

REFERENCE: U-2525C

PROJECT: 34821

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

**STRUCTURE
SUBSURFACE INVESTIGATION**

COUNTY GUILFORD
PROJECT DESCRIPTION GREENSBORO EASTERN LOOP
I-85 BYPASS FROM US 29 NORTH OF
GREENSBORO TO EAST OF LAWNSDALE DRIVE

SITE DESCRIPTION SITE NO. 6 (STRUCTURE NO. 8
AND NO. 9) - BRIDGE NO. 1247 AND 1248 ON I-85
BYPASS (-L-) OVER NORTH ELM STREET (-Y6-)

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4-5	CROSS SECTIONS
6-12	BORE LOGS, CORE REPORT & CORE PHOTO
13	LABORATORY SAMPLE RESULTS
14	SITE PHOTOGRAPHS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2525C	1	14

CAUTION NOTICE

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

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

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

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

SCHLEMM, T. S.

RIGGS, JR., A. F.

TURNAGE, J. R.

COGAR, T. E.

INVESTIGATED BY TERRACON CONSULTANTS

DRAWN BY FIELDS, W. D.

CHECKED BY RIGGS, JR., A. F.

SUBMITTED BY TERRACON CONSULTANTS

DATE OCTOBER 2017

Prepared in the Office of:

Terracon
Consulting Engineers & Scientists

2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
PHONE: (919) 873-2211 FAX: (919) 873-9555
NC REGISTERED FIRM: F-0869



DocuSigned by:

Abner Riggs Jr.

10/9/2017

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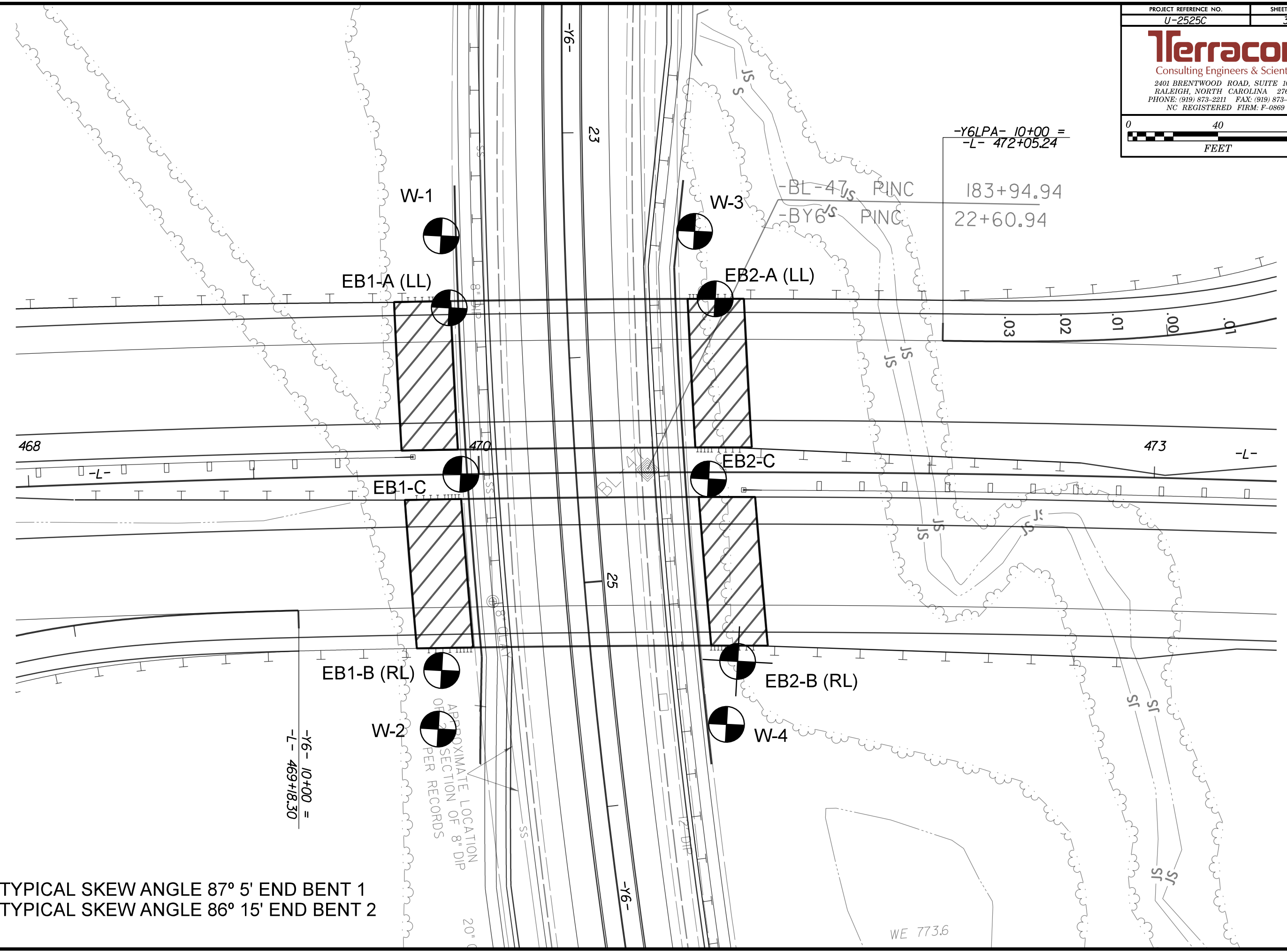
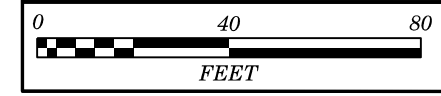
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DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

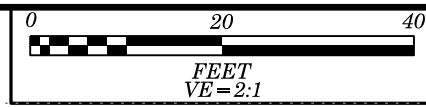
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
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SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																																																																							
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 208, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																																																																							
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IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p> <p>MODERATE (MOD.): SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.</p> <p>MODERATELY SEVERE (MOD. SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i></p> <p>SEVERE (SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</i></p> <p>VERY SEVERE (IV SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i></p> <p>COMPLETE: ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>										<p style="text-align: center;">PERCENTAGE OF MATERIAL</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT - CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE 1 - 10%</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE 10 - 20%</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME 20 - 35%</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>> 10%</td> <td>> 20%</td> <td>HIGHLY 35% AND ABOVE</td> </tr> </table>										ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE 1 - 10%	LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE 10 - 20%	MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME 20 - 35%	HIGHLY ORGANIC	> 10%	> 20%	HIGHLY 35% AND ABOVE
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<p style="text-align: center;">GROUND WATER</p> <p> WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING</p> <p> STATIC WATER LEVEL AFTER 24 HOURS</p> <p> PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA</p> <p> SPRING OR SEEP</p>										<p style="text-align: center;">MISCELLANEOUS SYMBOLS</p> <p> ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION</p> <p> SOIL SYMBOL</p> <p> ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT</p> <p> INFERRED SOIL BOUNDARY</p> <p> INFERRED ROCK LINE</p> <p> ALLUVIAL SOIL BOUNDARY</p> <p> DIP & DIP DIRECTION OF ROCK STRUCTURES</p> <p> SPT TEST BORING</p> <p> AUGER BORING</p> <p> CORE BORING</p> <p> MONITORING WELL</p> <p> PIEZOMETER INSTALLATION</p> <p> SLOPE INDICATOR INSTALLATION</p> <p> CONE PENETROMETER TEST</p> <p> SOUNDING ROD</p> <p> TEST BORING WITH CORE</p> <p> SPT N-VALUE</p>																																																																																																																																																																																																																																											
<p style="text-align: center;">TEXTURE OR GRAIN SIZE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>U.S. STD. SIEVE SIZE OPENING (MM)</th> <td>4</td> <td>10</td> <td>40</td> <td>60</td> <td>200</td> <td>270</td> </tr> <tr> <td></td> <td>4.75</td> <td>2.00</td> <td>0.42</td> <td>0.25</td> <td>0.075</td> <td>0.053</td> </tr> <tr> <th>BOULDER (BLDR.)</th> <th>COBBLE (COB.)</th> <th>GRAVEL (GR.)</th> <th>COARSE SAND (CSE. SD.)</th> <th>FINE SAND (F SD.)</th> <th>SILT (SL.)</th> <th>CLAY (CL.)</th> </tr> <tr> <td>GRAIN SIZE</td> <td>MM 305</td> <td>75</td> <td>2.0</td> <td>0.25</td> <td>0.05</td> <td>0.005</td> </tr> <tr> <td></td> <td>IN. 12</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										U.S. STD. SIEVE SIZE OPENING (MM)	4	10	40	60	200	270		4.75	2.00	0.42	0.25	0.075	0.053	BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)	GRAIN SIZE	MM 305	75	2.0	0.25	0.05	0.005		IN. 12	3					<p style="text-align: center;">RECOMMENDATION SYMBOLS</p> <p> UNDERCUT</p> <p> SHALLOW UNDERCUT</p> <p> UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE</p> <p> UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK</p> <p> UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</p>																																																																																																																																																																																																								
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<p style="text-align: center;">COLOR</p> <p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-BROWN). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>										<p style="text-align: center;">ROCK HARDNESS</p> <p>VERY HARD: CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</p> <p>HARD: CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</p> <p>MODERATELY HARD: CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.</p> <p>MEDIUM HARD: CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</p> <p>SOFT: CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.</p> <p>VERY SOFT: CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.</p>																																																																																																																																																																																																																																											
<p style="text-align: center;">FRACTURE SPACING</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>TERM</th> <th>SPACING</th> </tr> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FOOT</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> </tr> </table>										TERM	SPACING	VERY WIDE	MORE THAN 10 FEET	WIDE	3 TO 10 FEET	MODERATELY CLOSE	1 TO 3 FEET	CLOSE	0.16 TO 1 FOOT	VERY CLOSE	LESS THAN 0.16 FEET	<p style="text-align: center;">BEDDING</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>TERM</th> <th>THICKNESS</th> </tr> <tr> <td>VERY THICKLY BEDDED</td> <td>4 FEET</td> </tr> <tr> <td>THICKLY BEDDED</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>THINLY BEDDED</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>VERY THINLY BEDDED</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>THICKLY LAMINATED</td> <td>0.008 - 0.03 FEET</td> </tr> <tr> <td>THINLY LAMINATED</td> <td>< 0.008 FEET</td> </tr> </table>										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																																																																																																																																																																																																								
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<p style="text-align: center;">INDURATION</p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p style="text-align: center;">NOTES:</p> <p>FIAD - FILLED IMMEDIATELY AFTER DRILLING</p>																																																																																																																																																																																																																																											
<p style="text-align: center;">BENCH MARK: BL-47; N: 870,408; E: 1,764,474 - 36" REBAR WITH ALUMINUM CAP</p> <p style="text-align: right;">ELEVATION: 784.40 FEET</p>																																																																																																																																																																																																																																																					



TYPICAL SKEW ANGLE 87° 5' END BENT 1
 TYPICAL SKEW ANGLE 86° 15' END BENT 2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



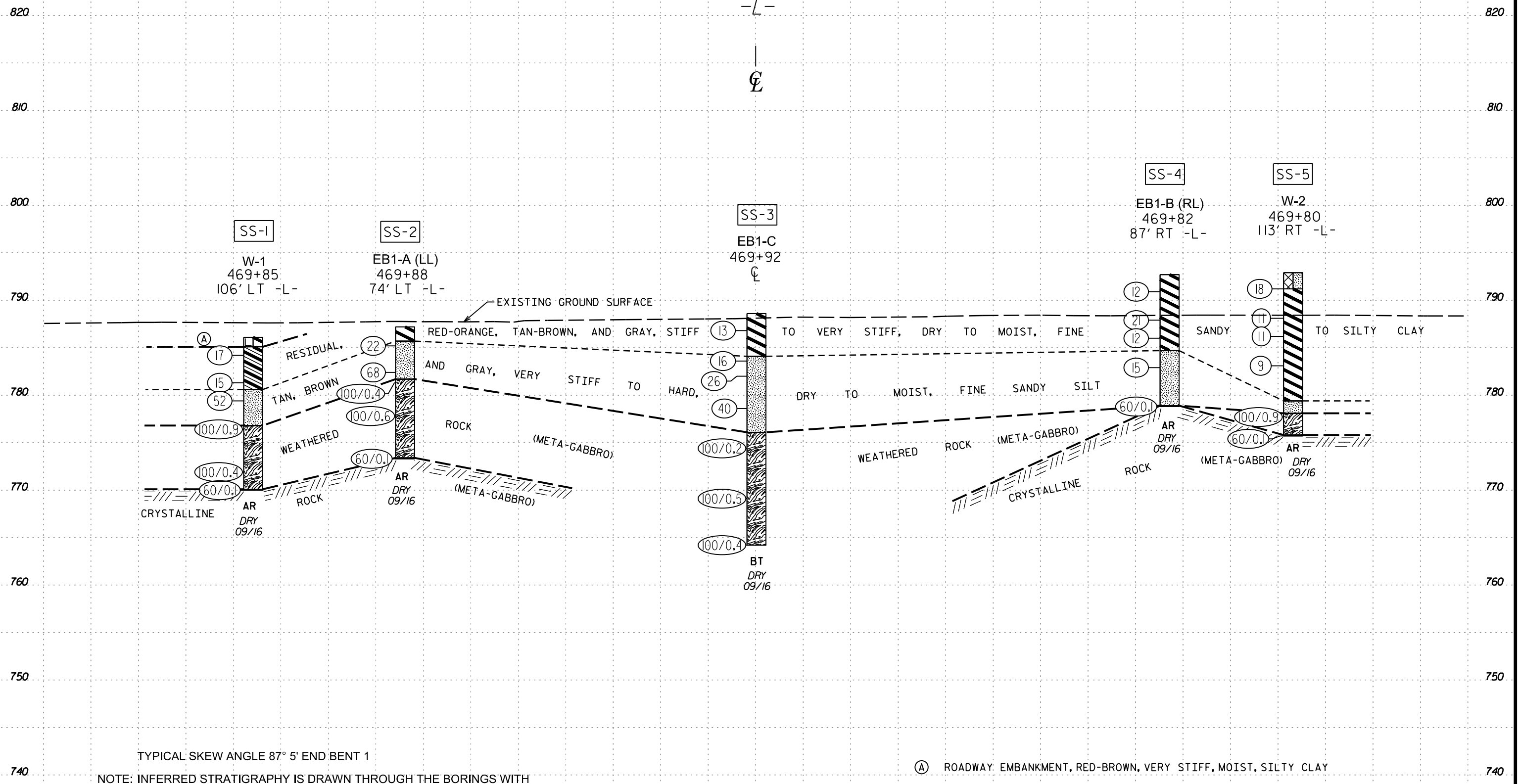
PROJECT REFERENCE NO. U-2525C	SHEET NO. 4
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Terracon
Consulting Engineers & Scientists
2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
PHONE: (919) 873-2211 FAX: (919) 873-9555
NC REGISTERED FIRM: P-0869

← SOUTH (TO KENNETH ROAD)

CROSS SECTION THROUGH END BENT 1 AT STA. 469+89 -L-

→ NORTH



TYPICAL SKEW ANGLE 87° 5' END BENT 1

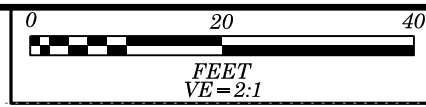
NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE CROSS SECTION GROUND LINE TAKEN FROM PROVIDED TIN FILE u2525c.ls tin.tin (DATED 01/20/16)

(A) ROADWAY EMBANKMENT, RED-BROWN, VERY STIFF, MOIST, SILTY CLAY

SITE NO. 6 (STRUCTURE NO. 8 AND NO. 9) - BRIDGE NO. 1247 AND 1248

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



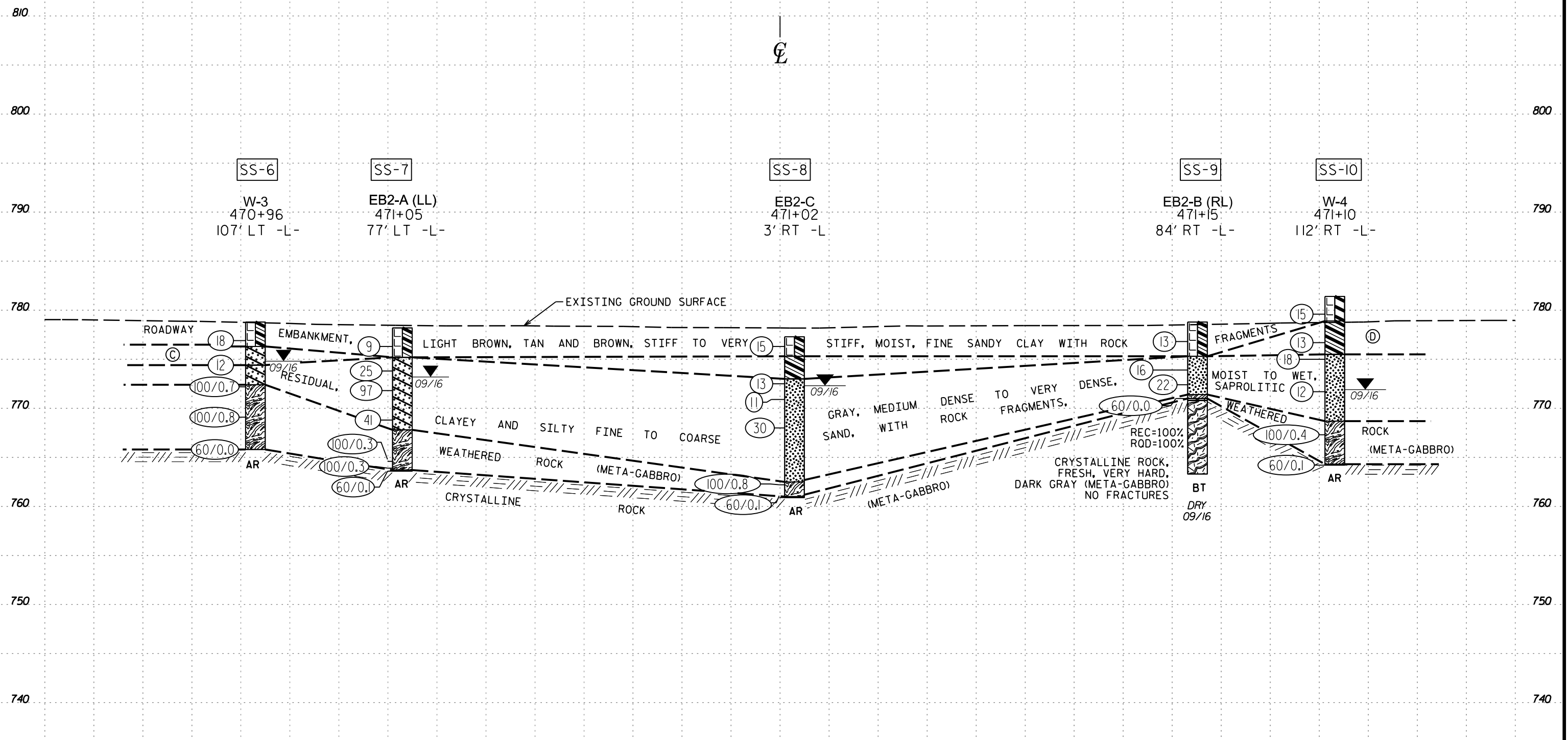
PROJECT REFERENCE NO. U-2525C	SHEET NO. 5
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NC REGISTERED FIRM: P-0869

← SOUTH (TO KENNETH ROAD)

CROSS SECTION THROUGH END BENT 2 AT STA. 470+98 -L-

→ NORTH



TYPICAL SKEW ANGLE 86° 15' END BENT 2

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE CROSS SECTION GROUND LINE TAKEN FROM PROVIDED TIN FILE u2525c Is tin.tin (DATED 01/20/16)

- Ⓒ ALLUVIAL, DARK GRAY, MEDIUM DENSE, WET, CLAYEY FINE SAND
- Ⓓ RESIDUAL, RED-BROWN AND ORANGE, STIFF, DRY TO MOIST, FINE SANDY CLAY

SITE NO. 6 (STRUCTURE NO. 8 AND NO. 9) - BRIDGE NO. 1247 AND 1248

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST RIGGS, A. F.									
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)								
BORING NO. W-1		STATION 469+85		OFFSET 106 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 786.1 ft		TOTAL DEPTH 16.1 ft		NORTHING 870,309		EASTING 1,764,571									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/29/16		COMP. DATE 09/29/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
790															
785	785.2	0.9	6	8	9										
	782.3	3.8													
780	780.4	5.7	5	5	10										
	777.3	8.8	11	24	28										
775			33	67	0.4										
	772.3	13.8													
770	770.1	16.0	100	0.4											
			60	0.1											

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST RIGGS, A. F.									
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)								
BORING NO. EB1-A (LL)		STATION 469+88		OFFSET 74 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 787.2 ft		TOTAL DEPTH 13.9 ft		NORTHING 870,341		EASTING 1,764,565									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/29/16		COMP. DATE 09/29/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
790															
785	786.2	1.0	7	10	12										
	783.4	3.8	6	24	44										
780	781.7	5.5	100	0.4											
	778.4	8.8	100	0.6											
775															
	773.4	13.8	60	0.1											

NCDOT BORE DOUBLE U2525C_GEO.GPJ NC_DOT.GDT 10/4/17

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST RIGGS, A. F.										
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)									
BORING NO. EB1-C		STATION 469+92		OFFSET CL		ALIGNMENT -L-										
COLLAR ELEV. 788.6 ft		TOTAL DEPTH 24.4 ft		NORTHING 870,415		EASTING 1,764,556										
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER TURNAGE, J. R.		START DATE 09/29/16		COMP. DATE 09/29/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
790	787.8	0.8	3	5	8									788.6	0.0	GROUND SURFACE
785	784.6	4.0	6	7	9									784.1	4.5	RESIDUAL TAN-BROWN, SILTY CLAY
	783.0	5.6	6	11	15											TAN-BROWN AND GRAY, FINE SANDY SILT
780	779.6	9.0	11	17	23											
775	774.6	14.0	100/0.2												12.5	WEATHERED ROCK (META-GABBRO)
770	769.6	19.0	100/0.5													
765	764.6	24.0	100/0.4												24.4	Boring Terminated at Elevation 764.2 ft IN WEATHERED ROCK (META-GABBRO) 0 Hr. Ground Water Caved Dry at 18.1 Ft. 24 Hr. Ground Water Caved Dry at 18.1 Ft.

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST RIGGS, A. F.										
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)									
BORING NO. EB1-B (RL)		STATION 469+82		OFFSET 87 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 792.7 ft		TOTAL DEPTH 13.9 ft		NORTHING 870,502		EASTING 1,764,560										
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER TURNAGE, J. R.		START DATE 09/29/16		COMP. DATE 09/29/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
795	791.9	0.8	7	6	6									792.7	0.0	GROUND SURFACE
790	788.9	3.8	7	9	12											RESIDUAL BROWN TO TAN-BROWN, SILTY CLAY
	787.0	5.7	6	6	6											
785	783.9	8.8	10	7	8										8.0	TAN-BROWN, FINE SANDY SILT
780	778.9	13.8	60/0.1												13.8	CRYSTALLINE ROCK (META-GABBRO) Boring Terminated with Standard Penetration Test Refusal at Elevation 778.8 ft IN CRYSTALLINE ROCK (META-GABBRO) 0 Hr. Ground Water Caved Dry at 11.0 Ft. 24 Hr. Ground Water Caved Dry at 10.8 Ft.

NCDOT BORE DOUBLE U2525C_GEO.GPJ NC_DOT.GDT 10/4/17

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST RIGGS, A. F.											
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)										
BORING NO. W-2		STATION 469+80		OFFSET 113 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 792.9 ft		TOTAL DEPTH 17.2 ft		NORTHING 870,528		EASTING 1,764,560											
0 HR. Dry		24 HR. Dry															
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/29/16		COMP. DATE 09/29/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
795																	
	792.2	0.7	11	10	8										792.9	GROUND SURFACE	0.0
	791.2														791.2	ARTIFICIAL FILL BROWN-TAN, FINE SANDY SILT	1.7
790	789.1	3.8	7	5	6											RESIDUAL RED-ORANGE AND BROWN, SILTY CLAY	
	787.2	5.7	5	5	6												
785	784.1	8.8	4	4	5												
	779.1	13.8	9	6	94/0.4												
780	775.8	17.1	60/0.1												775.8	WEATHERED ROCK (META-GABBRO)	17.1
															775.7	CRYSTALLINE ROCK (META-GABBRO)	17.2
																Boring Terminated with Standard Penetration Test Refusal at Elevation 775.7 ft IN CRYSTALLINE ROCK (META-GABBRO)	
																0 Hr. Ground Water Caved Dry at 13.5 Ft. 24 Hr. Ground Water Caved Dry at 13.5 Ft.	

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST SCHLEMM, T. S.											
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)										
BORING NO. W-3		STATION 470+96		OFFSET 107 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 778.8 ft		TOTAL DEPTH 13.0 ft		NORTHING 870,301		EASTING 1,764,458											
0 HR. Dry		24 HR. 4.0															
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/27/16		COMP. DATE 09/27/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
780																	
	777.9	0.9	10	9	9										778.8	GROUND SURFACE	0.0
	775.4	3.4	2	2	10										776.3	ROADWAY EMBANKMENT TAN AND BROWN, FINE SANDY CLAY	2.5
775	772.9	5.9	44	56/0.2											774.4	ALLUVIAL DARK GRAY, CLAYEY FINE SAND	4.4
	770.4	8.4	42	55	45/0.3										772.4	RESIDUAL BROWN AND GRAY CLAYEY FINE TO COARSE SAND	6.4
770	765.8	13.0	60/0.0												765.8	WEATHERED ROCK (META-GABBRO)	13.0
																Boring Terminated with Standard Penetration Test Refusal at Elevation 765.8 ft ON CRYSTALLINE ROCK (META-GABBRO)	
																0 Hr. Ground Water Caved Dry at 11.0 Ft.	

NCDOT BORE DOUBLE U2525C_GEO.GPJ NC_DOT.GDT 10/4/17

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST SCHLEMM, T. S.									
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)								
BORING NO. EB2-A (LL)		STATION 471+05		OFFSET 77 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 778.2 ft		TOTAL DEPTH 14.6 ft		NORTHING 870,331		EASTING 1,764,448									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/27/16		COMP. DATE 09/27/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
780															
	777.3	0.9	4	4	5									778.2	0.0
775	774.8	3.4	11	12	13									775.2	3.0
	772.8	5.4	6	17	80										
770	769.8	8.4	26	18	23										
765	764.8	13.4	100/0.3											763.7	14.5
	763.7	14.5	100/0.3											763.6	14.6
	763.7	14.5	60/0.1												

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST SCHLEMM, T. S.									
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)								
BORING NO. EB2-C		STATION 471+02		OFFSET 3 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 777.3 ft		TOTAL DEPTH 16.4 ft		NORTHING 870,411		EASTING 1,764,446									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/27/16		COMP. DATE 09/27/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
780															
	777.3	0.0	6	7	8									777.3	0.0
775	774.8	3.4	11	12	13									775.3	2.0
	773.5	3.8	4	4	9									773.0	4.3
	771.9	5.4	5	4	7										
770	769.8	8.4	26	18	23										
765	764.8	13.4	100/0.3											762.5	14.8
	763.5	13.8	31	43	57/0.3									761.0	16.3
	761.0	16.3	60/0.1											760.9	16.4

NCDOT BORE DOUBLE U2525C_GEO.GPJ NC_DOT.GDT 10/4/17

GEOTECHNICAL BORING REPORT
BORE LOG

GEOTECHNICAL BORING REPORT
CORE LOG

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST SCHLEMM, T. S.									
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)								
BORING NO. EB2-B (RL)		STATION 471+15		OFFSET 84 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 778.8 ft		TOTAL DEPTH 15.5 ft		NORTHING 870,491		EASTING 1,764,429									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD SPT Core Boring		HAMMER TYPE Automatic											
DRILLER TURNAGE, J. R.		START DATE 09/28/16		COMP. DATE 09/28/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
780														778.8	0.0
	777.8	1.0												775.3	3.5
	774.9	3.9	4	7	6									771.4	7.4
	773.4	5.4	7	8	8									771.0	7.8
	771.0	7.8	7	9	13									770.8	8.0
														763.3	15.5
<p>Boring Terminated at Elevation 763.3 ft IN CRYSTALLINE ROCK (META-GABBRO)</p> <p>1) Advanced 2-15/16" Tricone Roller Bit to Refusal at 8.0 FT. 2) NW Casing Advanced to 7.4 FT. 3) Water used as Drilling Fluid</p> <p>24 Hr. Ground Water Caved Dry at 4.4 Ft.</p>															

WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST SCHLEMM, T. S.						
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)					
BORING NO. EB2-B (RL)		STATION 471+15		OFFSET 84 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 778.8 ft		TOTAL DEPTH 15.5 ft		NORTHING 870,491		EASTING 1,764,429						
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016		DRILL METHOD SPT Core Boring		HAMMER TYPE Automatic								
DRILLER TURNAGE, J. R.		START DATE 09/28/16		COMP. DATE 09/28/16		SURFACE WATER DEPTH N/A						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)		REC. (%)	RQD (%)			
770.8												
	770.8	8.0	2.5	2:75/1.0	(2.5)	(2.5)		(7.5)	(7.5)		Begin Coring @ 8.0 ft	8.0
	768.3	10.5		2:50/1.0	100%	100%					CRYSTALLINE ROCK	
			5.0	0:75/0.5							FRESH, VERY HARD, DARK GRAY (META-GABBRO)	
				2:25/1.0	100%	100%					NO FRACTURES	
				2:75/1.0								
				2:00/1.0								
	763.3	15.5		2:25/1.0							Boring Terminated at Elevation 763.3 ft IN CRYSTALLINE ROCK (META-GABBRO)	15.5
<p>1) Advanced 2-15/16" Tricone Roller Bit to Refusal at 8.0 FT. 2) NW Casing Advanced to 7.4 FT. 3) Water used as Drilling Fluid</p> <p>24 Hr. Ground Water Caved Dry at 4.4 Ft.</p>												

Project No. 34821 (U-2525C)
SITE NO. 6 (STRUCTURE NO. 8 AND NO. 9) - BRIDGE NO. 1247 AND 1248 ON I-85
BYPASS (-L-) OVER NORTH ELM STREET (-Y6-)

CORE PHOTOGRAPHS

EB2-B

BOX 1: 8.0-15.5 FEET



WBS 34821		TIP U-2525C		COUNTY GUILFORD		GEOLOGIST SCHLEMM, T. S.									
SITE DESCRIPTION SITE NO. 6 (STRUC. #8 & #9) - BRDG. NO. 1247 & 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM ST. (-Y6-)							GROUND WTR (ft)								
BORING NO. W-4		STATION 471+10		OFFSET 112 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 781.4 ft		TOTAL DEPTH 17.2 ft		NORTHING 870,519		EASTING 1,764,432									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 92% 03/21/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER TURNAGE, J. R.		START DATE 09/28/16		COMP. DATE 09/28/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
785															
780	780.6	0.8	5	6	9							SS-10	16.7	ROADWAY EMBANKMENT	0.0
	777.7	3.7	5	7	6									BROWN AND TAN, FINE SANDY CLAY	2.5
775	776.0	5.4	4	7	11									RESIDUAL RED-BROWN AND ORANGE, FINE SANDY CLAY	5.9
	772.7	8.7	7	5	7									LIGHT BROWN, SILTY FINE SAND	
770															
	767.7	13.7	100/0.4											WEATHERED ROCK (META-GABBRO)	12.7
765	764.3	17.1	60/0.1											CRYSTALLINE ROCK (META-GABBRO)	17.1
														Boring Terminated with Standard Penetration Test Refusal at Elevation 764.2 ft IN CRYSTALLINE ROCK (META-GABBRO)	17.2
														0 Hr. Ground Water Caved Dry at 13.0 Ft.	

NCDOT BORE SINGLE U2525C_GEO.GPJ NC_DOT.GDT 10/4/17

LABORATORY TESTING SUMMARY

PROJECT NUMBER: 34821.1.1

TIP: U-2525C

COUNTY: GUILFORD

DESCRIPTION: SITE NO. 6 (STRUCTURE NO. 8 AND NO. 9) - BRIDGE NO. 1247 AND 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM STREET (-Y6-)

Sample No.	Alignment	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
								Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
SS-1	-L-	469+85	106 LT	3.8-5.3	A-6 (13)	37	20	10.5	23.6	40.2	25.7	0	100	94	74	18.1	N/D
SS-2	-L-	469+88	74 LT	3.8-5.3	A-4 (0)	28	NP	3.7	18.4	70.3	7.6	0	100	98	86	7.2	N/D
SS-3	-L-	469+92	0'	0.8-2.3	A-7-6 (29)	56	33	5.7	17.9	43.3	33.1	0	100	97	83	30.4	N/D
SS-4	-L-	469+82	87 RT	5.7-7.2	A-7-6 (17)	42	17	1.5	15.2	60.6	22.7	0	100	99	90	16.1	N/D
SS-5	-L-	469+80	113 RT	8.8-10.3	A-7-6 (25)	55	28	3.4	25.2	40.3	31.1	0	100	98	81	35.3	N/D
SS-6	-L-	470+96	107 LT	0.9-2.4	A-6 (6)	29	12	14.7	19.4	41.8	24.1	1	98	89	71	9.6	N/D
SS-7	-L-	471+05	77 LT	8.4-9.9	A-2-6 (0)	30	13	53.0	26.0	13.6	7.4	0	100	60	26	N/A	N/D
SS-8	-L-	471+02	3 RT	5.4-6.9	A-2-4 (0)	27	NP	26.0	22.2	45.4	6.4	43	55	44	32	N/A	N/D
SS-9	-L-	471+15	84 RT	1.0-2.5	A-6 (6)	29	12	9.4	14.1	45.9	30.6	16	82	76	68	10.4	N/D
SS-10	-L-	471+10	112 RT	0.8-2.3	A-7-6 (19)	41	23	7.2	14.4	39.5	38.9	0	98	93	83	16.7	N/D

NP - NONPLASTIC

Stephanie H. Huffman
 Certified Lab Technician Signature
 114-01-1203
 Certification Number

SITE NO. 6 (STRUCTURE NO. 8 AND NO. 9) – BRIDGE NO. 1247 AND 1248 ON I-85 BYPASS (-L-) OVER NORTH ELM STREET (-Y6-)



Photograph No. 1: Right of the I-85 Bypass -L- alignment, looking South along proposed End Bent No. 1



Photograph No. 3: Right of the I-85 Bypass -L- alignment, looking South along proposed End Bent No. 2.



Photograph No. 2: Left of the I-85 Bypass -L- alignment, looking North along the proposed End Bent No. 1



Photograph No. 4: Left of the I-85 Bypass -L- alignment, looking North along proposed End Bent No. 2.