

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

CONTENTS

SHEET	DESCRIPTION
1	Title Sheet
2	NCDOT Geotechnical Unit Soil and Rock Classification Sheet
3	Boring Location Plan
4	Generalized Subsurface Profile Along -Y-
5	Generalized Subsurface Cross Section Through End Bent No. 1
6	Generalized Subsurface Cross Section Through Interior Bent No. 1
7	Generalized Subsurface Cross Section Through Interior Bent No. 2
8 - 14	Test Boring Logs
15	Site Photographs

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34845.1.1 (U-2707) F.A. PROJ. STP-3000(1)
 COUNTY FORSYTH
 PROJECT DESCRIPTION CLEMMONS - (SR3000 (IDOLS ROAD))
FROM (SR2999 (HAMPTON ROAD)) TO (US-158 (CLEMMONS ROAD))
 SITE DESCRIPTION BRIDGE NO. 109 ON -Y- (SR2999 (HAMPTON ROAD))
OVER NORFOLK SOUTHERN RAILROAD

INVENTORY

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 19191 701-6850. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

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

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

PERSONNEL

J. WILLIAMSON

B. RATTI

C. ODEM

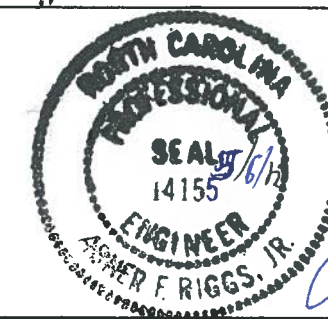
J. JACKSON

INVESTIGATED BY S&ME, INC.

CHECKED BY A.F. RIGGS, JR.

SUBMITTED BY S&ME, INC.

DATE MAY 2012



A. F. Riggs, Jr.

PROJECT: 34845.1.1 ID: U-2707

DRAWN BY: B. RATTI

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

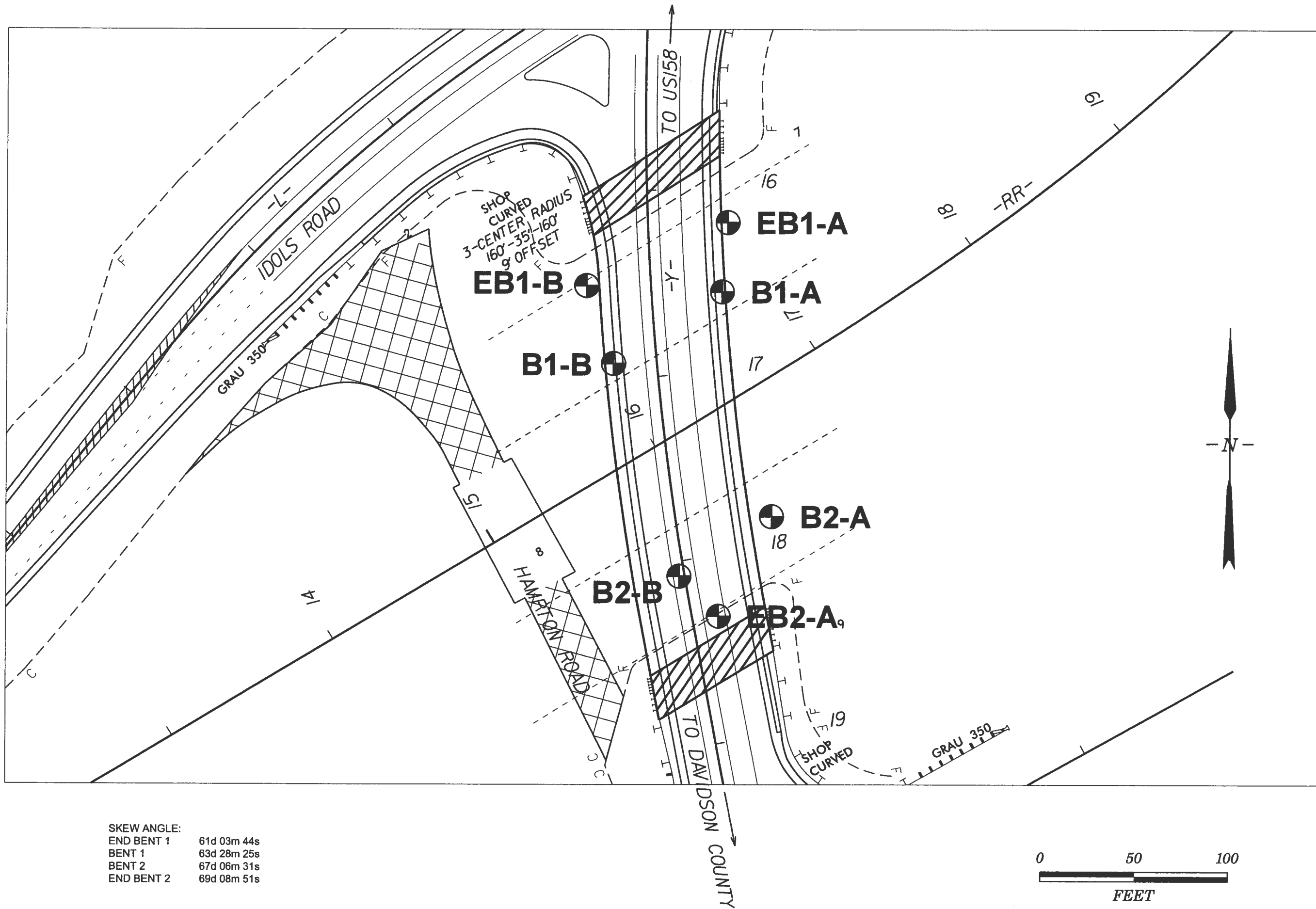
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

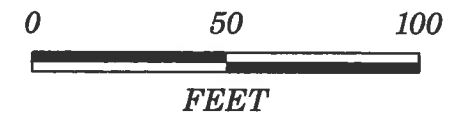
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE ASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, ASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGLE, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY-SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A-7-6</i>	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR , SUBANGULAR , SUBROUNDED , OR ROUNDED .	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CPI)	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND 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 (SCRC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
SOIL LEGEND AND ASHTO CLASSIFICATION GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS GROUP CLASS. A-1, A-3, A-2, A-4, A-5, A-6, A-7, A-1, A-2, A-3, A-4, A-5, A-6, A-7 SYMBOL % PASSING LIQUID LIMIT PLASTIC INDEX GROUP INDEX USUAL TYPES OF MAJOR MATERIALS GEORATING AS A SUBGRADE PI OF A-7-5 SUBGROUP IS <= LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30	MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE. COMPRESSIBILITY SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE PERCENTAGE OF MATERIAL ORGANIC MATERIAL TRACE OF ORGANIC MATTER LITTLE ORGANIC MATTER MODERATELY ORGANIC HIGHLY ORGANIC GROUND WATER WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP	WEATHERING FRESH VERY SLIGHT (V SL) SLIGHT (SL) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V SEV.) COMPLETE ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	WEATHERING FRESH VERY SLIGHT (V SL) SLIGHT (SL) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V SEV.) COMPLETE ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
CONSISTENCY OR DENSENESS PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)	MISCELLANEOUS SYMBOLS ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE OPENING (MM) BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CS, SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)	ABBREVIATIONS AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST o - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HL - HIGHLY MED. - MEDIUM MICA - MICA MDO. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA. - WEATHERED UNIT WEIGHT DRY UNIT WEIGHT SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION LL - LIQUID LIMIT PL - PLASTIC LIMIT OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT	EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINDER BITS TUNG-CARBIDE INSERTS CASING w/ ADVANCER TRICONE STEEL TEETH TRICONE TUNG-CARB. CORE BIT 3 1/4" H.S.A. HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: B H H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
PLASTICITY NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY COLOR DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	FRACTURE SPACING TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET BEDDING 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 INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT
		ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	ROCK HARDNESS VERY HARD HARD MODERATELY



SKEW ANGLE:
 END BENT 1 61d 03m 44s
 BENT 1 63d 28m 25s
 BENT 2 67d 06m 31s
 END BENT 2 69d 08m 51s

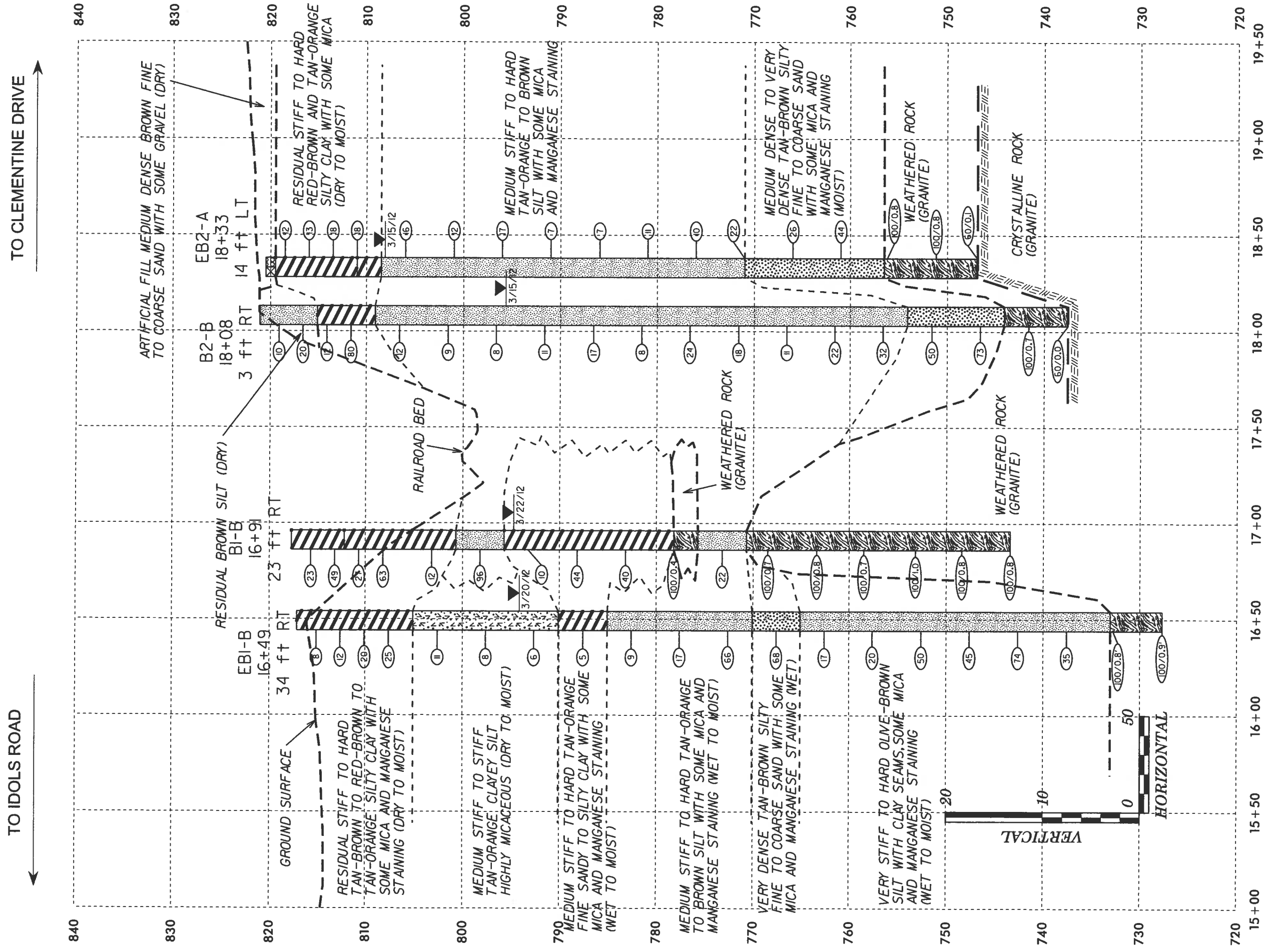


BORING LOCATION PLAN
 BRIDGE NO. 109 ON -Y- (SR2999 (HAMPTON ROAD))
 OVER NORFOLK SOUTHERN RAILROAD
 STATE PROJ NO. 34845.1.1 TIP NO. U-2707
 FEDERAL I.D. NO. STP-3000(1)
 FORSYTH COUNTY, NORTH CAROLINA


 WWW.SMEINC.COM
 NC ENGINEER LICENSE #F-0176
 3201 SPRING FOREST RD, RALEIGH, NC 27616

SCALE: 1" = 50'
 DATE: APRIL 2012
 APPROVED BY: AFR
 DRAWN BY: BTR
 JOB NO:
 SHEET: 3

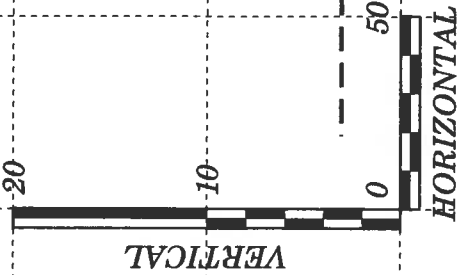
GENERALIZED SUBSURFACE PROFILE ALONG -Y-



NOTES:
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE PROFILE. GROUND LINE AND -Y- PROFILE TAKEN FROM ROADWAY DESIGN PLANS AS OF APRIL 2012.

TO CLEMENTINE DRIVE

TO IDOLS ROAD



GENERALIZED SUBSURFACE PROFILE ALONG -Y-

BRIDGE NO. 109 ON -Y- (SR2999 (HAMPTON ROAD))
 OVER NORFOLK SOUTHERN RAILROAD
 STATE PROJ NO. 34845.1.1 TIP NO. U-2707
 FEDERAL I.D. NO. STP-3000(1)
 FORSYTH COUNTY, NORTH CAROLINA



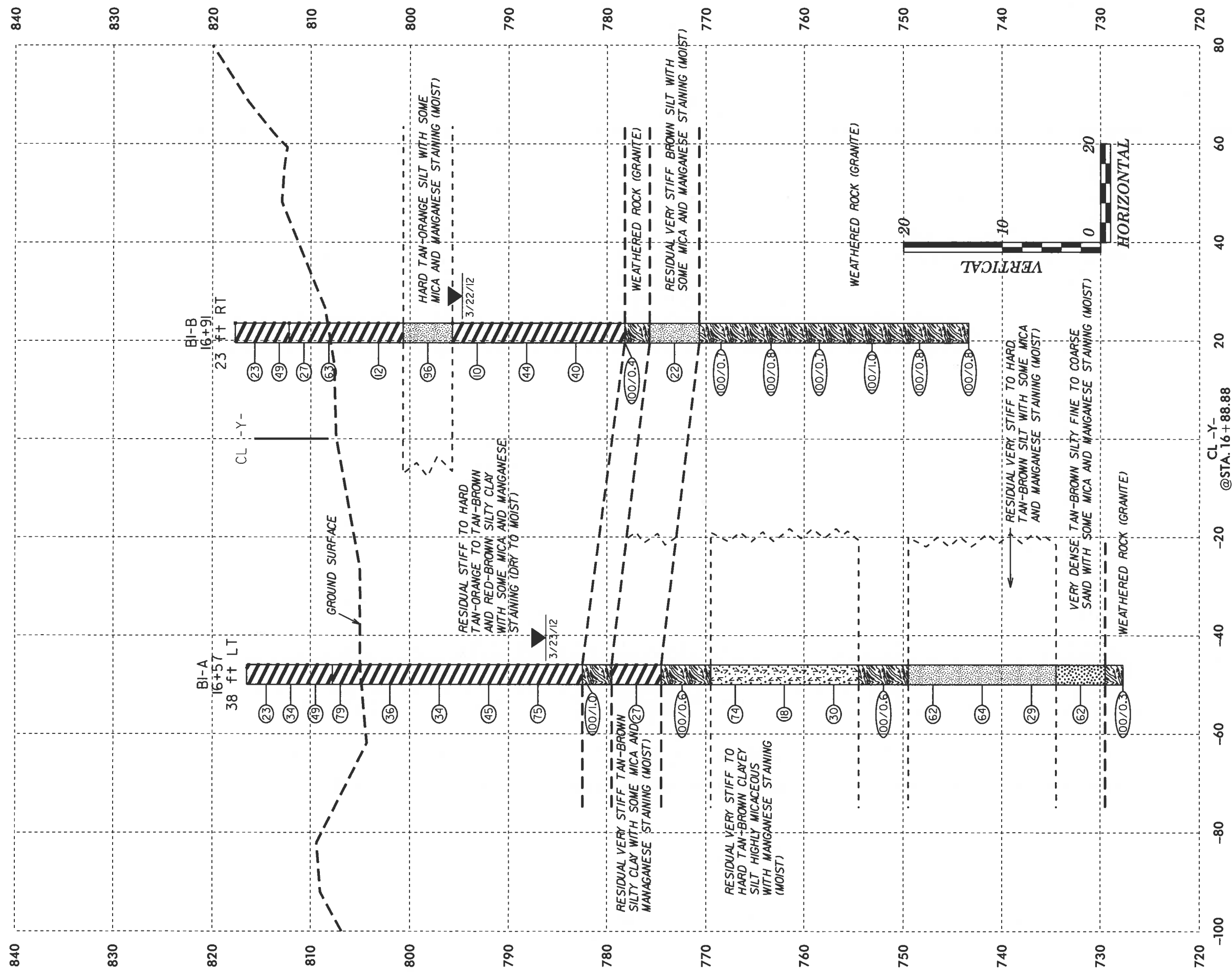
WWW.SMEINC.COM
 NC ENGINEER LICENSE #F-0176
 3201 SPRING FOREST RD., RALEIGH, NC 27616

SCALE: VERT. 1" = 10' HOR. 1" = 50'	APPROVED BY: AFR
DATE: APRIL 2012	DRAWN BY: BTR
JOB NO:	SHEET: 4

GENERALIZED SUBSURFACE CROSS SECTION (XS) THROUGH INTERIOR BENT 1

TO NORTHEAST

TO SOUTHWEST



NOTES:
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE CROSS SECTIONS. GROUND LINE AND CROSS SECTION TAKEN FROM ROADWAY DESIGN PLANS AS OF APRIL 2012.

GENERALIZED SUBSURFACE XS THROUGH INT. BENT 1

BRIDGE NO. 109 ON -Y- (SR2999 (HAMPTON ROAD))
OVER NORFOLK SOUTHERN RAILROAD
STATE PROJ NO. 34845.1.1 TIP NO. U-2707
FEDERAL I.D. NO. STP-3000(1)
FORSYTH COUNTY, NORTH CAROLINA



WWW.SMEINC.COM
NC ENGINEER LICENSE #F-0176
3201 SPRING FOREST RD, RALEIGH, NC 27616

SCALE: VERT. 1" = 10'
HOR. 1" = 20'

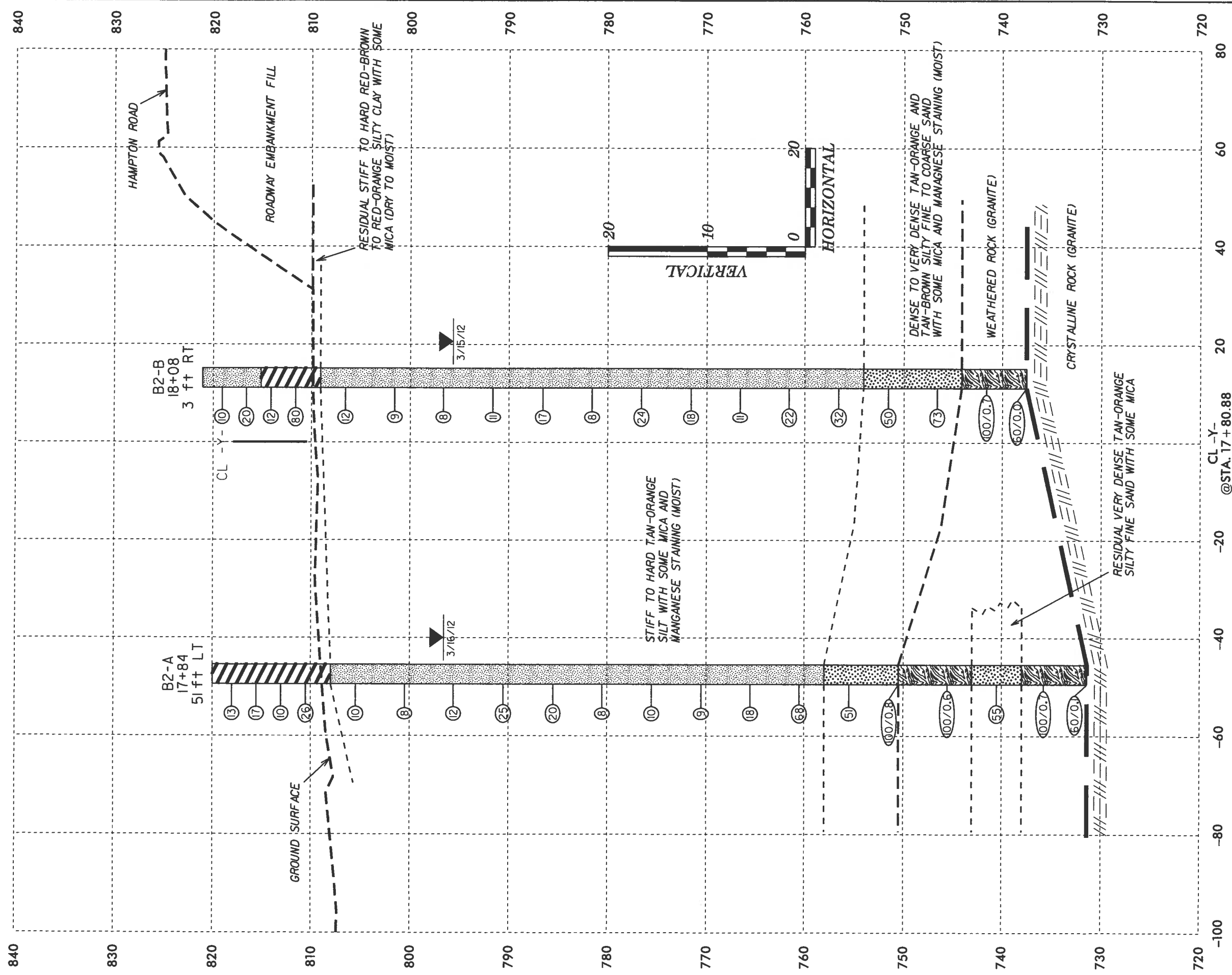
DATE: APRIL 2012

APPROVED BY: AFR
DRAWN BY: BTR
JOB NO:
SHEET: 6

GENERALIZED SUBSURFACE CROSS SECTION (XS) THROUGH INTERIOR BENT 2

TO NORTHEAST

TO SOUTHWEST



NOTES:
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE CROSS SECTIONS. GROUND LINE AND CROSS SECTION TAKEN FROM ROADWAY DESIGN PLANS AS OF APRIL 2012.

GENERALIZED SUBSURFACE XS THROUGH INT. BENT 2
 BRIDGE NO. 109 ON -Y- (SR2999 (HAMPTON ROAD))
 OVER NORFOLK SOUTHERN RAILROAD
 STATE PROJ NO. 34845.1.1 TIP NO. U-2707
 FEDERAL I.D. NO. STP-3000(1)
 FORSYTH COUNTY, NORTH CAROLINA

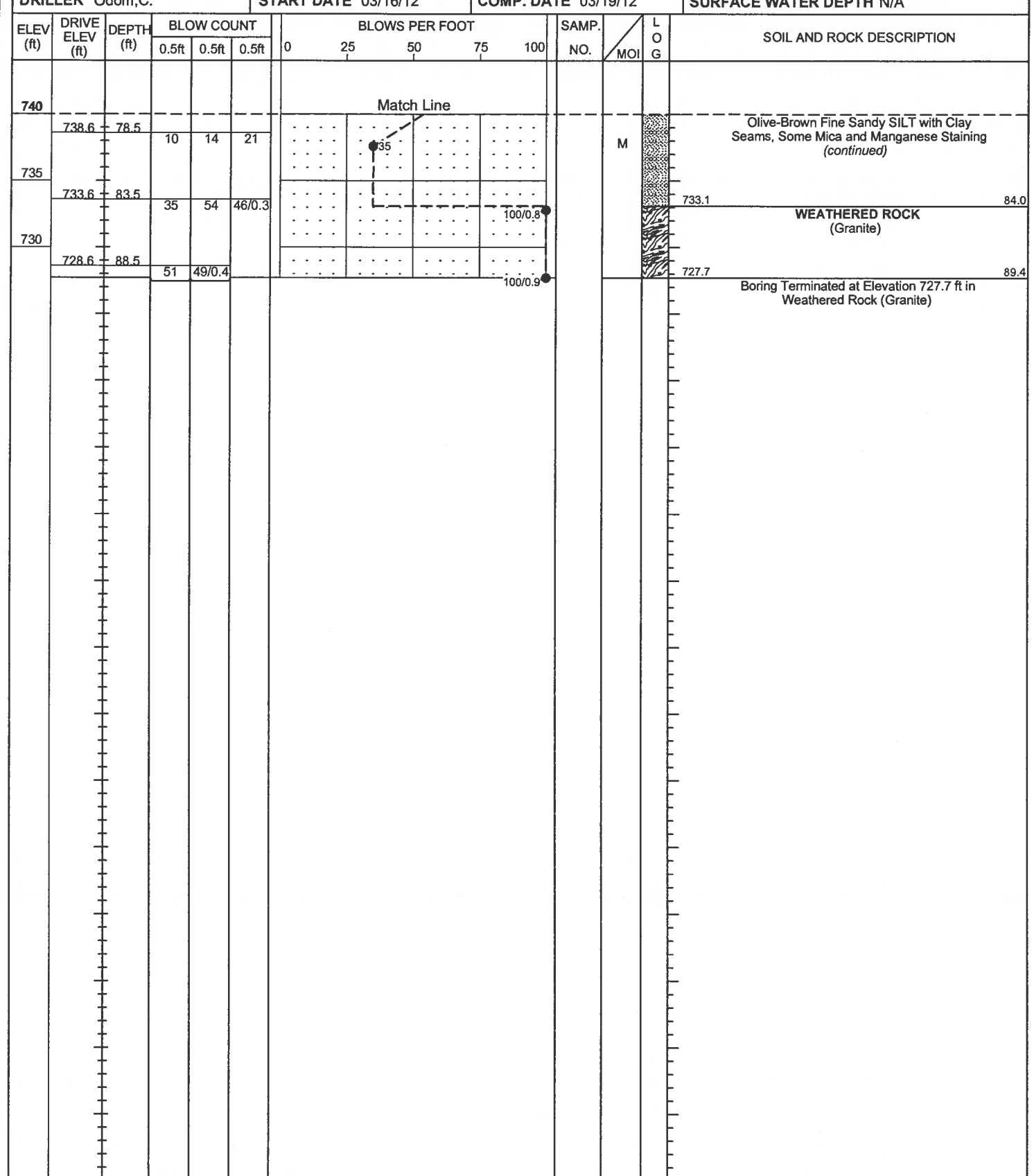
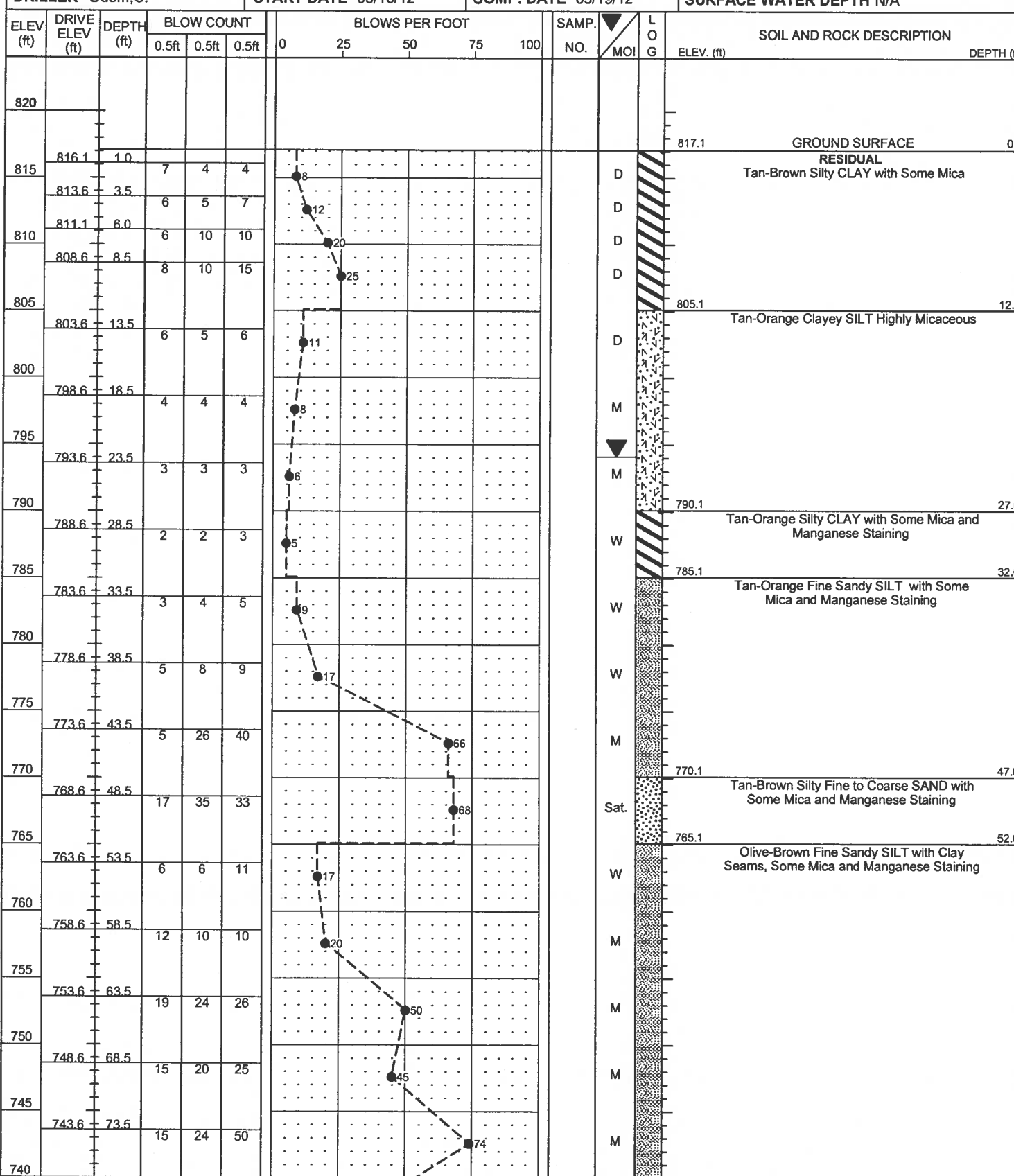


NC ENGINEER LICENSE #F-0176
 3201 SPRING FOREST RD, RALEIGH, NC 27616

SCALE: VERT. 1" = 10' HOR. 1" = 20'	APPROVED BY: AFR
DATE: APRIL 2012	DRAWN BY: BTR
JOB NO.:	SHEET: 7

WBS 34845.1.1	TIP U-2707	COUNTY FORSYTH	GEOLOGIST Williamson, J.
SITE DESCRIPTION Bridge No. 109 on (SR 2999 (Hampton Road)) over Norfolk Southern Railroad			GROUND WTR (ft)
BORING NO. EB1-B	STATION 16+49	OFFSET 34 ft RT	ALIGNMENT -Y-
COLLAR ELEV. 817.1 ft	TOTAL DEPTH 89.4 ft	NORTHING 823,116	EASTING 1,594,227
DRILL RIG/HAMMER EFF./DATE SME R-5 BK-51 78% 06/06/2010		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Odom, C.	START DATE 03/16/12	COMP. DATE 03/19/12	SURFACE WATER DEPTH N/A

WBS 34845.1.1	TIP U-2707	COUNTY FORSYTH	GEOLOGIST Williamson, J.
SITE DESCRIPTION Bridge No. 109 on (SR 2999 (Hampton Road)) over Norfolk Southern Railroad			GROUND WTR (ft)
BORING NO. EB1-B	STATION 16+49	OFFSET 34 ft RT	ALIGNMENT -Y-
COLLAR ELEV. 817.1 ft	TOTAL DEPTH 89.4 ft	NORTHING 823,116	EASTING 1,594,227
DRILL RIG/HAMMER EFF./DATE SME R-5 BK-51 78% 06/06/2010		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Odom, C.	START DATE 03/16/12	COMP. DATE 03/19/12	SURFACE WATER DEPTH N/A



NC DOT BORE DOUBLE 12-089A.GPJ NC_DOT.GDT 5/3/12

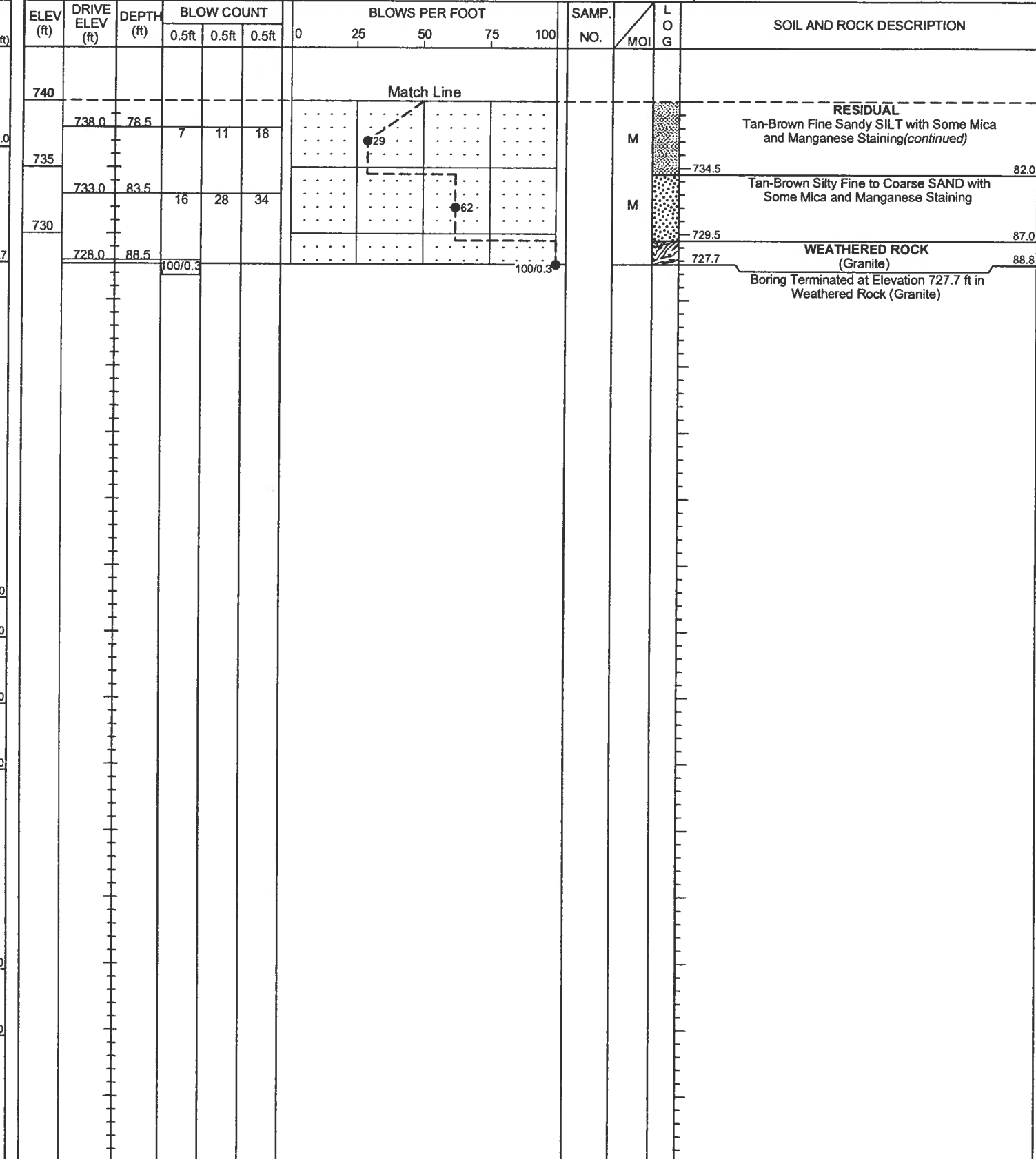
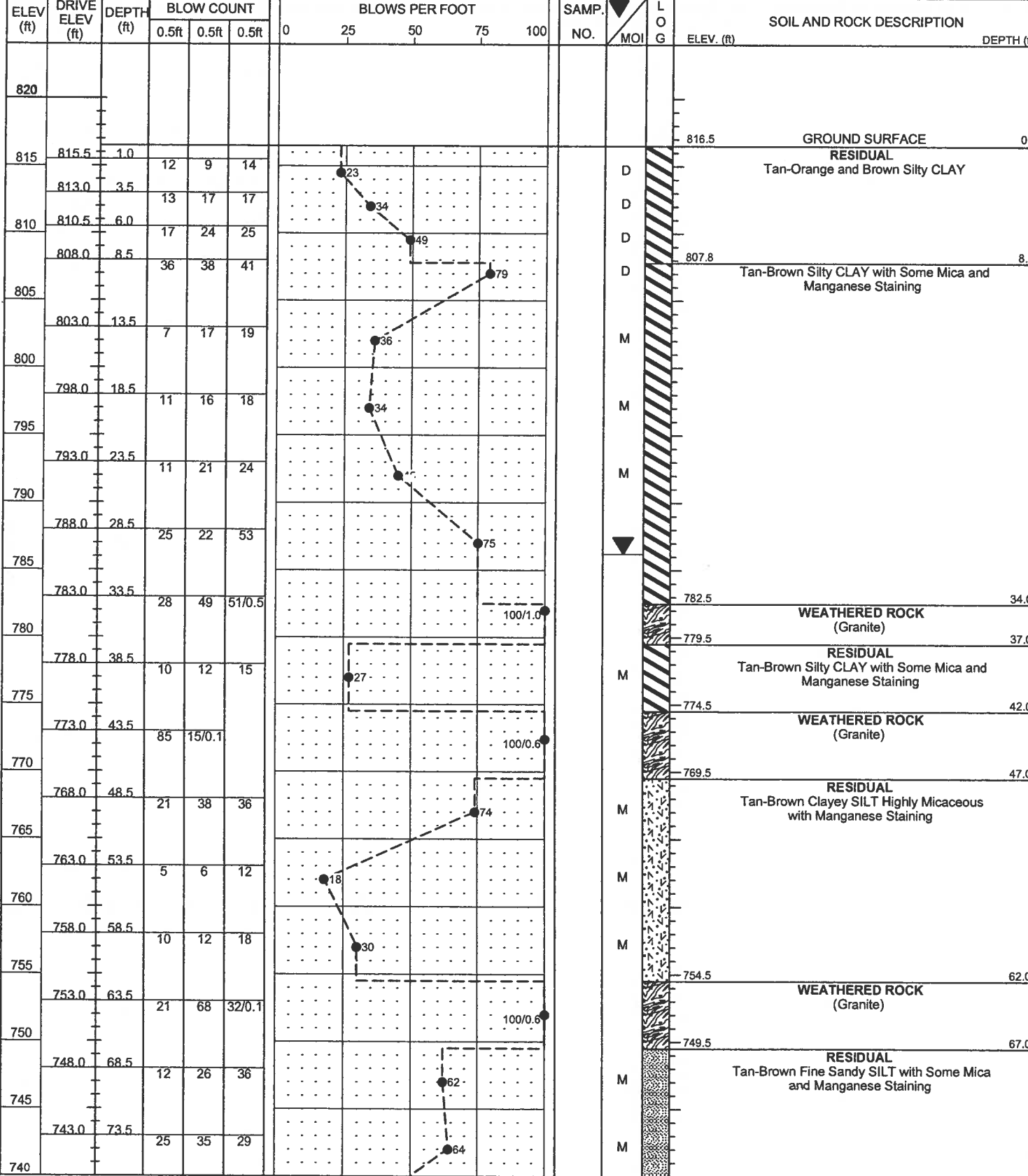


NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

WBS 34845.1.1	TIP U-2707	COUNTY FORSYTH	GEOLOGIST Williamson, J.
SITE DESCRIPTION Bridge No. 109 on (SR 2999 (Hampton Road)) over Norfolk Southern Railroad			GROUND WTR (ft)
BORING NO. B1-A	STATION 16+57	OFFSET 38 ft LT	ALIGNMENT -Y-
COLLAR ELEV. 816.5 ft	TOTAL DEPTH 88.8 ft	NORTHING 823,109	EASTING 1,594,262
DRILL RIG/HAMMER EFF./DATE SME R-5 BK-51 78% 06/06/2010		DRILL METHOD H.S. Augers	
DRILLER Odom, C.		HAMMER TYPE Automatic	
START DATE 03/21/12	COMP. DATE 03/22/12	SURFACE WATER DEPTH N/A	

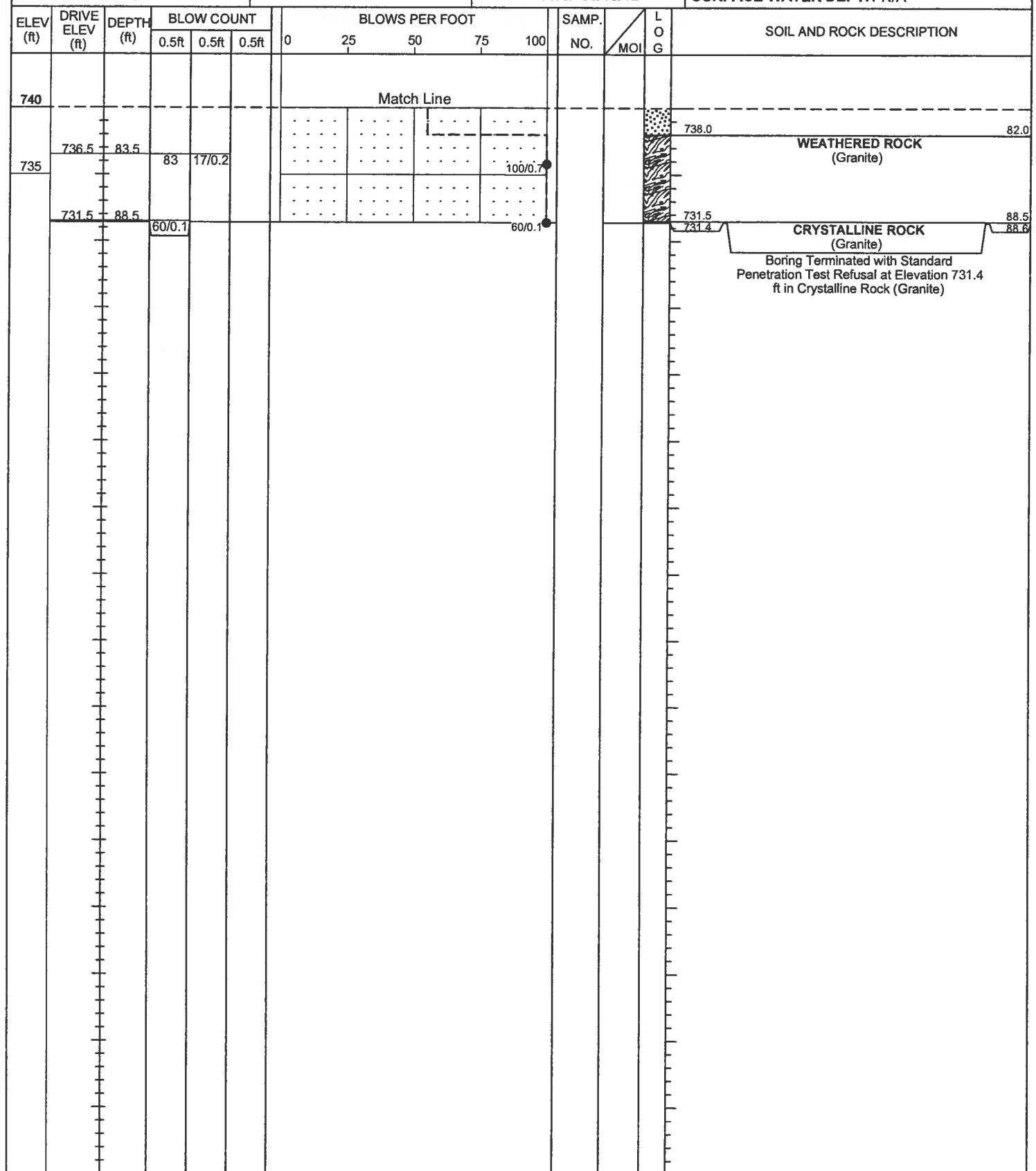
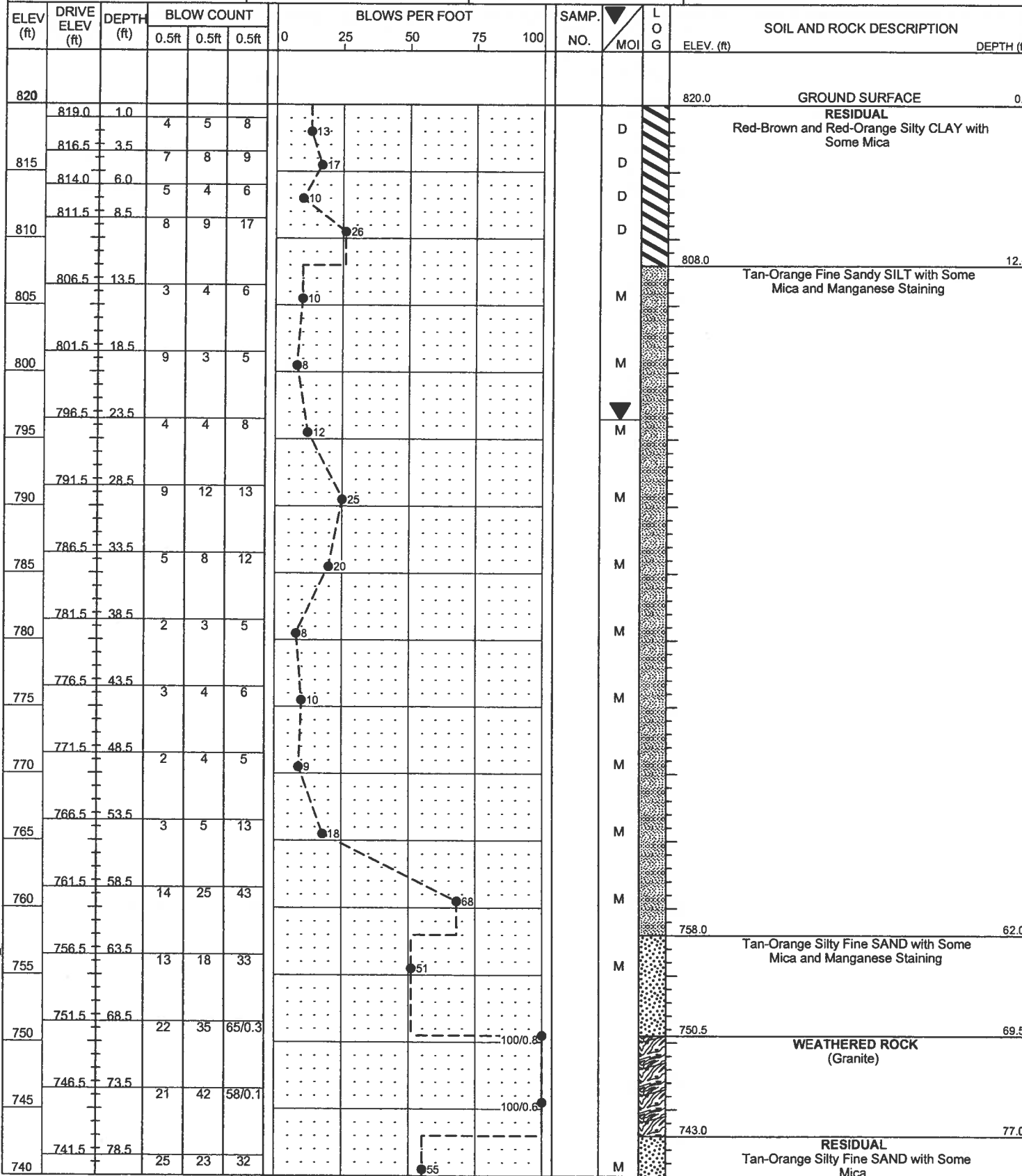
WBS 34845.1.1	TIP U-2707	COUNTY FORSYTH	GEOLOGIST Williamson, J.
SITE DESCRIPTION Bridge No. 109 on (SR 2999 (Hampton Road)) over Norfolk Southern Railroad			GROUND WTR (ft)
BORING NO. B1-A	STATION 16+57	OFFSET 38 ft LT	ALIGNMENT -Y-
COLLAR ELEV. 816.5 ft	TOTAL DEPTH 88.8 ft	NORTHING 823,109	EASTING 1,594,262
DRILL RIG/HAMMER EFF./DATE SME R-5 BK-51 78% 06/06/2010		DRILL METHOD H.S. Augers	
DRILLER Odom, C.		HAMMER TYPE Automatic	
START DATE 03/21/12	COMP. DATE 03/22/12	SURFACE WATER DEPTH N/A	



NCDOT BORE DOUBLE 12-089A.GPJ NC_DOT.GDT 5/3/12

WBS 34845.1.1	TIP U-2707	COUNTY FORSYTH	GEOLOGIST Williamson, J.
SITE DESCRIPTION Bridge No. 109 on (SR 2999 (Hampton Road)) over Norfolk Southern Railroad			GROUND WTR (ft)
BORING NO. B2-A	STATION 17+84	OFFSET 51 ft LT	ALIGNMENT -Y-
COLLAR ELEV. 820.0 ft	TOTAL DEPTH 88.6 ft	NORTHING 822,983	EASTING 1,594,276
DRILL RIG/HAMMER EFF./DATE SME R-5 BK-51 78% 06/06/2010		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Odom, C.	START DATE 03/15/12	COMP. DATE 03/15/12	SURFACE WATER DEPTH N/A

WBS 34845.1.1	TIP U-2707	COUNTY FORSYTH	GEOLOGIST Williamson, J.
SITE DESCRIPTION Bridge No. 109 on (SR 2999 (Hampton Road)) over Norfolk Southern Railroad			GROUND WTR (ft)
BORING NO. B2-A	STATION 17+84	OFFSET 51 ft LT	ALIGNMENT -Y-
COLLAR ELEV. 820.0 ft	TOTAL DEPTH 88.6 ft	NORTHING 822,983	EASTING 1,594,276
DRILL RIG/HAMMER EFF./DATE SME R-5 BK-51 78% 06/06/2010		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER Odom, C.	START DATE 03/15/12	COMP. DATE 03/15/12	SURFACE WATER DEPTH N/A



NC DOT BORE DOUBLE 12-089A.GPJ NC_DOT.GDT 5/3/12



Photograph No. 1: This photograph was taken right of the center line of -Y- alignment, looking East along the railroad tracks.



Photograph No.2: This photograph was taken from the right side of the -Y- alignment looking East across proposed Interior Bent No. 2.