

SEE SHEET 2A FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0011C	1	94

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  - 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

TRIGON

GOODNIGHT, D. J.

WEIS, J.M.

INVESTIGATED BY FALCON ENG.

DRAWN BY HILL, M. J.

CHECKED BY HUNSBERGER, W. S.

SUBMITTED BY FALCON ENG.

DATE AUGUST 2019

ROADWAY  
SUBSURFACE INVESTIGATION

COUNTY CLAY  
PROJECT DESCRIPTION NC 69 FROM GEORGIA STATE  
LINE TO US 64

INVENTORY

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	20+50.00 - 221+00.00	4-20	22-30
-Y1-	12+00.00 - 18+50.00	5	31
-Y2-	12+00.00 - 14+00.99	7	31
-Y3-	10+00.00 - 13+00.00	7	31
-Y4-	11+25.00 - 13+94.32	7	32
-Y5-	10+00.00 - 14+75.00	7	32
-Y6-	10+75.00 - 13+42.41	8	32
-Y7-	11+75.00 - 15+34.38	9	32
-Y8-	12+75.00 - 15+22.38	10	33
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-Y10-	10+00.00 - 15+67.82	11	33
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-Y14-	10+00.00 - 12+75.00	14	35
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REFERENCE: A-0011C

PROJECT: 32574



Jeremy R Hamm

8/19/2019

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
<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 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p><b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. <b>UNIFORMLY GRADED</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. <b>GAP-GRADED</b> - 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 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><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. <b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA. <b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. <b>ARGILLACEOUS</b> - 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. <b>ARTESIAN</b> - 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. <b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. <b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. <b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. <b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. <b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. <b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. <b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. <b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. <b>FORMATION (FM)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. <b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. <b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. <b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. <b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. <b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. <b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. <b>ROCK QUALITY DESIGNATION (ROD)</b> - 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. <b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. <b>SILL</b> - 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. <b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. <b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - 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. <b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. <b>STRATA ROCK QUALITY DESIGNATION (SROD)</b> - 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. <b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
<p><b>SOIL LEGEND AND AASHTO CLASSIFICATION</b></p> <table border="1" style="width: 100%; text-align: center;"> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="5">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="5">SILT-CLAY MATERIALS (&gt; 35% PASSING #200)</th> <th colspan="5">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1</th><th>A-2</th><th>A-3</th><th>A-4</th><th>A-5</th> <th>A-6</th><th>A-7</th><th>A-8</th><th>A-9</th><th>A-10</th> <th>A-11</th><th>A-12</th><th>A-13</th><th>A-14</th><th>A-15</th> <th>A-16</th><th>A-17</th><th>A-18</th><th>A-19</th><th>A-20</th> </tr> <tr> <th>GROUP CLASS.</th> <td>A-1-a</td><td>A-1-b</td><td>A-2-4</td><td>A-2-5</td><td>A-2-6</td><td>A-2-7</td><td>A-4</td><td>A-5</td><td>A-6</td><td>A-7</td> <td>A-1, A-2</td><td>A-3</td><td>A-4, A-5</td><td>A-6, A-7</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th>SYMBOL</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th>% PASSING #10 #40 #200</th> <td>50 MX 30 MX 15 MX</td><td>50 MX 25 MX</td><td>51 MN 35 MX 35 MX</td><td>40 MX 35 MX</td><td>41 MN 35 MX</td><td>41 MN 35 MX</td><td>40 MX 36 MN</td><td>41 MN 36 MN</td><td>40 MX 36 MN</td><td>41 MN 36 MN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th>MATERIAL PASSING #40 LL PI</th> <td>-</td><td>-</td><td>40 MX 10 MN</td><td>41 MN 11 MN</td><td>41 MN 11 MN</td><td>40 MX 11 MN</td><td>41 MN 11 MN</td><td>40 MX 11 MN</td><td>41 MN 11 MN</td><td>41 MN 11 MN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th>GROUP INDEX</th> <td>0</td><td>0</td><td>0</td><td>4 MX</td><td>8 MX</td><td>12 MX</td><td>16 MX</td><td>NO MX</td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th>USUAL TYPES OF MAJOR MATERIALS</th> <td>STONE FRAGS. GRAVEL, AND SAND</td><td>FINE SAND</td><td>SILTY OR CLAYEY GRAVEL AND SAND</td><td>SILTY SOILS</td><td>CLAYEY SOILS</td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th>GEN. RATING AS SUBGRADE</th> <td colspan="5">EXCELLENT TO GOOD</td><td colspan="5">FAIR TO POOR</td><td>FAIR TO POOR</td><td>POOR</td><td>UNSATURABLE</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="10">PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS &gt; LL - 30</td> <td colspan="10"></td> <td colspan="10"></td> </tr> <tr> <td colspan="10"> <p><b>CONSISTENCY OR DENSENESS</b></p> <table border="1" style="width: 100%;"> <tr> <th>PRIMARY SOIL TYPE</th> <th>COMPACTNESS OR CONSISTENCY</th> <th>RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)</th> <th>RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT<sup>2</sup>)</th> </tr> <tr> <td>GENERALLY GRANULAR MATERIAL (NON-COHESSIVE)</td> <td>VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE</td> <td>&lt; 4 4 TO 10 10 TO 30 30 TO 50 &gt; 50</td> <td>N/A</td> </tr> <tr> <td>GENERALLY SILT-CLAY MATERIAL (COHESIVE)</td> <td>VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD</td> <td>&lt; 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 &gt; 30</td> <td>&lt; 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 &gt; 4</td> </tr> </table> </td> <td colspan="10"> <p><b>MISCELLANEOUS SYMBOLS</b></p> <table border="1" style="width: 100%;"> <tr> <td></td> <td>ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION</td> <td></td> <td>DIP &amp; DIP DIRECTION OF ROCK STRUCTURES</td> <td></td> <td>SPT TEST BORING</td> <td></td> <td>SLOPE INDICATOR INSTALLATION</td> </tr> <tr> <td></td> <td>SOIL SYMBOL</td> <td></td> <td>AUGER BORING</td> <td></td> <td>CONE PENETROMETER TEST</td> <td></td> <td>SOUNDING ROD</td> </tr> <tr> <td></td> <td>ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT</td> <td></td> <td>CORE BORING</td> <td></td> <td>MONITORING WELL</td> <td></td> <td>TEST BORING WITH CORE</td> </tr> <tr> <td></td> <td>INFERRED SOIL BOUNDARY</td> <td></td> <td>PIEZOMETER INSTALLATION</td> <td></td> <td>SPT N-VALUE</td> <td></td> <td></td> </tr> <tr> <td></td> <td>INFERRED ROCK LINE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>ALLUVIAL SOIL BOUNDARY</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </td> <td colspan="10"> <p><b>ROCK HARDNESS</b></p> <table border="1" style="width: 100%;"> <tr> <th>VERY HARD</th> <td>CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</td> </tr> <tr> <th>HARD</th> <td>CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</td> </tr> <tr> <th>MODERATELY HARD</th> <td>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.</td> </tr> <tr> <th>MEDIUM HARD</th> <td>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.</td> </tr> <tr> <th>SOFT</th> <td>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.</td> </tr> <tr> <th>VERY SOFT</th> <td>CAN BE CARVED WITH KNIFE. 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A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7							SYMBOL																					% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 35 MX 35 MX	40 MX 35 MX	41 MN 35 MX	41 MN 35 MX	40 MX 36 MN	41 MN 36 MN	40 MX 36 MN	41 MN 36 MN											MATERIAL PASSING #40 LL PI	-	-	40 MX 10 MN	41 MN 11 MN	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	41 MN 11 MN											GROUP INDEX	0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX													USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND	SILTY SOILS	CLAYEY SOILS																GEN. 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GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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<p><b>COLOR</b></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><b>FRACATURE SPACING</b></p> <p><b>BEDDING</b></p> <p><b>BENCH MARK:</b> BORING ELEVATIONS TAKEN FROM a0011c_ls_tin_tin DATED 09/06/17 ELEVATION: FEET</p> <p><b>NOTES:</b> FIAD - FILLED IMMEDIATELY AFTER DRILLING</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

09/28/2019

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**TIP PROJECT: A-0011C**

**CONTRACT: 32574**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

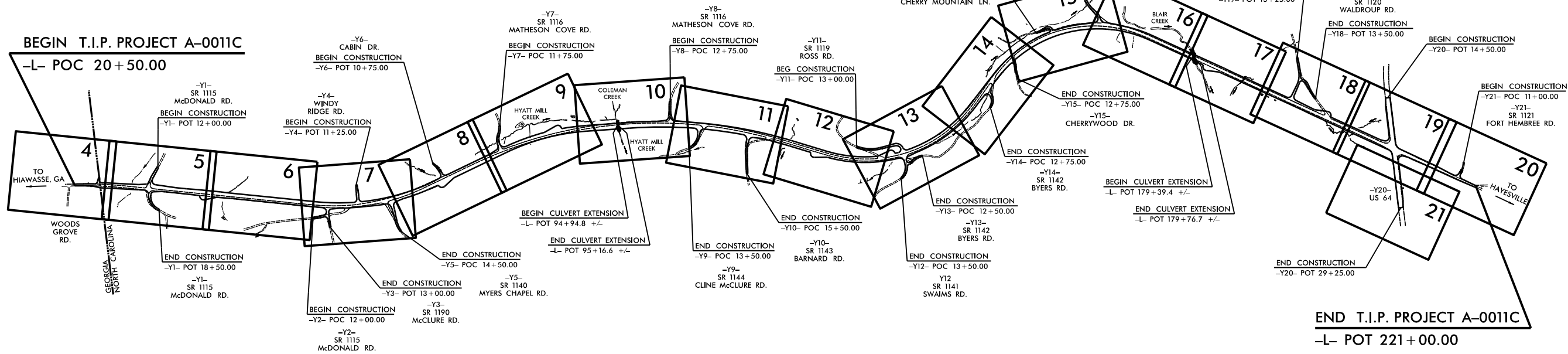
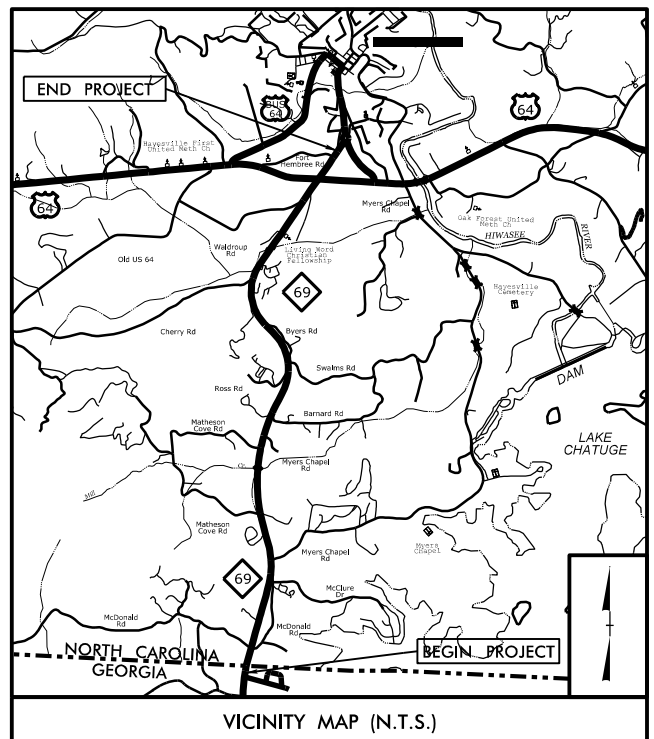
**CLAY COUNTY**

LOCATION: NC 69 FROM GEORGIA STATE LINE TO US 64

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS,  
AND CULVERTS

**25% REVISED PLAN SUBMITTAL**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0011C	2A	94
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32574.1.FD7	APD-0069(007)	PE	

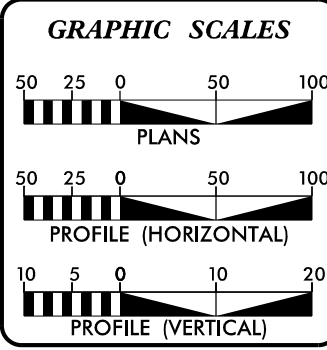


THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_.

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NCDOT CONTACT:  
KENNETH McDOWELL  
ASSISTANT DESIGN CONSTRUCTION  
ENGINEER, DIV. 14  
(828) 631-1172



**DESIGN DATA**

ADT 2020 =	11,730
ADT 2040 =	17,390
K =	9 %
D =	55 %
T =	9 % *
V =	50 MPH
* TTST = 2% DUAL 7%	
FUNC CLASS = MINOR ARTERIAL	
REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT A-0011C	=	3.786 mile
LENGTH STRUCTURES PROJECT A-0011C	=	0.011 mile
TOTAL LENGTH PROJECT A-0011C	=	3.797 mile

Prepared For:  
**DIVISION OF HIGHWAYS**  
Division 14, 253 Webster Road, Sylva, NC 28779

By:  
**M A Engineering Consultants, Inc.**  
598 East Chatham Street - Suite 137  
Cary, NC 27511  
Phone: 919.297.0220 Fax: 919.297.0221  
NC License: F-0160

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
AUGUST 15, 2018

LETTING DATE:  
AUGUST 18, 2020

ROBERT W. PORTER, JR PE  
PROJECT ENGINEER

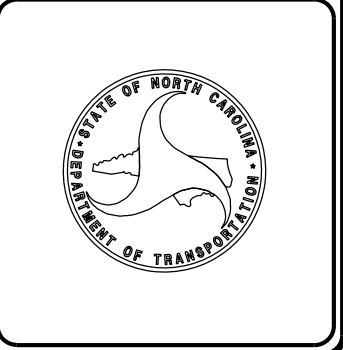
KEVIN S. HUTCHENS PE  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.





**WBS:** 32574.1.FD7  
**TIP:** A-0011C  
**COUNTY:** Clay  
**DESCRIPTION:** NC 69 from Georgia State Line to US 64  
**SUBJECT:** Roadway Subsurface Investigation – Inventory

## Roadway Subsurface Investigation Report - Inventory

**NC 69 from Georgia State Line to US 64**  
**Clay County, North Carolina**  
**WBS: 32574.1.FD7 TIP: A-0011C**  
**Falcon Project No.: G16005.00**

**Prepared for:**

MA Engineering Consultants, Inc.  
598 E. Chatham Street, Suite 137  
Cary, NC 27511

Submitted by:

Falcon Engineering, Inc.  
1210 Trinity Road, Suite 110  
Cary, North Carolina 27513  
(919) 871-0800  
www.falconengineers.com

August 19, 2019

### PROJECT DESCRIPTION

This project consists of widening existing NC 69 from the Georgia state line to US 64 in Hayesville, NC to the. The overall corridor is approximately 3.5 miles long and consists of a mix of two and three lane sections. The widened corridor will consist of a five lane highway with center turn lane, four lane median-divided sections and new U-turn bulbs. Numerous Y-lines will be significantly adjusted in order for the existing horizontal and/or vertical alignments to tie to the widened mainline. Some reconfiguration/improvement of intersections is also planned, including widening/turn lanes on US 64. In addition to the roadway realignment, multiple retaining walls will be constructed. Investigations for these structures will be provided under separate cover.

The investigation was conducted between April 30<sup>th</sup> and June 29<sup>th</sup>, 2018 in general accordance with our Scope and Fee Estimate for Geotechnical Investigation and Engineering Services, dated September 8<sup>th</sup>, 2015. The recommendations provided in this report are based solely on our site reconnaissance, soil test borings and laboratory test data, engineering evaluation of these data, and generally accepted soil and foundation engineering practices and principles.

A total of one hundred and thirty-nine (139) Standard Penetration Test (SPT) borings were performed for the proposed roadway alignments. All mechanical borings were drilled using a Mobil B-57 ATV mounted drill rig equipped with 2 ¼-inch inside diameter hollow-stem auger with an automatic hammer. Representative soil samples, collected with a split-barrel sampler, were selected for laboratory testing to verify visual field classifications. In addition, five (5) bulk samples were collected for standard Proctor compaction and California Bearing Ratio (CBR) testing. Forty-two (42) locations along the existing roadways were cored, measured and Dual Mass Dynamic Cone Penetrometer (DCP) testing completed to correlate in-situ CBR values for the existing subgrade to depths of up to three feet. The dual mass DCP used is manufactured by Kessler Soils Engineering Products, Inc. CBR values were estimated using software provided by the manufacturer which utilizes correlations established by the Army Corps of Engineers Waterways Experiment Station.





The following alignments, totaling approximately 5.56 miles were investigated.

<u>Alignment</u>	<u>Station (ft)</u>
-L- (NC 69)	20+50 – 221+00
-Y1- (McDonald Road)	12+00 – 18+50
-Y2- (McDonald Road)	12+00 – 14+01
-Y3- (McClure Road)	10+00 – 13+00
-Y4- (Windy Ridge Road)	11+25 – 13+94
-Y5- (Myers Chapel Road)	10+00 – 14+75
-Y6- (Cabin Drive)	10+75 – 13+42
-Y7- (Matheson Cove Road)	11+75 – 15+34
-Y8- (Matheson Cove Road)	12+75 – 15+22
-Y9- (Cline McClure Road)	10+00 – 12+00
-Y10- (Barnard Road)	10+00 – 15+68
-Y11- (Ross Road)	13+00 – 20+14
-Y12- (Swaims Road)	10+00 – 13+50
-Y13- (Byers Road)	10+00 – 12+50
-Y14- (Byers Road)	10+00 – 12+75
-Y15- (Cherrywood Drive)	10+00 – 12+75
-Y16- (Cherry Mountain Lane)	11+00 – 13+96
-Y17- (Cherry Road)	11+00 – 16+24
-Y18- (Waldroup Road)	10+00 – 13+50
-Y19- (Waldroup Road)	13+25 – 19+39
-Y20- (US 64)	11+00 – 29+25
-DR116- (Clyde Curtis Drive)	10+40 – 14+26

## PHYSIOGRAPHY AND GEOLOGY

The site is in the Blue Ridge Belt Physiographic Province of North Carolina. According to the *Geologic Map of North Carolina* (1985), the site is underlain by four major rock types in the Blue Ridge belt. The site transitions from south to north across Biotite Gneiss (**ZYbn**), Copperhill Formation (**Zch**), Wehuty Formation (**Zwe**) and Metasandstone, Metagraywacke, Meta Siltstone and Mica Schist (**Zhha**).

The Biotite Gneiss (**ZYbn**) is noted to consist of biotite gneiss - migmatitic; interlayered and gradational with biotite-garnet gneiss and amphibolite; locally abundant quartz and alumino-silicates. The Copperhill formation (**Zch**) is noted to consist of metagraywacke, massive, graded bedding common; includes dark-gray slate, mica schist and nodular calc-silicate rock. The Wehuty Formation (**Zwe**) is noted to consist of slate to schist, dark gray, graphitic and sulfidic; includes mica schist, metagraywacke, and metaconglomerate. The Metasandstone, Metagraywacke, Meta Siltstone and Mica Schist (**Zhha**) consists of metasandstone, metagraywacke, meta siltstone and mica schist – beds and lenses of calc-silicate rock locally abundant; garnet, staurolite, and cross-biotite porphyroblasts common in fine-grained layers.

Existing site topography is gently rolling, typical of a mountain valley, and generally grades downward from south to north. The site lies between the Georgia state line and Hayesville, NC along NC Highway 69. The roadway is currently a two lane undivided highway which becomes three lanes as it enters the business district. The existing corridor is populated with residential and agricultural properties to the south and commercial and municipal properties to the north. Steep roadway embankments and/or cut slopes occur adjacent to the roadway in several sections. The corridor crosses several streams along the alignment and in places streams run parallel to the mainline.

## SOIL PROPERTIES

A variety of soils were encountered along the project, including existing roadway embankments, artificial fills associated with adjacent development, alluvial, colluvial, and residual soils, and weathered and crystalline rock.

Topsoil was encountered in grassy, brushy, and wooded areas ranging in thickness from 0.2 to 1.0 feet, typically on the order of 0.3 feet, and consisting predominantly of sandy clay.

Roadway Embankment soils were encountered at the ground surface beneath and adjacent to existing roadways. These soils consist of up to 27 feet of moist, very loose to dense, silty and clayey sand (A-2-4, A-2-6) and very soft to stiff, silty and sandy clay and clayey and sandy silt (A-4, A-5, A-6, A-7).





Artificial Fill soils were encountered at the ground surface beneath thin layers of topsoil on developed properties adjacent to the existing right-of-way. These soils consist of up to 8.0 feet of dry to wet, very loose to medium dense, silty and clayey sand (A-1-b, A-2-4, A-2-6) and soft to stiff, silty and sandy clay and clayey and sandy silt (A-4, A-5, A-6, A-7).

Alluvial soils were encountered at the ground surface or below artificial fill near historic flood plains of natural waterways. These soils consist of up to 19 feet of wet to saturated, very loose to medium dense, clean, clayey and silty sand (A-1-b, A-2-4, A-2-6) and very soft to stiff, silty and sandy clay and clayey and sandy silt (A-4, A-5, A-6, A-7).

Colluvial soils, soils transported by either rainwash or downslope creep were encountered in one location. These soils consist of up to 6.5 feet of moist, silty sand (A-2-4) with rock fragments.

Residual soils were encountered at the ground surface, or beneath roadway embankments, artificial fills, alluvial, or colluvial soils. These soils consist of dry to saturated, loose to very dense, clayey and silty sand (A-2-4, A-2-6) and soft to hard, sandy and clayey silt, and silty and sandy clays (A-4, A-5, A-6, A-7).

Weathered Rock (WR) is a very hard material with properties intermediate of soil and rock. WR is classified by having an N-value of 100 blows per foot or less. WR encountered generally consists of brown tan and white biotite gneiss and mica schist.

Crystalline Rock (CR), in the form of biotite gneiss and schist and mica schist, was encountered beneath weathered rock or residual soils at various locations throughout the site. CR is classified as material that yields auger refusal or SPT refusal (blow count of 60/0.0 or 60/0.1 feet.)

## GROUNDWATER PROPERTIES

Groundwater levels were measured at the time of boring completion, and in many cases after a waiting period of at least 24 hours. Borings drilled within and in close proximity to existing roadways were backfilled immediately after completion due to safety considerations.

Detailed groundwater measurements are included in the attached subsurface profiles and cross sections.

Multiple streams run throughout the project corridor both perpendicular and parallel to the mainline. A spring is noted on the final survey within the proposed project corridor.

## AREAS OF SPECIAL GEOTECHNICAL INTEREST

- I. The following locations contain very soft to soft/very loose soils with an N-value less than 4 near the ground surface:

<u>Alignment</u>	<u>Station (ft)</u>
-L-	30+00
-L-	40+00
-L-	59+00 – 63+00
-L-	82+00
-L-	85+94
-L-	100+00
-L-	132+16
-L-	138+07
-L-	200+03
-L-	204+00
-L-	212+00
-L-	218+00
-Y5-	13+99
-Y14-	12+15
-Y15-	12+00
-Y20-	16+00
-Y20-	20+02
-Y20-	29+00

- II. Alluvial soils were encountered near the following locations. The potential for shallow groundwater and wet, soft or organic soils should be anticipated at these locations:

<u>Alignment</u>	<u>Station (ft)</u>
-L-	26+00
-L-	68+00
-L-	78+00 and 80+00
-L-	90+00 and 92+00
-L-	95+10 and 95+99
-L-	130+02
-L-	140+00 and 143+37
-L-	174+02
-L-	177+98 and 179+50
-L-	180+31, 182+01 and 184+01
-L-	186+29 and 188+00





-L-	190+00 and 191+98
-L-	197+91 and 200+03
-L-	204+00
-L-	208+00
-Y5-	13+99
-Y18-	14+00
-Y19-	12+00
-Y19-	18+00

III. Shallow rock within 6 feet of proposed subgrade was encountered at the following locations:

<u>Alignment</u>	<u>Station (ft)</u>
-L-	111+96
-L-	114+00
-L-	152+00
-L-	153+90
-L-	155+94
-L-	163+93
-L-	165+95
-L-	193+84
-L-	196+00
-L-	202+00
-Y15-	12+00

IV. Rock within the Zch and Zwe rock units may be acid producing. Based on geologic mapping, rock encountered in the following areas during our investigation has the potential to be acid producing:

<u>Alignment</u>	<u>Station (ft)</u>
-L-	111+96
-L-	114+00
-L-	152+00
-L-	153+90
-L-	155+94
-L-	158+00
-L-	159+97
-L-	163+93
-L-	165+95
-Y15-/-Y15DET-	12+00

### ADDITIONAL LABORATORY TESTING

The following bulk samples were obtained for the additional laboratory tests noted:

<u>Sample</u>	<u>Location</u>	<u>Location</u>	<u>Test</u>
BS-1	44+00, 40' LT, -L-	1.0 – 10.0	California Bearing Ratio, Standard Proctor
BS-2	54+02, 75' LT, -L-	1.0 – 10.0	California Bearing Ratio, Standard Proctor
BS-3	111+96, 74' LT, -L-	1.0 – 10.0	California Bearing Ratio, Standard Proctor
BS-4	202+01, 69' LT, -L-	1.0 – 8.5	California Bearing Ratio, Standard Proctor
BS-5	206+00, 60' LT, -L-	1.0 – 10.0	California Bearing Ratio, Standard Proctor

Classification test results for these samples are included in the subsurface profiles. Standard Proctor and California Bearing Ratio (CBR) data is attached in Appendix B.

### CLOSING

Falcon appreciates the opportunity to have provided our geotechnical engineering services for the above referenced project. If you have any questions concerning the contents of this report or need additional information, please do not hesitate to contact our office.

### FALCON ENGINEERING, INC.

Report Prepared By:

Report Reviewed By:

W. Scott Hunsberger, PE  
Geotechnical Engineer

Jeremy R. Hamm, PE  
Geotechnical Engineering Manager

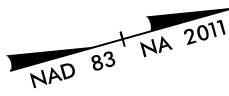


8/17/99

REVISIONS

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A:\Projects\2018\11615005.00 A-0011C

-L-  
PI Sta 22+42.68  
 $\Delta = 4' 26'' 55.3'' (RT)$   
 $D = 0' 59'' 59.7''$   
 $L = 444.90'$   
 $T = 222.56'$   
 $R = 5730.00'$   
 $SE = 0.03$   
 $RO = 150'$   
 $V = 50 \text{ mph}$



SEE SHEET 22 FOR -L- PROFILE

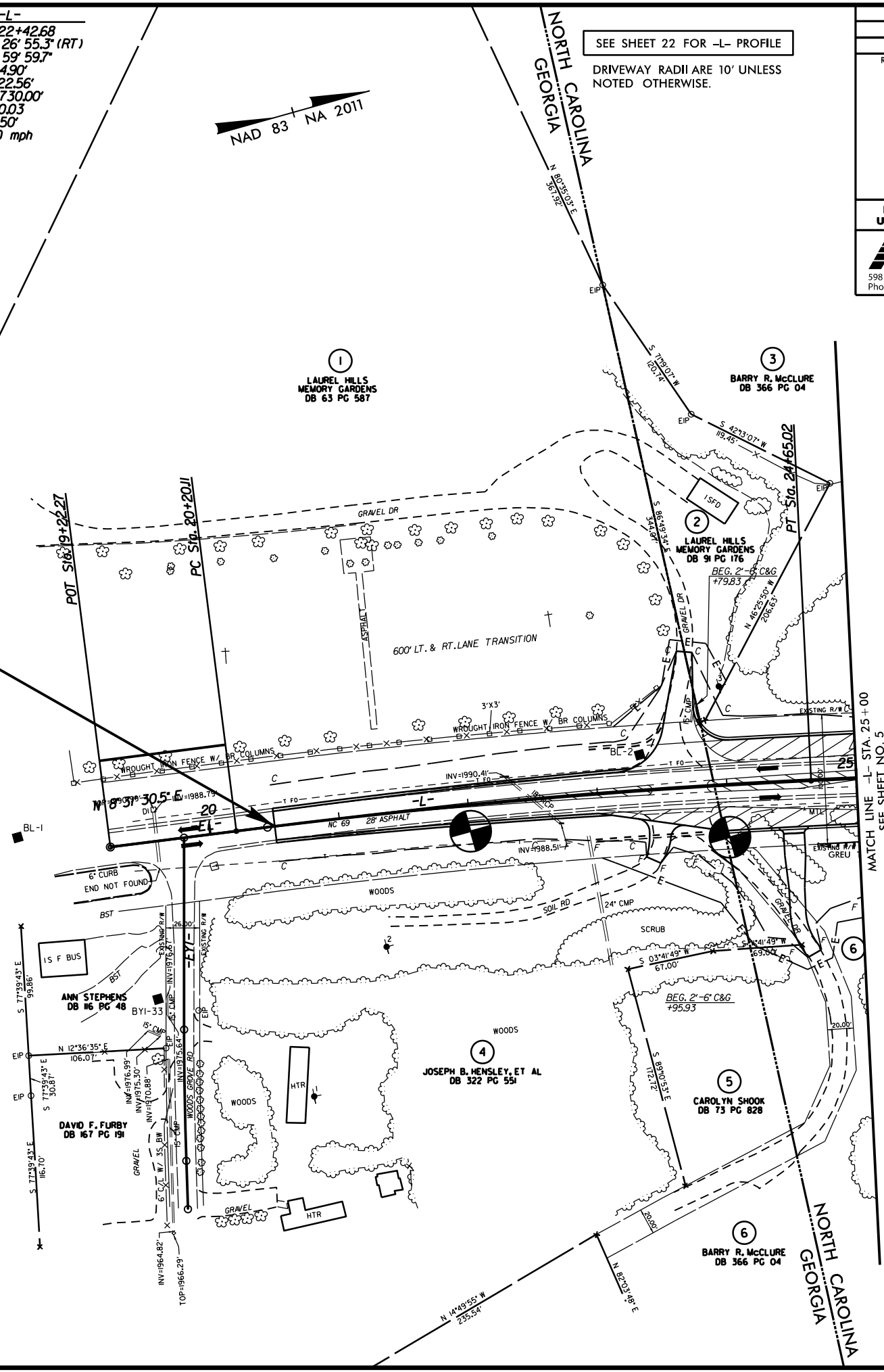
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

PROJECT REFERENCE NO. A-0011C		SHEET NO. 4	
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<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION			
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED			
		NC License: F-0160	
M A Engineering Consultants, Inc.		Cary, NC 27511	
598 East Chatham Street Suite 137		Phone: 919.297.0220	
		Fax: 919.297.0221	

BEGIN T.I.P. PROJECT A-0011C  
-L- POC 20+50.00

GPS-102

BM #1  
-BL- STA 5+00.00  
S 14°39'29" E 215.20'  
ELEV. 1988.59'

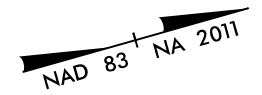


MATCH LINE -L- STA. 25+00  
SEE SHEET NO. 5



-L-		-YI-	
PI Sta 30+86.35	PI Sta 10+99.93	PI Sta 13+91.90	PI Sta 17+19.79
$\Delta = 2' 46' 27.2''$ (RT)	$\Delta = 5' 07' 34.5''$ (RT)	$\Delta = 25' 15' 01.9''$ (LT)	$\Delta = 63' 13' 22.7''$ (LT)
$D = 0' 45' 50.2''$	$D = 3' 03' 50.2''$	$D = 28' 38' 52.4''$	$D = 28' 38' 52.4''$
$L = 363.14'$	$L = 167.31'$	$L = 88.14'$	$L = 220.69'$
$T = 181.61'$	$T = 83.71'$	$T = 44.80'$	$T = 123.10'$
$R = 7,500.00'$	$R = 1,870.00'$	$R = 200.00'$	$R = 200.00'$
$SE = 0.03$	$SE = 0.02$	$SE = 0.02$	$SE = 0.04$
$RO = 150'$	$RO = 30'$	$RO = 30'$	$RO = 60'$
$V = 50$ mph	$V = STOP$ COND.	$V = STOP$ COND.	$V = STOP$ COND.

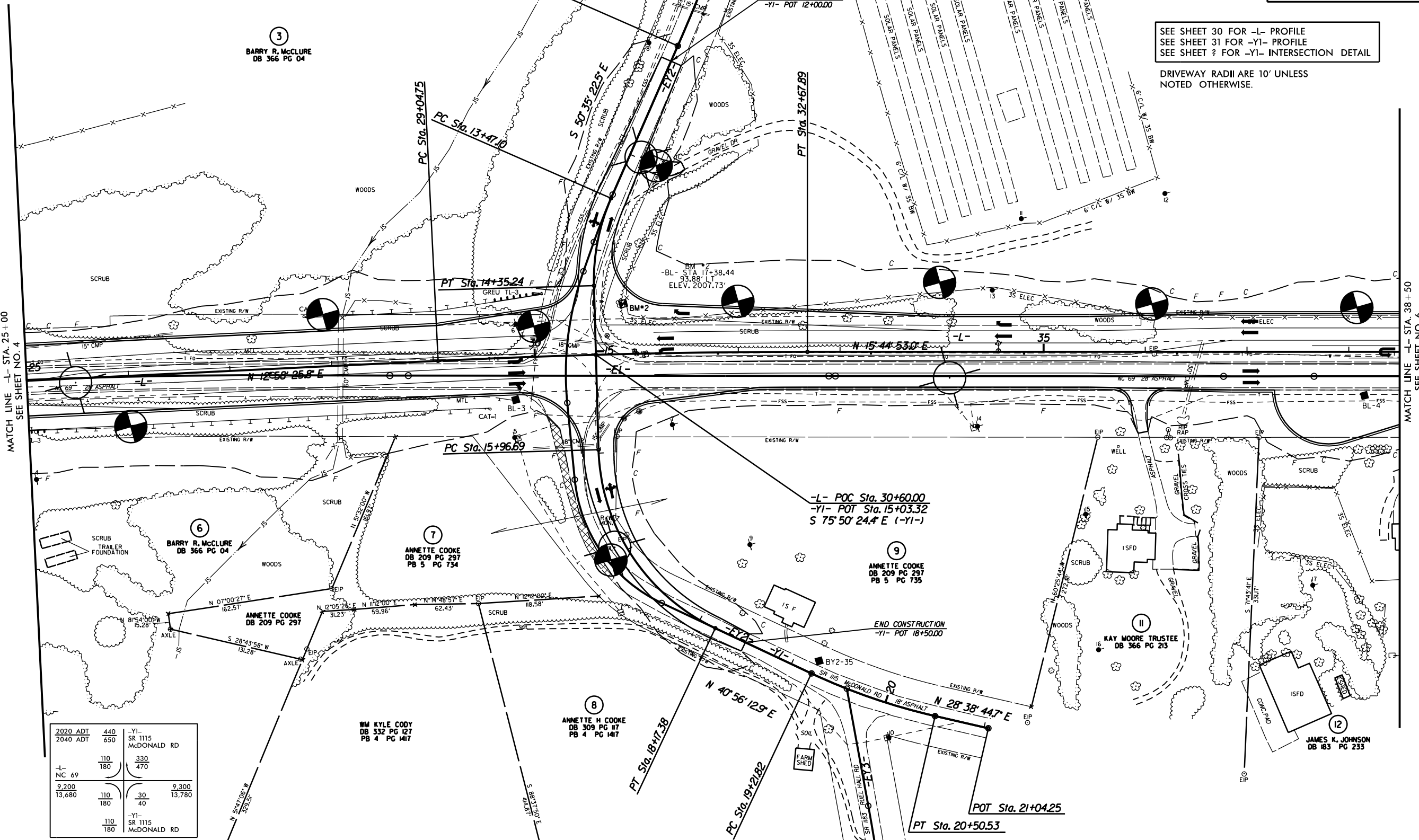
PROJECT REFERENCE NO. A-0011C	SHEET NO. 5
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
M A Engineering Consultants, Inc. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



10  
KENNETH J. McCLURE  
DB 380 PG 161  
DB 386 PG 185

SEE SHEET 30 FOR -L- PROFILE  
SEE SHEET 31 FOR -YI- PROFILE  
SEE SHEET ? FOR -YI- INTERSECTION DETAIL

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.



MATCH LINE -L- STA. 25+00  
SEE SHEET NO. 4

MATCH LINE -L- STA. 38+50  
SEE SHEET NO. 6

2020 ADT	440	-YI-	SR 1115	McDONALD RD
2040 ADT	650			
-L-	110	330		
NC 69	180	470		
9,200	110	30	9,300	
13,680	180	40	13,780	
	110	-YI-	SR 1115	McDONALD RD
	180			

REVISIONS

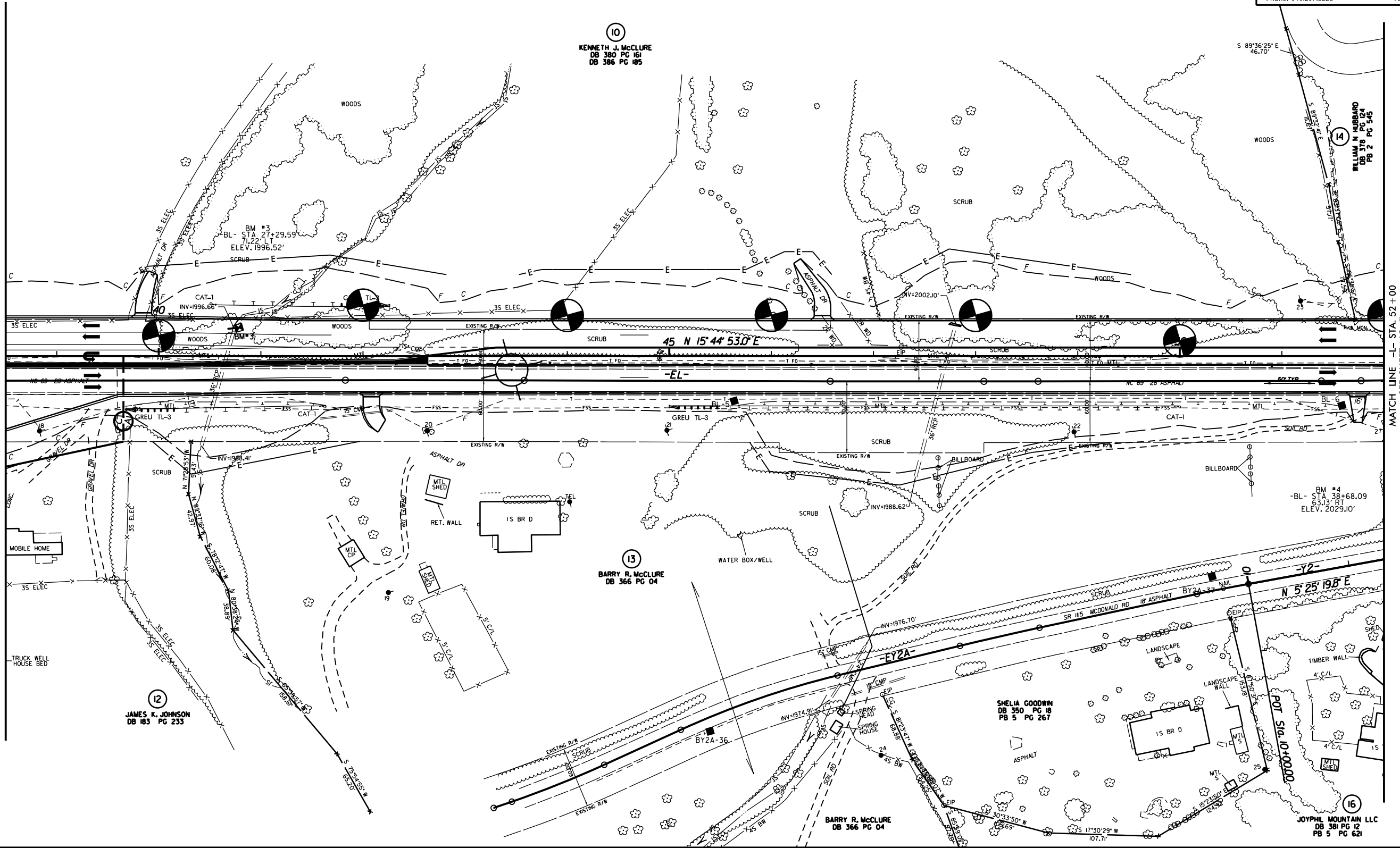
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 Barry R. McClure

8/17/19

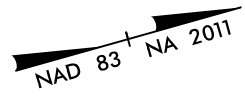
REVISIONS

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MATCH LINE -L- STA. 38+50  
SEE SHEET NO. 5




MATCH LINE -L- STA. 52+00  
SEE SHEET NO. 7



SEE SHEET 23 FOR -L- PROFILE  
 DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

PROJECT REFERENCE NO. A-0011C	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
 <b>M A Engineering Consultants, Inc.</b> <small>598 East Chatham Street Suite 137 Cary, NC 27511        Phone: 919.297.0220 Fax: 919.297.0221</small>	

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
 M A Engineering Consultants, Inc.	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

-L-	-Y2-	-Y3-	-Y4-	-Y5-
PI Sta 61+27.03 Δ = 31° 27' 02.4" (LT) D = 1° 54' 35.5" L = 1646.75' T = 844.69' R = 3,000.00' SE = 0.03 RO = 150' V = 50 mph	PI Sta 12+31.89 Δ = 9° 10' 34.3" (LT) D = 4° 46' 28.7" L = 192.19' T = 96.30' R = 1,200.00' SE = 0.02 RO = 30' V = STOP COND.	PI Sta 11+5.65 Δ = 14° 34' 30.8" (LT) D = 14° 19' 26.2" L = 101.75' T = 51.15' R = 400.00' SE = N.C. V = STOP COND.	PI Sta 12+05.58 Δ = 3° 53' 59.9" (RT) D = 5° 43' 46.5" L = 68.07' T = 34.05' R = 1,000.00' SE = 0.02 RO = 30' V = 15 mph	PI Sta 14+16.49 Δ = 35° 34' 39.4" (LT) D = 16° 22' 12.8" L = 217.33' T = 112.30' R = 350.00' SE = 0.04 RO = 84' V = 34 mph

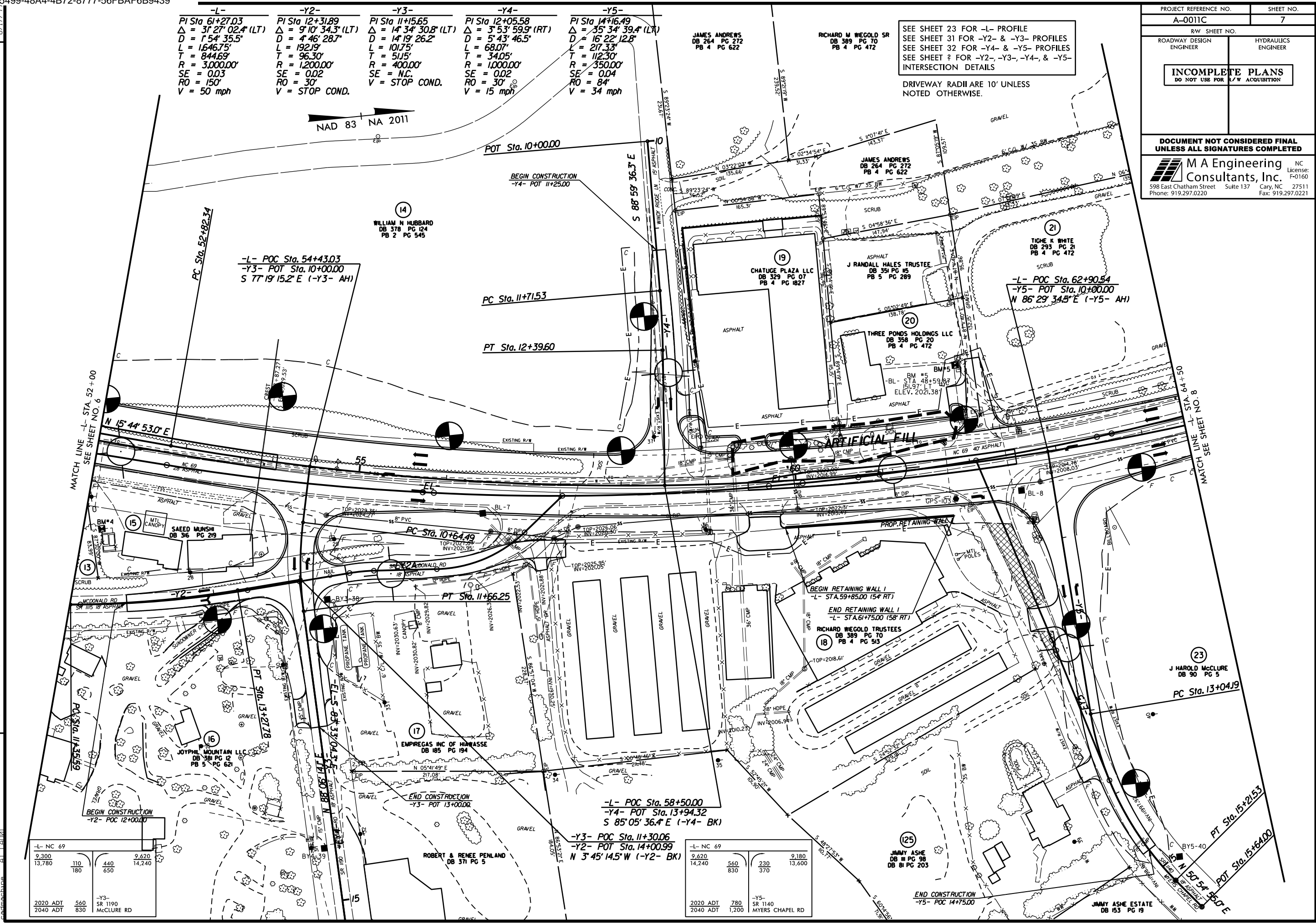
JAMES ANDREWS  
DB 264 PG 272  
PB 4 PG 622

RICHARD M WEGOLD SR  
DB 389 PG 70  
PB 4 PG 472

SEE SHEET 23 FOR -L- PROFILE  
SEE SHEET 31 FOR -Y2- & -Y3- PROFILES  
SEE SHEET 32 FOR -Y4- & -Y5- PROFILES  
SEE SHEET ? FOR -Y2-, -Y3-, -Y4-, & -Y5- INTERSECTION DETAILS

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

NAD 83 NA 2011



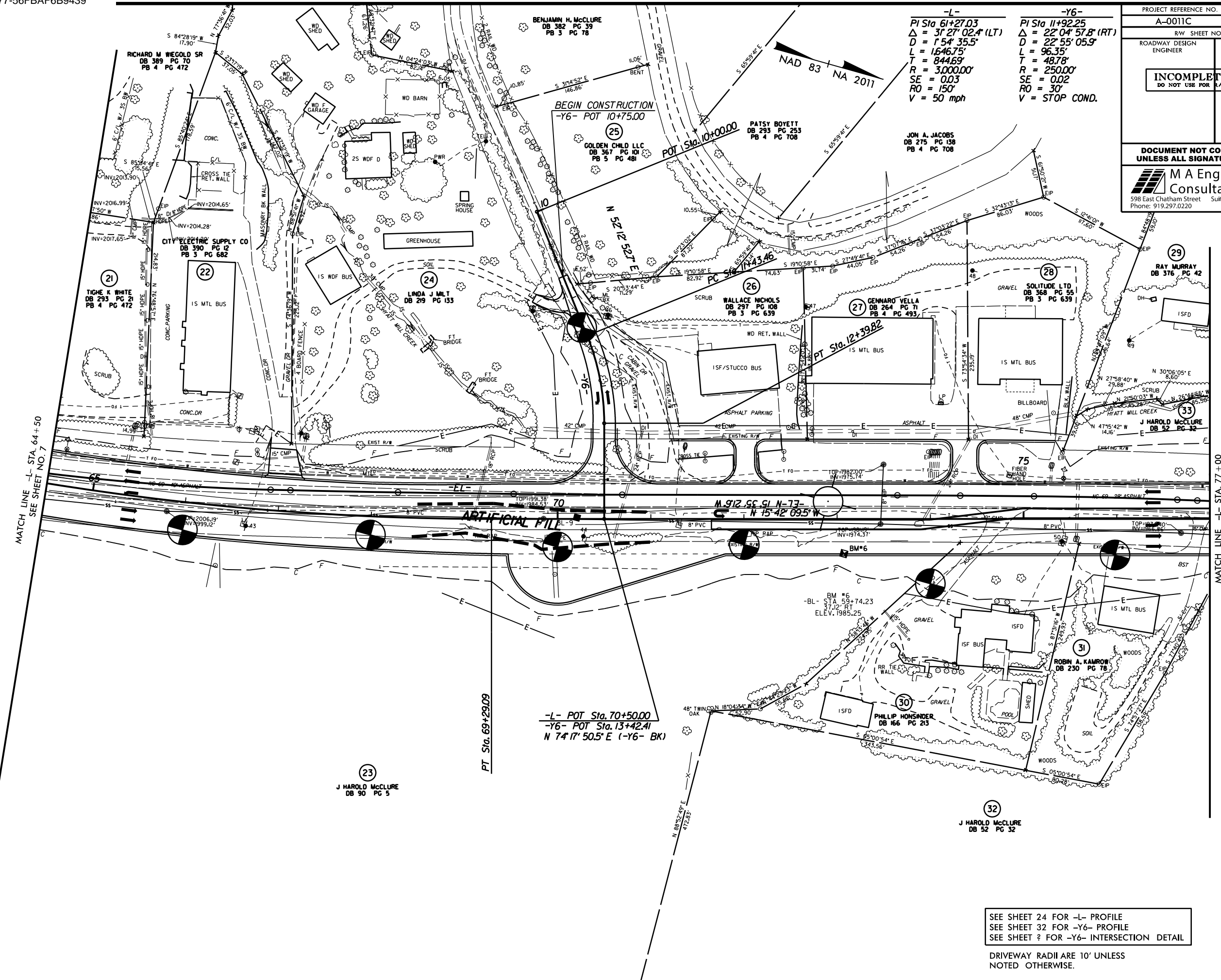
-L- NC 69	9,300	110	440	9,620
	13,780	180	650	14,240
2020 ADT	560			
2040 ADT	830			
	-Y3-			
	SR 1190			
	McCLURE RD			

-L- NC 69	9,620	560	230	9,180
	14,240	830	370	13,600
2020 ADT	780			
2040 ADT	1,200			
	-Y5-			
	SR 1140			
	MYERS CHAPEL RD			

REVISIONS

08-NOV-2018 15:31  
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8/17/2016 15:37  
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REVISONS  
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-L-  
PI Sta 61+27.03  
Δ = 31° 27' 02.4" (LT)  
D = 154' 35.5"  
L = 1646.75'  
T = 844.69'  
R = 3000.00'  
SE = 0.03  
RO = 150'  
V = 50 mph

-Y6-  
PI Sta 11+92.25  
Δ = 22° 04' 57.8" (RT)  
D = 22' 55' 05.9"  
L = 96.35'  
T = 48.78'  
R = 250.00'  
SE = 0.02  
RO = 30'  
V = STOP COND.

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
<b>M A Engineering Consultants, Inc.</b> 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 NC License: F-0160 Fax: 919.297.0221	

MATCH LINE -L- STA. 64+50  
SEE SHEET NO. 7

MATCH LINE -L- STA. 77+00  
SEE SHEET NO. 9

-L- POT Sta. 70+50.00  
-Y6- POT Sta. 13+42.41  
N 74° 17' 50.5" E (-Y6- BK)

SEE SHEET 24 FOR -L- PROFILE  
SEE SHEET 32 FOR -Y6- PROFILE  
SEE SHEET ? FOR -Y6- INTERSECTION DETAIL

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

8/17/99

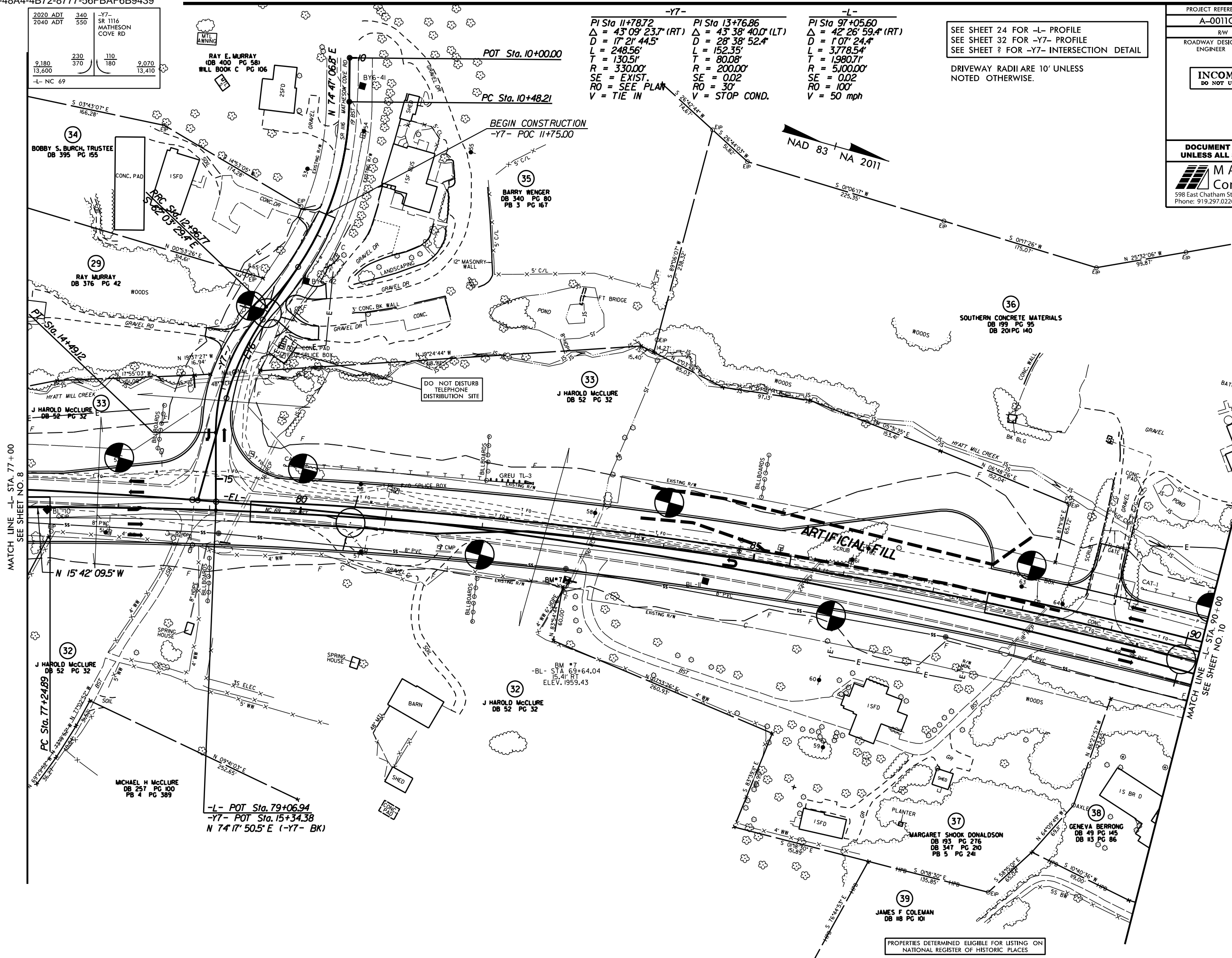
2020 ADT	340	-Y7-	SR 116
2040 ADT	550		MATHESON COVE RD
9,180	230	110	
13,600	370	180	9,070
-L- NC 69			

-Y7-		-L-	
PI Sta 11+78.72	PI Sta 13+76.86	PI Sta 97+05.60	
$\Delta = 43^{\circ} 09' 23.7" (RT)$	$\Delta = 43^{\circ} 38' 40.0" (LT)$	$\Delta = 42^{\circ} 26' 59.4" (RT)$	
$D = 17^{\circ} 21' 44.5"$	$D = 28^{\circ} 38' 52.4"$	$D = 1^{\circ} 07' 24.4"$	
$L = 248.56'$	$L = 152.35'$	$L = 3,778.54'$	
$T = 130.5'$	$T = 80.08'$	$T = 1,980.71'$	
$R = 330.00'$	$R = 200.00'$	$R = 5,000.00'$	
$SE = EXIST.$	$SE = 0.02$	$SE = 0.02$	
$RO = SEE PLAN$	$RO = 30'$	$RO = 100'$	
$V = TIE IN$	$V = STOP COND.$	$V = 50 \text{ mph}$	

SEE SHEET 24 FOR -L- PROFILE  
 SEE SHEET 32 FOR -Y7- PROFILE  
 SEE SHEET ? FOR -Y7- INTERSECTION DETAIL

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
<b>M A Engineering Consultants, Inc.</b>	
<small>598 East Chatham Street Suite 137 Cary, NC 27511        Phone: 919.297.0220 Fax: 919.297.0221</small>	



PROPERTIES DETERMINED ELIGIBLE FOR LISTING ON NATIONAL REGISTER OF HISTORIC PLACES

REVISIONS

DB: NOV-2018 15:37  
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 8/17/99

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	

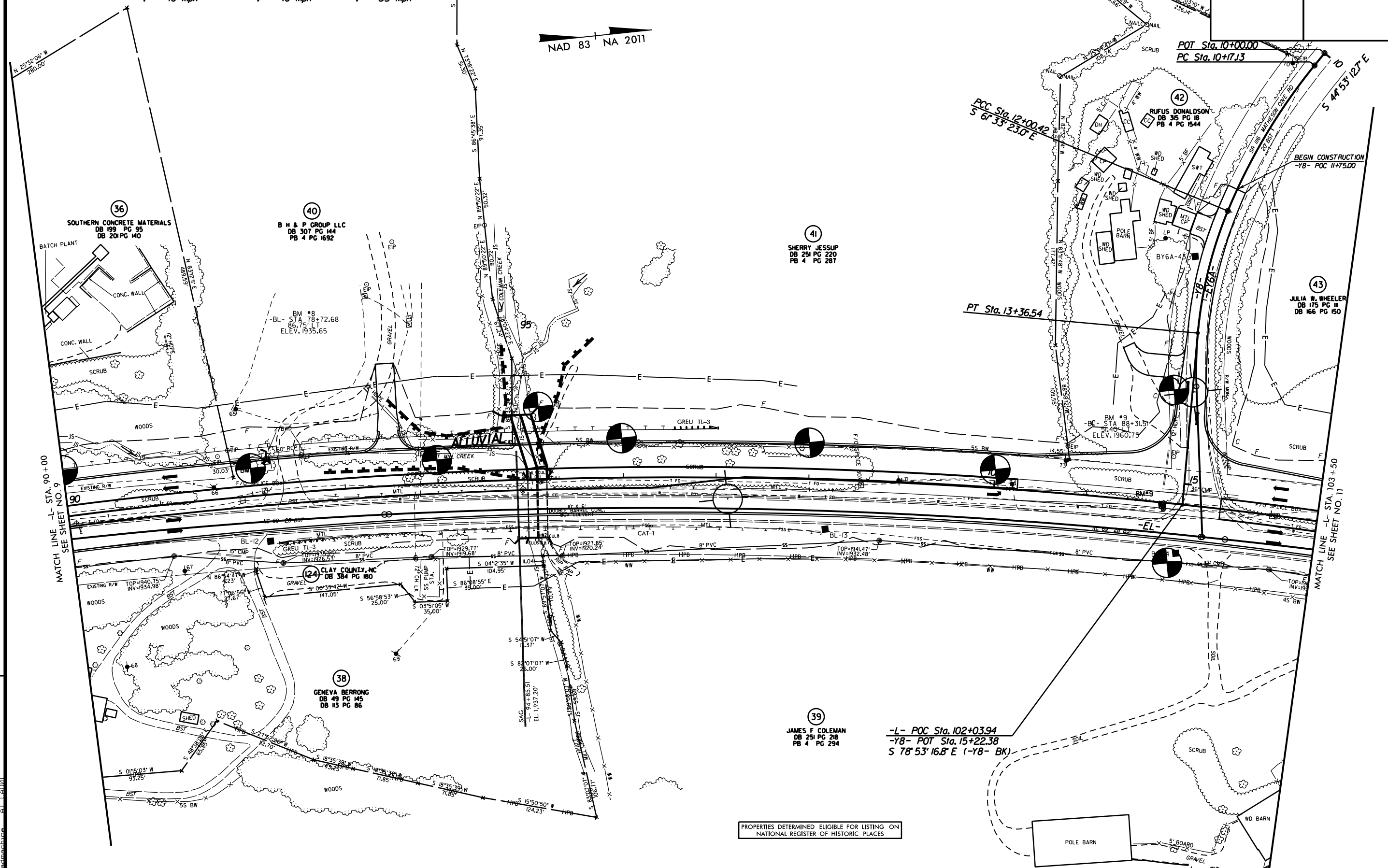
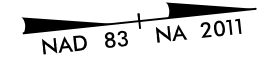
-L-	-Y8-	-Y8-
PI Sta 97+05.60	PI Sta 11+09.42	PI Sta 12+69.00
$\Delta = 42' 26" 59.4" (RT)$	$\Delta = 16' 40" 10.3" (LT)$	$\Delta = 17' 19" 53.8" (LT)$
$D = 1' 07" 24.4"$	$D = 9' 05" 40.4"$	$D = 12' 43" 56.6"$
$L = 3,778.54'$	$L = 183.29'$	$L = 136.12'$
$T = 1,980.71'$	$T = 92.30'$	$T = 68.58'$
$R = 5,100.00'$	$R = 630.00'$	$R = 450.00'$
$SE = EX.$	$SE = EX.$	$SE = 0.04$
$RO = 100'$	$RO = N/A$	$RO = 80'$
$V = 40 \text{ mph}$	$V = 40 \text{ mph}$	$V = 35 \text{ mph}$

2020 ADT	670	-Y8-	SR 1116
2040 ADT	1,010		MATHESON COVE RD
		110	560
		180	830
		9,070	9,510
		13,410	14,060
-L- NC 69			

SEE SHEET 25 FOR -L- PROFILE  
SEE SHEET 33 FOR -Y8- PROFILE  
SEE SHEET ? FOR -Y8- INTERSECTION DETAIL

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

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



REVISIONS

MATCH LINE -L- STA. 90+00  
SEE SHEET NO. 9

MATCH LINE -L- STA. 103+50  
SEE SHEET NO. 11

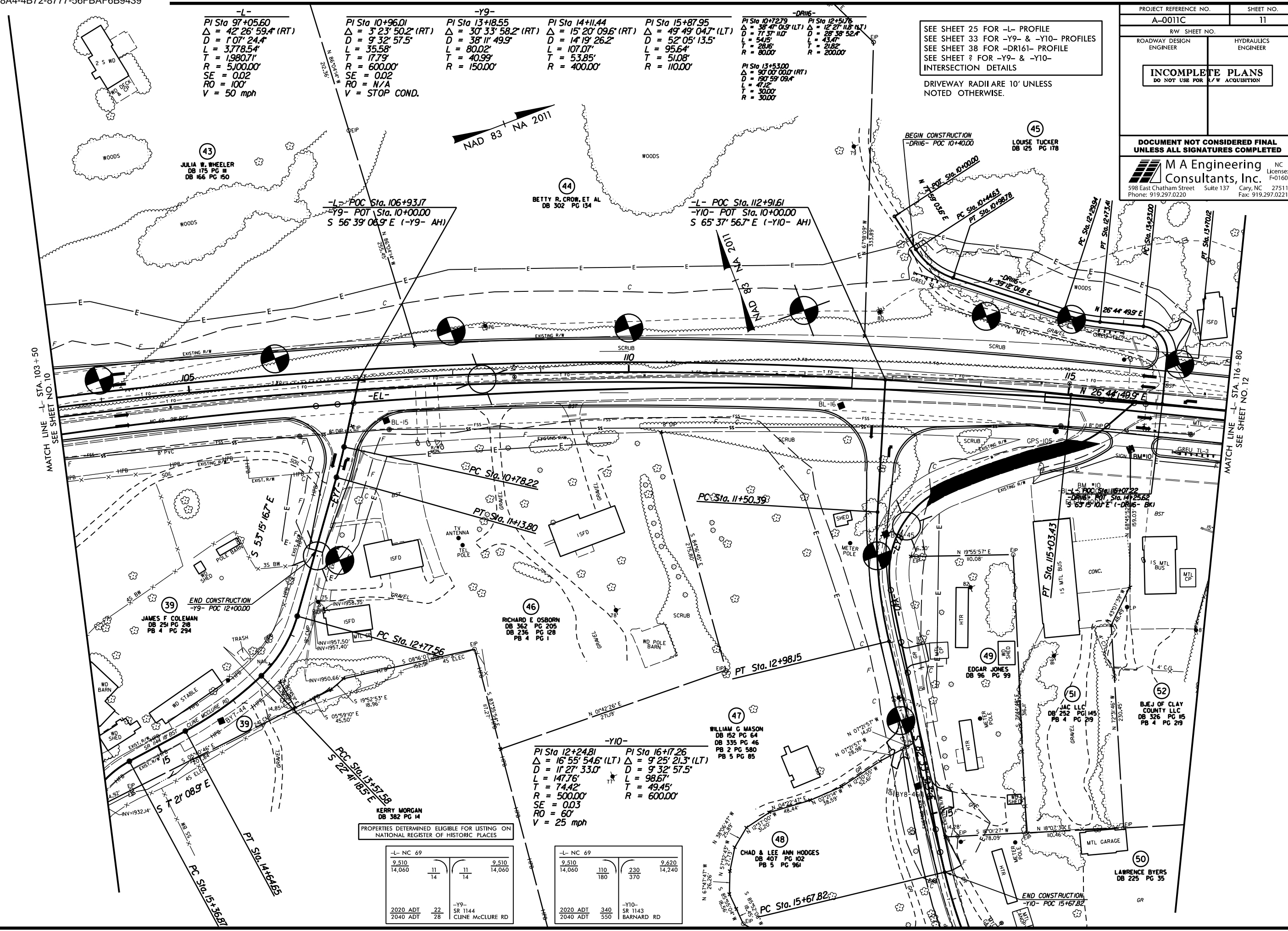
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8/17/99

REVISIONS

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C:\Users\jacob\OneDrive\Documents\A0011C.dwg



-L-  
PI Sta 97+56.60  
Δ = 42° 26' 59.4" (RT)  
D = 107' 24.4"  
L = 3,778.54'  
T = 1,980.71'  
R = 5,100.00'  
SE = 0.02  
RO = 100'  
V = 50 mph

-Y9-  
PI Sta 10+96.01  
Δ = 3° 23' 50.2" (RT)  
D = 9° 32' 57.5"  
L = 35.58'  
T = 17.79'  
R = 600.00'  
SE = 0.02  
RO = N/A  
V = STOP COND.

PI Sta 13+18.55  
Δ = 30° 33' 58.2" (RT)  
D = 38° 11' 49.9"  
L = 80.02'  
T = 40.99'  
R = 150.00'

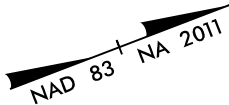
PI Sta 14+11.44  
Δ = 15° 20' 09.6" (RT)  
D = 14° 19' 26.2"  
L = 107.07'  
T = 53.85'  
R = 400.00'

PI Sta 15+87.95  
Δ = 49° 49' 04.7" (LT)  
D = 52° 05' 13.5"  
L = 95.64'  
T = 51.08'  
R = 110.00'

-DR16-  
PI Sta 10+72.79  
Δ = 38° 47' 01.9" (LT)  
D = 71° 37' 11.0"  
L = 54.5'  
T = 28.16'  
R = 80.00'

PI Sta 12+51.76  
Δ = 12° 27' 11.8" (LT)  
D = 28° 38' 52.4"  
L = 43.47'  
T = 21.82'  
R = 200.00'

SEE SHEET 25 FOR -L- PROFILE  
SEE SHEET 33 FOR -Y9- & -Y10- PROFILES  
SEE SHEET 38 FOR -DR161- PROFILE  
SEE SHEET ? FOR -Y9- & -Y10- INTERSECTION DETAILS  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.



PROJECT REFERENCE NO.	SHEET NO.
A-0011C	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

MATCH LINE -L- STA. 103+50  
SEE SHEET NO. 10

MATCH LINE -L- STA. 116+80  
SEE SHEET NO. 12

END CONSTRUCTION  
-Y9- POC 12+00.00  
JAMES F COLEMAN  
DB 251 PG 218  
PB 4 PG 294

PROPERTIES DETERMINED ELIGIBLE FOR LISTING ON NATIONAL REGISTER OF HISTORIC PLACES

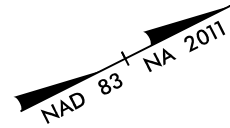
-L- NC 69			
9,510	11	9,510	
14,060	14	14,060	
2020 ADT	22	-Y9- SR 1144 CLINE McCLURE RD	
2040 ADT	28		

-L- NC 69			
9,510	110	9,620	
14,060	180	14,240	
2020 ADT	340	-Y10- SR 1143 BARNARD RD	
2040 ADT	550		

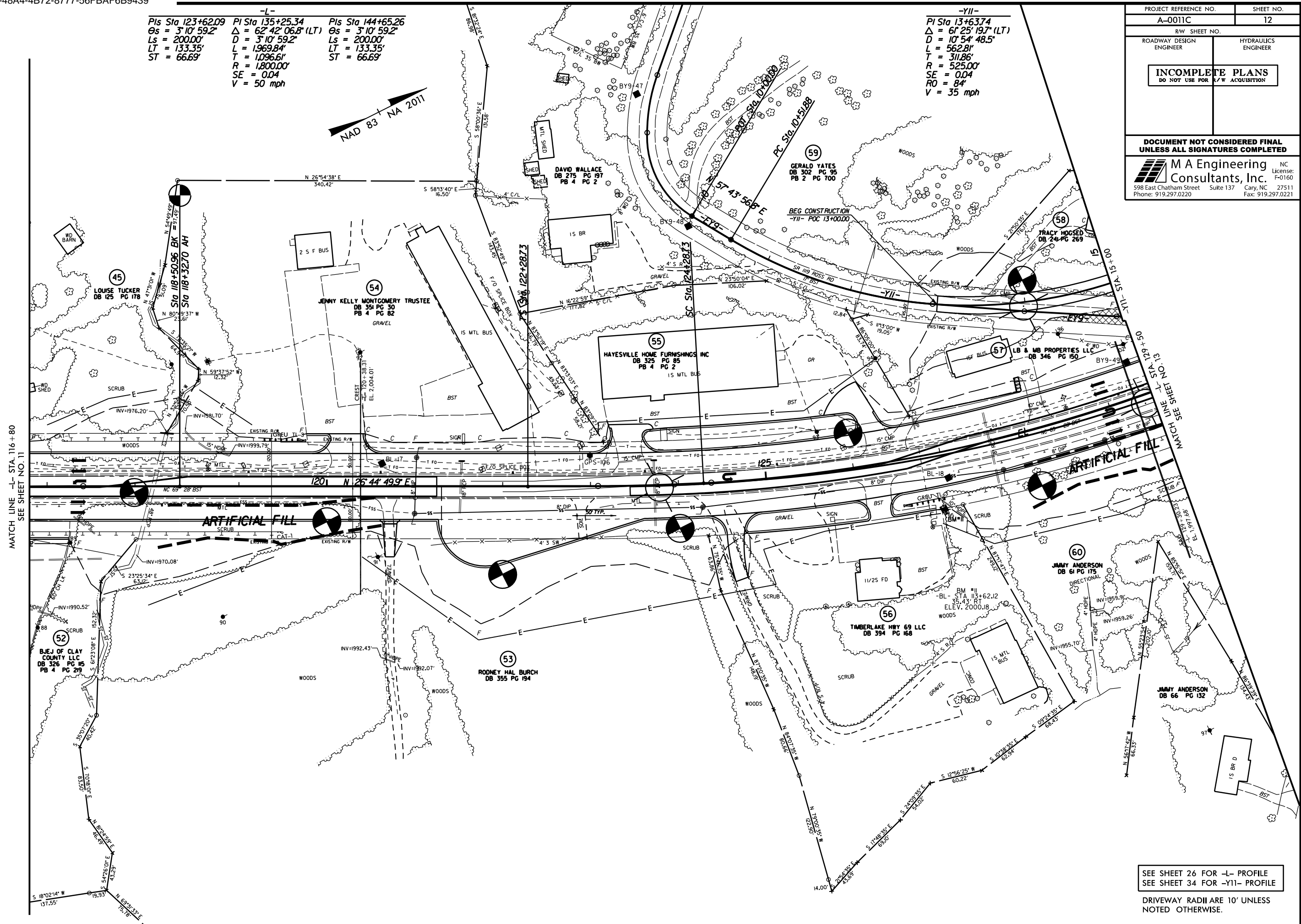
END CONSTRUCTION  
-Y10- POC 15+67.82

-L-  
 PIs Sta 123+62.09 PI Sta 135+25.34 PIs Sta 144+65.26  
 $\Theta_s = 3^\circ 10' 59.2''$   $\Delta = 62^\circ 42' 06.8''$  (LT)  $\Theta_s = 3^\circ 10' 59.2''$   
 $L_s = 200.00'$   $D = 3^\circ 10' 59.2''$   $L_s = 200.00'$   
 $LT = 133.35'$   $L = 1,969.84'$   $LT = 133.35'$   
 $ST = 66.69'$   $T = 1,096.61'$   $ST = 66.69'$   
 $R = 1,800.00'$   
 $SE = 0.04$   
 $V = 50$  mph

-YII-  
 PI Sta 13+63.74  
 $\Delta = 61^\circ 25' 19.7''$  (LT)  
 $D = 10^\circ 54' 48.5''$   
 $L = 562.81'$   
 $T = 311.86'$   
 $R = 525.00'$   
 $SE = 0.04$   
 $RO = 84'$   
 $V = 35$  mph



PROJECT REFERENCE NO.	SHEET NO.
A-0011C	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
M A Engineering Consultants, Inc. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



MATCH LINE -L- STA. 116 + 80  
SEE SHEET NO. 11

MATCH LINE -YII- STA. 117 + 11  
SEE SHEET NO. 13

SEE SHEET 26 FOR -L- PROFILE  
 SEE SHEET 34 FOR -YII- PROFILE  
 DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

REVISIONS  
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 A: 0011C



2020 ADT	110	-Y11-	SR 1119
2040 ADT	180		ROSS RD
9,620	30	110	9,740
14,240	40	180	14,430
-L- NC 69			

2020 ADT	340	-Y12-	SR 1141
2040 ADT	550		SWAIMS RD
9,740	110	230	9,850
14,430	180	370	14,610
-L- NC 69			

**-Y11-**  
 PI Sta 13+63.74  
 $\Delta = 61^{\circ}25'19.7"$  (LT)  
 $D = 10^{\circ}54'48.5"$   
 $L = 562.81'$   
 $T = 311.86'$   
 $R = 525.00'$   
 $SE = 0.04$   
 $RO = 84'$   
 $V = 35$  mph

**-Y11-**  
 PI Sta 18+97.89  
 $\Delta = 86^{\circ}58'26.4"$  (RT)  
 $D = 71^{\circ}37'11.0"$   
 $L = 121.44'$   
 $T = 75.88'$   
 $R = 80.00'$   
 $SE = 0.04$   
 $RO = 60'$   
 $V = STOP$  COND.

**-L-**  
 PI Sta 123+62.09  
 $\Delta = 3^{\circ}10'59.2"$   
 $D = 200.00'$   
 $LT = 133.35'$   
 $ST = 66.69'$

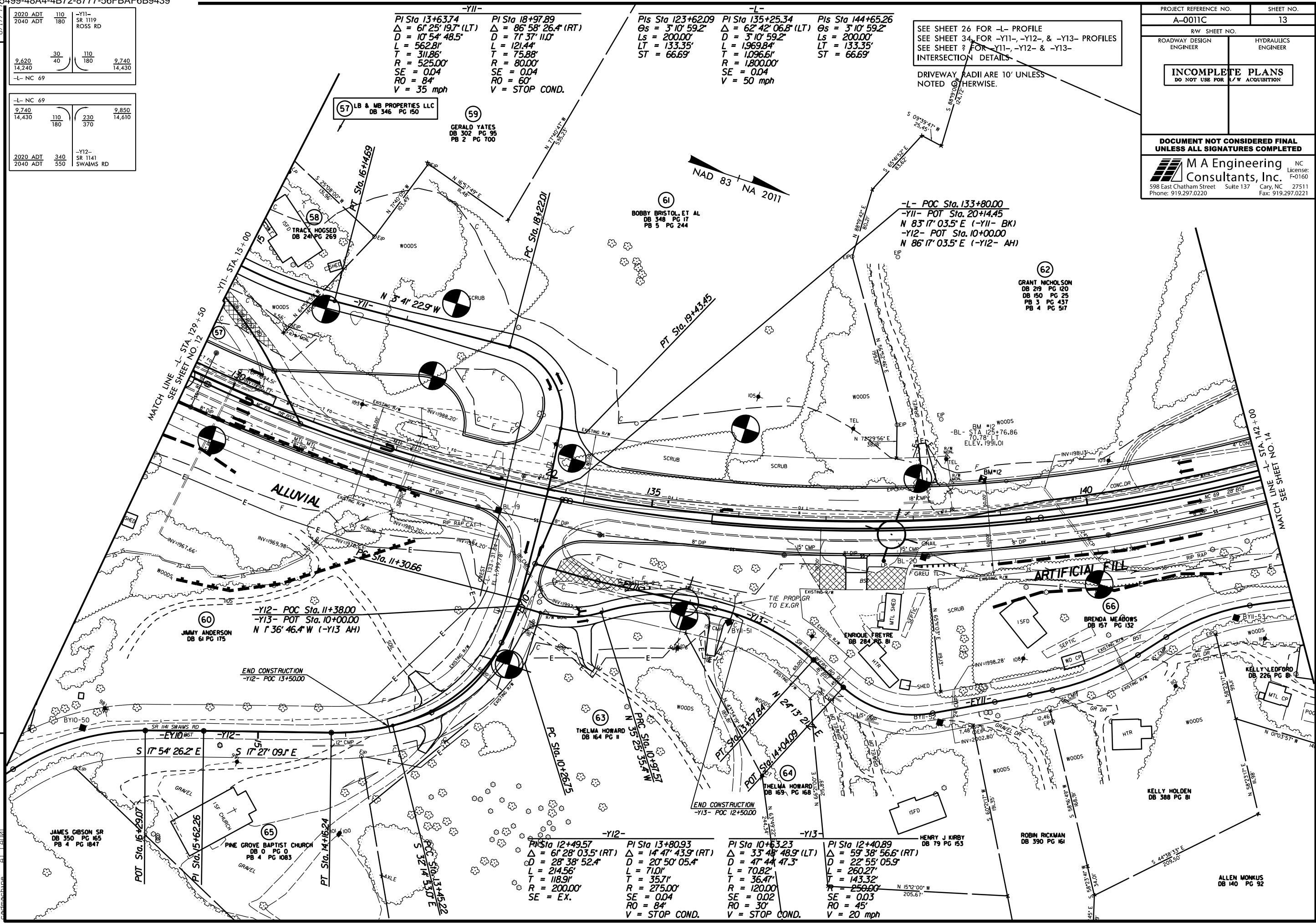
**-L-**  
 PI Sta 135+25.34  
 $\Delta = 62^{\circ}42'06.8"$  (LT)  
 $D = 3^{\circ}10'59.2"$   
 $L = 1,969.84'$   
 $T = 1,096.61'$   
 $R = 1,800.00'$   
 $SE = 0.04$   
 $V = 50$  mph

**-L-**  
 PI Sta 144+65.26  
 $\Delta = 3^{\circ}10'59.2"$   
 $D = 200.00'$   
 $LT = 133.35'$   
 $ST = 66.69'$

SEE SHEET 26 FOR -L- PROFILE  
 SEE SHEET 34 FOR -Y11-, -Y12-, & -Y13- PROFILES  
 SEE SHEET ? FOR -Y11-, -Y12- & -Y13- INTERSECTION DETAILS

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



REVISIONS  
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ALLEN MONKUS  
DB 140 PG 92

8/17/99  
REVISED  
REVISIONS  
08-NOV-2018 15:45  
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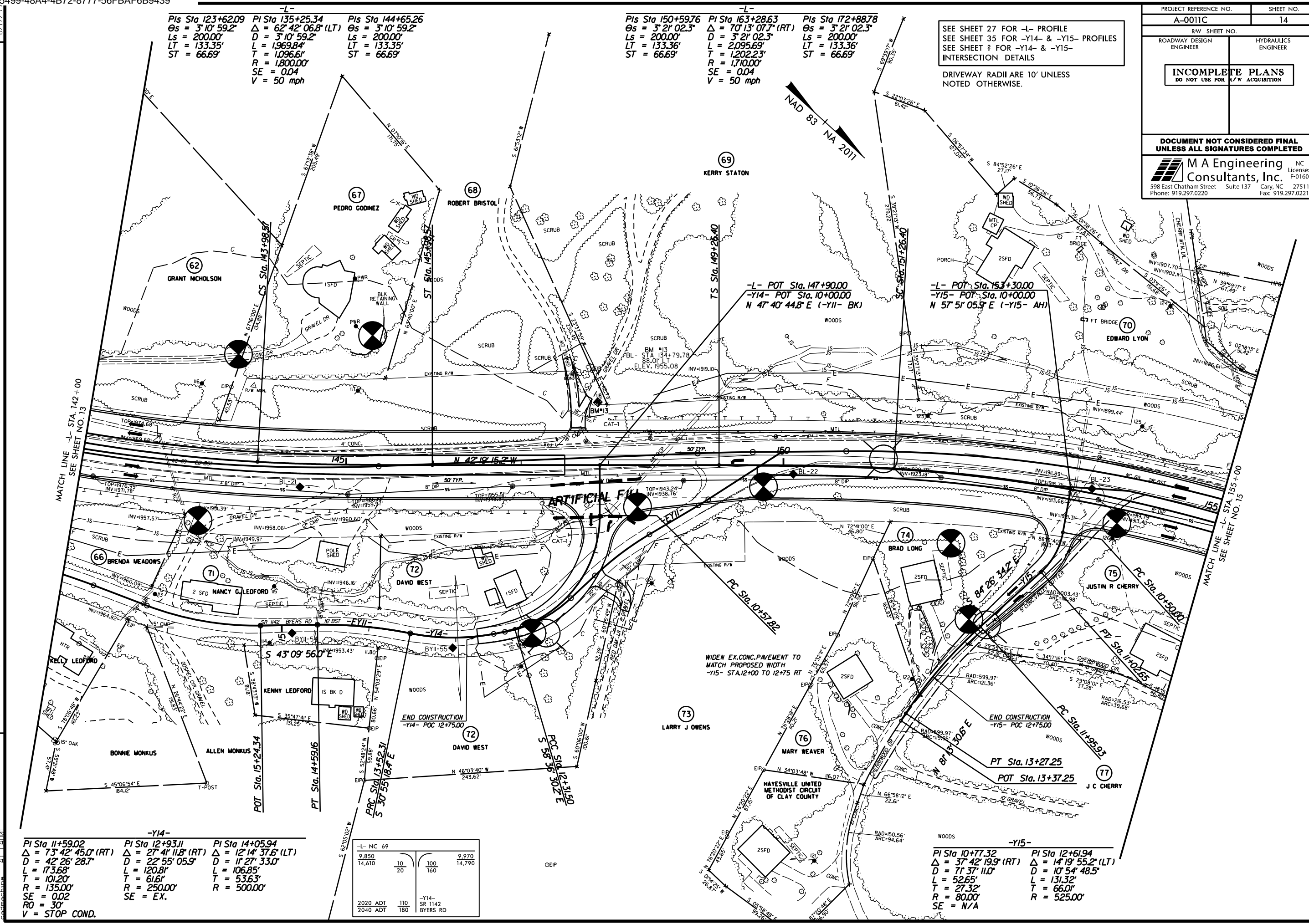
-L-		
PIs Sta 123+62.09	PI Sta 135+25.34	PIs Sta 144+65.26
$\Delta s = 3' 10'' 59.2''$	$\Delta = 62' 42'' 06.8''$ (LT)	$\Delta s = 3' 10'' 59.2''$
$Ls = 200.00'$	$L = 1,969.84'$	$Ls = 200.00'$
$LT = 133.35'$	$T = 1,096.61'$	$LT = 133.35'$
$ST = 66.69'$	$R = 1,800.00'$	$ST = 66.69'$
	$SE = 0.04$	
	$V = 50$ mph	

-L-		
PIs Sta 150+59.76	PI Sta 163+28.63	PIs Sta 172+88.78
$\Delta s = 3' 21'' 02.3''$	$\Delta = 70' 13'' 07.7''$ (RT)	$\Delta s = 3' 21'' 02.3''$
$Ls = 200.00'$	$L = 2,095.69'$	$Ls = 200.00'$
$LT = 133.36'$	$T = 1,202.23'$	$LT = 133.36'$
$ST = 66.69'$	$R = 1,710.00'$	$ST = 66.69'$
	$SE = 0.04$	
	$V = 50$ mph	

SEE SHEET 27 FOR -L- PROFILE  
SEE SHEET 35 FOR -Y14- & -Y15- PROFILES  
SEE SHEET ? FOR -Y14- & -Y15- INTERSECTION DETAILS

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

PROJECT REFERENCE NO.	A-0011C
SHEET NO.	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
<b>M A Engineering Consultants, Inc.</b>	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



-Y14-		
PI Sta 11+59.02	PI Sta 12+93.11	PI Sta 14+05.94
$\Delta = 73' 42'' 45.0''$ (RT)	$\Delta = 27' 41'' 11.8''$ (RT)	$\Delta = 12' 14'' 37.6''$ (LT)
$D = 42' 26'' 28.7''$	$D = 22' 55'' 05.9''$	$D = 11' 27'' 33.0''$
$L = 173.68'$	$L = 120.81'$	$L = 106.85'$
$T = 101.20'$	$T = 61.61'$	$T = 53.63'$
$R = 135.00'$	$R = 250.00'$	$R = 500.00'$
$SE = 0.02$	$SE = EX.$	
$RO = 30'$		
$V = STOP COND.$		

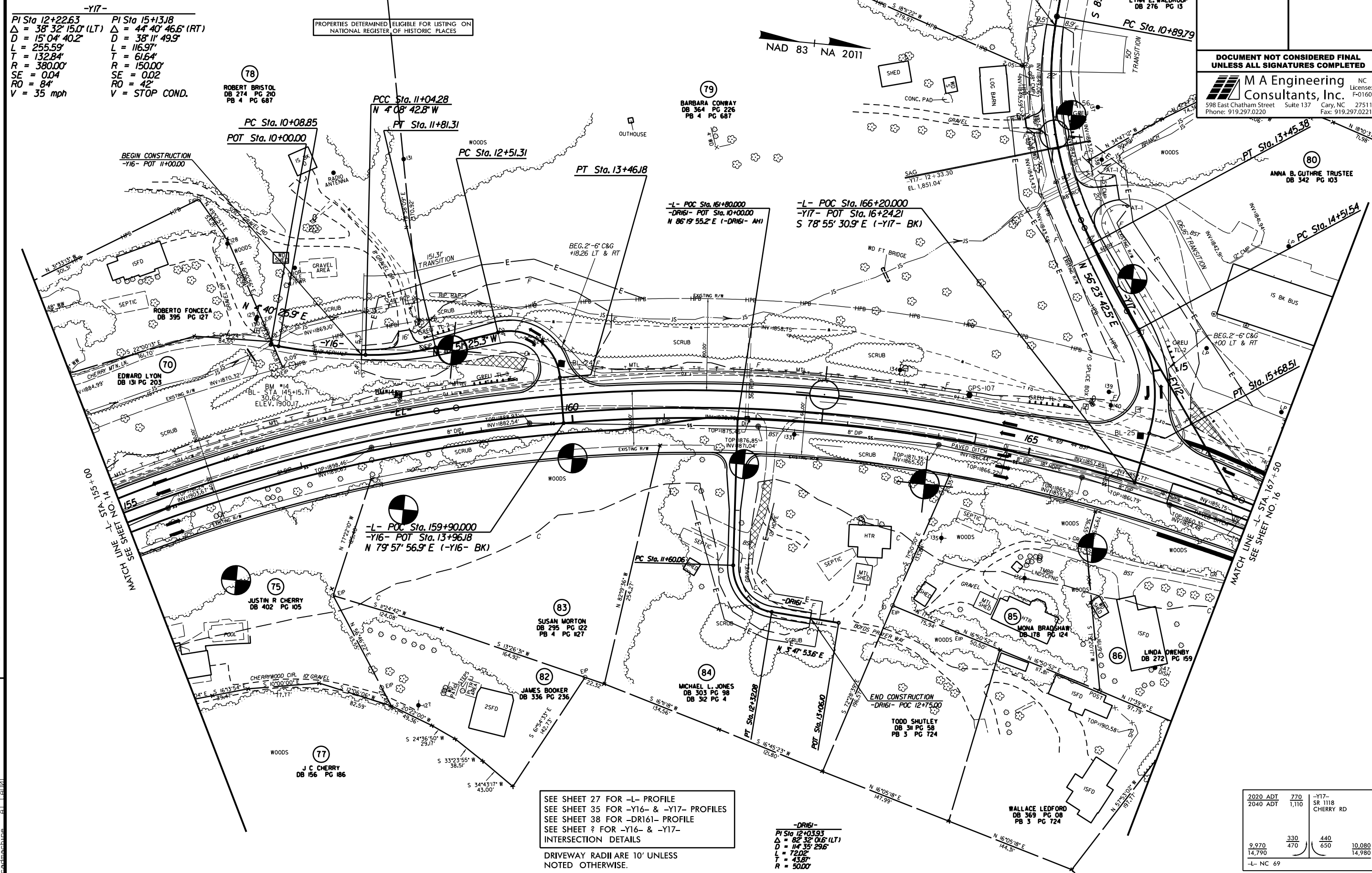
-L- NC 69		
9,850	10	9,970
14,610	20	14,790
2020 ADT	110	-Y14- SR 1142 BYERS RD
2040 ADT	180	

-Y15-	
PI Sta 10+77.32	PI Sta 12+61.94
$\Delta = 37' 42'' 19.9''$ (RT)	$\Delta = 14' 19'' 55.2''$ (LT)
$D = 71' 37'' 11.0''$	$D = 10' 54'' 48.5''$
$L = 52.65'$	$L = 131.32'$
$T = 27.32'$	$T = 66.01'$
$R = 80.00'$	$R = 525.00'$
$SE = N/A$	

REVISIONS  
NOV-2018 15:45  
Projects 2016  
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-Y16-		-L-	
PI Sta 10+56.66 Δ = 8° 49' 08.7" (LT) D = 9' 14' 28.5" L = 95.43' T = 47.81' R = 620.00' SE = EX. RO = 30'	PI Sta 11+43.01 Δ = 14° 42' 42.4" (LT) D = 19' 05' 54.9" L = 77.03' T = 38.73' R = 300.00' SE = 0.02 RO = 30'	PI Sta 13+15.51 Δ = 98° 49' 22.1" (RT) D = 104' 10' 26.9" L = 94.86' T = 64.20' R = 55.00' SE = 0.02 (ADV.) RO = 30'	PIs Sta 160+59.76 Θs = 3° 21' 02.3" Ls = 200.00' LT = 133.36' ST = 66.69'
PI Sta 12+22.63 Δ = 38° 32' 15.0" (LT) D = 15' 04' 40.2" L = 255.59' T = 132.84' R = 380.00' SE = 0.04 RO = 84' V = 35 mph	PI Sta 15+13.18 Δ = 44° 40' 46.6" (RT) D = 38' 11' 49.9" L = 116.97' T = 61.64' R = 150.00' SE = 0.02 RO = 42' V = STOP COND.	PI Sta 163+28.63 Δ = 70° 13' 07.7" (RT) D = 3° 21' 02.3" Ls = 200.00' LT = 133.36' ST = 66.69'	PIs Sta 172+88.78 Θs = 3° 21' 02.3" Ls = 200.00' LT = 133.36' ST = 66.69'

PROPERTIES DETERMINED ELIGIBLE FOR LISTING ON NATIONAL REGISTER OF HISTORIC PLACES



PROJECT REFERENCE NO. A-0011C	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
<b>M A Engineering Consultants, Inc.</b> 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220	

SEE SHEET 27 FOR -L- PROFILE  
SEE SHEET 35 FOR -Y16- & -Y17- PROFILES  
SEE SHEET 38 FOR -DR161- PROFILE  
SEE SHEET ? FOR -Y16- & -Y17- INTERSECTION DETAILS

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

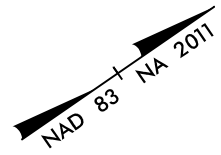
-DR161-  
PI Sta 12+03.93  
Δ = 82° 32' 01.6" (LT)  
D = 114' 35' 29.6"  
L = 72.02'  
T = 43.81'  
R = 50.00'

2020 ADT 14,790	770 470	-Y17- SR 1118 CHERRY RD 440 650	10,080 14,980
-L- NC 69			

8/17/09

-L-

Pls Sta 150+59.76	PI Sta 163+28.63	Pls Sta 172+88.78
$\theta_s = 3^\circ 21' 02.3"$	$\Delta = 70^\circ 13' 07.7" (RT)$	$\theta_s = 3^\circ 21' 02.3"$
$L_s = 200.00'$	$D = 3^\circ 21' 02.3"$	$L_s = 200.00'$
$LT = 133.36'$	$L = 2,095.69'$	$LT = 133.36'$
$ST = 66.69'$	$T = 1,202.23'$	$ST = 66.69'$
	$R = 1,710.00'$	
	$SE = 0.04$	
	$V = 50 \text{ mph}$	



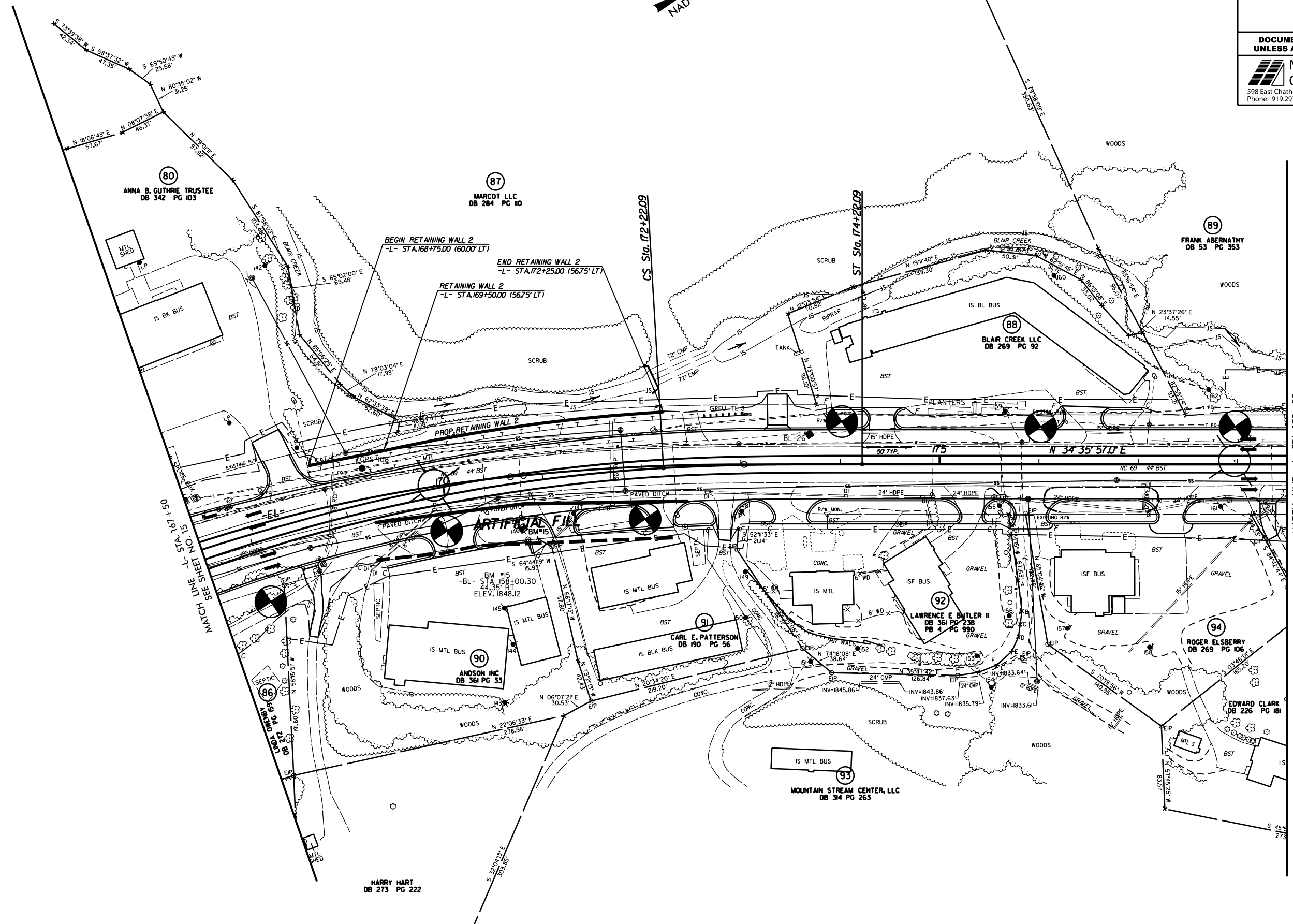
SEE SHEET 28 FOR -L- PROFILE

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE.

PROJECT REFERENCE NO. A-0011C	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

REVISIONS

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MATCH LINE -L- STA. 178+50  
 SEE SHEET 17-15

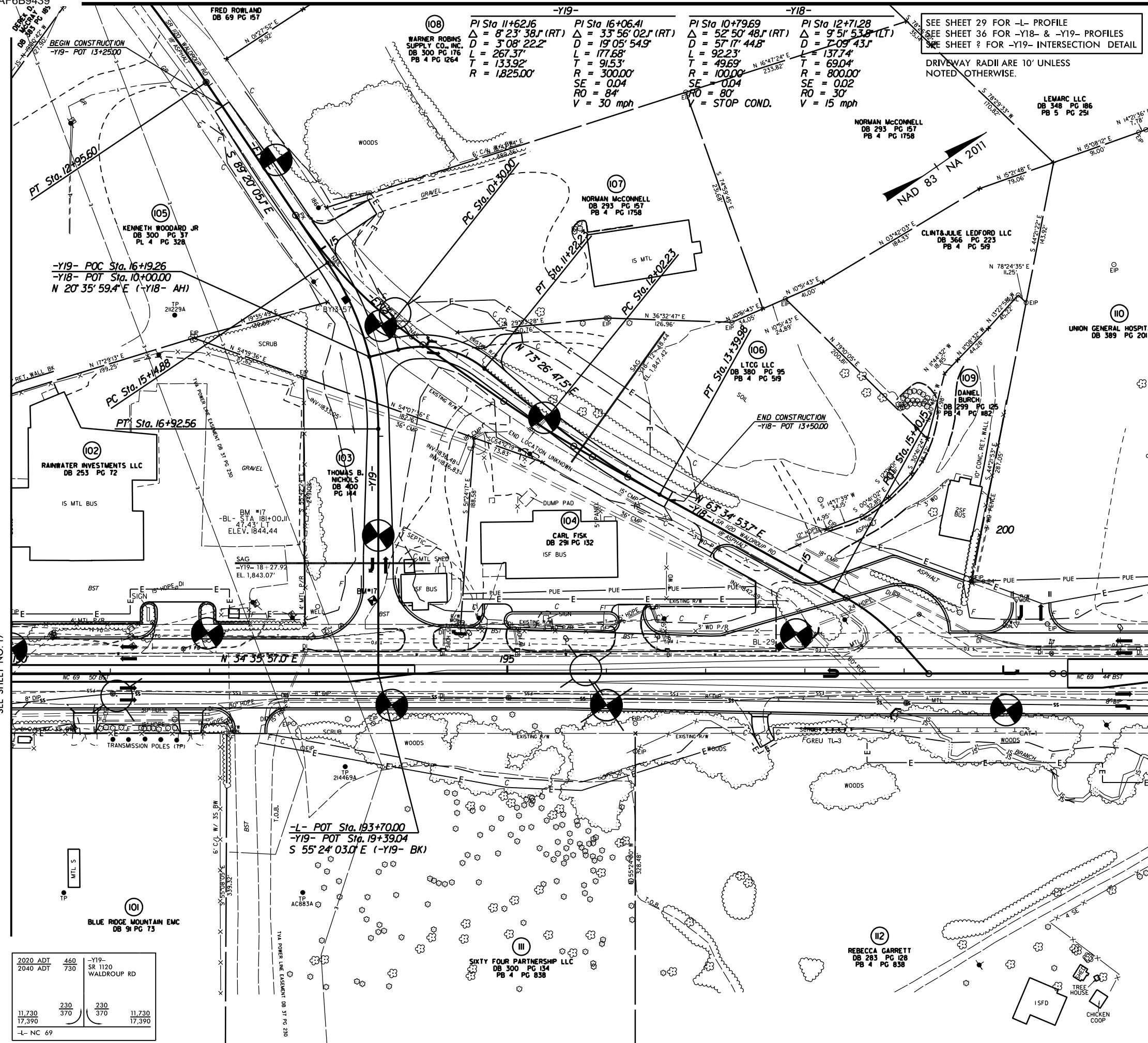
MATCH LINE -L- STA. 178+50  
 SEE SHEET NO. 17

HARRY HART DB 273 PG 222



8/17/19

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
<b>M A Engineering Consultants, Inc.</b>	
<small>598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220</small>	
<small>NC License: F-0160 27511 Fax: 919.297.0221</small>	



MATCH LINE -L- STA. 190+00  
SEE SHEET NO. 17

MATCH LINE -L- STA. 202+00  
SEE SHEET NO. 19

2020 ADT	460	-Y19- SR 1120 WALDROUP RD	
2040 ADT	730		
11,730	230	230	11,730
17,390	370	370	17,390
-L- NC 69			

REVISIONS

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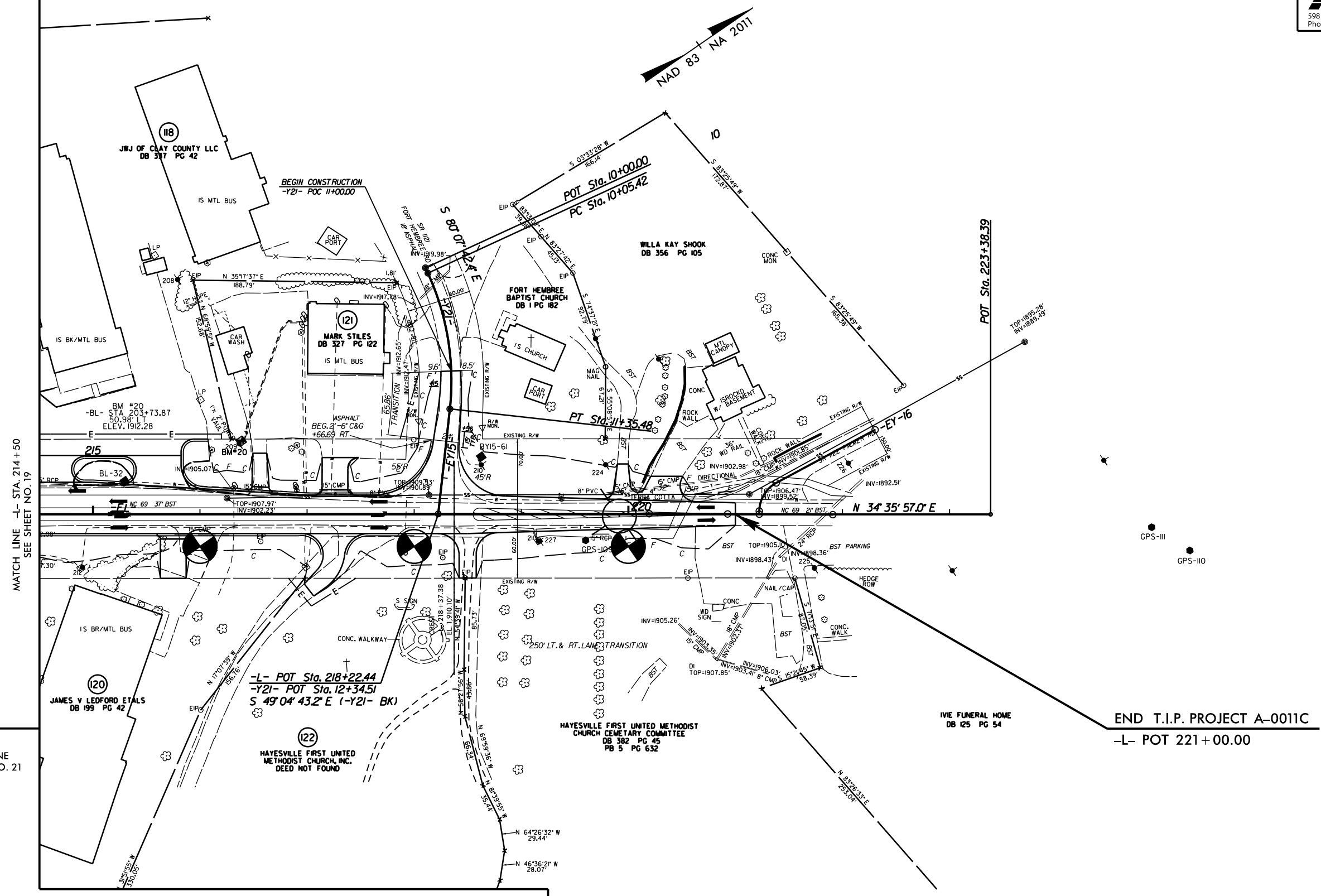
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-Y21-  
 PI Sta 10+72.09  
 $\Delta = 31^{\circ}02'59.2" (RT)$   
 $D = 23^{\circ}52'23.7"$   
 $L = 130.06'$   
 $T = 66.67'$   
 $R = 240.00'$   
 $SE = ?$   
 $RO = ?$   
 $V = ? \text{ mph}$

SEE SHEET 30 FOR -L- PROFILE  
 SEE SHEET 38 FOR -Y21- PROFILE  
 SEE SHEET ? FOR -Y21- INTERSECTION DETAIL

DRIVEWAY RADII ARE 10' UNLESS  
 NOTED OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
A-0011C	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
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MATCH LINE -L- STA. 214+50  
 SEE SHEET NO. 19

MATCH LINE  
 SEE SHEET NO. 21

END T.I.P. PROJECT A-0011C  
 -L- POT 221+00.00



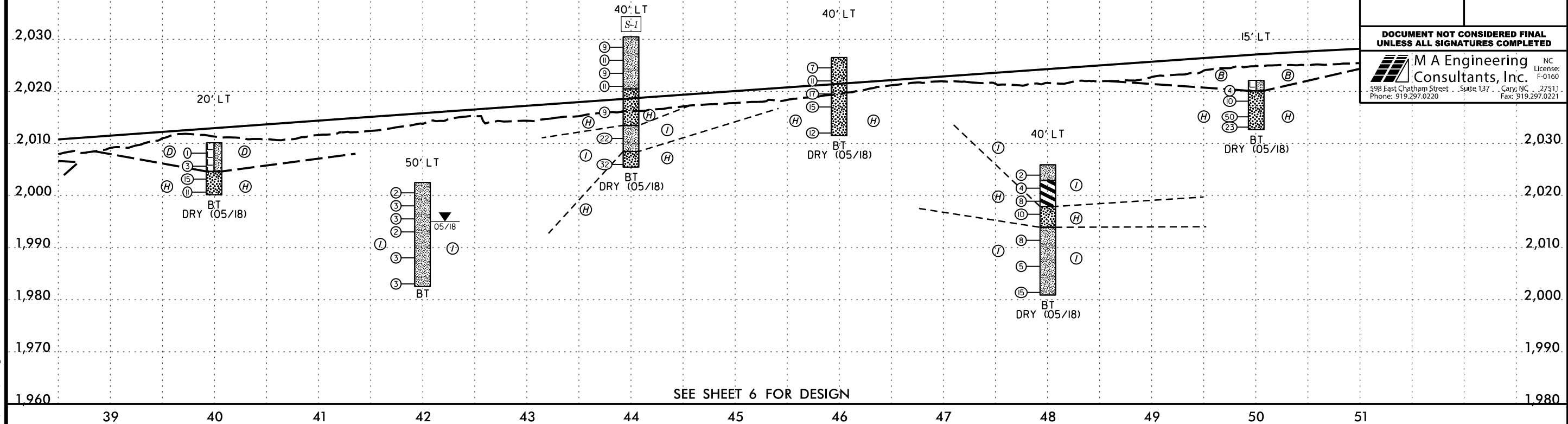




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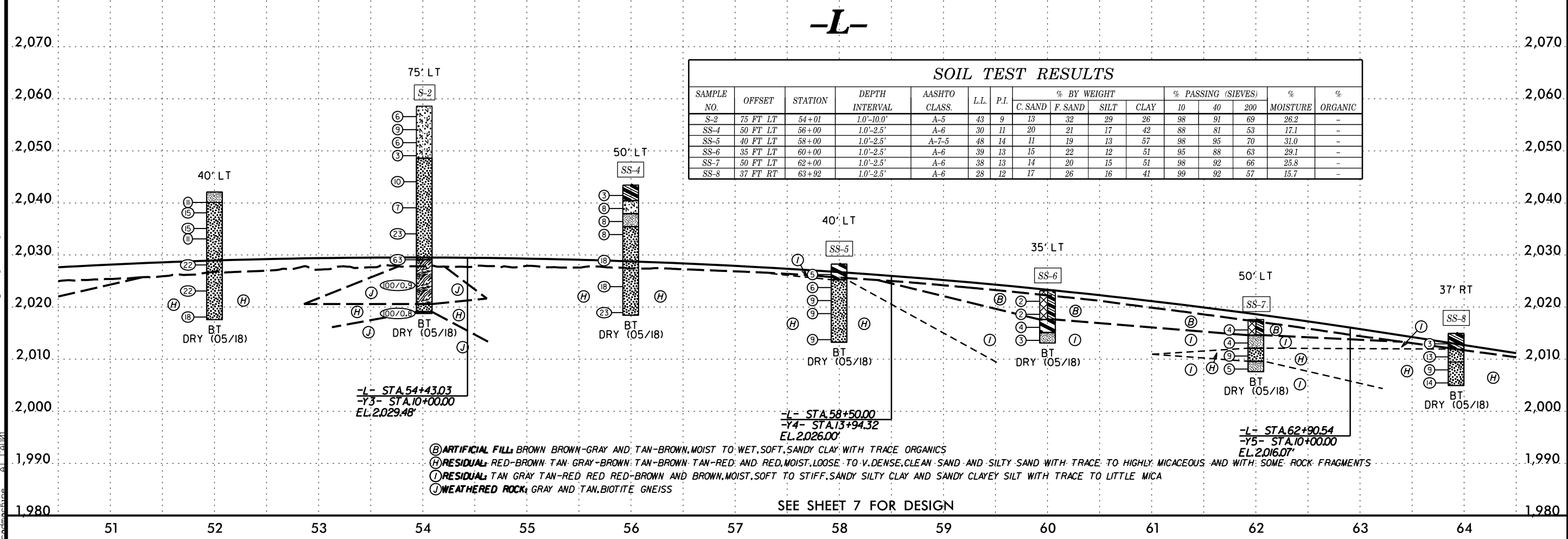
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-1	40 FT LT	44+00	1.0'-2.5'	A-4	37	6	28	51	13	8	88	79	50	25.0	-

- (D) ROADWAY EMBANKMENT: RED-BROWN AND BROWN, MOIST, V. SOFT TO MED. STIFF, SANDY SILT WITH TRACE TO LITTLE GRAVEL
- (H) RESIDUAL: TAN TAN-BROWN AND RED-TAN, MOIST, LOOSE TO DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS
- (I) RESIDUAL: BROWN TAN RED-BROWN AND TAN-RED, MOIST TO SAT., SOFT TO V. STIFF, SANDY SILT AND SILTY CLAY WITH TRACE ROOTS AND LITTLE MICA



PROJECT REFERENCE NO. A-0011C	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

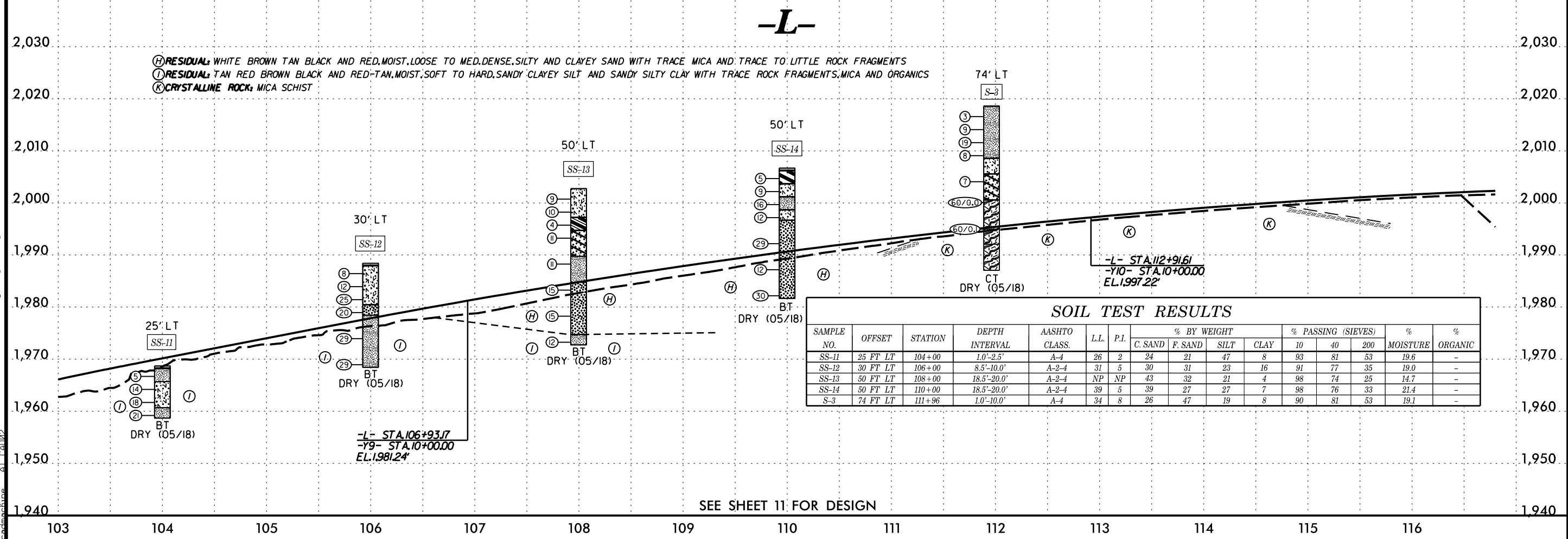
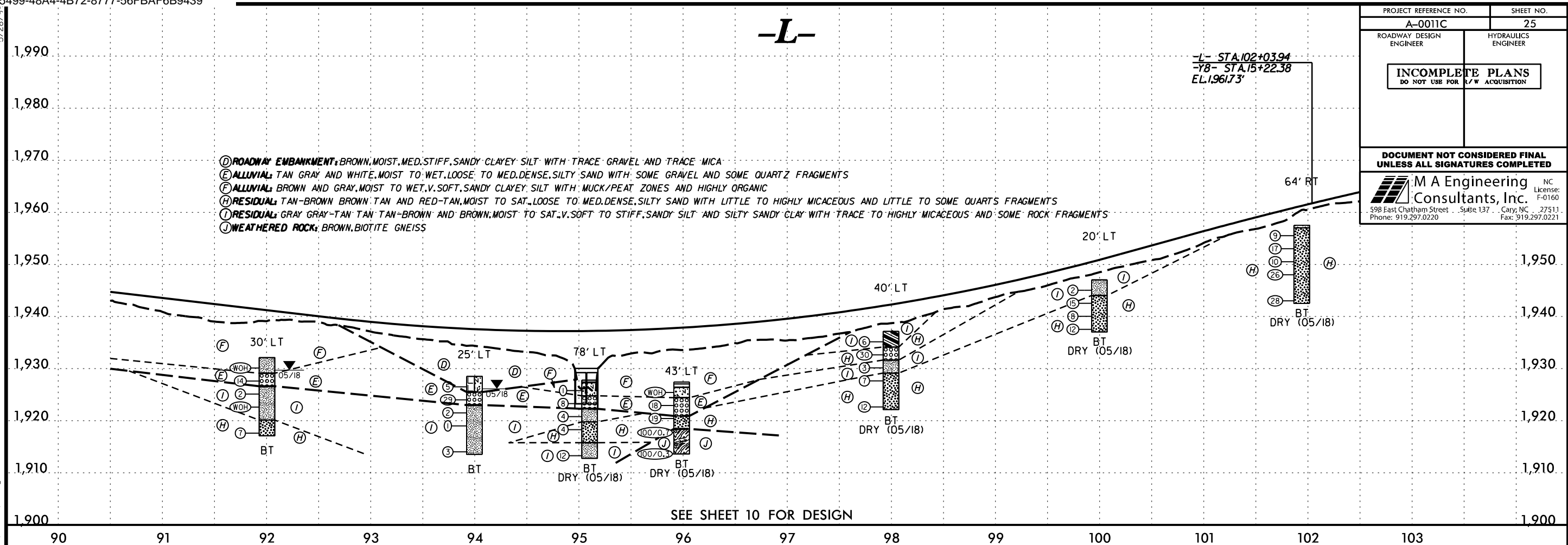
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-2	75 FT LT	54+01	1.0'-10.0'	A-5	43	9	13	32	29	26	98	91	69	26.2	-
SS-4	50 FT LT	56+00	1.0'-2.5'	A-6	30	11	20	21	17	42	88	81	53	17.1	-
SS-5	40 FT LT	58+00	1.0'-2.5'	A-7-5	48	14	11	19	13	57	98	95	70	31.0	-
SS-6	35 FT LT	60+00	1.0'-2.5'	A-6	39	13	15	22	12	51	95	88	63	29.1	-
SS-7	50 FT LT	62+00	1.0'-2.5'	A-6	38	13	14	20	15	51	98	92	66	25.8	-
SS-8	37 FT RT	63+92	1.0'-2.5'	A-6	28	12	17	26	16	41	99	92	57	15.7	-



- (B) ARTIFICIAL FILL: BROWN BROWN-GRAY AND TAN-BROWN, MOIST TO WET, SOFT, SANDY CLAY WITH TRACE ORGANICS
- (H) RESIDUAL: RED-BROWN TAN GRAY-BROWN TAN-BROWN TAN-RED AND RED, MOIST, LOOSE TO V. DENSE, CLEAN SAND AND SILTY SAND WITH TRACE TO HIGHLY MICACEOUS AND WITH SOME ROCK FRAGMENTS
- (I) RESIDUAL: TAN GRAY TAN-RED RED-BROWN AND BROWN, MOIST, SOFT TO STIFF, SANDY SILTY CLAY AND SANDY CLAYEY SILT WITH TRACE TO LITTLE MICA
- (J) WEATHERED ROCK: GRAY AND TAN, BIOTITE GNEISS



PROJECT REFERENCE NO. A-0011C	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

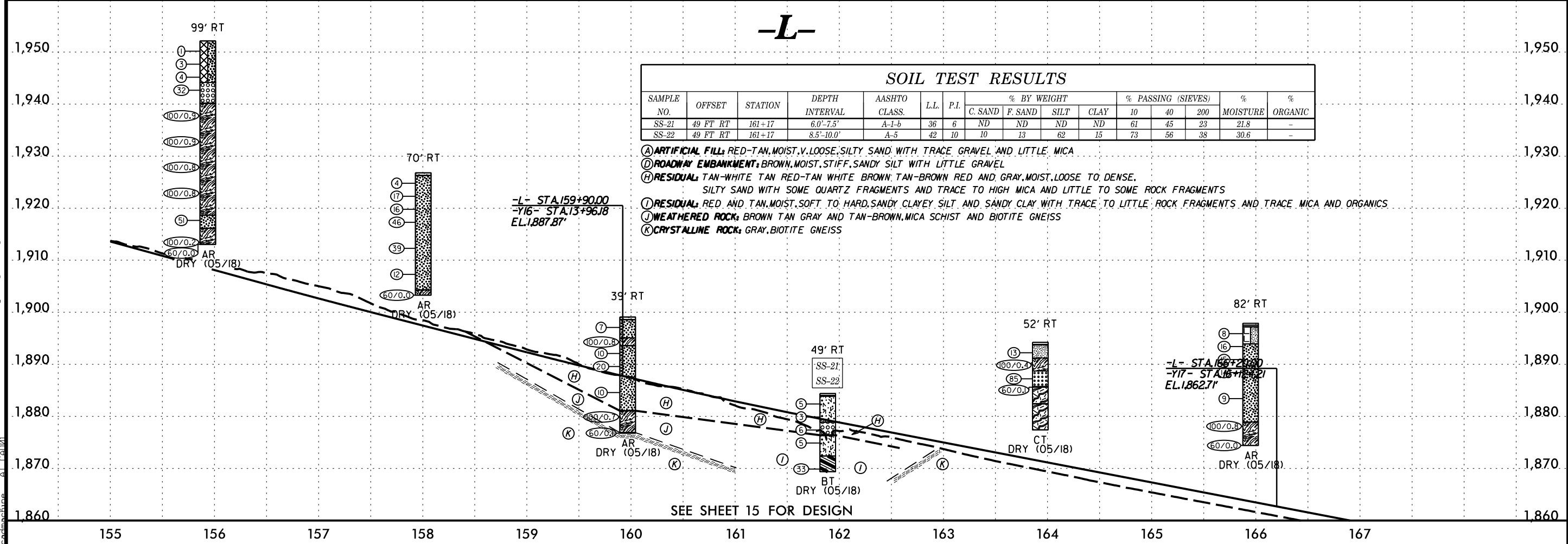
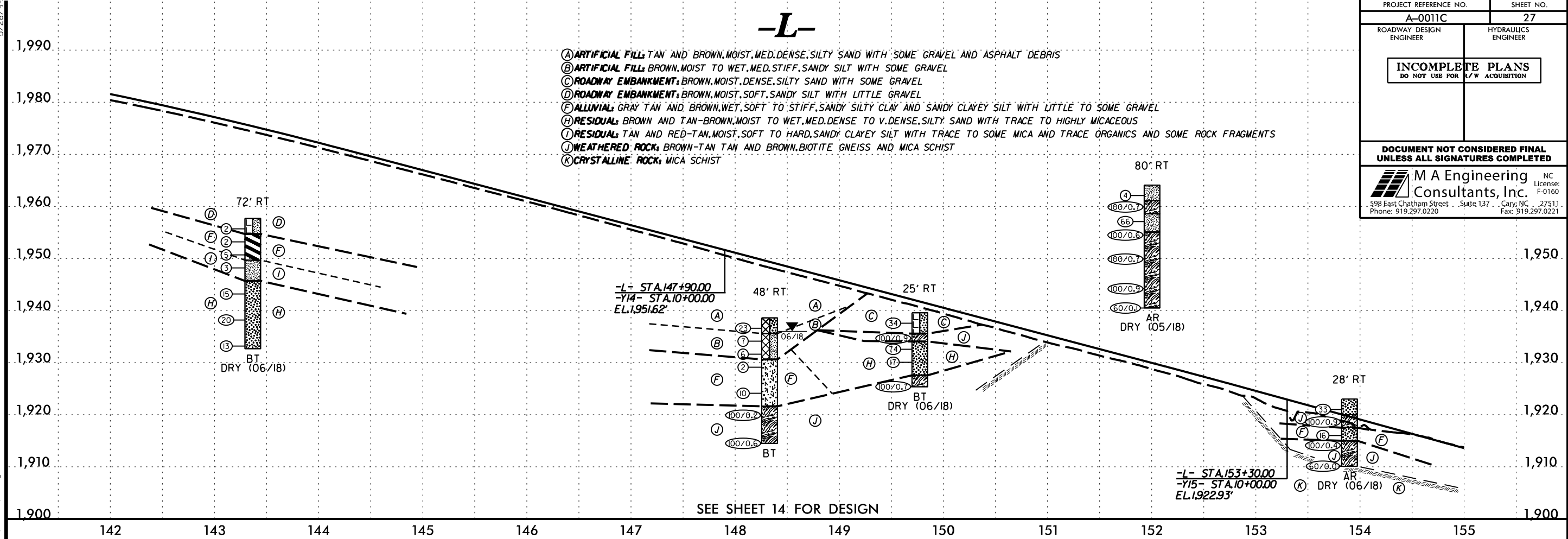


SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-11	25 FT LT	104+00	1.0'-2.5'	A-4	26	2	24	21	47	8	93	81	53	19.6	-
SS-12	30 FT LT	106+00	8.5'-10.0'	A-2-4	31	5	30	31	23	16	91	77	35	19.0	-
SS-13	50 FT LT	108+00	18.5'-20.0'	A-2-4	NP	NP	43	32	21	4	98	74	25	14.7	-
SS-14	50 FT LT	110+00	18.5'-20.0'	A-2-4	39	5	39	27	27	7	98	76	33	21.4	-
S-3	74 FT LT	111+96	1.0'-10.0'	A-4	34	8	26	47	19	8	90	81	53	19.1	-

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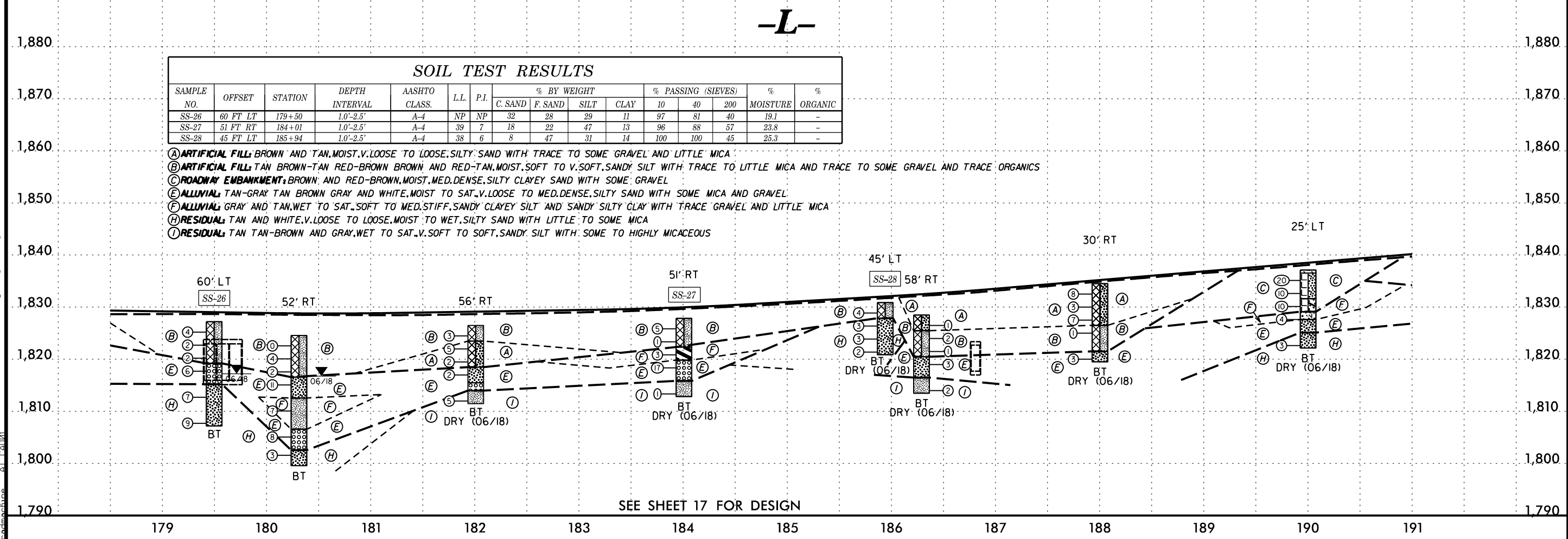
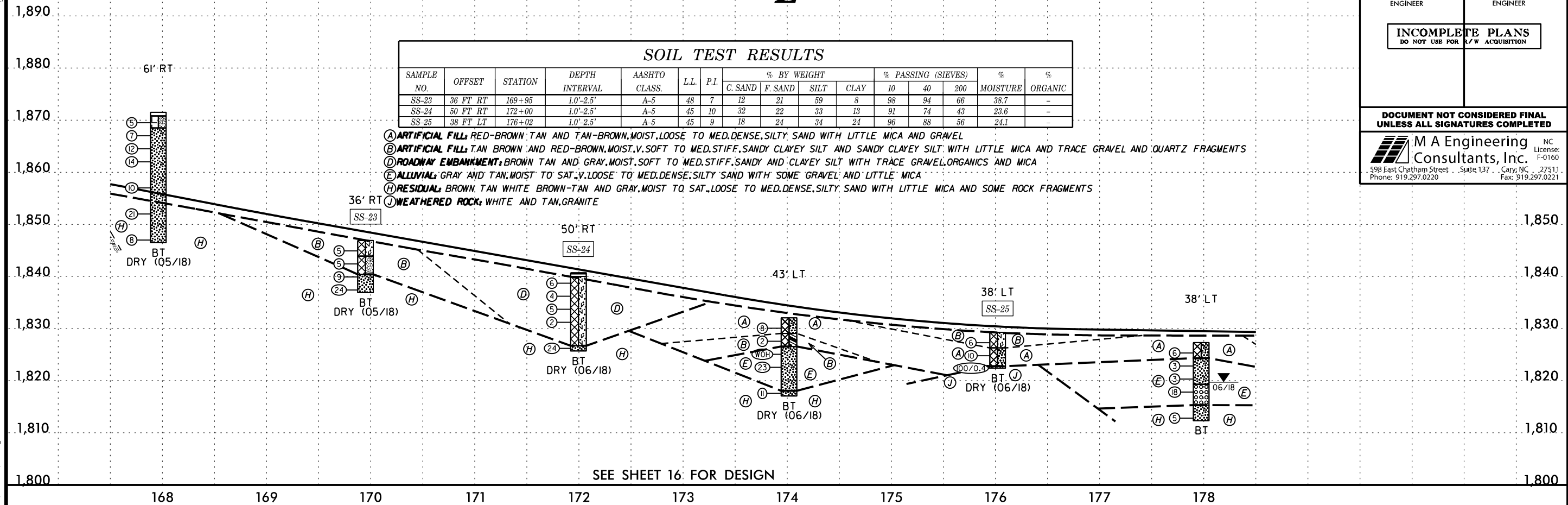
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
 M A Engineering Consultants, Inc. 598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



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5/28/09

PROJECT REFERENCE NO. A-0011C	SHEET NO. 28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



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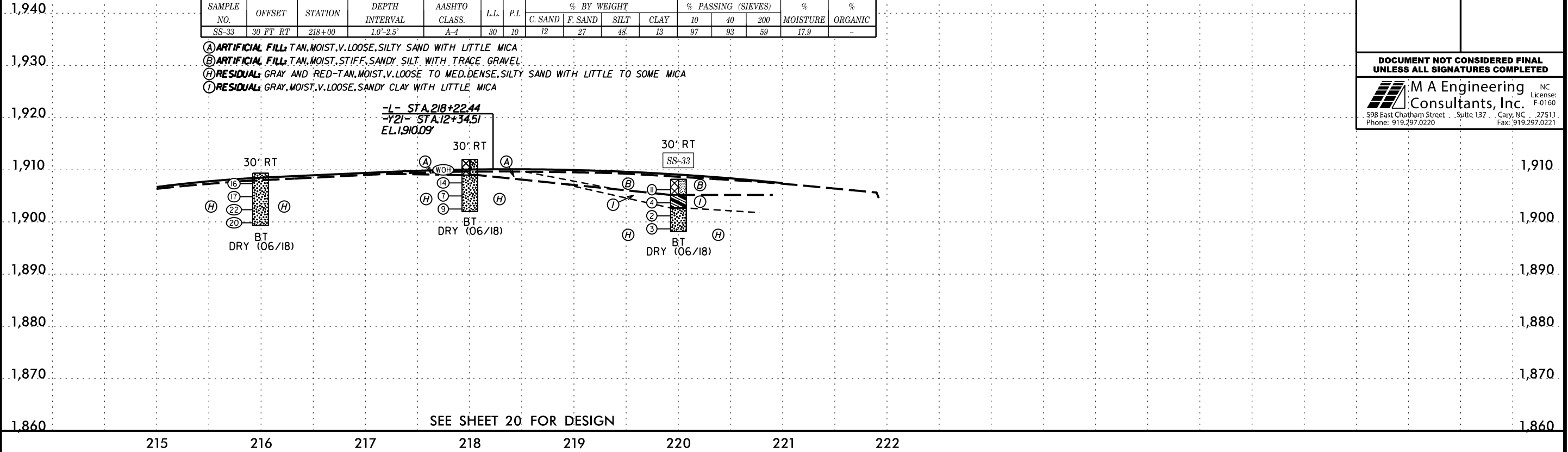
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BM #20  
SPIKE IN BASE OF POWER POLE  
-L- STA. 216+38.48 (68.32' LT)  
EL. 1,912.28'

**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-33	30 FT RT	218+00	1.0'-2.5'	A-4	30	10	12	27	48	13	97	93	59	17.9	-

- Ⓐ ARTIFICIAL FILL: TAN, MOIST, V. LOOSE, SILTY SAND WITH LITTLE MICA
- Ⓑ ARTIFICIAL FILL: TAN, MOIST, STIFF, SANDY SILT WITH TRACE GRAVEL
- Ⓗ RESIDUAL: GRAY AND RED-TAN, MOIST, V. LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO SOME MICA
- Ⓘ RESIDUAL: GRAY, MOIST, V. LOOSE, SANDY CLAY WITH LITTLE MICA




PROJECT REFERENCE NO. <b>A-0011C</b>	SHEET NO. <b>30</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
 M A Engineering Consultants, Inc. 598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

26-SEP-2008 08:29  
 I:\Projects\016\16005.00 A-0011C NC 69 Widening Clay County\A0011C.GEO.ROW\CADD.GEOTECH\PlanProf\A0011C.GEO.\_psh30.plt.dgn  
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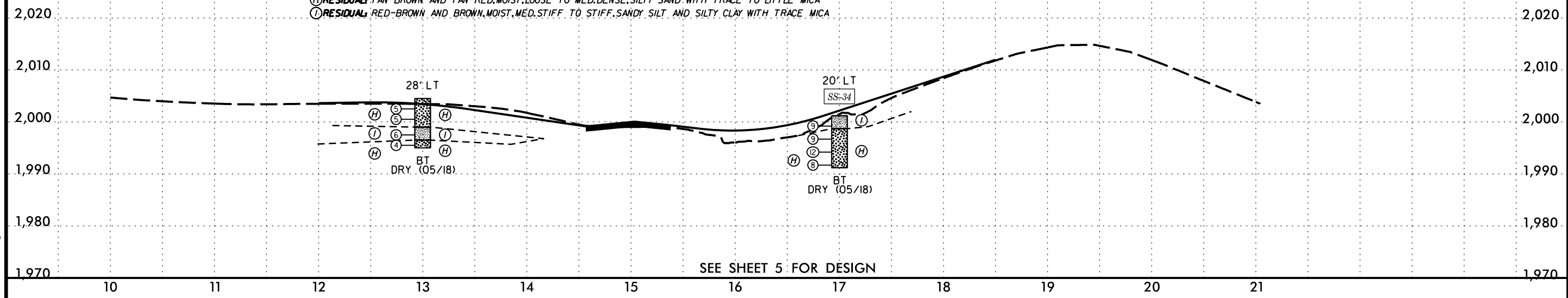
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**-Y1-**

PROJECT REFERENCE NO. <b>A-0011C</b>	SHEET NO. <b>31</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
 M A Engineering Consultants, Inc. 598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

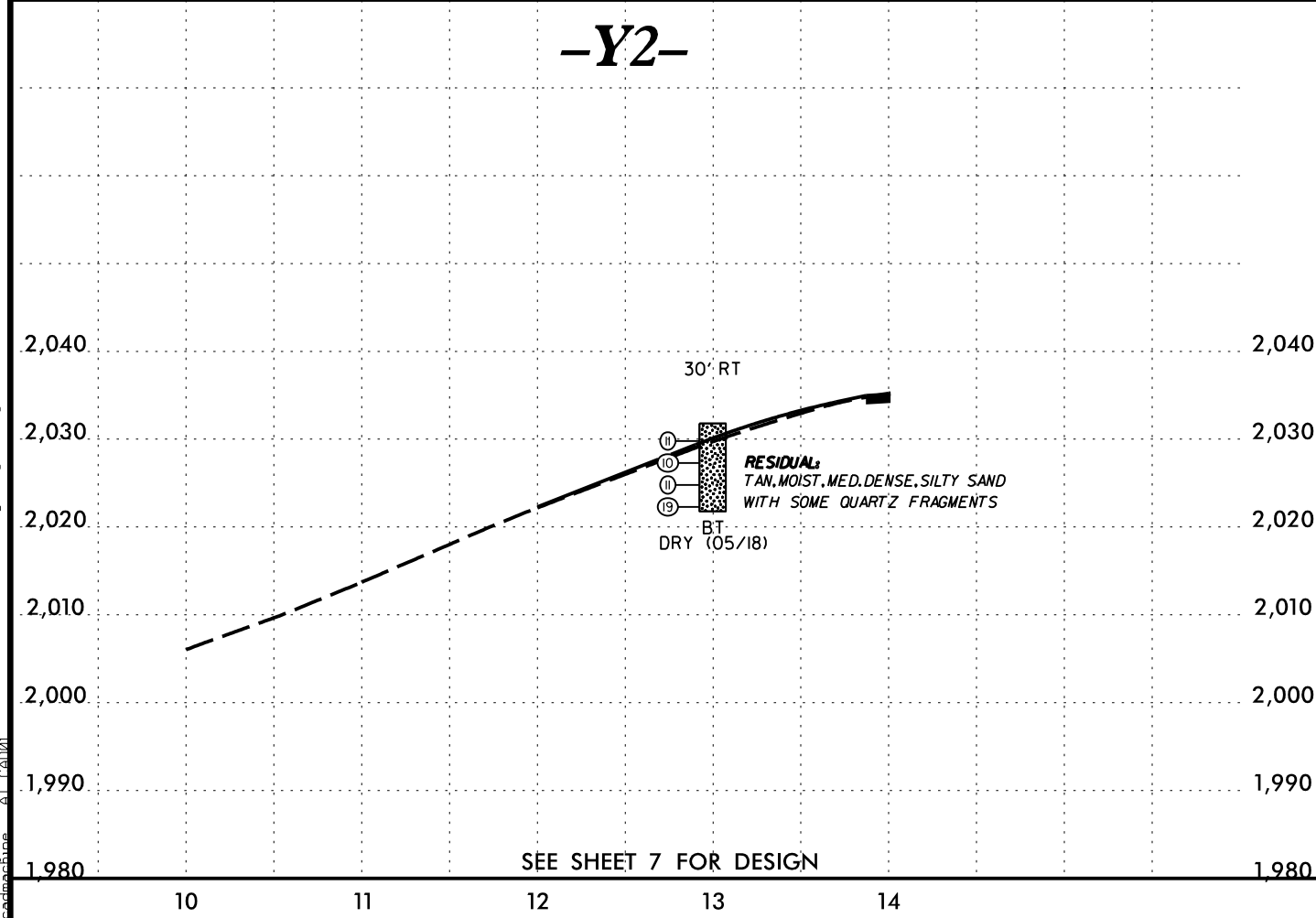
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-34	20 FT LT	17+00	1.0'-2.5'	A-7-5	54	13	11	16	7	66	99	93	73	27.0	-

(H) RESIDUAL: TAN-BROWN AND TAN-RED, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE MICA  
 (I) RESIDUAL: RED-BROWN AND BROWN, MOIST, MED. STIFF TO STIFF, SANDY SILT AND SILTY CLAY WITH TRACE MICA

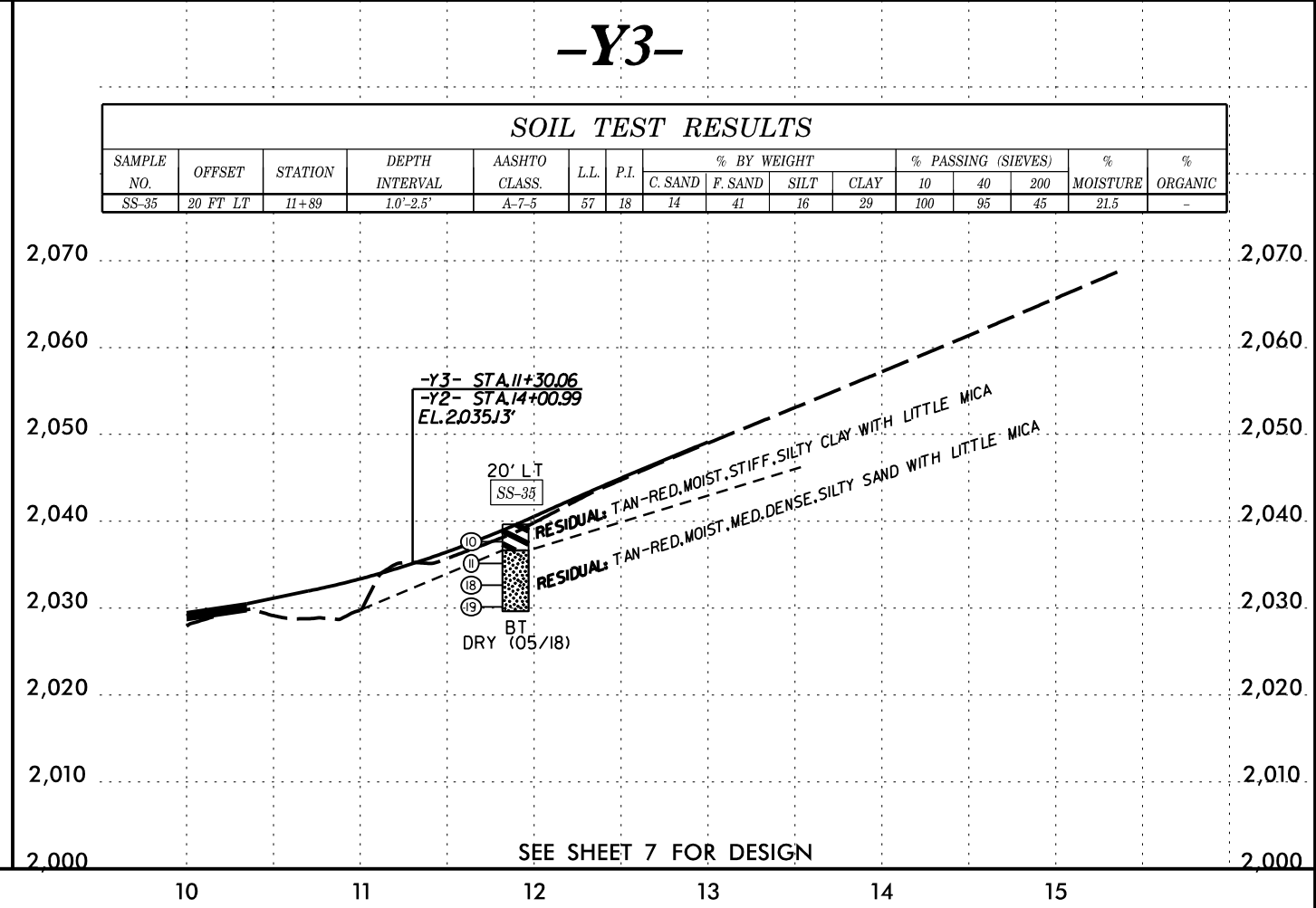


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-35	20 FT LT	11+89	1.0'-2.5'	A-7-5	57	18	14	41	16	29	100	95	45	21.5	-



**-Y3-**

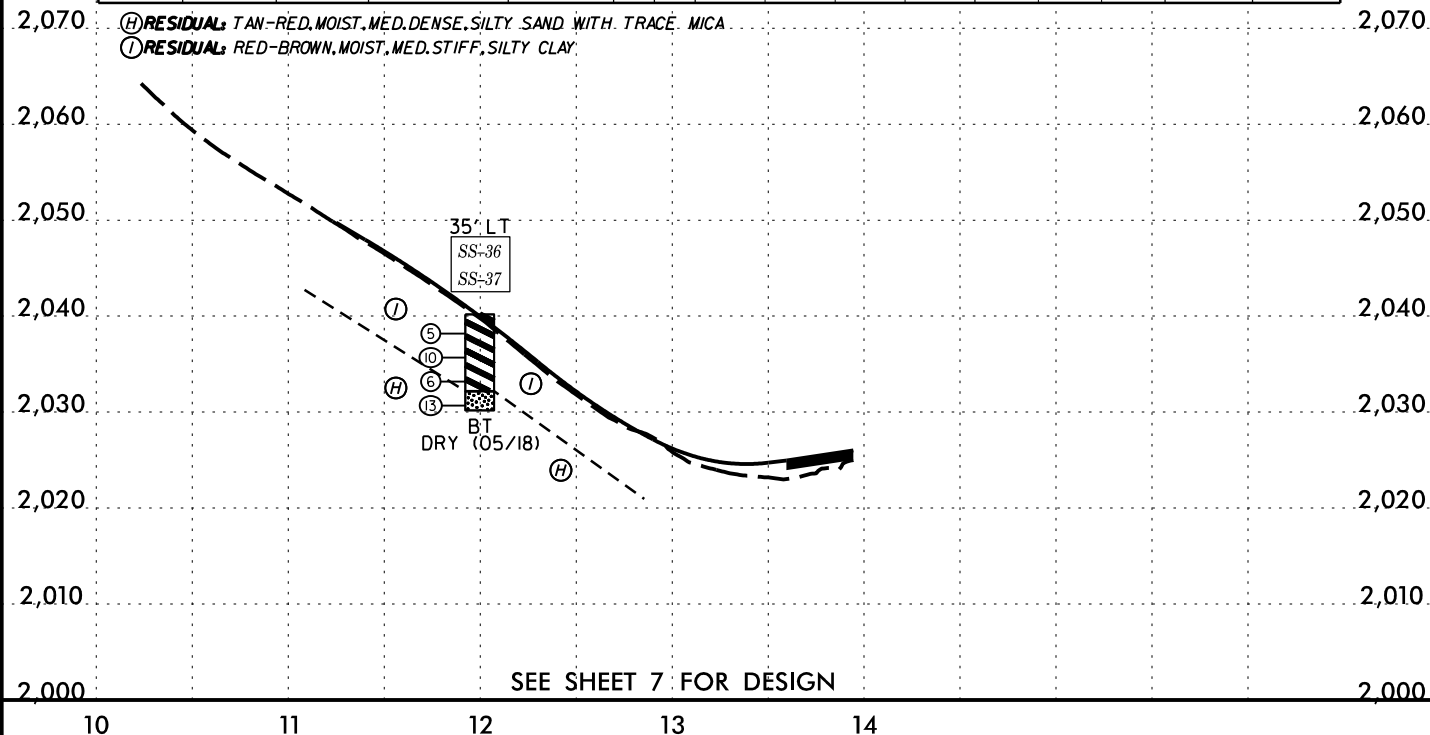


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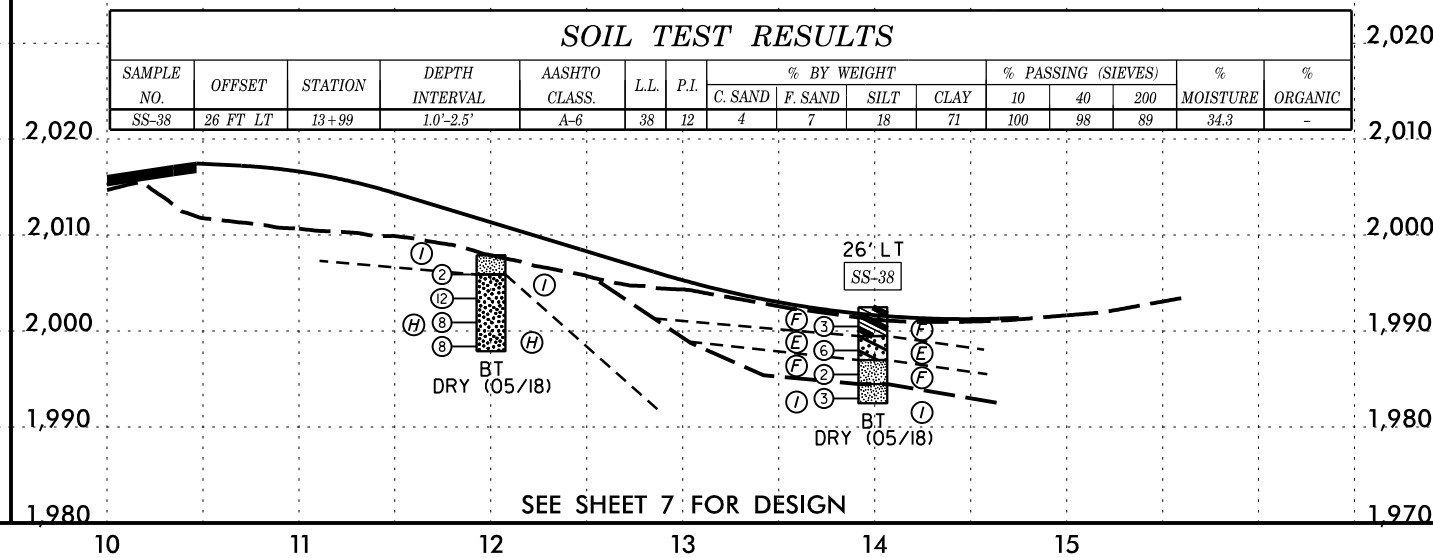
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							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-36	20 FT RT	12+00	1.0'-2.5'	A-7-6	42	18	11	22	9	58	98	94	67	22.3	-
SS-37	20 FT RT	12+00	3.5'-5.0'	A-7-5	48	11	14	24	9	53	96	91	61	27.6	-



**-Y5-**

- (E) ALLUVIAL:** TAN AND GRAY, WET, LOOSE, CLAYEY SAND WITH LITTLE GRAVEL
- (F) ALLUVIAL:** TAN-GRAY AND GRAY, MOIST TO WET, SOFT, SANDY CLAY AND SILT WITH LITTLE ROOTLETS AND GRAVEL
- (H) RESIDUAL:** RED-TAN, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH SOME MICA
- (I) RESIDUAL:** GRAY-TAN, MOIST, SOFT, SANDY SILT CULTIVATED SOIL WITH ROOTLETS

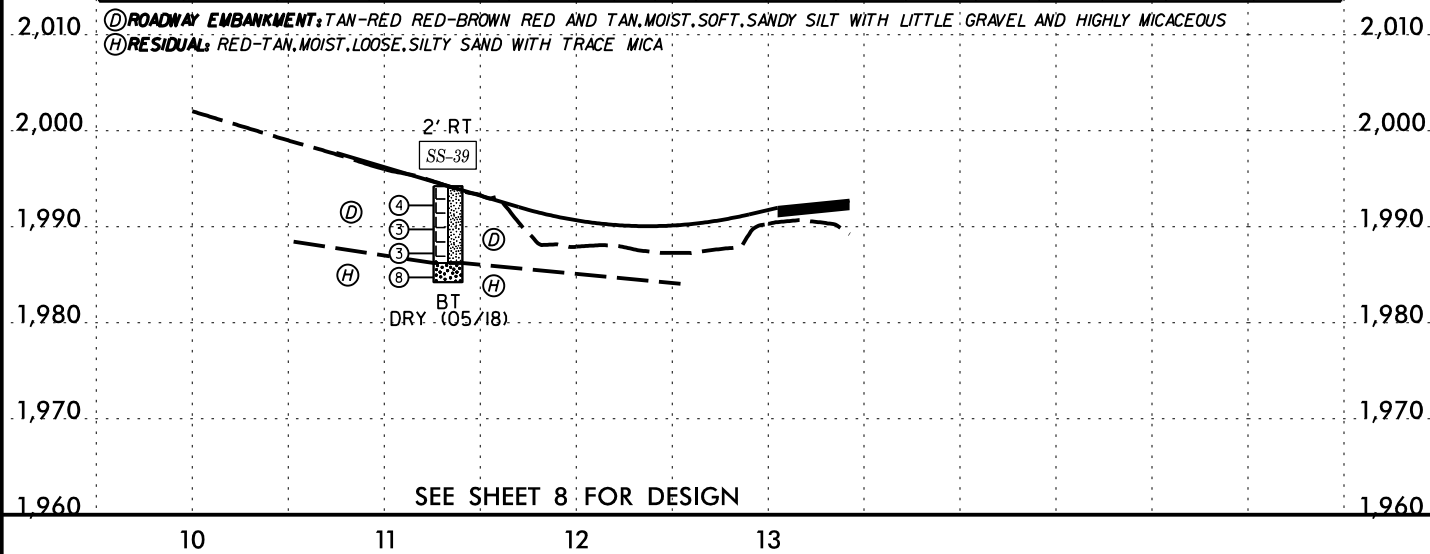
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-38	26 FT LT	13+99	1.0'-2.5'	A-6	38	12	4	7	18	71	100	98	89	34.3	-



PROJECT REFERENCE NO. A-0011C	SHEET NO. 32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
 M A Engineering Consultants, Inc. 598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

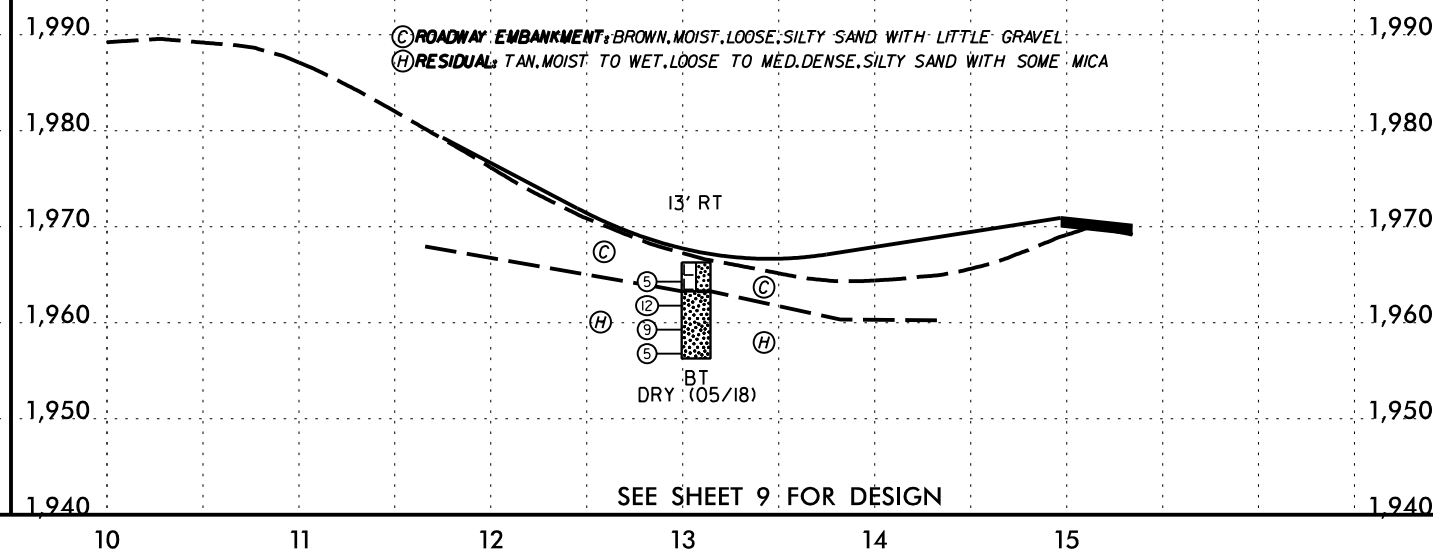
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-39	2 FT RT	11+33	1.0'-2.5'	A-4	31	5	26	24	41	9	95	82	47	22.1	-



**-Y7-**

- (C) ROADWAY EMBANKMENT:** BROWN, MOIST, LOOSE, SILTY SAND WITH LITTLE GRAVEL
- (H) RESIDUAL:** TAN, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME MICA



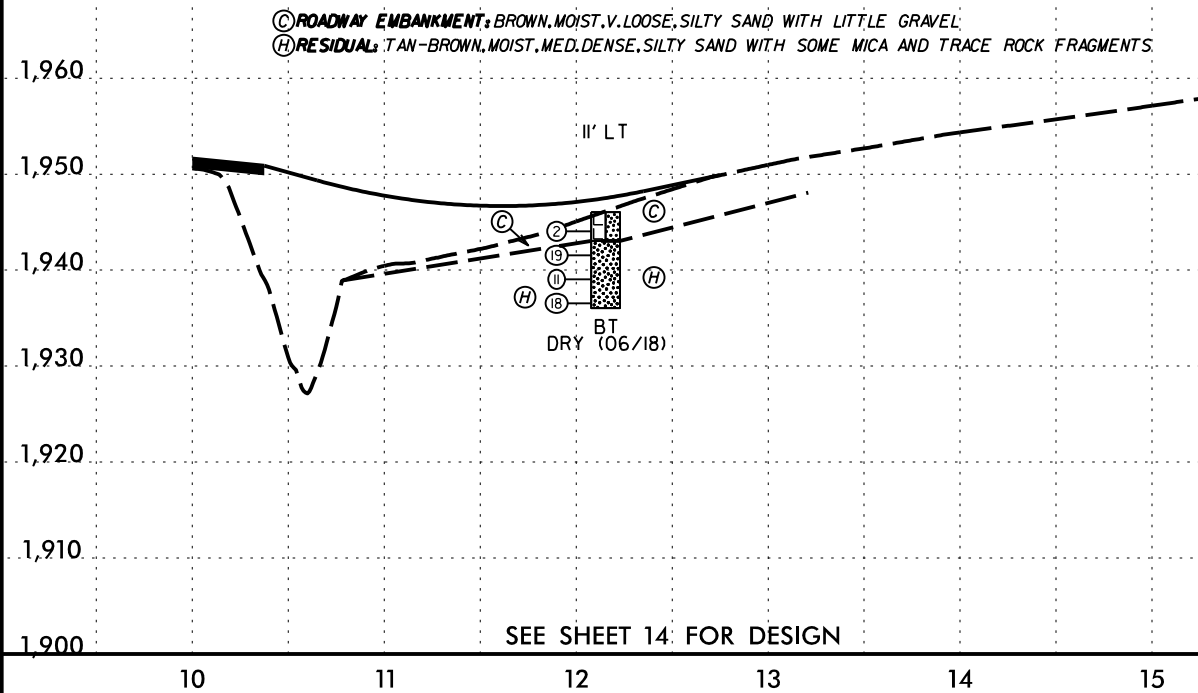
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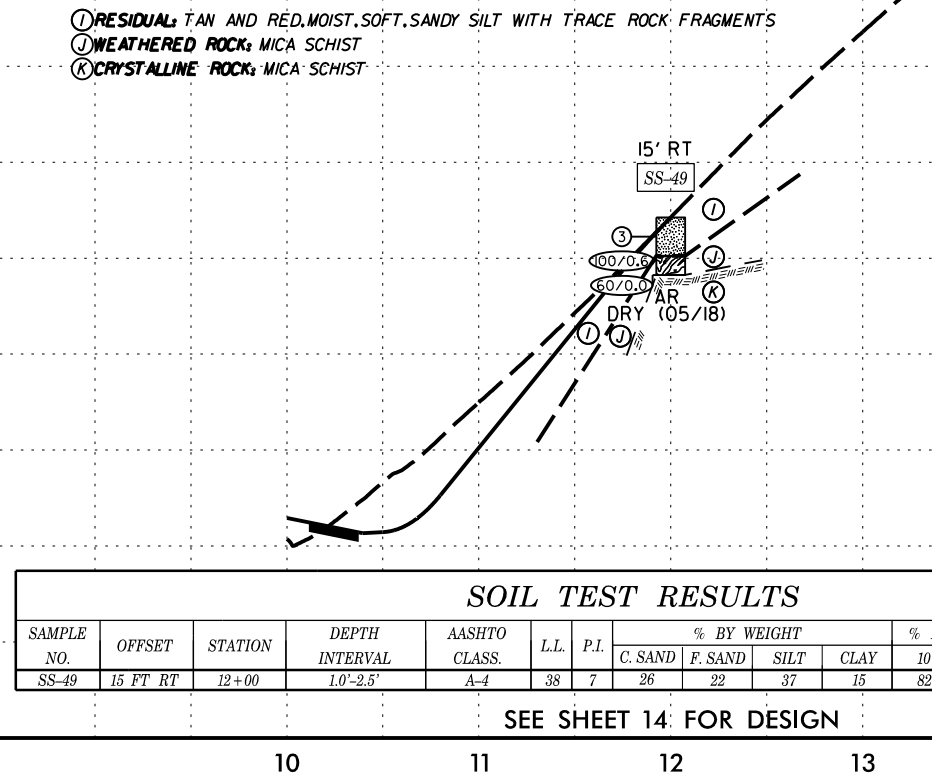


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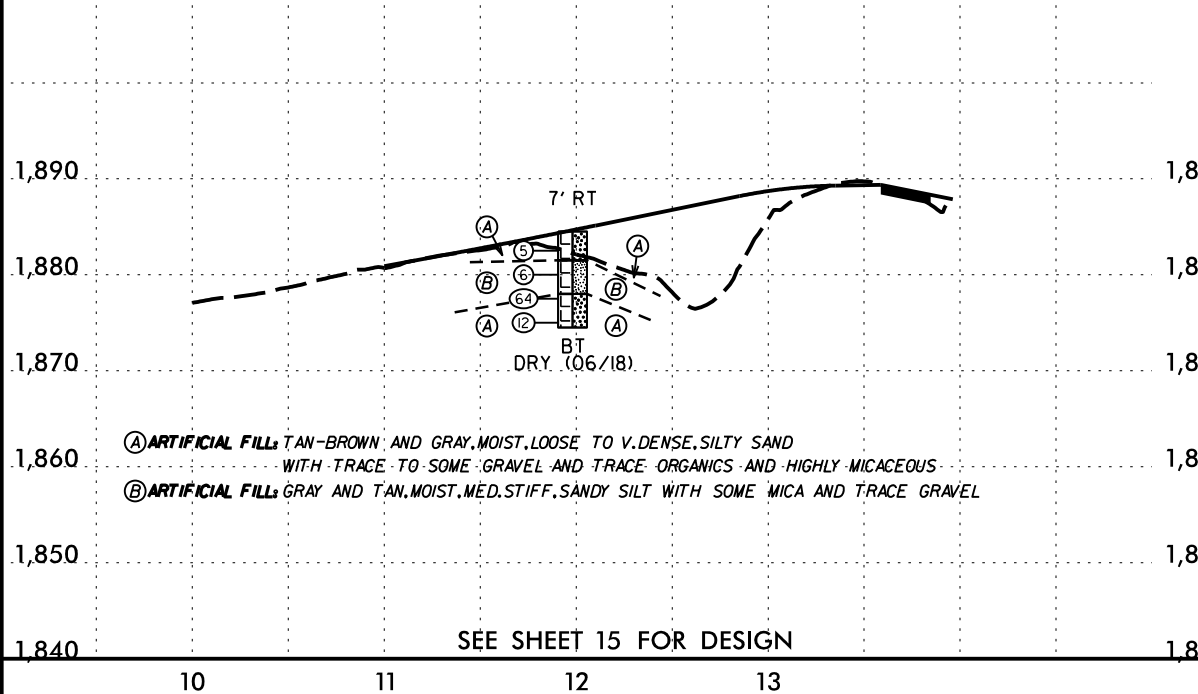
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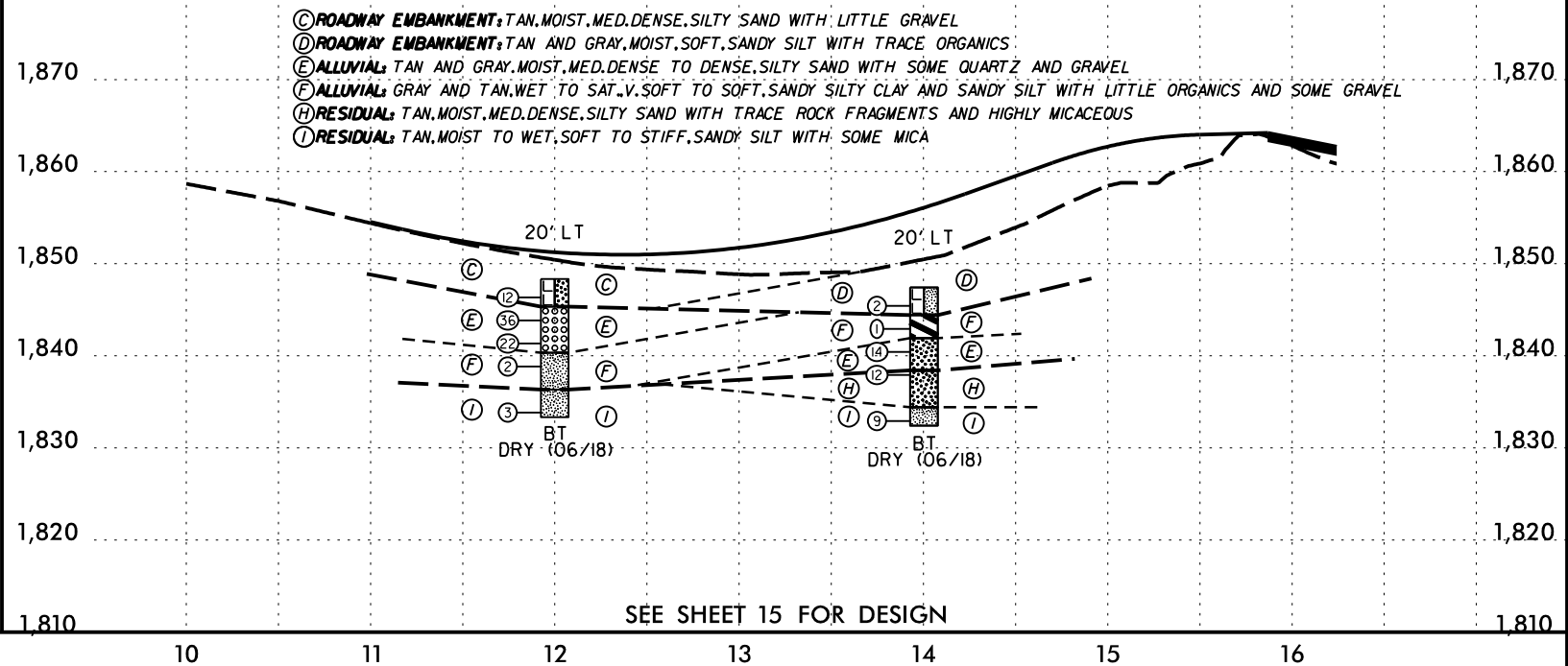
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-49	15 FT RT	12+00	1.0'-2.5'	A-4	38	7	26	22	37	15	82	71	43	21.1	-

PROJECT REFERENCE NO. A-0011C	SHEET NO. 35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
M A Engineering Consultants, Inc. 598 East Chatham Street, Suite 137, Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

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# -Y17-





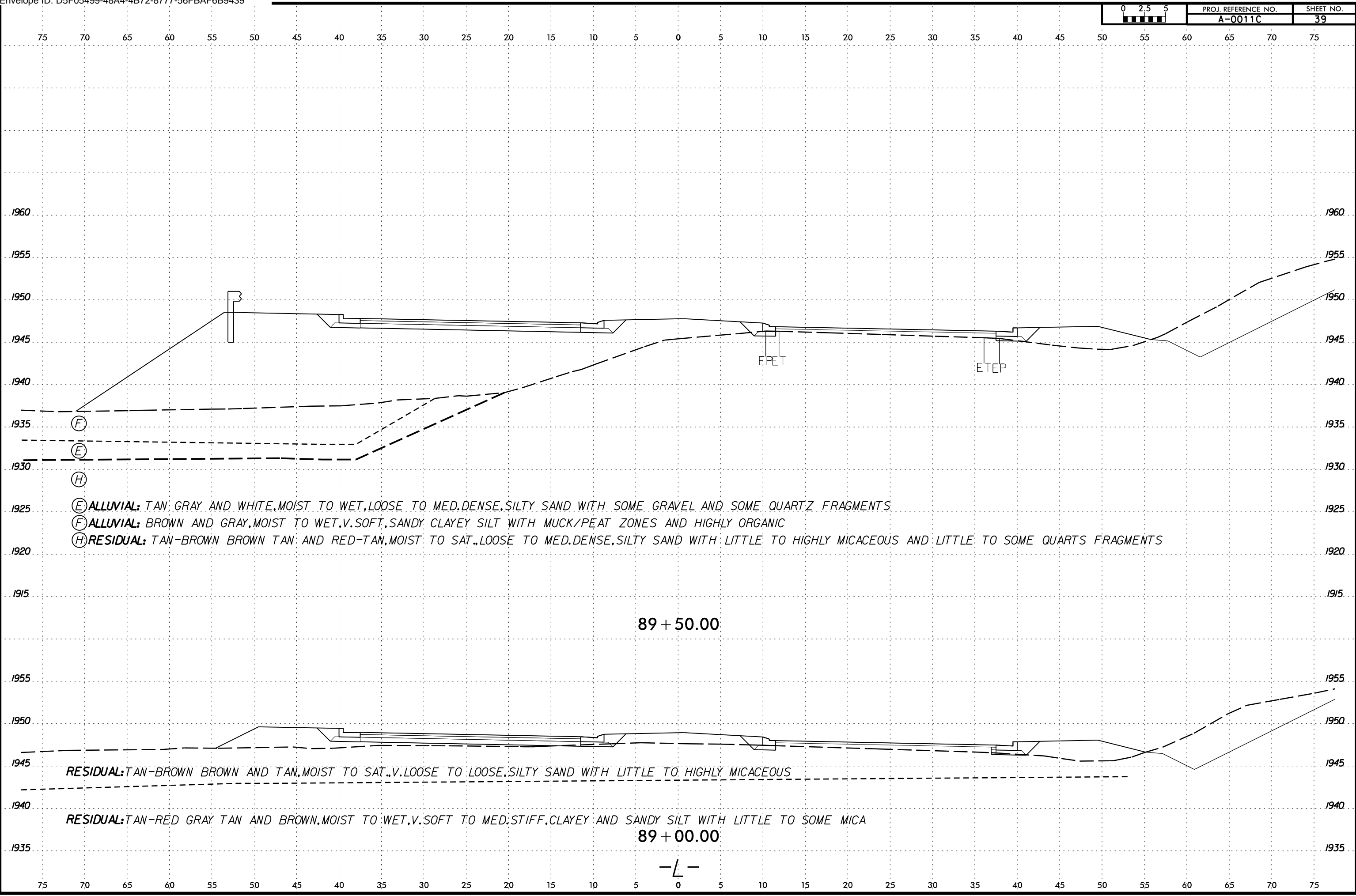








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ceamc@ncdot.gov



(E) ALLUVIAL: TAN GRAY AND WHITE, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME GRAVEL AND SOME QUARTZ FRAGMENTS

(F) ALLUVIAL: BROWN AND GRAY, MOIST TO WET, V. SOFT, SANDY CLAYEY SILT WITH MUCK/PEAT ZONES AND HIGHLY ORGANIC

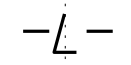
(H) RESIDUAL: TAN-BROWN BROWN TAN AND RED-TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS AND LITTLE TO SOME QUARTS FRAGMENTS

RESIDUAL: TAN-BROWN BROWN AND TAN, MOIST TO SAT., V. LOOSE TO LOOSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS

RESIDUAL: TAN-RED GRAY TAN AND BROWN, MOIST TO WET, V. SOFT TO MED. STIFF, CLAYEY AND SANDY SILT WITH LITTLE TO SOME MICA

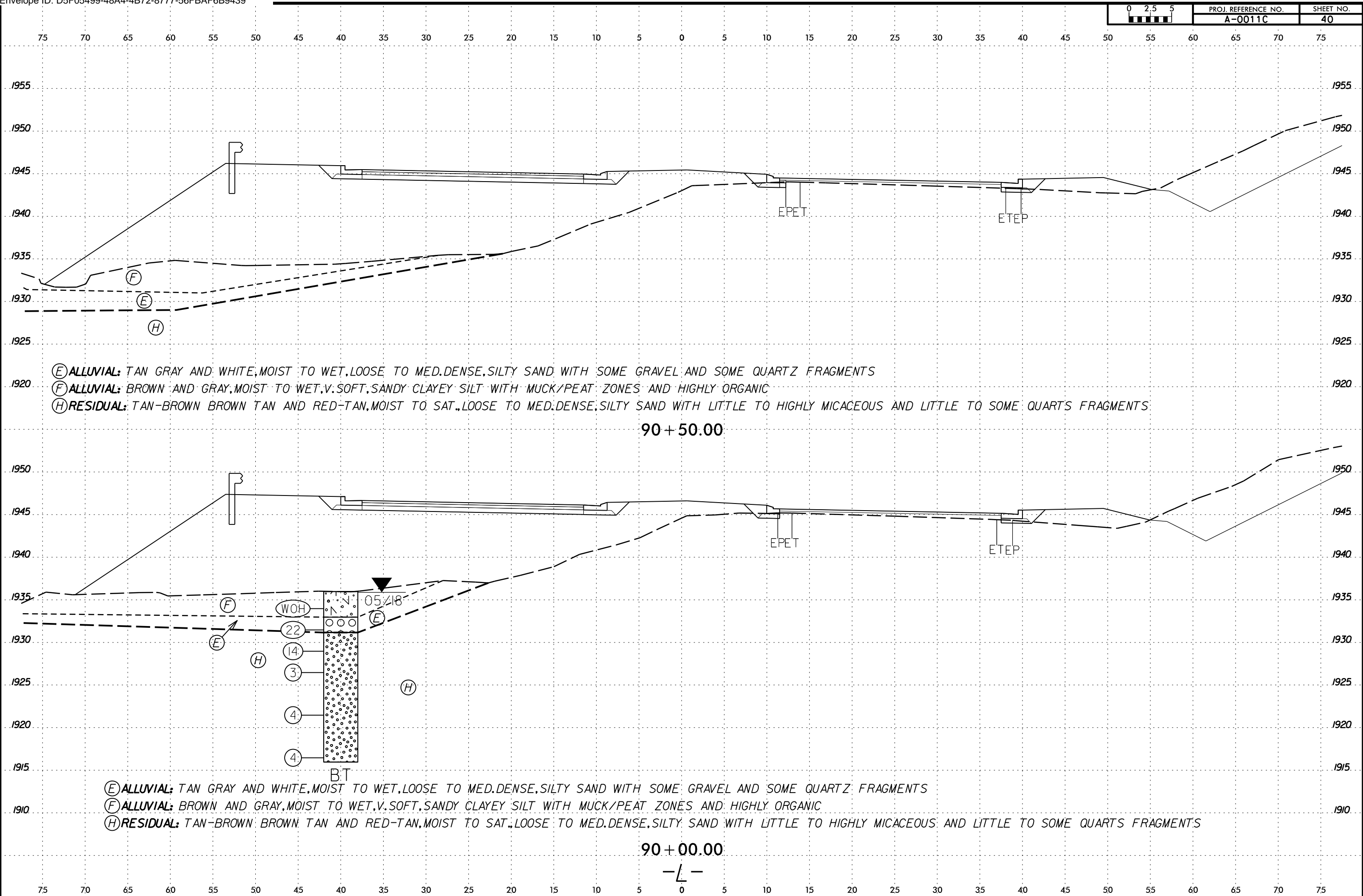
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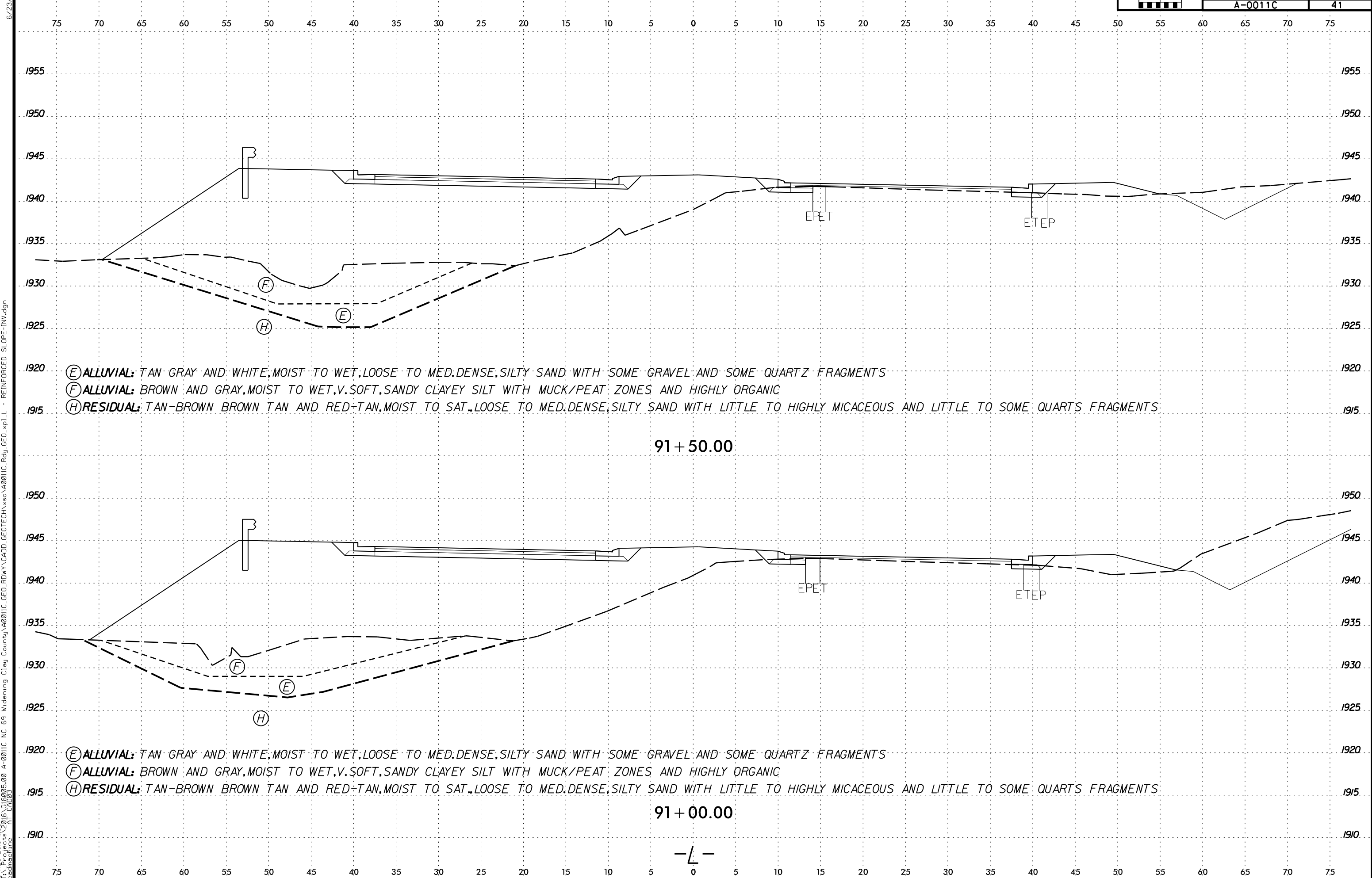
- (E) ALLUVIAL: TAN GRAY AND WHITE, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME GRAVEL AND SOME QUARTZ FRAGMENTS
- (F) ALLUVIAL: BROWN AND GRAY, MOIST TO WET, V. SOFT, SANDY CLAYEY SILT WITH MUCK/PEAT ZONES AND HIGHLY ORGANIC
- (H) RESIDUAL: TAN-BROWN BROWN TAN AND RED-TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS AND LITTLE TO SOME QUARTZ FRAGMENTS

90+50.00

- (E) ALLUVIAL: TAN GRAY AND WHITE, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME GRAVEL AND SOME QUARTZ FRAGMENTS
- (F) ALLUVIAL: BROWN AND GRAY, MOIST TO WET, V. SOFT, SANDY CLAYEY SILT WITH MUCK/PEAT ZONES AND HIGHLY ORGANIC
- (H) RESIDUAL: TAN-BROWN BROWN TAN AND RED-TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS AND LITTLE TO SOME QUARTZ FRAGMENTS

90+00.00

-L-

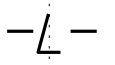


(E) ALLUVIAL: TAN GRAY AND WHITE, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME GRAVEL AND SOME QUARTZ FRAGMENTS  
 (F) ALLUVIAL: BROWN AND GRAY, MOIST TO WET, V. SOFT, SANDY CLAYEY SILT WITH MUCK/PEAT ZONES AND HIGHLY ORGANIC  
 (H) RESIDUAL: TAN-BROWN BROWN TAN AND RED-TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS AND LITTLE TO SOME QUARTZ FRAGMENTS

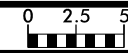
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(E) ALLUVIAL: TAN GRAY AND WHITE, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME GRAVEL AND SOME QUARTZ FRAGMENTS  
 (F) ALLUVIAL: BROWN AND GRAY, MOIST TO WET, V. SOFT, SANDY CLAYEY SILT WITH MUCK/PEAT ZONES AND HIGHLY ORGANIC  
 (H) RESIDUAL: TAN-BROWN BROWN TAN AND RED-TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS AND LITTLE TO SOME QUARTZ FRAGMENTS

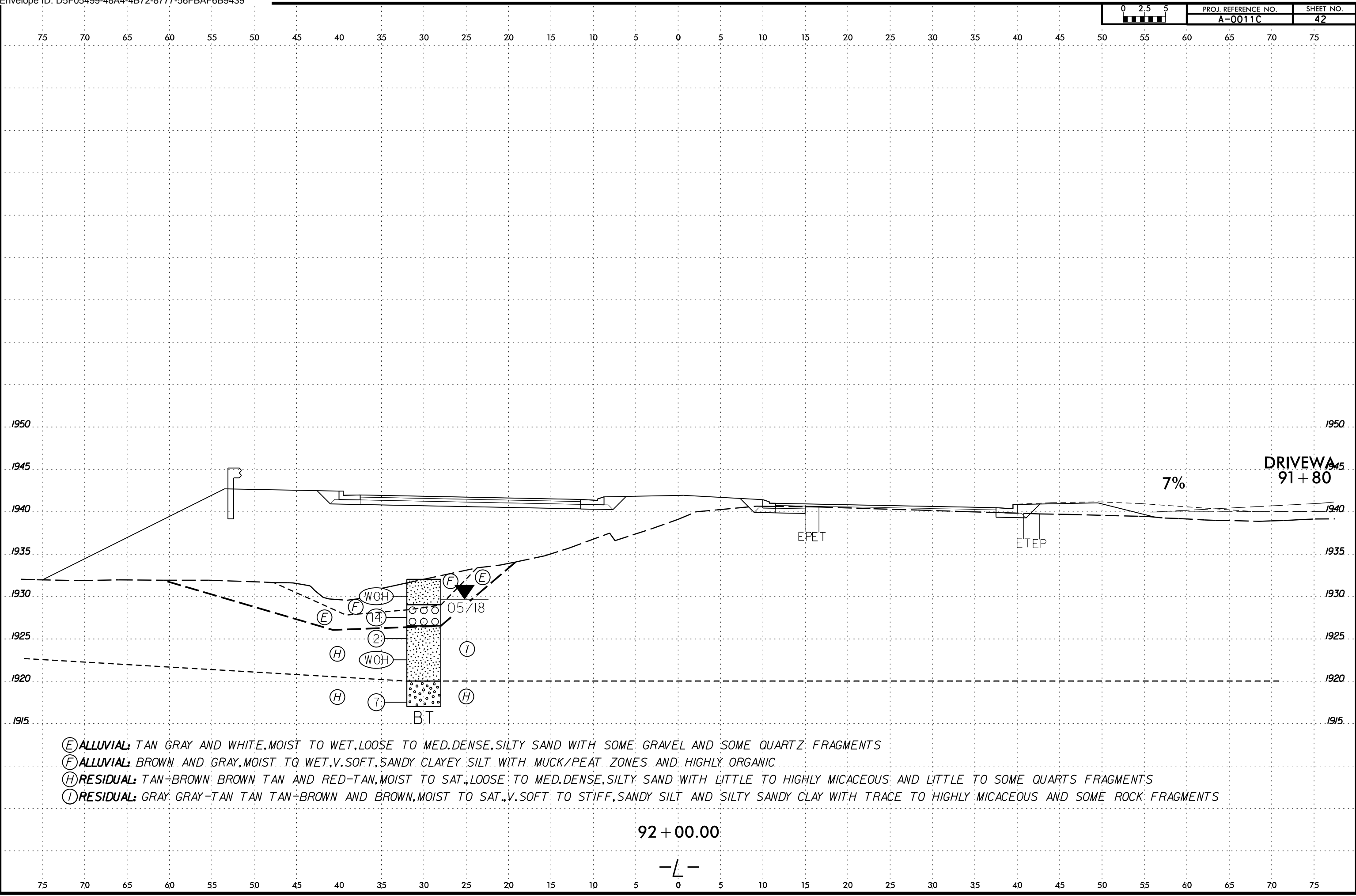
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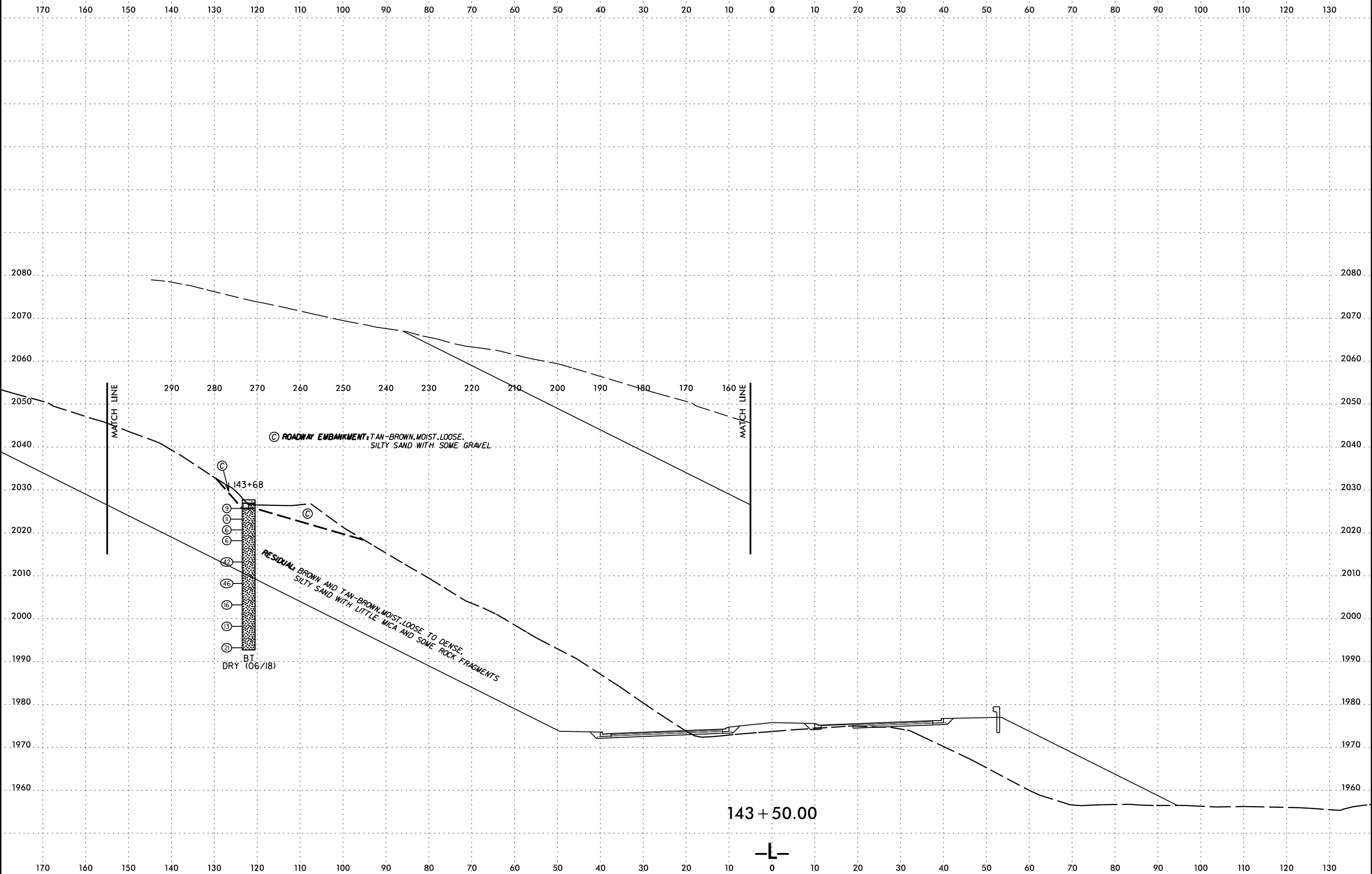
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- (F) ALLUVIAL: BROWN AND GRAY, MOIST TO WET, V. SOFT, SANDY CLAYEY SILT WITH MUCK/PEAT ZONES AND HIGHLY ORGANIC
- (H) RESIDUAL: TAN-BROWN BROWN TAN AND RED-TAN, MOIST TO SAT, LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO HIGHLY MICACEOUS AND LITTLE TO SOME QUARTS FRAGMENTS
- (I) RESIDUAL: GRAY GRAY-TAN TAN-BROWN AND BROWN, MOIST TO SAT, V. SOFT TO STIFF, SANDY SILT AND SILTY SANDY CLAY WITH TRACE TO HIGHLY MICACEOUS AND SOME ROCK FRAGMENTS

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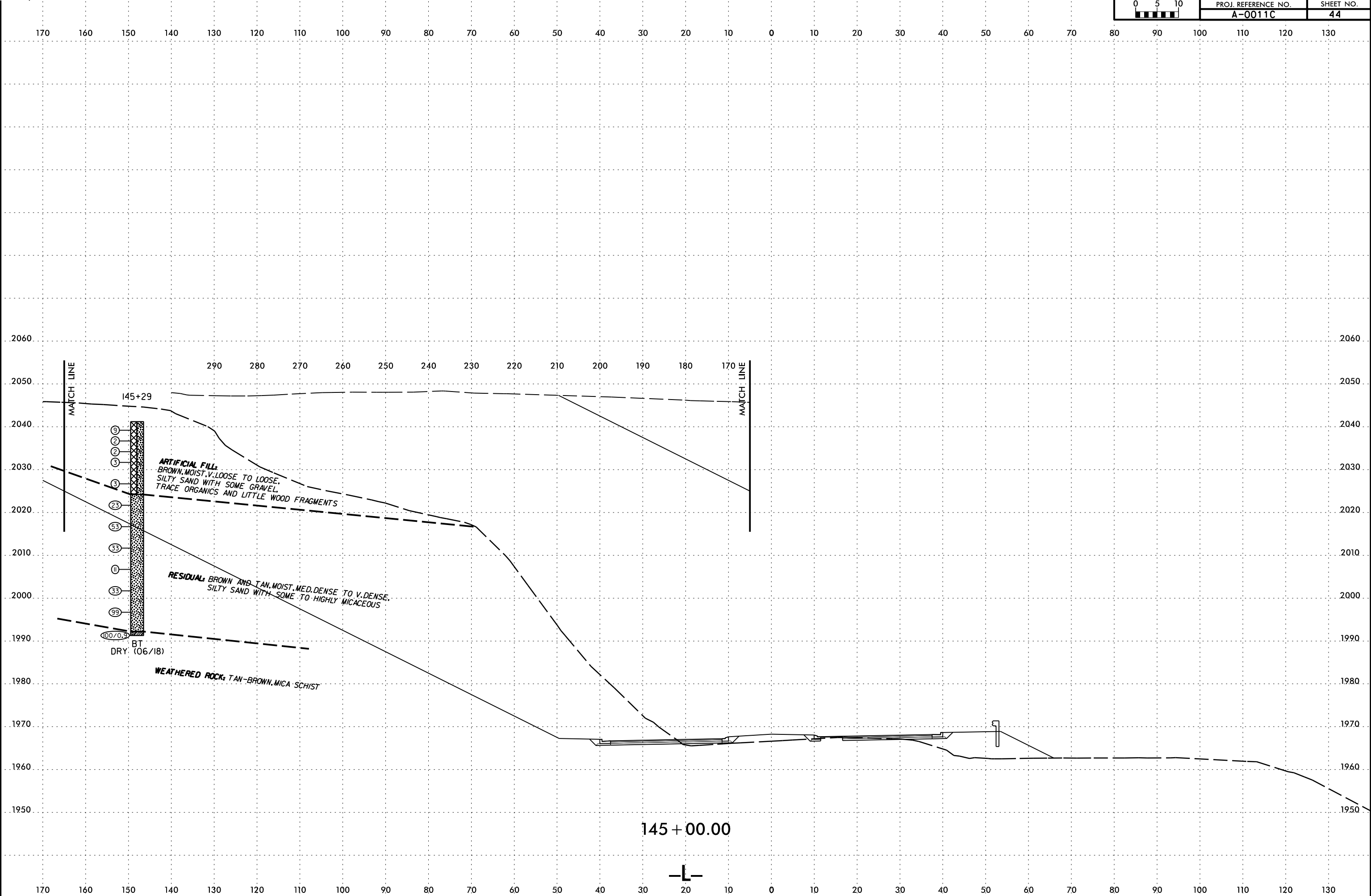
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**REFERENCE: A-0011C**

**PROJECT: 32574**

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

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***SUBSURFACE INVESTIGATION***

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***APPENDIX A  
PAVEMENT INVESTIGATION***

Falcon Engineering, Inc.

1210 Trinity Road, Suite 110 Cary, NC 27513

PAVEMENT SECTION AND SUBGRADE CONDITION SUMMARY

NC 69 FROM GEORGIA STATE LINE TO US 64

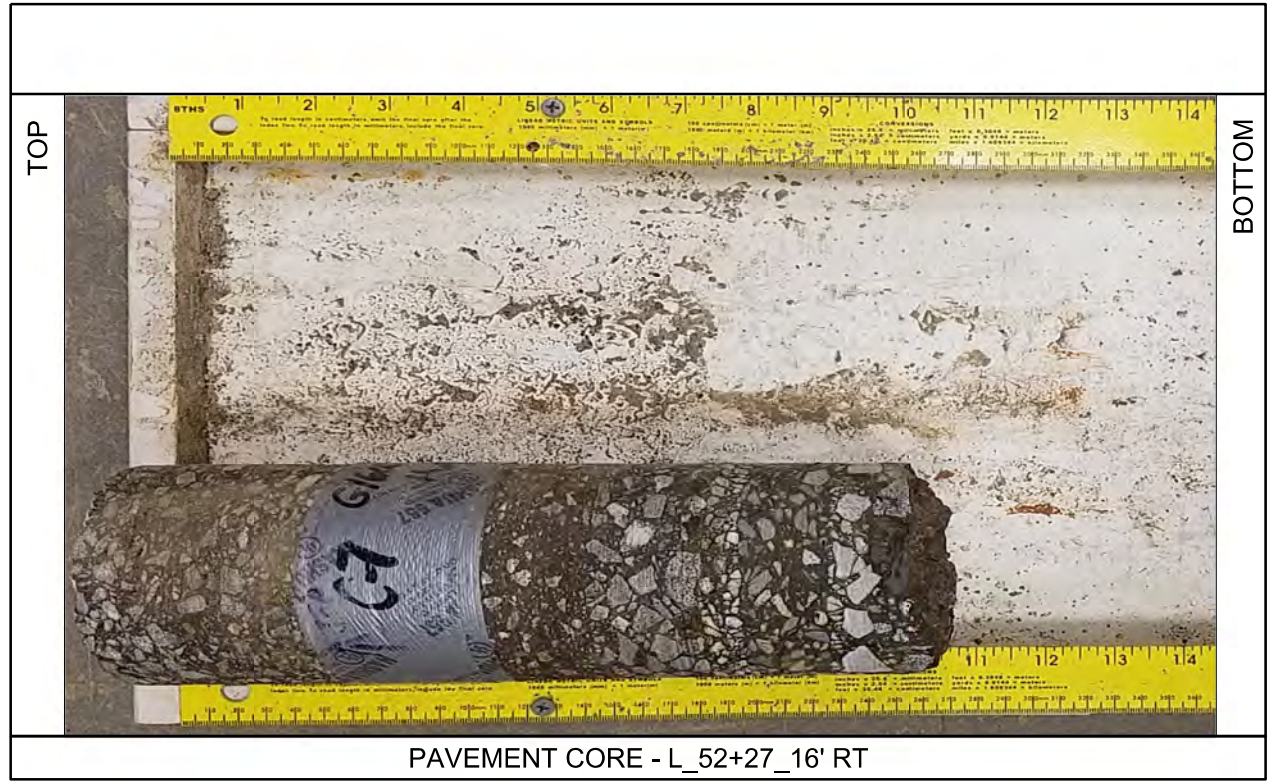
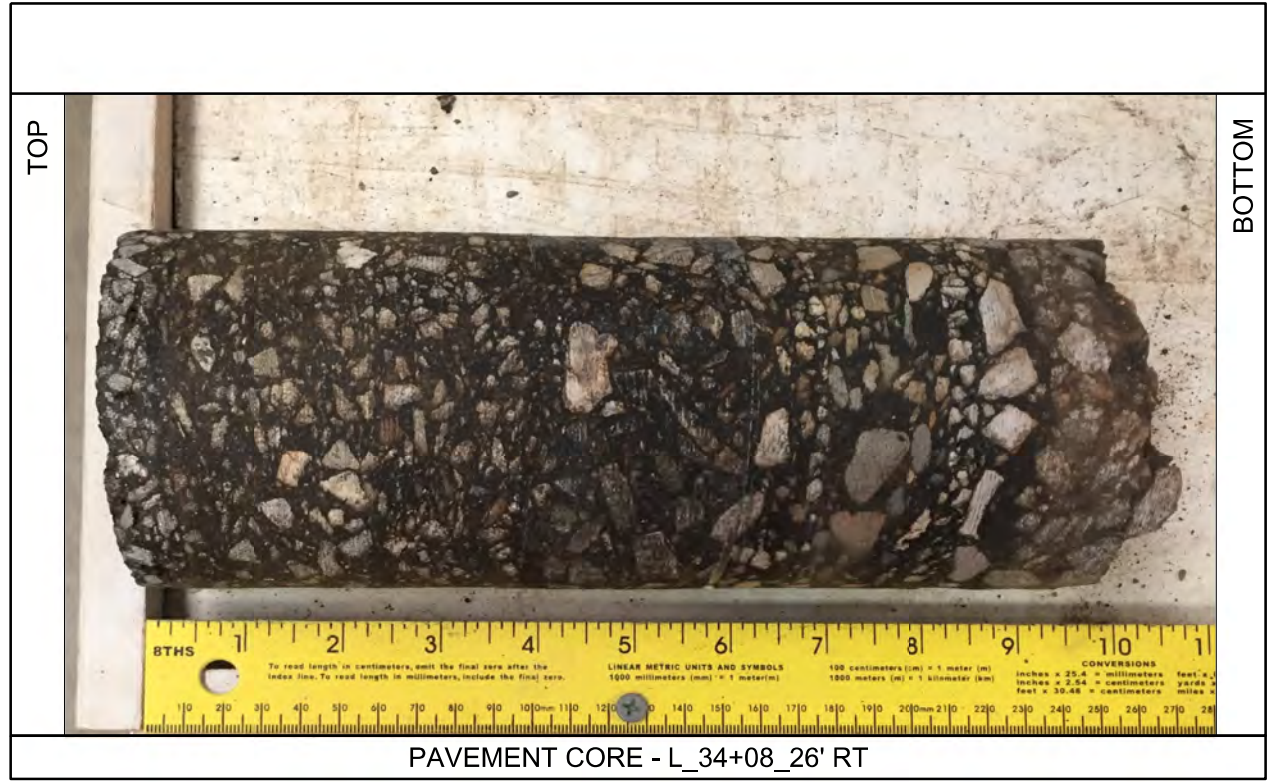
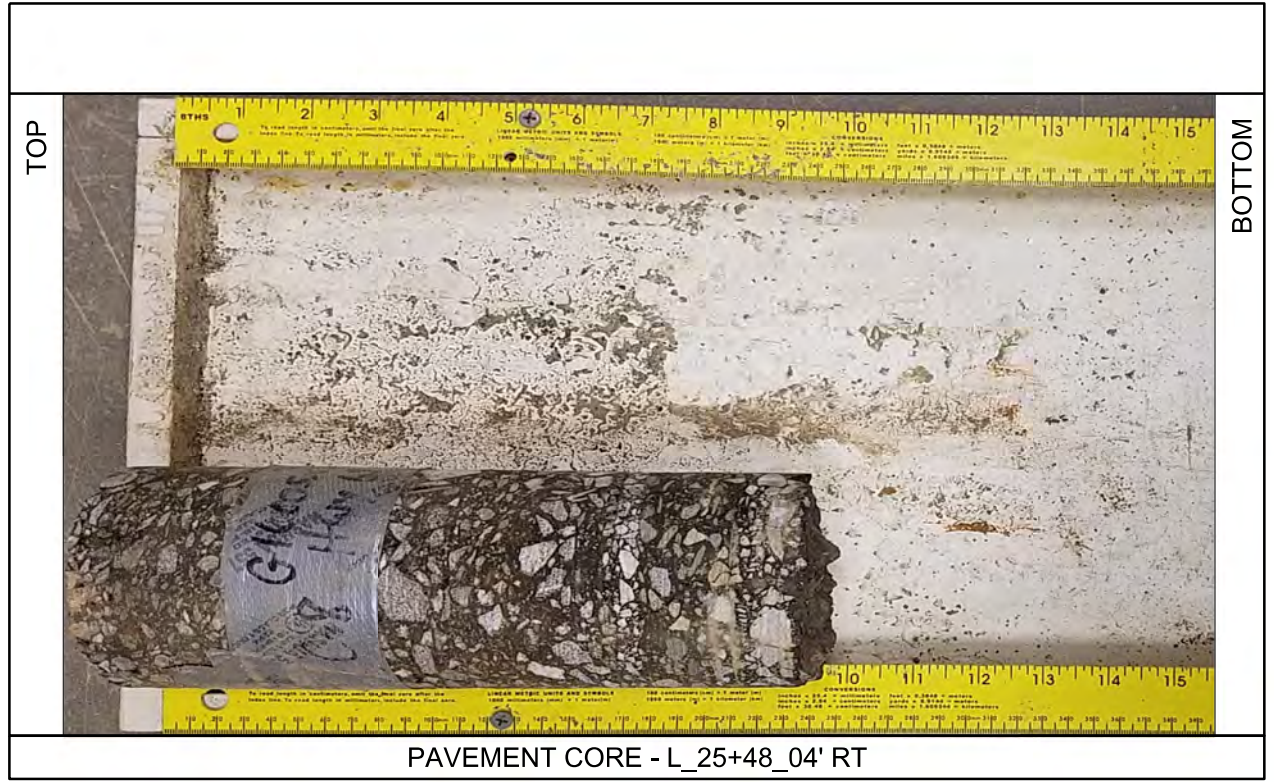
CLAY COUNTY, NORTH CAROLINA


WBS: 32574.1.FD7 ; TIP: A-0011C

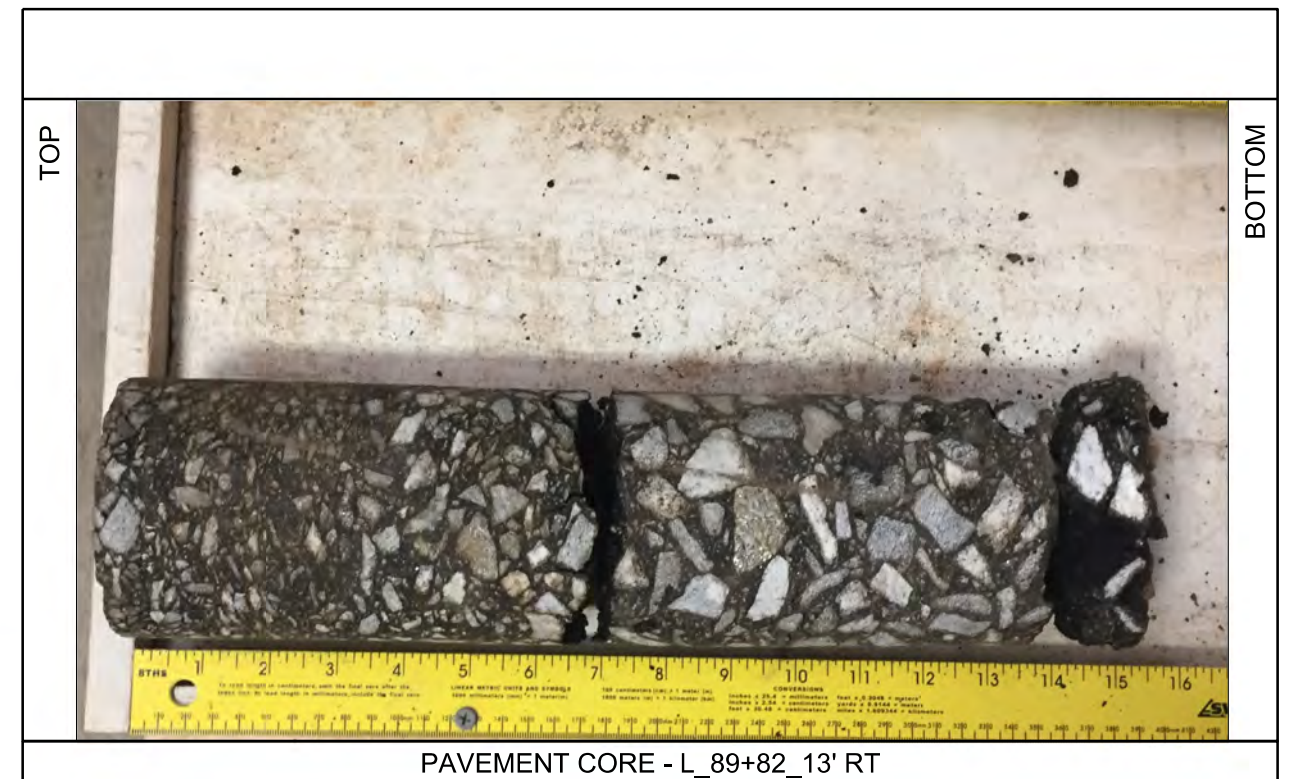
Falcon Project No.: G16005.00


TEST LOCATION				PAVEMENT SECTION THICKNESS (INCHES)			SUBGRADE	NOTES
ALIGNMENT	STATION	OFFSET	LANE	HMA	AGGREGATE BASE	TOTAL	IN-SITU CBR	
-L-	25+48	4' RT	NORTHBOUND, TL	10.00	10.00	20.00	4	Multiple Layers
-L-	34+08	26' RT	NORTHBOUND, TL	10.00	5.00	15.00	13	Multiple Layers
-L-	43+46	14' RT	SOUTHBOUND, TL	9.00	6.00	15.00	6	Multiple Layers
-L-	52+27	16' RT	SOUTHBOUND, TL	11.00	10.00	21.00	>20	Multiple Layers
-L-	61+11	3' LT	SOUTHBOUND, TL	12.00	10.00	22.00	>20	Multiple Layers, delaminated at 6 inches
-L-	72+90	19' RT	NORTHBOUND, TL	9.00	8.00	17.00	>20	Multiple Layers, delaminated at 6 inches, base course crumbling
-L-	80+55	6' RT	NORTHBOUND, TL	13.00	5.00	18.00	5	Multiple Layers, delaminated at 8 inches, base course crumbling
-L-	89+82	13' RT	SOUTHBOUND, TL	15.00	3.00	18.00	10	Multiple Layers, delaminated at 7 and 14 inches
-L-	97+13	23' RT	SOUTHBOUND, TL	10.00	14.00	24.00	8	Multiple Layers
-L-	108+33	6' RT	SOUTHBOUND, TL	11.00	8.00	19.00	15	Multiple Layers
-L-	123+78	3' RT	NORTHBOUND, TL	11.00	9.00	20.00	20	Multiple Layers, delaminated at 9 inches
-L-	129+40	10' RT	NORTHBOUND, TL	15.00	9.00	24.00	10	Multiple Layers
-L-	137+75	16' RT	NORTHBOUND, TL	14.00	10.00	24.00	>20	Multiple Layers, delaminated at 8 inches
-L-	151+14	10' LT	NORTHBOUND, TL	12.00	7.00	19.00	>20	Multiple Layers, delaminated at 5 inches
-L-	162+72	32' LT	CENTRAL TURN LANE	20.00	4.00	24.00	>20	Multiple Layers, delaminated at 3 and 10 inches
-L-	169+91	12' LT	CENTRAL TURN LANE	17.00	5.00	22.00	20	Multiple Layers
-L-	177+97	3' RT	CENTRAL TURN LANE	15.00	7.00	22.00	10	Multiple Layers, delaminated at 9 inches
-L-	187+81	20' LT	SOUTHBOUND, TL	10.00	6.00	16.00	6	Multiple Layers, delaminated at 7 inches, base course crumbling
-L-	191+06	23' RT	NORTHBOUND, TL	10.00	14.00	24.00	15	Multiple Layers
-L-	195+79	3' LT	CENTRAL TURN LANE	13.00	10.00	23.00	>20	Multiple Layers, delaminated at 7 inches
-L-	205+92	CL	NORTHBOUND, INSIDE TURN LANE	15.00	6.00	21.00	4	Multiple Layers, delaminated at 11 inches, base course crumbling
-L-	212+45	7' LT	CENTRAL TURN LANE	8.00	10.00	18.00	10	Multiple Layers
-L-	219+92	2' RT	NORTHBOUND, TL	8.00	10.00	18.00	10	Multiple Layers, aggregate base bonded to base course
-Y1-	12+98	11' LT	WESTBOUND, TL	11.00	7.00	18.00	12	Multiple Layers
-Y1-	16+92	10' RT	WESTBOUND, TL	2.00	12.00	14.00	10	Single Asphalt Lift
-Y3-	11+27	103' LT	EASTBOUND, TL	2.00	12.00	14.00	>20	Single Asphalt Lift
-Y4-	12+65	6' LT	WESTBOUND, TL	2.00	5.00	7.00	8	Single Asphalt Lift
-Y5-	12+25	15' RT	WESTBOUND, TL	6.00	6.00	12.00	12	Multiple Layers
-Y7-	13+01	5' LT	EASTBOUND, TL	4.00	8.00	12.00	15	Multiple Layers
-Y8-	14+01	CL	EASTBOUND, TL	3.00	9.00	12.00	>20	Single Asphalt Lift
-Y9-	12+06	3' LT	WESTBOUND, TL	5.00	7.00	12.00	>20	Multiple Layers
-Y10-	11+65	34' LT	WESTBOUND, TL	7.00	5.00	12.00	15	Multiple Layers
-Y11-	13+98	4' RT	SOUTHBOUND, TL	1.00	13.00	14.00	10	Single Asphalt Lift
-Y12-	12+02	16' LT	WESTBOUND, TL	3.00	17.00	20.00	15	Single Asphalt Lift
-Y13-	11+94	1' LT	NORTHBOUND, TL	9.00	2.00	11.00	20	Multiple Layers
-Y14-	12+02	18' LT	WESTBOUND, TL	1.00	9.00	10.00	10	Single Asphalt Lift
-Y15-	11+89	3' LT	EASTBOUND, TL	5.00*	7.00	12.00	>20	*Concrete Pavement
-Y16-	11+98	7' RT	SOUTHBOUND, TL	8.00	11.00	19.00	>20	Multiple Layers
-Y17-	12+19	1' RT	EASTBOUND, TL	3.00	16.00	19.00	20	Single Asphalt Lift
-Y19-	15+87	7' RT	WESTBOUND, TL	6.00	8.00	14.00	15	Multiple Layers, delaminated at 2 and 4 inches
-Y20-	17+03	1' LT	CENTRAL TURN LANE	12.00	6.00	18.00	15	Multiple Layers, delaminated at 7 inches
-Y20-	28+21	3' LT	CENTRAL TURN LANE	9.00	10.00	19.00	15	Multiple Layers, delaminated at 6 inches
REPRESENTATIVE AVERAGE				8.86	8.48	17.45	N/A	-

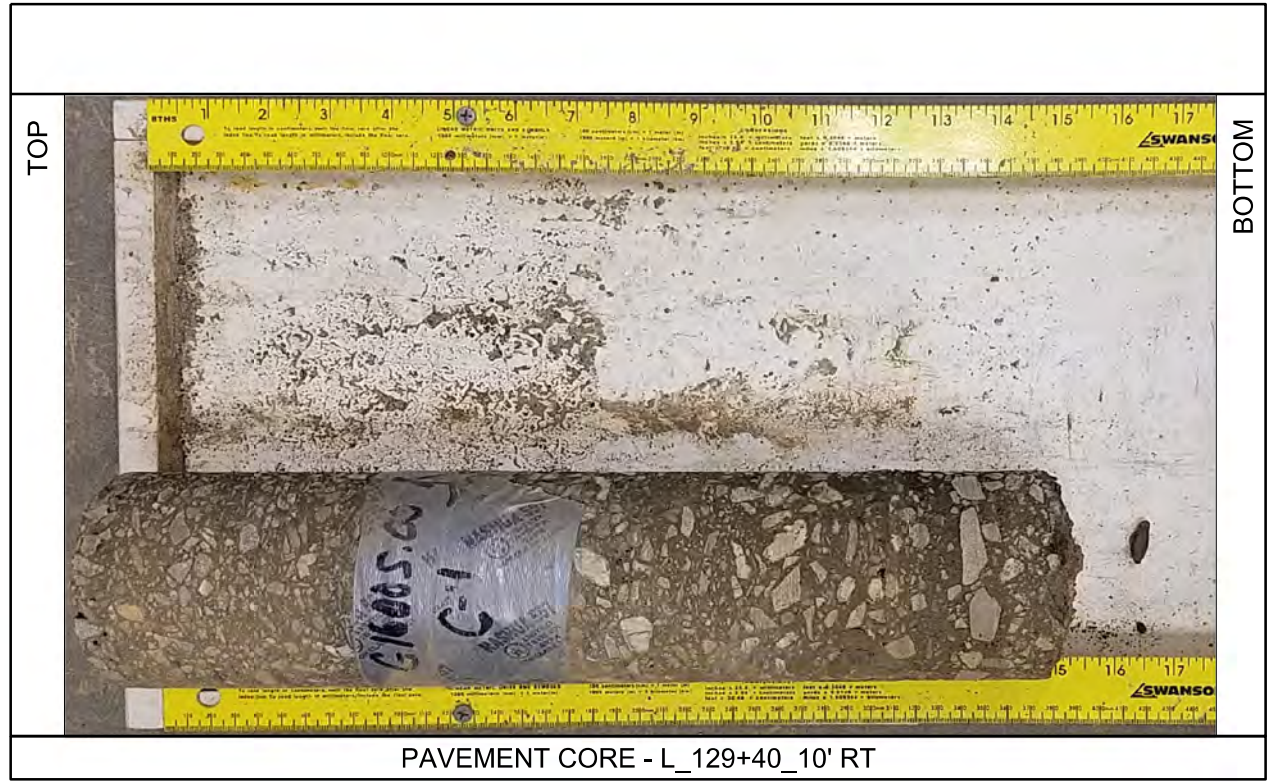
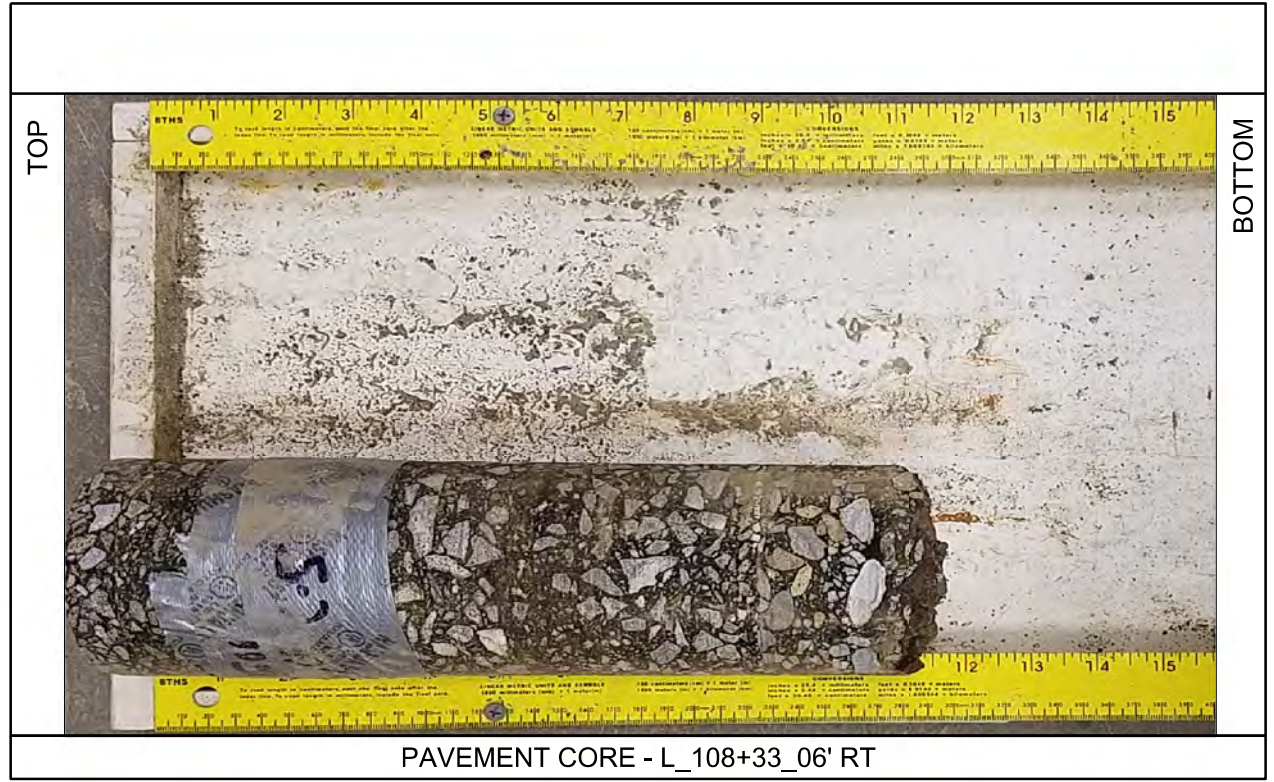
Legend: TL - Travel Lane




 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p> <p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p> <p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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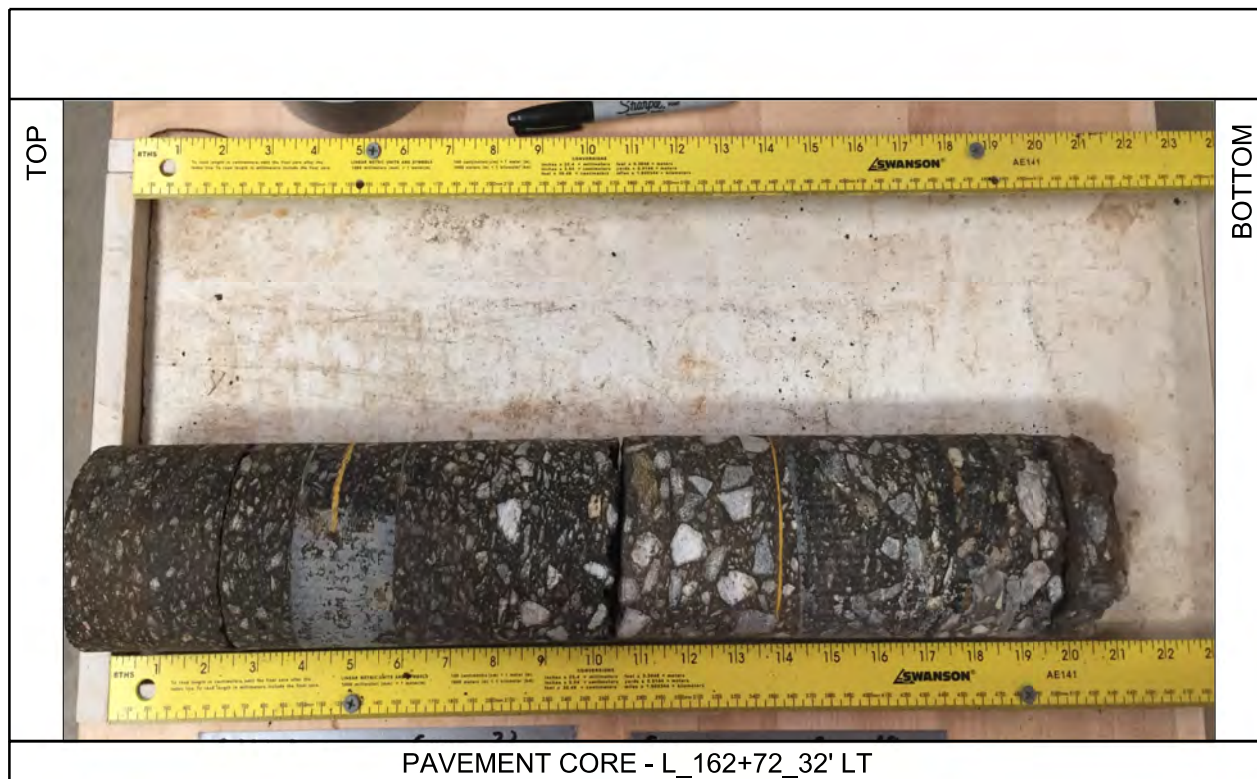
 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p> <p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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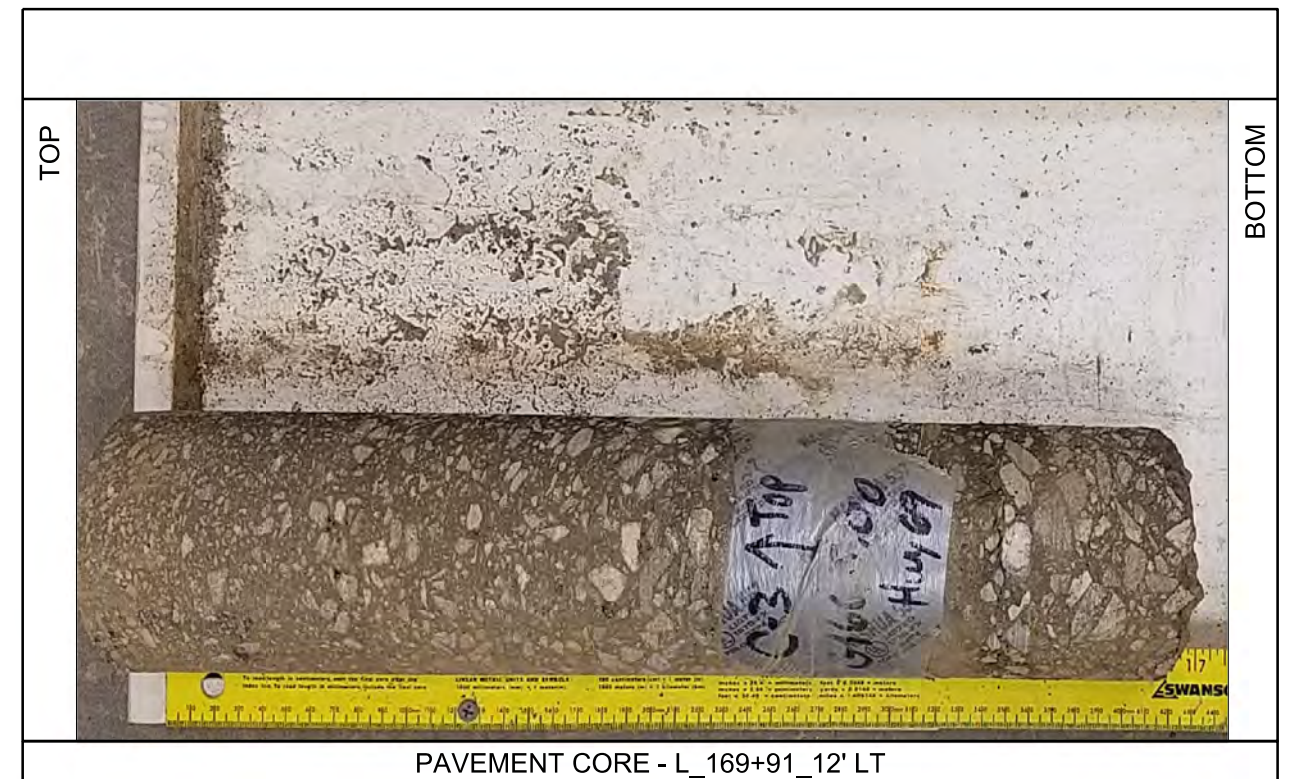
PAVEMENT CORE - L\_137+75\_16' RT



PAVEMENT CORE - L\_151+14\_10' LT



PAVEMENT CORE - L\_162+72\_32' LT



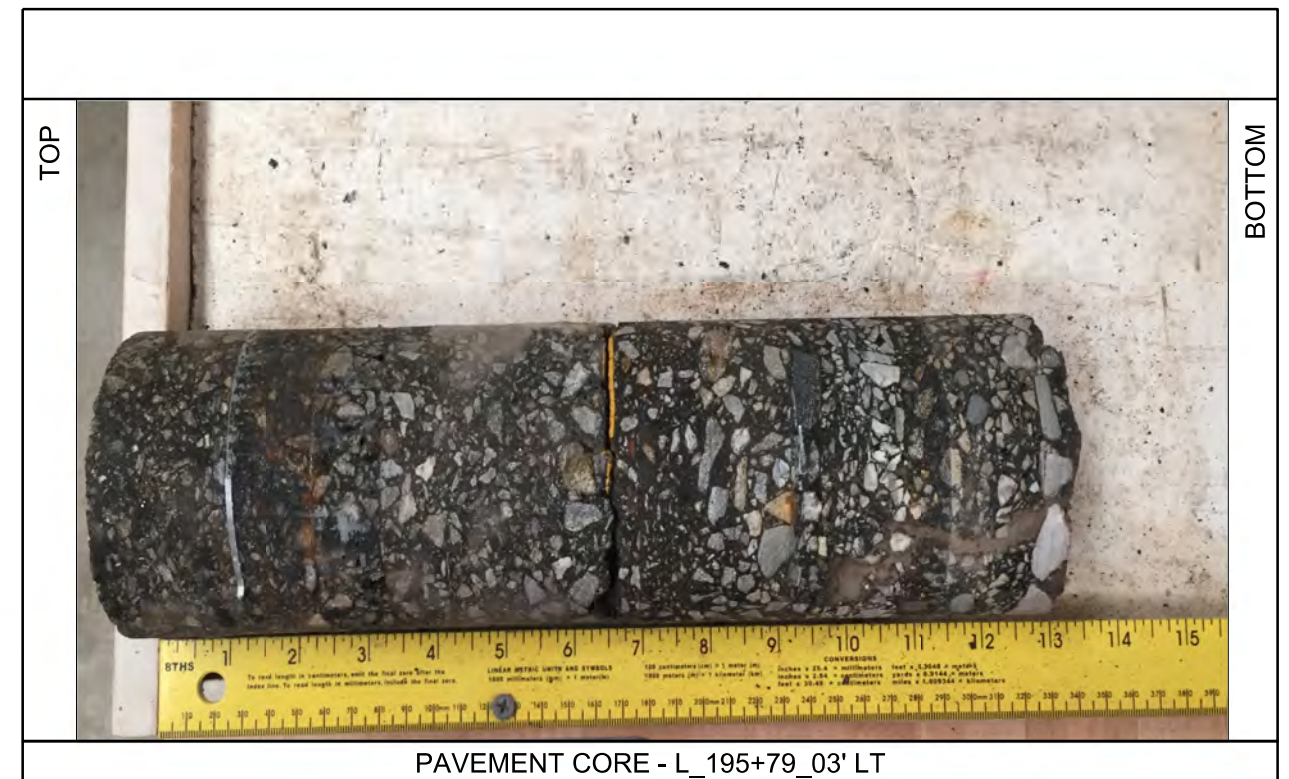
PAVEMENT CORE - L\_169+91\_12' LT




FALCON ENGINEERING, INC.  
 1210 TRINITY ROAD, SUITE 110  
 CARY, NC 27513  
 PHONE: 919.871.0800  
 FAX: 919.871.0803

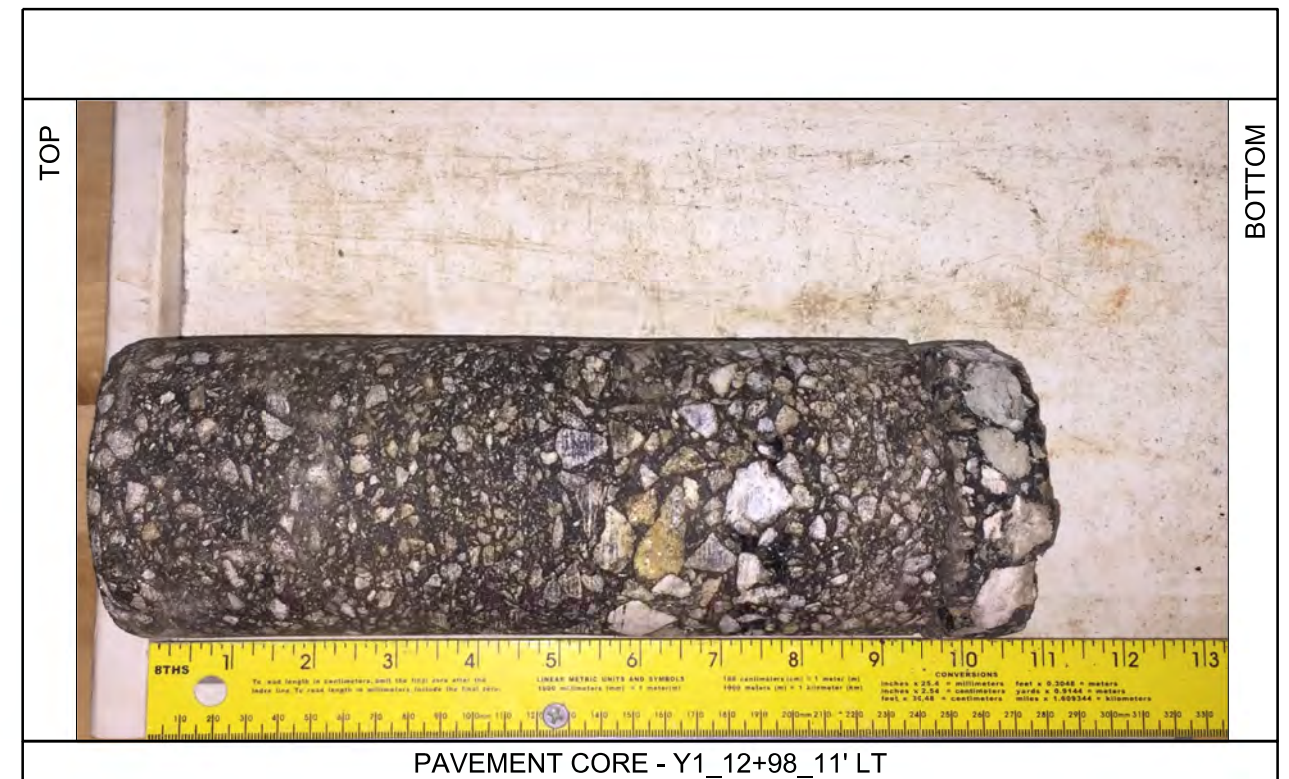
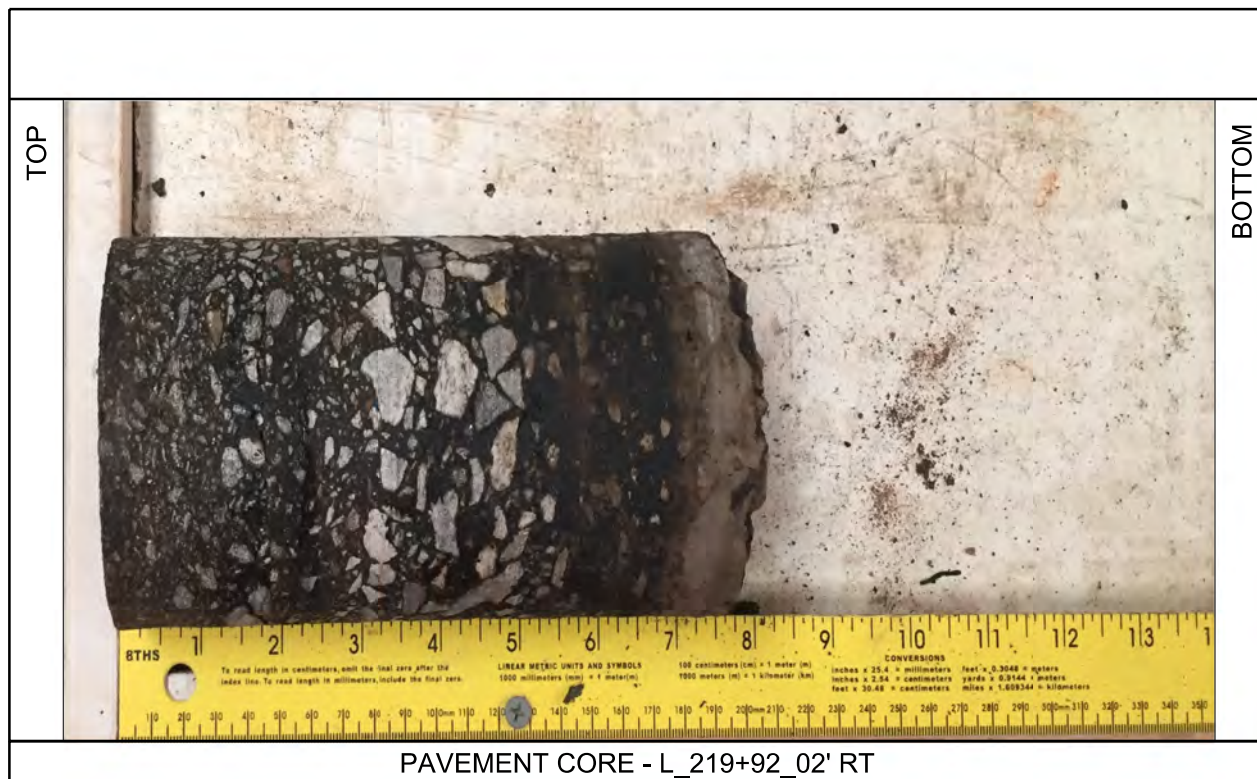
PAVEMENT CORE PHOTOGRAPHS


NC 69 FROM GEORGIA STATE LINE TO US 64  
 CLAY COUNTY, NORTH CAROLINA  
 WBS NO.: 32574.1.FD7 | TIP NO.: A0011C  
 FALCON PROJECT NO.: G16005.00

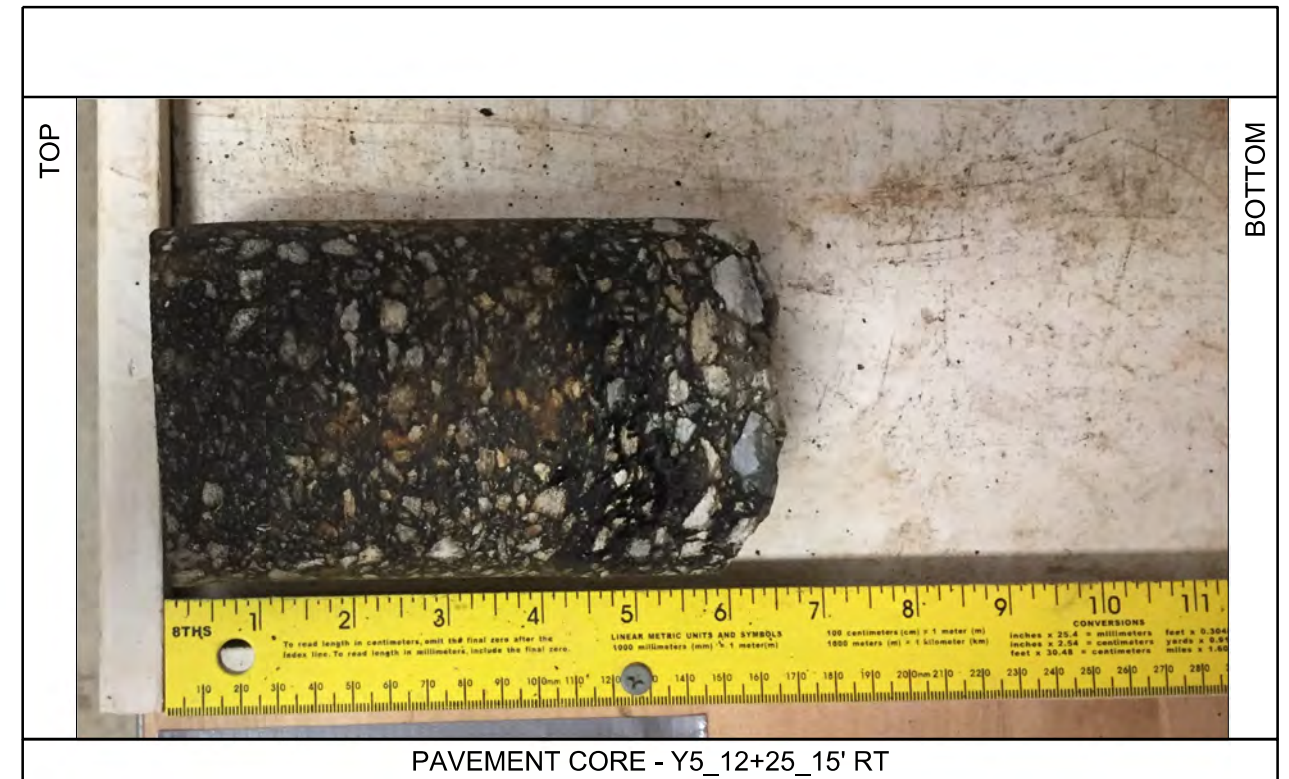
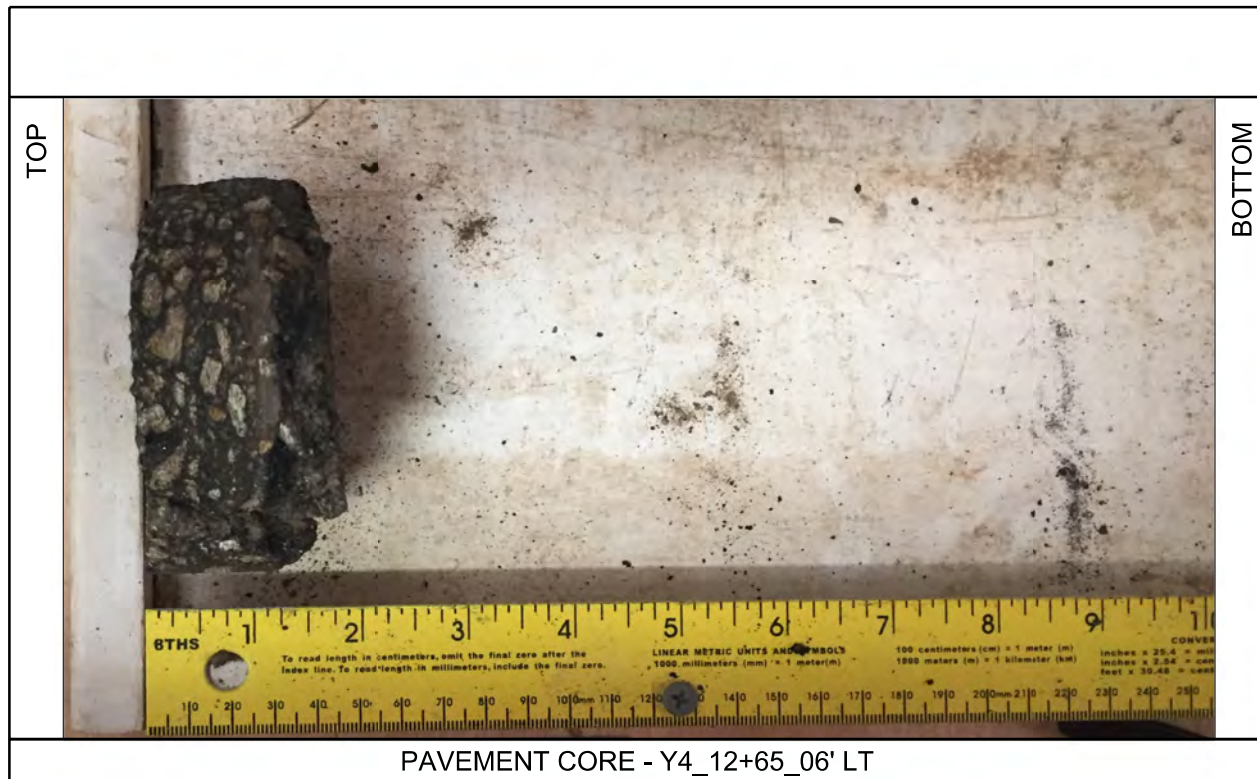



 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p> <p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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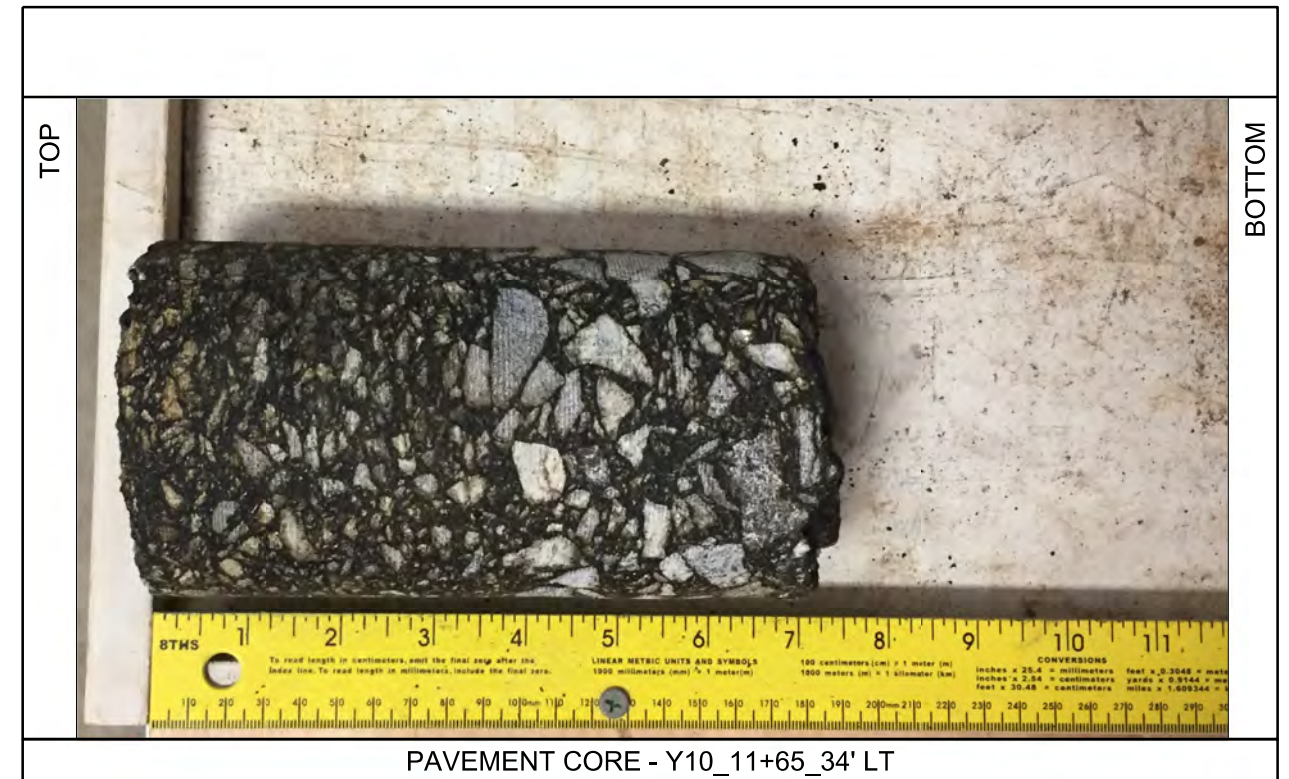
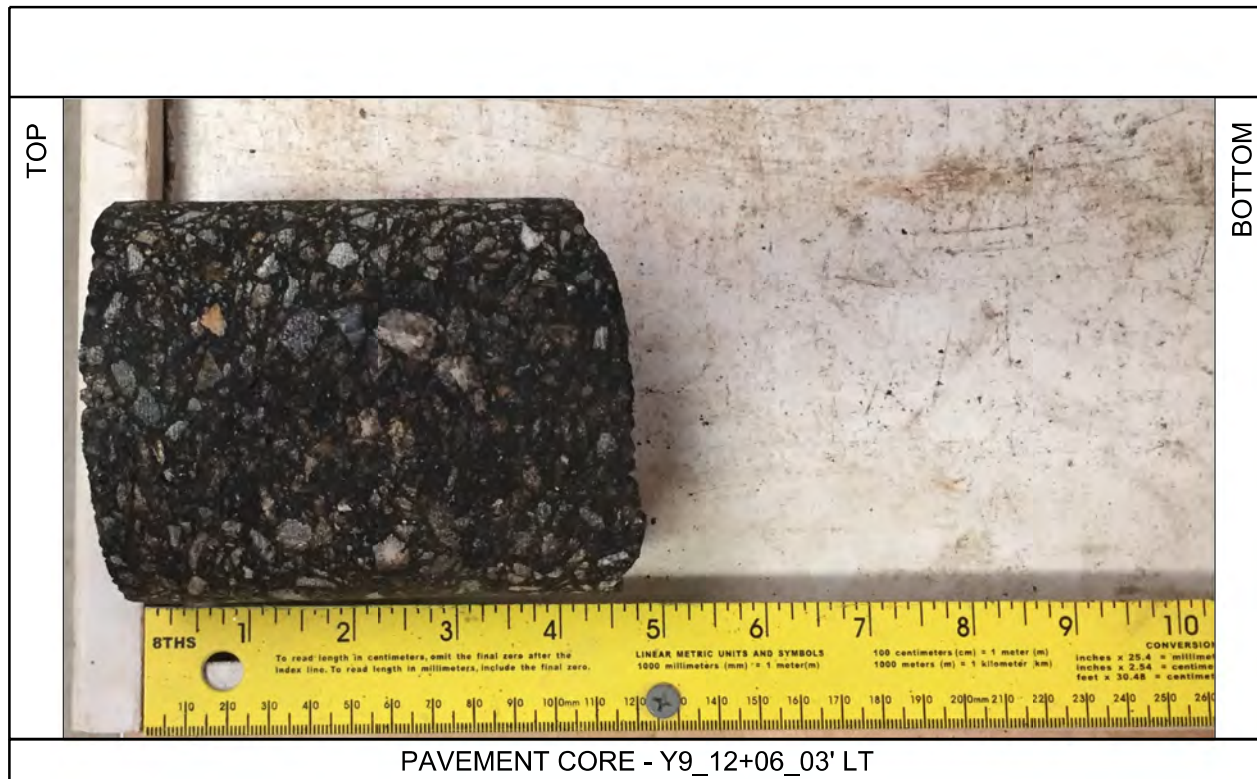





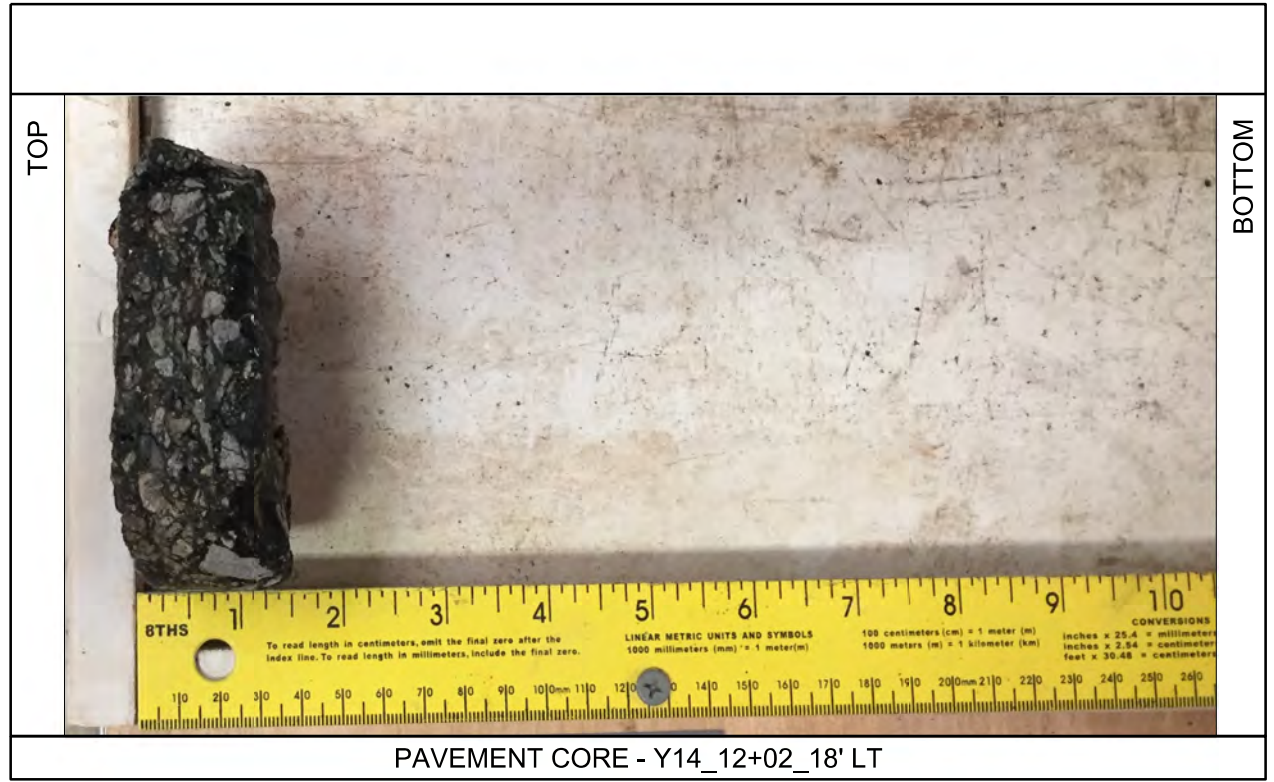
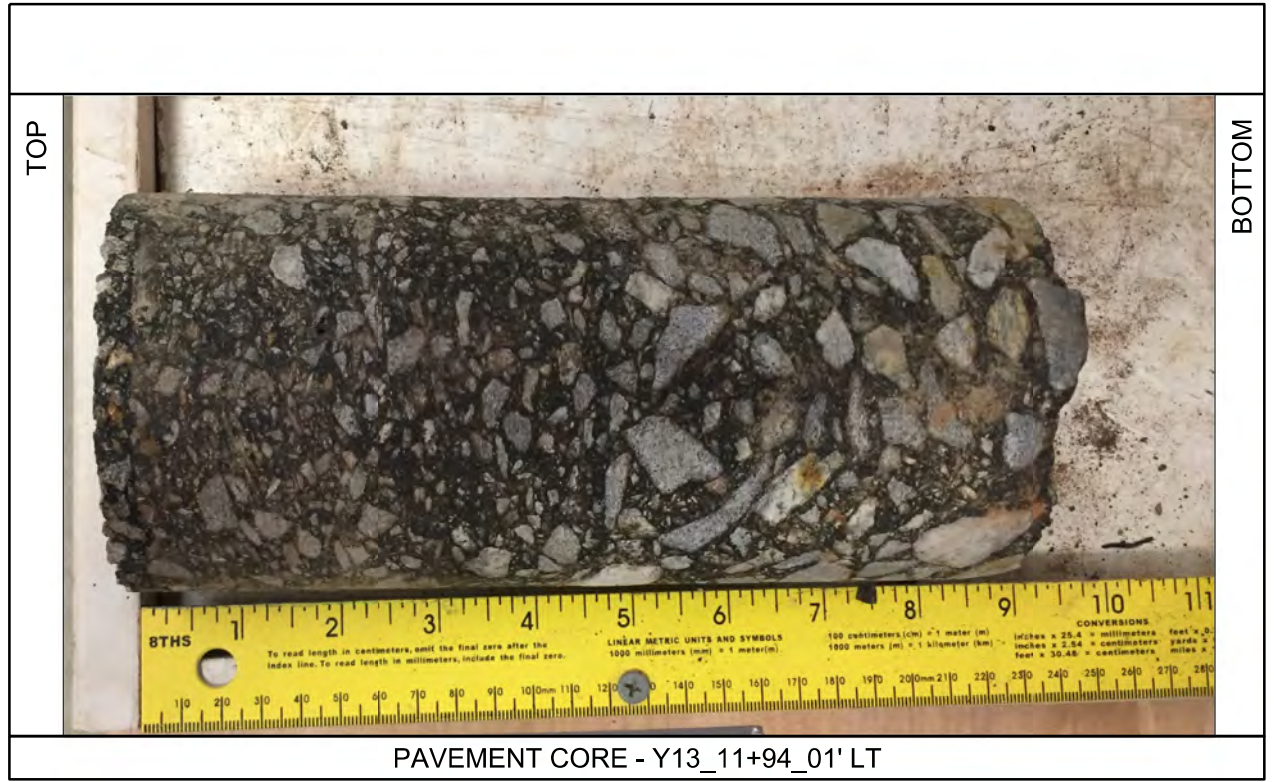
 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p>
	<p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>




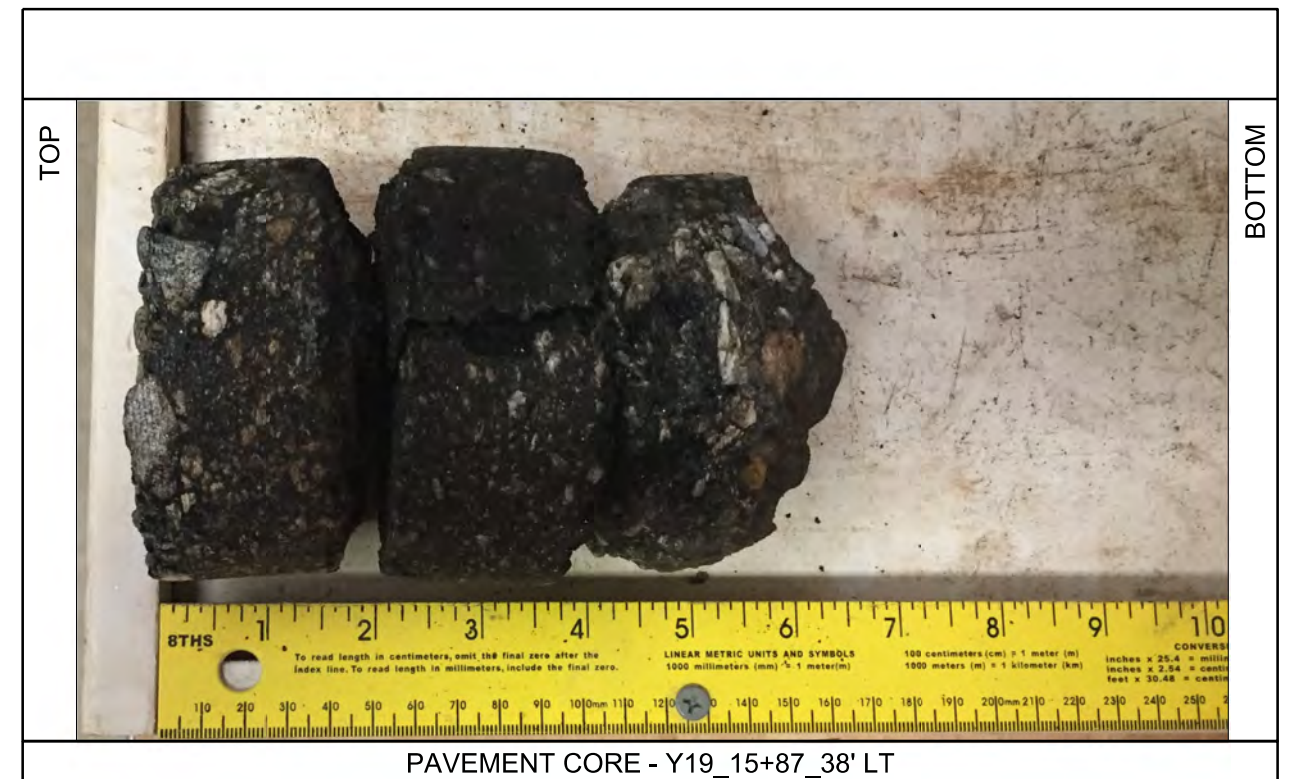
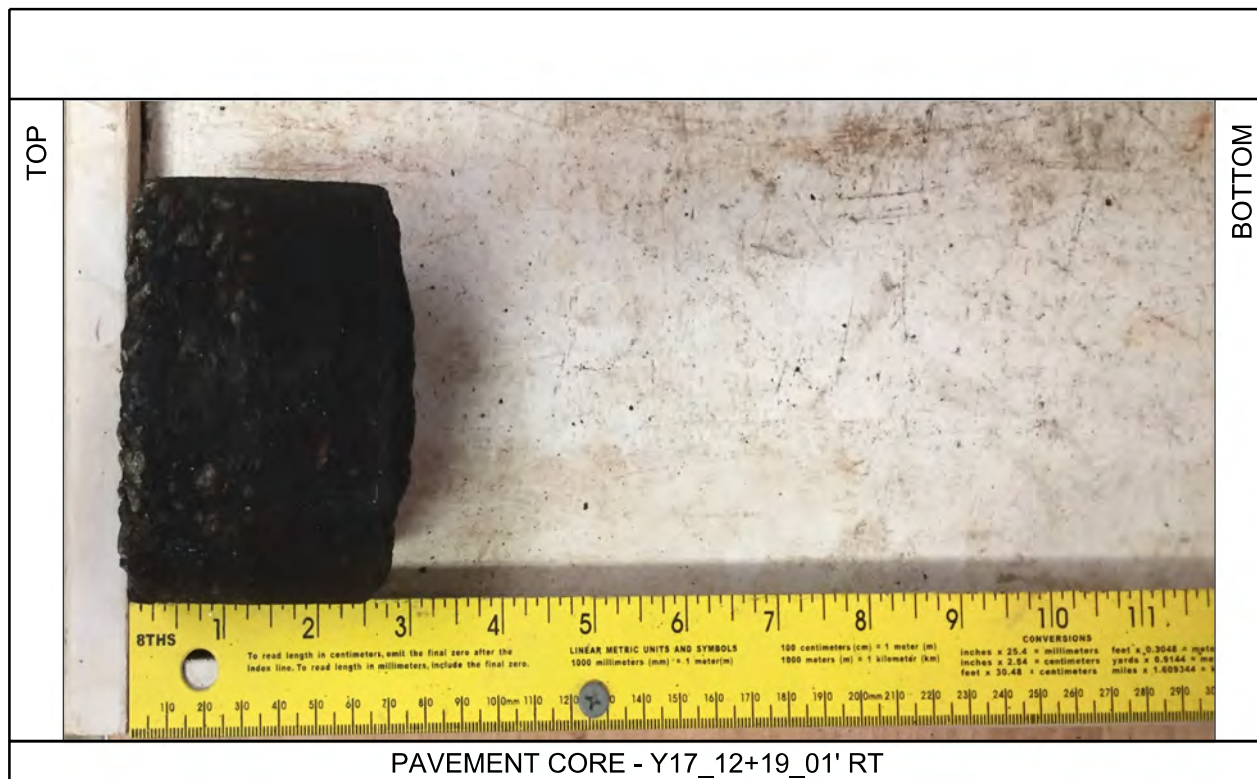
 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p>
	<p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>




 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p>
	<p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>




 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p>
	<p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>



 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<p><b>PAVEMENT CORE PHOTOGRAPHS</b></p>
	<p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>



 <p>FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 CARY, NC 27513 PHONE: 919.871.0800 FAX: 919.871.0803</p>	<b>PAVEMENT CORE PHOTOGRAPHS</b>
	<p>NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>

### DCP TEST DATA

File Name: L\_25+48\_4' RT

Project: G16005

Date: 7-Jun-18

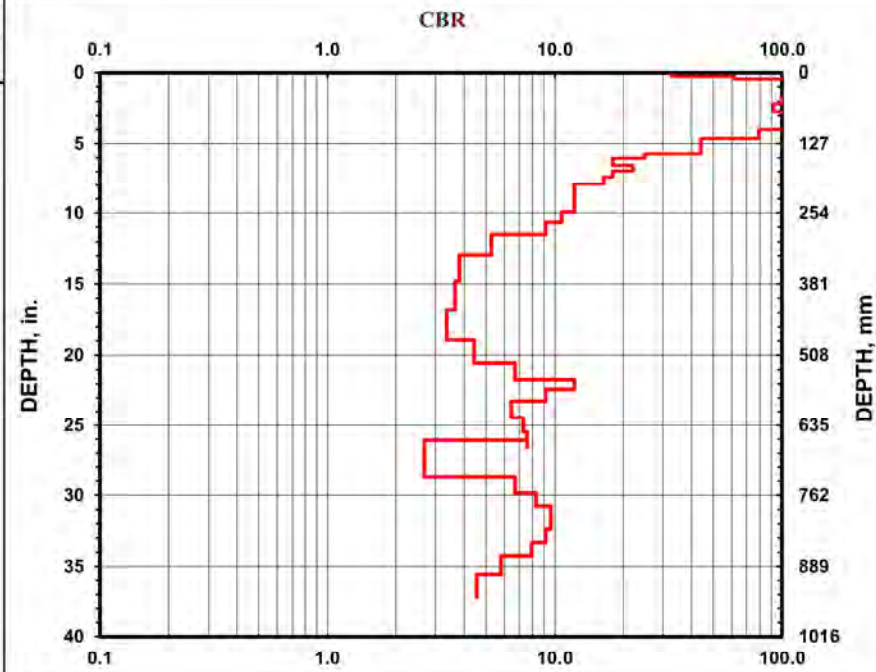
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	7	1
1	11	1
5	22	1
5	31	1
5	43	1
5	56	1
5	70	1
5	78	1
5	90	1
5	102	1
5	118	1
5	145	1
1	154	1
1	166	1
1	176	1
1	188	1
1	201	1
2	235	1
1	252	1
1	271	1
1	293	1
1	329	1
1	377	1
1	427	1
1	481	1
1	523	1
1	552	1
1	569	1
1	591	1
1	621	1
1	648	1
1	674	1
1	663	1
1	729	1
1	758	1
1	782	1
2	824	1
1	846	1
1	871	1
1	904	1
1	945	1



### DCP TEST DATA

File Name: L\_34+08\_26' RT

Project: G16005

Date: 7-Jun-18

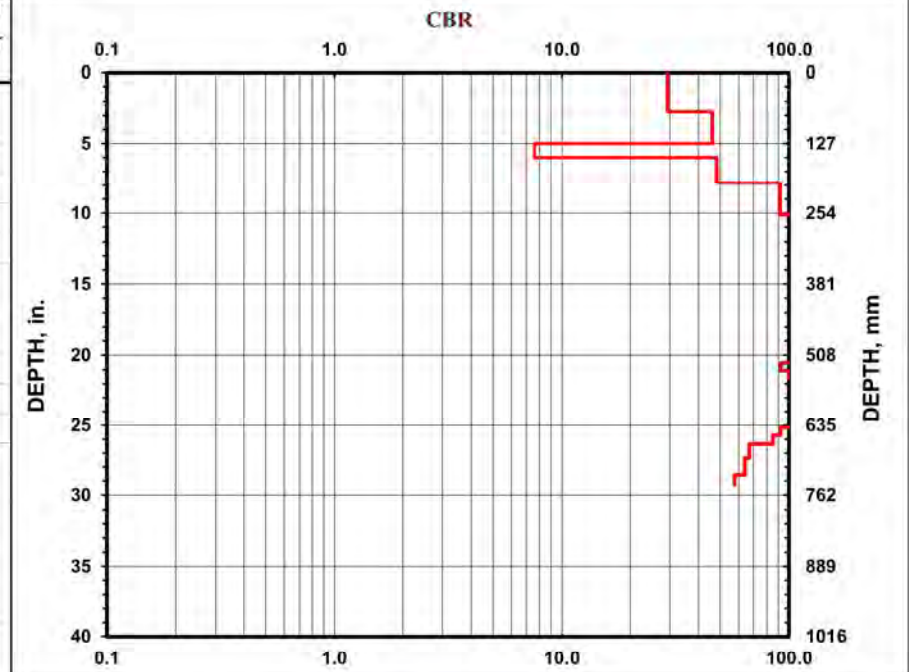
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
9	70	1
11	127	1
1	153	1
9	198	1
21	257	1
21	305	1
70	390	1
55	442	1
30	479	1
5	489	1
5	499	1
5	510	1
5	522	1
5	536	1
5	549	1
14	579	1
5	585	1
5	589	1
5	594	1
5	598	1
5	603	1
5	608	1
5	614	1
5	620	1
5	629	1
5	640	1
5	654	1
5	669	1
7	695	1
8	726	1
4	743	1



### DCP TEST DATA

File Name: L\_43+46\_14' RT

Project: G16005

Date: 7-Jun-18

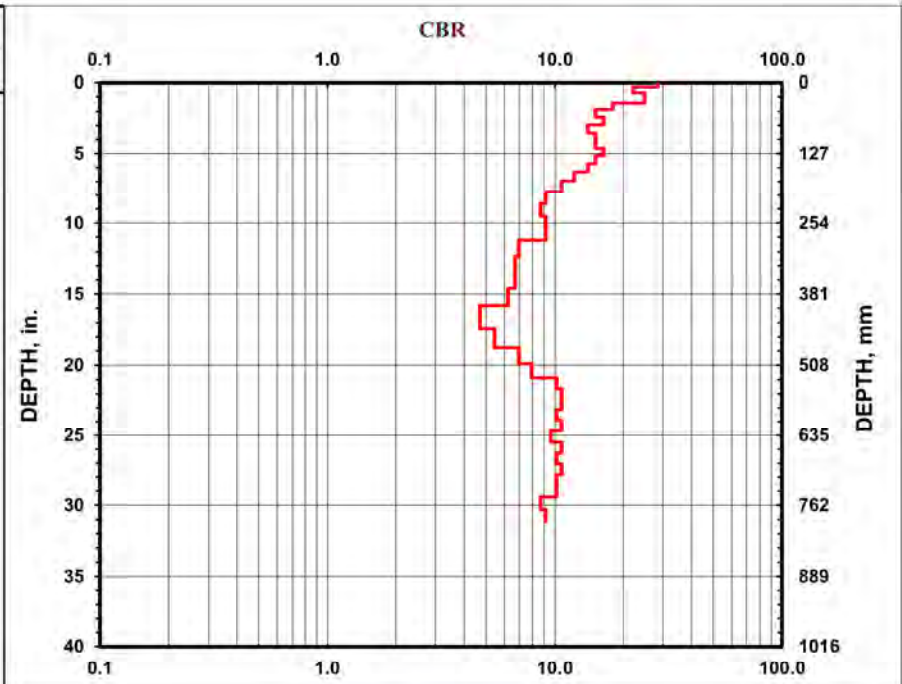
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	8	1
1	18	1
1	27	1
1	36	1
1	48	1
1	62	1
1	75	1
1	90	1
1	104	1
1	118	1
1	131	1
1	145	1
1	160	1
1	177	1
1	196	1
1	218	1
1	241	1
1	263	1
1	285	1
1	313	1
1	342	1
1	371	1
1	402	1
1	442	1
1	477	1
1	505	1
1	530	1
1	550	1
1	569	1
1	588	1
1	608	1
1	627	1
1	648	1
1	667	1
1	687	1
1	706	1
1	726	1
1	746	1
1	769	1
1	791	1



### DCP TEST DATA

File Name: L\_52+27\_16' RT

Project: G16005

Date: 7-Jun-18

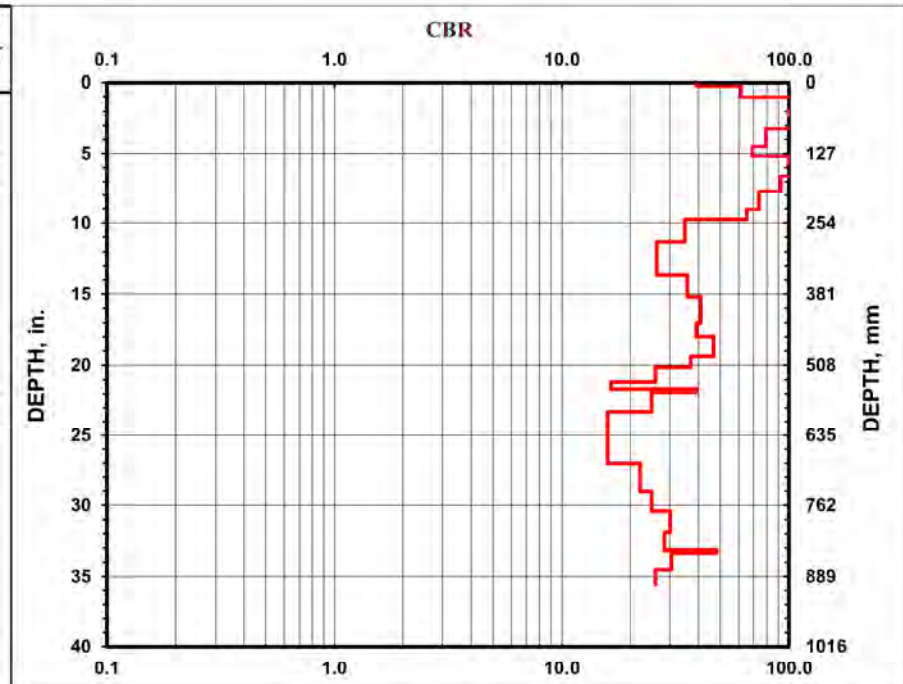
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	6	1
5	26	1
5	38	1
5	48	1
5	61	1
5	72	1
5	82	1
5	98	1
5	114	1
5	132	1
5	145	1
5	156	1
5	167	1
5	181	1
5	195	1
5	212	1
5	229	1
5	248	1
6	288	1
7	348	1
6	387	1
8	433	1
4	457	1
7	493	1
3	512	1
3	538	1
1	551	1
1	557	1
4	593	1
7	687	1
5	737	1
4	773	1
5	811	1
4	843	1
1	848	1
4	878	1
3	904	1





### DCP TEST DATA

File Name: L\_61+11\_3' LT

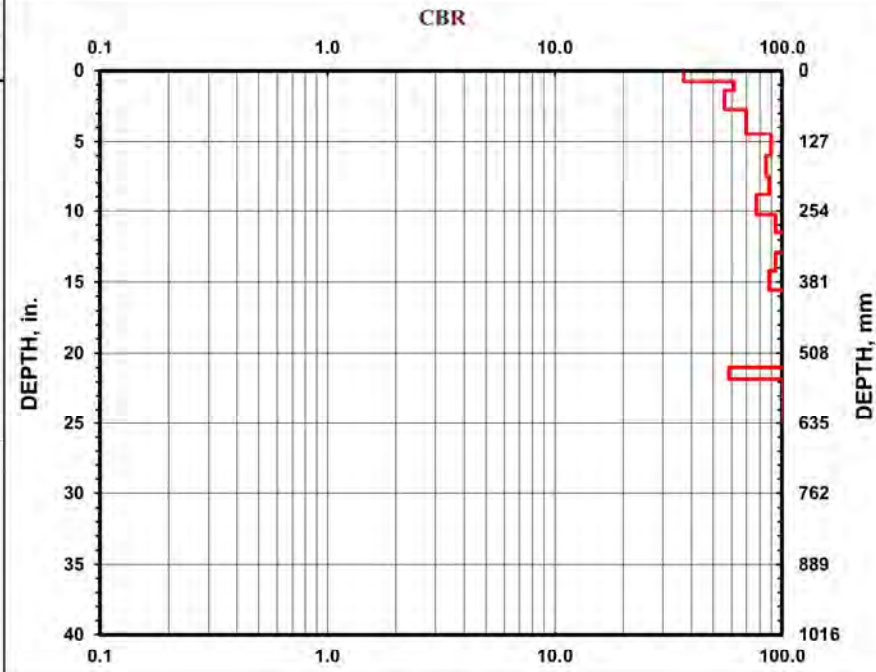
Project: G16005  
 Location: Clay County, NC

Date: 7-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
3	19	1
4	35	1
8	70	1
12	113	1
14	153	1
12	189	1
12	224	1
11	260	1
12	293	1
14	328	1
12	361	1
12	396	1
13	429	1
14	458	1
25	503	1
15	534	1
5	555	1
30	632	1



### DCP TEST DATA

File Name: L\_72+90\_19' LT

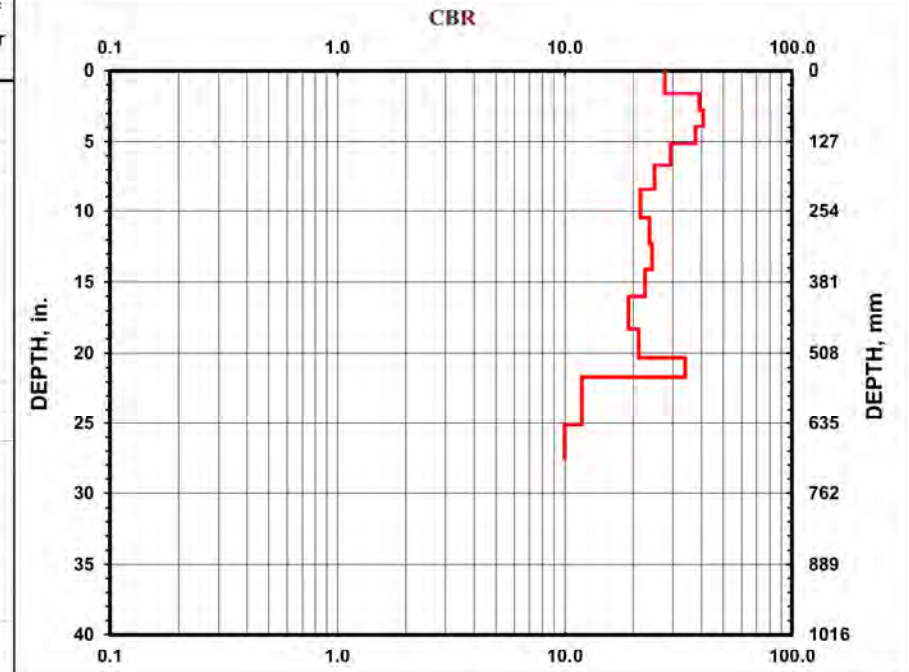
Project: G16005  
 Location: Clay County, NC

Date: 7-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
5	41	1
5	71	1
5	100	1
5	131	1
5	170	1
5	215	1
5	266	1
5	313	1
5	359	1
5	408	1
5	465	1
5	517	1
5	551	1
5	638	1
3	699	1



### DCP TEST DATA

File Name: L\_80+55\_6' RT

Project: G16005

Date: 7-Jun-18

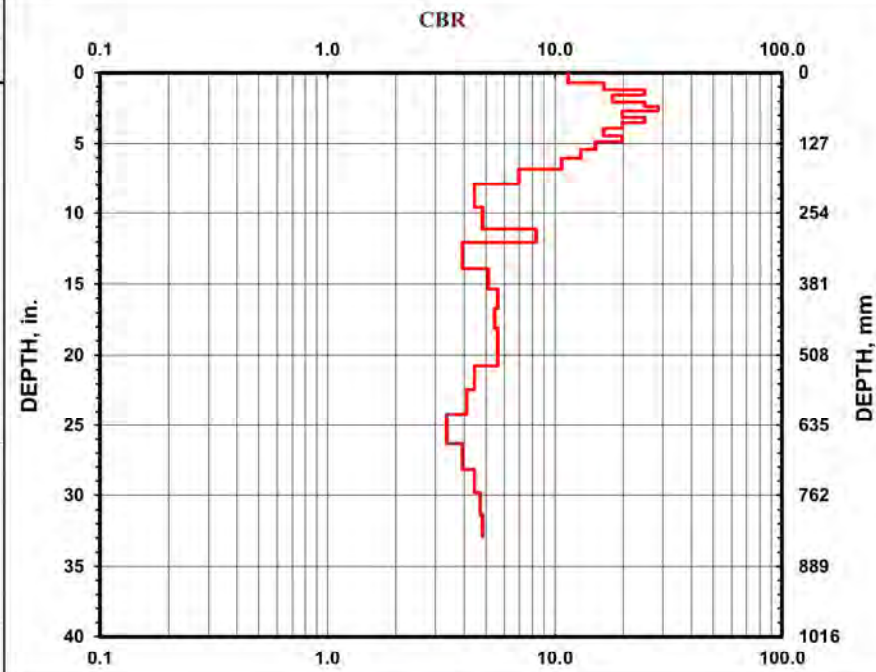
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	18	1
1	31	1
1	40	1
1	52	1
1	61	1
1	69	1
1	80	1
1	89	1
1	100	1
1	113	1
1	124	1
1	138	1
1	154	1
1	173	1
1	201	1
1	243	1
1	282	1
1	306	1
1	353	1
1	390	1
1	424	1
1	459	1
1	493	1
1	527	1
1	569	1
1	614	1
1	668	1
1	715	1
1	757	1
1	797	1
1	836	1



### DCP TEST DATA

File Name: L\_89+82\_13' RT

Project: G16005

Date: 7-Jun-18

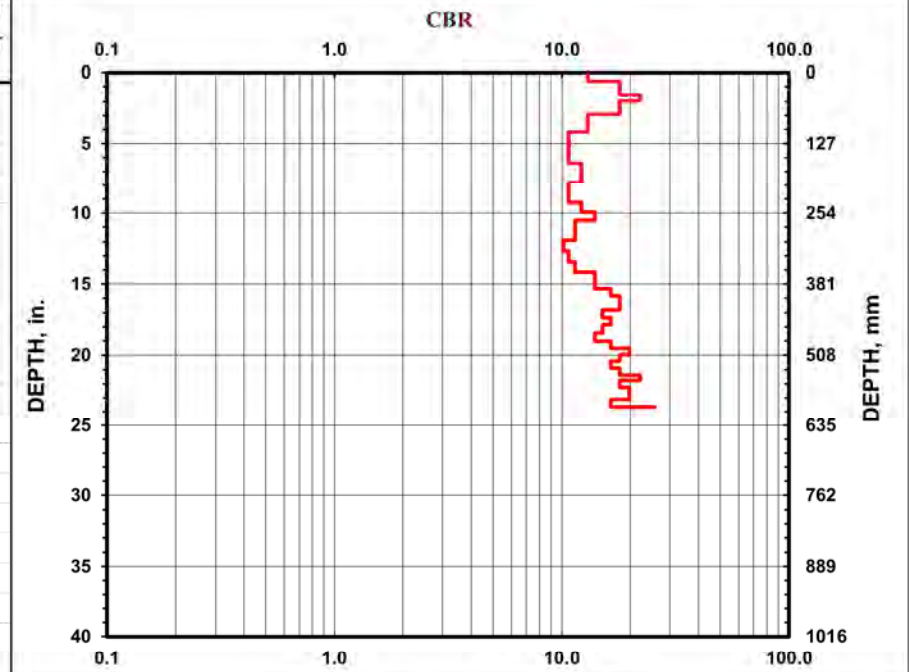
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	16	1
1	28	1
1	40	1
1	50	1
1	62	1
1	74	1
1	90	1
1	106	1
1	125	1
1	144	1
1	163	1
1	180	1
1	197	1
1	216	1
1	235	1
1	252	1
1	267	1
1	285	1
1	303	1
1	323	1
1	342	1
1	360	1
1	375	1
1	390	1
1	403	1
1	415	1
1	427	1
1	441	1
1	454	1
1	468	1
1	483	1
1	496	1
1	507	1
1	519	1
1	532	1
1	544	1
1	554	1
1	566	1
1	577	1
1	588	1
1	601	1
11	697	1



### DCP TEST DATA

File Name: L\_97+13\_23' RT

Project: G16005

Date: 8-Jun-18

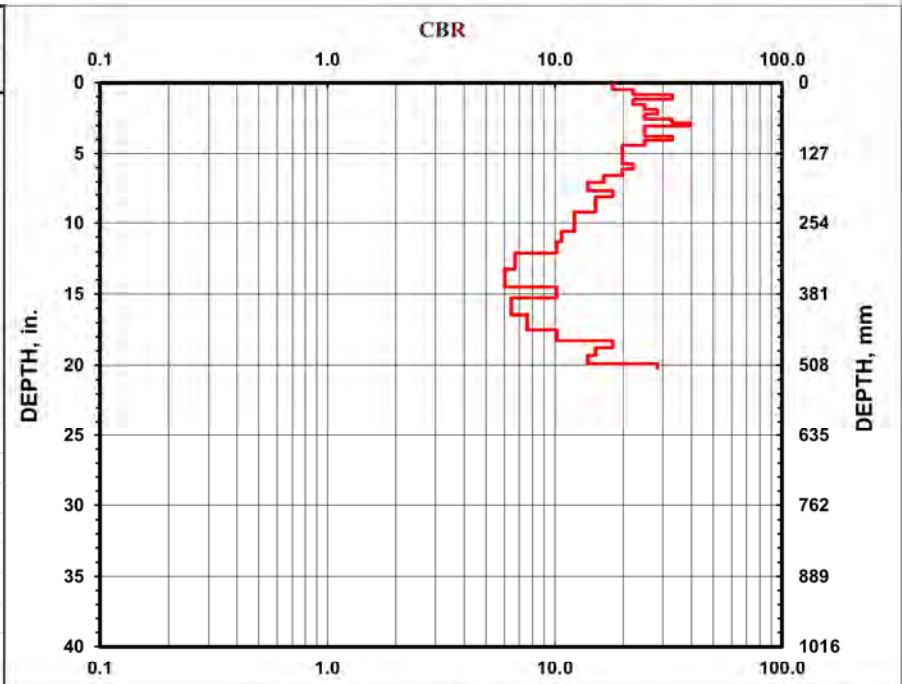
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used.

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	12	1
1	22	1
1	29	1
1	39	1
1	48	1
1	56	1
1	65	1
1	72	1
1	78	1
1	87	1
1	96	1
1	103	1
1	112	1
1	123	1
1	134	1
1	145	1
1	155	1
1	166	1
1	179	1
1	194	1
1	206	1
1	220	1
1	234	1
1	251	1
1	268	1
1	287	1
1	307	1
1	336	1
1	368	1
1	388	1
1	418	1
1	444	1
1	464	1
1	476	1
1	490	1
1	505	1
1	513	1



### DCP TEST DATA

File Name: L\_108+33\_6' RT

Project: G16005

Date: 7-Jun-18

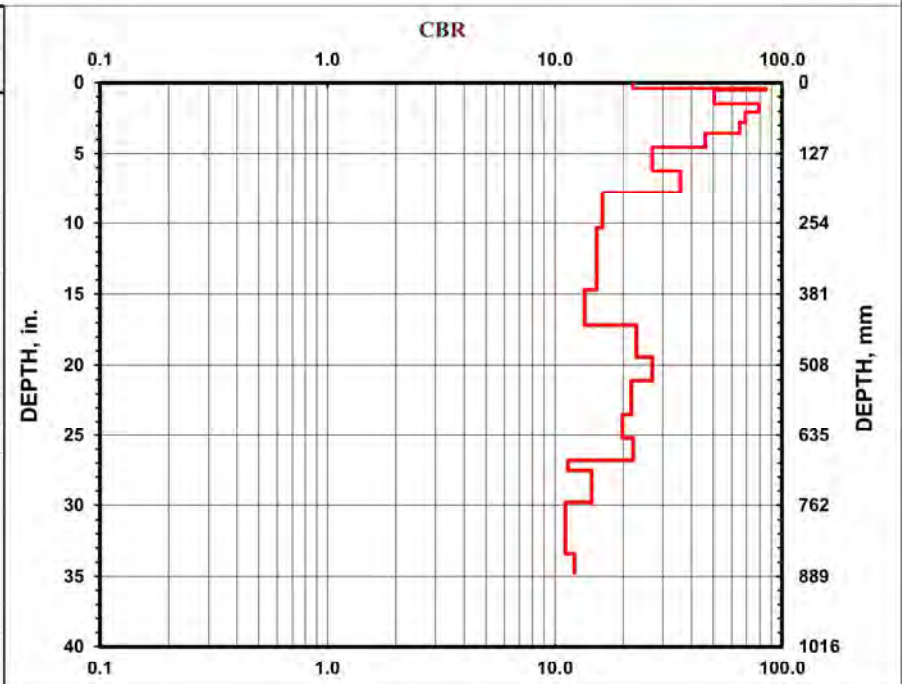
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used.

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	10	1
1	13	1
5	37	1
5	53	1
5	71	1
5	90	1
5	116	1
5	158	1
6	197	1
5	263	1
8	374	1
4	436	1
6	494	1
5	536	1
6	597	1
4	641	1
4	681	1
1	699	1
4	757	1
5	849	1
2	883	1



### DCP TEST DATA

File Name: L\_123+78\_3' RT

Project: G16005

Date: 8-Jun-18

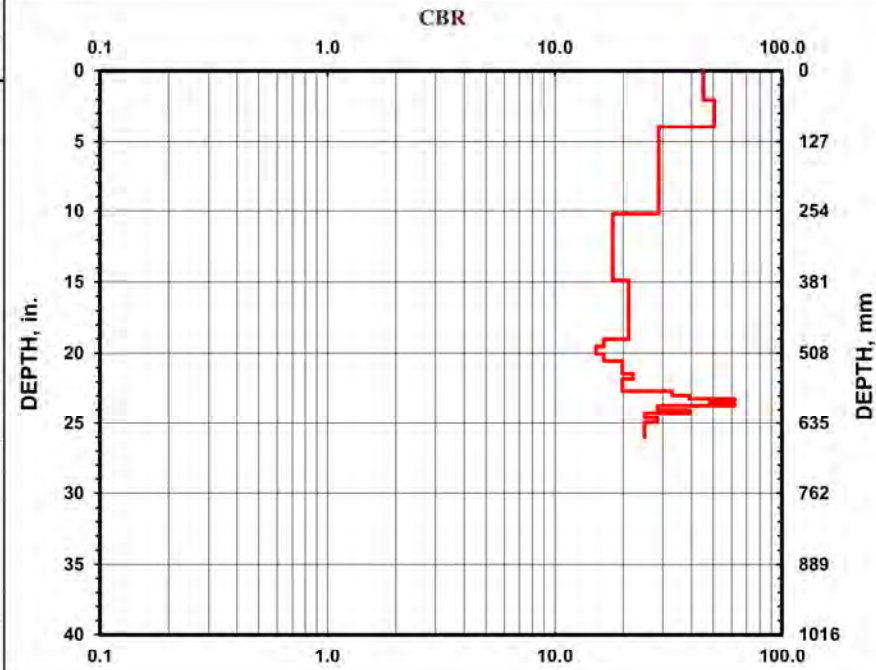
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
10	53	1
10	101	1
20	259	1
10	379	1
10	483	1
1	496	1
1	510	1
1	523	1
1	534	1
1	545	1
1	555	1
1	566	1
1	577	1
1	584	1
1	590	1
1	594	1
1	599	1
1	603	1
1	611	1
1	617	1
1	626	1
1	634	1
1	643	1
1	652	1
1	661	1



### DCP TEST DATA

File Name: L\_129+40\_10' RT

Project: G16005

Date: 13-Jul-18

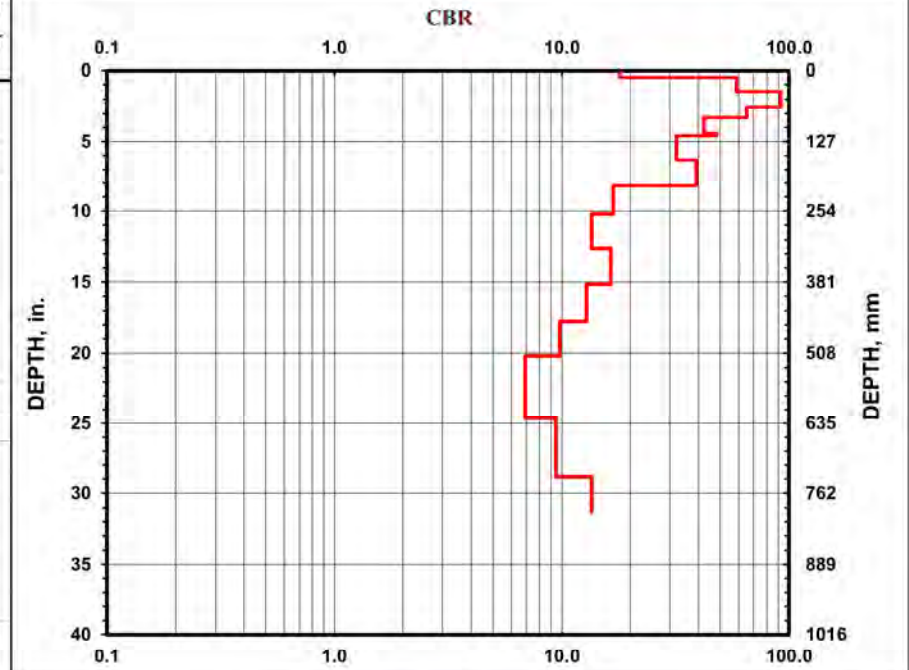
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	12	1
6	37	1
5	51	1
5	65	1
5	84	1
5	112	1
1	117	1
6	160	1
8	208	1
4	259	1
4	321	1
5	386	1
4	451	1
3	513	1
4	626	1
5	733	1
4	795	1



### DCP TEST DATA

File Name: L\_137+75\_16' RT

Project: G16005

Date: 8-Jun-18

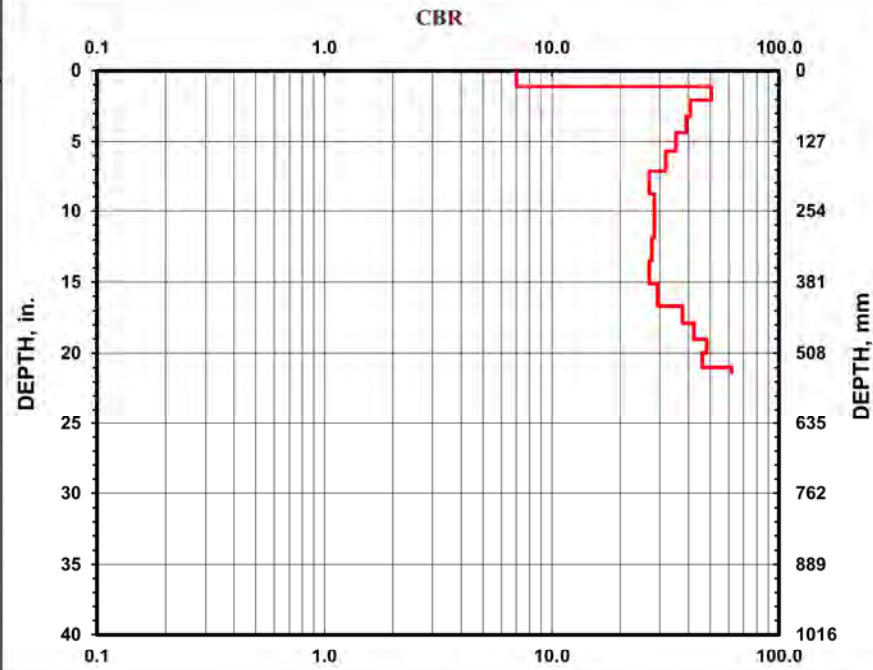
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	28	1
5	52	1
5	81	1
5	111	1
5	144	1
5	180	1
5	222	1
5	262	1
5	302	1
5	343	1
5	385	1
5	424	1
5	455	1
5	483	1
5	508	1
5	534	1
2	542	1



### DCP TEST DATA

File Name: L\_151+14\_10' LT

Project: G16005

Date: 8-Jun-18

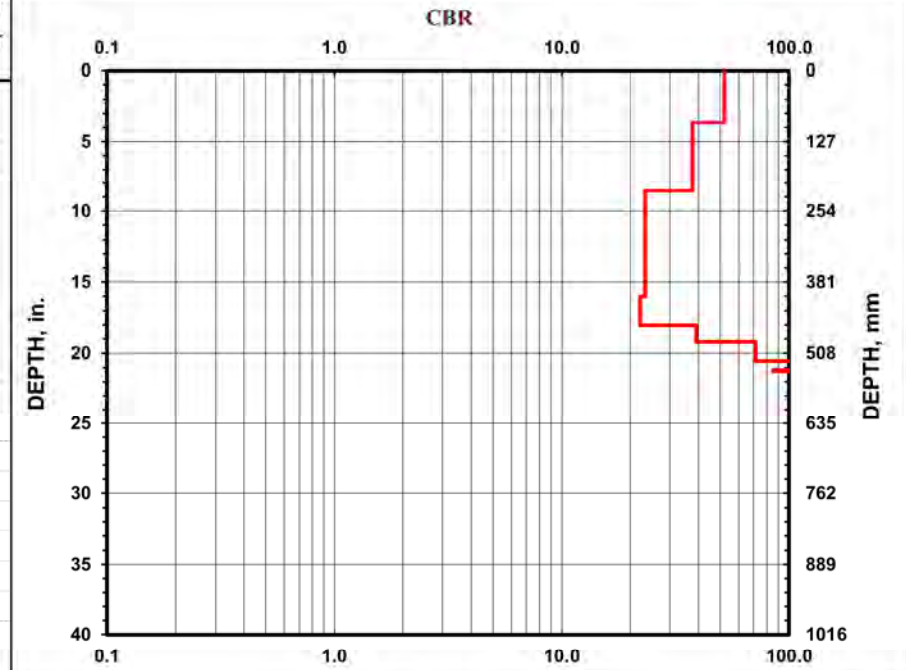
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
20	93	1
20	217	1
20	408	1
5	458	1
5	488	1
10	523	1
6	538	1
1	541	1
5	553	1
5	560	1
5	563	1
5	565	1
5	568	1



### DCP TEST DATA

File Name: L\_162+72\_32' LT

Project: G16005

Date: 19-Jun-18

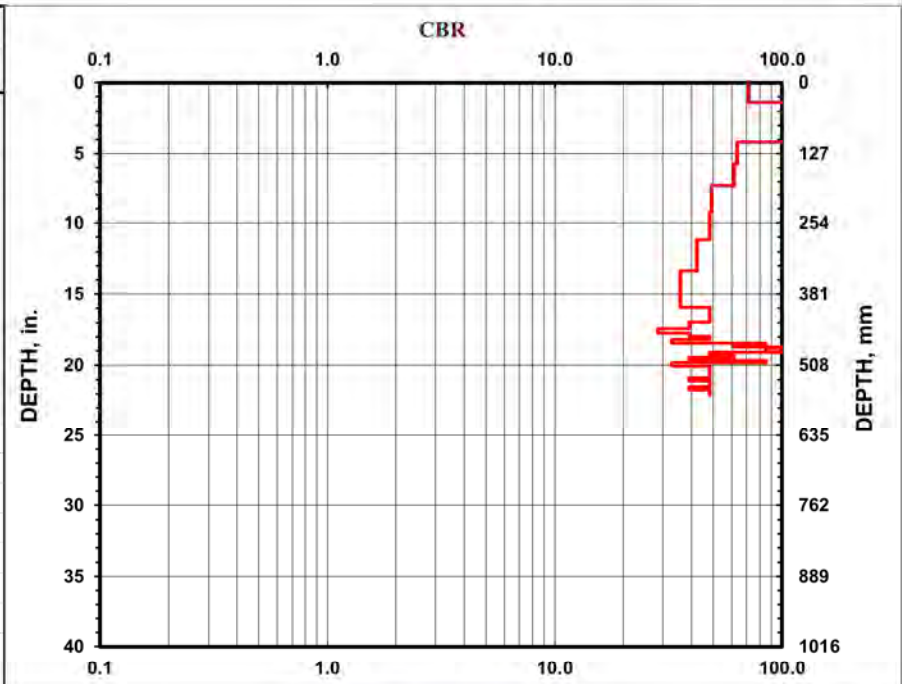
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
10	35	1
11	57	1
20	106	1
10	145	1
10	185	1
10	234	1
10	284	1
10	340	1
10	405	1
5	430	1
1	436	1
1	442	1
1	450	1
1	456	1
1	461	1
1	468	1
1	471	1
1	475	1
1	477	1
1	480	1
1	483	1
1	485	1
1	490	1
1	494	1
1	500	1
1	503	1
1	510	1
1	515	1
1	520	1
1	525	1
1	530	1
1	536	1
1	541	1
1	546	1
1	552	1
1	557	1
1	562	1



### DCP TEST DATA

File Name: L\_169+91\_12' LT

Project: G16005

Date: 13-Jul-18

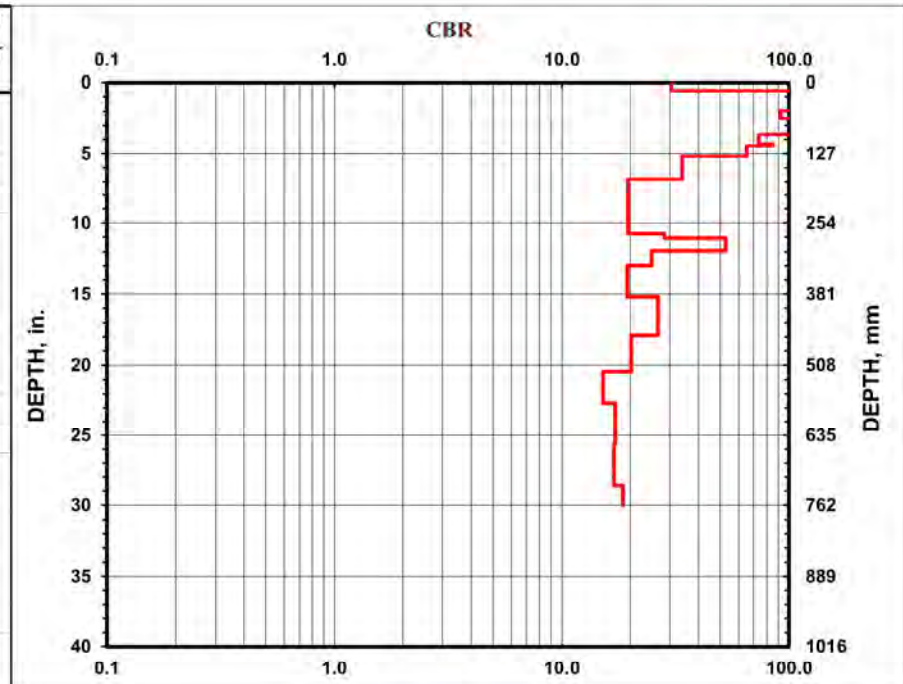
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
2	15	1
5	25	1
5	34	1
5	42	1
5	50	1
5	64	1
5	74	1
5	83	1
5	93	1
5	110	1
1	113	1
5	132	1
6	173	1
9	273	1
1	281	1
5	304	1
3	331	1
5	387	1
8	455	1
6	520	1
4	576	1
6	651	1
6	727	1
3	762	1



### DCP TEST DATA

File Name: L\_177+97\_3' LT

Project: G16005

Date: 8-Jun-18

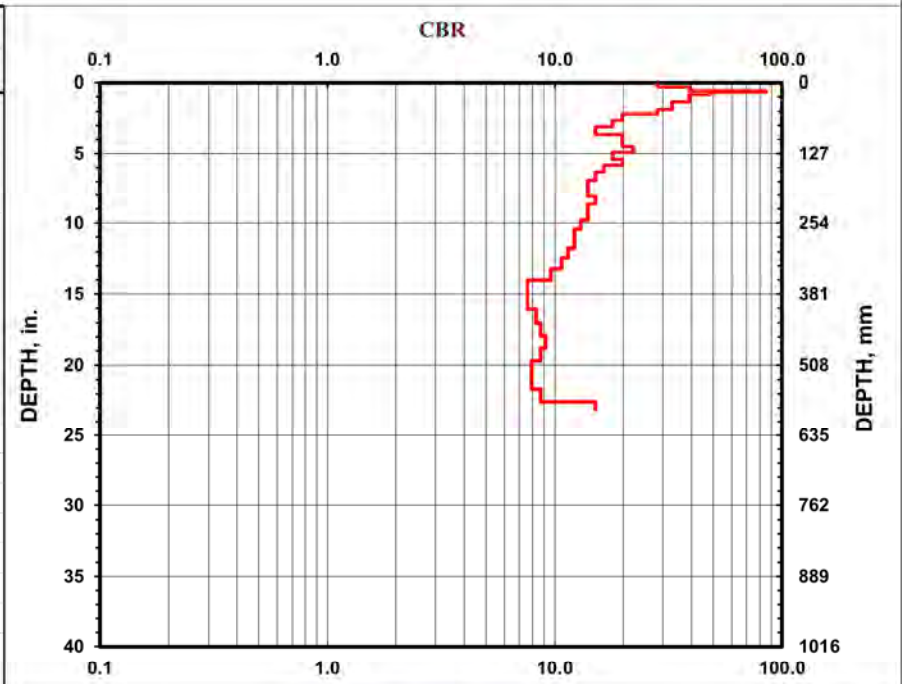
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	8	1
1	14	1
1	17	1
1	22	1
1	28	1
1	34	1
1	41	1
1	48	1
1	56	1
1	67	1
1	79	1
1	93	1
1	104	1
1	115	1
1	125	1
1	137	1
1	148	1
1	161	1
1	175	1
1	190	1
1	205	1
1	219	1
1	234	1
1	249	1
1	265	1
1	282	1
1	299	1
1	317	1
1	336	1
1	357	1
1	383	1
1	409	1
1	433	1
1	456	1
1	478	1
1	501	1
1	526	1
1	551	1
1	574	1
1	588	1



### DCP TEST DATA

File Name: L\_187+81\_20' LT

Project: G16005

Date: 14-Jul-18

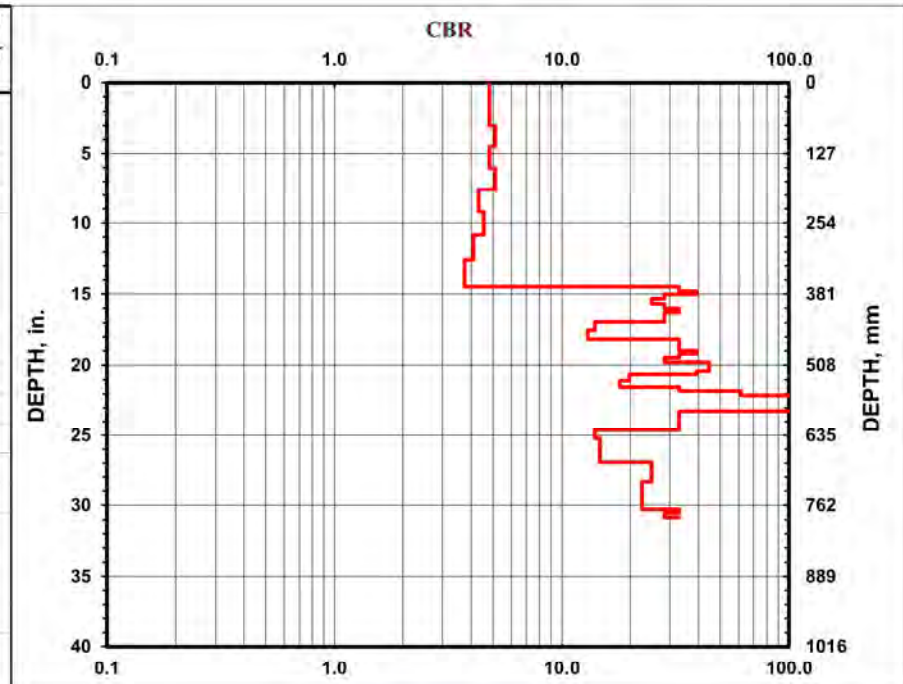
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	39	1
1	78	1
1	115	1
1	154	1
1	191	1
1	234	1
1	275	1
1	320	1
1	369	1
1	376	1
1	382	1
1	390	1
1	399	1
1	407	1
1	414	1
1	422	1
1	430	1
1	445	1
1	461	1
1	468	1
1	475	1
1	482	1
1	488	1
1	495	1
1	503	1
3	519	1
1	525	1
1	536	1
1	548	1
1	555	1
1	559	1
1	563	1
5	575	1
10	591	1
5	626	1
1	641	1
3	684	1
4	720	1
5	769	1
1	776	1
1	784	1
1	791	1



### DCP TEST DATA

File Name: L\_191+06\_23' RT

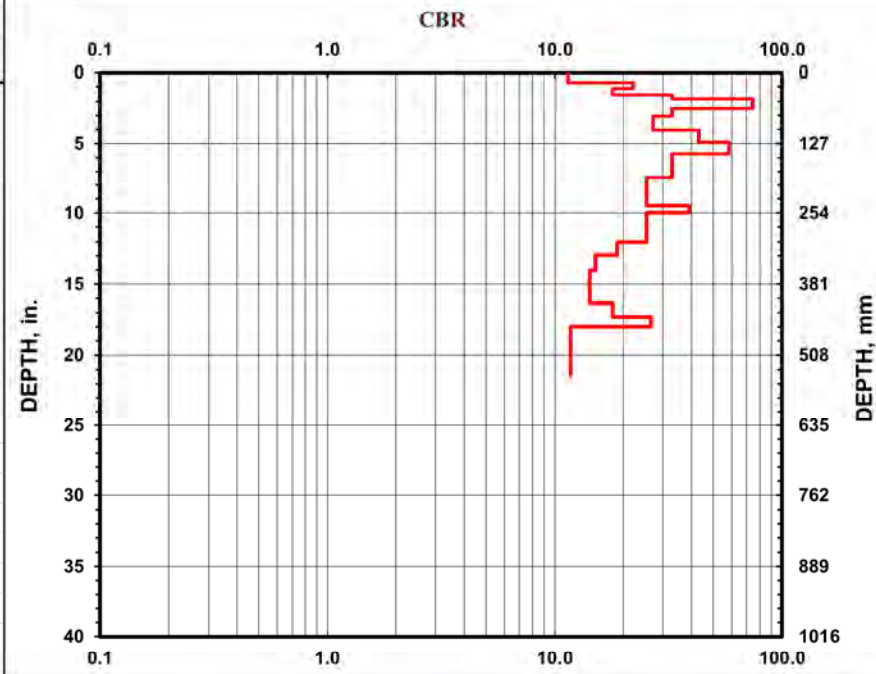
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	18	1
1	28	1
1	40	1
1	47	1
5	64	1
2	78	1
3	103	1
4	125	1
5	146	1
6	188	1
6	241	1
2	253	1
6	306	1
2	329	1
2	357	1
4	416	1
2	440	1
2	457	1
5	545	1



### DCP TEST DATA

File Name: L\_195+79\_3' LT

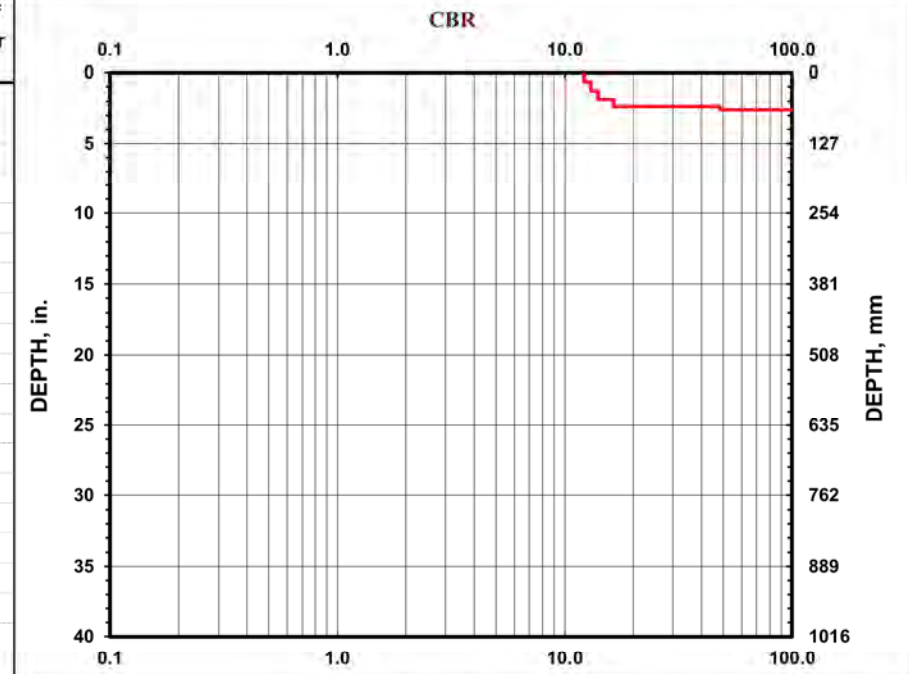
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	17	1
1	33	1
1	48	1
1	61	1
1	66	1
1	67	1
15	78	1
15	89	1
15	104	1
15	116	1
15	126	1
15	136	1
15	148	1
15	156	1
15	159	1
15	167	1
15	172	1
15	176	1
15	181	1
15	185	1
20	189	1
15	193	1
25	198	1
30	203	1
30	207	1
30	212	1
30	218	1
40	224	1
30	228	1
10	229	1
Refusal		





### DCP TEST DATA

File Name: L\_205+92

Project: G16005

Date: 14-Sep-17

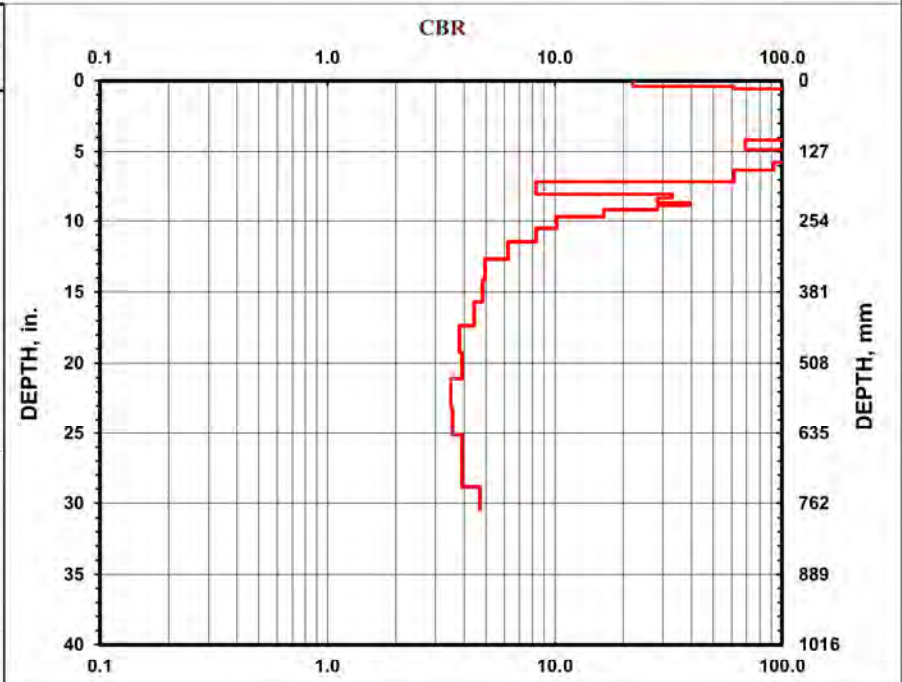
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	10	1
1	14	1
10	16	1
10	25	1
10	36	1
10	44	1
10	50	1
10	60	1
10	69	1
10	80	1
10	94	1
10	106	1
5	124	1
5	136	1
5	147	1
5	161	1
5	181	1
1	205	1
1	212	1
1	220	1
1	226	1
1	234	1
1	247	1
1	267	1
1	291	1
1	322	1
1	360	1
1	399	1
1	441	1
1	489	1
1	536	1
1	588	1
1	639	1
1	686	1
1	733	1
1	773	1



### DCP TEST DATA

File Name: L\_212+45\_7' LT

Project: G16005

Date: 8-Jun-18

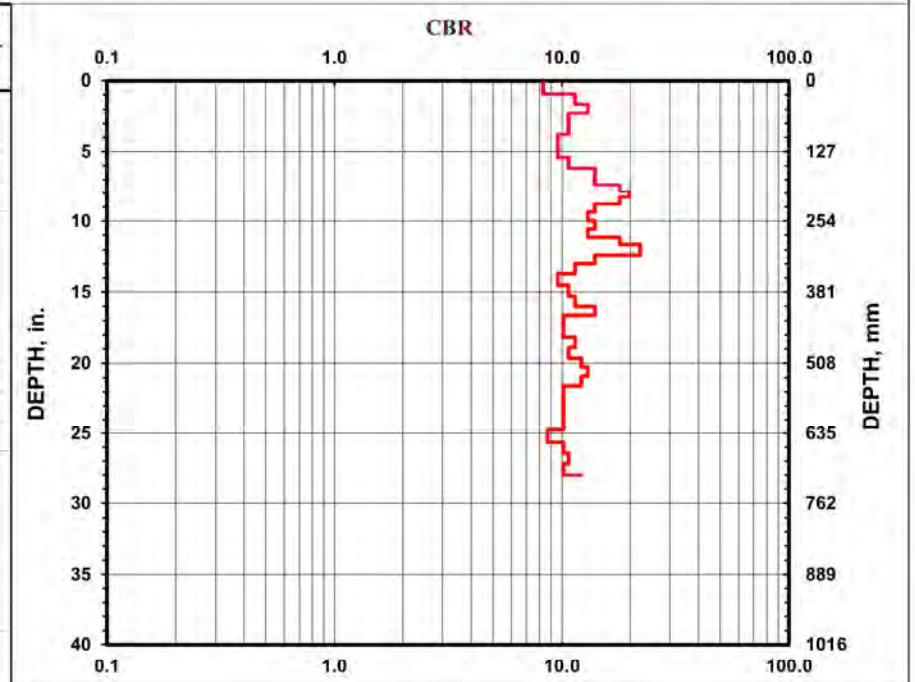
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	24	1
1	42	1
1	58	1
1	77	1
1	96	1
1	117	1
1	138	1
1	157	1
1	172	1
1	187	1
1	199	1
1	210	1
1	222	1
1	237	1
1	253	1
1	268	1
1	284	1
1	296	1
1	306	1
1	316	1
1	331	1
1	349	1
1	370	1
1	389	1
1	407	1
1	422	1
1	442	1
1	462	1
1	480	1
1	499	1
1	516	1
1	532	1
1	549	1
1	569	1
1	589	1
1	609	1
1	629	1
1	652	1
1	672	1
1	691	1
1	711	1
1	728	1



### DCP TEST DATA

File Name: L\_219+92\_2' RT

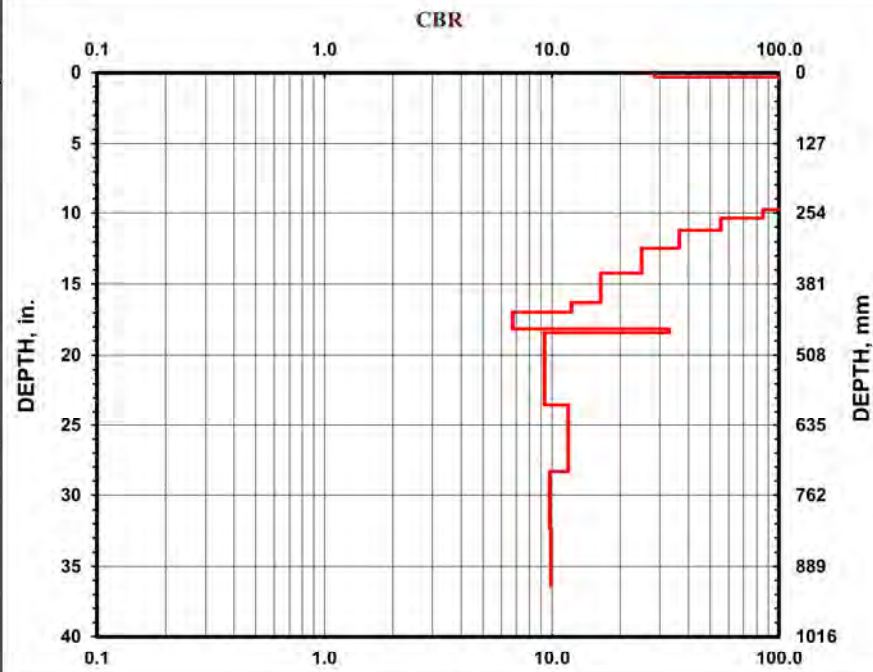
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	8	1
7	23	1
10	35	1
10	44	1
10	52	1
10	61	1
10	68	1
10	77	1
10	86	1
10	91	1
10	97	1
10	103	1
10	110	1
10	116	1
10	123	1
10	132	1
10	143	1
10	153	1
10	168	1
10	187	1
10	203	1
10	217	1
10	231	1
10	248	1
5	263	1
5	285	1
5	317	1
5	362	1
4	414	1
1	431	1
1	460	1
1	467	1
6	597	1
7	719	1
5	822	1
5	924	1



### DCP TEST DATA

File Name: Y1\_12+98\_11' LT

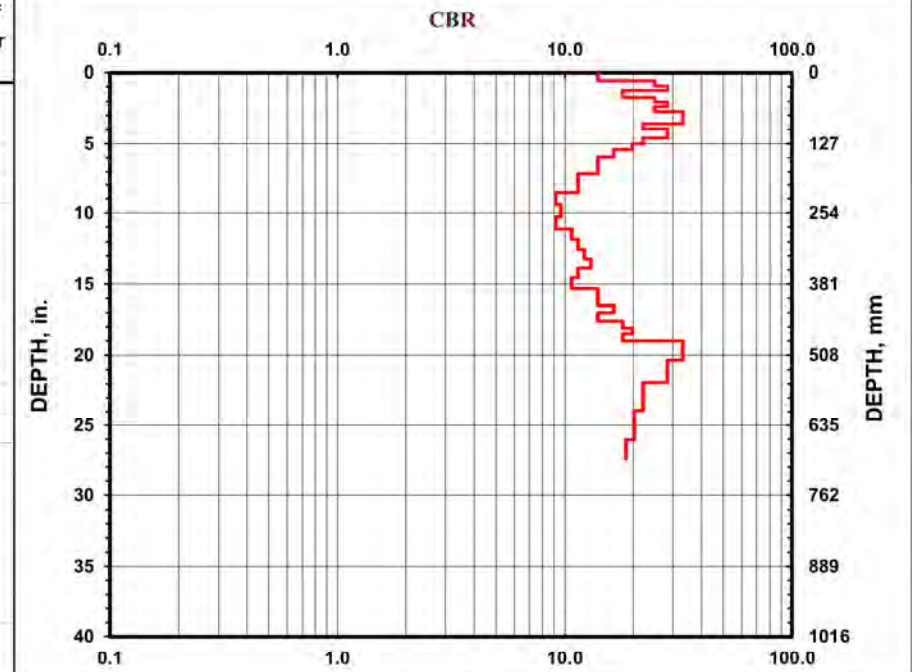
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	15	1
1	24	1
1	32	1
1	44	1
1	53	1
1	61	1
1	70	1
1	77	1
1	84	1
1	91	1
1	101	1
1	109	1
1	117	1
1	127	1
1	138	1
1	151	1
1	166	1
1	181	1
1	199	1
1	217	1
1	239	1
1	260	1
1	282	1
1	301	1
1	319	1
1	336	1
1	352	1
1	370	1
1	389	1
1	404	1
1	419	1
1	432	1
1	447	1
1	459	1
1	470	1
1	482	1
5	517	1
5	557	1
5	607	1
5	661	1
3	696	1



### DCP TEST DATA

File Name: Y1\_16+92\_10' RT

Project: G16005

Date: 14-Jul-18

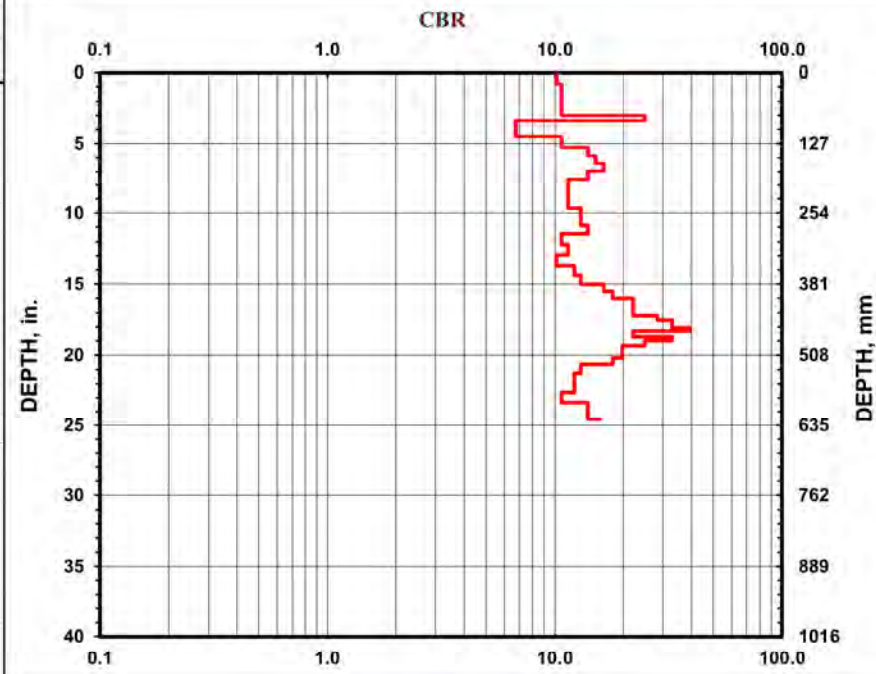
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	20	1
1	39	1
1	58	1
1	77	1
1	86	1
1	115	1
1	134	1
1	149	1
1	163	1
1	176	1
1	191	1
1	209	1
1	227	1
1	245	1
1	261	1
1	277	1
1	292	1
1	311	1
1	329	1
1	349	1
1	366	1
1	382	1
1	395	1
1	407	1
3	437	1
1	445	1
1	452	1
1	459	1
1	465	1
1	475	1
1	482	1
1	491	1
1	502	1
1	513	1
1	525	1
1	541	1
1	558	1
1	575	1
1	594	1
1	609	1
1	624	1
9	745	1



### DCP TEST DATA

File Name: Y2\_28+21\_3' LT

Project: G16005

Date: 19-Jun-18

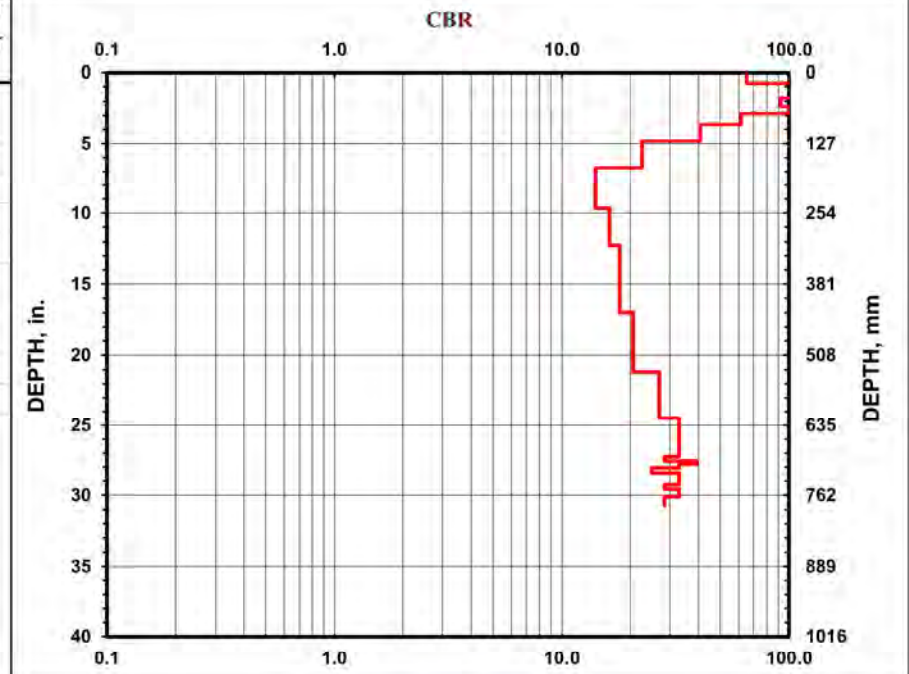
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
5	19	1
5	31	1
4	35	1
5	46	1
5	60	1
5	73	1
5	93	1
5	122	1
5	171	1
5	246	1
5	312	1
10	432	1
10	538	1
10	622	1
10	692	1
1	700	1
1	706	1
1	713	1
1	722	1
1	729	1
1	736	1
1	743	1
1	751	1
1	758	1
1	765	1
1	773	1
1	781	1



### DCP TEST DATA

File Name: Y3\_11+27\_103' LT

Project: G16005

Date: 14-Jul-18

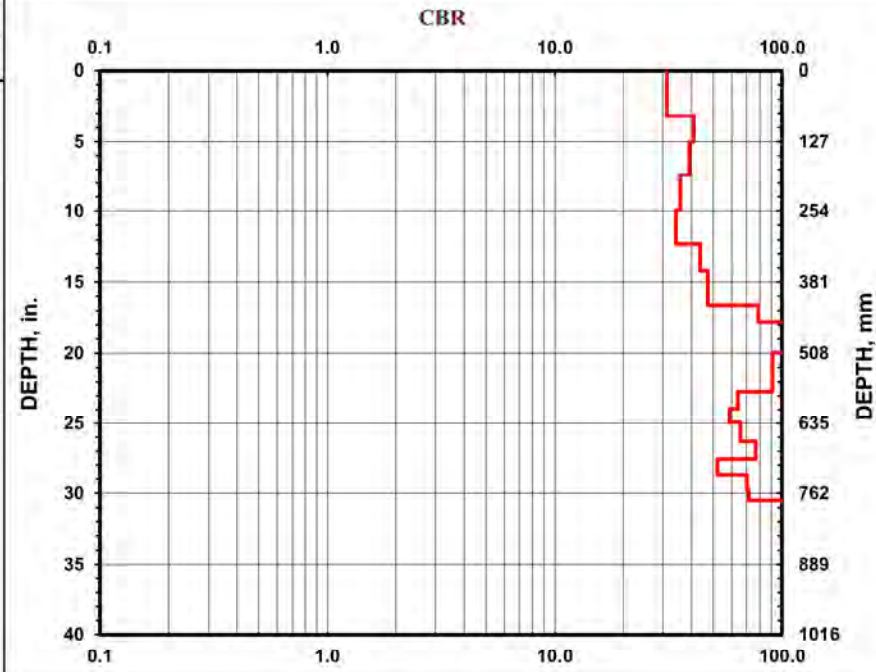
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used.

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
11	81	1
8	127	1
10	187	1
10	252	1
9	313	1
9	362	1
12	423	1
9	452	1
10	472	1
15	507	1
25	578	1
8	609	1
6	634	1
9	668	1
10	701	1
6	729	1
7	754	1
6	775	1
11	803	1



### DCP TEST DATA

File Name: Y4\_12+65 6' LT

Project: G16005

Date: 14-Jul-18

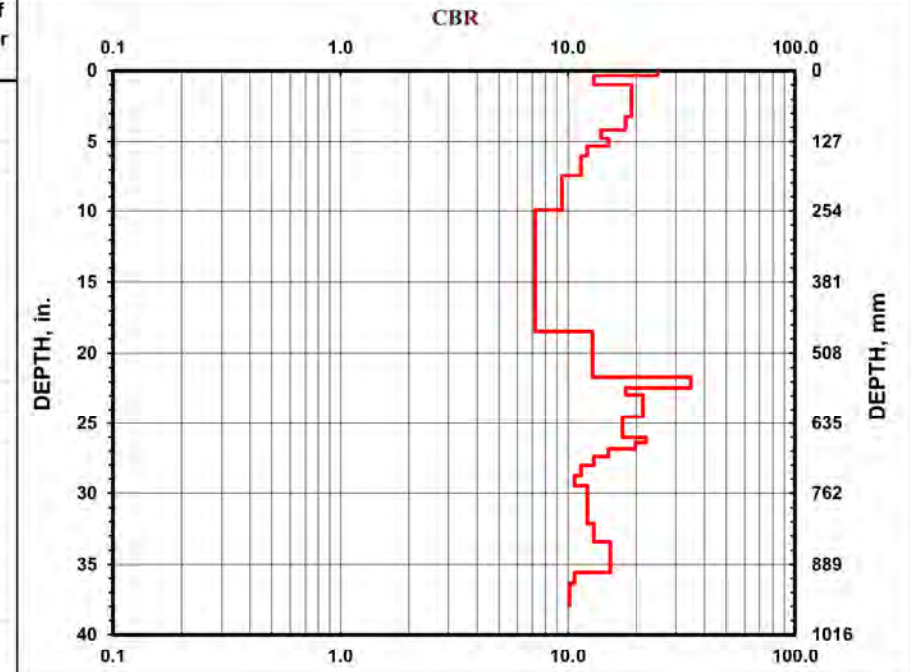
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used.

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	9	1
1	25	1
5	82	1
1	94	1
1	106	1
1	121	1
1	135	1
1	152	1
1	170	1
1	188	1
3	252	1
8	470	1
5	551	1
3	571	1
1	583	1
4	624	1
3	661	1
1	671	1
1	682	1
1	696	1
1	712	1
1	730	1
1	749	1
4	817	1
1	833	1
1	849	1
4	904	1
1	923	1
1	943	1
1	963	1



### DCP TEST DATA

File Name: Y5\_12+25\_15' RT

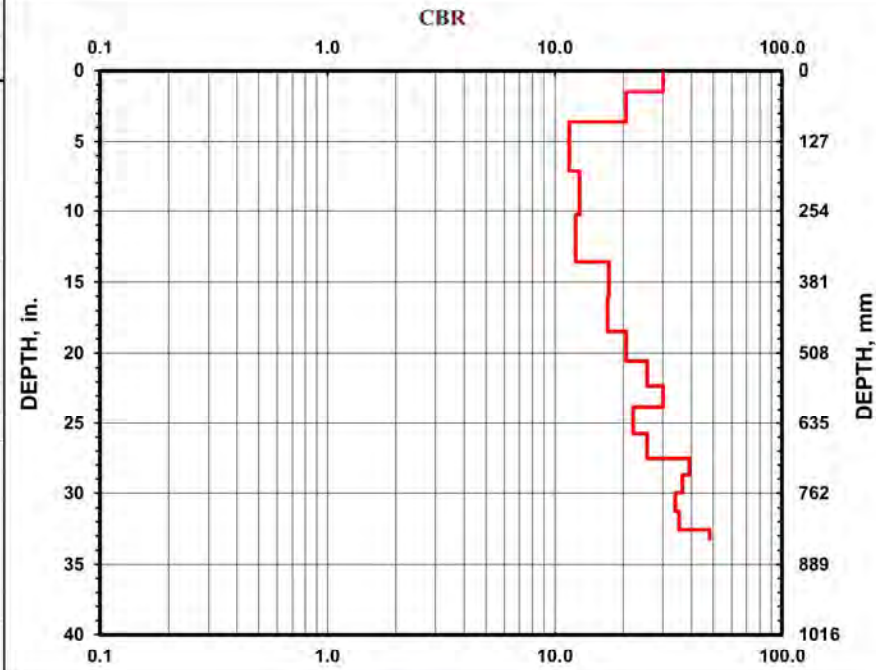
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used.

Soil Type  
 CH  
 CL  
 All other soils.

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
5	38	1
5	91	1
5	180	1
5	261	1
5	345	1
5	407	1
5	470	1
5	523	1
5	567	1
5	605	1
5	655	1
5	699	1
5	729	1
5	761	1
5	795	1
5	828	1
3	843	1



### DCP TEST DATA

File Name: Y7\_13+01\_5' LT

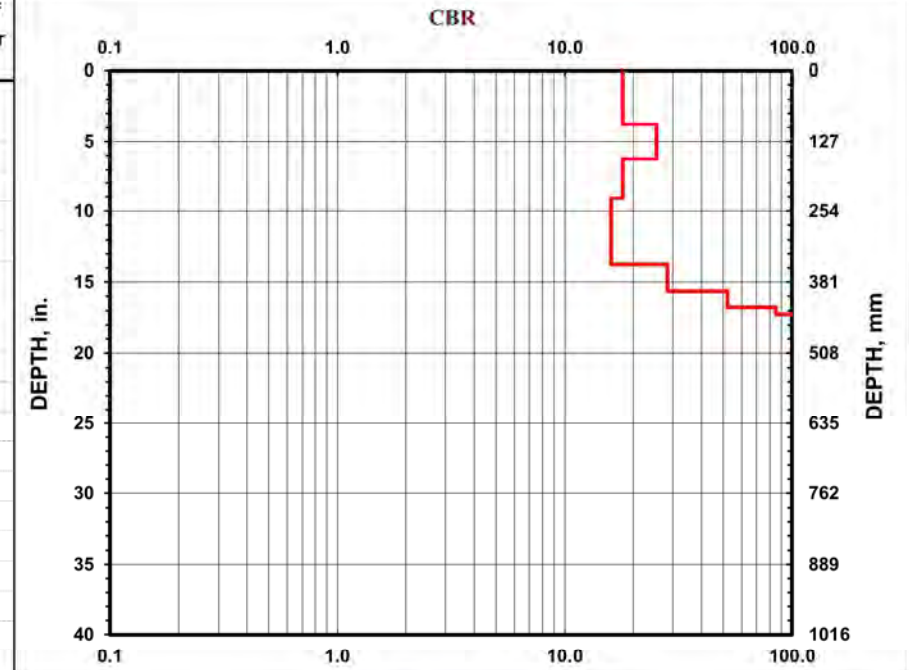
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used.

Soil Type  
 CH  
 CL  
 All other soils.

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
8	96	1
7	158	1
6	230	1
9	350	1
6	398	1
6	426	1
4	438	1
25	469	1
35	496	1
35	521	1
25	541	1
25	562	1
40	599	1
35	630	1
30	660	1
35	692	1
40	736	1
30	769	1
30	809	1
35	859	1



### DCP TEST DATA

File Name: Y8\_14+01

Project: G16005

Date: 20-Jun-18

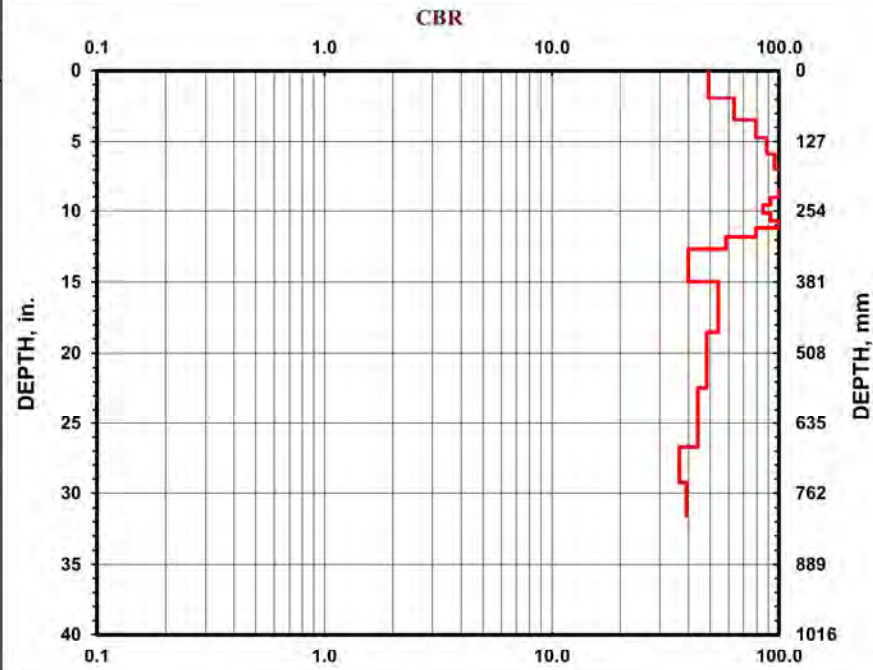
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
10	49	1
10	88	1
10	120	1
10	149	1
10	176	1
8	195	1
5	205	1
5	216	1
5	229	1
5	243	1
5	258	1
5	272	1
5	285	1
5	301	1
5	322	1
10	381	1
20	471	1
20	571	1
20	679	1
10	743	1
10	803	1



### DCP TEST DATA

File Name: Y9\_12+06\_3' LT

Project: G16005

Date: 20-Jun-18

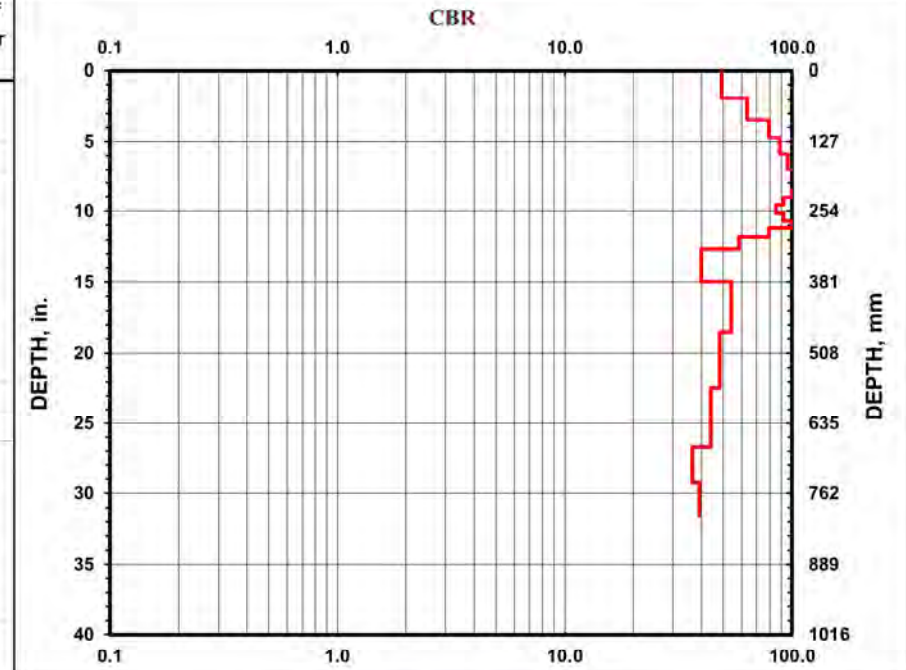
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
10	49	1
10	88	1
10	120	1
10	149	1
10	176	1
8	195	1
5	205	1
5	216	1
5	229	1
5	243	1
5	258	1
5	272	1
5	285	1
5	301	1
5	322	1
10	381	1
20	471	1
20	571	1
20	679	1
10	743	1
10	803	1



### DCP TEST DATA

File Name: Y10\_11+65\_34' LT

Project: G16005

Date: 20-Jun-18

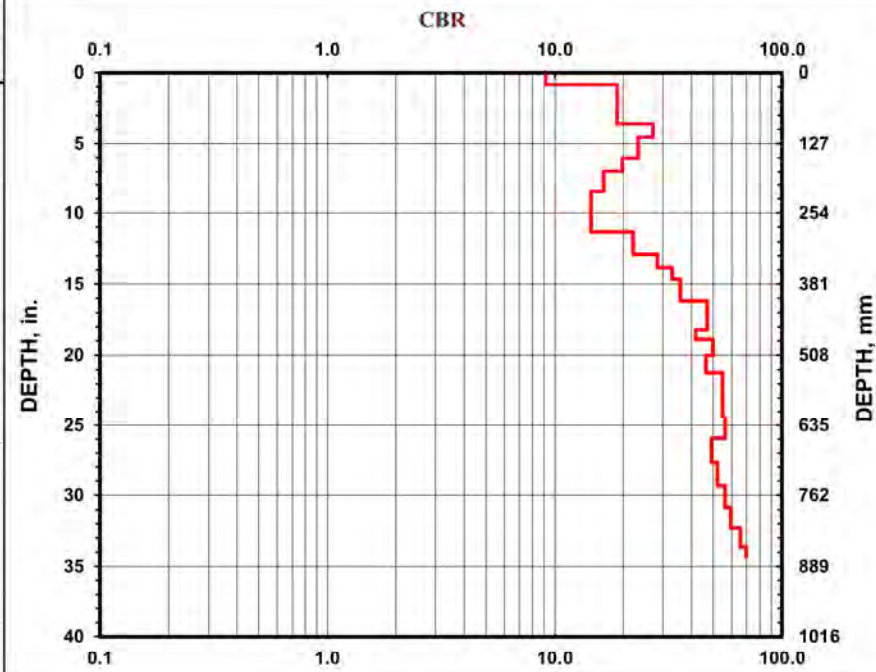
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	22	1
6	91	1
3	116	1
4	154	1
2	176	1
3	215	1
5	288	1
4	328	1
3	352	1
3	373	1
6	412	1
10	463	1
3	480	1
6	509	1
6	540	1
9	580	1
9	620	1
9	659	1
9	703	1
9	745	1
9	784	1
9	821	1
9	855	1
5	873	1



### DCP TEST DATA

File Name: Y11\_13+98\_04' RT

Project: G16005

Date: 8-Jun-18

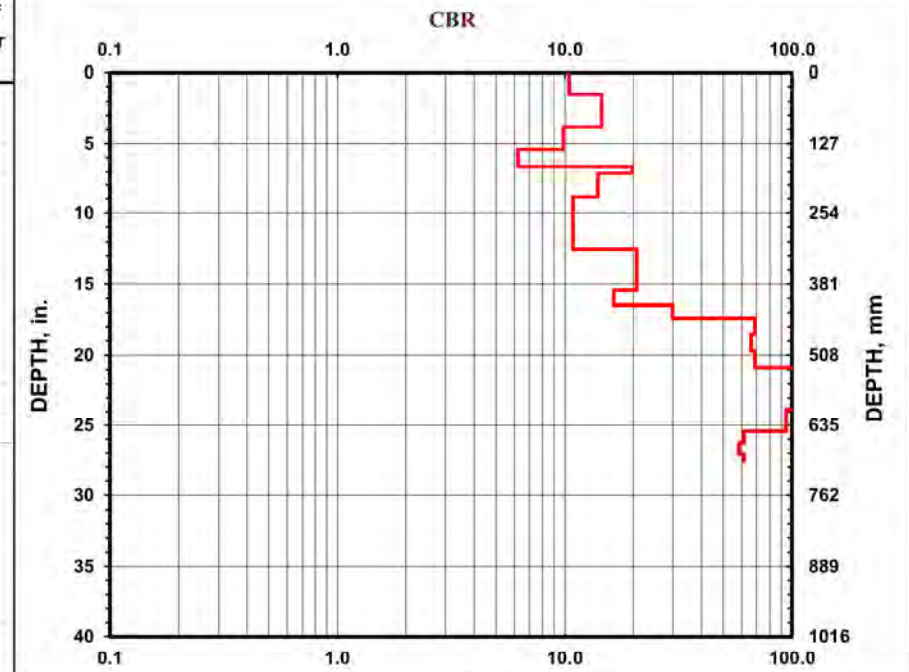
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
2	39	1
4	97	1
2	138	1
1	169	1
1	180	1
3	225	1
5	319	1
7	393	1
2	419	1
3	442	1
8	471	1
8	501	1
8	530	1
5	541	1
25	550	1
25	558	1
25	571	1
25	606	1
15	647	1
5	667	1
5	688	1
3	700	1



### DCP TEST DATA

File Name: Y12\_12+02\_16' LT

Project: G16005

Date: 8-Jun-18

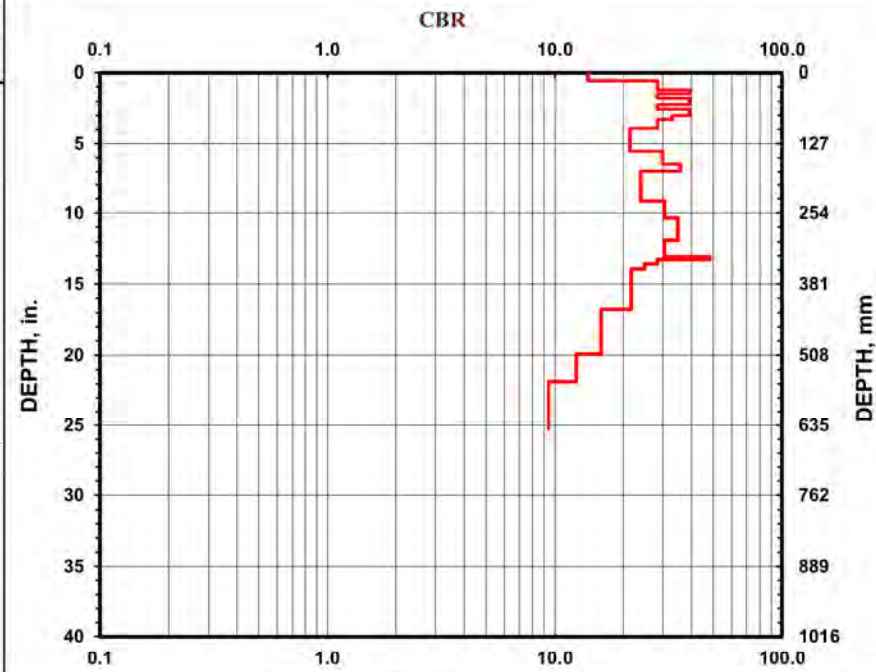
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	15	1
2	31	1
1	37	1
1	45	1
2	57	1
1	65	1
2	77	1
1	84	1
2	100	1
4	141	1
3	164	1
2	177	1
6	233	1
4	263	1
6	303	1
4	333	1
1	338	1
1	346	1
1	355	1
7	426	1
6	506	1
3	556	1
4	642	1



### DCP TEST DATA

File Name: Y13\_11+94\_1' LT

Project: G16005

Date: 8-Jun-18

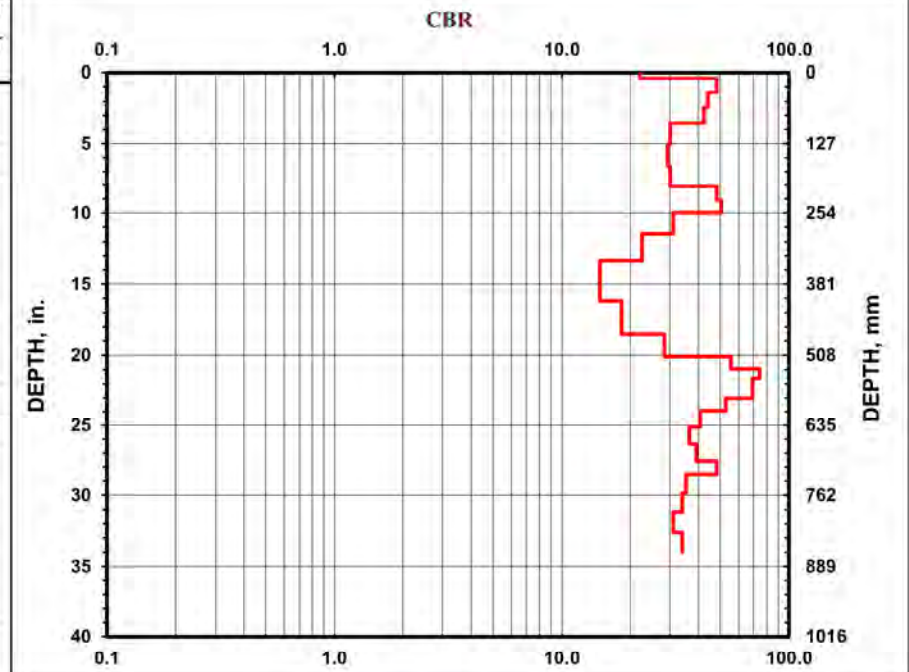
Location: Clay County, NC

Soil Type(s): A

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	10	1
5	35	1
5	62	1
5	90	1
5	128	1
5	167	1
5	205	1
5	230	1
5	254	1
5	291	1
5	340	1
5	412	1
5	471	1
5	511	1
5	533	1
5	550	1
5	568	1
5	586	1
5	609	1
5	638	1
5	670	1
5	700	1
5	725	1
5	758	1
5	792	1
5	829	1
5	863	1





### DCP TEST DATA

File Name: Y14\_12+02\_18' LT

Project: G16005

Date: 8-Jun-18

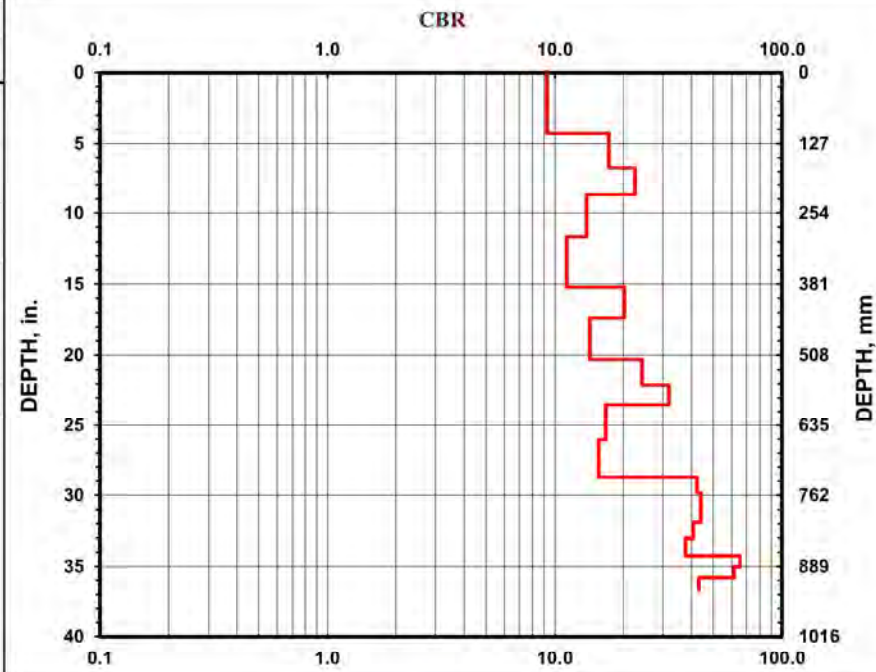
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
5	109	1
5	171	1
5	220	1
5	296	1
5	387	1
5	441	1
5	515	1
5	561	1
5	597	1
5	661	1
5	729	1
5	757	1
5	784	1
5	811	1
5	840	1
5	871	1
5	890	1
5	910	1
4	932	1



### DCP TEST DATA

File Name: Y15\_11+89\_3' LT

Project: G16005

Date: 8-Jun-18

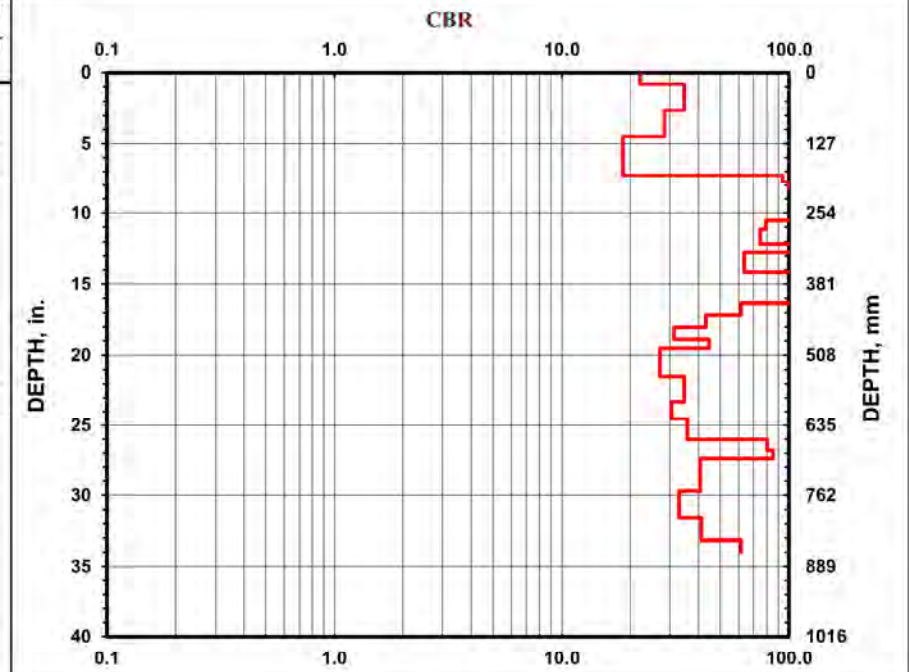
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
2	20	1
7	67	1
6	115	1
6	185	1
4	196	1
5	209	1
5	220	1
5	226	1
5	235	1
5	243	1
5	251	1
5	259	1
5	267	1
5	283	1
8	310	1
6	325	1
9	360	1
8	377	1
5	382	1
5	387	1
5	393	1
5	398	1
5	403	1
5	409	1
5	416	1
5	436	1
4	458	1
3	480	1
3	496	1
6	546	1
7	593	1
4	623	1
6	662	1
6	681	1
5	696	1
10	754	1
7	803	1
7	843	1
5	863	1



### DCP TEST DATA

File Name: Y16\_11+98\_7' RT

Project: G16005

Date: 8-Jun-18

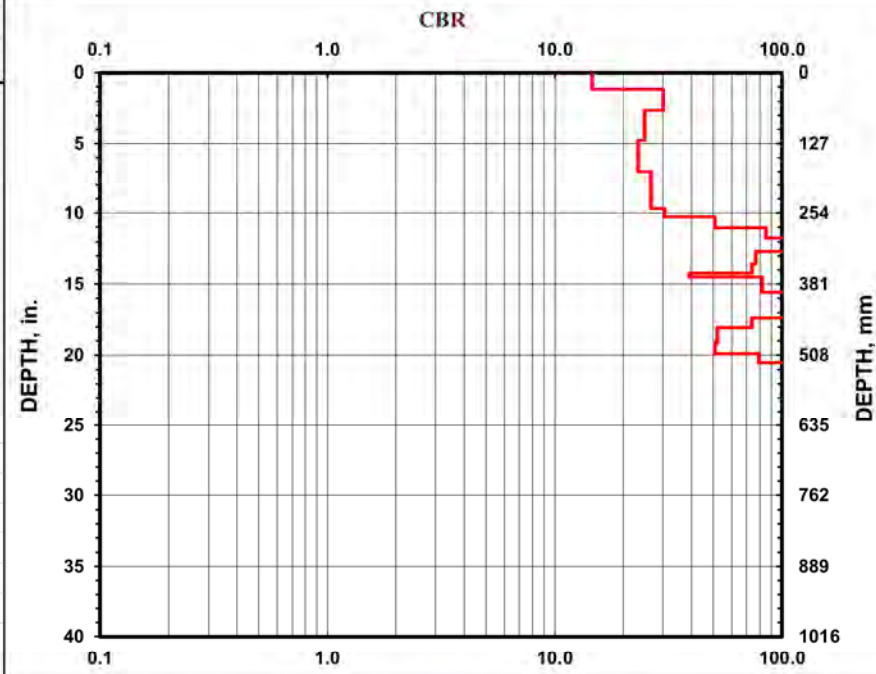
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
2	29	1
5	67	1
6	121	1
6	178	1
8	246	1
2	261	1
4	280	1
6	298	1
4	308	1
6	322	1
7	345	1
5	362	1
1	368	1
9	396	1
7	408	1
5	413	1
5	420	1
5	429	1
5	441	1
5	458	1
6	486	1
4	505	1
5	521	1
5	526	1
5	529	1
5	530	1
5	532	1
15	534	1



### DCP TEST DATA

File Name: Y17\_12+19\_1' RT

Project: G16005

Date: 19-Jun-18

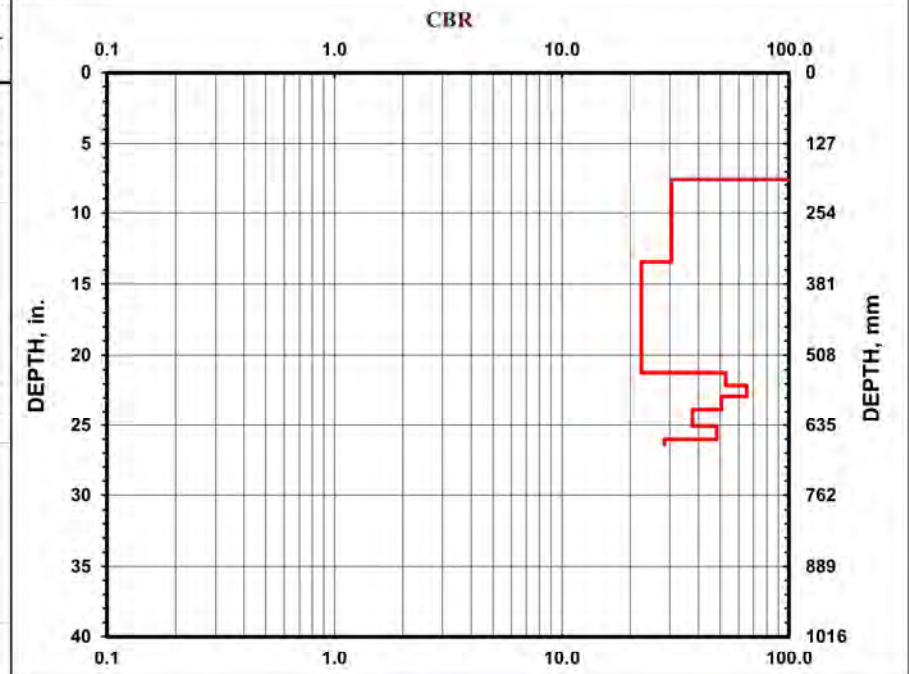
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
4	6	1
5	13	1
5	20	1
5	26	1
5	32	1
5	34	1
5	40	1
5	44	1
5	47	1
5	51	1
5	56	1
5	60	1
5	62	1
5	65	1
5	70	1
5	73	1
5	76	1
5	79	1
5	85	1
5	88	1
5	92	1
5	96	1
50	131	1
25	142	1
25	155	1
20	192	1
20	342	1
20	540	1
5	563	1
5	582	1
5	606	1
5	637	1
5	662	1
1	670	1



### DCP TEST DATA

File Name: Y19\_15+87\_38' LT

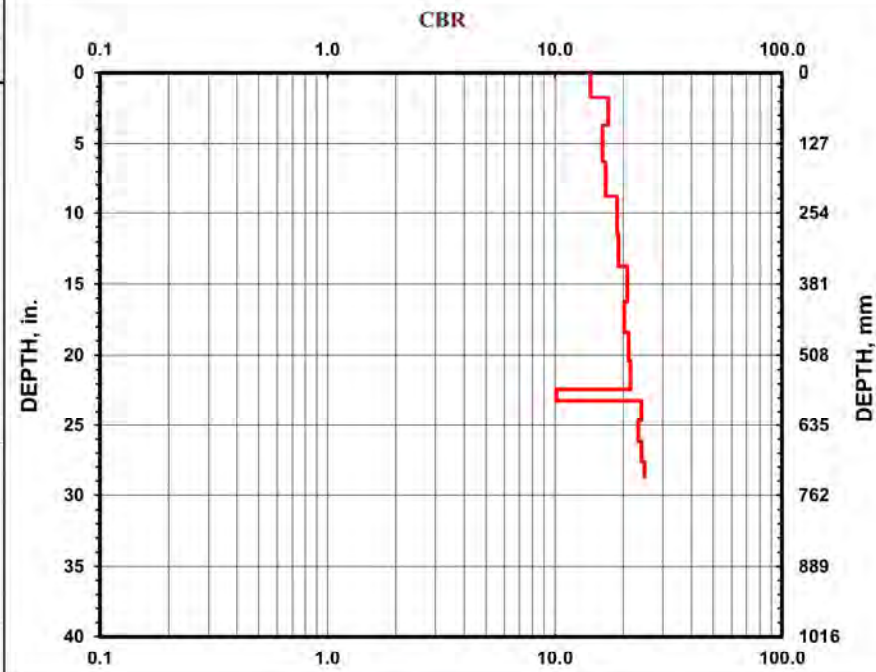
Project: G16005  
 Location: Clay County, NC

Date: 19-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
3	44	1
4	94	1
5	160	1
5	224	1
6	293	1
5	350	1
6	413	1
5	467	1
5	519	1
5	570	1
1	590	1
4	627	1
4	665	1
4	702	1
3	729	1



### DCP TEST DATA

File Name: Y20\_1703\_1' LT

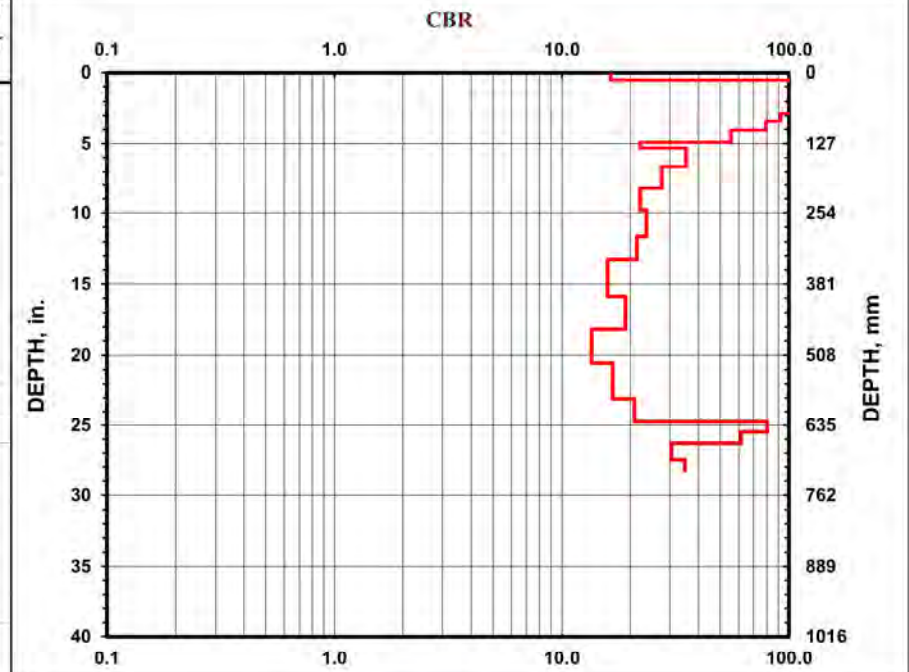
Project: G16005  
 Location: Clay County, NC

Date: 19-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	13	1
1	15	1
1	17	1
5	27	1
5	37	1
5	45	1
5	54	1
5	63	1
5	73	1
5	87	1
5	103	1
5	125	1
1	135	1
5	168	1
5	209	1
4	249	1
5	296	1
4	337	1
5	404	1
5	461	1
4	523	1
5	587	1
4	629	1
6	648	1
5	668	1
4	698	1
3	718	1



### DCP TEST DATA

File Name: Y20\_28+21\_3' LT

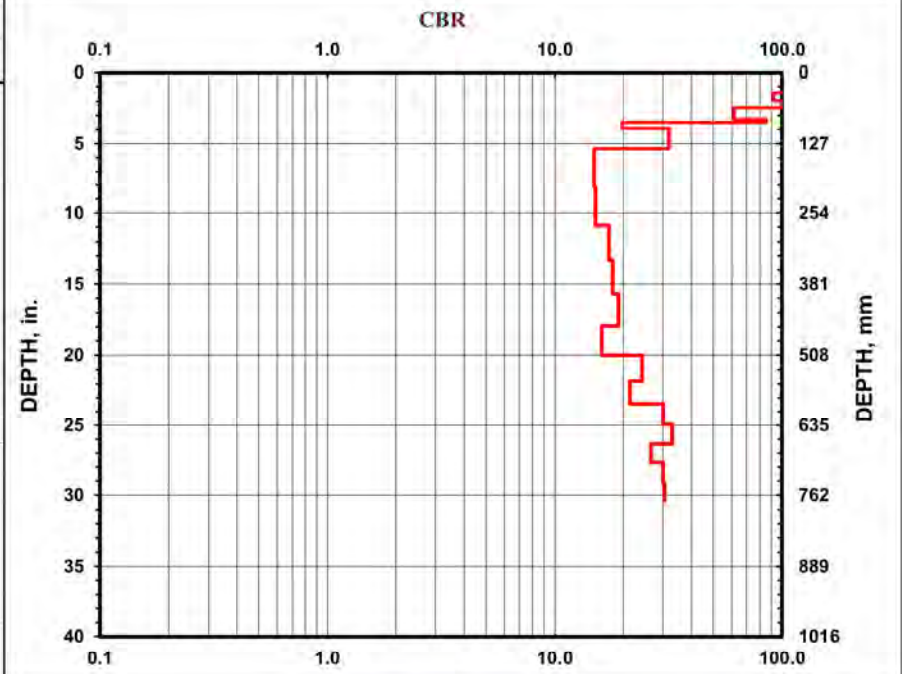
Project: G16005  
 Location: Clay County, NC

Date: 19-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
5	11	1
5	22	1
2	25	1
5	36	1
5	50	1
5	63	1
5	83	1
2	89	1
1	100	1
5	136	1
5	207	1
5	277	1
5	339	1
5	399	1
5	456	1
4	509	1
5	555	1
4	596	1
5	634	1
5	669	1
4	703	1
5	741	1
4	771	1



### DCP TEST DATA

File Name: L\_25+48\_4' RT

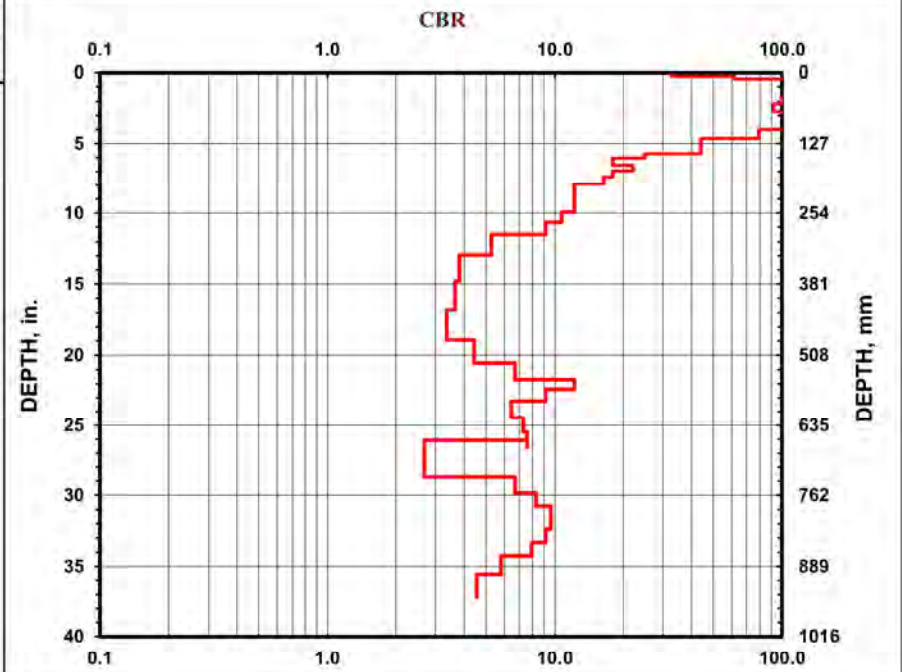
Project: G16005  
 Location: Clay County, NC

Date: 7-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 ○ 10.1 lbs.  
 ● 17.6 lbs.  
 ○ Both hammers used

Soil Type  
 ○ CH  
 ○ CL  
 ● All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	7	1
1	11	1
5	22	1
5	31	1
5	43	1
5	56	1
5	70	1
5	78	1
5	90	1
5	102	1
5	118	1
5	145	1
1	154	1
1	166	1
1	176	1
1	188	1
1	201	1
2	235	1
1	252	1
1	271	1
1	293	1
1	329	1
1	377	1
1	427	1
1	481	1
1	523	1
1	552	1
1	569	1
1	591	1
1	621	1
1	648	1
1	674	1
1	663	1
1	729	1
1	758	1
1	782	1
2	824	1
1	846	1
1	871	1
1	904	1
1	945	1



### DCP TEST DATA

File Name: L\_34+08\_26' RT

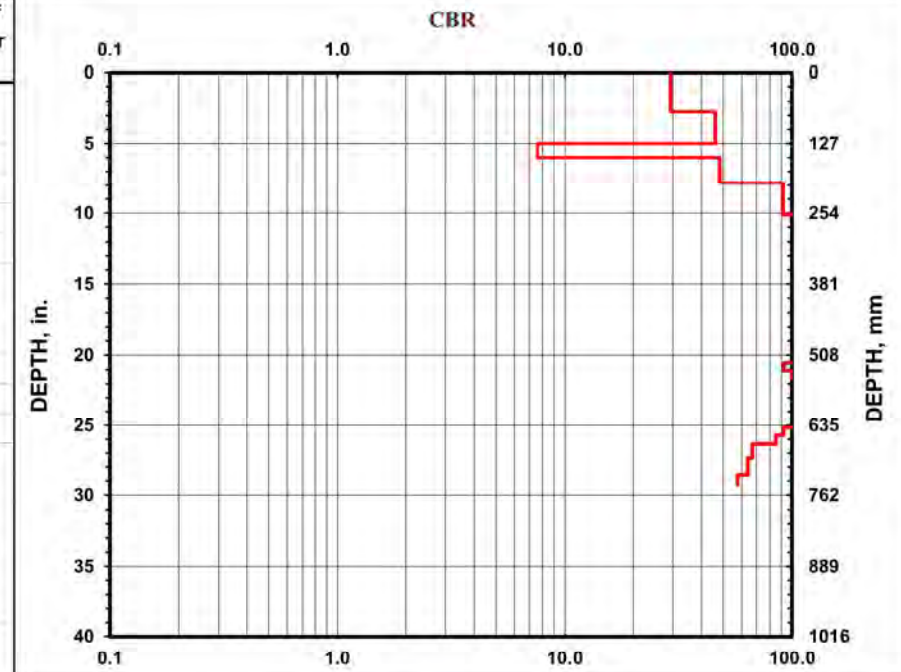
Project: G16005  
 Location: Clay County, NC

Date: 7-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 ○ 10.1 lbs.  
 ● 17.6 lbs.  
 ○ Both hammers used

Soil Type  
 ○ CH  
 ○ CL  
 ● All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
9	70	1
11	127	1
1	153	1
9	198	1
21	257	1
21	305	1
70	390	1
55	442	1
30	479	1
5	489	1
5	499	1
5	510	1
5	522	1
5	536	1
5	549	1
14	579	1
5	585	1
5	589	1
5	594	1
5	598	1
5	603	1
5	608	1
5	614	1
5	620	1
5	629	1
5	640	1
5	654	1
5	669	1
7	695	1
8	726	1
4	743	1



### DCP TEST DATA

File Name: L\_43+46\_14' RT

Project: G16005

Date: 7-Jun-18

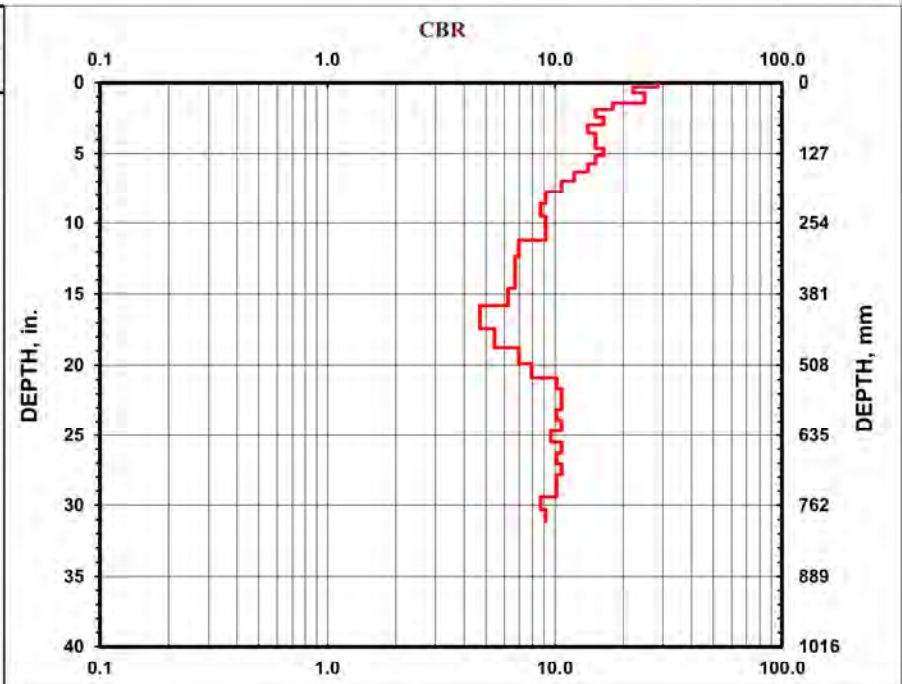
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	8	1
1	18	1
1	27	1
1	36	1
1	48	1
1	62	1
1	75	1
1	90	1
1	104	1
1	118	1
1	131	1
1	145	1
1	160	1
1	177	1
1	196	1
1	218	1
1	241	1
1	263	1
1	285	1
1	313	1
1	342	1
1	371	1
1	402	1
1	442	1
1	477	1
1	505	1
1	530	1
1	550	1
1	569	1
1	588	1
1	608	1
1	627	1
1	648	1
1	667	1
1	687	1
1	706	1
1	726	1
1	746	1
1	769	1
1	791	1



### DCP TEST DATA

File Name: L\_52+27\_16' RT

Project: G16005

Date: 7-Jun-18

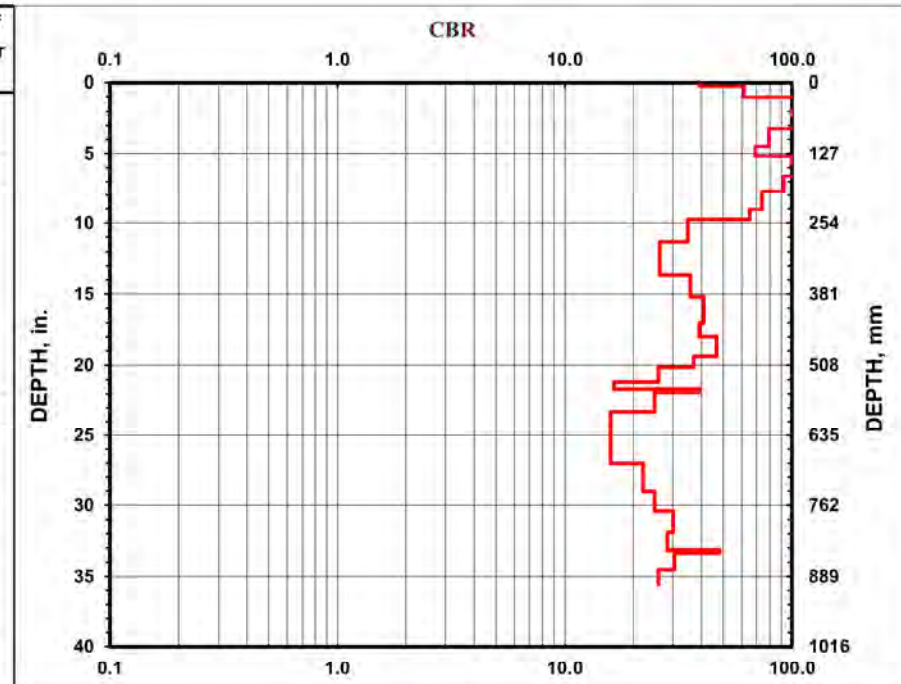
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	6	1
5	26	1
5	38	1
5	48	1
5	61	1
5	72	1
5	82	1
5	98	1
5	114	1
5	132	1
5	145	1
5	156	1
5	167	1
5	181	1
5	195	1
5	212	1
5	229	1
5	248	1
6	288	1
7	348	1
6	387	1
8	433	1
4	457	1
7	493	1
3	512	1
3	538	1
1	551	1
1	557	1
4	593	1
7	687	1
5	737	1
4	773	1
5	811	1
4	843	1
1	848	1
4	878	1
3	904	1



### DCP TEST DATA

File Name: L\_61+11\_3' LT

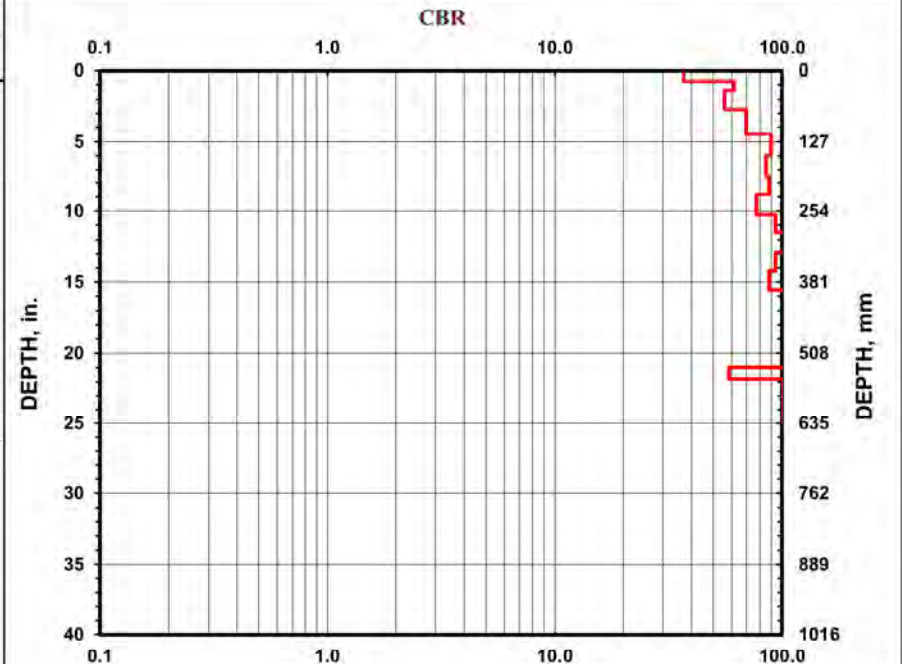
Project: G16005  
 Location: Clay County, NC

Date: 7-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
3	19	1
4	35	1
8	70	1
12	113	1
14	153	1
12	189	1
12	224	1
11	260	1
12	293	1
14	328	1
12	361	1
12	396	1
13	429	1
14	458	1
25	503	1
15	534	1
5	555	1
30	632	1



### DCP TEST DATA

File Name: L\_72+90\_19' LT

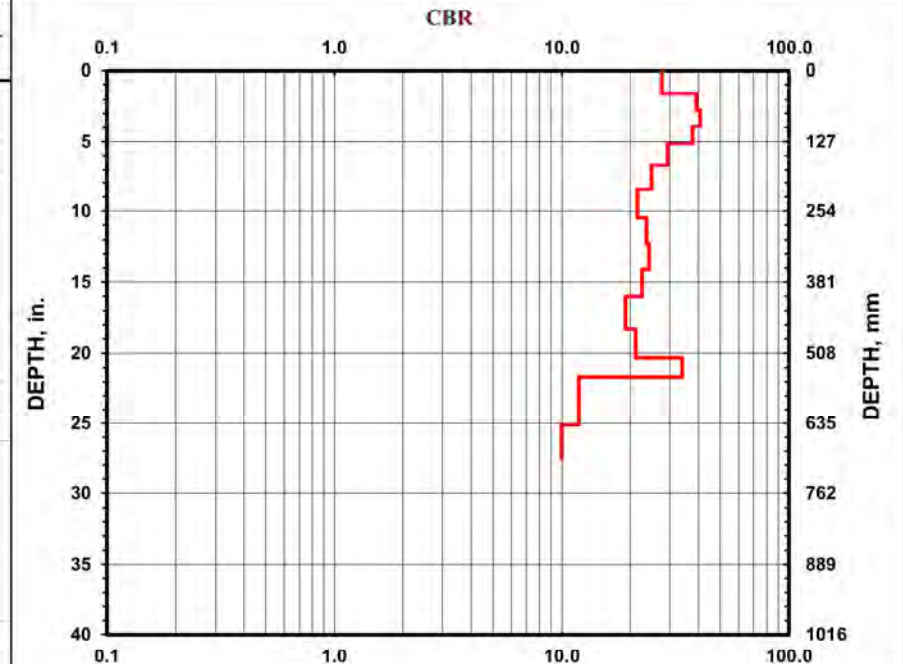
Project: G16005  
 Location: Clay County, NC

Date: 7-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
5	41	1
5	71	1
5	100	1
5	131	1
5	170	1
5	215	1
5	266	1
5	313	1
5	359	1
5	408	1
5	465	1
5	517	1
5	551	1
5	638	1
3	699	1



### DCP TEST DATA

File Name: L\_80+55\_6' RT

Project: G16005

Date: 7-Jun-18

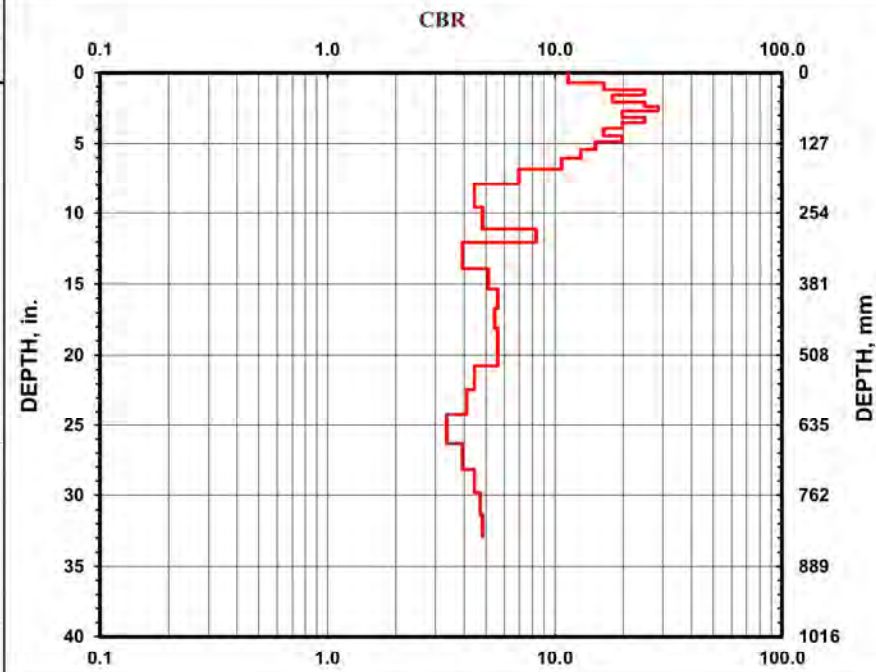
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	18	1
1	31	1
1	40	1
1	52	1
1	61	1
1	69	1
1	80	1
1	89	1
1	100	1
1	113	1
1	124	1
1	138	1
1	154	1
1	173	1
1	201	1
1	243	1
1	282	1
1	306	1
1	353	1
1	390	1
1	424	1
1	459	1
1	493	1
1	527	1
1	569	1
1	614	1
1	668	1
1	715	1
1	757	1
1	797	1
1	836	1



### DCP TEST DATA

File Name: L\_89+82\_13' RT

Project: G16005

Date: 7-Jun-18

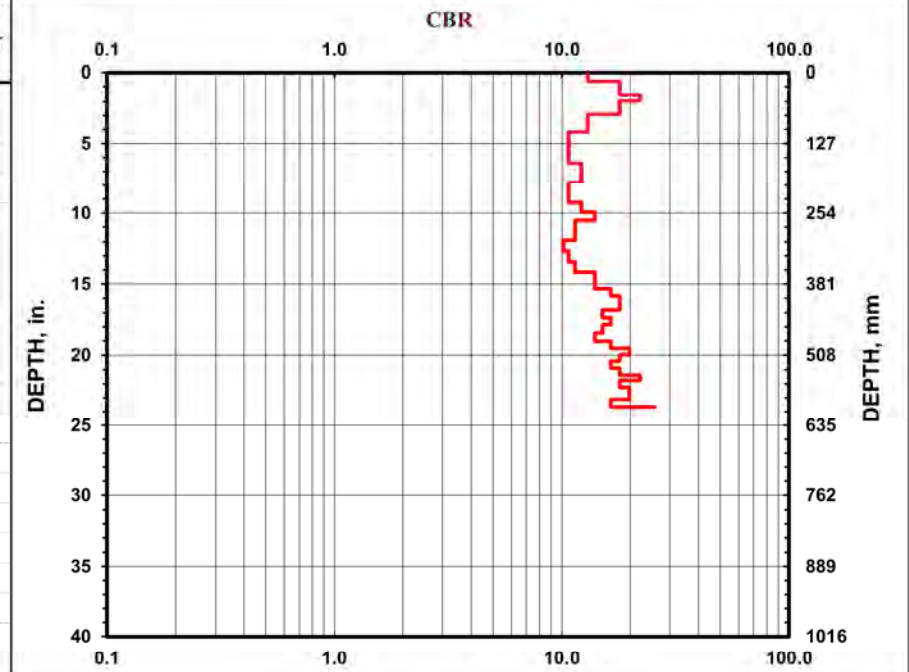
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	16	1
1	28	1
1	40	1
1	50	1
1	62	1
1	74	1
1	90	1
1	106	1
1	125	1
1	144	1
1	163	1
1	180	1
1	197	1
1	216	1
1	235	1
1	252	1
1	267	1
1	285	1
1	303	1
1	323	1
1	342	1
1	360	1
1	375	1
1	390	1
1	403	1
1	415	1
1	427	1
1	441	1
1	454	1
1	468	1
1	483	1
1	496	1
1	507	1
1	519	1
1	532	1
1	544	1
1	554	1
1	566	1
1	577	1
1	588	1
1	601	1
11	697	1





### DCP TEST DATA

File Name: L\_97+13\_23' RT

Project: G16005

Date: 8-Jun-18

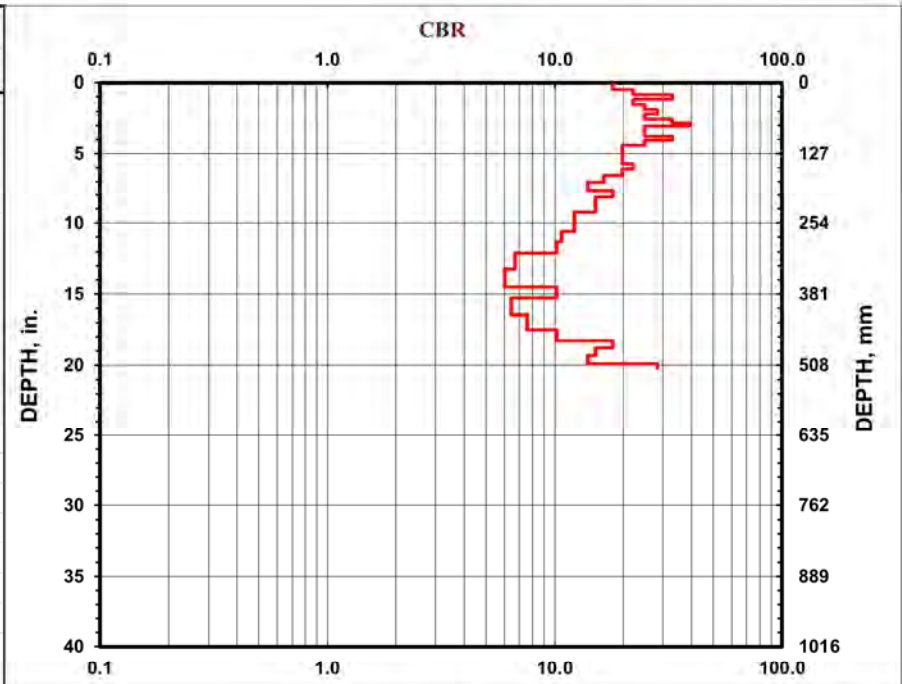
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used.

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	12	1
1	22	1
1	29	1
1	39	1
1	48	1
1	56	1
1	65	1
1	72	1
1	78	1
1	87	1
1	96	1
1	103	1
1	112	1
1	123	1
1	134	1
1	145	1
1	155	1
1	166	1
1	179	1
1	194	1
1	206	1
1	220	1
1	234	1
1	251	1
1	268	1
1	287	1
1	307	1
1	336	1
1	368	1
1	388	1
1	418	1
1	444	1
1	464	1
1	476	1
1	490	1
1	505	1
1	513	1



### DCP TEST DATA

File Name: L\_108+33\_6' RT

Project: G16005

Date: 7-Jun-18

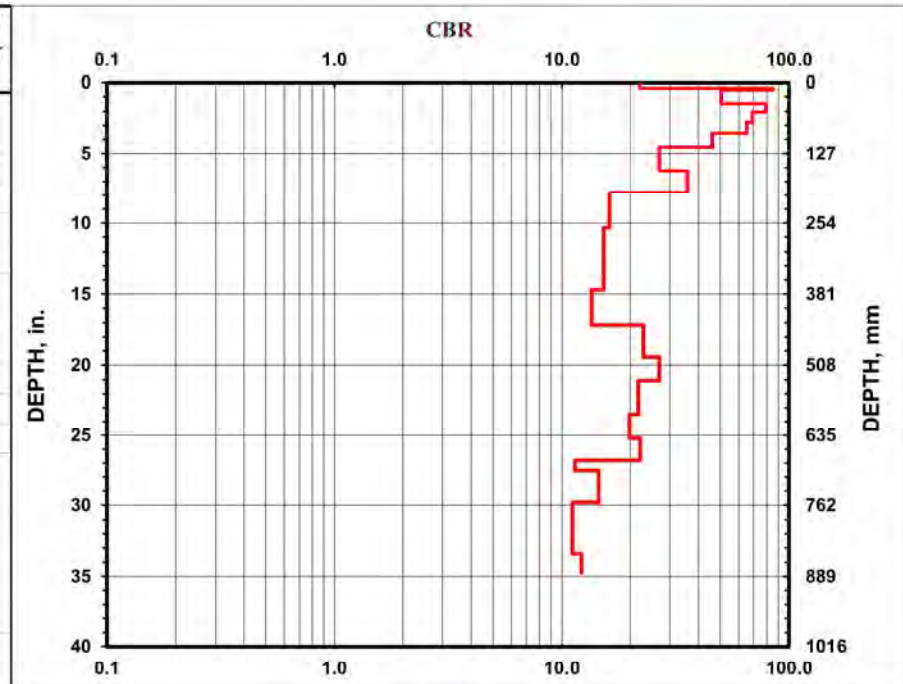
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used.

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	10	1
1	13	1
5	37	1
5	53	1
5	71	1
5	90	1
5	116	1
5	158	1
6	197	1
5	263	1
8	374	1
4	436	1
6	494	1
5	536	1
6	597	1
4	641	1
4	681	1
1	699	1
4	757	1
5	849	1
2	883	1



**DCP TEST DATA**

File Name: L\_123+78\_3' RT

Project: G16005

Date: 8-Jun-18

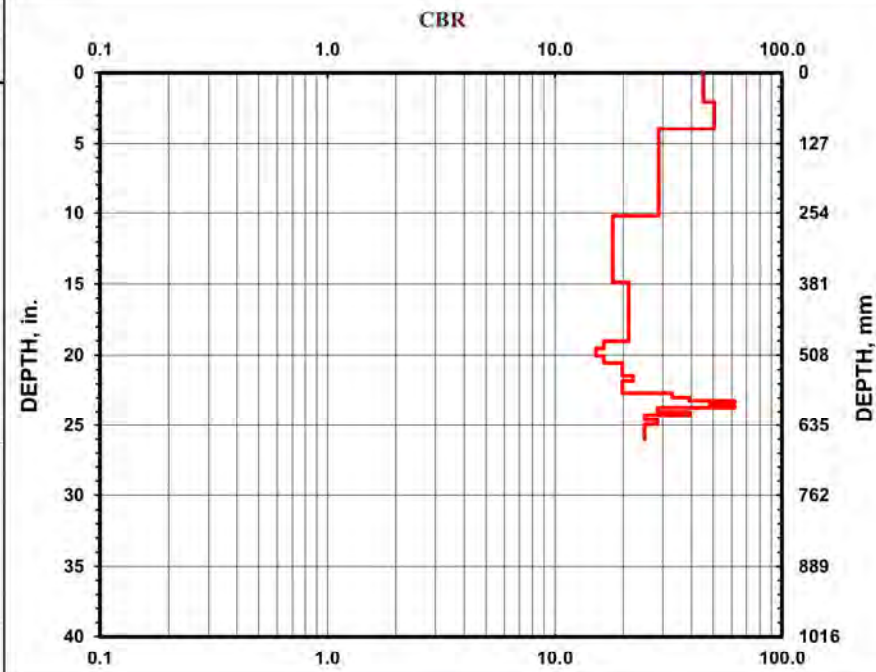
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
10	53	1
10	101	1
20	259	1
10	379	1
10	483	1
1	496	1
1	510	1
1	523	1
1	534	1
1	545	1
1	555	1
1	566	1
1	577	1
1	584	1
1	590	1
1	594	1
1	599	1
1	603	1
1	611	1
1	617	1
1	626	1
1	634	1
1	643	1
1	652	1
1	661	1



**DCP TEST DATA**

File Name: L\_129+40\_10' RT

Project: G16005

Date: 13-Jul-18

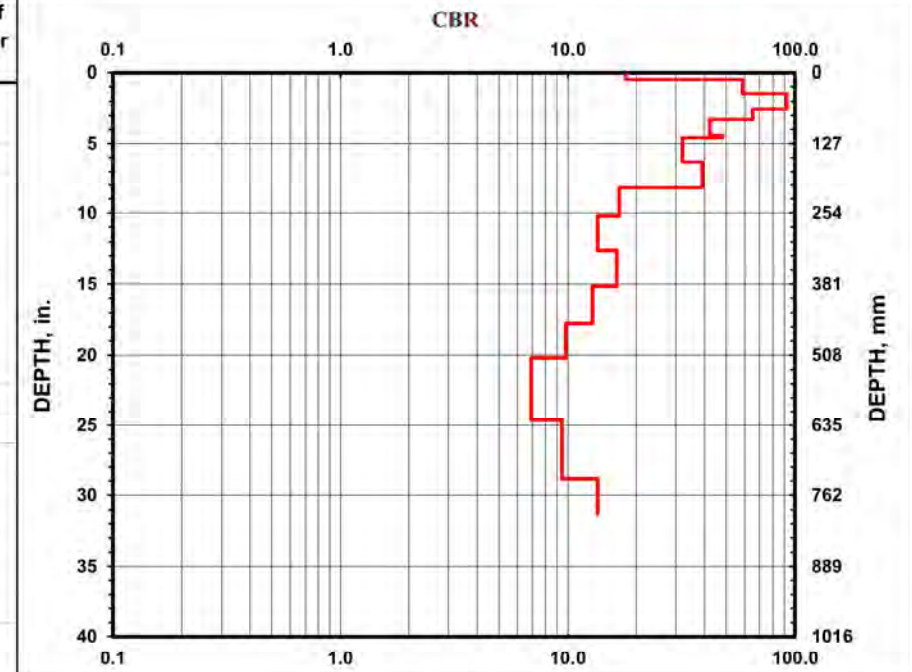
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	12	1
6	37	1
5	51	1
5	65	1
5	84	1
5	112	1
1	117	1
6	160	1
8	208	1
4	259	1
4	321	1
5	386	1
4	451	1
3	513	1
4	626	1
5	733	1
4	795	1



### DCP TEST DATA

File Name: L\_137+75\_16' RT

Project: G16005

Date: 8-Jun-18

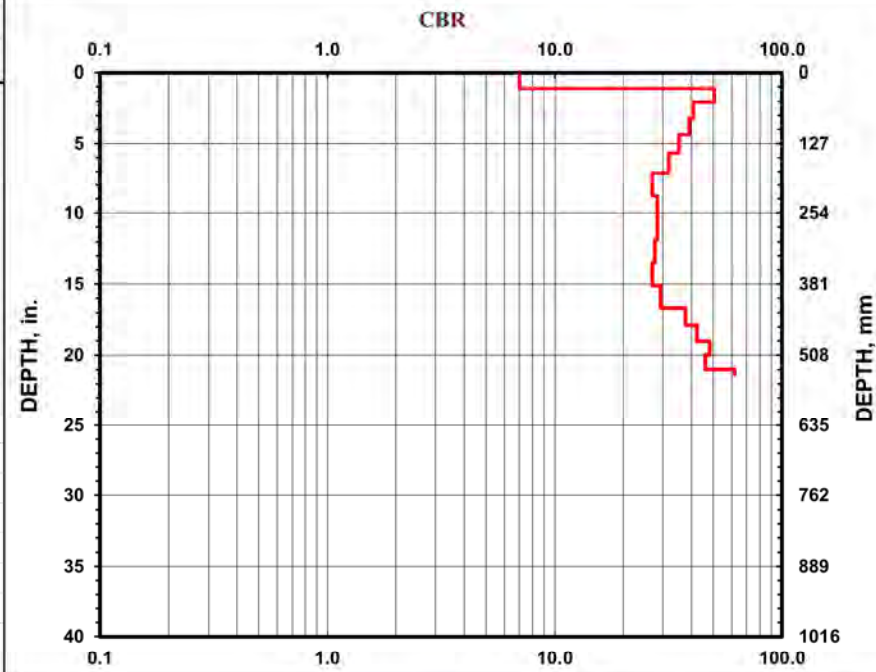
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	28	1
5	52	1
5	81	1
5	111	1
5	144	1
5	180	1
5	222	1
5	262	1
5	302	1
5	343	1
5	385	1
5	424	1
5	455	1
5	483	1
5	508	1
5	534	1
2	542	1



### DCP TEST DATA

File Name: L\_151+14\_10' LT

Project: G16005

Date: 8-Jun-18

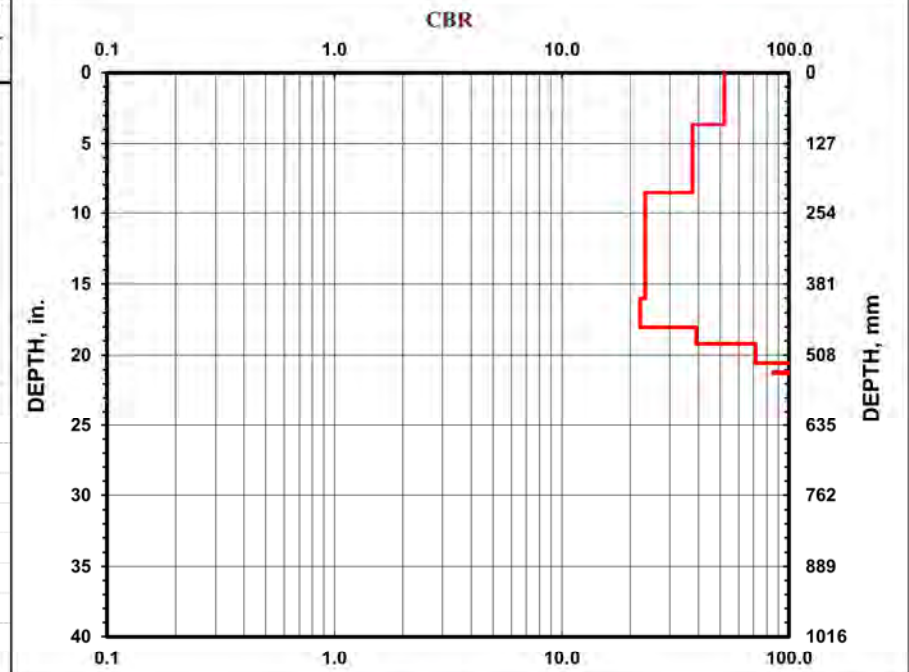
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
20	93	1
20	217	1
20	408	1
5	458	1
5	488	1
10	523	1
6	538	1
1	541	1
5	553	1
5	560	1
5	563	1
5	565	1
5	568	1



### DCP TEST DATA

File Name: L\_162+72\_32' LT

Project: G16005

Date: 19-Jun-18

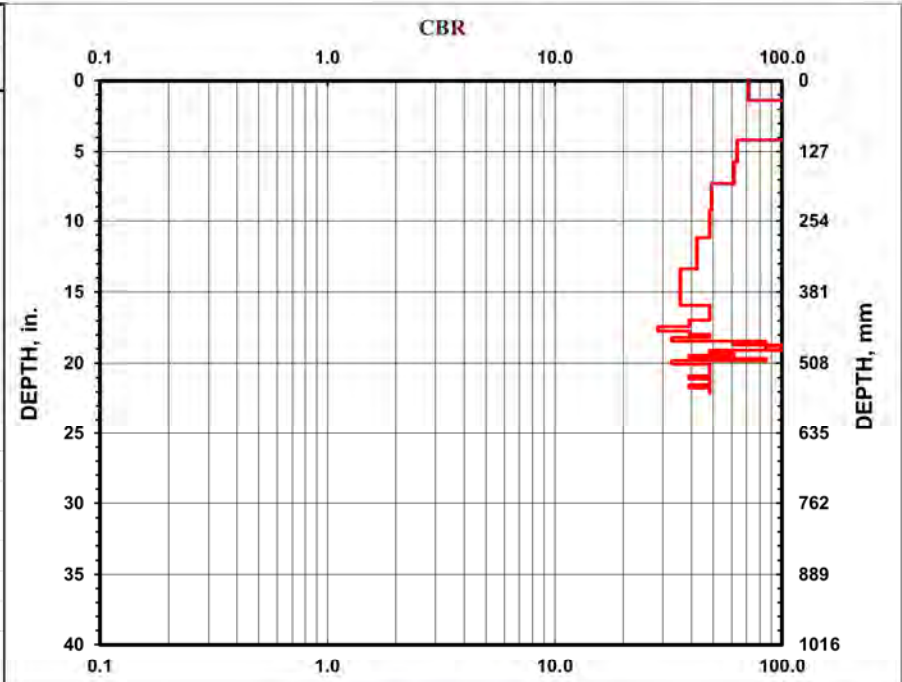
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
10	35	1
11	57	1
20	106	1
10	145	1
10	185	1
10	234	1
10	284	1
10	340	1
10	405	1
5	430	1
1	436	1
1	442	1
1	450	1
1	456	1
1	461	1
1	468	1
1	471	1
1	475	1
1	477	1
1	480	1
1	483	1
1	485	1
1	490	1
1	494	1
1	500	1
1	503	1
1	510	1
1	515	1
1	520	1
1	525	1
1	530	1
1	536	1
1	541	1
1	546	1
1	552	1
1	557	1
1	562	1



### DCP TEST DATA

File Name: L\_169+91\_12' LT

Project: G16005

Date: 13-Jul-18

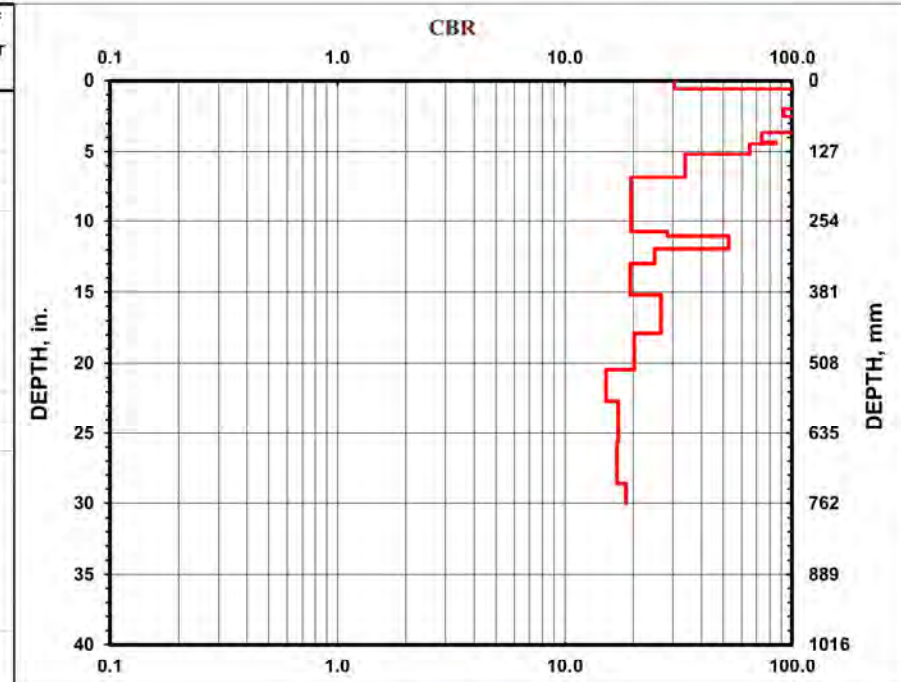
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
2	15	1
5	25	1
5	34	1
5	42	1
5	50	1
5	64	1
5	74	1
5	83	1
5	93	1
5	110	1
1	113	1
5	132	1
6	173	1
9	273	1
1	281	1
5	304	1
3	331	1
5	387	1
8	455	1
6	520	1
4	576	1
6	651	1
6	727	1
3	762	1



### DCP TEST DATA

File Name: L\_177+97\_3' LT

Project: G16005

Date: 8-Jun-18

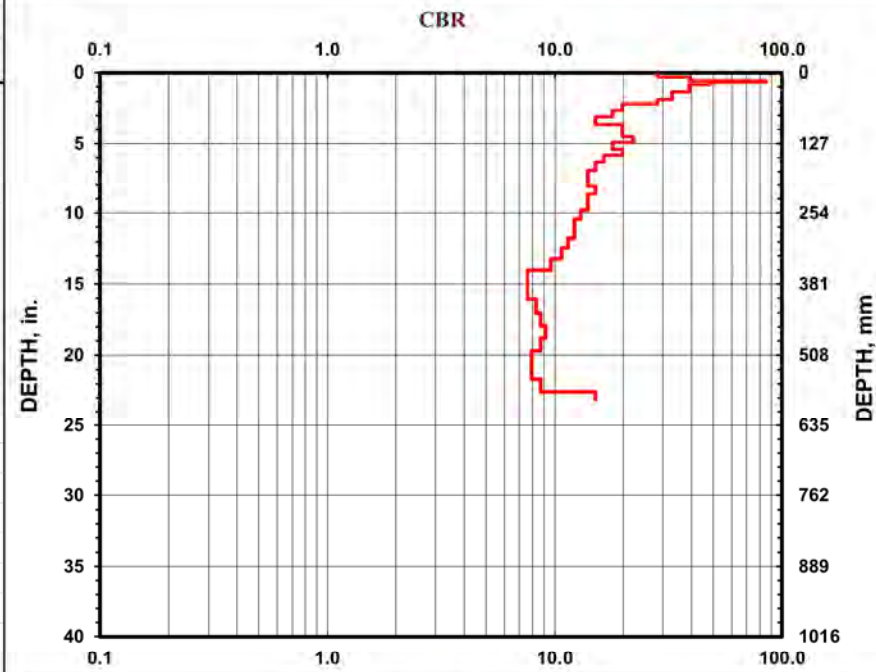
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	8	1
1	14	1
1	17	1
1	22	1
1	28	1
1	34	1
1	41	1
1	48	1
1	56	1
1	67	1
1	79	1
1	93	1
1	104	1
1	115	1
1	125	1
1	137	1
1	148	1
1	161	1
1	175	1
1	190	1
1	205	1
1	219	1
1	234	1
1	249	1
1	265	1
1	282	1
1	299	1
1	317	1
1	336	1
1	357	1
1	383	1
1	409	1
1	433	1
1	456	1
1	478	1
1	501	1
1	526	1
1	551	1
1	574	1
1	588	1



### DCP TEST DATA

File Name: L\_187+81\_20' LT

Project: G16005

Date: 14-Jul-18

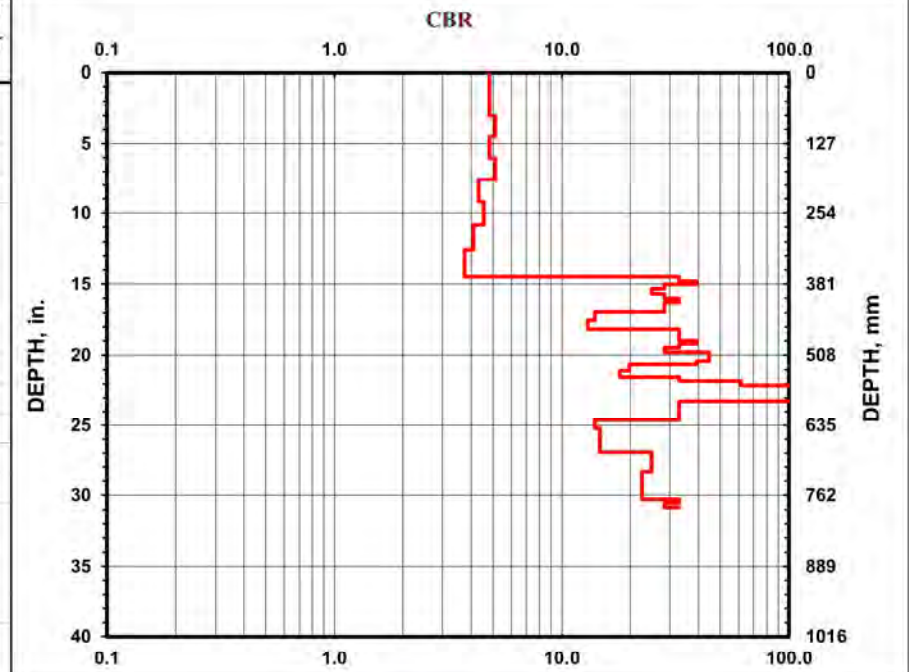
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	39	1
1	78	1
1	115	1
1	154	1
1	191	1
1	234	1
1	275	1
1	320	1
1	369	1
1	376	1
1	382	1
1	390	1
1	399	1
1	407	1
1	414	1
1	422	1
1	430	1
1	445	1
1	461	1
1	468	1
1	475	1
1	482	1
1	488	1
1	495	1
1	503	1
3	519	1
1	525	1
1	536	1
1	548	1
1	555	1
1	559	1
1	563	1
5	575	1
10	591	1
5	626	1
1	641	1
3	684	1
4	720	1
5	769	1
1	776	1
1	784	1
1	791	1



### DCP TEST DATA

File Name: L\_191+06\_23' RT

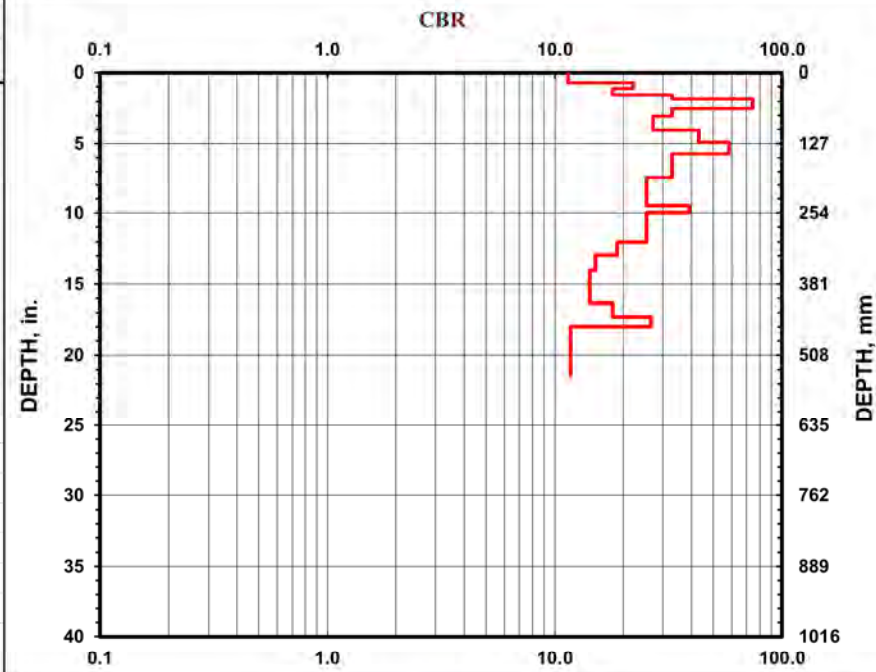
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	18	1
1	28	1
1	40	1
1	47	1
5	64	1
2	78	1
3	103	1
4	125	1
5	146	1
6	188	1
6	241	1
2	253	1
6	306	1
2	329	1
2	357	1
4	416	1
2	440	1
2	457	1
5	545	1



### DCP TEST DATA

File Name: L\_195+79\_3' LT

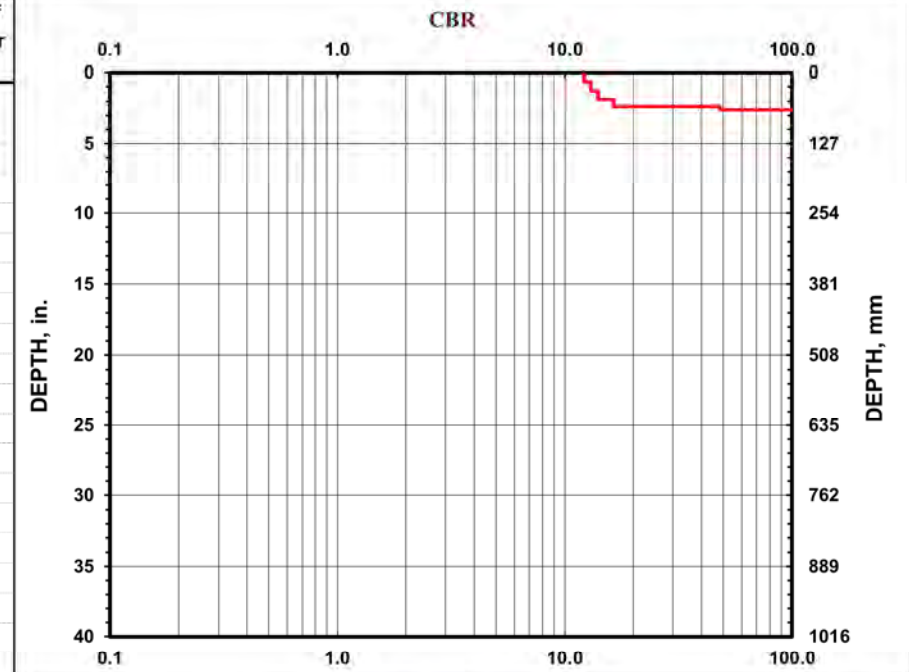
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	17	1
1	33	1
1	48	1
1	61	1
1	66	1
1	67	1
15	78	1
15	89	1
15	104	1
15	116	1
15	126	1
15	136	1
15	148	1
15	156	1
15	159	1
15	167	1
15	172	1
15	176	1
15	181	1
15	185	1
20	189	1
15	193	1
25	198	1
30	203	1
30	207	1
30	212	1
30	218	1
40	224	1
30	228	1
10	229	1
Refusal		



### DCP TEST DATA

File Name: L\_205+92

Project: G16005

Date: 14-Sep-17

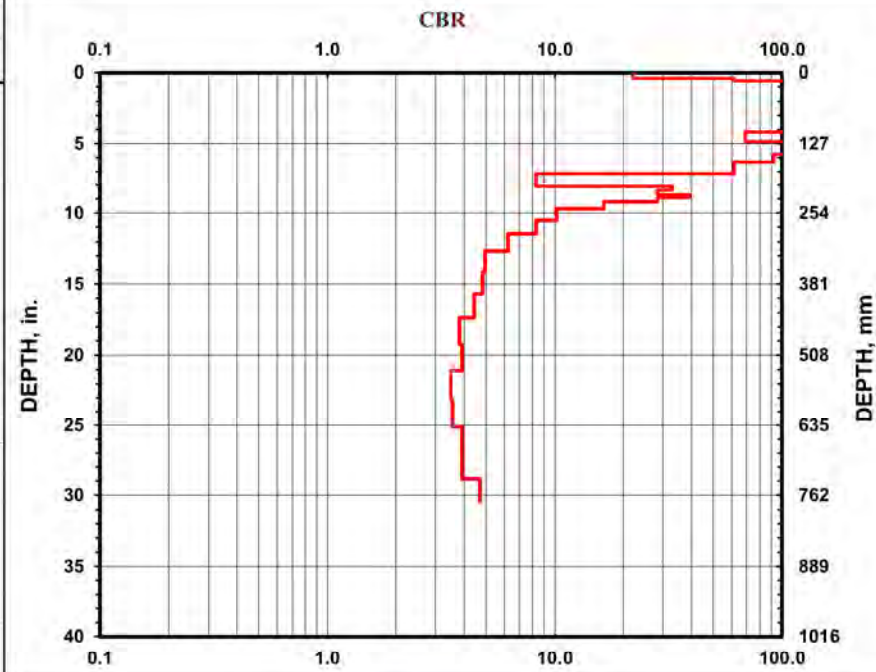
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	10	1
1	14	1
10	16	1
10	25	1
10	36	1
10	44	1
10	50	1
10	60	1
10	69	1
10	80	1
10	94	1
10	106	1
5	124	1
5	136	1
5	147	1
5	161	1
5	181	1
1	205	1
1	212	1
1	220	1
1	226	1
1	234	1
1	247	1
1	267	1
1	291	1
1	322	1
1	360	1
1	399	1
1	441	1
1	489	1
1	536	1
1	588	1
1	639	1
1	686	1
1	733	1
1	773	1



### DCP TEST DATA

File Name: L\_212+45\_7' LT

Project: G16005

Date: 8-Jun-18

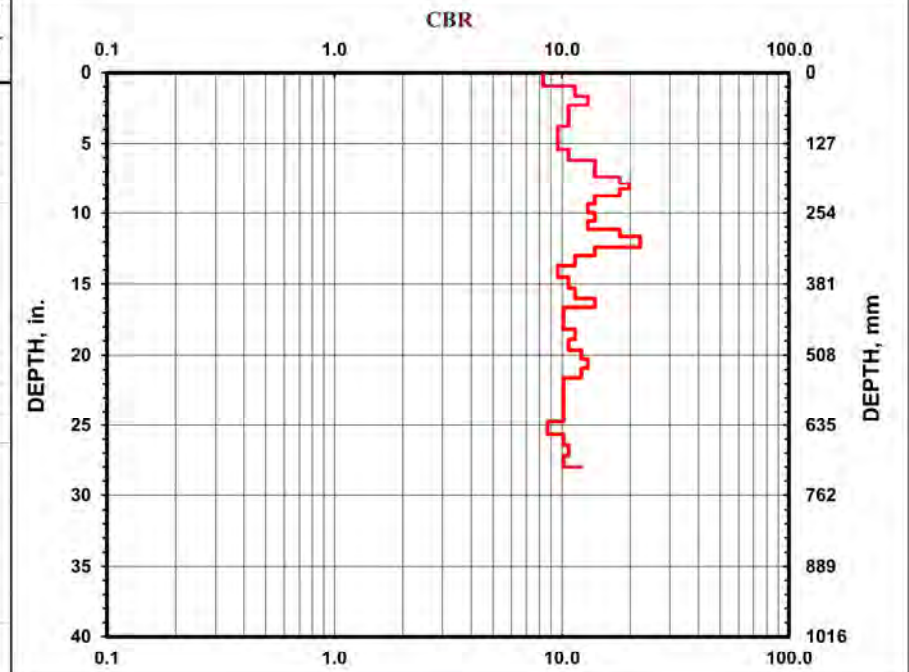
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	24	1
1	42	1
1	58	1
1	77	1
1	96	1
1	117	1
1	138	1
1	157	1
1	172	1
1	187	1
1	199	1
1	210	1
1	222	1
1	237	1
1	253	1
1	268	1
1	284	1
1	296	1
1	306	1
1	316	1
1	331	1
1	349	1
1	370	1
1	389	1
1	407	1
1	422	1
1	442	1
1	462	1
1	480	1
1	499	1
1	516	1
1	532	1
1	549	1
1	569	1
1	589	1
1	609	1
1	629	1
1	652	1
1	672	1
1	691	1
1	711	1
1	728	1



### DCP TEST DATA

File Name: L\_219+92\_2' RT

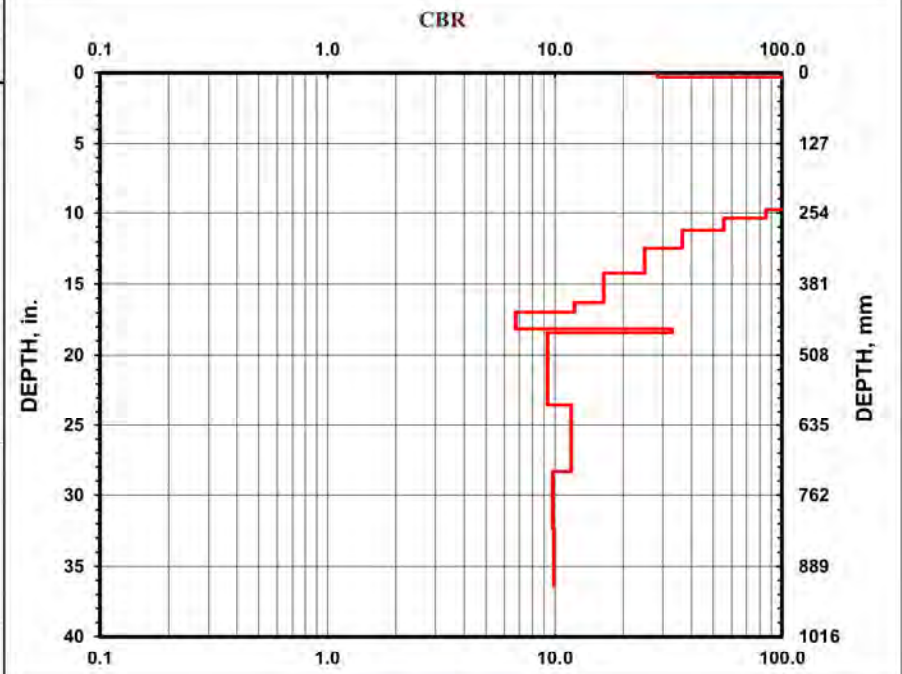
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	8	1
7	23	1
10	35	1
10	44	1
10	52	1
10	61	1
10	68	1
10	77	1
10	86	1
10	91	1
10	97	1
10	103	1
10	110	1
10	116	1
10	123	1
10	132	1
10	143	1
10	153	1
10	168	1
10	187	1
10	203	1
10	217	1
10	231	1
10	248	1
5	263	1
5	285	1
5	317	1
5	362	1
4	414	1
1	431	1
1	460	1
1	467	1
6	597	1
7	719	1
5	822	1
5	924	1



### DCP TEST DATA

File Name: Y1\_12+98\_11' LT

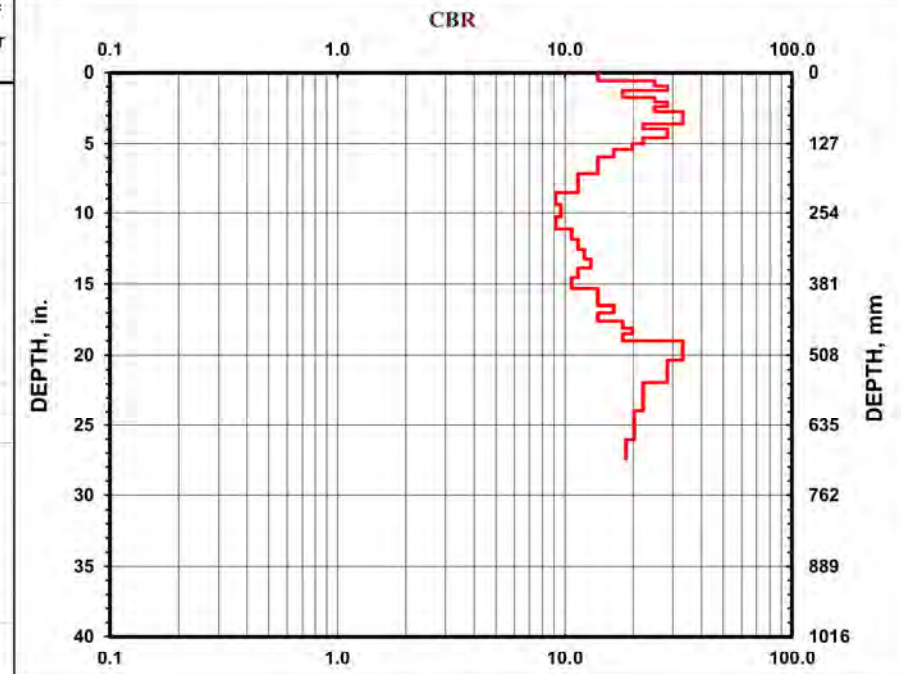
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	15	1
1	24	1
1	32	1
1	44	1
1	53	1
1	61	1
1	70	1
1	77	1
1	84	1
1	91	1
1	101	1
1	109	1
1	117	1
1	127	1
1	138	1
1	151	1
1	166	1
1	181	1
1	199	1
1	217	1
1	239	1
1	260	1
1	282	1
1	301	1
1	319	1
1	336	1
1	352	1
1	370	1
1	389	1
1	404	1
1	419	1
1	432	1
1	447	1
1	459	1
1	470	1
1	482	1
5	517	1
5	557	1
5	607	1
5	661	1
3	696	1





**DCP TEST DATA**

File Name: Y1\_16+92\_10' RT

Project: G16005

Date: 14-Jul-18

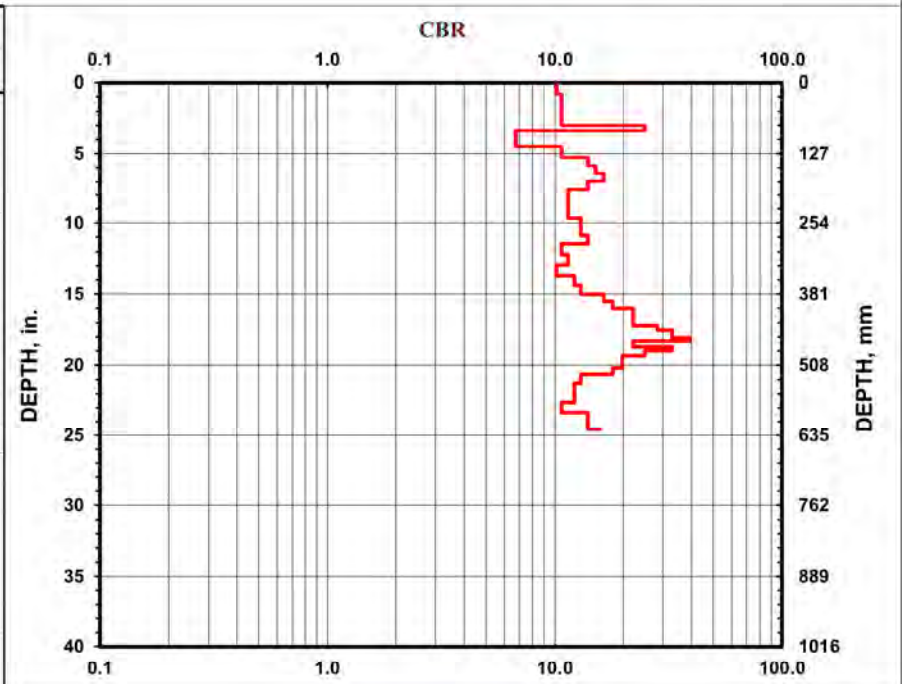
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	20	1
1	39	1
1	58	1
1	77	1
1	86	1
1	115	1
1	134	1
1	149	1
1	163	1
1	176	1
1	191	1
1	209	1
1	227	1
1	245	1
1	261	1
1	277	1
1	292	1
1	311	1
1	329	1
1	349	1
1	366	1
1	382	1
1	395	1
1	407	1
3	437	1
1	445	1
1	452	1
1	459	1
1	465	1
1	475	1
1	482	1
1	491	1
1	502	1
1	513	1
1	525	1
1	541	1
1	558	1
1	575	1
1	594	1
1	609	1
1	624	1
9	745	1



**DCP TEST DATA**

File Name: Y2\_28+21\_3' LT

Project: G16005

Date: 19-Jun-18

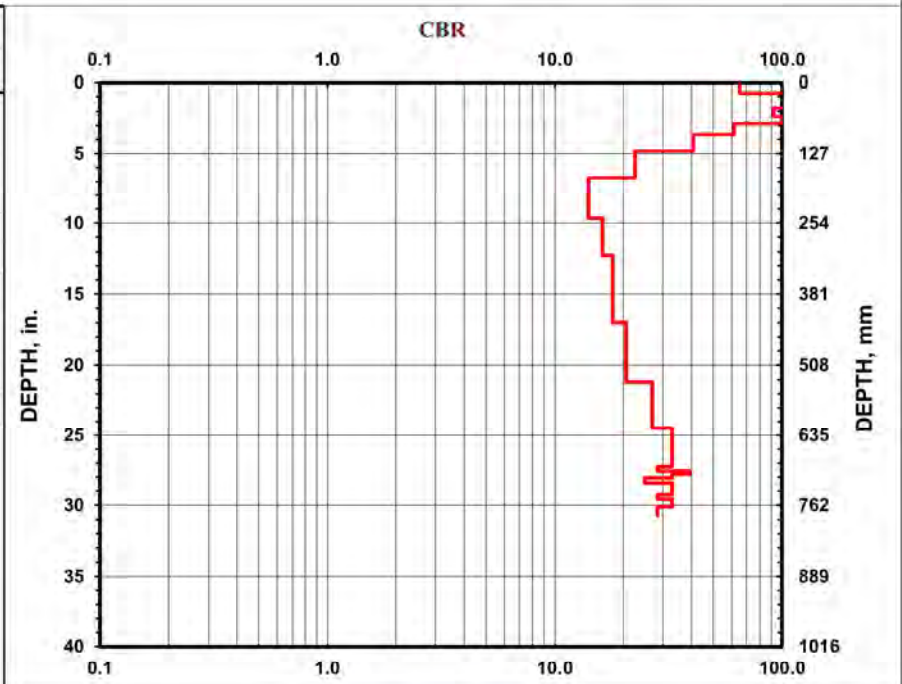
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
5	19	1
5	31	1
4	35	1
5	46	1
5	60	1
5	73	1
5	93	1
5	122	1
5	171	1
5	246	1
5	312	1
10	432	1
10	538	1
10	622	1
10	692	1
1	700	1
1	706	1
1	713	1
1	722	1
1	729	1
1	736	1
1	743	1
1	751	1
1	758	1
1	765	1
1	773	1
1	781	1



### DCP TEST DATA

File Name: Y3\_11+27\_103' LT

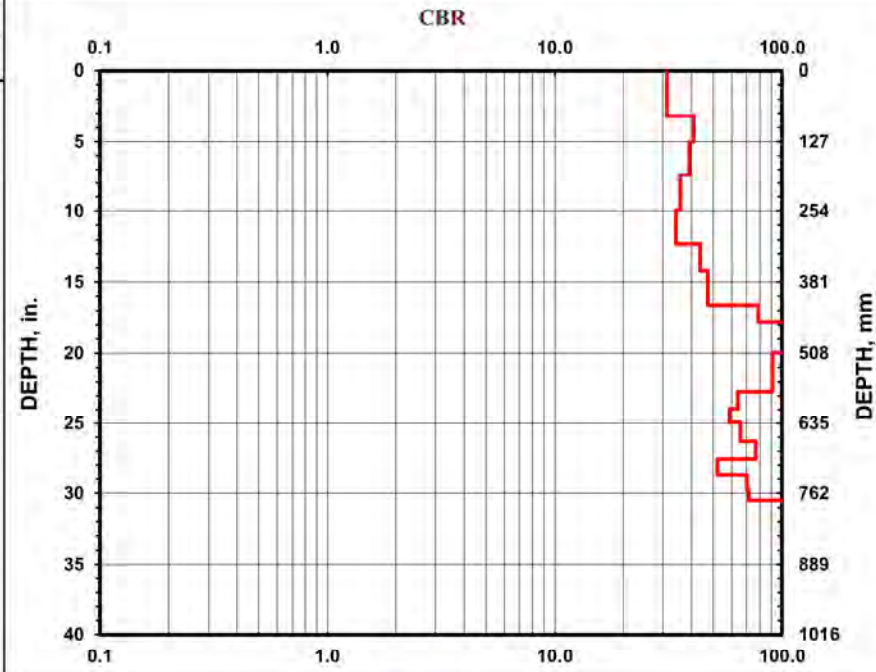
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
11	81	1
8	127	1
10	187	1
10	252	1
9	313	1
9	362	1
12	423	1
9	452	1
10	472	1
15	507	1
25	578	1
8	609	1
6	634	1
9	668	1
10	701	1
6	729	1
7	754	1
6	775	1
11	803	1



### DCP TEST DATA

File Name: Y4\_12+65 6' LT

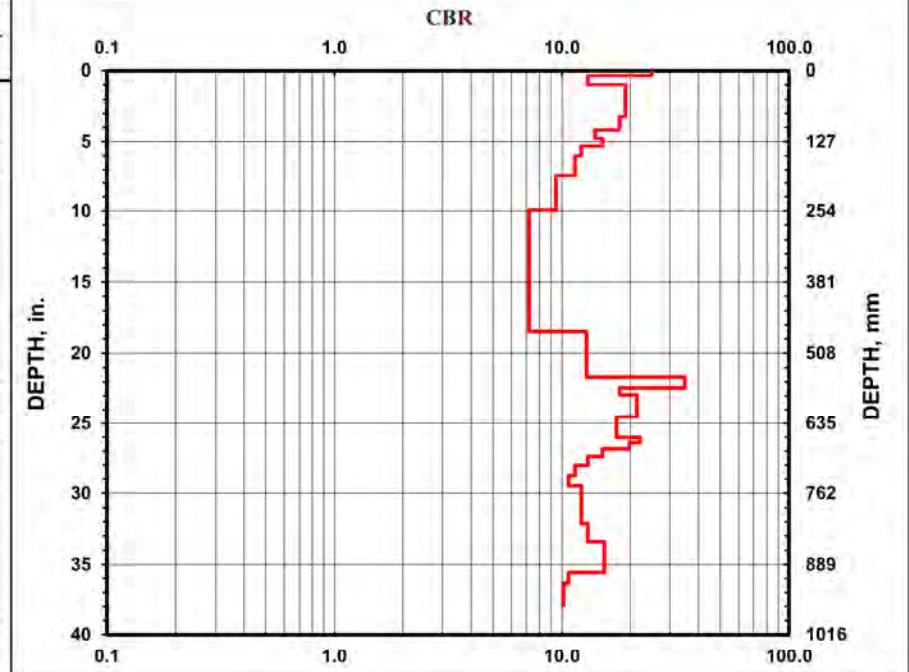
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	9	1
1	25	1
5	82	1
1	94	1
1	106	1
1	121	1
1	135	1
1	152	1
1	170	1
1	188	1
3	252	1
8	470	1
5	551	1
3	571	1
1	583	1
4	624	1
3	661	1
1	671	1
1	682	1
1	696	1
1	712	1
1	730	1
1	749	1
4	817	1
1	833	1
1	849	1
4	904	1
1	923	1
1	943	1
1	963	1



### DCP TEST DATA

File Name: Y5\_12+25\_15' RT

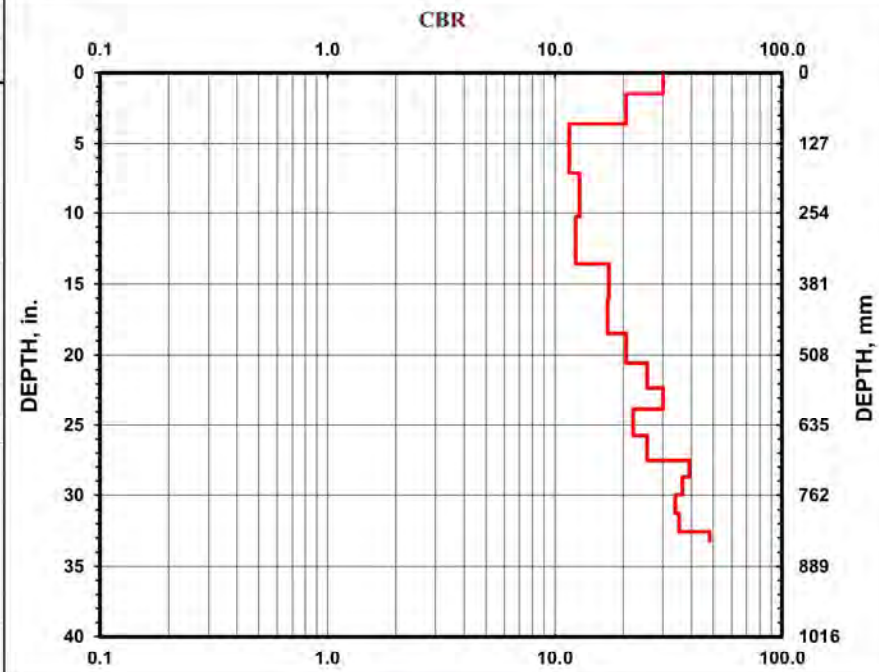
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
5	38	1
5	91	1
5	180	1
5	261	1
5	345	1
5	407	1
5	470	1
5	523	1
5	567	1
5	605	1
5	655	1
5	699	1
5	729	1
5	761	1
5	795	1
5	828	1
3	843	1



### DCP TEST DATA

File Name: Y7\_13+01\_5' LT

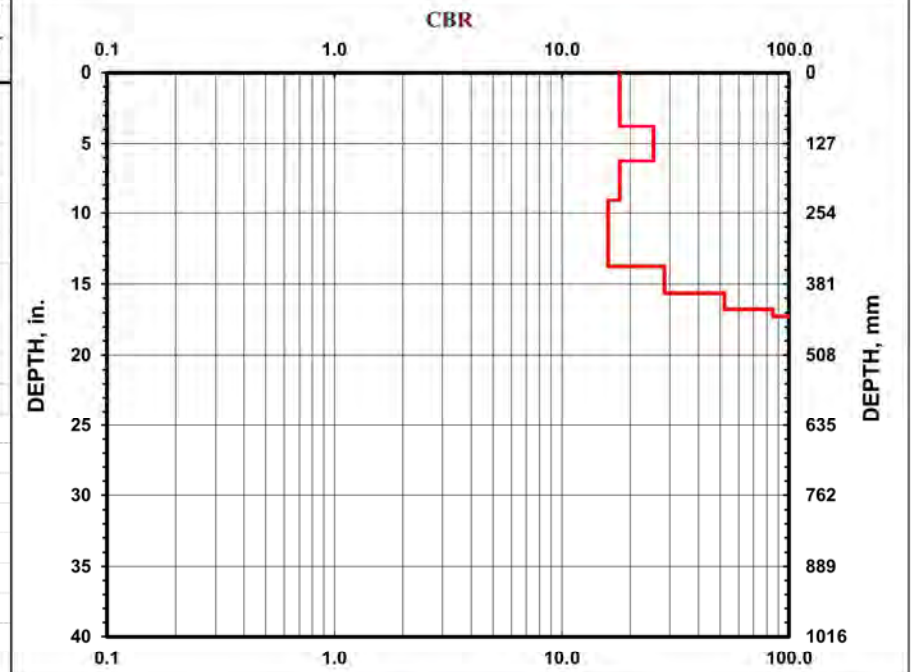
Project: G16005  
 Location: Clay County, NC

Date: 14-Jul-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
8	96	1
7	158	1
6	230	1
9	350	1
6	398	1
6	426	1
4	438	1
25	469	1
35	496	1
35	521	1
25	541	1
25	562	1
40	599	1
35	630	1
30	660	1
35	692	1
40	736	1
30	769	1
30	809	1
35	859	1



### DCP TEST DATA

File Name: Y8\_14+01

Project: G16005

Date: 20-Jun-18

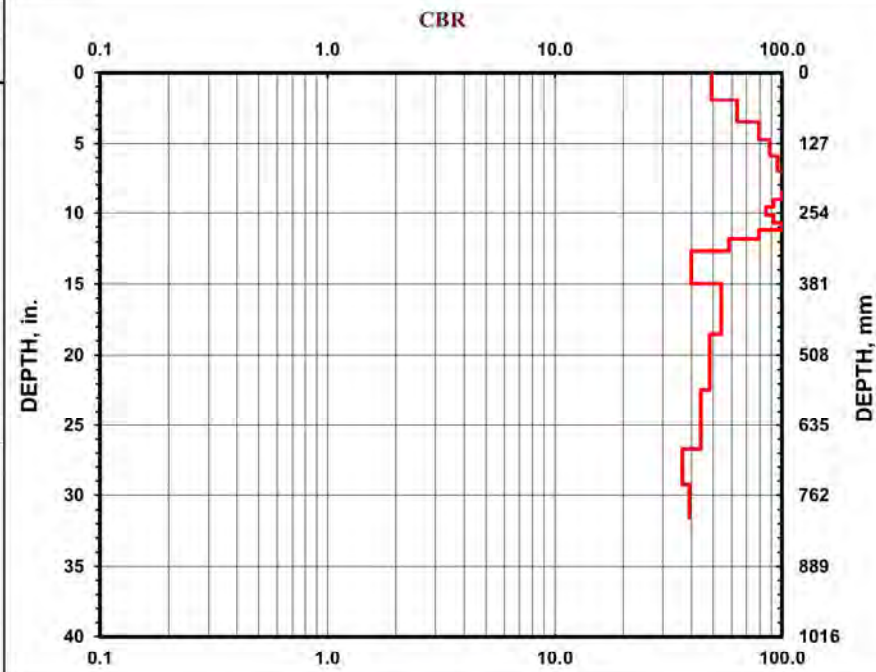
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
10	49	1
10	88	1
10	120	1
10	149	1
10	176	1
8	195	1
5	205	1
5	216	1
5	229	1
5	243	1
5	258	1
5	272	1
5	285	1
5	301	1
5	322	1
10	381	1
20	471	1
20	571	1
20	679	1
10	743	1
10	803	1



### DCP TEST DATA

File Name: Y9\_12+06\_3' LT

Project: G16005

Date: 20-Jun-18

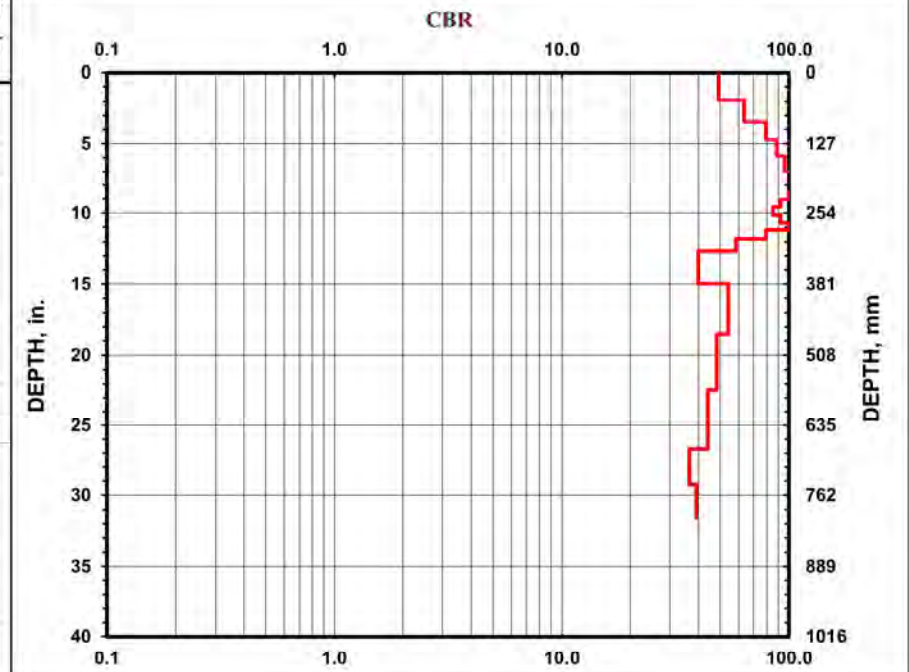
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
10	49	1
10	88	1
10	120	1
10	149	1
10	176	1
8	195	1
5	205	1
5	216	1
5	229	1
5	243	1
5	258	1
5	272	1
5	285	1
5	301	1
5	322	1
10	381	1
20	471	1
20	571	1
20	679	1
10	743	1
10	803	1



### DCP TEST DATA

File Name: Y10\_11+65\_34' LT

Project: G16005

Date: 20-Jun-18

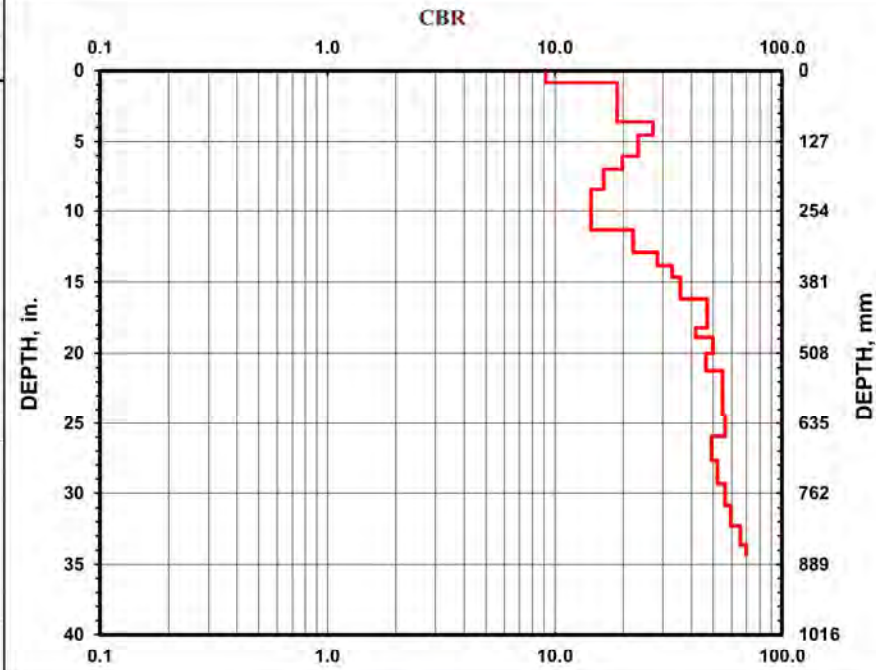
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
0	0	1
1	22	1
6	91	1
3	116	1
4	154	1
2	176	1
3	215	1
5	288	1
4	328	1
3	352	1
3	373	1
6	412	1
10	463	1
3	480	1
6	509	1
6	540	1
9	580	1
9	620	1
9	659	1
9	703	1
9	745	1
9	784	1
9	821	1
9	855	1
5	873	1



### DCP TEST DATA

File Name: Y11\_13+98\_04' RT

Project: G16005

Date: 8-Jun-18

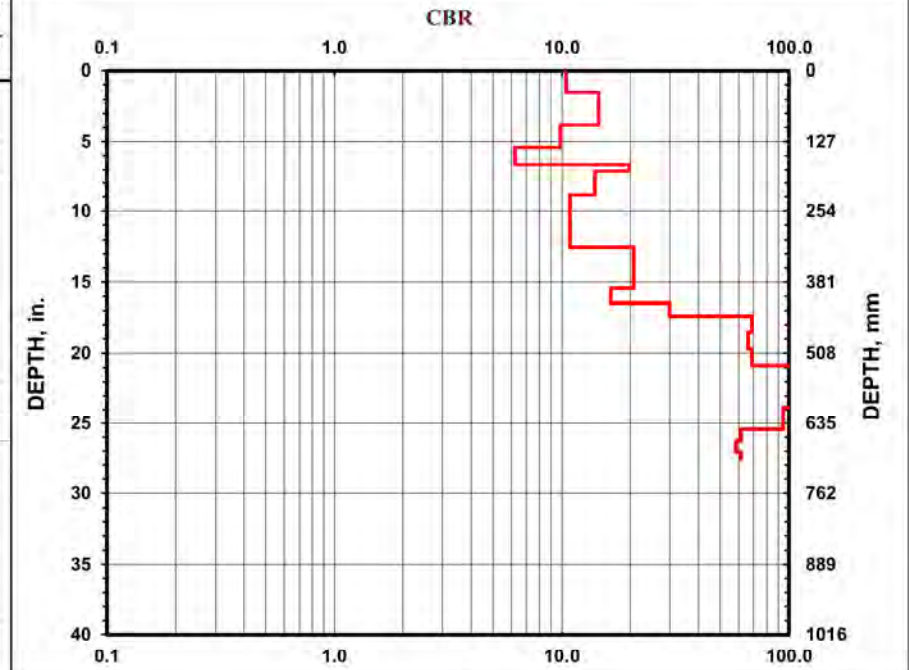
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
2	39	1
4	97	1
2	138	1
1	169	1
1	180	1
3	225	1
5	319	1
7	393	1
2	419	1
3	442	1
8	471	1
8	501	1
8	530	1
5	541	1
25	550	1
25	558	1
25	571	1
25	606	1
15	647	1
5	667	1
5	688	1
3	700	1



### DCP TEST DATA

File Name: Y12\_12+02\_16' LT

Project: G16005

Date: 8-Jun-18

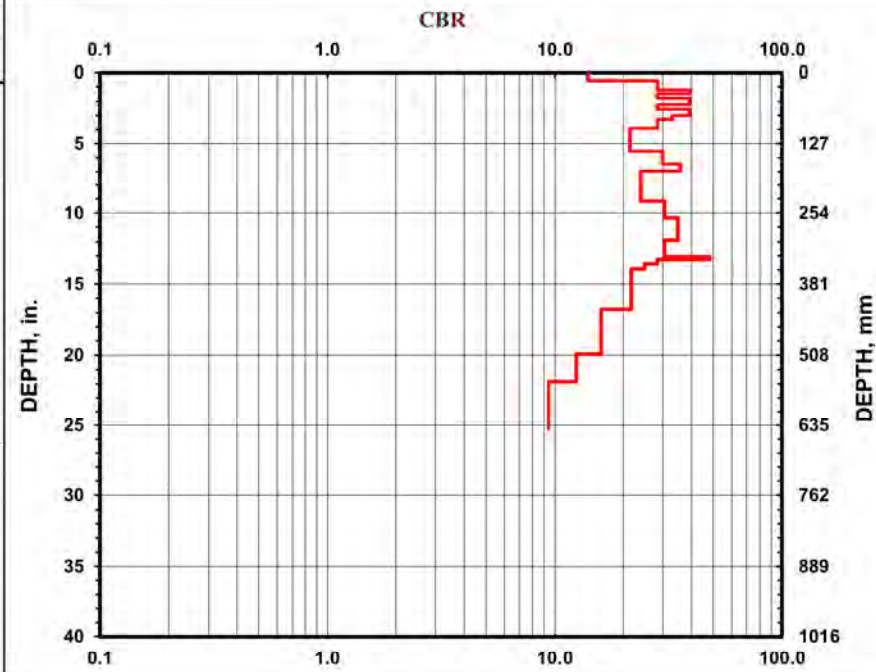
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	15	1
2	31	1
1	37	1
1	45	1
2	57	1
1	65	1
2	77	1
1	84	1
2	100	1
4	141	1
3	164	1
2	177	1
6	233	1
4	263	1
6	303	1
4	333	1
1	338	1
1	346	1
1	355	1
7	426	1
6	506	1
3	556	1
4	642	1



### DCP TEST DATA

File Name: Y13\_11+94\_1' LT

Project: G16005

Date: 8-Jun-18

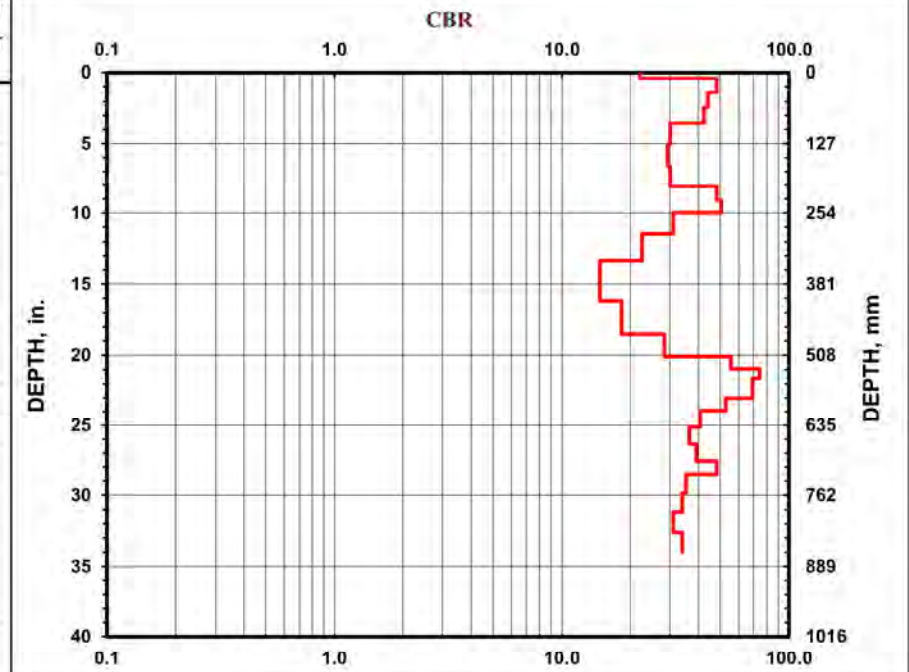
Location: Clay County, NC

Soil Type(s): A

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	10	1
5	35	1
5	62	1
5	90	1
5	128	1
5	167	1
5	205	1
5	230	1
5	254	1
5	291	1
5	340	1
5	412	1
5	471	1
5	511	1
5	533	1
5	550	1
5	568	1
5	586	1
5	609	1
5	638	1
5	670	1
5	700	1
5	725	1
5	758	1
5	792	1
5	829	1
5	863	1



### DCP TEST DATA

File Name: Y14\_12+02\_18' LT

Project: G16005

Date: 8-Jun-18

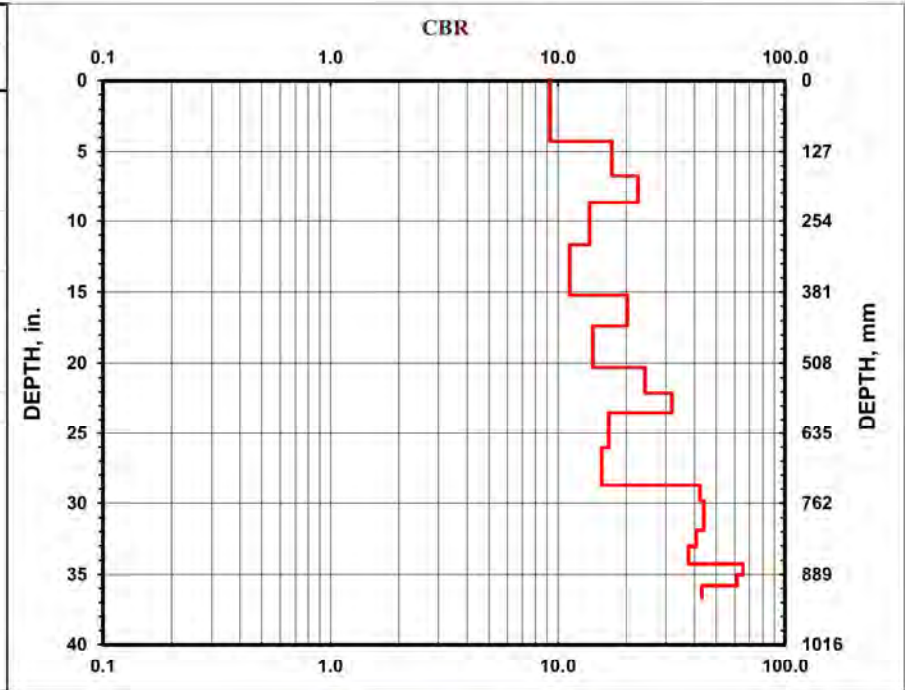
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
5	109	1
5	171	1
5	220	1
5	296	1
5	387	1
5	441	1
5	515	1
5	561	1
5	597	1
5	661	1
5	729	1
5	757	1
5	784	1
5	811	1
5	840	1
5	871	1
5	890	1
5	910	1
4	932	1



### DCP TEST DATA

File Name: Y15\_11+89\_3' LT

Project: G16005

Date: 8-Jun-18

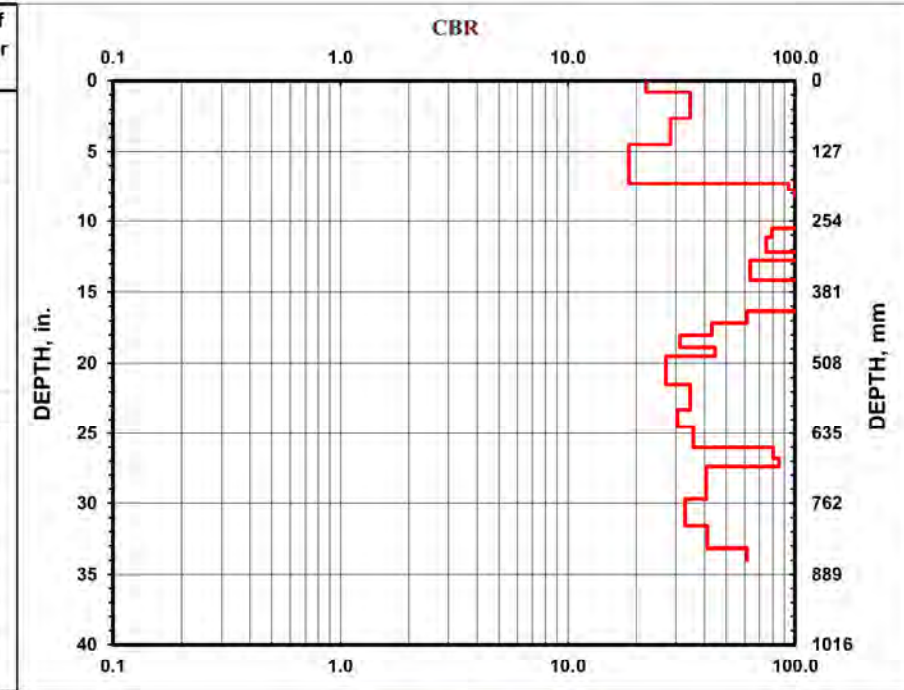
Location: Clay County, NC

Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
2	20	1
7	67	1
6	115	1
6	185	1
4	196	1
5	209	1
5	220	1
5	226	1
5	235	1
5	243	1
5	251	1
5	259	1
5	267	1
5	283	1
8	310	1
6	325	1
9	360	1
8	377	1
5	382	1
5	387	1
5	393	1
5	398	1
5	403	1
5	409	1
5	416	1
5	436	1
4	458	1
3	480	1
3	496	1
6	546	1
7	593	1
4	623	1
6	662	1
6	681	1
5	696	1
10	754	1
7	803	1
7	843	1
5	863	1



### DCP TEST DATA

File Name: Y16\_11+98\_7' RT

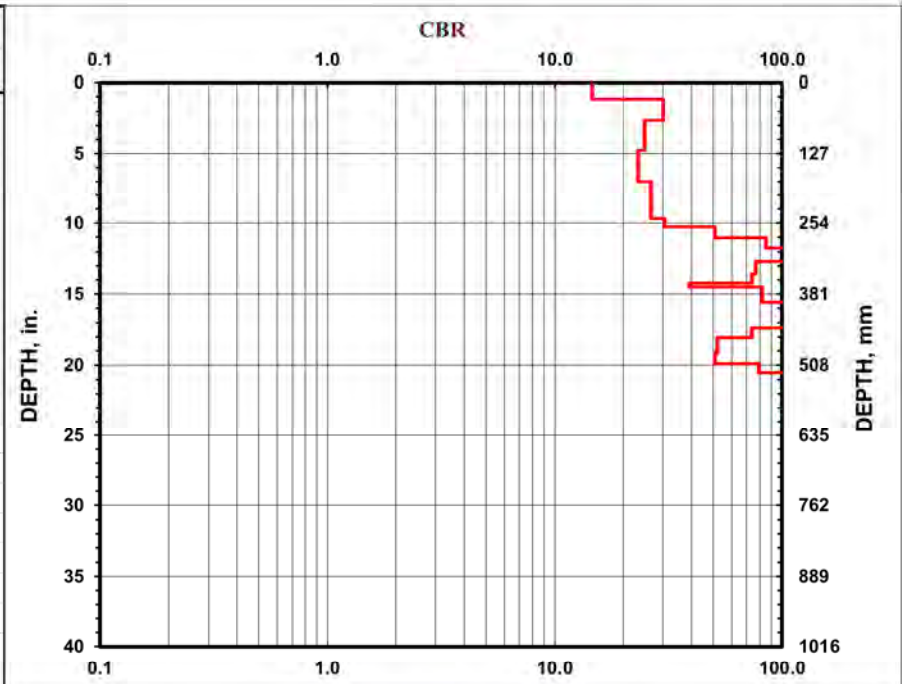
Project: G16005  
 Location: Clay County, NC

Date: 8-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
2	29	1
5	67	1
6	121	1
6	178	1
8	246	1
2	261	1
4	280	1
6	298	1
4	308	1
6	322	1
7	345	1
5	362	1
1	368	1
9	396	1
7	408	1
5	413	1
5	420	1
5	429	1
5	441	1
5	458	1
6	486	1
4	505	1
5	521	1
5	526	1
5	529	1
5	530	1
5	532	1
15	534	1



### DCP TEST DATA

File Name: Y17\_12+19\_1' RT

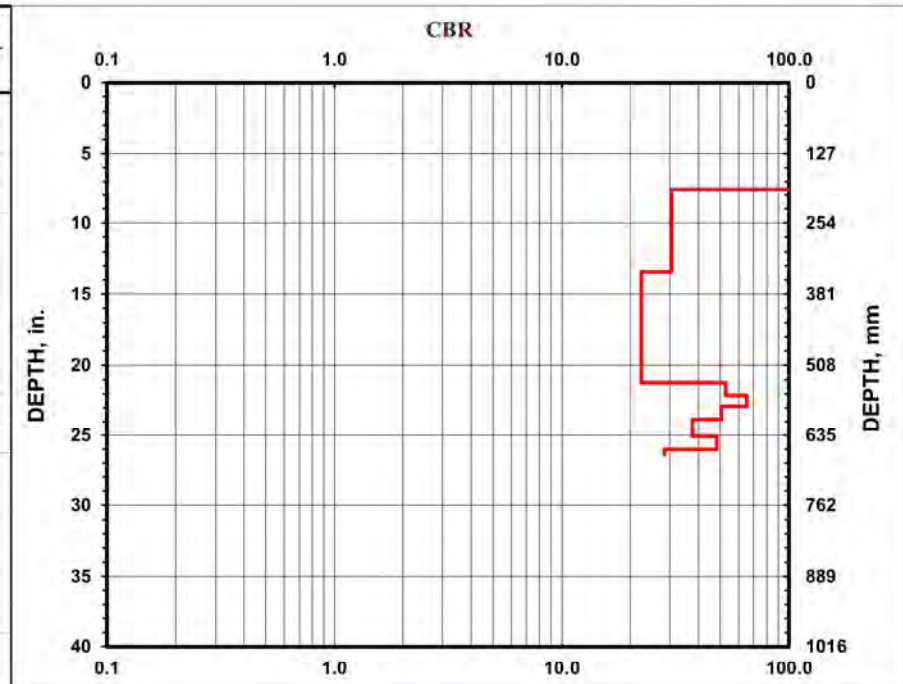
Project: G16005  
 Location: Clay County, NC

Date: 19-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
4	6	1
5	13	1
5	20	1
5	26	1
5	32	1
5	34	1
5	40	1
5	44	1
5	47	1
5	51	1
5	56	1
5	60	1
5	62	1
5	65	1
5	70	1
5	73	1
5	76	1
5	79	1
5	85	1
5	88	1
5	92	1
5	96	1
50	131	1
25	142	1
25	155	1
20	192	1
20	342	1
20	540	1
5	563	1
5	582	1
5	606	1
5	637	1
5	662	1
1	670	1





### DCP TEST DATA

File Name: Y19\_15+87\_38' LT

Project: G16005

Date: 19-Jun-18

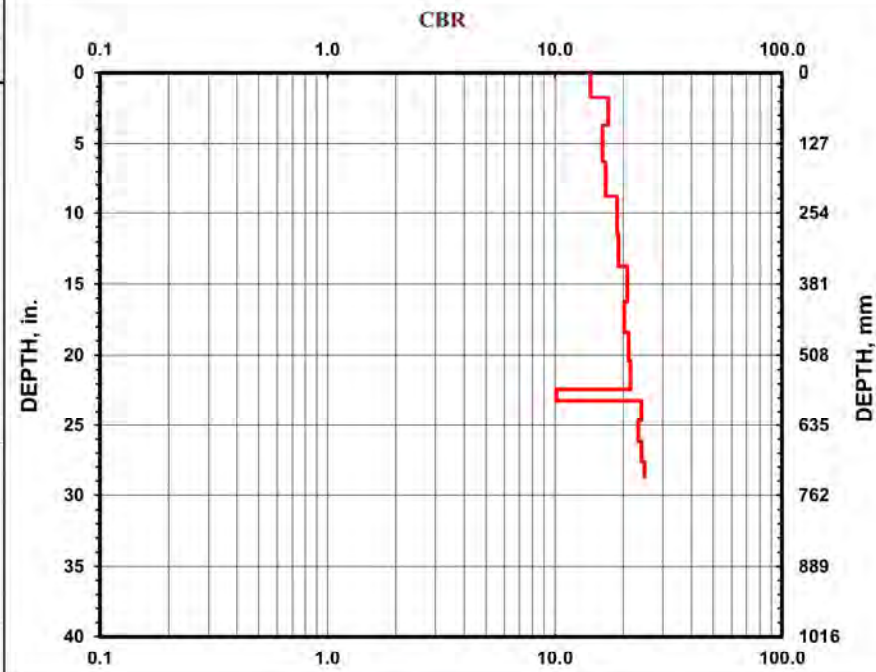
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
3	44	1
4	94	1
5	160	1
5	224	1
6	293	1
5	350	1
6	413	1
5	467	1
5	519	1
5	570	1
1	590	1
4	627	1
4	665	1
4	702	1
3	729	1



### DCP TEST DATA

File Name: Y20\_1703\_1' LT

Project: G16005

Date: 19-Jun-18

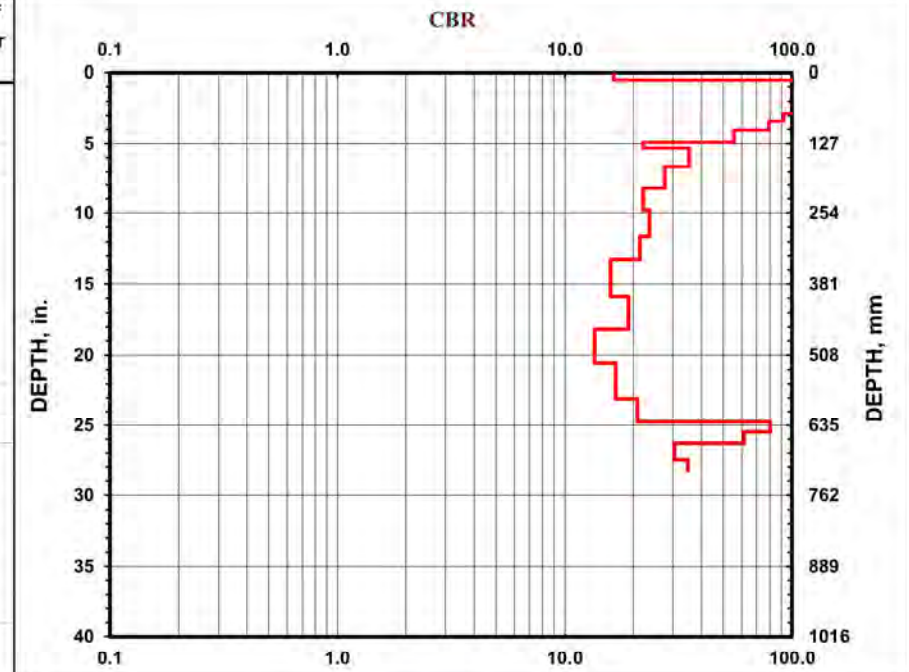
Location: Clay County, NC

Soil Type(s): Type in the soil type

- Hammer
- 10.1 lbs.
  - 17.6 lbs.
  - Both hammers used

- Soil Type
- CH
  - CL
  - All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
1	13	1
1	15	1
1	17	1
5	27	1
5	37	1
5	45	1
5	54	1
5	63	1
5	73	1
5	87	1
5	103	1
5	125	1
1	135	1
5	168	1
5	209	1
4	249	1
5	296	1
4	337	1
5	404	1
5	461	1
4	523	1
5	587	1
4	629	1
6	648	1
5	668	1
4	698	1
3	718	1



### DCP TEST DATA

File Name: Y20\_28+21\_3' LT

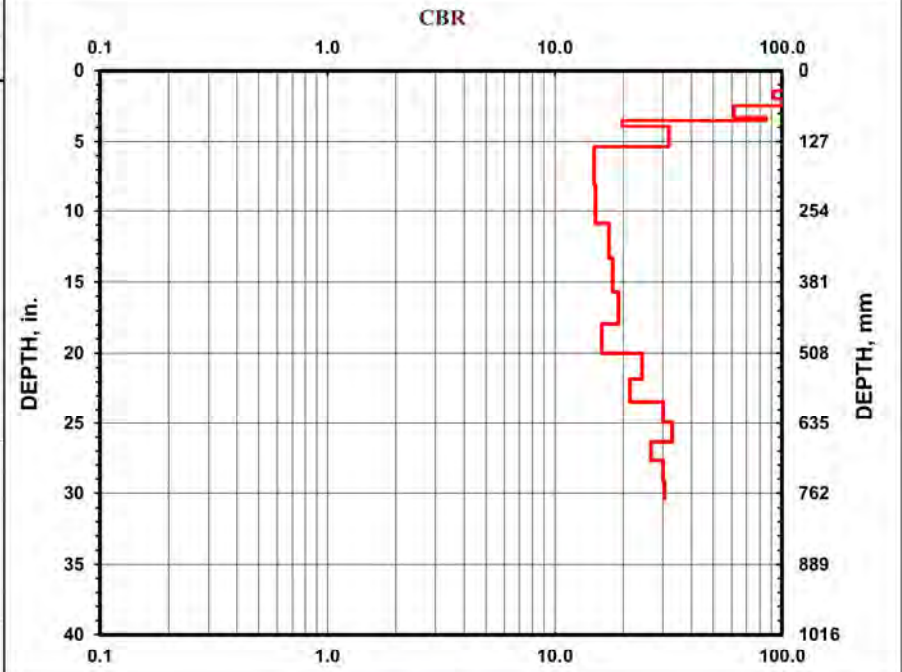
Project: G16005  
 Location: Clay County, NC

Date: 19-Jun-18  
 Soil Type(s): Type in the soil type

Hammer  
 10.1 lbs.  
 17.6 lbs.  
 Both hammers used

Soil Type  
 CH  
 CL  
 All other soils

No. of Blows	Accumulative Penetration (mm)	Type of Hammer
Start	0	1
5	11	1
5	22	1
2	25	1
5	36	1
5	50	1
5	63	1
5	83	1
2	89	1
1	100	1
5	136	1
5	207	1
5	277	1
5	339	1
5	399	1
5	456	1
4	509	1
5	555	1
4	596	1
5	634	1
5	669	1
4	703	1
5	741	1
4	771	1



**REFERENCE: A-0011C**

**PROJECT: 32574**

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT  
SUBSURFACE INVESTIGATION  
APPENDIX B  
LABORATORY RESULTS**

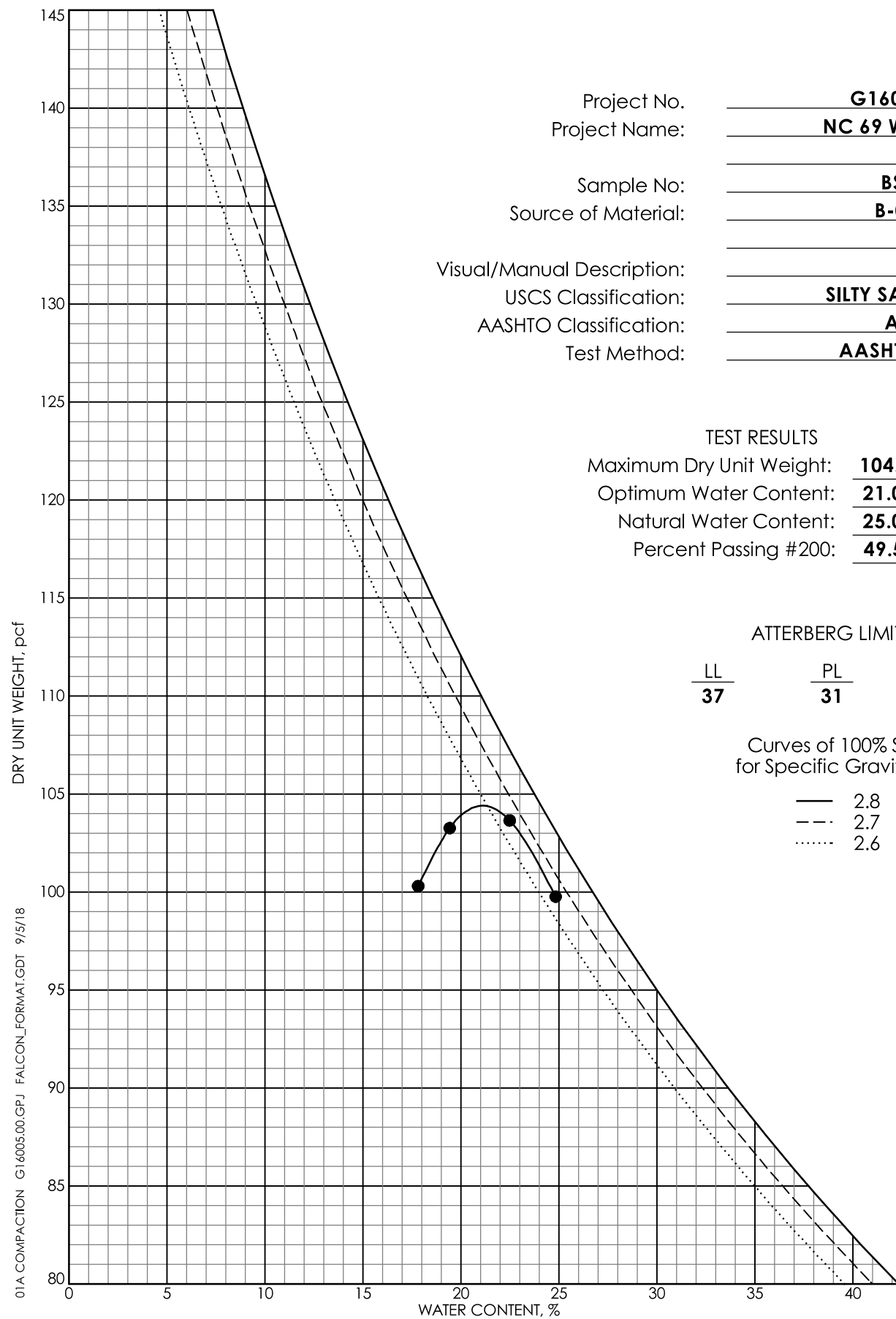


1210 TRINITY ROAD, SUITE 110  
CARY, NC 27513

PHONE: 919.871.0800  
www.falconengineers.com

### LABORATORY COMPACTION TEST RESULTS

9/5/2018



Project No. G16005.00  
 Project Name: NC 69 Widening  
 Sample No. BS-1  
 Source of Material: B-012  
 Visual/Manual Description: \_\_\_\_\_  
 USCS Classification: SILTY SAND(SM)  
 AASHTO Classification: A-4  
 Test Method: AASHTO T-99

**TEST RESULTS**  
 Maximum Dry Unit Weight: 104.4 PCF  
 Optimum Water Content: 21.0 %  
 Natural Water Content: 25.0 %  
 Percent Passing #200: 49.5 %

**ATTERBERG LIMITS**

LL	PL	PI
37	31	6

Curves of 100% Saturation  
for Specific Gravity Equal to:

- 2.8
- - - 2.7
- ..... 2.6

### FALCON ENGINEERING 1210 TRINITY RD., SUITE 110, Cary, NC 27513

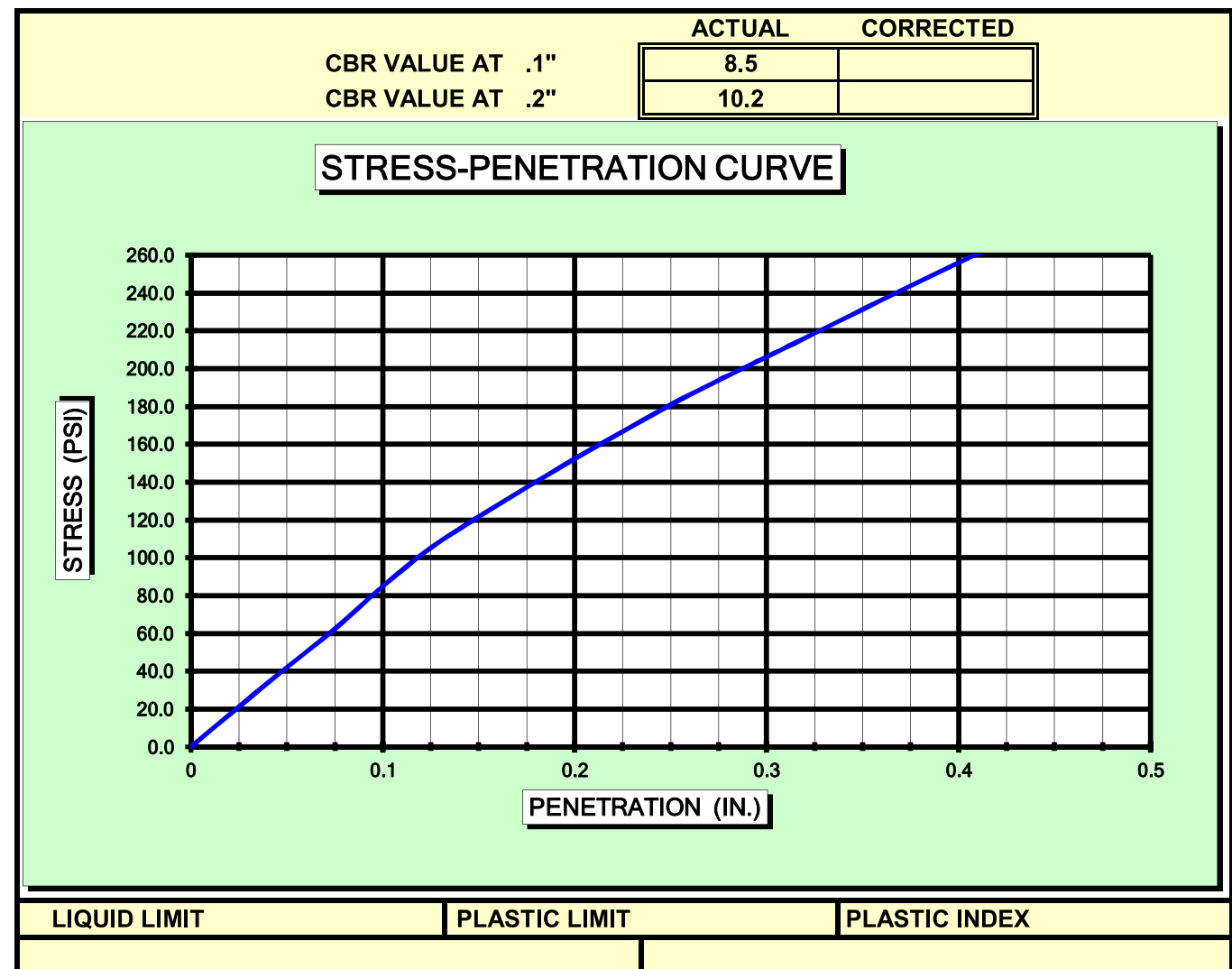
#### CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 \ ASTM D-1883

PROJECT #: G16005.00 DATE: 8/17/2018  
 PROJECT NAME: NC 69 Widening  
 BORING: B-12 SAMPLE: BS-1 DEPTH: 1.0-10.0

SOIL DESCRIPTION:

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	103.6 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	21.9%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	101.5 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	22.0%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.0%	SWELL	0.26%



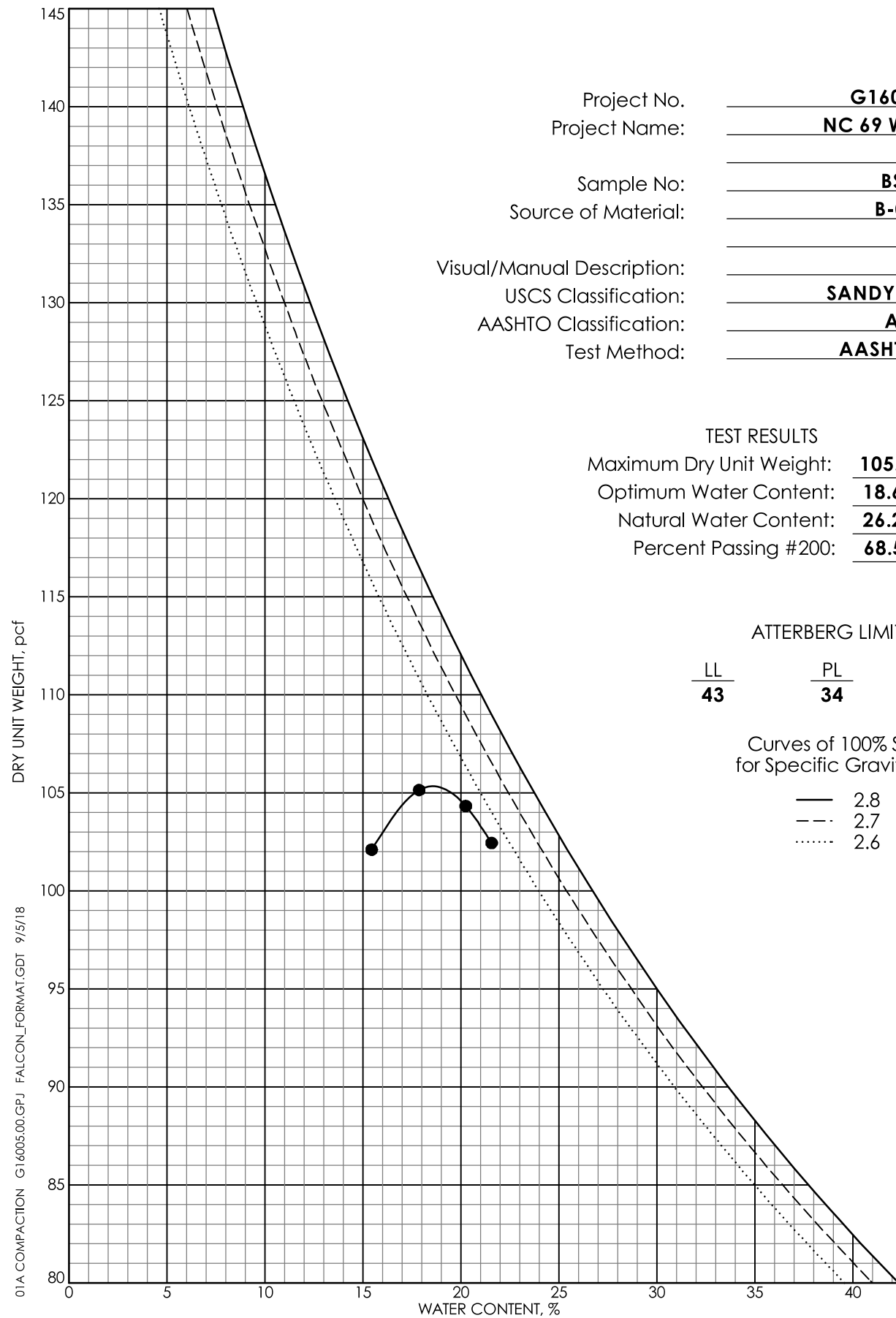


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CARY, NC 27513

PHONE: 919.871.0800  
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### LABORATORY COMPACTION TEST RESULTS

9/5/2018



Project No. G16005.00  
 Project Name: NC 69 Widening  
 Sample No. BS-2  
 Source of Material: B-017  
 Visual/Manual Description: \_\_\_\_\_  
 USCS Classification: SANDY SILT(ML)  
 AASHTO Classification: A-5  
 Test Method: AASHTO T-99

**TEST RESULTS**  
 Maximum Dry Unit Weight: 105.3 PCF  
 Optimum Water Content: 18.6 %  
 Natural Water Content: 26.2 %  
 Percent Passing #200: 68.5 %

**ATTERBERG LIMITS**

LL	PL	PI
<b>43</b>	<b>34</b>	<b>9</b>

Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.8  
 - - - 2.7  
 ..... 2.6

### FALCON ENGINEERING

1210 TRINITY RD., SUITE 110, Cary, NC 27513

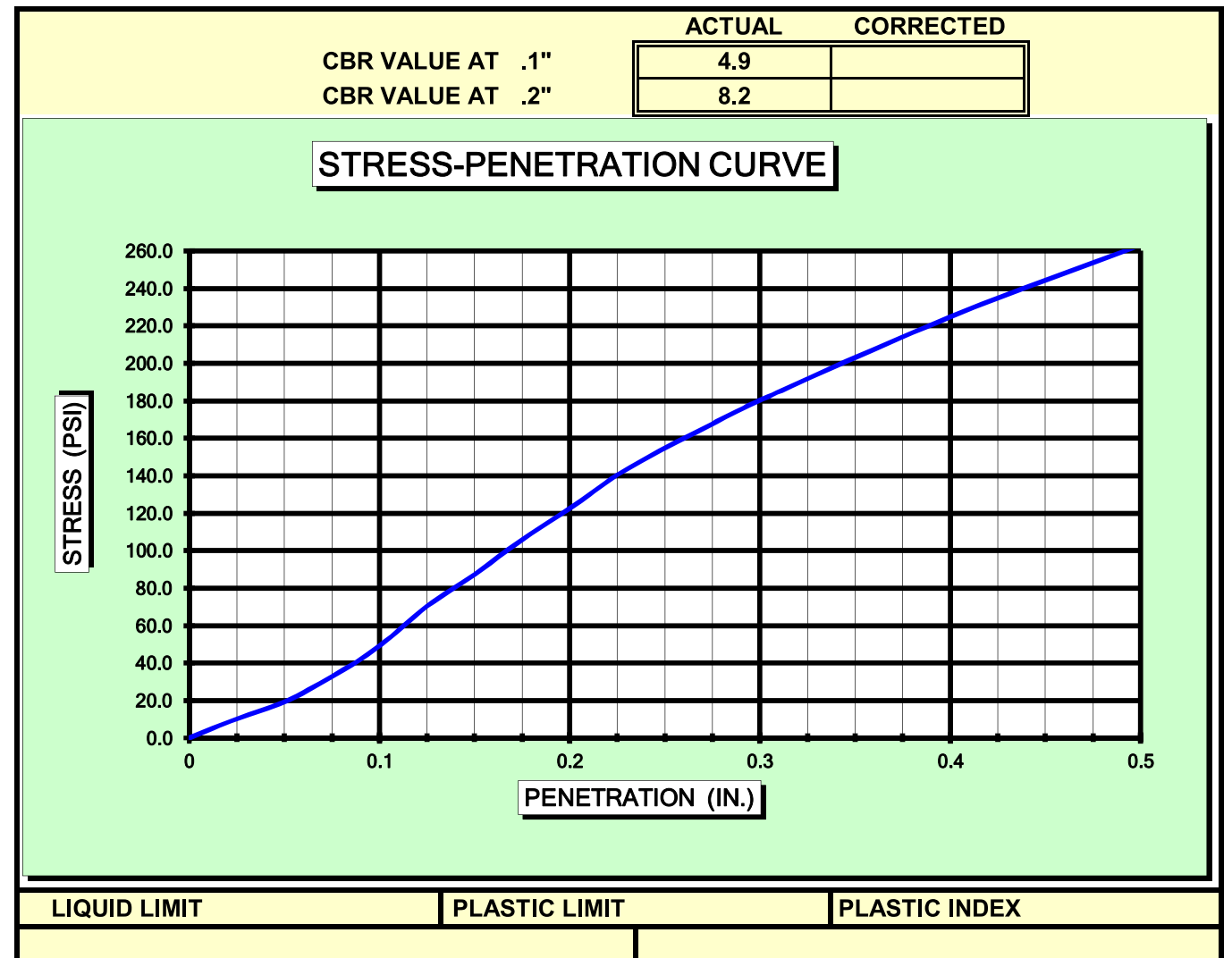
### CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 \ ASTM D-1883

PROJECT #: G16005.00 DATE: 8/17/2018  
 PROJECT NAME: NC 69 Widening  
 BORING: B-17 SAMPLE: BS-2 DEPTH: 1.0'-10.0'

**SOIL DESCRIPTION:**

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	104.9 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.2%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	102.8 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.0%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.0%	SWELL	0.55%



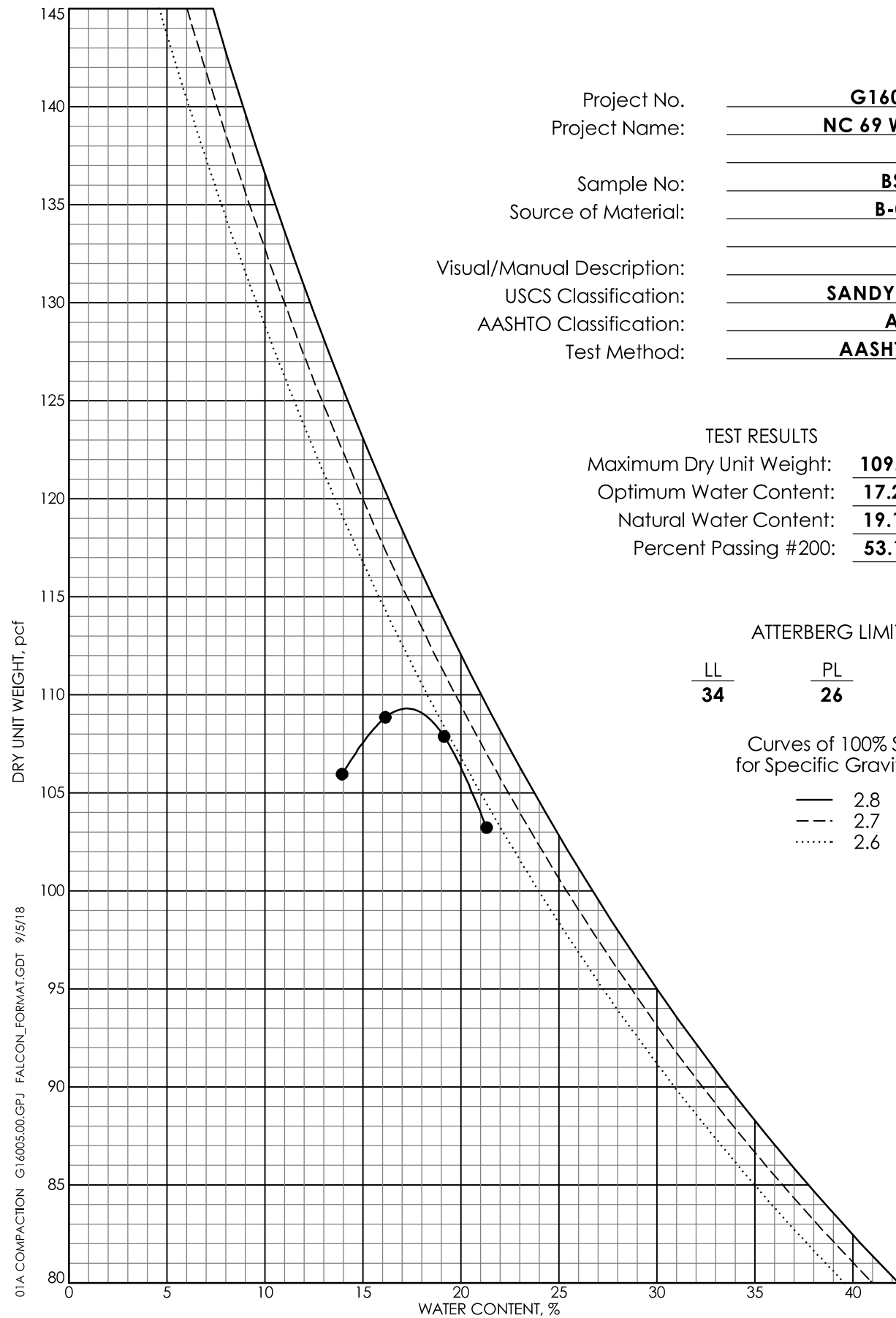


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# LABORATORY COMPACTION TEST RESULTS

9/5/2018



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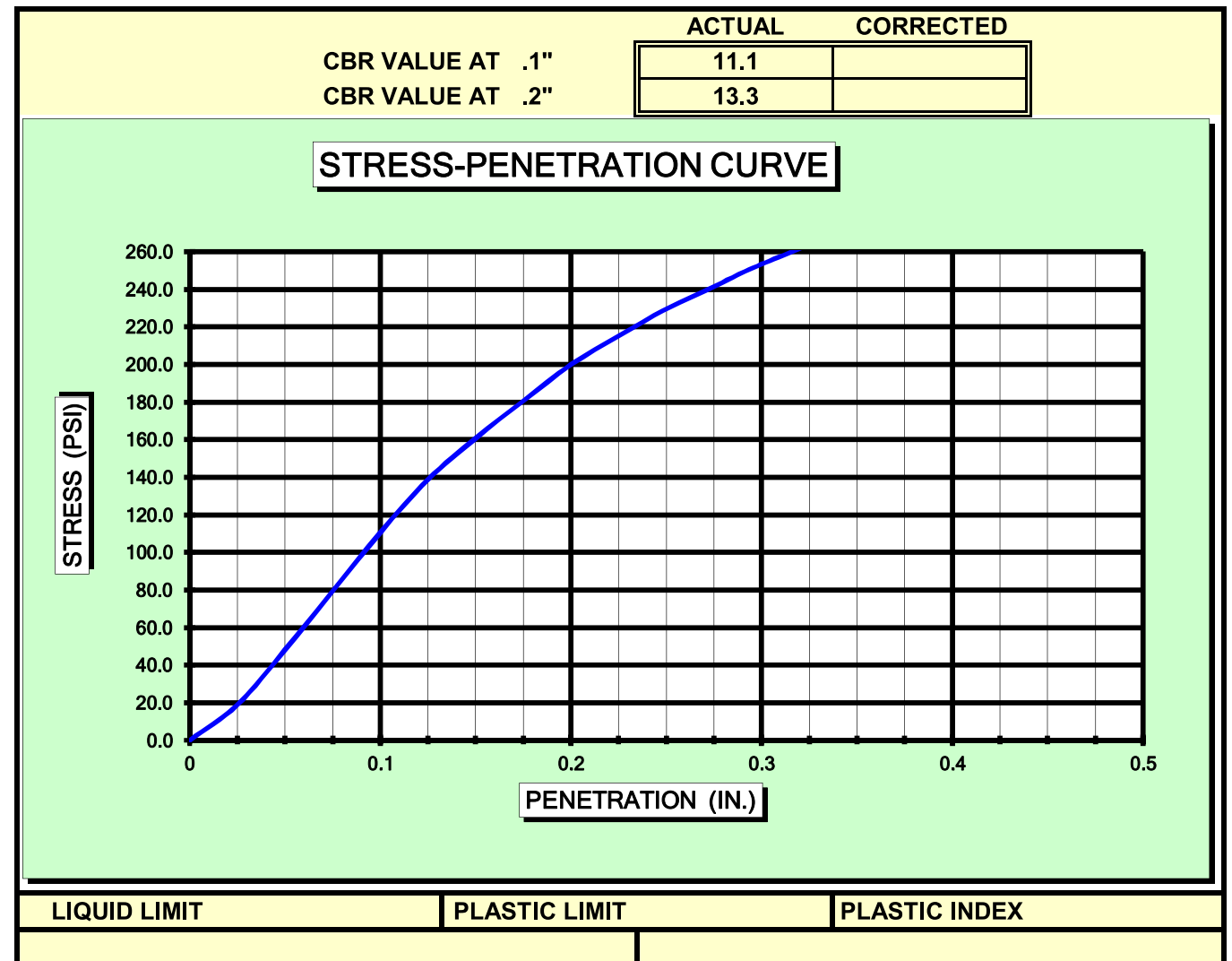
### CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 \ ASTM D-1883

PROJECT #:	G16005.00	DATE:	8/17/2018
PROJECT NAME:	NC 69 Widening		
BORING:	B-47	SAMPLE:	BS-3
		DEPTH:	1.0'-10.0'

**SOIL DESCRIPTION:**

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	107.1 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	18.2%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	105.0 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	18.4%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.0%	SWELL	0.50%



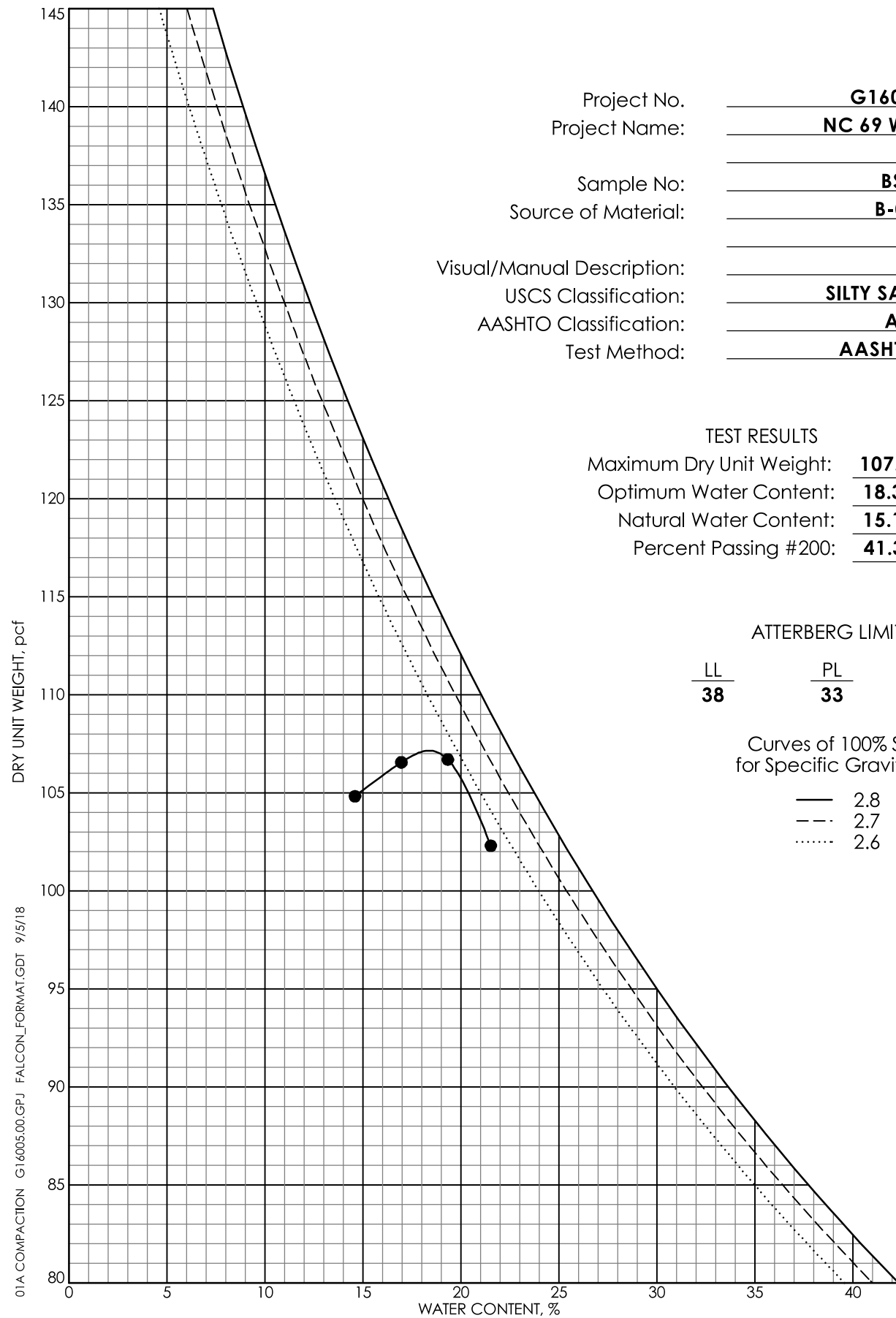


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### LABORATORY COMPACTION TEST RESULTS

9/5/2018



Project No. G16005.00  
 Project Name: NC 69 Widening  
 Sample No. BS-4  
 Source of Material: B-095  
 Visual/Manual Description: \_\_\_\_\_  
 USCS Classification: SILTY SAND(SM)  
 AASHTO Classification: A-4  
 Test Method: AASHTO T-99

**TEST RESULTS**  
 Maximum Dry Unit Weight: 107.1 PCF  
 Optimum Water Content: 18.3 %  
 Natural Water Content: 15.1 %  
 Percent Passing #200: 41.3 %

**ATTERBERG LIMITS**

LL	PL	PI
<b>38</b>	<b>33</b>	<b>5</b>

Curves of 100% Saturation for Specific Gravity Equal to:

- 2.8
- - - 2.7
- ..... 2.6

### FALCON ENGINEERING

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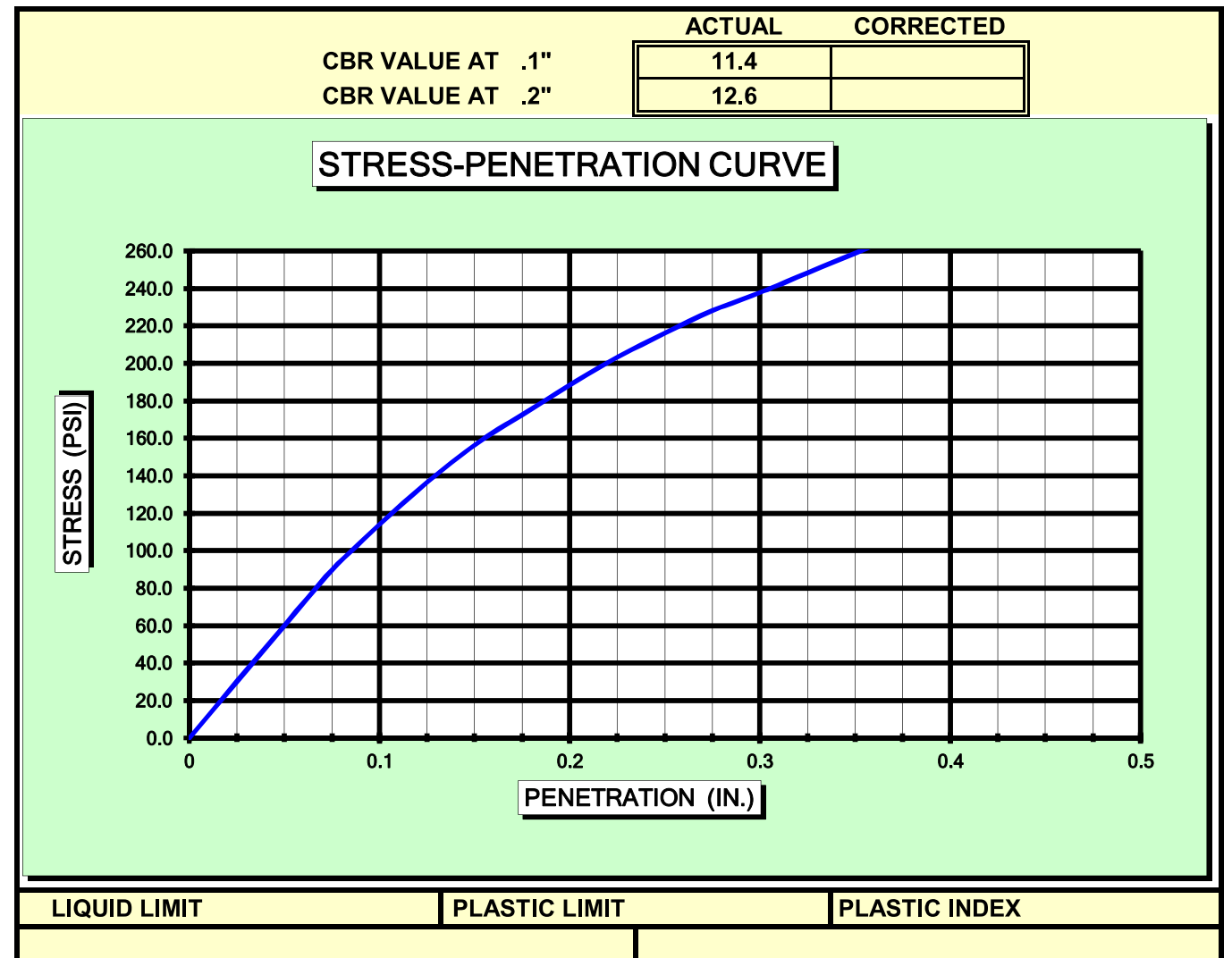
### CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 \ ASTM D-1883

PROJECT #: G16005.00 DATE: 8/17/2018  
 PROJECT NAME: NC 69 Widening  
 BORING: B-95 SAMPLE: BS-4 DEPTH: 1.0'-10.0'

**SOIL DESCRIPTION:**

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	107.3 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	18.5%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	105.2 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	18.2%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.0%	SWELL	0.68%



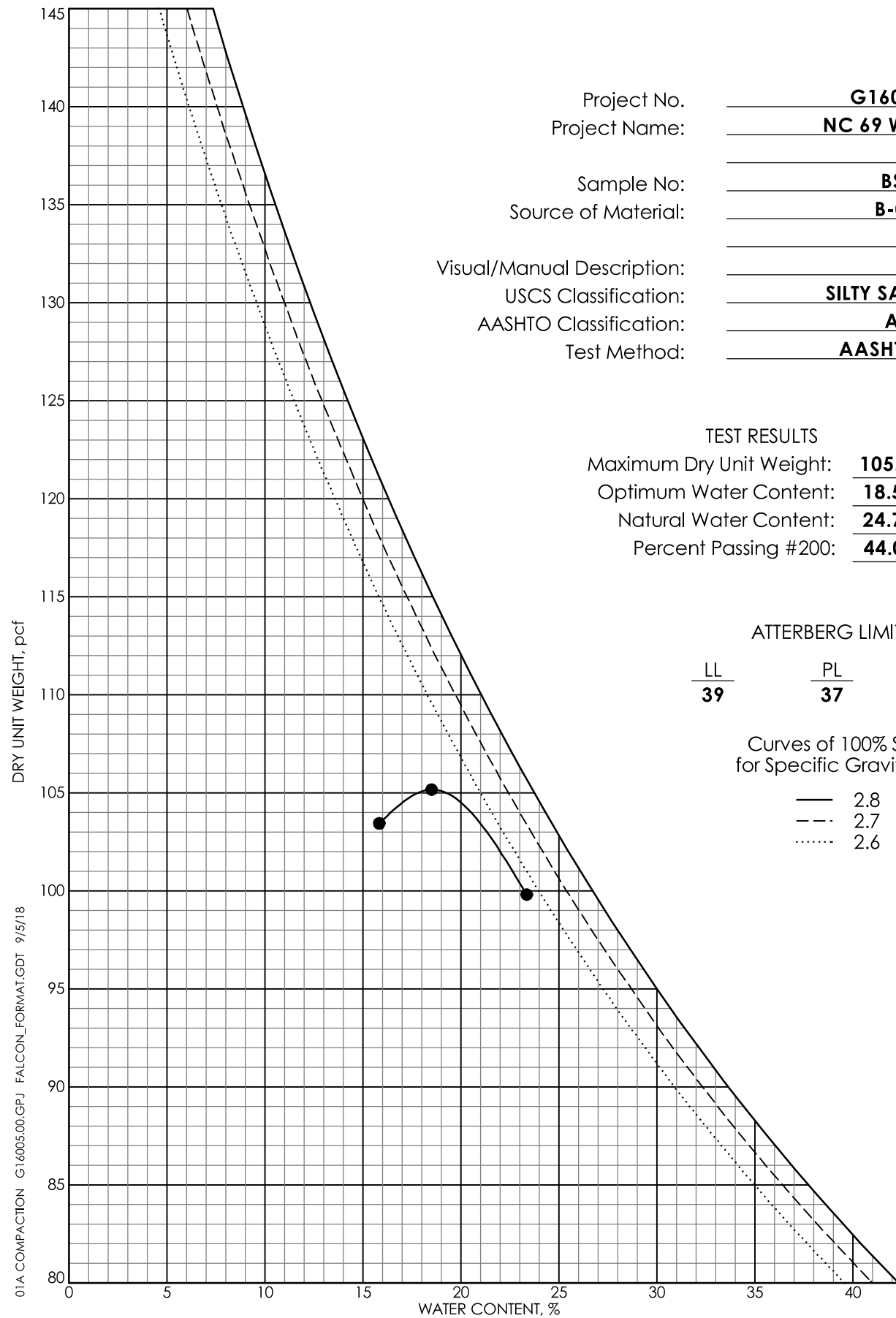


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**LABORATORY COMPACTION TEST RESULTS**

9/5/2018



Project No. G16005.00  
 Project Name: NC 69 Widening  
 Sample No. BS-5  
 Source of Material: B-097  
 Visual/Manual Description: \_\_\_\_\_  
 USCS Classification: SILTY SAND(SM)  
 AASHTO Classification: A-4  
 Test Method: AASHTO T-99

**TEST RESULTS**  
 Maximum Dry Unit Weight: 105.2 PCF  
 Optimum Water Content: 18.5 %  
 Natural Water Content: 24.7 %  
 Percent Passing #200: 44.0 %

**ATTERBERG LIMITS**

LL	PL	PI
39	37	2

Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.8  
 - - - 2.7  
 ..... 2.6

**FALCON ENGINEERING**

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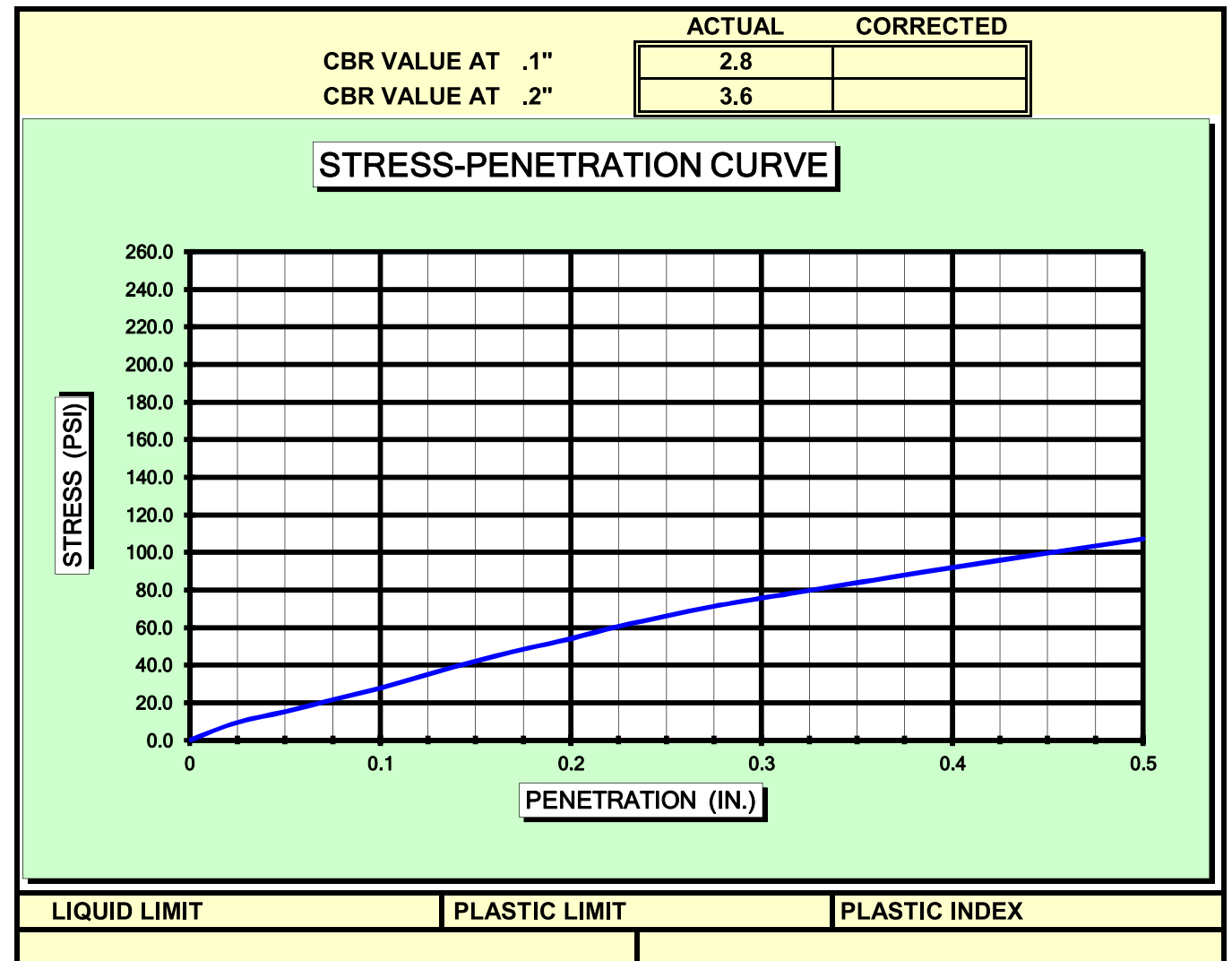
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 \ ASTM D-1883

PROJECT #: G16005.00 DATE: 8/17/2018  
 PROJECT NAME: NC 69 Widening  
 BORING: B-97 SAMPLE: BS-5 DEPTH: 1.0'-10.0'

**SOIL DESCRIPTION:**

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	105.3 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	18.1%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	103.2 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	17.9%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.0%	SWELL	0.70%





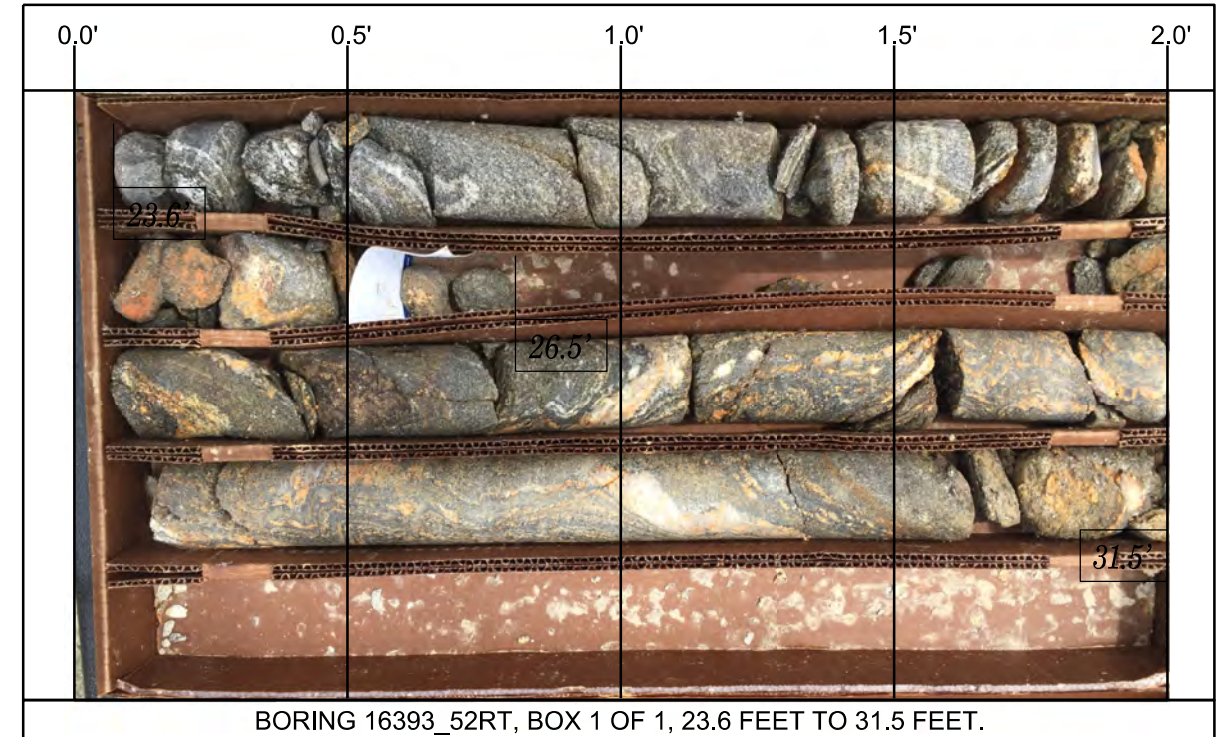
**REFERENCE: A-0011C**

**PROJECT: 32574**

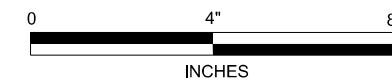
*NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT  
SUBSURFACE INVESTIGATION  
APPENDIX C  
CORE LOGS AND PHOTOGRAPHS*

## GEOTECHNICAL BORING REPORT CORE LOG

WBS 32574.1.FD7		TIP A-0011C		COUNTY CLAY		GEOLOGIST Weis, J.					
SITE DESCRIPTION NC 69 ROAD WIDENING FROM GA STATE LINE TO US 64 (HAYESVILLE BYPASS)							GROUND WTR (ft)				
BORING NO. L_11196_74LT		STATION 111+96		OFFSET 74 ft LT		ALIGNMENT -L-	0 HR. Dry				
COLLAR ELEV. N/A		TOTAL DEPTH 31.5 ft		NORTHING 494,077		EASTING 555,716	24 HR. N/A				
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 95% 03/19/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic					
DRILLER Estep, J. E.		START DATE 05/17/18		COMP. DATE 05/17/18		SURFACE WATER DEPTH N/A					
CORE SIZE NQ2		TOTAL RUN 7.9 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %	REC. (ft) %	RQD (ft) %			
		23.6	2.9	3:08/0.9 2:08/1.0 1:31/1.0	(2.0) 69%	(0.0) 0%	(2.0) 69%	(0.0) 0%	L O G	Begin Coring @ 23.6 ft	23.6
		26.5								BLACK AND WHITE, MOD. TO FRESH WEATHERING, VERY CLOSE TO CLOSELY FRACTURED, MED. HARD TO HARD MICA SCHIST	26.5
			5.0	1:42/1.0 1:41/1.0 1:37/1.0 1:52/1.0 0:57/1.0	(4.0) 80%	(2.0) 40%	(4.0) 80%	(2.0) 40%		BLACK AND WHITE, MOD. TO FRESH WEATHERING, VERY CLOSE TO CLOSELY FRACTURED, MED. HARD TO HARD BIOTITE SCHIST	
		31.5								Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Depth 31.5 ft IN CRYSTALLINE ROCK: MICA SCHIST	31.5



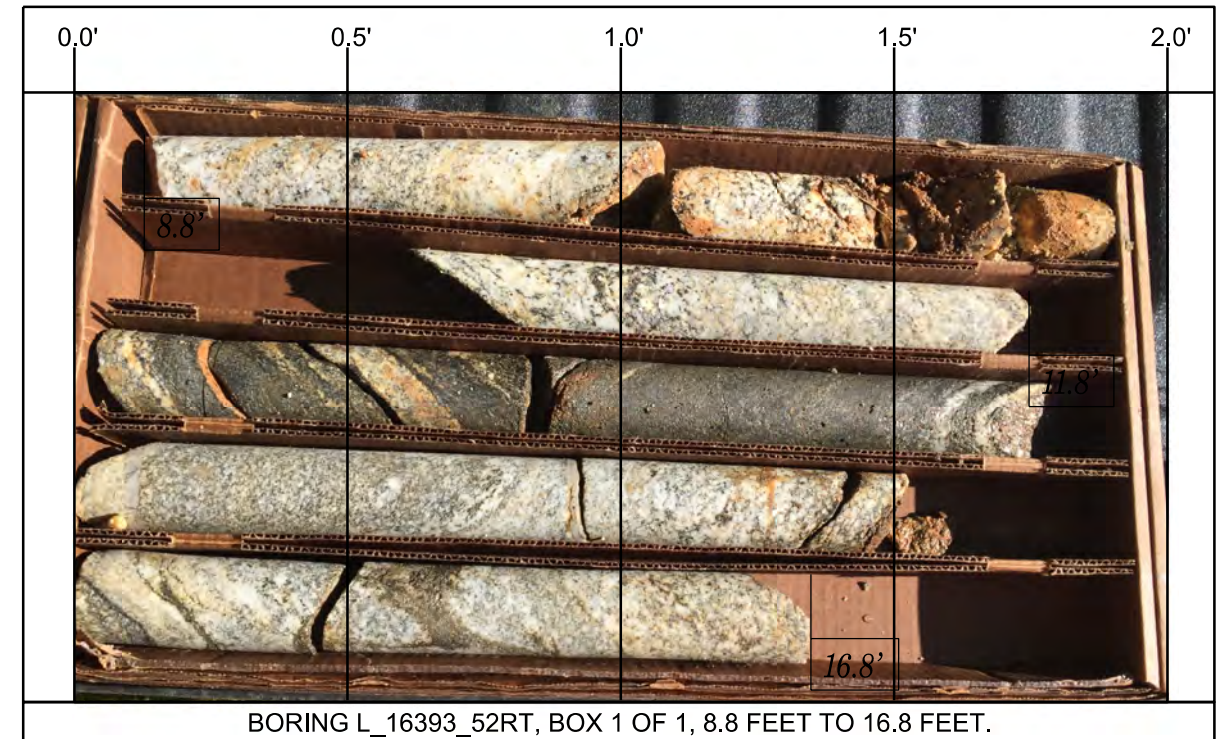
NCDOT CORE SINGLE A011C\_GEO\_RDWY\_GINT.GPJ NC\_DOT.GDT 9/28/18



<p style="font-size: 8px;">FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 RALEIGH, NC 27607 PHONE: 919.871.0800</p>	<p><b>ROCK CORE PHOTOS</b></p> <p style="font-size: 8px;">NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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## GEOTECHNICAL BORING REPORT CORE LOG

WBS 32574.1.FD7		TIP A-0011C		COUNTY CLAY		GEOLOGIST Weis, J.					
SITE DESCRIPTION NC 69 ROAD WIDENING FROM GA STATE LINE TO US 64 (HAYESVILLE BYPASS)							GROUND WTR (ft)				
BORING NO. L_16393_52RT		STATION 163+93		OFFSET 52 ft RT		ALIGNMENT -L-	0 HR. Dry				
COLLAR ELEV. N/A		TOTAL DEPTH 16.8 ft		NORTHING 498,745		EASTING 555,272	24 HR. N/A				
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 95% 03/19/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic					
DRILLER Estep, J. E.		START DATE 05/24/18		COMP. DATE 05/24/18		SURFACE WATER DEPTH N/A					
CORE SIZE NQ2		TOTAL RUN 8.0 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %	REC. (ft) %	RQD (ft) %			
		8.8	3.0	1:38/1.0 1:42/1.0 1:35/1.0	(2.8) 93%	(2.2) 73%	(2.8) 93%	(2.2) 73%		Begin Coring @ 8.8 ft	8.8
		11.8	5.0	2:12/1.0 2:14/1.0 1:55/1.0 1:58/1.0 2:05/1.0	(5.0) 100%	(3.8) 76%	(5.0) 100%	(3.8) 76%		BLACK TO BLACK AND WHITE, MODERATE TO FRESH WEATHERING, VERY CLOSE TO MODERATLY CLOSE FRACTURING, MEDIUM HARD TO HARD, MICA SCHIST	11.8
		16.8								BLACK TO BLACK AND WHITE, MODERATE TO FRESH WEATHERING, VERY CLOSE TO MODERATLY CLOSE FRACTURING, MEDIUM HARD TO HARD, BIOTITE GNEISS TO MICA SCHIST	16.8
Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Depth 16.8 ft IN CRYSTALLINE ROCK: MICA SCHIST											



BORING L\_16393\_52RT, BOX 1 OF 1, 8.8 FEET TO 16.8 FEET.

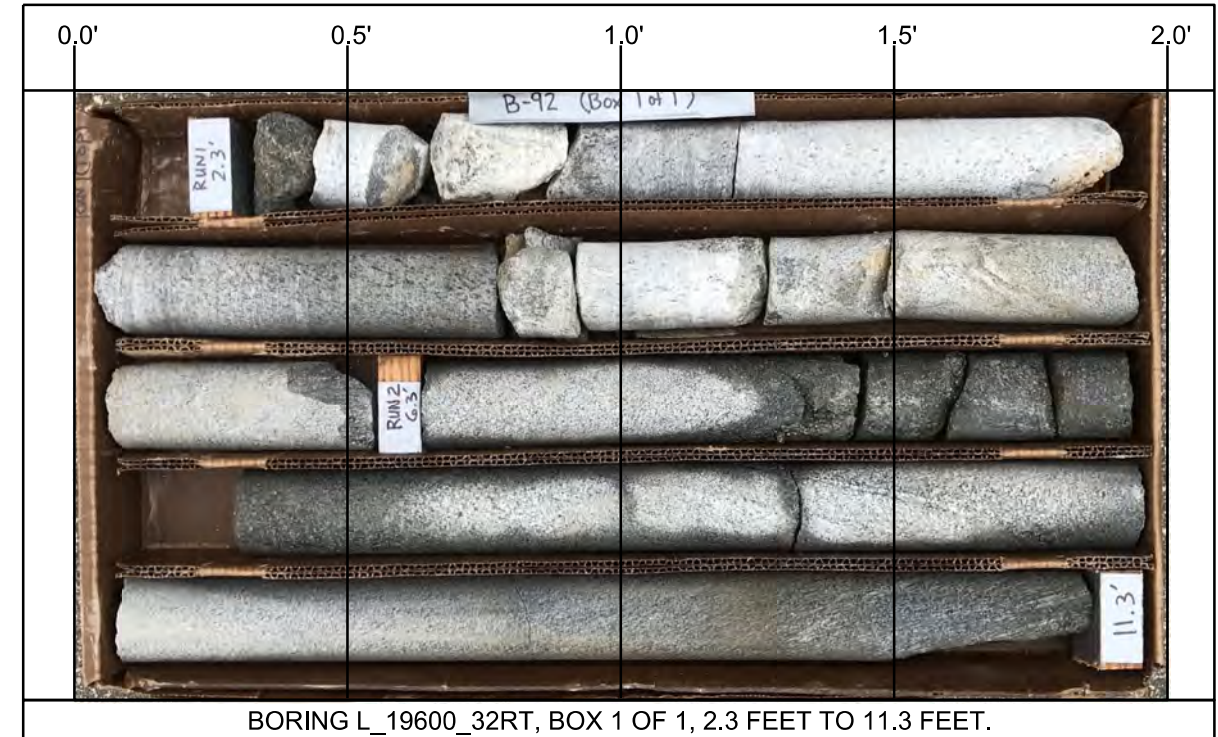
NCDOT CORE SINGLE A011C\_GEO\_RDWY\_GINT.GPJ NC\_DOT.GDT 9/28/18



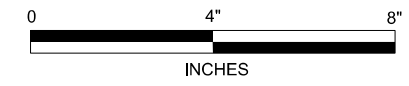
<p style="font-size: 8px;">FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 RALEIGH, NC 27607 PHONE: 919.871.0800</p>	<p><b>ROCK CORE PHOTOS</b></p> <p style="font-size: 8px;">NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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## GEOTECHNICAL BORING REPORT CORE LOG

WBS 32574.1.FD7		TIP A-0011C		COUNTY CLAY		GEOLOGIST Goodnight, D.					
SITE DESCRIPTION NC 69 ROAD WIDENING FROM GA STATE LINE TO US 64 (HAYESVILLE BYPASS)							GROUND WTR (ft)				
BORING NO. L_19600_32RT		STATION 196+00		OFFSET 32 ft RT		ALIGNMENT -L-					
COLLAR ELEV. N/A		TOTAL DEPTH 11.3 ft		NORTHING 501,473		EASTING 556,838					
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 95% 03/19/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic					
DRILLER Estep, J. E.		START DATE 06/18/18		COMP. DATE 06/18/18		SURFACE WATER DEPTH N/A					
CORE SIZE NQ2		TOTAL RUN 9.0 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %	REC. (ft) %	RQD (ft) %			
		2.3	4.0	2:40/1.0 2:11/1.0 1:49/1.0 3:30/1.0	(3.9) 98%	(2.8) 70%	(8.8) 98%	(7.1) 79%	Begin Coring @ 2.3 ft		2.3
		6.3	5.0	2:53/1.0 2:40/1.0 2:18/1.0 2:32/1.0 2:34/1.0	(4.9) 98%	(4.3) 86%			CRYSTALLINE ROCK		
		11.3							GRAY, V. SLIGHT TO FRESH WEATHERING, MODERATELY HARD TO HARD, CLOSELY TO MEDIUM CLOSELY FRACTURED, BIOTITE GNEISS		11.3
Boring Terminated at Depth 11.3 ft IN CRYSTALLINE ROCK: BIOTITE GNEISS											



NCDOT CORE SINGLE A011C\_GEO\_RDWY\_GINT.GPJ NC\_DOT.GDT 9/28/18



<p style="font-size: 8px;">FALCON ENGINEERING, INC. 1210 TRINITY ROAD, SUITE 110 RALEIGH, NC 27607 PHONE: 919.871.0800</p>	<p><b>ROCK CORE PHOTOS</b></p> <p style="font-size: 8px;">NC 69 FROM GEORGIA STATE LINE TO US 64 CLAY COUNTY, NORTH CAROLINA WBS NO.: 32574.1.FD7   TIP NO.: A0011C FALCON PROJECT NO.: G16005.00</p>
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