET 26.5 LT ALIGNMENT -L-	0 HR. DRY
COLLAR ELF		THE REPORT OF THE PERSON NAMED IN COLUMN	83.1	*******		ORTHING 756159.6 EASTING 1629542.3	24 HR. 38.0
TOTAL DEPT	TH 52	2.5	D				E 140lb. AUTO
START DATE		7-28					ROCK 52.5
	EPTH (PEN.	BLOWS PER FOOT SAMP SAMP SOIL AND DESCRIP	ROCK
	(FT.)	0.5	0.5	0.5	(FT.)		
745.0	33.5 38.5 43.5	3 ,	4	5	1.5	Loose, Tan, White, to Coarse SAND, Mo 10 M Tas.1* WEATHERED ROCK— Granite, Moist	ist, (A-2-4) Tan, White,
730.0 🛨	52.5	00/0.0				GRING-TERMINATED WITH-STANDARD TRATION TEST-REFUSAL-AT-ELEVATION	52.5
‡					/3	CETON CRYSTALLINE ROCK (GRANITE)	
‡							
725.0 ‡							
‡							
<u>-</u>			L	<u> </u>			

SHEET 1 OF 2 PROJECT NO. 33066.1.1 COUNTY DAVIDSON GEOLOGIST TJ ROBERSON ID. B-3446 SITE DESCRIPTION BRIDGE 415 OVER NSRR ON SR 1243 (CENTER STREET) GROUND WATER 0 HR. 39.0 BORING NO. EB2-B BORING LOCATION 18+06.0 OFFSET 14.0 RT ALIGNMENT -L-COLLAR ELEVATION 782.7 NORTHING 756132.3 EASTING 1629512.1 24 HR. 36.7 TOTAL DEPTH 58.5 DRILL MACHINE CME 55 TM DRILL METHOD HSA 2.25 INCH HAMMER TYPE 140lb. AUTO START DATE 08-11-05 SURFACE WATER DEPTH NA DEPTH TO ROCK 58.5 COMPLETION DATE 08-11-05 DEPTH BLOW COUNT PEN. SOIL AND ROCK BLOWS PER FOOT SAMP. MOI. B ELEV. 100 NUM. DESCRIPTION (FT.) 0.5', 0.5', 0.5' (FT.) Q 782.7 PAVEMENT STRUCTURE- 8 inches of Asphaltic Concrete 780.0 RESIDUAL: Stiff, Ton, Brown, Fine to Coarse Sandy Silty CLAY, Dry, (A-7-5) 4 7 6 1.5 SS-13 6.4% Loose to Medium Dense, Tan, White, Silty Fine to Coarse SAND, Moist, (A-2-4) 775.0 3 4 4 1.5 770.0 4 5 1.5 13.5 3 |765.0 | + 18.5 5 | 6 | 1.5 | 3 M 1760.0 | 3 | 5 | 7 十 23.5 1.5 755.0 1.5 - 28.5 3 4 6

33

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

	' NO. 33 SCRIPTIO			415		3-3446 0 R NSRR ON SF		MDSON NTER ST	REET)	100	OLOGIST	TJ ROBERSO	GROUND WA	TER
ORING	NO. EB					TION 18+06.0		OFFSET 1	4.0 RT	ALI	GNMENT	-L-	0 HR. 39.0	
DLLAR	ELEVATI	ON	782.7	7	N(RTHING 7561	32.3		EASTING	G 162	9512.1		24 HR. 36.	7
TAL D	EPTH	58.5		DRILL	MACHI	NE CME 55 TH	/ DRIL	METHOD		2.25		HANNER TY		
rart d)ATE	08-1	I-05		COMPL	etion date o	8-11-05	SURFA	CE WATE	ER DEPI	AN H		0 ROCK 58.5	
ELEV.	DEPTI (FT.)				PEN. (FT.)		PER FOOT 75	100 N	AMP.	/OI. G		SOIL AND DESCRIP		
	+==	10.0	10.0	10.0	1		1	=#		200	752. 7	DECIDIAL. Madisus	Name Tan	30.0
50.0	333.5	3	5	7	1.5	x-12			*	M	Brown	RESIDUAL: Medium n to Tan, White, Sil SAND, Moist, (ty Fine to Coorse	
' 4 5.0	38.5	5 4	5	12	1.5	17			Ţ	M				
'40.0	+ 43.5 + 43.5 + 43.5	5 16	18	26	1.5		44			M	740.7	Dense Tan, White SAND, Moist,		42.0
735.0	+ 48.5	5 3	8	12	1.5	20				M	734.7°	Medium Dense Tar Fine SAND, Mois		48.0
730.0	± ± ± 53.	5 4	59/0	1.5	1.0		14	00/1.0			730.7	WEATHERED RO White, Granite,		52.0
725.0		5 80/1 5	.0		0.0 E	ORING TERMINA	TED WITH S	0/0.0 ANDARD			724.2			58.
					72	PENETRATION 4.2 ON CRYSTA	TEST REFUS LLINE ROCK	AL AT (GRANITE	<u></u> E)		<u> </u>			

SUMMARY OF LABORATORY TEST DATA FOR NCDOT

Project No. 33066.1.1 (B-3446) Bridge 415 over NSRR on SR 1243 (Center Street) Davidson County, North Carolina

	(%)	٦														
Gradation Results	Clay (%)		40	14	44	13	27	15	2	15	27	17	2	41	27	2
	Silt (%)		10	18	2	14	12	15	27	24	24	8	24	17	28	29
	Coarse Fine Sand (%)		22	29	17	27	28	30	32	27	26	52	35	17	19	33
	Coarse Sand (%)		28	39	32	46	33	40	39	34	23	23	39	25	26	36
	Pass #270 Sieve %		49	31	49	25	37	29	27	36	90	24	25	57	54	30
	Pass #200 Sieve %		52	34	51	28	40	33	32	39	52	33	29	58	56	33
	Pass #10 Pass #40 Sieve % Sieve %		77	89	71	58	88	29	29	69	91	93	74	82	79	73
	Pass #10 Pass #4 Sieve % Sieve %		98	96	36	06	96	94	94	93	66	86	96	97	97	96
Atterberg Limits		P.I.	11	2	11	dN	5	l	2	8	4	dN	dN	16	13	NP
		P.L.	30	35	32	dN	68	42	36	32	47	NP	NP	48	37	NP
Att		L.L.	41	37	25	dN	44	43	41	40	51	NP	NP	64	20	NP
	N Value		24	10	10	10	15	11	10	10	6	14	11	16	13	11
AASHTO			A-7-5 (4)	A-2-4 (0)	A-7-5 (7)	A-2-4 (0)	A-5 (0)	A-2-5 (0)	A-2-5 (0)	A-4 (0)	A-5 (2)	A-2-4 (0)	A-2-4 (0)	A-7-5 (10)	A-7-5 (7)	A-2-4 (0)
Natural Moisture Content %			11.5	NA	18.5	NA	10.0	NA	NA	10.2	21.7	NA	NA	19.3	6.4	NA
	Sample No.		SS-1	SS-2	SS-3	SS-4	SS-5	9-88	8-85	SS-7	6-88	SS-10	SS-11	SS-12	SS-13	SS-14
***********	Sample Depth (ft)		3.5-5	13.5-15	3.5-5	28.5-30	3.5-5	18.5-20	8.5-10	3.5-5	8.5-10	48.5-50	28.5-30	3.5-5	3.5-5	18.5-20
Boring No.			EB1-A	EB1-A	EB1-B	EB1-B	B1-A	B1-A	B1-C	B1-B	B2-A	B2-A	B2-C	EB2-A	EB2-B	EB2-B



Greensboro, NC

SITE PHOTOGRAPHS

NCDOT PROJECT NO. 33066.1.1 (B-3446) Bridge 415 over NSRR on SR 1243 (Center Street) DAVIDSON COUNTY, NORTH CAROLINA



VIEW LOOKING NORTHEAST ALONG END BENT – 1



VIEW LOOKING NORTHEAST ALONG BENT - 1



VIEW LOOKING NORTHEAST ALONG BENT - 2



VIEW LOOKING NORTHEAST ALONG END BENT - 2

SITE PHOTOGRAPHS

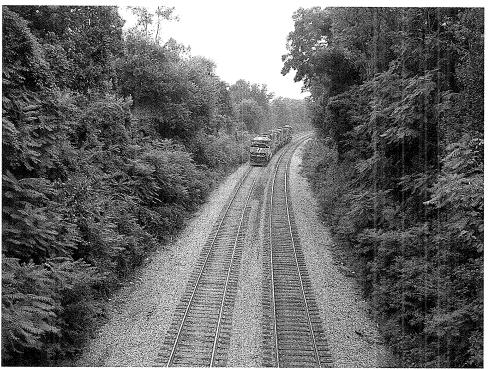
NCDOT PROJECT NO. 33066.1.1 (B-3446) Bridge 415 over NSRR on SR 1243 (Center Street) DAVIDSON COUNTY, NORTH CAROLINA



VIEW LOOKING NORTHWEST ALONG CENTERLINE -L-



VIEW LOOKING SOUTHEAST ALONG CENTERLINE -L-



VIEW LOOKING NORTHEAST ALONG NSRR



VIEW LOOKING SOUTHWEST ALONG NSRR