



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

October 12, 2021

MEMORANDUM TO: Clark Morrison PhD, P.E.  
State Pavement Design Engineer

Tatia L. White, P.E., PLS  
State Roadway Design Engineer

FROM: J. L. Pilipchuk, P.E., L.G.  
State Geotechnical Engineer

DocuSigned by:  
*John Pilipchuk*  
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STATE PROJECT: 38332.1.FS1 (B-3186, B-5898)

COUNTY: Haywood

DESCRIPTION: US 23/US 74/US 19 (Great Smoky Mountain Hwy) from  
west of NC 209 (Crabtree Rd.) to east of Russ Ave.

SUBJECT: Pavement and Subgrade Investigation Report

The Geotechnical Engineering Unit has completed the evaluation of the pavement and subgrade investigation for this project and presents the following.

The proposed work consists of widening the inside and outside of the existing four-lane divided roadway to construct a six-lane roadway with full-depth paved shoulders.

The subgrade beneath the existing roadway consists of residual and roadway embankment soils. Predominant soil types are micaceous, sandy silt (A-4) and silty clays (A-7-5, A-7-6).

Anticipated borrow will likely consist of sandy silt (A-4) and silty clay (A-7).

The length of this project is 1.2579 miles.

The existing pavement is in good condition with low to moderate severity transverse and longitudinal cracking present.

The project mainline is approximately 25 percent embankment.

**AREAS OF SPECIAL GEOTECHNICAL INTEREST**

**A. Highly Plastic Clays:**

Cohesive soils with a PI of 26 or greater were not encountered on this project.

**B. Ground Water or Trapped Water within the Pavement:**

Neither ground water nor trapped water were encountered during this investigation.

**C. Soils with a High Moisture Content:**

Locations of soils that were classified as wet to saturated.

LINE	STATION AND OFFSET	MOISTURE CONTENT
-L-	35+34 EB OSS	25.4%

**D. Auger Refusal**

Locations of Auger refusal within 6 feet of proposed subgrade.

LINE	STATION AND OFFSET
-L-	20+09 WB OSS
-L-	76+90 EB OSS, EB OSL
-Y1LT-	13+66 WB OSL

JLP/JBB/LMH

ATTACHMENT 1:	Pavement and Subgrade Inventory	43
ATTACHMENT 2:	DCP Graphs	20
ATTACHMENT 3:	Pavement Core Evaluation	03



Jeffrey Brian Barfield

DocuSigned by:

*Jeffrey Brian Barfield* 10/13/2021

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REFERENCE: B-3186/B-5898

PROJECT: 38332

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3186/B-5898	1	42

**CONTENTS**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2, 2A	LEGEND (SOIL & ROCK), ABBREVIATIONS
3	ROADWAY TITLE SHEET
4-10	PLAN SHEETS
11-13	PAVEMENT INVESTIGATION DATA SHEETS
14-17	DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEETS (-L- EB)
18	PAVEMENT CORE PHOTOS (-L- EB)
19-23	DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEETS (-L- WB)
24	PAVEMENT CORE PHOTOS (-L- WB)
25-26	DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEETS (-YI- US 19)
27	PAVEMENT CORE PHOTOS (-YI- US 19)
28-42	LABORATORY TEST RESULTS

**ROADWAY**  
**SUBSURFACE INVESTIGATION**

COUNTY HAYWOOD

PROJECT DESCRIPTION US 23-74 BRIDGE 155 & 158  
OVER RICHLAND CREEK ON US 23-74  
NORTHBOUND LANE (COMBINE WITH B-5898)

**PAVEMENT AND SUBGRADE INVESTIGATION**

**CAUTION NOTICE**

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

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

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

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

PERSONNEL

M. BREWER

D. UNDERWOOD

R. KRAL

INVESTIGATED BY CG2

DRAWN BY M. BREWER, P.E.

CHECKED BY R. KRAL, P.E.

SUBMITTED BY CG2

DATE SEPTEMBER 2021

Prepared in the Office of:



**CAROLINAS  
GEOTECHNICAL  
GROUP**  
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 CHARLOTTE, NC 28227  
 (980) 339-8684



DocuSigned by:  
D. Matthew Brewer 10/13/2021  
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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 208, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p><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. 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 DISLOGGED 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 (IN 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 style="text-align: center;"><b>SOIL LEGEND AND AASHTO CLASSIFICATION</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>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>GROUP CLASS.</th> <th>A-1</th> <th>A-3</th> <th>A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th colspan="5"></th> </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> </tr> <tr> <th>% PASSING #10 #40 #200</th> <td>50 MX 30 MX 15 MX</td> <td>50 MX 25 MX 10 MX</td> <td>51 MN 35 MX 35 MX</td> <td>35 MX 35 MX 35 MX</td> <td>36 MN 36 MN 36 MN</td> <td>36 MN 36 MN 36 MN</td> <td>36 MN 36 MN 36 MN</td> <td>GRANULAR SOILS</td> <td>SILT-CLAY SOILS</td> <td colspan="5">MUCK, PEAT</td> </tr> <tr> <th>MATERIAL PASSING #40 LL PI</th> <td colspan="11"></td> <td colspan="2">SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER</td> <td colspan="2">HIGHLY ORGANIC SOILS</td> </tr> <tr> <th>GROUP INDEX</th> <td colspan="11"></td> <td colspan="2">FAIR TO POOR</td> <td colspan="2">POOR</td> <td colspan="2">UNSATURABLE</td> </tr> <tr> <th>USUAL TYPES OF MAJOR MATERIALS</th> <td colspan="2">STONE FRAGS. 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ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p style="text-align: center;"><b>WEATHERING</b></p> <p>FRESH: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p>VERY SLIGHT (IV SLI.): ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.</p> <p>SLIGHT (SLI.): ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p> <p>MODERATE (MOD.): SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.</p> <p>MODERATELY SEVERE (MOD. SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i></p> <p>SEVERE (SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES &gt; 100 BPF</i></p> <p>VERY SEVERE (IV SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES &lt; 100 BPF</i></p> <p>COMPLETE: ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>										<p style="text-align: center;"><b>GROUND WATER</b></p> <p> WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING</p> <p> STATIC WATER LEVEL AFTER 24 HOURS</p> <p> PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA</p> <p> SPRING OR SEEP</p>									
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<p style="text-align: center;"><b>INDURATION</b></p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p style="text-align: center;"><b>NOTES:</b></p> <p>ROADWAY DESIGN FILES DATED 7/29/2021 PROVIDED BY NCDOT</p> <p> PAVEMENT CORE WITH DCP</p> <p> BULK SAMPLE</p>																																																																																																																																																																																				
<p style="text-align: center;"><b>COLOR</b></p> <p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>										<p style="text-align: center;"><b>BENCH MARK: N/A</b></p> <p style="text-align: right;">ELEVATION: _____ FEET</p>																																																																																																																																																																																				



## Tip No. B-3186/B-5898 | WBS No. 38332.1.FS1 | Haywood County

### ABBREVIATIONS

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RT LN = Right Lane

LT LN = Left Lane

OSL = Outside Lane

ISL = Inside Lane

PS = Paved Shoulder

LTL = Left Turn Lane

RTL = Right Turn Lane

MID = Middle Lane

CTL - Center Turn Lane

ISWP = Inside Wheel Path

OSWP = Outside Wheel Path

PS = Paved Shoulder

FW = From White Line

FY = From Yellow Line

RT = Right

LT = Left

(I) = Inside

(O) = Outside

BOC = Back of Curb

C&G = Curb and Gutter

EOP = Edge of Pavement

CR = Crown

S = Super

C = Cut

F = Fill

DCP = Dynamic Cone Penetrometer

M = Moist

W = Wet

N/A = Not Observed

NSR = No Sample Recovered

Ref- = Soil Reference Sample

S- = Soil Grab Sample

SS- = Split Spoon Sample

RE = Roadway Embankment

F. = Fine

Cse. = Coarse

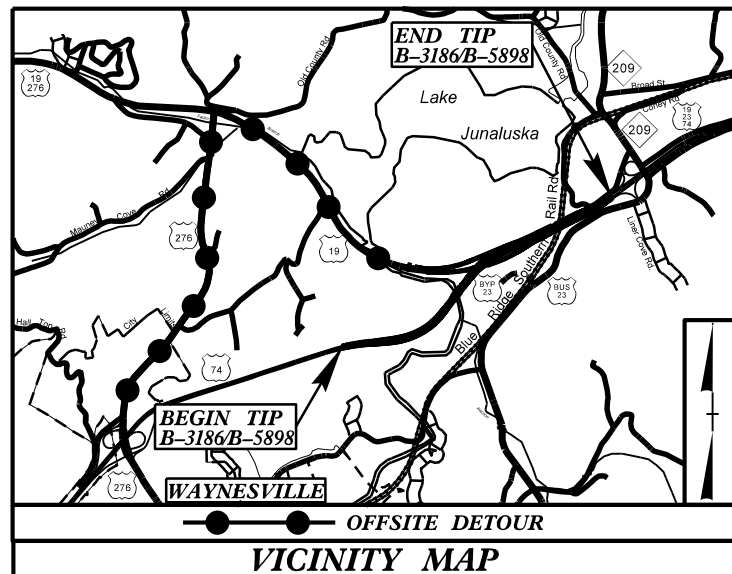
ABC = Aggregate Base Course

STBC = Soil Type Base Course

09/08/99

TIP PROJECT: B-3186 / B-5898

See Sheet 1-A For Conventional Symbols

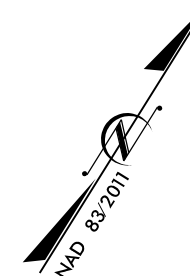
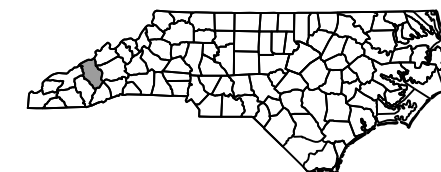


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**HAYWOOD COUNTY**

**LOCATION: US 23/US 74/US 19 (GREAT SMOKY MOUNTAIN HWY)  
FROM WEST OF NC 209(CRABTREE RD.) TO EAST OF RUSS AVE.  
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES  
AND UTILITIES.**

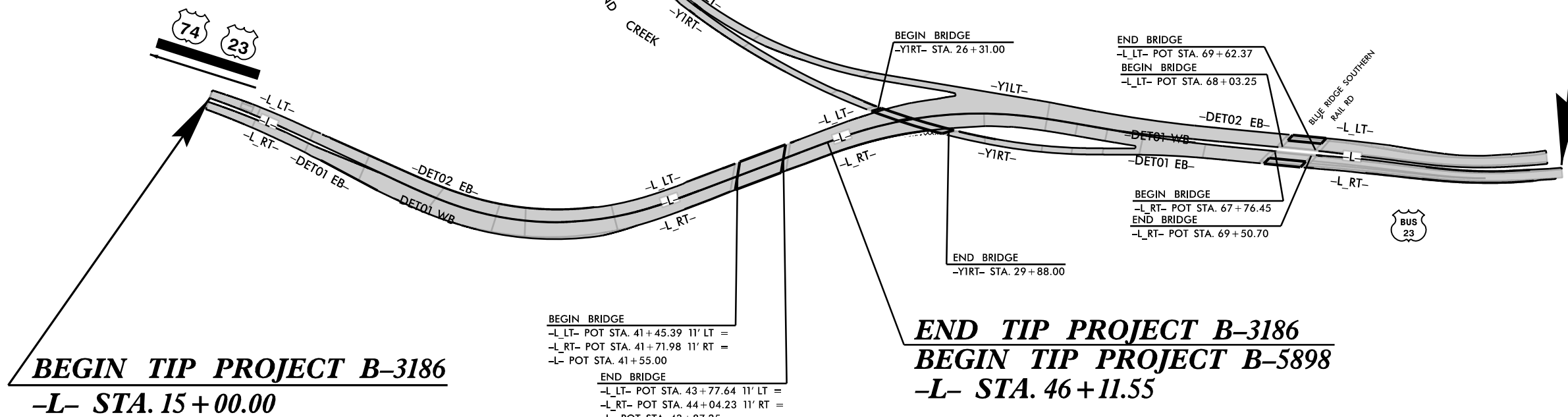
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3186 / B-5898	3	42
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38332.1.FS.1	BRNHP-0023(32)	P.E.	
48030.1.FS.1	BRSTP-0019(49)	P.E.	
38332.2.1	N/A	RW/UTILITY	
48030.2.1	N/A	RW/UTILITY	



**BEGIN CONSTRUCTION**  
**-YIRT- STA. 12 + 00.00**

**BEGIN CONSTRUCTION**  
**-YILT- STA. 11 + 99.83**

**END TIP PROJECT B-5898**  
**-L- STA. 81 + 35.95**



**BEGIN BRIDGE**  
-L LT- POT STA. 41+45.39 11' LT =  
-L RT- POT STA. 41+71.98 11' RT =  
-L- POT STA. 41+55.00  
**END BRIDGE**  
-L LT- POT STA. 43+77.64 11' LT =  
-L RT- POT STA. 44+04.23 11' RT =  
-L- POT STA. 43+87.25

**BEGIN BRIDGE**  
-YIRT- STA. 26+31.00  
**END BRIDGE**  
-L LT- POT STA. 69+62.37  
-L RT- POT STA. 68+03.25  
**BEGIN BRIDGE**  
-L RT- POT STA. 67+76.45  
**END BRIDGE**  
-L RT- POT STA. 69+50.70  
**END BRIDGE**  
-YIRT- STA. 29+88.00

**END TIP PROJECT B-3186**  
**BEGIN TIP PROJECT B-5898**  
**-L- STA. 46 + 11.55**

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

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

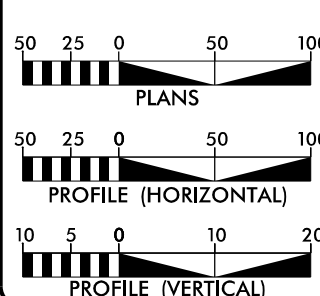
PENTABLE: \$PENTBL\$  
TIME: \$TIME\$

DATE: \$DATE\$

PLOT DRIVER: \$PLTDV\$  
USER: \$USER\$  
FILE: \$P\WVAULT\PATHDESC\$

CONTRACT:

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2022 = 47,300  
ADT 2042 = 59,400  
K = 8 %  
D = 55 %  
T = 5 % \*  
V = 65 MPH  
\* TTST = 2% DUAL 3%  
FUNC CLASS = FREEWAY  
STATEWIDE TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-3186 / B-5898 = 1.181 miles  
TOTAL STRUCTURES TIP PROJECT B-3186 / B-5898 = 0.076 miles  
TOTAL LENGTH TIP PROJECT B-3186 / B-5898 = 1.2579 miles  
(LENGTHS BASED ON L\_RT ALIGNMENT)



Prepared In the Office of:  
HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JULY 8, 2021

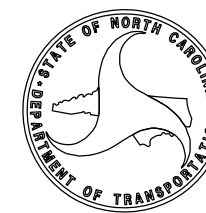
LETTING DATE:  
JANUARY 18, 2022

**PHILLIP E. ROGERS, PE**  
PROJECT ENGINEER  
**HENRY W. BARE**  
PROJECT DESIGN ENGINEER  
**GARRETT HIGDON**  
NCDOT CONTACT

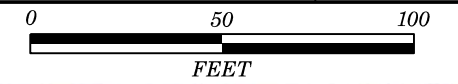
HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.  
**ROADWAY DESIGN ENGINEER**

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







C-25 -L- 15+13 WB OSS	
5.5 FT RT FW	
PAVEMENT SECTION	
ASPHALT	5.25 in
STBC	16.75 in

C-26 -L- 20+09 WB OSS	
1.2 FT RT FW	
PAVEMENT SECTION	
ASPHALT	5.50 in
STBC	17.50 in
C-28 -L- 20+09 WB ISS	
2.4 FT LT FY	
PAVEMENT SECTION	
ASPHALT	5.75 in
STBC	16.25 in



C-1 -L- 15+32 EB OSS	
5.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	5.25 in
STBC	18.75 in

-L- CS Sta. 17+47.64





C-29 -L- 25+50 WB OSS	
5.7 FT RT FW	
PAVEMENT SECTION	
ASPHALT	4.75 in
STBC	17.25 in
C-30 -L- 25+50 WB ISS	
1.8 FT LT FY	
PAVEMENT SECTION	
ASPHALT	6.25 in
STBC	16.75 in

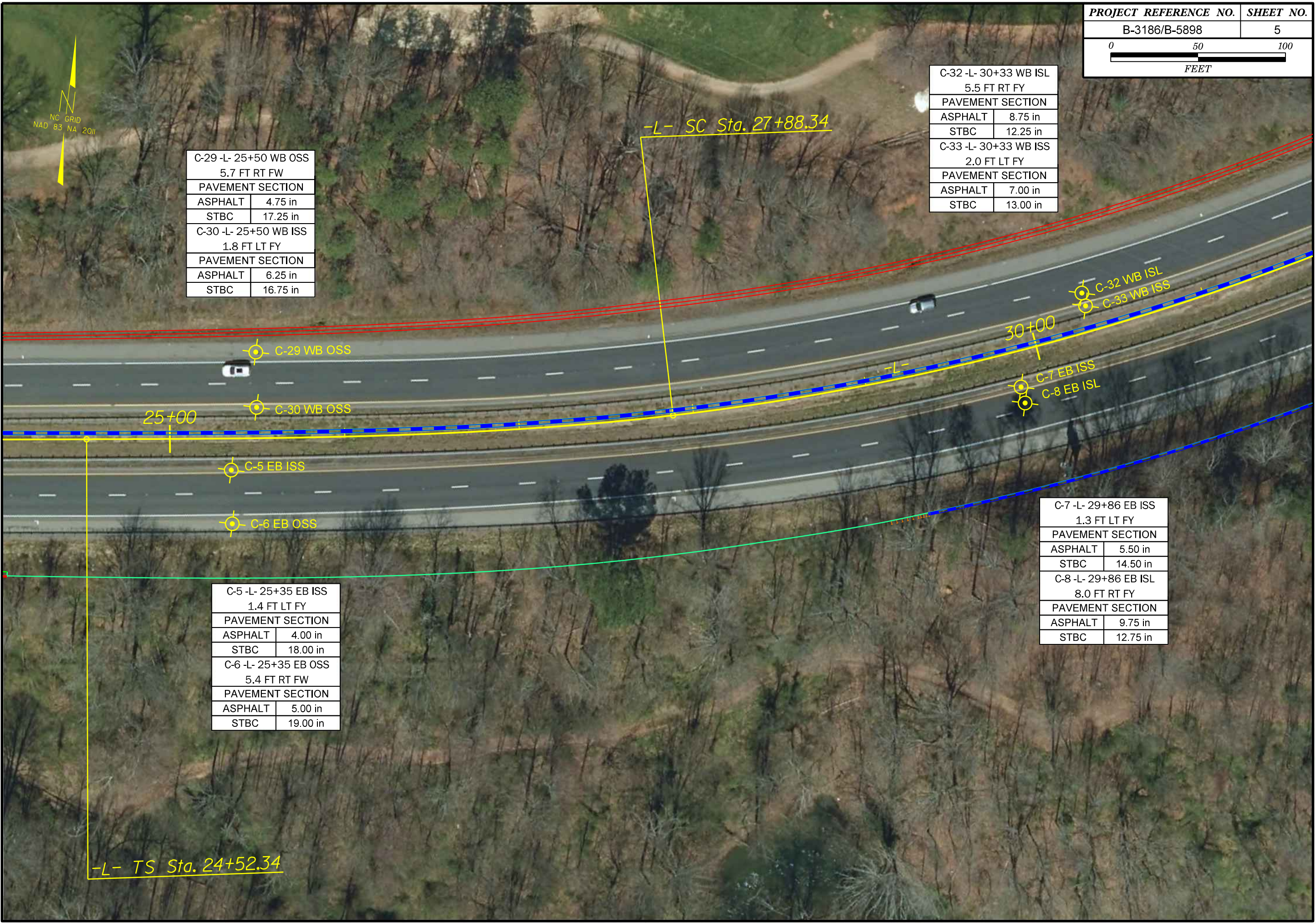
C-32 -L- 30+33 WB ISL	
5.5 FT RT FY	
PAVEMENT SECTION	
ASPHALT	8.75 in
STBC	12.25 in
C-33 -L- 30+33 WB ISS	
2.0 FT LT FY	
PAVEMENT SECTION	
ASPHALT	7.00 in
STBC	13.00 in

C-7 -L- 29+86 EB ISS	
1.3 FT LT FY	
PAVEMENT SECTION	
ASPHALT	5.50 in
STBC	14.50 in
C-8 -L- 29+86 EB ISL	
8.0 FT RT FY	
PAVEMENT SECTION	
ASPHALT	9.75 in
STBC	12.75 in

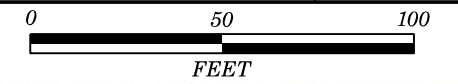
C-5 -L- 25+35 EB ISS	
1.4 FT LT FY	
PAVEMENT SECTION	
ASPHALT	4.00 in
STBC	18.00 in
C-6 -L- 25+35 EB OSS	
5.4 FT RT FW	
PAVEMENT SECTION	
ASPHALT	5.00 in
STBC	19.00 in

-L- SC Sta. 27+88.34

-L- TS Sta. 24+52.34







INC GRID  
NAD 83 NA 2011

-L- CS Sta. 36+26.50

-L- ST Sta. 39+62.50

C-34 -L- 35+34 WB OSS	
6.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	5.00 in
STBC	17.00 in
C-35 -L- 35+35 WB ISS	
2.3 FT LT FY	
PAVEMENT SECTION	
ASPHALT	8.75 in
STBC	14.25 in

BULK-2

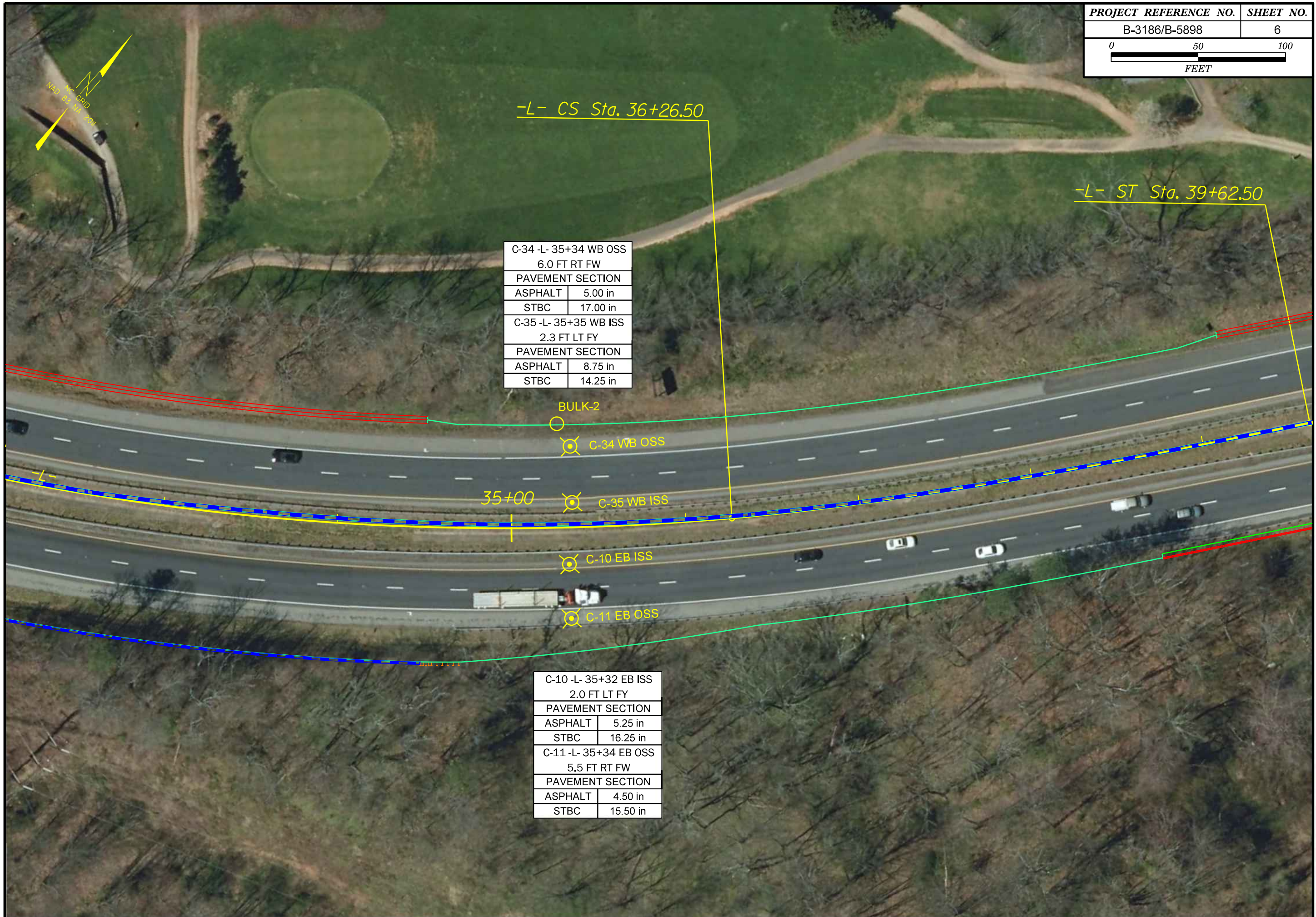
C-34 WB OSS

35+00 C-35 WB ISS

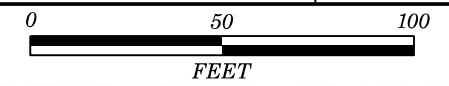
C-10 EB ISS

C-11 EB OSS

C-10 -L- 35+32 EB ISS	
2.0 FT LT FY	
PAVEMENT SECTION	
ASPHALT	5.25 in
STBC	16.25 in
C-11 -L- 35+34 EB OSS	
5.5 FT RT FW	
PAVEMENT SECTION	
ASPHALT	4.50 in
STBC	15.50 in







-YILT- POT Sta. 33+16.69 =  
-L\_LT- POS Sta. 56+11.71 36' LT

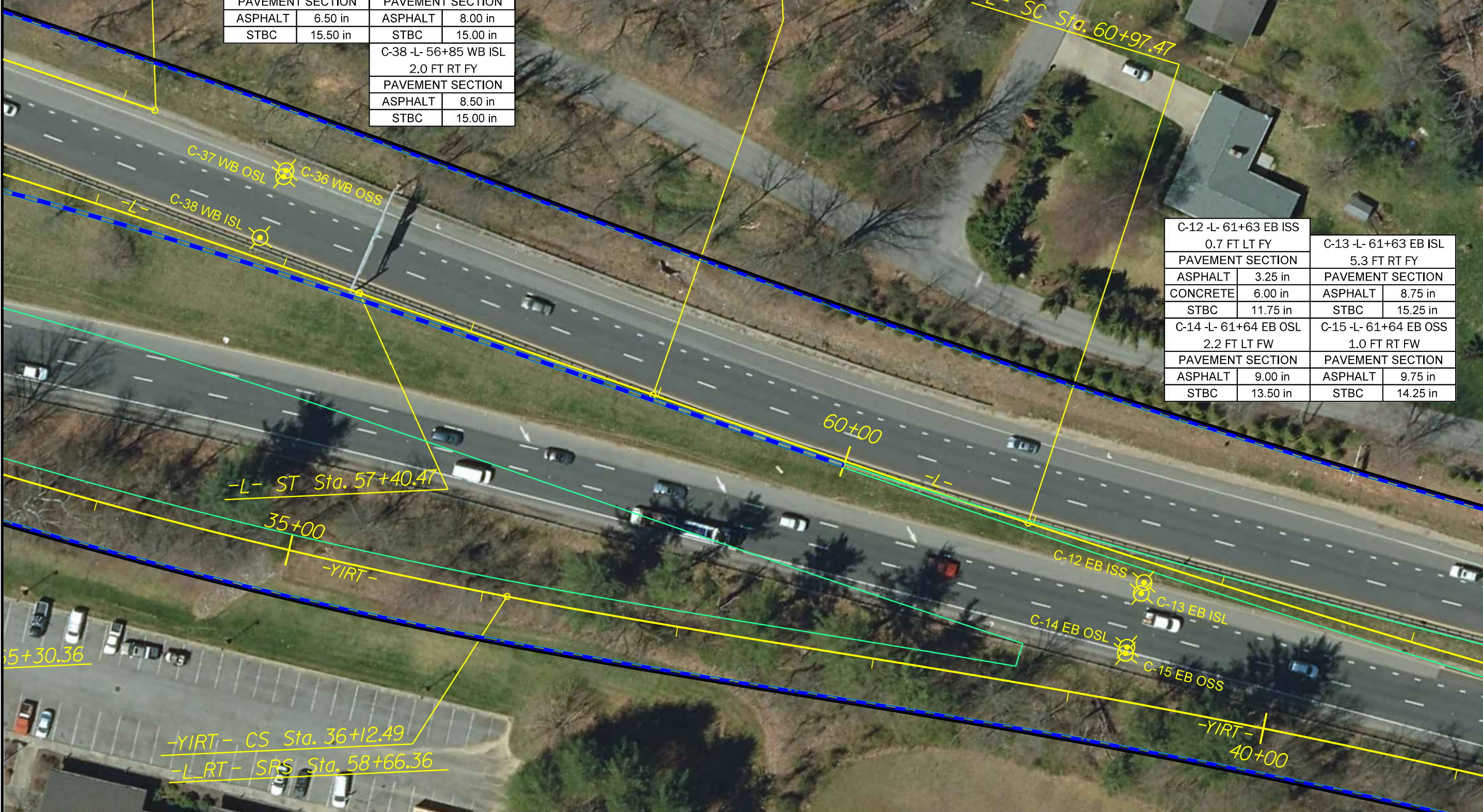
NC GRID  
NAD 83 NA 2011

-L- TS Sta. 58+97.47

-L- SC Sta. 60+97.47

C-36 -L- 56+85 WB OSS 1.0 FT RT FW		C-37 -L- 56+85 WB OSL 2.3 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	6.50 in	ASPHALT	8.00 in
STBC	15.50 in	STBC	15.00 in
		C-38 -L- 56+85 WB ISL 2.0 FT RT FY	
		PAVEMENT SECTION	
ASPHALT	8.50 in		
STBC	15.00 in		

C-12 -L- 61+63 EB ISS 0.7 FT LT FY		C-13 -L- 61+63 EB ISL 5.3 FT RT FY	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	3.25 in	ASPHALT	8.75 in
CONCRETE	6.00 in	STBC	15.25 in
STBC	11.75 in		
C-14 -L- 61+64 EB OSL 2.2 FT LT FW		C-15 -L- 61+64 EB OSS 1.0 FT RT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	9.00 in	ASPHALT	9.75 in
STBC	13.50 in	STBC	14.25 in



-L- ST Sta. 57+40.47

35+00

-YIRT-

60+00

C-12 EB ISS

C-13 EB ISL

C-14 EB OSL

C-15 EB OSS

5+30.36

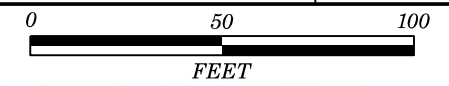
-YIRT- CS Sta. 36+12.49

-L\_RT- SRS Sta. 58+66.36

-YIRT-

40+00

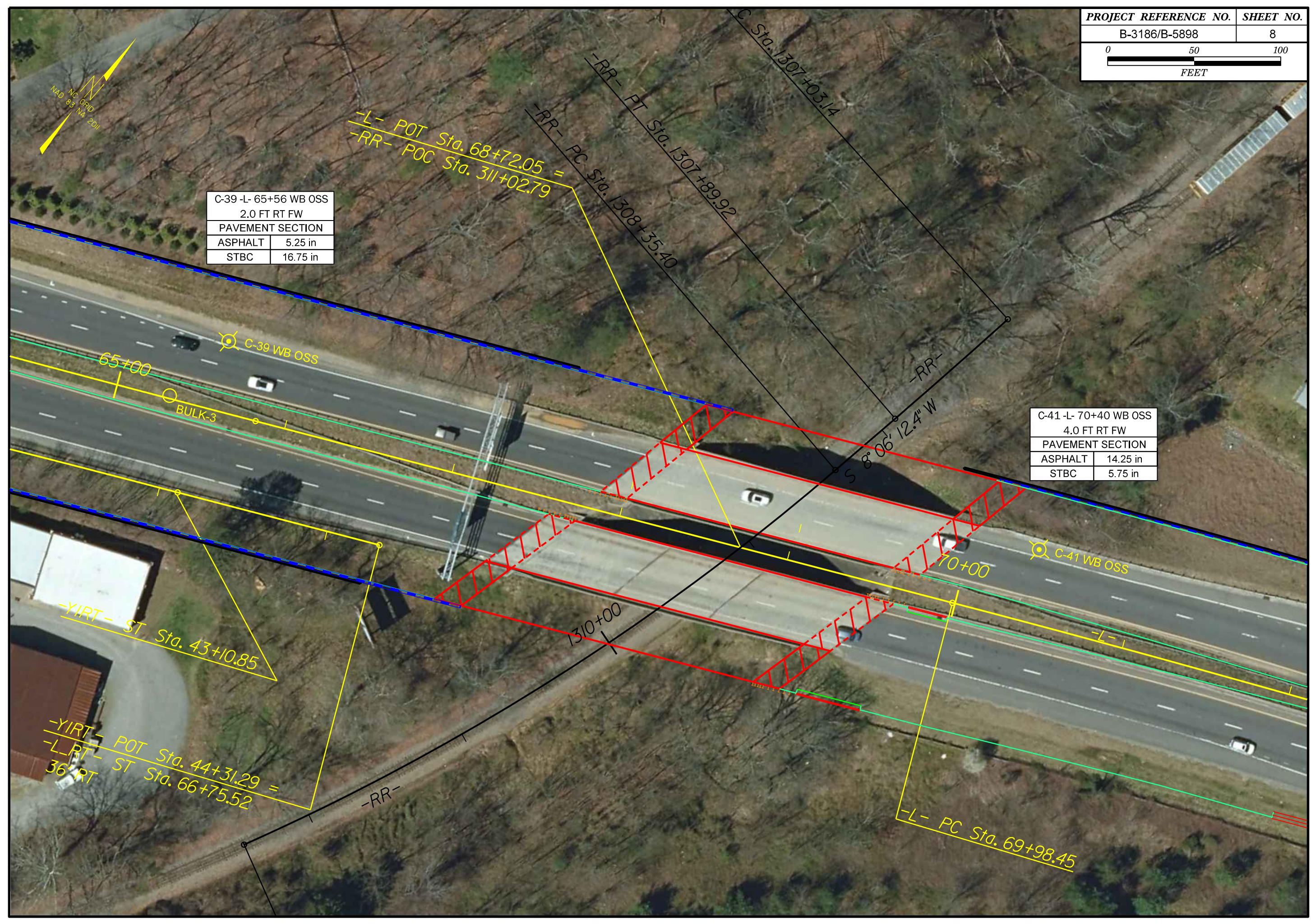




NC GRID  
NAD 83 NA 2011

C-39 -L- 65+56 WB OSS	
2.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	5.25 in
STBC	16.75 in

C-41 -L- 70+40 WB OSS	
4.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	14.25 in
STBC	5.75 in



-YIRT- ST Sta. 43+10.85

-YIRT- POT Sta. 44+31.29 =  
-L-RT- ST Sta. 66+75.52  
36' RT

-RR-

1310+00

-L- PC Sta. 69+98.45

S 8° 06' 12.4" W

-L- POT Sta. 68+72.05 =  
-RR- POC Sta. 311+02.79

-RR- PC Sta. 1308+35.40

-RR- PT Sta. 1307+89.92

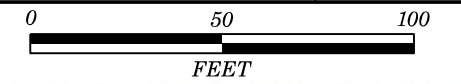
C Sta. 1307+03.14

65+00

70+00

-L-

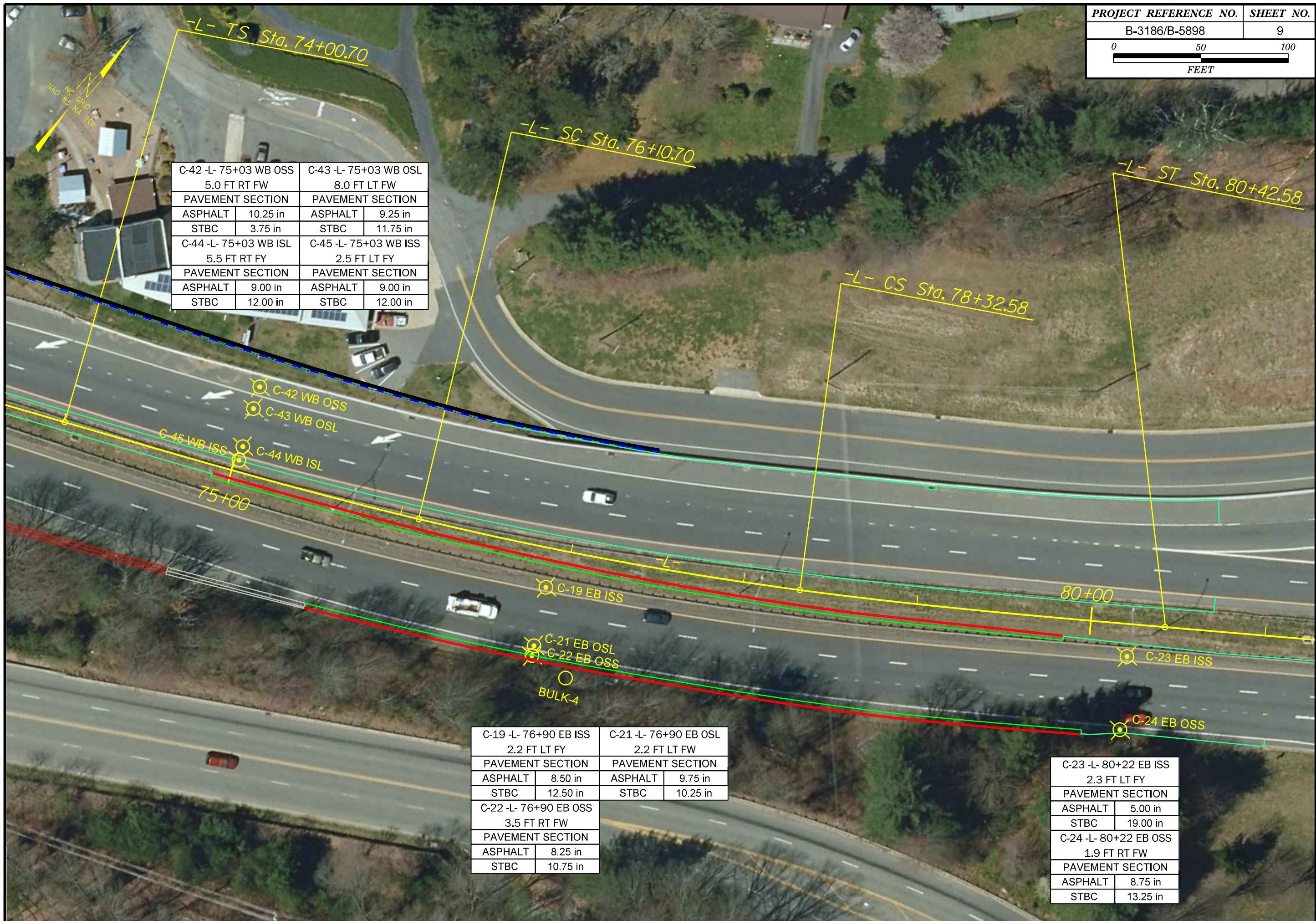




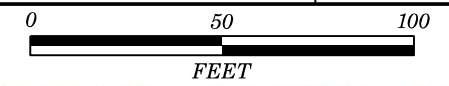
C-42 -L- 75+03 WB OSS 5.0 FT RT FW		C-43 -L- 75+03 WB OSL 8.0 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	10.25 in	ASPHALT	9.25 in
STBC	3.75 in	STBC	11.75 in
C-44 -L- 75+03 WB ISL 5.5 FT RT FY		C-45 -L- 75+03 WB ISS 2.5 FT LT FY	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	9.00 in	ASPHALT	9.00 in
STBC	12.00 in	STBC	12.00 in

C-19 -L- 76+90 EB ISS 2.2 FT LT FY		C-21 -L- 76+90 EB OSL 2.2 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	8.50 in	ASPHALT	9.75 in
STBC	12.50 in	STBC	10.25 in
C-22 -L- 76+90 EB OSS 3.5 FT RT FW			
PAVEMENT SECTION			
ASPHALT	8.25 in		
STBC	10.75 in		

C-23 -L- 80+22 EB ISS 2.3 FT LT FY	
PAVEMENT SECTION	
ASPHALT	5.00 in
STBC	19.00 in
C-24 -L- 80+22 EB OSS 1.9 FT RT FW	
PAVEMENT SECTION	
ASPHALT	8.75 in
STBC	13.25 in







-YILT- POT Sta. 10+00.00

-YILT- TS Sta. 12+06.91

-YILT- SC Sta. 14+06.91

C-47 -Y1LT- 13+66 US 19		C-48 -Y1LT- 13+66 US 19	
WB RTL, 6.0 FT RT C&G		WB OSL, 15.5 FT LT C&G	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	7.25 in	ASPHALT	8.50 in
STBC	-	STBC	13.50 in

C-49 -Y1LT- 13+67 US 19	
WB ISL, 2.8 FT RT C&G FACE	
PAVEMENT SECTION	
ASPHALT	11.50 in
STBC	10.50 in

10+00

10+00

C-47 US 19 WB RTL  
C-48 US 19 WB OSL  
C-49 US 19 WB ISL

-YILT-

15+00

15+00

C-50 US 19 EB ISL

-Y1RT-

C-51 US 19 EB OSL  
C-52 US 19 EB OSS

-Y1RT- TS Sta. 11+12.00

-Y1RT- POT Sta. 10+00.00

C-50 -Y1RT- 13+67 US 19		C-51 -Y1RT- 14+30 US 19	
EB ISL, 1.0 FT RT FY		EB OSL, 1.5 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	12.50 in	ASPHALT	7.00 in
STBC	-	STBC	14.00 in

C-52 -Y1RT- 14+30 US 19	
EB OSS, 1.8 FT RT FW	
PAVEMENT SECTION	
ASPHALT	4.00 in
STBC	19.00 in

-Y1RT- SC Sta. 13+12.00



PAVEMENT INVESTIGATION DATA SHEET

Project:	38332.1.FS1
TIP:	B-3186/B-5898

Route:	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane
County:	Haywood County

Date Performed:	8/4 to 8/6/2021 (2 nights)
Field Personnel:	M. Brewer, D. Underwood, R. Kral

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		Offset Distance (See Notes)	(ft)	(in)	Thickness (in)					Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates	
		Lane	Shoulder				Gross to Top of Soil	Asphalt	STBC	Stabilized Subgrade	Concrete		Description (Depth - ft)	Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)		Northing	Easting
C-1 -L- 15+32 EB OSS	7.0 Fill	11.0	9.5 PS Asphalt Curb	5.0 RT FW	Cr	24.00	5.25	18.75	-	-	Asphalt STBC Soil Subgrade	2.0-5.0: RE - Brown, Silty Fine to Coarse SAND	S-1	A-2-4	M	5	Low to Moderate Severity Transverse Cracking, No Observable Distress in OSL	665,229	816,598	
C-5 -L- 25+35 EB ISS	10.0 Fill	11.5	3.0 PS	1.4 LT FY	Cr	22.00	4.00	18.00	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: RE - Brown-Red, Fine to Coarse Sandy SILT	S-5	A-4	M	5	No Observable Distress	665,399	817,583	
C-6 -L- 25+35 EB OSS	15.0 Fill	11.0	9.5 PS	5.4 RT FW	Cr	24.00	5.00	19.00	-	-	Asphalt STBC Soil Subgrade	2.0-5.0: RE - Brown-Red, Silty CLAY, Slightly Plastic *STBC - Silty, Fine to Coarse Sandy GRAVEL (A-1-a)	S-6 STBC-1	A-7-5 A-1-a	M	5	No Observable Distress	665,368	817,587	
C-7 -L- 29+86 EB ISS	20.0 Cut	11.5	2.5 PS	1.3 LT FY	S	20.00	5.50	14.50	-	-	Asphalt STBC Soil Subgrade	1.7-5.0: Residual - Brown-Tan, Fine Sandy Micaceous SILT	Ref-8	A-4	M	5	No Observable Distress <b>3-inch Bottom Up Crack in Core</b>	665,502	818,025	
C-8 -L- 29+86 EB ISL	20.0 Cut	11.5	2.5 PS	8.0 RT FY	S	22.50	9.75	12.75	-	-	Asphalt STBC Soil Subgrade	1.9-5.0: Residual - Brown-Tan, Fine to Coarse Sandy Micaceous SILT	S-8	A-4	M	5	Low Severity Transverse Cracking and Logitudinal Cracking (OSWP & ISWP)	665,493	818,029	
C-10 -L- 35+32 EB ISS	4.0 Cut	11.0	4.0 PS	2.0 LT FY	S	21.50	5.25	16.25	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-Orange, Fine Sandy Micaceous SILT	Ref-11A	A-4	M	5	Low Severity Transverse Cracking and Logitudinal Cracking (OSWP & ISWP) <b>Full Depth Bottom Up Crack in Core</b>	665,793	818,493	
C-11 -L- 35+34 EB OSS	3.5 Fill	11.0	9.5 PS	5.5 RT FW	S	20.00	4.50	15.50	-	-	Asphalt STBC Soil Subgrade	1.7-3.5: RE - Red, Silty CLAY, Moderately Plastic 3.5-5.0: Residual - Brown-Red, Fine to Coarse Sandy Micaceous SILT	S-11 S-11A	A-7-6 A-4	M	5	Low to Moderate Severity Transverse Cracking <b>Full Depth Bottom Up Crack in Core</b>	665,771	818,515	
C-12 -L- 61+63 EB ISS	1.9 Fill	11.5	1.5 PS	0.7 LT FY	Cr	21.00	3.25	11.75	-	6.00	Asphalt Concrete STBC / SG	1.8-5.0: Residual - Red-Tan, Silty Fine to Coarse SAND Possibly 2-3 inches of contaminated drainage sand beneath concrete	S-12	A-2-4	M	5	Low Severity Transverse Cracking <b>Full Depth Bottom Up Crack in Asphalt Core</b>	667,474	820,429	
C-13 -L- 61+63 EB ISL	2.0 Fill	11.5	1.5 PS	5.3 RT FY	Cr	24.00	8.75	15.25	-	-	Asphalt STBC Soil Subgrade	2.0-5.0: Residual - Brown, Fine to Coarse Sandy Micaceous SILT	S-13	A-4	M	5	Low Severity Transverse Cracking <b>7-inch Top Down Crack in Core</b>	667,469	820,431	
C-14 -L- 61+64 EB OSL	4.0 Fill	11.0	4.5 PS	2.2 LT FW	Cr	22.50	9.00	13.50	-	-	Asphalt STBC Soil Subgrade	1.9-4.0: RE - Red-Brown, Fine Sandy SILT 4.0-5.0: Residual - Brown, Fine to Coarse Sandy Micaceous SILT	Ref-15 Ref-11A	A-4 A-4	M	5	No Observable Distress	667,444	820,444	
C-15 -L- 61+64 EB OSS	4.0 Fill	11.0	4.5 PS	1.0 RT FW	Cr	24.00	9.75	14.25	-	-	Asphalt STBC Soil Subgrade	2.0-4.0: RE - Brown, Fine to Coarse Sandy Micaceous SILT 4.0-5.0: Residual - Brown, Fine to Coarse Sandy Micaceous SILT	S-15 Ref-11A	A-4 A-4	M	5	No Observable Distress	667,441	820,445	
C-19 -L- 76+90 EB ISS	20.0 Cut	11.0	4.0 PS	2.2 LT FY	S	21.00	8.50	12.50	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-Tan, Silty, Gravelly Fine to Coarse SAND	S-19	A-1-b	M	5	No Observable Distress	668,133	821,809	
C-21 -L- 76+90 EB OSL	20.0 Cut	10.0	6.0 PS	2.2 LT FW	S	20.00	9.75	10.25	-	-	Asphalt STBC Soil Subgrade	1.7-2.1: Residual - Brown, Fine Sandy Micaceous SILT 2.0-3.0: Weathered Rock - GNEISS Auger Refusal at 3.0 ft	Ref-22	A-4 WR	M	3 A/R	No Observable Distress	668,103	821,825	
C-22 -L- 76+90 EB OSS	20.0 Cut	10.0	6.0 PS	3.5 RT FW	S	19.00	8.25	10.75	-	-	Asphalt STBC Soil Subgrade	1.6-2.3: Residual - Brown, Fine to Coarse Sandy Micaceous SILT 2.3-3.9: Weathered Rock - GNEISS Auger Refusal at 3.9 ft	S-22	A-4 WR	M	3.9 A/R	No Observable Distress	668,098	821,828	
C-23 -L- 80+22 EB ISS	2.0 Fill	11.5	4.0 PS	2.3 LT FY	S	24.00	5.00	19.00	-	-	Asphalt STBC Soil Subgrade	2.0-5.0: Residual - Brown, Fine Sandy Micaceous SILT	Ref-22	A-4	M	5	No Observable Distress	668,322	822,085	

Notes:

Offset Distance: Left and Right Relative to the Direction of Travel

Prepared by: DMB  
Reviewed by: REK

PAVEMENT INVESTIGATION DATA SHEET

Project:	38332.1.FS1
TIP:	B-3186/B-5898

Route:	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane
County:	Haywood County

Date Performed:	8/4 to 8/6/2021 (2 nights)
Field Personnel:	M. Brewer, D. Underwood, R. Kral

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		(ft)	(in)	Thickness (in)					Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates	
		Lane	Shoulder			Offset Distance (See Notes)	Crown "C" or Super "S"	Gross to Top of Soil	Asphalt	STBC		Stabilized Subgrade	Concrete	Description (Depth - ft)	Soil Sample Number	AASHTO Classification		Soil Moisture	Boring Depth (ft)
C-24 -L- 80+22 EB OSS	8.0 Cut	12.0	5.0 PS	1.9 RT FW	Cr	22.00	8.75	13.25	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown, Micaceous, Silty Fine to Coarse SAND	S-24	A-2-4	M	5	No Observable Distress	668,288	822,109
C-25 -L- 15+13 WB OSS	20.0 Fill	12.0	11.0 PS Asphalt Curb	5.5 RT FW	Cr	22.00	5.25	16.75	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: RE - Brown-Red, Silty CLAY, Slightly Plastic	S-25	A-7-5	M	5	Low Severity Transverse Cracking, Polished Aggregate	665,309	816,560
C-26 -L- 20+09 WB OSS	20.0 Cut	12.0	11.0 PS	1.2 RT FW	Cr	23.00	5.50	17.50	-	-	Asphalt STBC Soil Subgrade	1.9-2.5: Residual - Brown-Tan, Fine Sandy Micaceous SILT Auger Refusal at 2.5 ft	Ref-28	A-4	M	2.5 A/R	Low Severity Transverse Cracking	665,394	817,054
C-28 -L- 20+09 WB ISS	20.0 Cut	11.5	3.5 PS	2.4 LT FY	Cr	22.00	5.75	16.25	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-Orange, Fine to Coarse Sandy Micaceous SILT	S-28	A-4	M	5	Low Severity Transverse Cracking	665,367	817,057
C-29 -L- 25+50 WB OSS	25.0 Cut	12.0	10.5 PS	5.7 RT FW	Cr	22.00	4.75	17.25	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Red-Orange-Brown, Silty CLAY, Slightly Plastic	S-29	A-7-5	M	5	Low to Moderate Severity Transverse Cracking, Polished Aggregate <b>Full Depth Bottom Up Crack in Core</b>	665,467	817,589
C-30 -L- 25+50 WB ISS	10.0 Cut	12.0	3.5 PS	1.8 LT FY	Cr	23.00	6.25	16.75	-	-	Asphalt STBC Soil Subgrade	1.9-5.0: Residual - Brown-Orange, Silty CLAY, Slightly Plastic	S-30	A-7-5	M	5	Low to Moderate Severity Transverse Cracking <b>Full Depth Bottom Up Crack in Core</b>	665,436	817,593
C-32 -L- 30+33 WB ISL	25.0 Cut	11.5	4.0 PS	5.5 RT FY	S	21.00	8.75	12.25	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Tan-Brown, Fine to Coarse Sandy Micaceous SILT	S-32	A-4	M	5	Low Severity Longitudinal Cracking (ISWP)	665,559	818,053
C-33 -L- 30+33 WB ISS	25.0 Cut	11.5	4.0 PS	2.0 LT FY	S	20.00	7.00	13.00	-	-	Asphalt STBC Soil Subgrade	1.7-5.0: Residual - Tan-Brown, Fine Sandy Micaceous SILT	Ref-32	A-4	M	5	Low Severity Longitudinal Cracking (ISWP)	665,552	818,056
C-34 -L- 35+34 WB OSS	10.0 Cut	11.5	10.5 PS	6.0 RT FW	S	22.00	5.00	17.00	-	-	Asphalt STBC Soil Subgrade	1.8-3.0: RE - Red, Fine to Coarse Sandy SILT 3.0-5.0: Residual - Brown-Red, Fine Sandy Micaceous SILT	S-34 Ref-32	A-4 A-4	M M	5	Low Severity Longitudinal (OSWP & ISWP) and Transverse Cracking at Shoulder / OSL	665,844	818,449
C-35 -L- 35+35 WB ISS	20.0 Cut	11.5	4.0 PS	2.3 LT FY	S	23.00	8.75	14.25	-	-	Asphalt STBC Soil Subgrade	1.9-3.5: RE - Red, Fine to Coarse Sandy SILT	S-35	A-4	M	5	No Observable Distress	665,821	818,471
C-36 -L- 56+85 WB OSS	20.0 Cut	12.0	4.0 PS	1.0 RT FW	Cr	22.00	6.50	15.50	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown, Micaceous, Fine to Coarse Sandy, Clayey SILT	Ref-37	A-5	M	5	Low Severity Transverse Cracking <b>2-inch Top Down Crack in Core</b>	667,345	819,966
C-37 -L- 56+85 WB OSL	20.0 Cut	12.0	4.0 PS	2.3 LT FW	Cr	23.00	8.00	15.00	-	-	Asphalt STBC Soil Subgrade	1.9-5.0: Residual - Brown, Micaceous, Fine to Coarse Sandy, Clayey SILT	S-37	A-5	M	5	Low Severity Transverse Cracking	667,342	819,967
C-38 -L- 56+85 WB ISL	20.0 Cut	11.5	2.0 PS Asphalt over C&G	2.0 RT FY	Cr	23.50	8.50	15.00	-	-	Asphalt STBC Soil Subgrade	1.9-3.5: RE - Red, Silty CLAY, Slightly Plastic 3.5-5.0: Residual - Brown, Fine to Coarse Sandy, Clayey SILT	S-38 Ref-37	A-7-5 A-5	M M	5	Low Severity Transverse Cracking <b>Full Depth Bottom Up Crack in Core</b>	667,311	819,978
C-39 -L- 65+56 WB OSS	15.0 Cut	11.5	4.5 PS	2.0 RT FW	Cr	22.00	5.25	16.75	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-White, Fine Sandy Micaceous SILT	Ref-41	A-4	M	5	No Observable Distress	667,688	820,762
C-41 -L- 70+40 WB OSS	15.0 Fill	11.5	7.0 PS Concrete Exp Gutter	4.0 RT FW	Cr	20.00	14.25	5.75	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: RE - Brown-Red, Fine to Coarse Sandy Micaceous SILT	S-41	A-4	M	5	Low Severity Longitudinal Cracking (OSWP) and Transverse Cracking	667,906	821,194

Notes:  
Offset Distance: Left and Right Relative to the Direction of Travel

Prepared by: DMB  
Reviewed by: REK

PAVEMENT INVESTIGATION DATA SHEET

Project:	38332.1.FS1
TIP:	B-3186/B-5898

Route:	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane
County:	Haywood County

Date Performed:	8/4 to 8/6/2021 (2 nights)
Field Personnel:	M. Brewer, D. Underwood, R. Kral

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		(ft)	(in)	Thickness (in)					Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates		
		Lane	Shoulder			Offset Distance (See Notes)	Crown "C" or Super "S"	Gross to Top of Soil	Asphalt	STBC		Stabilized Subgrade	Concrete	Description (Depth - ft)	Soil Sample Number	AASHTO Classification		Soil Moisture	Boring Depth (ft)	Northing
C-42 -L- 75+03 WB OSS	4.0 Cut	12.0	11.5 PS	5.0 RT FW	S	14.00	10.25	3.75	-	-	Asphalt STBC Soil Subgrade	1.2-5.0: Residual - Brown-Tan, Fine Sandy Micaceous SILT	Ref-43	A-4	M	5	Low Severity Longitudinal Cracking (OSWP) and Transverse Cracking	668,111	821,610	
C-43 -L- 75+03 WB OSL	4.0 Cut	12.0	11.5 PS	8.0 LT FW	S	21.00	9.25	11.75	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-Tan, Fine to Coarse Sandy Micaceous SILT	S-43	A-4	M	5	Low Severity Longitudinal Cracking (OSWP) and Transverse Cracking <b>Full Depth Bottom Up Crack in Core</b>	668,099	821,615	
C-44 -L- 75+03 WB ISL	8.0 Cut	11.0	5.0 PS	5.5 RT FY	S	21.00	9.00	12.00	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-Tan, Fine Sandy Micaceous SILT	S-44	A-4	M	5	Low Severity Transverse Cracking	668,079	821,625	
C-45 -L- 75+03 WB ISS	8.0 Cut	11.0	5.0 PS	2.5 LT FY	S	21.00	9.00	12.00	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Brown-Tan-Gray, Fine to Coarse Sandy Micaceous SILT	S-45	A-4	M	5	Low Severity Transverse Cracking <b>Full Depth Bottom Up Crack in Core</b>	668,072	821,628	
C-47 -Y1LT- 13+66 US 19 WB RTL	6.0 Cut	11.5	Concrete C&G	6.0 RT C&G	S	7.25	7.25	0.00	-	-	Asphalt Soil Subgrade	0.6-4.0: Residual - Brown-Tan, Fine Sandy SILT Auger Refusal at 4.0 ft	Ref-48	A-4	M	4 A/R	Low Severity Longitudinal Cracking (OSWP & ISWP) and Transverse Cracking, Polished Aggregate	666,937	818,029	
C-48 -Y1LT- 13+66 US 19 WB OSL	6.0 Cut	11.0	N/A	15.5 LT C&G (RT)	S	22.00	8.50	13.50	-	-	Asphalt STBC Soil Subgrade	1.8-5.0: Residual - Tan-Red, Fine to Coarse Sandy SILT	S-48	A-4	M	5	Polished Aggregate	666,928	818,027	
C-49 -Y1LT- 13+67 US 19 WB ISL	3.5 Fill	12.0	Asphalt over C&G	2.8 RT C&G Face	S	22.00	11.50	10.50	-	-	Asphalt STBC Soil Subgrade	1.8-3.5: RE - Gray-Tan, Silty CLAY, Moderately Plastic 3.5-5.0: Residual - Tan-Brown, Fine Sandy SILT	S-49 Ref-48	A-7-6 A-4	M	5	1/2-inch Rutting (ISWP), Low Severity Longitudinal Cracking (ISWP), Low to Moderate Severity Transverse Cracking, Polished Aggregate	666,910	818,024	
C-50 -Y1RT- 13+67 US 19 EB ISL	4.0 Fill	12.0	Asphalt over C&G	1.0 RT FY	S	12.50	12.50	0.00	-	-	Asphalt Soil Subgrade	1.0-4.0: RE - Red, Silty CLAY, Slightly Plastic 4.0-5.0: Residual - Tan-Brown, Fine Sandy SILT	S-50 Ref-48	A-7-6 A-4	M	5	Low to Moderate Severity Longitudinal Cracking (OSWP) and Transverse Cracking, Ravelling Polished Aggregate	666,896	818,021	
C-51 -Y1RT- 14+30 US 19 EB OSL	10.0 Fill	11.0	4.0 PS	1.5 LT FW	S	21.00	7.00	14.00	-	-	Asphalt STBC Soil Subgrade	1.8-4.0: RE - Brown, Fine Sandy Micaceous SILT 4.0-5.0: RE - Brown-Red, Silty CLAY, Slightly Plastic	Ref-52 Ref-50	A-4 A-7-5	M	5	Low to Moderate Severity Longitudinal Cracking (OSWP) and Transverse Cracking, Ravelling Polished Aggregate	666,865	818,080	
C-52 -Y1RT- 14+30 US 19 EB OSS	10.0 Fill	11.0	4.0 PS	1.8 RT FW	Cr	23.00	4.00	19.00	-	-	Asphalt STBC Soil Subgrade	1.9-5.0: RE - Brown, Fine to Coarse Sandy Micaceous SILT	S-52	A-4	M	5	Low to Moderate Severity Longitudinal Cracking (OSWP) and Transverse Cracking, Ravelling Polished Aggregate	666,862	818,079	

Notes:  
Offset Distance: Left and Right Relative to the Direction of Travel

Prepared by: DMB  
Reviewed by: REK

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-1 -L- 15+32 EB OSS 5.0 FT RT FW				8/4 to 8/6/2021	C-5 -L- 25+35 EB ISS 1.4 FT LT FY				8/4 to 8/6/2021
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill
DCP	Cumulative cm per blow		STBC	7.0 ft Fill	DCP	Cumulative cm per blow		STBC	10.0 ft Fill
2.50	21.00	34.62			1.00	23.00	58.00		
3.40	21.16	34.66			1.50	23.20	59.40		
4.20	21.33	34.70			2.00	23.60	60.60		
4.60	21.49	35.20			2.50	23.80	62.00		
5.00	21.65	35.60			3.00	24.10	63.60		
5.50	21.82	36.00			3.30	24.30	65.50		
5.90	21.98	36.40			3.70	24.50	67.50		
6.20	22.15	36.80			4.10	24.80	69.60		
6.50	22.31	37.40			4.60	25.00	71.90		
6.70	22.47	38.20			5.20	25.30	74.30		
7.20	22.64	39.00			5.50	25.70	77.00		
7.70	22.80	39.80			6.00	26.10	79.20		
8.20	22.94	40.60			6.30	26.80	82.10		
8.50	23.08	41.60			6.60	27.00	85.00		
9.00	23.22	43.30			6.80	27.30	87.20		
9.50	23.36	45.00			7.20	27.60	89.40		
9.80	23.50	46.00			7.50	28.00	91.40		
10.30	23.70	47.20			7.80	28.30	92.30		
10.60	23.90	48.20			8.20	28.60	94.70		
11.20	24.10	50.50			8.30	29.10	96.20		
11.50	24.30	51.60			8.80	29.20	98.00		
11.70	24.50	52.30			9.20	29.70	99.20		
12.20	24.70	54.60			9.60	30.00	100.50		
12.40	24.90	56.20			10.20	30.30	101.50		
12.70	25.10	57.10			10.50	30.60	102.50		
13.00	25.30	59.00			10.90	30.80	103.50		
13.30	25.50	60.60			11.40	31.40	104.40		
13.50	25.70	62.70			11.70	31.70	105.40		
13.70	25.90	64.50			12.00	32.20	106.20		
13.90	26.10	66.20			12.20	32.50	107.20		
14.20	26.30	67.70			12.50	32.90	108.00		
14.30	26.50	69.50			13.00	33.40	109.00		
14.50	26.70	71.60			13.10	33.50	110.00		
14.70	26.90	74.20			13.30	33.70	111.00		
15.10	27.10	77.10			13.60	34.00	112.00		
15.20	27.30	80.40			14.50	34.40	113.20		
15.30	27.50	83.30			14.70	34.80	114.20		
15.40	27.72	85.60			14.90	35.00	115.20		
15.80	27.94	87.70			15.10	35.50	116.50		
16.10	28.16	89.20			15.30	35.70	118.00		
16.30	28.38	90.90			15.50	36.10	119.20		
16.50	28.60	92.10			15.70	36.30	120.30		
16.90	28.88	93.90			16.00	36.80	121.30		
17.00	29.16	94.50			16.30	37.20	122.40		
17.10	29.44	95.50			16.80	37.60	123.20		
17.22	29.72	96.70			17.20	38.00	124.60		
17.34	30.00	98.10			17.30	38.60	125.70		
17.46	30.50	99.50			17.50	39.00	126.80		
17.58	30.66	100.60			18.00	39.50	128.00		
17.70	30.82	102.50			18.30	40.10	128.80		
17.82	30.98	103.20			18.90	40.60	130.00		
17.94	31.14	104.60			19.10	41.10	131.20		
18.06	31.30	105.60			19.50	41.70	132.10		
18.18	31.56	107.00			19.90	42.50	133.20		
18.30	31.82	108.30			20.00	43.10	134.10		
18.52	32.08	109.50			20.10	44.00	135.20		
18.74	32.34	110.70			20.20	46.10	136.20		
18.97	32.60	112.20			20.60	47.20	137.40		
19.19	32.98	113.30			20.80	48.10	138.40		
19.41	33.36	114.90			21.20	49.00	139.60		
19.63	33.74	116.50			21.40	50.00	140.50		
19.86	34.12	117.60			21.70	51.40	141.60		
20.08	34.50	119.10			22.10	52.80	142.60		
20.30	34.54				22.50	54.50	143.50		
20.50	34.58				22.80	56.50	144.40		

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-6 -L- 25+35 EB OSS 5.4 FT RT FW				8/4 to 8/6/2021	C-7 -L- 29+86 EB ISS 1.3 FT LT FY				8/4 to 8/6/2021
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill
DCP	Cumulative cm per blow		STBC	15.0 ft Fill	DCP	Cumulative cm per blow		STBC	20.0 ft Cut
1.40	27.70	95.00			2.80	35.70	111.50		
2.20	28.30	95.90			3.80	36.90	112.90		
2.80	28.60	97.00			4.40	37.50	114.10		
3.60	29.30	97.80			5.00	38.50	115.40		
4.50	29.80	99.00			5.50	39.50	116.70		
5.00	30.50	99.60			6.10	40.50	117.70		
5.50	31.70	100.50			6.50	41.40	118.90		
5.80	32.00	101.50			7.00	42.30	120.20		
6.00	32.30	102.50			7.50	43.20	121.70		
6.50	32.80	103.60			8.10	44.00	123.30		
7.10	33.30	104.60			8.60	44.80	124.90		
7.50	34.20	105.80			8.90	45.70	126.70		
7.90	35.00	107.00			9.40	46.50	128.10		
8.30	36.00	108.00			9.70	47.50	129.90		
8.60	36.30	109.20			10.10	48.30	131.50		
9.00	37.20	110.50			10.50	49.20	133.10		
9.20	38.00	111.60			10.70	50.00	134.30		
9.70	38.20	112.60			11.00	50.90	135.70		
9.90	39.50	113.80			11.40	51.60	137.40		
10.30	40.10	115.00			11.90	52.30	139.10		
10.70	41.00	116.00			12.30	53.10	140.60		
11.00	41.80	117.30			12.50	54.10	142.20		
11.40	42.60	118.30			13.00	54.70	143.80		
11.70	43.90	119.50			13.40	55.40	145.30		
12.00	45.10	120.70			13.60	56.00			
12.40	47.10	121.00			13.80	56.80			
12.70	49.30	121.90			14.00	57.50			
13.00	51.00	123.30			14.20	58.40			
13.40	52.80	124.50			14.70	59.40			
13.70	54.50	125.60			15.20	60.60			
14.10	56.00	127.00			15.40	62.10			
14.40	58.00	128.10			15.90	63.10			
14.70	59.30	129.10			16.10	64.30			
15.10	61.20	130.20			16.30	65.50			
15.40	62.50	131.20			16.50	66.80			
15.80	63.50	132.10			17.00	68.20			
16.10	64.60	133.00			17.30	69.80			
16.20	65.60	133.80			17.60	71.40			
16.60	66.40	134.60			17.90	72.90			
17.10	67.50	135.50			18.80	74.10			
17.50	68.20	136.50			19.00	75.30			
17.80	69.20	137.30			19.40	76.80			
18.20	70.20	138.30			19.70	78.20			
18.50	71.30	139.20			20.20	79.50			
18.80	72.50	140.00			20.50	80.90			
19.10	73.80	140.80			21.40	82.50			
19.50	75.20	141.60			21.70	84.30			
19.80	76.60	142.30			22.00	85.50			
20.20	78.30	143.00			22.50	86.90			
20.50	80.30				23.20	88.30			
21.30	81.60				23.40	89.60			
21.60	83.10				23.70	90.70			
22.10	84.50				24.20	92.10			
22.50	86.00				24.50	93.60			
23.00	87.00				25.10	95.30			
23.30	88.00				25.40	97.20			
23.50	89.00				25.60	99.00			
23.80	89.50				26.30	100.70			
24.20	90.20				26.80	102.30			
24.60	90.70				27.40	103.70			
25.10	91.10				28.30	104.80			
25.60	91.80				29.50	105.80			
26.10	92.50				31.00	107.40			
26.50	93.20				32.60	108.60			
27.30	94.00				34.20	110.10			

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET								WBS NO.	PROJECT TIP I.D.	ROUTE					
								38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane					
								COUNTY	FIELD PROFESSIONAL	FIELD CREW					
								Haywood	M. Brewer	R. Kral/D. Underwood					
Test Location								Date Run	Test Location				Date Run		
C-8 -L- 29+86 EB ISL 8.0 FT RT FY								8/4 to 8/6/2021	C-10 -L- 35+32 EB ISS 2.0 FT LT FY				8/4 to 8/6/2021		
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill	
DCP	Cumulative cm per blow			STBC		20.0 ft Cut		DCP	Cumulative cm per blow			STBC		4.0 ft Cut	
0.80	10.68	33.00	79.00					0.50	17.30	30.50	100.00				
1.20	10.80	34.00	79.80					1.00	17.40	30.80	103.30				
1.80	10.85	34.70	80.60					1.50	17.60	31.00	106.00				
2.30	10.90	35.40	81.50					1.70	17.80	31.30	108.10				
2.60	10.95	36.00	82.10					2.00	18.00	31.80	110.00				
3.10	11.00	36.70	83.10					2.50	18.10	32.10	112.40				
3.23	11.05	37.30	84.20					2.90	18.30	32.70	114.00				
3.35	11.10	38.00	85.20					3.20	18.50	33.20	116.50				
3.48	11.15	38.70	86.40					3.40	18.70	33.60	118.60				
3.61	11.20	39.30	87.50					3.50	18.90	34.00	120.20				
3.74	11.25	39.90	88.70					3.70	19.50	35.00	121.80				
3.86	11.30	40.60	89.80					4.00	19.60	35.40	123.40				
3.99	AUGER	41.30	90.90					4.30	19.70	36.00	125.20				
4.12	13.0 CM	41.90	92.00					4.50	19.90	36.50	126.60				
4.25	1.00	42.60	93.10					4.70	20.10	37.30	128.00				
4.37	1.50	43.30	94.30					5.10	20.30	38.00	129.60				
4.50	2.00	43.90	95.40					5.40	20.50	39.00	131.20				
4.65	2.30	44.60	96.50					5.60	20.51	39.50	132.60				
4.80	2.60	45.20	97.60					6.00	20.52	40.40	134.30				
4.95	3.20	45.90	98.50					6.50	20.53	41.00	135.60				
5.10	3.50	46.60	99.30					6.70	20.54	41.60	136.90				
5.25	4.00	47.20	100.30					7.20	20.55	42.40	138.10				
5.40	4.40	47.90	101.00					7.40	20.55	43.00	139.70				
5.55	4.70	48.50	101.80					7.50	20.56	43.70	140.00				
5.70	5.20	49.20	102.50					7.70	20.57	44.50	141.30				
5.85	5.60	50.00	103.50					8.10	20.58	45.50	143.30				
6.00	5.80	50.50	104.50					8.30	20.59	46.50	145.50				
6.18	6.20	51.20	105.00					8.50	20.60	47.50	148.00				
6.36	6.80	51.50	105.80					8.70	20.85	48.80	150.20				
6.54	7.10	53.00	106.50					8.90	21.10	49.70	152.70				
6.72	7.50	53.60						9.10	21.35	50.60					
6.90	7.80	54.50						9.30	21.60	51.70					
7.08	8.50	55.00						9.50	21.85	52.90					
7.26	9.50	55.70						9.70	22.10	54.00					
7.44	10.00	56.50						10.00	22.35	55.00					
7.62	10.50	57.20						10.30	22.60	56.00					
7.80	11.30	58.00						10.60	22.85	57.00					
7.90	12.10	58.70						10.90	23.10	58.00					
8.00	12.50	59.30						11.20	23.33	59.00					
8.10	13.00	60.00						11.50	23.56	60.00					
8.20	13.80	60.70						11.60	23.79	60.90					
8.30	14.50	61.30						11.70	24.02	62.00					
8.40	15.50	62.10						11.90	24.25	62.10					
8.50	16.60	62.80						12.10	24.48	62.70					
8.60	17.20	63.40						12.40	24.71	64.50					
8.70	19.00	64.00						12.60	24.94	65.40					
8.80	20.40	64.50						12.80	25.17	66.50					
8.88	21.50	65.20						13.10	25.40	67.50					
8.96	22.20	65.90						13.30	25.70	68.80					
9.04	22.80	66.60						13.70	26.00	70.00					
9.12	23.50	67.40						14.00	26.30	71.40					
9.20	24.00	68.10						14.40	26.50	72.80					
9.28	24.80	68.70						14.60	26.80	74.10					
9.36	25.50	69.50						15.00	27.00	75.70					
9.44	26.10	70.30						15.20	27.20	77.30					
9.52	26.80	71.10						15.40	27.60	79.10					
9.60	27.40	71.80						15.60	28.00	80.90					
9.72	28.10	72.70						15.80	28.40	82.30					
9.84	28.80	73.40						16.00	28.70	84.50					
9.96	29.40	74.10						16.20	29.00	86.00					
10.08	30.00	75.00						16.40	29.20	88.00					
10.20	30.70	75.80						16.60	29.50	90.00					
10.32	31.40	76.60						16.80	29.80	92.20					
10.44	32.00	77.30						17.10	30.00	94.50					
10.56	32.70	78.10						17.20	30.30	97.00					

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET								WBS NO.	PROJECT TIP I.D.	ROUTE					
								38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane					
								COUNTY	FIELD PROFESSIONAL	FIELD CREW					
								Haywood	M. Brewer	R. Kral/D. Underwood					
Test Location								Date Run	Test Location				Date Run		
C-11 -L- 35+34 EB OSS 5.5 FT RT FW								8/4 to 8/6/2021	C-12 -L- 61+63 EB ISS 0.7 FT LT FY				8/4 to 8/6/2021		
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill	
DCP	Cumulative cm per blow			STBC		3.5 ft Fill		DCP	Cumulative cm per blow			STBC		1.9 ft Fill	
1.30	46.20	115.80						1.30	23.40	123.00					
2.10	47.60	116.50						2.10	23.70	124.10					
2.80	49.60	117.30						3.00	24.00	126.10					
3.40	51.40	117.70						3.80	24.30	127.60					
4.00	52.60	118.60						4.50	24.70	129.20					
4.70	54.80	119.20						5.10	25.30	130.70					
5.40	56.80	120.10						5.60	25.60	132.20					
5.90	58.70	120.60						6.00	26.00	133.70					
6.50	60.20	121.80						6.60	26.50	135.20					
7.10	61.70	122.80						7.20	26.80	136.70					
7.50	62.00	123.50						7.60	27.40	138.10					
8.20	64.50	124.00						8.00	28.00	139.40					
8.80	65.80	124.50						8.60	28.30	140.80					
9.40	67.20	124.80						8.80	28.80						
9.90	68.40	125.50						9.20	29.30						
10.60	70.00	126.00						9.60	30.00						
11.10	71.10	127.20						9.90	30.70						
11.50	72.50	128.00						10.20	31.60						
12.40	73.80	128.80						10.60	32.60						
12.80	75.00	129.90						11.00	33.60						
13.30	76.50	130.30						11.20	35.10						
13.70	77.60	130.50						11.60	37.20						
14.30	79.20	132.10						12.00	40.10						
14.60	80.50	133.00						12.20	43.40						
15.10	81.70	134.00						12.40	46.10						
15.70	83.10	134.90						12.70	49.10						
16.30	84.60	135.60						13.10	51.20						
17.00	85.20	136.40						13.50	53.20						
17.80	86.50	137.10						13.80	55.20						
18.50	87.50	138.00						14.00	57.00						
19.20	88.50	139.00						14.20	58.70						
20.00	89.50	139.80						14.40	61.30						
21.00	90.10	141.00						14.60	62.20						
21.40	90.60	141.90						14.80	65.40						
22.10	92.00	142.80						15.10	67.30						
23.00	92.90	143.60						15.30	69.60						
23.60	93.70	144.50						15.50	72.20						
24.40	94.50	145.00						15.80	74.80						
25.00	95.40	145.50						16.10	77.60						



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						38332.1.FS		B-3186/B-5898				US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Haywood		M. Brewer				R. Kral/D. Underwood			
Test Location						Date Run		Test Location				Date Run			
C-13 -L- 61+63 EB ISL 5.3 FT RT FY						8/4 to 8/6/2021		C-14 -L- 61+64 EB OSL 2.2 FT LT FW				8/4 to 8/6/2021			
Type	Test Interval			Datum		Cut/Fill	Type	Test Interval			Datum		Cut/Fill		
DCP	Cumulative cm per blow			STBC		2.0 ft Fill	DCP	Cumulative cm per blow			STBC		4.0 ft Fill		
1.20	13.35	22.96	45.10	141.80			0.70	9.50	16.08	25.10	58.30	111.20			
1.90	13.47	23.10	46.70				1.30	9.56	16.20	25.30	58.70	111.80			
2.40	13.58	23.30	48.80				1.50	9.62	16.31	25.50	59.00	112.00			
2.70	13.70	23.50	51.90				1.90	9.68	16.42	25.70	59.20	112.30			
3.10	13.92	23.70	54.30				2.10	9.74	16.53	25.90	59.50	112.80			
3.30	14.14	23.90	57.50				2.40	9.80	16.64	26.10	60.00	113.40			
3.60	14.36	24.10	60.00				2.60	9.86	16.75	26.30	60.20	113.60			
4.00	14.58	24.28	62.00				2.80	9.92	16.86	26.50	60.50	114.00			
4.20	14.80	24.46	64.30				3.10	9.98	16.97	26.80	61.10	115.00			
4.40	14.86	24.64	66.50				3.30	10.04	17.08	27.10	61.60	115.50			
4.60	14.92	24.82	68.50				3.60	10.10	17.19	27.40	62.20	115.90			
4.80	14.98	25.00	70.60				4.10	10.19	17.30	27.70	62.70	116.20			
5.10	15.04	25.38	72.70				4.30	10.28	17.40	28.00	63.50	116.50			
5.30	15.10	25.76	74.70				4.50	10.37	17.50	28.23	64.20	116.70			
5.50	15.18	26.14	76.80				4.70	10.46	17.60	28.47	65.00	117.00			
5.70	15.26	26.52	78.80				4.90	10.55	17.70	28.70	66.20	117.60			
5.90	15.34	26.90	80.90				5.20	10.64	17.80	28.93	67.30	118.00			
6.06	15.42	27.10	82.50				5.40	10.73	17.90	29.17	68.40	118.40			
6.22	15.50	27.30	84.20				5.56	10.82	18.00	29.40	69.20	118.80			
6.37	15.67	27.50	85.60				5.71	10.91	18.10	29.82	69.60	119.10			
6.53	15.83	27.70	87.50				5.87	11.00	18.20	30.24	70.60	119.50			
6.69	16.00	27.90	89.60				6.02	11.12	18.30	30.66	71.40	120.00			
6.85	16.17	28.08	91.50				6.18	11.24	18.43	31.08	72.30	120.50			
7.00	16.33	28.26	93.60				6.33	11.36	18.56	31.50	72.80	121.00			
7.16	16.50	28.44	94.90				6.49	11.48	18.69	31.80	73.80	121.60			
7.32	16.68	28.62	97.00				6.64	11.60	18.82	32.10	75.30	122.20			
7.48	16.87	28.80	98.10				6.80	11.71	18.95	32.40	76.00	122.80			
7.63	17.05	29.00	100.10				6.88	11.82	19.08	32.70	76.60	123.30			
7.79	17.23	29.20	101.60				6.96	11.93	19.21	33.00	77.80	124.10			
7.95	17.42	29.40	102.00				7.03	12.04	19.34	33.50	78.30	124.60			
8.11	17.60	29.60	102.50				7.11	12.15	19.47	33.70	79.10	125.20			
8.27	17.80	29.80	103.60				7.19	12.26	19.60	34.10	80.00	126.00			
8.42	18.00	30.00	104.70				7.27	12.37	19.79	34.40	81.00	127.00			
8.58	18.20	30.20	105.70				7.34	12.48	19.98	34.90	81.20	127.50			
8.74	18.40	30.40	106.80				7.42	12.59	20.17	35.30	83.00	128.20			
8.90	18.60	30.60	107.90				7.50	12.70	20.36	35.60	84.10	129.00			
9.05	18.78	30.80	109.10				7.57	12.79	20.55	36.50	85.40	129.50			
9.21	18.96	30.98	110.50				7.64	12.88	20.74	37.00	86.70	130.20			
9.37	19.14	31.16	111.70				7.71	12.97	20.93	37.50	88.00	131.20			
9.53	19.32	31.34	112.00				7.78	13.06	21.12	38.20	89.20	132.10			
9.68	19.50	31.52	114.20				7.85	13.15	21.31	38.60	90.40	133.00			
9.84	19.60	31.70	116.00				7.92	13.24	21.50	39.20	91.50	133.60			
10.00	19.70	31.96	117.10				7.99	13.33	21.59	39.80	92.60	134.50			
10.22	19.80	32.22	119.00				8.06	13.42	21.68	40.30	93.50	135.20			
10.44	19.90	32.48	120.20				8.13	13.51	21.77	41.20	94.70	136.10			
10.66	20.00	32.74	121.30				8.20	13.60	21.86	42.30	95.60	137.00			
10.88	20.14	33.00	122.50				8.26	13.73	21.95	43.30	96.70	137.80			
11.10	20.28	33.20	123.50				8.32	13.85	22.05	44.30	97.70	138.60			
11.22	20.42	33.60	124.60				8.38	13.98	22.14	45.60	98.30	139.50			
11.34	20.56	33.80	125.70				8.44	14.11	22.23	47.30	99.20	140.00			
11.46	20.70	34.10	126.70				8.50	14.24	22.32	49.50	99.80	141.00			
11.58	20.86	34.40	127.60				8.56	14.36	22.41	50.00	100.10	142.20			
11.70	21.02	34.90	128.80				8.62	14.49	22.50	52.20	101.00	143.20			
11.82	21.18	35.40	129.70				8.68	14.62	22.70	53.10	101.60	144.40			
11.94	21.34	35.90	131.20				8.74	14.75	22.90	53.90	102.50	145.40			
12.06	21.50	36.50	132.00				8.80	14.87	23.10	54.70	103.60	146.60			
12.18	21.65	37.10	133.10				8.87	15.00	23.30	55.20	104.50	147.60			
12.30	21.80	38.00	133.90				8.94	15.12	23.50	55.70	105.50	148.80			
12.44	21.95	38.40	135.10				9.01	15.24	23.70	56.00	106.60	149.90			
12.58	22.10	39.00	135.90				9.08	15.36	23.90	56.20	108.00	151.00			
12.72	22.25	39.70	136.90				9.15	15.48	24.10	56.50	109.00				
12.86	22.40	40.60	138.00				9.22	15.60	24.30	56.70	109.70				
13.00	22.54	41.60	139.10				9.29	15.72	24.50	57.10	110.20				
13.12	22.68	42.50	140.00				9.36	15.84	24.70	57.60	110.50				
13.23	22.82	43.70	140.60				9.43	15.96	24.90	58.10	110.80				

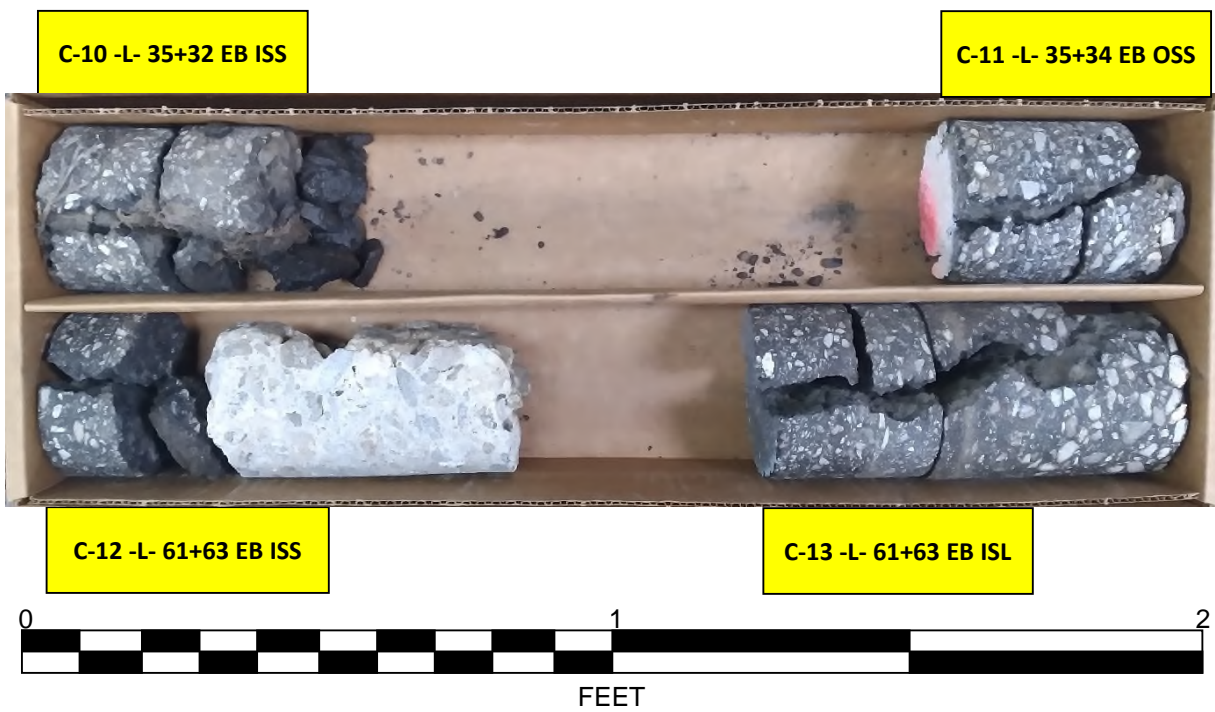
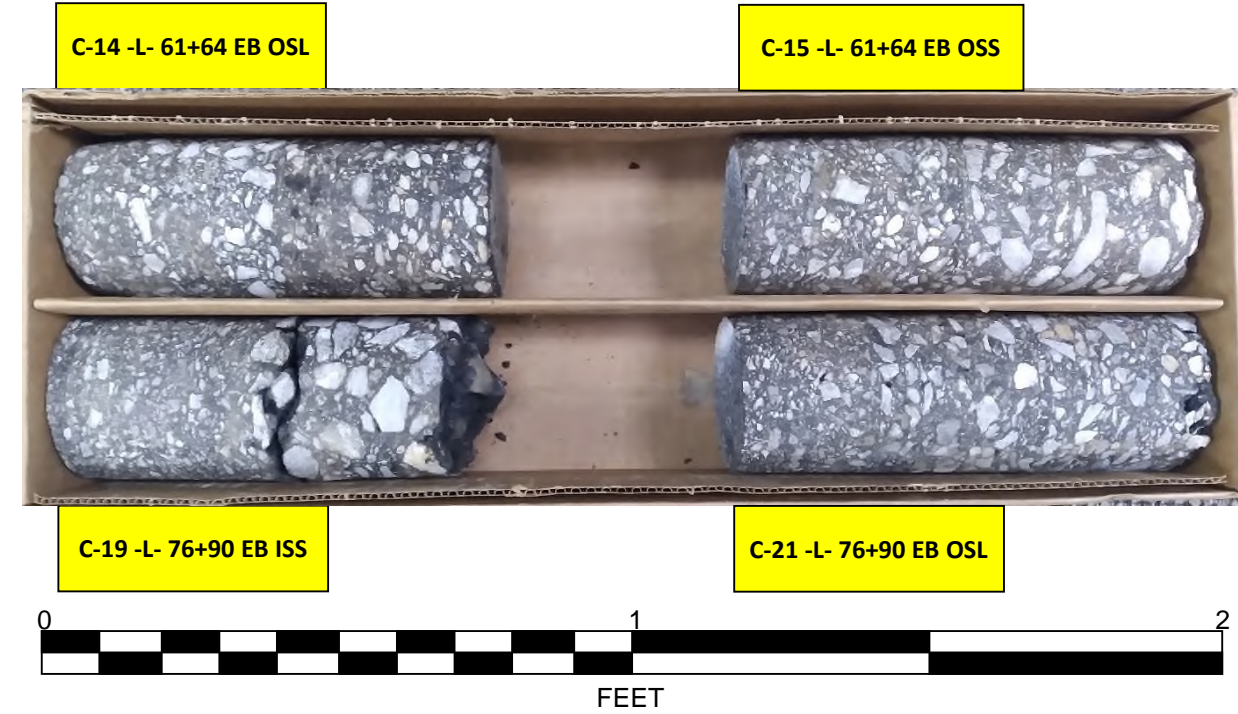
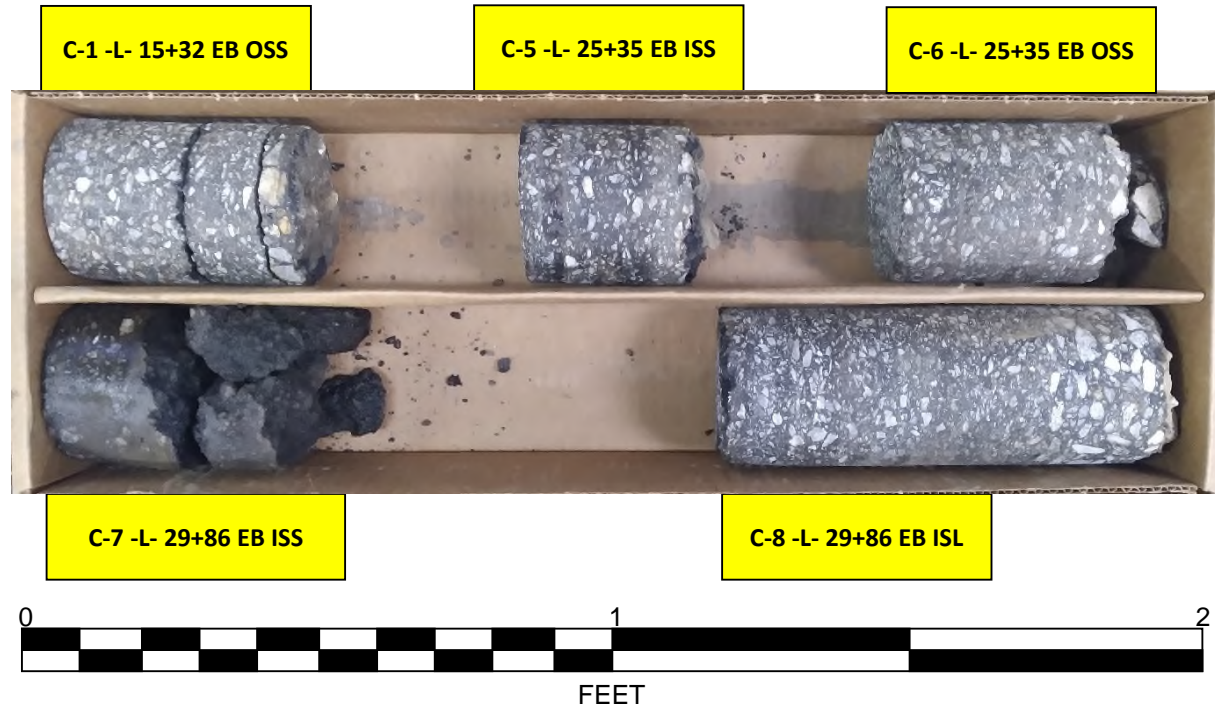
DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						38332.1.FS		B-3186/B-5898				US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Haywood		M. Brewer				R. Kral/D. Underwood			
Test Location						Date Run		Test Location				Date Run			
C-15 -L- 61+64 EB OSS 1.0 FT RT FW						8/4 to 8/6/2021		C-19 -L- 76+90 EB ISS 2.2 FT LT FY				8/4 to 8/6/2021			
Type	Test Interval			Datum		Cut/Fill	Type	Test Interval			Datum		Cut/Fill		
DCP	Cumulative cm per blow			STBC		4.0 ft Fill	DCP	Cumulative cm per blow			STBC		20.0 ft Cut		
1.90	17.10	45.00	120.20				2.50	37.10	59.50	83.60	92.77				
2.40	17.30	45.50	122.10				3.60	37.60	60.20	84.00	92.80				
2.80	17.50	46.00	123.70				4.10	38.30	61.00	84.30	92.83				
3.10	17.70	46.70	125.40				4.50	38.80	61.80	84.60	92.86				
3.50	17.90	47.50	127.20				4.80	39.50	62.50	85.00	92.89				
4.00	18.10	48.40	129.00				5.20	39.90	63.00	85.30	92.92				
4.30	18.30	49.10	130.50				5.80	40.20	63.60	85.60	92.95				
4.70	18.50	49.60	132.20				6.20	40.40	64.50	86.00	92.98				
5.20	18.70	50.20	133.40				6.40	40.52	65.50	86.50	93.01				
5.38	18.88	51.20	134.20				6.50	40.64	66.50	86.80	93.04				
5.56	19.06	52.10	136.00				6.70	40.76	67.60	87.20	93.07				
5.74	19.24	53.00					7.00	40.88	68.30	87.70	93.10				
5.92	19.42	54.30					7.30	41.00	68.80	88.00	DCP				
6.10	19.60	55.10					7.60	41.12	69.80	88.50	REF				
6.32	19.92	56.00					7.90	41.24	70.60	89.20					
6.54	20.24	56.50					8.20	41.36	71.40	89.60					
6.76	20.56	57.70					8.60	41.48	72.10	89.80					
6.98	20.88	58.80					8.80	41.60	72.70	90.00					
7.20	21.20	59.70					9.00	41.67	73.50	90.40					
7.48	21.46	60.70					9.30	41.74	74.20	90.60					
7.76	21.72	61.60					9.50	41.81	75.00	90.70					
8.04	21.98	62.60					9.70	41.88	75.60	90.80					
8.32	22.24	63.60					10.20	41.95	76.10	91.00					
8.60	22.50	64.30					10.50	42.02	76.50	91.20					
8.88	22.74	65.30					10.70	42.09	76.80	91.40					
9.16	22.98	66.50					11.00	42.16	77.00	91.50					
9.44	23.22	67.60					11.20	42.23	77.40	91.60					
9.72	23.46	68.60					11.40	42.30	77.51	91.63					
10.00	23.70	69.60					11.80	42.42	77.63	91.66					
10.14	24.06	70.60					12.10	4							

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE					
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane					
				COUNTY	FIELD PROFESSIONAL	FIELD CREW					
				Haywood	M. Brewer	R. Kral/D. Underwood					
Test Location				Date Run	Test Location				Date Run		
C-21 -L- 76+90 EB OSL 2.2 FT LT FW				8/4 to 8/6/2021	C-22 -L- 76+90 EB OSS 3.5 FT RT FW				8/4 to 8/6/2021		
Type	Test Interval	Datum	Cut/Fill	Type	Test Interval	Datum	Cut/Fill	Type	Test Interval	Datum	Cut/Fill
DCP	Cumulative cm per blow	STBC	20.0 ft Cut	DCP	Cumulative cm per blow	STBC	20.0 ft Cut	DCP	Cumulative cm per blow	STBC	20.0 ft Cut
2.40	49.70			2.50	63.10						
3.50	50.10			3.70	63.70						
4.10	50.60			4.10	64.10						
4.40	50.90			4.80	64.40						
5.20	51.90			5.40	64.70						
5.50	52.30			6.00	65.10						
5.80	52.60			6.60	65.50						
6.30	52.90			7.20	66.00						
6.60	53.30			7.50	66.30						
6.80	53.60			7.70	66.70						
7.60	53.90			8.30	67.20						
8.00	54.20			8.80	67.40						
8.30	54.50			9.10	67.70						
8.50	54.80			9.50	68.10						
9.00	55.20			9.60	68.40						
9.20	55.50			10.10	69.20						
9.50	55.80			10.40	50/0 CM						
10.00	56.10			10.90	DCP						
10.40	56.50			11.50	REF						
10.70	56.70			11.70							
11.00	57.10			12.20							
11.60	57.40			12.50							
11.80	57.80			13.10							
12.10	58.00			13.50							
12.50	58.30			14.00							
12.80	58.60			14.50							
13.20	58.90			15.00							
13.60	59.30			15.50							
14.00	59.60			16.00							
14.50	59.90			16.80							
14.80	60.20			17.50							
15.50	60.50			18.20							
16.00	60.90			18.80							
16.30	61.20			19.50							
16.60	61.50			20.30							
17.10	61.80			21.20							
17.50	62.10			22.00							
18.00	62.40			23.10							
18.30	62.80			24.40							
18.60	63.10			26.00							
19.30	63.40			27.60							
19.50	63.70			29.20							
19.90	64.00			30.70							
20.50	64.30			32.20							
21.00	64.70			33.00							
21.60	65.00			34.10							
22.30	65.30			36.00							
22.80	65.60			37.20							
23.70	50/0 CM			39.00							
24.50	DCP			40.10							
25.10	REF			43.00							
25.30				45.60							
26.50				48.80							
28.20				51.50							
30.00				54.40							
31.80				56.50							
33.30				57.60							
35.10				58.30							
37.20				58.70							
39.60				59.20							
41.80				59.90							
43.80				60.80							
45.60				61.20							
47.20				62.00							
48.60				62.80							

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE					
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane					
				COUNTY	FIELD PROFESSIONAL	FIELD CREW					
				Haywood	M. Brewer	R. Kral/D. Underwood					
Test Location				Date Run	Test Location				Date Run		
C-23 -L- 80+22 EB ISS 2.3 FT LT FY				8/4 to 8/6/2021	C-24 -L- 80+22 EB OSS 1.9 FT RT FW				8/4 to 8/6/2021		
Type	Test Interval	Datum	Cut/Fill	Type	Test Interval	Datum	Cut/Fill	Type	Test Interval	Datum	Cut/Fill
DCP	Cumulative cm per blow	STBC	2.0 ft Fill	DCP	Cumulative cm per blow	STBC	8.0 ft Cut	DCP	Cumulative cm per blow	STBC	8.0 ft Cut
1.00	19.50	33.00	94.80	4.00	24.00	107.50					
1.40	19.66	33.40	95.50	4.80	24.50	109.10					
2.10	19.82	34.10	96.10	5.40	25.00	110.80					
2.70	19.98	34.50	97.00	5.80	25.10	112.40					
3.00	20.14	35.60	97.70	6.50	26.00	114.20					
3.30	20.30	36.00	98.80	6.70	27.00	115.30					
4.00	20.48	36.60	99.70	7.30	27.60	117.80					
4.40	20.66	37.50	101.00	7.60	28.30	119.00					
5.00	20.84	38.60	102.10	8.00	28.90	120.30					
5.30	21.02	39.50	103.50	8.20	29.40	121.80					
5.80	21.20	40.20	104.50	8.40	29.70	123.10					
6.30	21.40	41.20	105.60	8.70	30.10	124.30					
6.50	21.60	42.60	107.00	8.90	30.70	125.70					
7.10	21.80	44.20	108.50	9.50	31.30	127.00					
7.70	22.00	45.70	109.00	9.80	32.10	128.40					
8.00	22.20	47.50	111.50	10.30	33.20	129.60					
8.30	22.30	49.40	112.40	10.50	34.00	131.00					
8.50	22.40	51.10	115.00	10.70	35.20	132.10					
8.80	22.50	53.00	116.30	11.00	36.30	133.50					
9.10	22.60	54.80	117.90	11.30	37.60	134.70					
9.60	22.70	56.70	119.50	11.50	38.30	136.00					
10.20	22.80	58.50	122.00	11.80	40.20	137.00					
10.50	22.90	60.00	124.10	12.00	41.50	138.50					
11.00	23.00	62.00	126.00	12.20	43.00	139.50					
11.50	23.10	63.50	128.00	12.40	44.40	140.70					
12.20	23.20	65.20	130.00	12.80	46.00	141.70					
12.38	23.42	67.00	130.50	13.00	47.50	142.80					
12.56	23.64	68.60	131.30	13.20	49.50						
12.74	23.86	70.20	132.60	13.40	51.50						
12.92	24.08	71.80	134.00	13.60	52.80						
13.10	24.30	73.80	135.50	13.80	54.00						
13.28	24.48	74.20	137.00	14.10	55.70						
13.46	24.66	75.20	138.20	14.40	57.90						
13.64	24.84	76.20	139.20	14.50	58.10						
13.82	25.02	76.80	141.20	14.80	59.90						
14.00	25.20	77.70	142.50	15.00	61.40						
14.18	25.30	78.20	143.80	15.20	62.70						
14.36	25.40	79.00	145.30	15.40	63.20						
14.54	25.50	79.30	146.80	16.00	65.50						
14.72	25.60	79.80	148.50	16.20	66.80						
14.90	25.70	80.10	150.20	16.60	68.20						
15.04	25.96	80.50	151.60	16.80	69.20						
15.18	26.22	81.00	153.00	17.00	71.20						
15.32	26.48	81.30		17.30	72.50						
15.46	26.74	81.70		17.60	73.60						
15.60	27.00	82.00		17.90	75.10						
15.84	27.18	82.40		18.10	76.50						
16.08	27.36	82.80		18.50	78.10						
16.32	27.54	83.20		18.60	79.80						
16.56	27.72	83.70		18.70	81.60						
16.80	27.90	84.20		19.10	83.50						
16.98	28.12	84.50		19.30	85.70						
17.16	28.34	85.60		19.60	87.70						
17.34	28.56	86.00		20.00	89.60						
17.52	28.78	86.80		20.20	91.30						
17.70	29.00	87.40		20.50	92.70						
17.88	29.40	88.00		20.80	94.50						
18.06	29.80	88.90		21.50	96.00						
18.24	30.20	89.60		22.00	97.30						
18.42	30.60	90.50		22.10	98.80						
18.60	31.00	91.10		22.50	100.30						
18.78	31.40	91.80		22.60	101.50						
18.96	31.80	92.40		23.10	103.20						
19.14	32.20	92.50		23.40	104.80						
19.32	32.60	93.90		23.80	106.20						



**B-3186/B-5898 - US 23-74 Bridge 155 & 158 over Richland Creek on US 23-74 Northbound Lane  
(Combine with B-5898)  
Pavement Core Photographs**



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-25 -L- 15+13 WB OSS 5.5 FT RT FW				8/4 to 8/6/2021	C-26 -L- 20+09 WB OSS 1.2 FT RT FW				8/4 to 8/6/2021
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill
DCP	Cumulative cm per blow		STBC	20.0 ft Fill	DCP	Cumulative cm per blow		STBC	20.0 ft Cut
1.40	24.50	84.60	139.00		0.30	16.50	27.15	49.40	
1.70	24.70	86.30	139.30		0.50	16.70	27.30	49.50	
2.60	25.00	87.50	139.60		0.80	16.90	27.45	49.60	
3.10	25.20	89.30	139.90		1.00	17.20	27.60	49.70	
3.60	25.40	91.30	140.20		1.30	17.50	27.75	49.80	
4.10	25.60	93.30	140.70		1.50	17.70	27.90	49.90	
4.50	25.80	95.10	141.00		1.80	18.00	28.05	50.00	
5.00	26.00	97.00	141.30		2.00	18.20	28.20	50.10	
5.30	26.20	98.70	141.70		2.30	18.50	28.35	50.20	
5.80	26.40	100.50	142.00		2.50	18.70	28.50	50.28	
6.30	26.50	102.30	142.30		2.80	18.90	29.00	50.36	
6.40	26.70	104.20	142.70		3.00	19.20	29.40	50.44	
6.70	27.10	105.70	143.00		3.30	19.45	29.90	50.52	
7.10	27.30	107.50	143.60		3.50	19.70	30.40	50.60	
7.30	27.60	109.00	144.20		3.80	19.86	30.90	50.68	
7.60	27.80	110.50	144.80		4.00	20.02	31.30	50.76	
7.80	28.20	112.20	145.30		4.30	20.18	31.50	50.84	
8.00	28.50	113.70	145.90		4.50	20.34	31.90	50.92	
8.30	28.80	115.50	146.50		4.80	20.50	32.20	51.00	
8.60	29.00	116.50	147.30		5.00	20.70	32.60	51.07	
8.90	29.50	117.50	148.10		5.30	20.90	33.00	51.14	
9.20	29.70	118.40	148.60		5.50	21.10	33.40	51.21	
9.60	30.00	119.30	149.00		5.80	21.30	34.10	51.28	
10.20	30.60	120.30	149.60		6.00	21.50	34.50	51.35	
10.50	31.00	121.50	150.20		6.30	21.62	35.00	51.42	
10.70	31.20	122.60	150.80		6.50	21.74	35.60	51.49	
11.00	31.50	124.00	151.30		6.80	21.86	36.00	51.56	
11.30	32.00	125.30	151.90		7.00	21.98	36.60	51.63	
11.60	32.20	126.60	152.50		7.30	22.10	37.20	51.70	
12.10	32.60	128.00	153.10		7.50	22.24	38.20	DCP	
12.50	33.00	129.10	153.70		7.80	22.38	39.00	REF	
12.80	33.50	130.10	154.30		8.00	22.52	40.00		
13.10	33.70	131.00	154.90		8.30	22.66	40.60		
13.70	34.50	132.00	155.50		8.50	22.80	41.80		
14.10	35.00	132.60	156.10		8.80	22.96	42.80		
14.60	35.60	132.75	156.70		9.00	23.12	43.80		
15.10	36.20	132.89	157.30		9.30	23.28	44.40		
15.50	36.80	133.04	157.90		9.50	23.44	44.80		
15.80	37.60	133.18	158.50		9.80	23.60	45.20		
16.00	38.30	133.33			10.00	23.78	45.70		
16.40	39.20	133.47			10.30	23.96	45.80		
16.80	40.20	133.62			10.50	24.14	46.20		
17.30	41.10	133.76			10.70	24.32	46.50		
17.50	42.20	133.91			11.00	24.50	47.20		
18.00	43.50	134.05			11.20	24.60	47.33		
18.30	45.20	134.20			11.50	24.70	47.46		
18.60	46.90	134.35			11.70	24.80	47.59		
19.20	49.00	134.50			12.00	24.90	47.72		
19.50	51.20	134.65			12.20	25.00	47.85		
19.80	53.30	134.80			12.50	25.15	47.98		
20.10	55.60	134.95			12.80	25.30	48.11		
20.50	57.60	135.10			12.90	25.45	48.24		
20.70	58.70	135.25			13.20	25.60	48.37		
21.00	60.00	135.40			13.40	25.75	48.50		
21.20	62.00	135.55			13.70	25.90	48.57		
21.40	64.00	135.70			14.00	26.02	48.64		
21.60	65.70	136.03			14.20	26.14	48.71		
21.80	67.80	136.36			14.50	26.26	48.78		
22.00	70.20	136.69			14.70	26.38	48.85		
22.20	72.20	137.02			14.90	26.50	48.92		
22.70	74.40	137.35			15.20	26.60	48.99		
23.20	76.50	137.68			15.40	26.70	49.06		
23.50	79.00	138.01			15.70	26.80	49.13		
23.70	81.00	138.34			15.90	26.90	49.20		
24.00	83.10	138.67			16.20	27.00	49.30		

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-28 -L- 20+09 WB ISS 2.4 FT LT FY				8/4 to 8/6/2021	C-29 -L- 25+50 WB OSS 5.7 FT RT FW				8/4 to 8/6/2021
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill
DCP	Cumulative cm per blow		STBC	20.0 ft Cut	DCP	Cumulative cm per blow		STBC	25.0 ft Cut
1.30	25.30	90.00			1.50	30.60	144.50		
2.10	25.70	91.20			1.80	30.90	146.80		
2.40	26.10	92.50			2.40	31.80	149.00		
2.80	26.50	93.90			2.90	32.20	151.00		
3.10	27.00	95.20			3.40	32.70	152.40		
3.60	27.60	96.30			3.80	33.20			
4.00	28.00	97.60			4.50	33.70			
4.60	28.80	98.20			5.60	34.10			
5.10	29.20	100.00			6.50	34.70			
5.50	29.50	100.30			6.70	35.20			
6.00	30.00	102.00			7.00	35.90			
6.30	30.50	102.80			7.30	36.40			
6.60	30.80	104.00			7.60	36.80			
6.90	31.50	105.10			8.10	37.30			
7.40	32.00	106.60			8.50	38.40			
7.60	32.50	108.00			8.90	38.80			
7.90	33.20	109.40			9.30	39.60			
8.30	33.80	111.00			9.60	40.10			
8.50	34.30	112.50			10.00	40.90			
8.80	34.80	113.90			10.40	42.00			
9.30	35.50	115.10			10.80	43.50			
9.60	36.50	116.40			11.30	44.60			
9.90	36.80	118.00			12.00	47.00			
10.20	37.80	119.30			12.40	49.00			
10.50	38.60	120.60			12.70	51.20			
10.80	39.80	121.40			13.20	53.50			
11.30	41.70	122.60			13.50	55.70			
11.50	43.20	124.20			13.80	57.90			
11.80	44.20	125.50			14.10	60.00			
12.30	45.40	126.50			14.40	62.30			
12.50	46.20	127.60			14.60	64.30			
12.70	48.40	129.10			15.00	67.00			
13.00	49.90	130.50			15.30	69.30			
13.30	52.20	131.70			15.90	70.20			
13.60	54.90	133.20			16.50	73.20			
14.00	56.70	134.50			16.80	75.30			
14.30	58.30	135.50			17.50	77.50			
14.60	58.80	136.70			18.00	80.00			
14.90	60.00	138.00			18.30	82.50			
15.20	61.10	139.20			18.80	85.10			
15.50	62.50	140.20			19.20	87.00			
16.00	63.60	141.80			19.50	89.50			
16.40	64.80	143.20			20.10	91.50			
16.60	66.10	144.80			20.50	93.70			
17.00	67.30	146.30			21.00	95.70			
17.50	68.30	147.80			21.50	98.20			
17.80	69.20	149.30			21.70	100.50			
18.10	70.20	150.50			22.10	103.20			
18.50	71.20	151.90			22.50	106.00			
19.00	72.50	153.10			23.00	109.00			
19.30	73.50	154.30			23.40	111.50			
19.70	74.40				24.00	113.50			
20.10	75.40				24.20	115.50			
20.50	76.50				25.20	117.40			
20.80	77.50				25.70	119.50			
21.40	78.50				26.20	122.00			
21.70	79.70				26.80	125.20			
22.10	80.70				27.10	128.50			
22.60	82.00				27.40	131.00			
23.00	83.50				27.70	132.80			
23.30	84.50				28.20	134.50			
23.90	85.70				28.70	136.10			
24.30	86.70				29.20	137.90			
24.60	87.80				29.80	140.00			
24.90	88.90				30.20	142.40			



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE				
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane				
				COUNTY	FIELD PROFESSIONAL	FIELD CREW				
				Haywood	M. Brewer	R. Kral/D. Underwood				
Test Location				Date Run	Test Location				Date Run	
C-30 -L- 25+50 WB ISS 1.8 FT RT FY				8/4 to 8/6/2021	C-32 -L- 30+33 WB ISL 5.5 FT RT FY				8/4 to 8/6/2021	
Type	Test Interval	Datum		Cut/Fill	Type	Test Interval	Datum		Cut/Fill	
DCP	Cumulative cm per blow	STBC		10.0 ft Cut	DCP	Cumulative cm per blow	STBC		25.0 ft Cut	
1.80	22.10	101.50			0.80	15.30	40.20	40.20	78.50	92.50
2.60	22.60	104.30			1.40	15.40	40.40	40.40	79.00	93.00
3.20	23.60	107.50			2.00	15.50	40.60	40.60	79.50	93.30
3.70	24.50	110.40			2.30	15.60	40.80	40.80	79.80	93.60
4.50	25.10	113.40			2.50	15.72	41.10	41.10	80.20	94.10
5.00	25.70	116.50			2.70	15.84	41.50	41.50	80.50	94.30
5.50	26.50	119.30			3.00	15.96	41.80	41.80	80.80	94.60
6.00	27.00	121.50			3.40	16.08	42.00	42.00	81.60	94.90
6.30	27.50	124.20			3.60	16.20	42.24	42.24	81.70	95.40
6.60	28.00	127.20			3.80	16.26	42.48	42.48	81.80	95.60
7.00	28.50	129.60			4.10	16.32	42.72	42.72	82.20	96.00
7.20	28.70	132.10			4.50	16.38	42.96	42.96	82.50	96.30
7.50	29.00	134.50			4.67	16.44	43.20	43.20	82.60	96.70
7.70	29.20	137.10			4.83	16.50	44.20	44.20	83.20	97.20
8.00	29.50	139.60			5.00	16.64	45.70	45.70	83.50	97.50
8.80	30.00	141.80			5.17	16.78	46.10	46.10	83.80	97.70
9.00	30.30	144.00			5.33	16.92	47.40	47.40	84.20	98.20
9.20	30.60	146.30			5.50	17.06	47.90	47.90	84.50	98.50
9.40	31.00	148.40			5.67	17.20	48.30	48.30	84.60	98.80
9.60	31.30				5.83	17.30	48.90	48.90	84.80	99.10
10.00	31.70				6.00	17.40	49.50	49.50	85.00	99.50
10.20	32.10				6.17	17.50	50.00	50.00	85.10	100.10
10.50	32.50				6.33	17.60	50.70	50.70	85.30	100.50
10.70	32.80				6.50	17.70	51.40	51.40	85.40	100.70
11.00	33.10				6.74	17.74	52.00	52.00	85.60	101.20
11.20	33.50				6.98	17.78	52.70	52.70	85.70	101.50
11.50	34.00				7.22	17.82	53.10	53.10	85.90	102.00
11.70	34.30				7.46	17.86	53.80	53.80	86.00	102.40
12.00	34.60				7.70	17.90	54.20	54.20	86.20	102.80
12.20	35.20				7.92	<b>AUGER</b>	54.90	54.90	86.30	103.40
12.50	35.70				8.14	<b>13.1 CM</b>	55.80	55.80	86.50	103.70
12.70	36.10				8.36	2.60	56.70	56.70	86.70	104.50
12.90	36.70				8.58	4.20	57.60	57.60	86.80	105.00
13.20	37.50				8.80	5.50	58.60	58.60	86.90	105.50
13.50	38.00				9.00	6.60	59.20	59.20	87.10	106.10
13.70	38.60				9.20	8.10	60.00	60.00	87.20	106.60
13.90	39.70				9.40	9.30	61.00	61.00	87.30	107.20
14.20	40.60				9.60	10.50	61.20	61.20	87.50	108.00
14.40	41.70				9.80	12.30	62.40	62.40	87.70	108.50
14.70	43.70				10.00	13.80	62.50	62.50	87.80	108.80
14.90	46.10				10.20	15.20	63.70	63.70	87.90	109.30
15.20	48.10				10.40	17.00	64.20	64.20	88.10	109.80
15.40	50.00				10.60	18.80	64.70	64.70	88.30	112.00
15.70	51.70				10.80	20.20	65.70	65.70	88.40	112.70
15.90	53.40				10.98	21.90	66.60	66.60	88.60	113.50
16.20	55.00				11.16	23.30	67.00	67.00	88.70	114.20
16.40	57.20				11.34	24.60	68.50	68.50	88.80	114.70
16.60	59.10				11.52	26.30	69.10	69.10	89.00	115.60
16.90	61.00				11.70	28.10	69.60	69.60	89.20	116.50
17.10	62.60				11.90	29.90	70.00	70.00	89.30	117.20
17.40	64.50				12.10	32.00	70.60	70.60	89.50	118.10
17.60	66.40				12.30	33.50	71.10	71.10	89.60	119.10
17.80	69.20				12.50	34.60	71.60	71.60	89.80	
18.10	71.50				12.70	35.50	72.20	72.20	89.90	
18.40	74.50				12.96	36.30	72.70	72.70	90.10	
18.60	76.90				13.22	36.80	73.20	73.20	90.20	
18.80	79.30				13.48	37.40	73.70	73.70	90.40	
19.10	81.60				13.74	37.70	74.30	74.30	90.50	
19.40	84.00				14.00	38.20	74.80	74.80	90.70	
19.60	86.60				14.22	38.40	75.30	75.30	90.80	
19.90	89.00				14.44	38.60	75.80	75.80	91.00	
20.10	91.80				14.66	38.80	76.40	76.40	91.40	
20.40	94.50				14.88	39.00	76.90	76.90	91.60	
20.60	97.00				15.10	39.20	77.40	77.40	92.00	
21.40	99.30				15.20	39.40	77.90	77.90	92.30	

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-33 -L- 30+33 WB ISS 2.0 FT LT FY				8/4 to 8/6/2021	C-34 -L- 35+34 WB OSS 6.0 FT RT FW				8/4 to 8/6/2021
Type	Test Interval	Datum		Cut/Fill	Type	Test Interval	Datum		Cut/Fill
DCP	Cumulative cm per blow	STBC		25.0 ft Cut	DCP	Cumulative cm per blow	STBC		10.0 ft Cut
1.40	44.40	137.30			1.00	23.90	58.00	129.60	
2.10	46.00	138.40			2.00	24.10	60.00	130.50	
2.80	48.00	139.50			2.60	24.30	62.30	131.20	
3.40	50.00	140.60			3.20	24.50	64.00	132.20	
3.60	52.00	141.50			3.60	24.70	65.50	132.90	
4.10	54.00	142.50			4.10	24.90	67.00	133.80	
4.50	55.70	143.50			4.40	25.10	68.20	134.60	
4.70	58.00	144.50			4.80	25.30	69.70	135.50	
5.10	59.60	145.50			5.10	25.50	71.00	136.50	
5.40	61.50	147.50			5.40	25.70	72.40	137.10	
5.90	63.20	148.50			5.80	25.90	73.70	137.90	
6.30	65.20	149.80			6.10	26.10	75.20	138.80	
6.50	67.30	150.70			6.40	26.30	76.50	139.60	
6.80	69.50	151.70			6.80	26.50	78.00	140.40	
7.00	71.50				7.10	26.70	79.00	141.30	
7.40	73.60				7.40	26.90	80.40	142.10	
7.70	75.60				7.80	27.10	81.50	142.90	
8.00	77.70				8.10	27.30	82.60	143.70	
8.30	79.50				8.50	27.50	83.90	144.60	
8.90	81.40				8.80	27.70	85.00	145.40	
9.20	83.30				9.20	27.90	86.20	146.20	
9.50	84.90				9.50	28.10	87.50	147.10	
10.00	86.60				9.80	28.30	88.50	147.80	
10.50	88.50				10.10	28.50	89.70	148.70	
10.80	90.00				10.50	28.70	90.90	149.50	
11.00	91.70				10.80	28.90	92.10	150.40	
11.70	93.50				11.10	29.10	93.20	151.20	
12.00	95.10				11.50	29.30	94.50	152.00	
12.30	96.50				11.80	29.50	95.50	152.90	
13.00	98.20				12.20	29.70	96.50	153.60	
13.40	99.50				12.50	30.00	97.50	154.50	
13.80	101.00				12.80	30.40	98.70	155.30	
14.30	102.40				13.10	30.70	99.90	156.20	
14.80	103.60				13.50	31.10	101.00	156.70	
15.30	105.00				13.80	31.40	102.00	157.80	
15.70	106.00				14.10	31.70	103.20	158.60	
16.30	107.40				14.50	31.90	104.40	159.50	
16.80	108.10				14.80	32.10	105.50	160.30	
17.50	109.30				15.10	32.30	106.50		
18.00	110.30				15.50	32.50	107.70		
18.50	111.20				15.80	33.00	108.70		
18.90	112.10				16.10	33.30	109.70		
19.60	113.20				16.50	33.70	110.90		
20.20	114.40				16.80	34.20	111.70		
20.50	115.60				17.10	34.80	113.50		
21.10	116.50				17.40	35.20	114.50		
21.60	117.40				17.80	35.80	115.20		
22.20	118.50				18.10	36.30	116.00		
22.50	119.50				18.50	36.70	116.70		
23.00	120.70				18.80	37.50	117.40		
23.60	121.50				19.20	38.20	118.40		
24.20	122.60				19.50	38.80	119.00		
24.60	123.50				19.80	39.60	119.80		
25.30	124.60				20.20	40.50	120.50		
26.00	125.60				20.50	41.40	121.40		
27.00	126.60				20.80	42.10	122.30		
28.00	127.50				21.20	43.30	123.10		
29.00	128.50				21.50	44.60	124.00		
31.00	129.60				21.				

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-35 -L- 35+35 WB ISS 2.3 FT LT FY				8/4 to 8/6/2021	C-36 -L- 56+85 WB OSS 1.0 FT RT FW				8/4 to 8/6/2021
Type	Test Interval	Datum		Cut/Fill	Type	Test Interval	Datum		Cut/Fill
DCP	Cumulative cm per blow	STBC		20.0 Cut	DCP	Cumulative cm per blow	STBC		20.0 ft Cut
1.60	28.30	99.60			1.20	29.50	88.60		
2.30	28.70	100.40			2.00	30.20	89.80		
2.80	29.10	101.30			2.50	30.60	91.20		
3.30	29.40	102.00			3.00	31.10	92.10		
3.80	29.80	103.00			3.20	31.50	93.30		
4.30	30.20	104.00			3.80	32.40	94.40		
4.60	30.70	104.80			4.20	32.60	95.50		
5.00	30.90	105.50			4.50	32.80	96.50		
5.40	31.30	106.50			4.80	33.30	97.50		
5.80	31.70	107.60			5.30	33.80	98.50		
6.10	32.00	108.50			5.70	34.20	99.50		
6.40	32.40	109.50			6.00	34.70	100.70		
6.80	32.80	110.50			6.60	35.10	101.50		
7.10	33.10	111.50			7.00	35.60	102.20		
7.40	33.60	112.50			7.50	36.00	103.50		
7.70	34.50	113.60			8.00	36.50	104.50		
8.20	35.20	114.60			8.40	36.90	105.50		
8.50	36.00	115.50			8.90	37.50	106.30		
8.80	37.20	116.50			9.50	37.80	107.50		
9.00	38.40	117.50			10.10	39.40	109.80		
9.40	40.00	118.40			11.10	40.60	110.90		
9.60	42.20	119.30			12.20	42.10	113.20		
9.80	44.50	120.00			13.50	43.40	114.10		
10.00	46.50	121.00			15.10	44.50	115.10		
10.20	48.50	121.60			16.60	45.50	116.60		
10.50	51.00	122.60			17.60	46.40	117.60		
11.00	53.10	123.50			18.00	47.30	119.00		
11.20	54.70	124.20			18.30	48.00	120.20		
11.90	56.30	125.10			18.60	49.00	121.50		
12.20	57.50	125.50			18.80	50.00	122.70		
12.80	58.70	126.40			19.10	50.60	124.00		
13.20	60.00	127.00			19.40	51.80	125.20		
13.80	61.50	127.70			19.70	52.60	126.70		
14.20	62.60	128.50			19.90	53.70	127.50		
14.60	64.00	129.00			20.00	54.60	128.40		
15.20	65.30	129.70			20.20	55.20	129.50		
15.50	66.60	130.30			20.40	56.20	130.60		
16.00	67.30	131.10			20.50	57.20	131.50		
16.80	68.90	131.70			20.70	58.00	132.80		
17.50	70.20	132.60			20.80	59.30	134.20		
17.70	71.60	133.30			21.00	60.10	135.50		
18.10	73.30	134.00			21.50	61.30	136.60		
18.80	74.50	134.70			21.80	62.30	137.70		
19.10	75.80	135.00			22.00	63.50	139.00		
19.50	77.20	136.00			22.70	64.60	140.20		
19.70	78.50	136.50			24.00	66.00	141.30		
20.20	79.90	137.00			24.30	67.00	142.40		
21.30	81.00	137.90			24.60	67.90			
21.60	82.20	138.30			24.80	68.30			
22.30	83.50	138.80			25.10	69.70			
22.60	84.80	139.00			25.40	71.00			
22.90	86.10	139.50			25.70	72.00			
23.40	87.20	140.50			25.90	73.50			
23.76	88.50				26.20	75.00			
24.12	89.70				26.50	76.00			
24.48	91.00				26.80	77.20			
24.84	92.00				27.00	78.40			
25.20	93.00				27.30	79.50			
25.56	93.80				27.60	80.60			
25.92	94.60				27.90	82.00			
26.28	95.20				28.10	83.00			
26.64	96.00				28.40	84.20			
27.00	96.80				28.70	85.20			
27.50	97.60				29.00	86.50			
27.90	98.50				29.20	87.60			

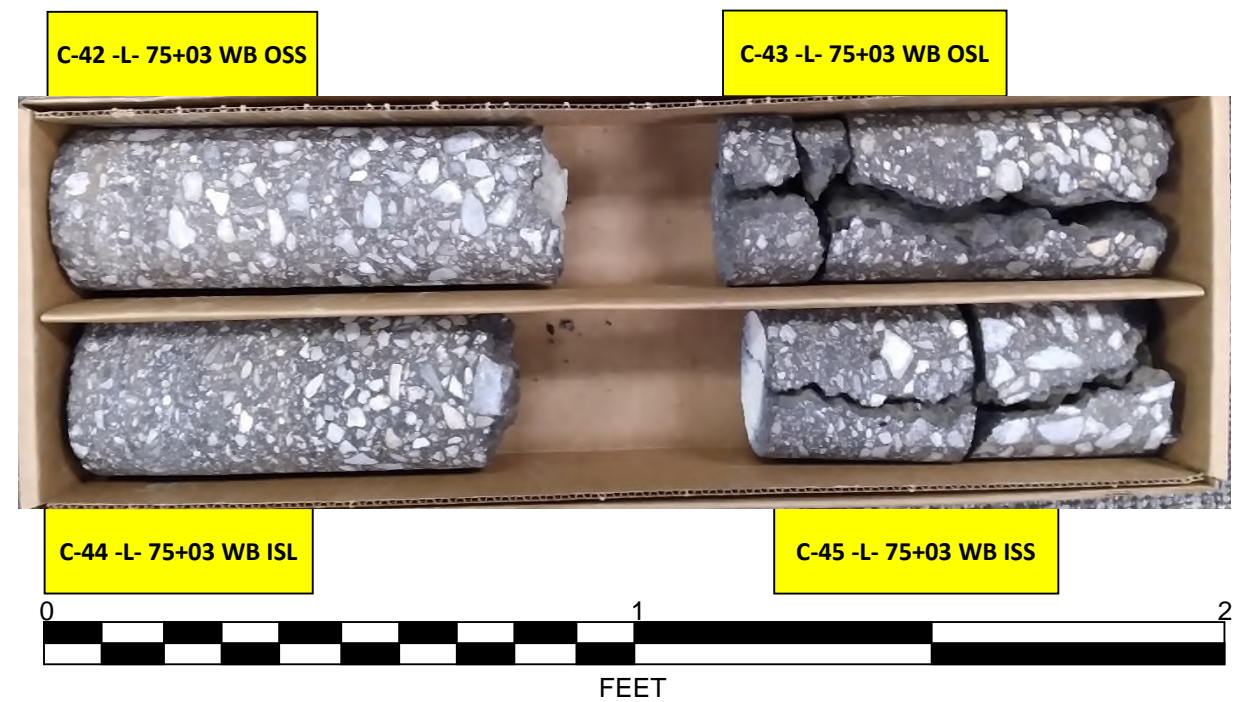
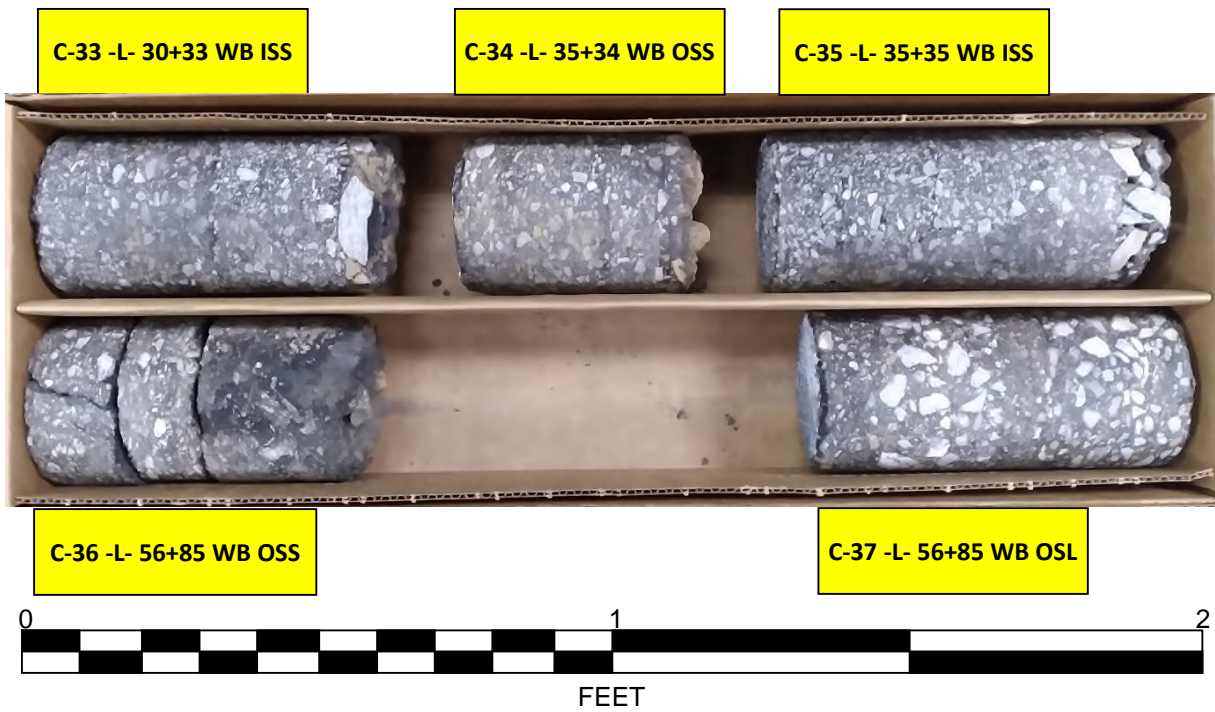
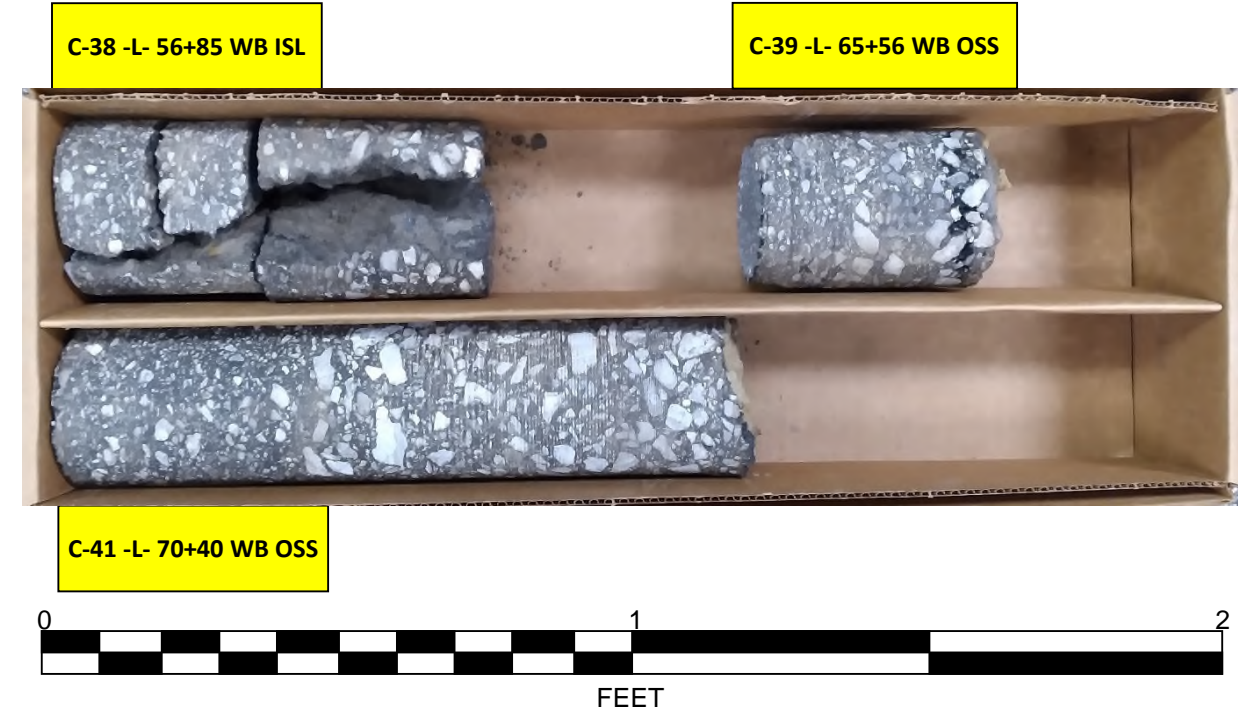
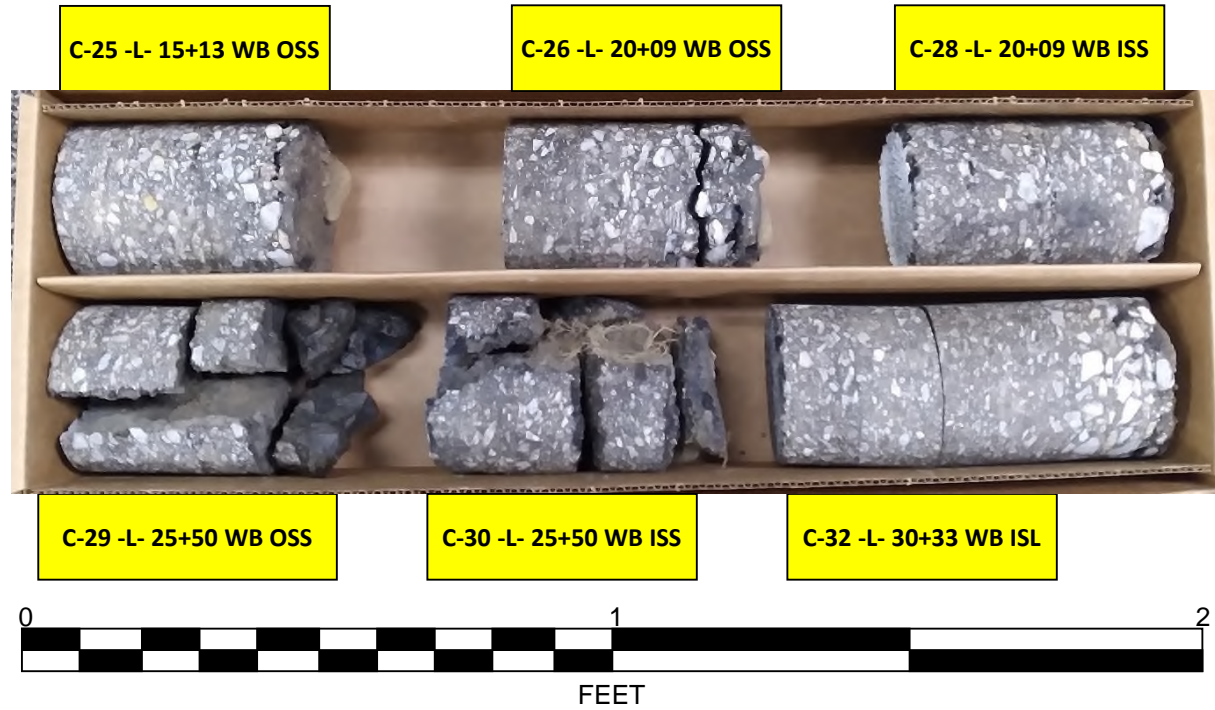
DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE			
				38332.1.FS	B-3186/B-5898	US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
				COUNTY	FIELD PROFESSIONAL	FIELD CREW			
				Haywood	M. Brewer	R. Kral/D. Underwood			
Test Location				Date Run	Test Location				Date Run
C-37 -L- 56+85 WB OSL 2.3 FT LT FW				8/4 to 8/6/2021	C-38 -L- 56+85 WB ISL 2.0 FT RT FY				8/4 to 8/6/2021
Type	Test Interval	Datum		Cut/Fill	Type	Test Interval	Datum		Cut/Fill
DCP	Cumulative cm per blow	STBC		20.0 ft Cut	DCP	Cumulative cm per blow	STBC		20.0 ft Cut
1.20	13.66	23.60	63.70		1.60	15.48	13.60		
1.80	13.80	23.90	64.70		2.50	15.53	15.20		
2.20	13.92	24.20	65.20		3.00	15.57	16.80		
2.50	14.04	24.40	66.00		3.30	15.62	18.10		
2.90	14.16	24.70	66.90		3.70	15.66	19.10		
3.30	14.28	24.90	67.70		4.00	15.71	19.90		
3.50	14.40	25.30	68.70		4.30	15.75	20.40		
3.80	14.64	25.50	69.70		4.60	15.80	21.30		
4.00	14.88	25.80	70.30		5.00	15.91	23.10		
4.10	15.12	26.10	71.30		5.20	16.02	25.10		
4.30	15.36	26.30	72.30		5.40	16.13	26.50		
4.60	15.60	26.70	73.10		5.60	16.24	28.00		
5.00	15.70	26.90	74.00		5.80	16.35	29.40		
5.40	15.80	27.20	75.10		6.00	16.46	30.80		
5.80	15.90	27.50	76.80		6.20	16.57	32.00		
5.90	16.00	27.80	78.20		6.40	16.68	33.10		
6.00	16.10	28.10	79.50		6.60	16.79	34.50		
6.20	16.22	28.30	80.90		6.80	16.90	35.70		
6.50	16.34	28.60	82.00		7.00	17.00	36.50		
6.70	16.46	28.90	83.20		7.20	17.10	37.30		
6.90	16.58	29.20	84.70		7.40	17.20	38.10		
7.10	16.70	29.40	85.70		7.60	17.30	39.10		
7.30	16.84	29.70	87.10		7.80	17.40	40.00		
7.40	16.98	29.90	88.60		8.00	17.50	40.80		
7.60	17.12	30.30	90.30		8.20	17.60	42.00		
7.80	17.26	30.50	92.10		8.40	17.70	43.10		
8.00	17.40	30.80	94.00		8.60	17.80	44.60		
8.20	17.46	31.10	95.30		8.80	17.90	46.10		
8.40	17.52	31.40	96.80		9.00	18.10	48.00		
8.60	17.58	31.70	98.20		9.20	18.20	50.20		
8.80	17.64	31.90	99.90		9.50	18.50	52.40		
9.00	17.70	32.20	101.50		9.60	18.60	55.20		
9.20	17.76	32.50	103.20		9.70	18.80	58.00		
9.30	17.82	32.70	105.00		9.90	18.90	60.50		
9.50	17.88	33.10	106.60		10.20	19.20	63.30		
9.70	17.94	33.30	108.80		10.30	19.30	65.60		
9.90	18.00	33.60	111.00		10.50	19.50	68.00		
10.10	18.12	34.00	113.00		10.70	19.60	70.50		
10.22	18.24	34.70	114.90		10.90	19.80	72.60		
10.34	18.36	35.70	116.50		11.10	19.90	74.50		
10.46	18.48	36.70	118.40		11.30	20.00	76.70		
10.58	18.60	38.10	120.50		11.50	20.10	79.00		
10.70	18.78	39.40	123.10		11.70	20.20	81.10		
10.82	18.96	40.70	126.00		11.90	20.40	83.10		
10.94	19.14	42.20	129.00		12.00	20.50	85.20		
11.06	19.32	43.60	131.90		12.20	20.60	87.50		
11.18	19.50	44.90	134.90		12.40	20.70	89.60		
11.30	19.62	45.00	138.20		12.60	20.90	91.60		
11.40	19.74	47.20	141.90		12.80	21.00	93.70		
11.50	19.86	48.20			13.00	21.10	96.50		
11.60	19.98	49.50			13.20	21.20	99.00		
11.70	20.10	50.50			13.40	AUGER	101.80		
11.80	20.30	51.60			13.60	7.6 CM	103.50		
11.94	20.60	52.90			13.80	1.60	105.70		
12.08	20.80	53.90			14.00	2.60	108.00		
12.22	21.00	55.00			14.20	3.50	109.30		
12.36	21.30	55.90			14.30	4.40			
12.50	21.60	56.90			14.50	5.10			
12.65	21.80	57.60			14.70	6.00			
12.80	22.00	58.40			14.90	7.00			
12.95	22.30	59.70			15.10	8.30			
13.10	22.50	60.60			15.30	9.60			
13.24	22.80	61.60			15.35	10.70			
13.38	23.10	62.40			15.39	11.60			
13.52	23.30	63.10			15.44	12.30			

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.		PROJECT TIP I.D.				ROUTE			
										38332.1.FS		B-3186/B-5898				US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
										COUNTY		FIELD PROFESSIONAL				FIELD CREW			
										Haywood		M. Brewer				R. Kral/D. Underwood			
Test Location										Date Run		Test Location				Date Run			
C-39 -L- 65+56 WB OSS 2.0 FT RT FW										8/4 to 8/6/2021		C-41 -L- 70+40 WB OSS 4.0 FT RT FW				8/4 to 8/6/2021			
Type	Test Interval			Datum			Cut/Fill		Type	Test Interval			Datum			Cut/Fill			
DCP	Cumulative cm per blow			STBC			15.0 ft Cut		DCP	Cumulative cm per blow			STBC			15.0 ft Fill			
1.20	15.50	32.70	113.70					1.10	103.00										
1.40	15.70	33.10	115.40					1.40	105.50										
2.00	15.90	33.40	117.00					2.00	108.00										
2.20	16.10	33.70	118.70					2.30	110.00										
2.40	16.30	34.10	120.30					2.80	111.70										
2.60	16.50	34.40	122.20					3.10	113.40										
2.80	16.70	35.20	124.00					3.40	115.30										
3.10	16.90	35.50	125.70					3.70	117.20										
3.30	17.10	35.90	127.60					4.00	119.00										
3.50	17.30	36.40	129.20					5.20	120.70										
3.70	17.50	36.70	132.50					6.00	123.00										
3.90	17.70	37.60	134.30					6.32	124.90										
4.00	17.92	38.10	136.20					6.64	127.10										
4.30	18.14	38.60	138.00					6.96	129.20										
4.50	18.36	39.30	139.80					7.28	131.40										
4.70	18.58	40.00	141.70					7.60	133.20										
4.90	18.80	41.70	143.20					7.92	135.20										
5.10	19.04	42.70	145.10					8.24	137.20										
5.30	19.28	43.70	146.80					8.56	139.00										
5.60	19.52	44.60	148.80					8.88											
5.80	19.76	45.90	150.50					9.20											
6.00	20.00	46.80	152.20					9.70											
6.20	20.26	47.90						10.00											
6.40	20.52	49.00						10.50											
6.60	20.78	50.00						11.00											
6.80	21.04	51.10						11.40											
7.10	21.30	52.20						12.00											
7.40	21.50	53.00						12.90											
7.60	21.80	54.20						14.00											
7.80	22.00	55.20						15.00											
7.90	22.20	56.30						17.00											
8.10	22.50	57.50						18.90											
8.30	22.70	58.60						21.50											
8.40	22.90	59.60						24.50											
8.60	23.20	61.00						28.40											
8.80	23.40	62.40						32.00											
9.00	23.60	63.60						35.40											
9.20	23.90	65.20						39.20											
9.40	24.00	67.00						44.00											
9.50	24.30	68.50						47.70											
9.70	24.50	69.70						50.70											
9.90	24.70	70.20						52.70											
10.10	25.00	71.70						54.30											
10.20	25.20	74.50						56.20											
10.40	25.50	76.20						57.70											
10.60	25.70	77.80						59.00											
10.70	26.20	79.50						60.00											
10.90	26.50	81.60						61.60											
11.10	26.90	83.30						63.60											
11.30	27.30	85.10						65.50											
11.70	27.60	87.00						67.60											
11.90	27.90	88.80						70.00											
12.10	28.30	90.60						72.50											
12.30	28.60	92.40						75.00											
12.50	28.90	94.10						77.50											
12.70	29.30	96.00						80.50											
13.40	29.60	97.50						83.70											
13.70	29.90	99.50						87.00											
14.00	30.30	101.30						89.40											
14.20	30.50	103.00						90.70											
14.40	30.90	105.00						92.00											
14.60	31.30	107.00						93.60											
14.90	31.70	108.60						95.50											
15.00	32.00	110.50						97.70											
15.20	32.40	112.00						100.50											

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.		PROJECT TIP I.D.				ROUTE			
										38332.1.FS		B-3186/B-5898				US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
										COUNTY		FIELD PROFESSIONAL				FIELD CREW			
										Haywood		M. Brewer				R. Kral/D. Underwood			
Test Location										Date Run		Test Location				Date Run			
C-42 -L- 75+03 WB OSS 5.0 FT RT FW										8/4 to 8/6/2021		C-43 -L- 75+03 WB OSL 8.0 FT LT FW				8/4 to 8/6/2021			
Type	Test Interval			Datum			Cut/Fill		Type	Test Interval			Datum			Cut/Fill			
DCP	Cumulative cm per blow			STBC			4.0 ft Cut		DCP	Cumulative cm per blow			STBC			4.0 ft Cut			
1.50	68.20	131.40						1.50	28.50	95.40	134.50								
2.50	69.60	131.80						2.60	29.00	96.20									
4.30	71.10	132.40						3.00	29.90	97.10									
6.50	72.60	132.80						3.60	30.50	97.90									
8.00	73.90	133.00						4.60	30.80	98.80									
9.40	75.50	133.20						4.90	31.30	99.60									
10.50	76.70	134.00						5.20	32.60	100.00									
11.50	78.50	134.20						5.70	32.80	100.50									
12.40	80.50	135.00						5.90	33.70	101.30									
13.30	82.40							6.20	34.50	101.80									
14.20	83.90							6.50	35.00	102.50									
15.00	85.70							6.80	35.60	103.10									
15.80	86.40							7.10	36.10	103.60									
16.60	87.50							7.40	36.50	104.20									
17.40	88.40							7.80	37.20	104.80									
18.30	89.30							8.00	37.80	105.40									
19.10	90.30							8.40	38.50	106.00									
20.00	91.10							8.70	39.30	106.50									
21.00	92.00							8.90	39.90	107.10									
21.80	93.00							9.30	40.70	107.70									
22.60	94.00							9.80	41.30	108.30									
23.80	95.00							9.90	42.00	108.90									
24.60	95.80							10.20	42.70	109.50									
25.20	96.70							10.50	43.40	110.00									
26.70	97.60							10.90	44.10	110.60									
27.60	98.70							11.10	44.80	111.20									
28.70	99.60							11.50	45.50	111.80									
29.70	100.40							11.80	46.50	112.40									
30.60	101.50							12.10	47.10	113.00									
31.60	102.40							12.40	48.20	113.50									
32.50	103.40							12.70	49.20	114.10									
33.50	104.50							13.10	50.20	114.70									
34.60	105.50							13.40	51.10	115.30									
35.60	106.20							13.70	52.10	115.90									
36.50	107.50							13.90	53.10	116.40									
37.50	108.30							14.30	54.50	117.00									
38.60	109.40							14.60	55.60	117.60									
39.60	110.30							14.90	57.10	118.10									
40.40	111.30							15.20	58.50	118.80									
41.40	112.10							15.60	59.60	119.40									
42.30	112.90							15.80	61.50	119.90									
43.50	113.80							16.20	63.10										



**B-3186/B-5898 - US 23-74 Bridge 155 & 158 over Richland Creek on US 23-74 Northbound Lane  
(Combine with B-5898)  
Pavement Core Photographs**







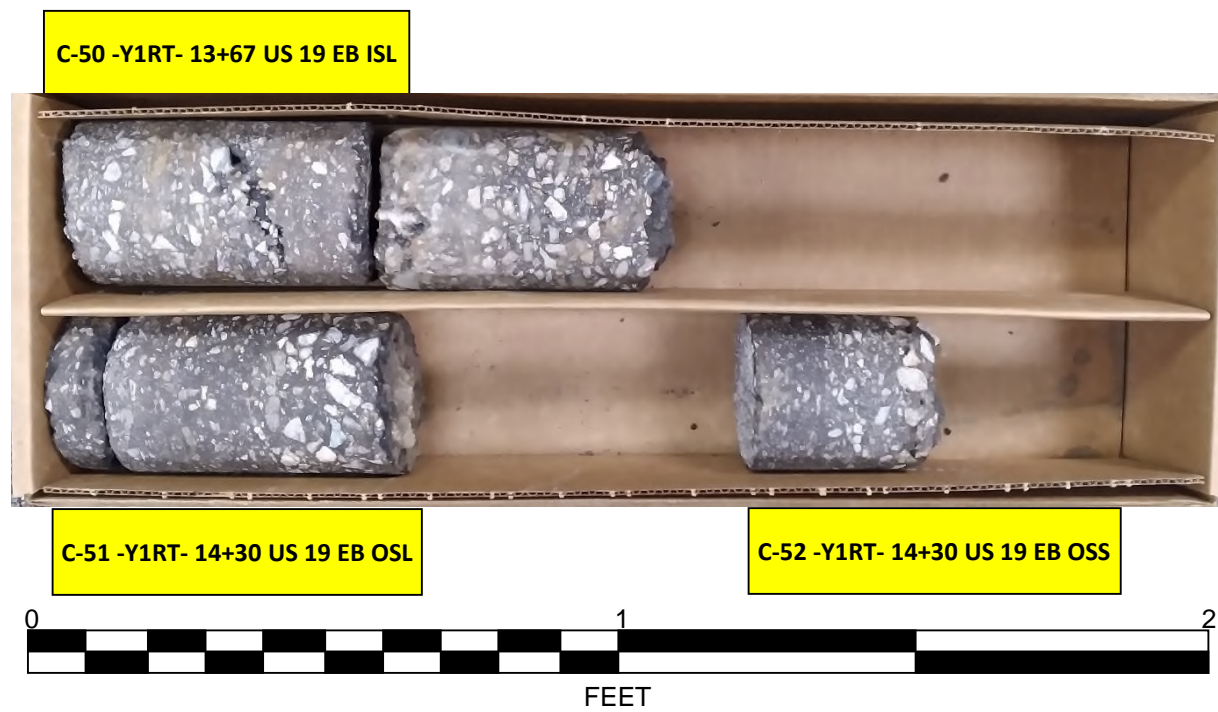
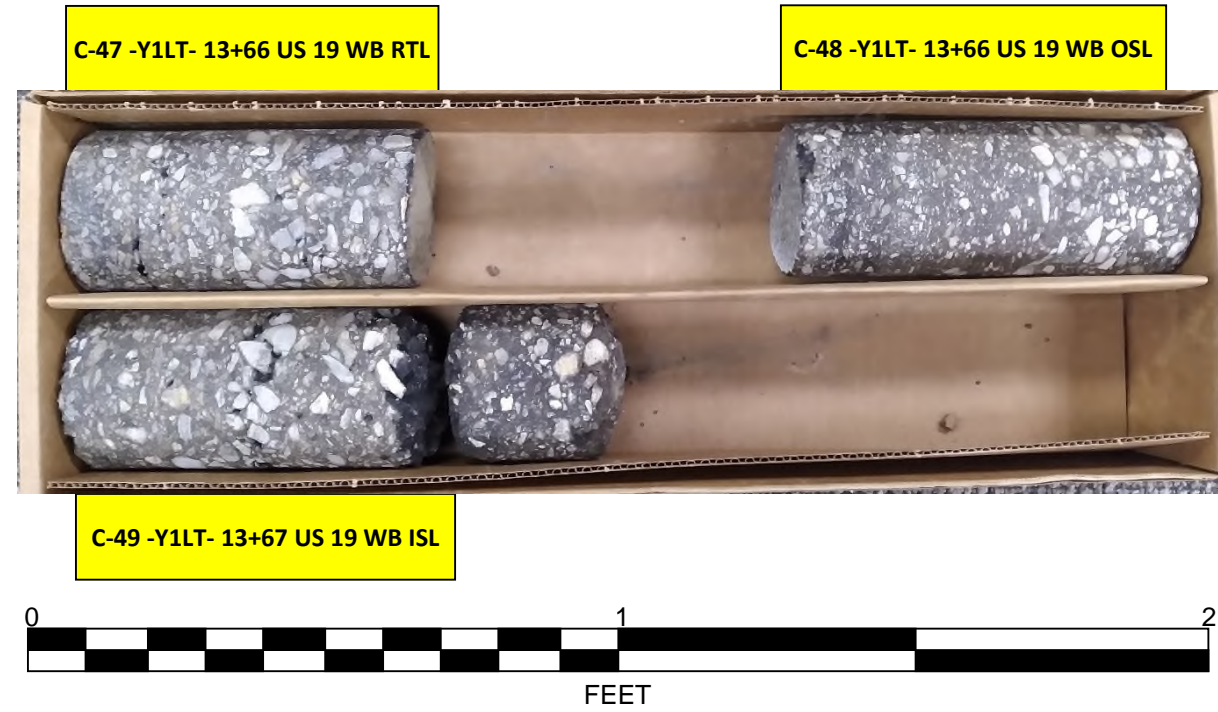
DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET							WBS NO.	PROJECT TIP I.D.				ROUTE									
							38332.1.FS							B-3186/B-5898				US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
							COUNTY							FIELD PROFESSIONAL				FIELD CREW			
							Haywood							M. Brewer				R. Kral/D. Underwood			
Test Location							Date Run				Test Location				Date Run						
C-47 -Y1LT- 13+66 US 19 WB RTL 6.0 FT RT C&G							8/4 to 8/6/2021				C-48 -Y1LT- 13+66 US 19 WB OSL 15.5 FT LT C&G (RT)				8/4 to 8/6/2021						
Type	Test Interval			Datum			Cut/Fill				Type	Test Interval			Datum			Cut/Fill			
DCP	Cumulative cm per blow			Subgrade			6.0 ft Cut				DCP	Cumulative cm per blow			STBC			6.0 ft Cut			
0.60	8.80	19.80	81.10	97.07						1.50	18.30	47.72	87.60	112.14							
1.40	8.90	20.40	81.50	97.28						1.80	18.50	48.24	87.90	112.26							
1.80	9.00	20.80	81.80	97.50						2.00	18.80	48.76	88.40	112.38							
2.20	<b>AUGER</b>	21.20	82.30	97.70						2.30	19.20	49.28	88.80	112.50							
2.40	<b>18.1 CM</b>	21.50	82.60	97.90						2.50	19.60	49.80	89.20	112.64							
2.50	1.00	22.10	82.80	98.10						2.70	19.70	50.04	89.60	112.78							
2.70	1.40	22.50	83.20	98.30						3.00	19.80	50.28	90.40	112.92							
3.30	1.80	23.00	83.50	98.50						3.30	20.20	50.52	90.70	113.06							
3.40	1.90	23.50	83.80	98.70						3.60	20.50	50.76	91.30	113.20							
3.50	2.10	24.00	84.10	98.96						4.00	20.90	51.00	91.70	113.34							
3.60	2.30	24.50	84.30	99.22						4.30	21.50	52.00	92.10	113.48							
3.80	2.60	25.20	84.50	99.48						4.60	21.70	53.40	92.50	113.62							
3.92	2.90	26.00	84.80	99.74						4.90	21.90	54.50	92.90	113.76							
4.04	3.10	26.20	85.20	100.00						5.20	22.30	56.00	93.40	113.90							
4.16	3.60	27.50	85.40	100.26						5.40	22.50	57.50	93.60	113.99							
4.28	4.10	28.00	85.70	100.52						5.50	22.70	58.70	94.00	114.08							
4.40	4.30	28.60	86.00	100.78						5.80	23.00	59.60	94.50	114.17							
4.52	4.50	29.20	86.10	101.04						6.00	23.20	60.40	94.70	114.26							
4.64	4.80	30.10	86.20	101.30						6.10	23.40	61.00	95.00	114.35							
4.76	5.10	31.00	86.30	101.50						6.30	23.60	61.70	95.60	114.44							
4.88	5.30	31.30	86.40	101.70						6.50	23.80	62.70	95.80	114.53							
5.00	5.40	31.50	86.50	101.90						6.70	24.00	63.50	96.20	114.62							
5.07	5.60	32.40	86.66	102.10						7.00	24.50	64.50	96.50	114.71							
5.13	5.80	33.00	86.82	102.30						7.20	24.80	65.30	97.00	114.80							
5.20	6.10	33.80	86.98	102.60						7.30	25.20	66.20	97.50	114.91							
5.27	6.30	34.20	87.14	102.90						7.60	25.80	67.00	98.20	115.02							
5.33	6.50	35.00	87.30	103.20						7.80	26.40	67.50	98.50	115.13							
5.40	6.80	35.70	87.54	103.50						8.10	26.80	68.00	98.80	115.24							
5.46	7.50	36.40	87.78	103.80						8.30	27.20	68.60	99.10	115.35							
5.52	7.70	37.30	88.02	104.10						8.40	27.50	69.30	99.60	115.45							
5.58	7.90	38.20	88.26	104.40						8.50	28.00	70.00	99.70	115.56							
5.64	8.10	39.00	88.50	104.70						8.80	28.90	70.50	100.00	115.67							
5.70	8.40	40.70	88.72	105.00						8.90	30.40	70.90	100.20	115.78							
5.74	9.20	41.40	88.94	105.30						9.20	31.90	71.30	100.60	115.89							
5.78	9.50	42.40	89.16	105.64						9.50	33.30	71.60	100.80	116.00							
5.82	9.80	43.40	89.38	105.98						9.70	34.60	71.80	101.00	116.03							
5.86	10.40	45.00	89.60	106.32						10.00	35.80	72.20	101.20	116.06							
5.90	10.70	46.50	89.82	106.66						10.50	37.00	72.80	101.40	116.09							
5.94	11.20	48.30	90.04	107.00						10.80	38.50	73.50	102.00	116.12							
5.98	11.50	50.40	90.26	107.20						11.00	39.70	74.00	102.40	116.15							
6.02	12.00	52.30	90.48	107.40						11.30	40.90	74.80	102.80	116.18							
6.06	12.30	57.00	90.70	107.60						11.50	41.50	75.60	103.10	116.21							
6.10	12.50	62.50	90.96	107.80						12.00	41.90	76.40	103.60	116.24							
6.28	13.00	65.00	91.22	108.00						12.20	42.30	77.60	104.30	116.27							
6.46	13.50	66.00	91.48	108.25						12.40	42.80	77.70	104.90	116.30							
6.64	13.70	67.50	91.74	108.50						12.70	43.10	78.30	105.40	<b>DCP</b>							
6.82	14.00	68.30	92.00	108.75						12.90	43.50	78.70	105.70	<b>REF</b>							
7.00	14.50	69.30	92.30	109.00						13.00	43.80	79.30	106.50								
7.10	14.80	70.00	92.60	109.25						13.30	44.00	80.30	107.20								
7.20	15.00	70.60	92.90	109.50						13.50	44.30	80.80	107.50								
7.30	15.20	71.30	93.20	109.70						13.70	44.60	81.60	108.50								
7.40	15.40	72.00	93.50	109.90						14.10	44.90	82.80	109.00								
7.50	15.60	72.50	93.66	110.10						14.50	45.20	83.20	109.50								
7.60	15.80	73.50	93.82	110.30						14.90	45.30	83.60	110.00								
7.70	16.00	74.00	93.98	110.50						15.40	45.40	84.00	110.40								
7.80	16.20	74.80	94.14							15.50	45.62	84.40	110.70								
7.90	16.40	75.60	94.30							15.90	45.84	84.80	110.90								
8.00	16.60	76.40	94.68							16.10	46.06	85.10	111.10								
8.10	17.20	77.70	95.06							16.70	46.28	85.50	111.30								
8.20	17.50	78.10	95.44							16.90	46.50	85.60	111.42								
8.30	17.80	78.80	95.82							17.10	46.64	85.90	111.54								
8.40	18.00	79.40	96.20							17.40	46.78	86.30	111.66								
8.50	18.50	79.80	96.42							17.60	46.92	86.70	111.78								
8.60	19.00	80.20	96.63							17.80	47.06	87.00	111.90								
8.70	19.20	80.70	96.85							18.00	47.20	87.20	112.02								

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET													WBS NO.	PROJECT TIP I.D.				ROUTE															
													38332.1.FS													B-3186/B-5898				US 23-74 Bridge 155 and 158 over Richland Creek on US 23-74 Northbound Lane			
													COUNTY													FIELD PROFESSIONAL				FIELD CREW			
													Haywood													M. Brewer				R. Kral/D. Underwood			
Test Location													Date Run				Test Location				Date Run												
C-49 -Y1LT- 13+67 US 19 WB ISL 2.8 FT RT C&G (FACE)													8/4 to 8/6/2021				C-50 -Y1RT- 13+67 US 19 EB ISL 1.0 FT RT FY				8/4 to 8/6/2021												
Type	Test Interval			Datum			Cut/Fill				Type	Test Interval			Datum			Cut/Fill															
DCP	Cumulative cm per blow			STBC			3.5 ft Fill				DCP	Cumulative cm per blow			Subgrade			4.0 ft Fill															
1.20	48.60	103.40											2.30	56.47	92.90	102.69																	
1.50	50.10	103.60											3.00	56.94	93.10	102.80																	
2.10	51.50	103.80											3.90	57.41	93.30	102.91																	
2.70	52.90	104.00											4.90	57.88	93.60	103.02																	
3.20	54.60	104.20											5.80	58.35	93.80	103.13																	
3.60	56.50	104.50											6.20	58.82	94.10	103.24																	
4.00	58.40	104.70											7.00	59.29	94.30	103.36																	
4.50	60.00	104.90											7.80	59.76	94.70	103.47																	
5.00	62.10	105.10											8.50	60.23	94.90	103.58																	
5.30	63.60	105.30											9.60	60.70	95.20	103.69																	
5.60	65.10	105.50											11.50	61.17	95.35	103.80																	
6.00	66.40	105.66											14.50	61.64	95.49	103.88																	
6.50	68.40	105.82											15.60	62.11	95.64	103.96																	
6.80	69.20	105.98																															





**B-3186/B-5898 - US 23-74 Bridge 155 & 158 over Richland Creek on US 23-74 Northbound Lane  
(Combine with B-5898)  
Pavement Core Photographs**



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT  
SUBSURFACE INVESTIGATION

LABORATORY TEST RESULTS

REFERENCE: B-3186/B-5898

PROJECT: 38332

Prepared in the Office of:

F&ME CONSULTANTS, INC.  
COLUMBIA, SOUTH CAROLINA  
NCDOT LAB CERT. NO. 132-0212

## SOIL TEST RESULTS

SAMPLE NO.	STATION	LOCATION	OFFSET*	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-1	-L- 15+32	EB OSS	5' RT FW	2.0 - 5.0'	A-2-4	34	NP	30.9	28.9	28.1	12.1	68.7	54.1	31.8	23.9	-
S-5	-L- 25+35	EB ISS	1.4' LT FY	1.8 - 5.0'	A-4(2)	38	5	19.5	25.5	30.8	24.2	87.7	75.9	54.0	23.5	-
S-6	-L- 25+35	EB OSS	5.4' RT FW	2.0 - 5.0'	A-7-5(9)	45	13	14.7	17.4	23.1	44.8	93.7	84.8	67.5	25.8	-
STBC-1	-L- 25+35	EB OSS	5.4' RT FW	0.4 - 2.0'	A-1-a	26	NP	43.5	30.3	20.1	6.0	41.9	28.4	13.3	5.2	-
S-8	-L- 29+86	EB ISL	8' RT FY	1.9 - 5.0'	A-4(0)	32	4	25.5	25.9	32.4	16.1	90.2	74.1	50.3	11.5	-
S-11	-L- 35+34	EB OSS	5.5' RT FW	1.7 - 3.5'	A-7-6(10)	47	22	20.9	17.7	19.0	42.4	86.4	73.9	56.3	25.4	-
S-11A	-L- 35+34	EB OSS	5.5' RT FW	3.5 - 5.0'	A-4(2)	37	7	24.1	25.6	24.1	26.2	95.7	80.2	53.8	19.8	-
S-12	-L- 61+63	EB ISS	0.7' LT FY	1.8 - 5.0'	A-2-4	35	NP	28.1	31.1	26.7	14.1	68.8	56.0	32.6	25.0	-
S-13	-L- 61+63	EB ISL	5.3' RT FY	2.0 - 5.0'	A-4(0)	30	NP	29.3	32.7	25.9	12.0	67.1	54.3	56.7	8.5	-
S-15	-L- 61+64	EB OSS	1' RT FW	2.0 - 4.0'	A-4(0)	31	4	22.3	29.1	28.5	20.1	82.2	69.6	46.3	15.7	-
S-19	-L- 76+90	EB ISS	2.2' LT FY	1.8 - 5.0'	A-1-b	23	NP	43.9	27.2	24.8	4.0	70.9	46.6	24.9	4.4	-
S-22	-L- 76+90	EB OSS	3.5' RT FW	1.6 - 2.3'	A-4(3)	40	10	17.5	30.2	32.1	20.2	80.4	71.9	47.8	16.9	-
S-24	-L- 80+22	EB OSS	1.9' RT FW	1.8 - 5.0'	A-2-4	39	NP	26.4	33.7	31.9	8.0	65.0	53.2	31.1	16.5	-
S-25	-L- 15+13	WB OSS	5.5' RT FW	1.8 - 5.0'	A-7-5(9)	50	15	17.7	25.5	38.7	18.1	94.9	84.2	60.4	30.4	-
S-28	-L- 20+09	WB ISS	2.4' LT FY	1.8 - 5.0'	A-4(5)	40	7	11.3	31.5	37.1	20.1	97.3	90.8	65.2	21.2	-
S-29	-L- 25+50	WB OSS	5.7' RT FW	1.8 - 5.0'	A-7-5(6)	50	12	17.0	32.0	32.9	18.1	94.5	84.4	56.1	28.5	-
S-30	-L- 25+50	WB ISS	1.8' LT FY	1.9 - 5.0'	A-7-5(15)	54	14	7.1	17.2	49.4	26.2	99.0	94.8	81.0	27.9	-
S-32	-L- 30+33	WB ISL	5.5' RT FY	1.8 - 5.0'	A-4(2)	37	8	20.6	30.7	32.6	16.1	90.9	78.2	52.4	7.4	-
S-34	-L- 35+34	WB OSS	6' RT FW	1.8 - 3.0'	A-4(3)	37	9	21.0	24.6	26.2	28.2	92.2	80.0	55.3	22.7	-
S-35	-L- 35+35	WB ISS	2.3' LT FY	1.9 - 3.5'	A-4(0)	39	NP	25.0	24.2	26.7	24.1	83.9	69.2	47.4	17.8	-
S-37	-L- 56+85	WB OSL	2.3' LT FW	1.9 - 5.0'	A-5(0)	43	NP	19.4	35.3	29.2	16.1	95.2	85.4	50.7	16.7	-
S-38	-L- 56+85	WB ISL	2' RT FY	1.9 - 3.5'	A-7-5(2)	46	13	29.1	28.6	24.2	18.1	82.7	66.7	39.9	16.9	-
S-41	-L- 70+40	WB OSS	4' RT FW	1.8 - 5.0'	A-4(2)	39	8	17.8	29.8	34.3	18.1	86.0	76.9	51.4	26.1	-
S-43	-L- 75+03	WB OSL	8' LT FW	1.8 - 5.0'	A-4(1)	35	9	31.4	30.7	25.9	12.1	93.9	73.8	41.6	17.0	-
S-44	-L- 75+03	WB ISL	5.5' RT FY	1.8 - 5.0'	A-4(0)	23	NP	27.6	41.5	24.9	6.0	99.3	85.4	37.9	8.2	-
S-45	-L- 75+03	WB ISS	2.5' LT FY	1.8 - 5.0'	A-4(5)	39	10	15.1	30.6	40.2	14.1	99.1	91.0	63.1	13.1	-
S-48	-Y1LT- 13+66	WB OSL	15.5' LT C&G (RT)	1.8 - 5.0'	A-4(1)	34	9	28.3	28.0	23.5	20.1	87.6	70.5	43.3	18.0	-
S-49	-Y1LT- 13+67	WB ISL	2.8' RT C&G FACE	1.8 - 3.5'	A-7-6(8)	44	17	18.7	23.6	23.4	34.3	93.6	81.7	59.3	25.1	-
S-50	-Y1RT- 13+67	EB ISL	1' RT FY	1.0 - 4.0'	A-7-6(7)	43	14	18.1	23.4	20.3	38.2	95.4	84.8	60.5	21.5	-
S-52	-Y1RT- 14+30	EB OSS	1.8' RT FW	1.9 - 5.0'	A-4(0)	40	5	26.7	26.7	26.4	20.1	81.5	66.6	42.5	22.5	-

\*FROM WHITE LINE (FW)

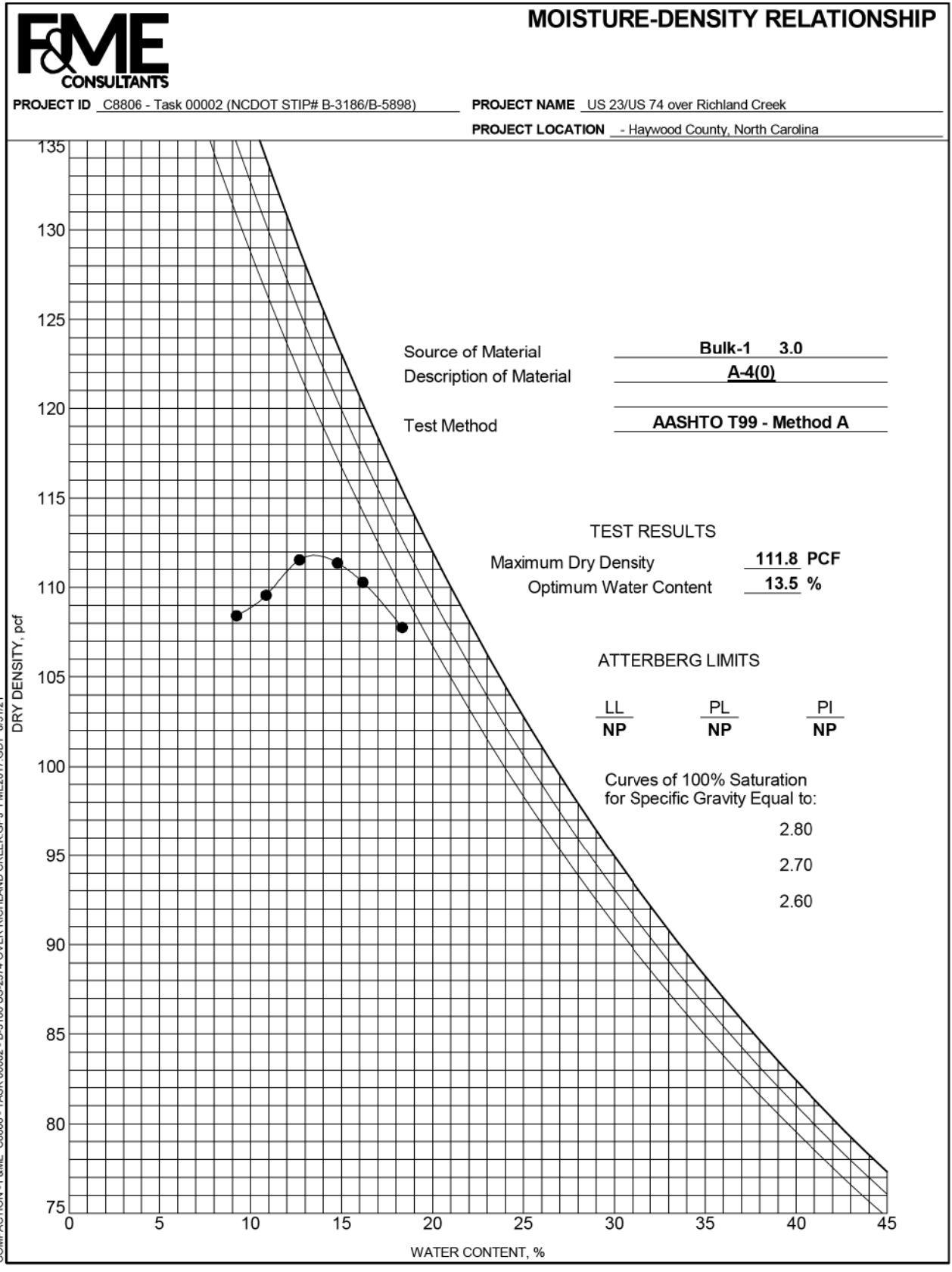
\*FROM YELLOW LINE (FY)



## SOIL TEST RESULTS

SAMPLE NO.	STATION	LOCATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
BULK-1	-L- 20+26	CUT SLOPE	68' RT	1.0 - 3.0'	A-4(0)	39	NP	36.3	23.6	31.9	8.1	96.7	69.6	43.4	12.9	-
BULK-2	-L- 35+27	CUT SLOPE	60' LT	1.0 - 3.0'	A-4(1)	37	NP	12.7	16.7	46.3	24.3	90.5	82.9	68.0	21.7	-
BULK-3	-L- 65+31	AT GRADE	2' LT	1.0 - 2.0'	A-2-4	30	4	32.3	27.5	20.7	19.6	77.2	61.7	64.3	11.4	-
BULK-4	-L- 77+10	CUT SLOPE	71' RT	1.0 - 3.0'	A-4(1)	33	7	22.0	28.7	31.7	17.6	83.2	72.1	45.7	8.9	-

\*NP = NON-PLASTIC





REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

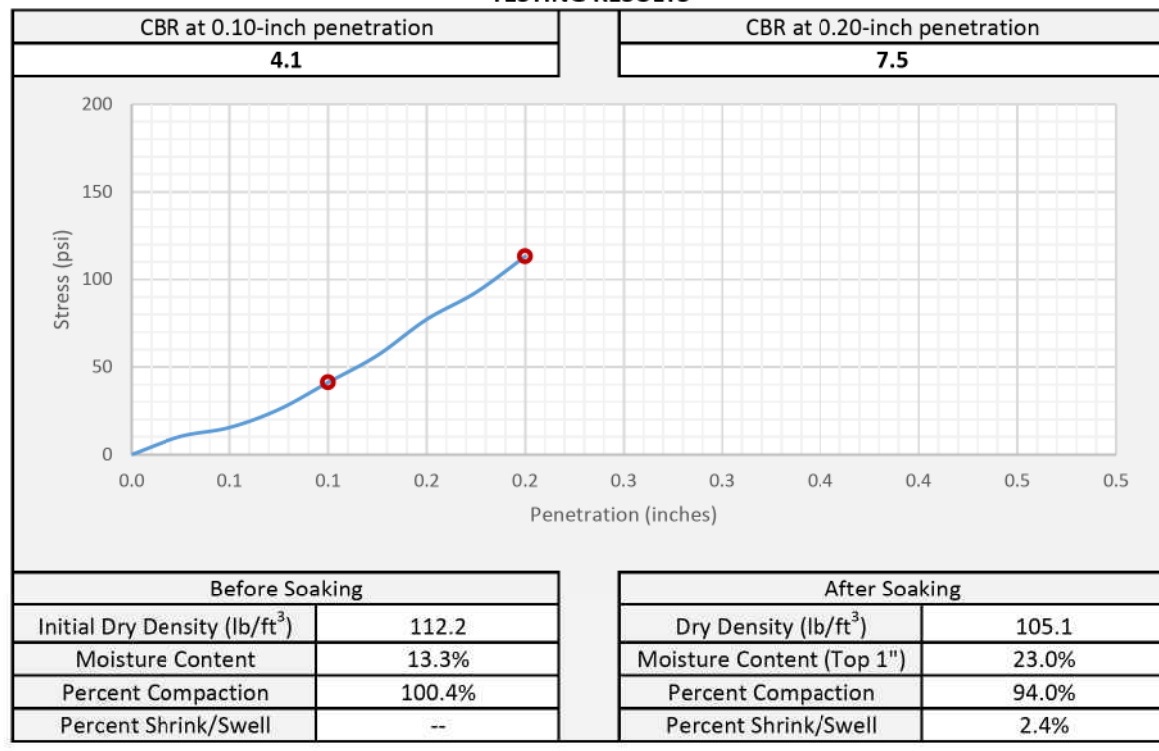
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-1		FME Lab ID	21-1758	
Soil Description	A-4(0)		Depth/Elev.	1.0' - 3.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	111.8	Optimum Moisture Content (%)	13.5
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=39, PL=NP, PI=NP, %Passing #200 Sieve = 43.4  
20+26 - 68' RT

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		<small>Reviewed By</small>	<small>Date</small>

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REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

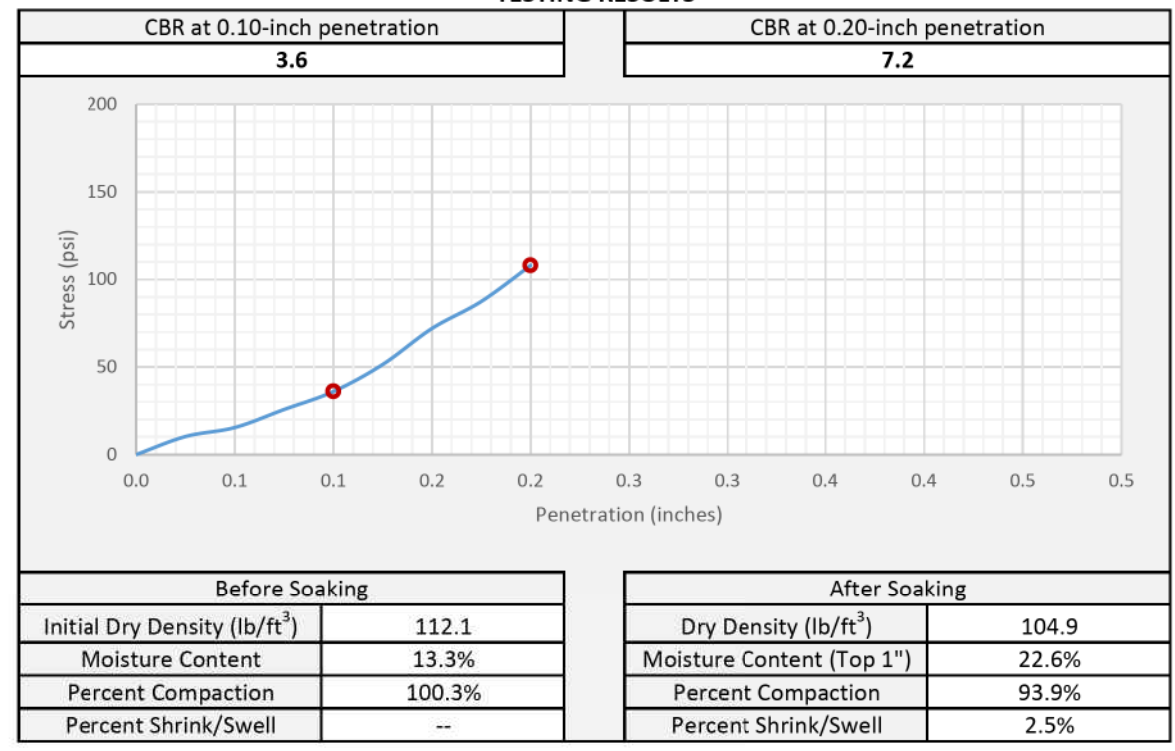
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-1		FME Lab ID	21-1758	
Soil Description	A-4(0)		Depth/Elev.	1.0' - 3.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	111.8	Optimum Moisture Content (%)	13.5
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**

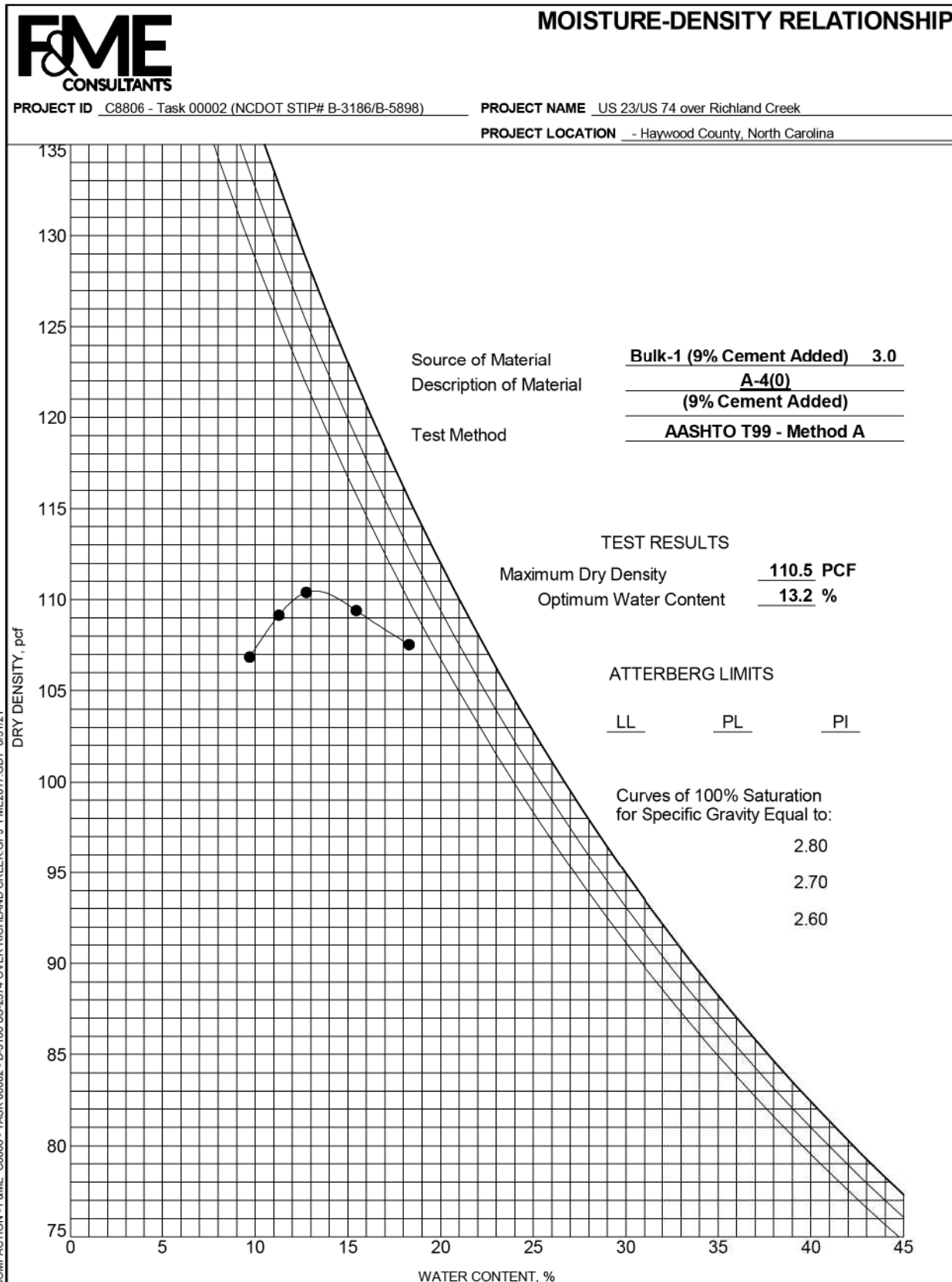


**ADDITIONAL COMMENTS**

LL=39, PL=NP, PI=NP, %Passing #200 Sieve = 43.4  
20+26 - 68' RT

	<b>F&amp;ME Consultants, Inc.</b> <small>3112 Devine Street, Columbia, SC 29205</small>		130-04-0212 <small>NCDOT Certification No.</small> <b>8/18/2021</b> <small>Date</small>
		<small>Reviewed By</small>	<small>Date</small>

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REV 08/2021

**COMPRESSIVE STRENGTH OF MOLDED SOIL-CEMENT CYLINDERS**  
**ASTM D-1633**

**SAMPLE INFORMATION**

Project Name	US 23 / US 74 over Richland Creek	NCDOT STIP #	B-3186/B-5898
Sample Location	Bulk-1	FME Lab ID	21-1758
Soil Description	A-4(0)	Depth/Elev.	1.0 - 3.0 ft.
Station	20+26	Offset	68' RT
Date Sampled	7/28/2021	Sampled By:	CG2
Date Molded	8/19/2021	Date Tested	8/26/2021
		Tested By	M. Johnson
		Date Received	8/4/2021

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Cement Added to Proctor	9%
Max Dry Density (lb/ft <sup>3</sup> )	110.5	Optimum Moisture Content (%)	13.2

**TESTING RESULTS**

% Cement	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in. <sup>2</sup> )	Maximum Load (lbf)	Compressive Strength (psi)	Average Compressive Strength (psi)
8%	7	13.0%	4.599	4.005	12.60	3990	315	260
8%	7	13.0%	4.607	4.005	12.60	2450	195	
10%	7	12.9%	4.63	4.003	12.59	5170	410	350
10%	7	12.9%	4.617	3.996	12.54	3640	290	

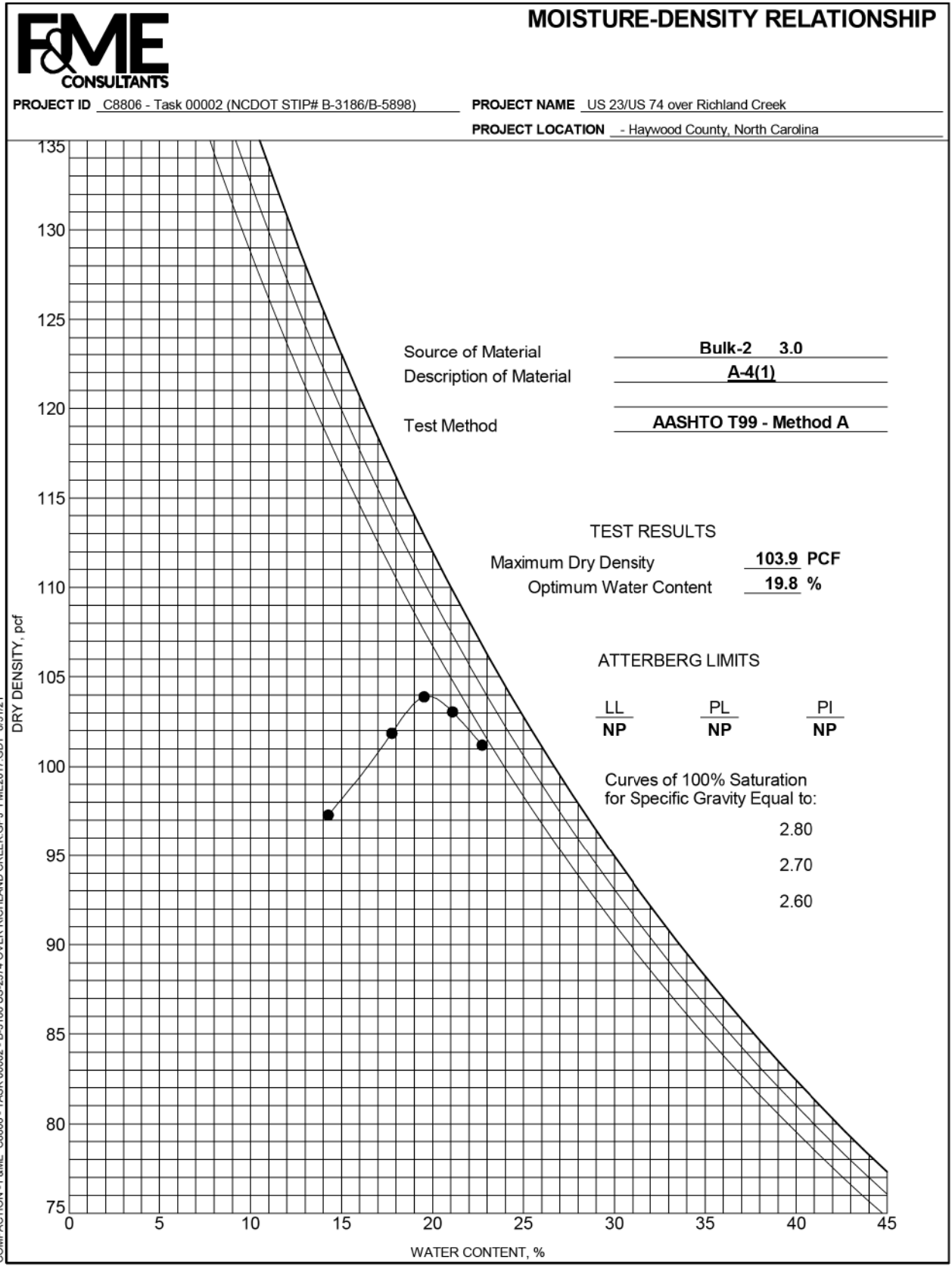
**ADDITIONAL COMMENTS**

**Bulk Soil Sample Data (without Cement Added):**  
 LL=39, PL=NP, PI=NP  
 %Passing #200 Sieve = 43.4%  
 As-Received Natural Moisture Content = 12.9%

	<b>F&amp;ME Consultants, Inc.</b> 3112 Devine Street, Columbia, SC 29205	130-04-0212 NCDOT Certification No.
		8/31/2021 Date
Reviewed By: <i>Jerry P. Davis</i>		

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REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

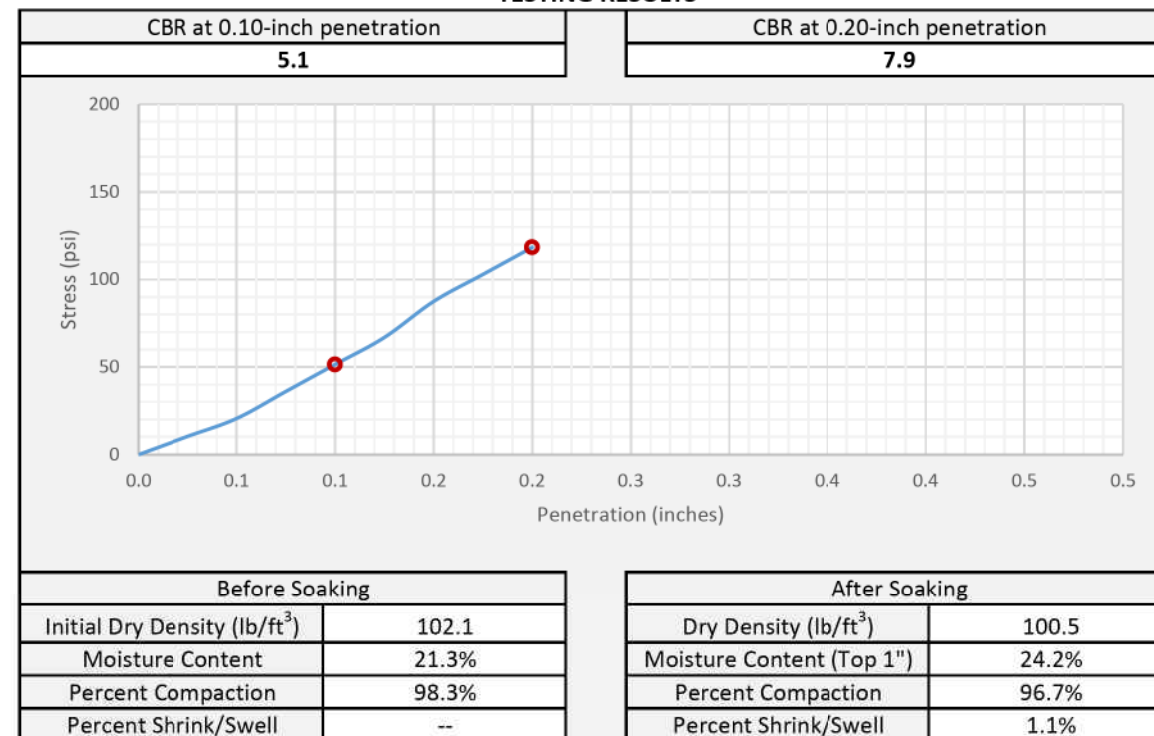
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-2		FME Lab ID	21-1759	
Soil Description	A-4(1)		Depth/Elev.	1.0' - 3.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	103.9	Optimum Moisture Content (%)	19.8
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=37, PL=NP, PI=NP, %Passing #200 Sieve = 68.0  
35+27, 60' LT



**F&ME Consultants, Inc.**  
3112 Devine Street, Columbia, SC 29205

*Jerry P. Davis*  
Reviewed By

130-04-0212  
NCDOT Certification No.  
8/18/2021  
Date

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REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

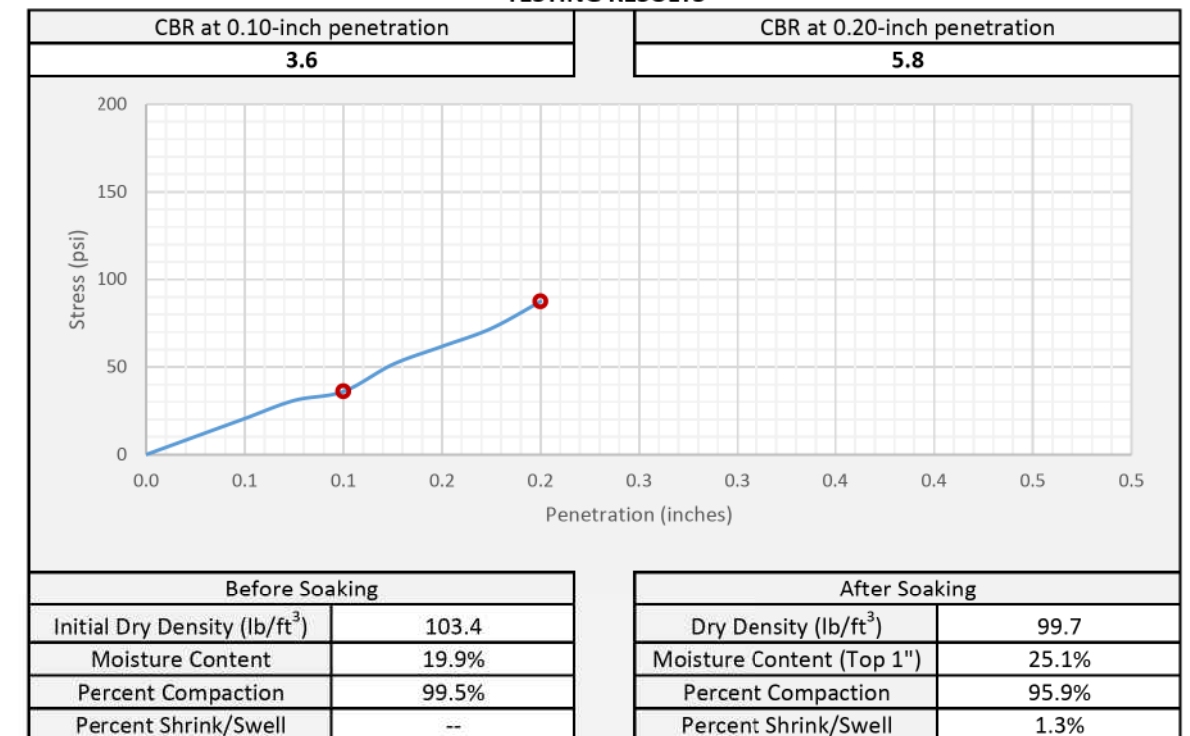
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-2		FME Lab ID	21-1759	
Soil Description	A-4(1)		Depth/Elev.	1.0' - 3.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	103.9	Optimum Moisture Content (%)	19.8
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=37, PL=NP, PI=NP, %Passing #200 Sieve = 68.0  
35+27, 60' LT



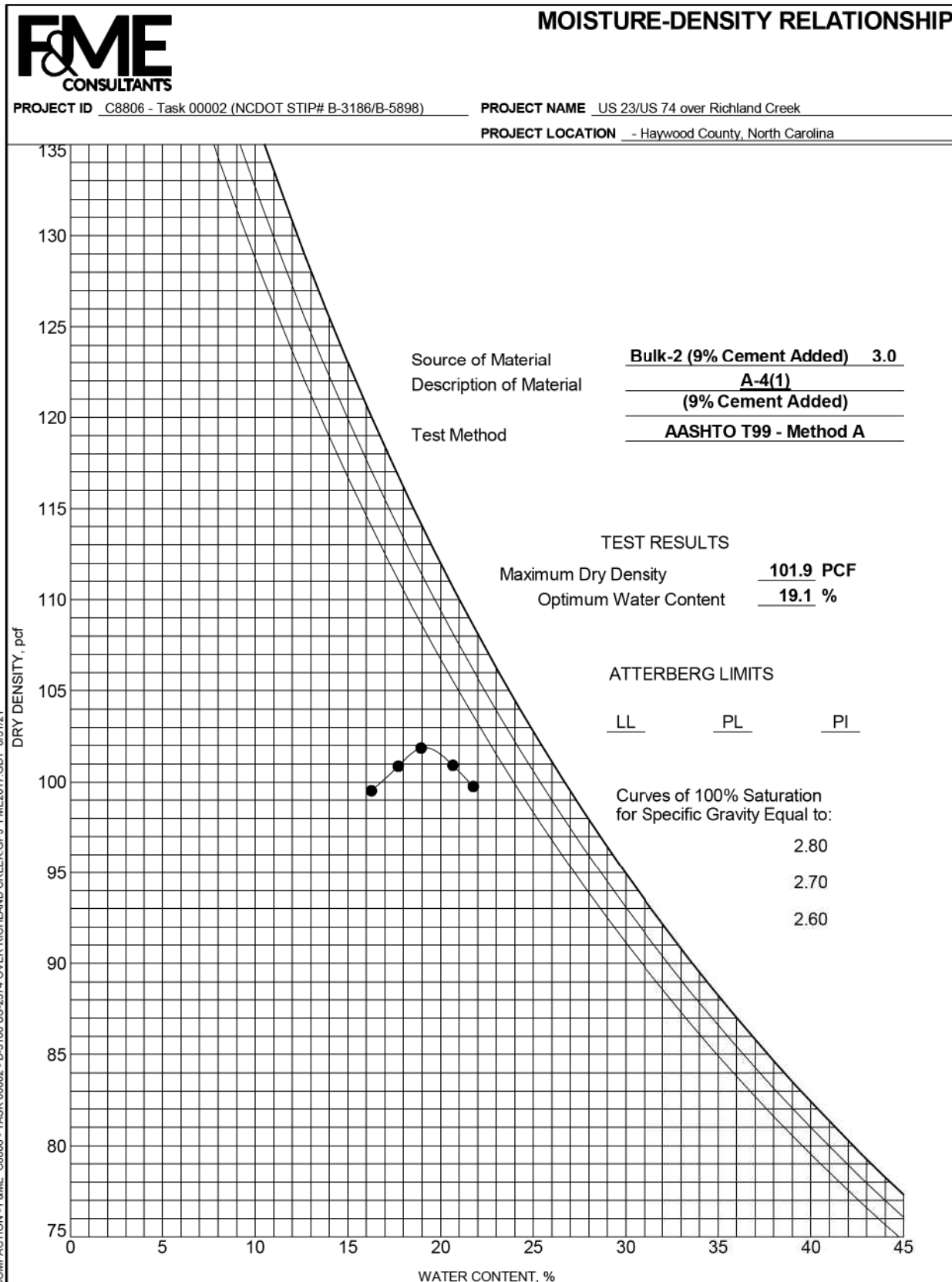
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*Jerry P. Davis*  
Reviewed By

130-04-0212  
NCDOT Certification No.  
8/18/2021  
Date

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REV 08/2021

**COMPRESSIVE STRENGTH OF MOLDED SOIL-CEMENT CYLINDERS**  
**ASTM D-1633**

**SAMPLE INFORMATION**

Project Name	US 23 / US 74 over Richland Creek	NCDOT STIP #	B-3186/B-5898
Sample Location	Bulk-2	FME Lab ID	21-1759
Soil Description	A-4(1)	Depth/Elev.	1.0 - 3.0 ft.
Station	35+27	Offset	60' LT
Date Sampled	7/28/2021	Sampled By:	CG2
Date Molded	8/19/2021	Date Tested	8/26/2021
		Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Cement Added to Proctor	9%
Max Dry Density (lb/ft <sup>3</sup> )	101.9	Optimum Moisture Content (%)	19.1

**TESTING RESULTS**

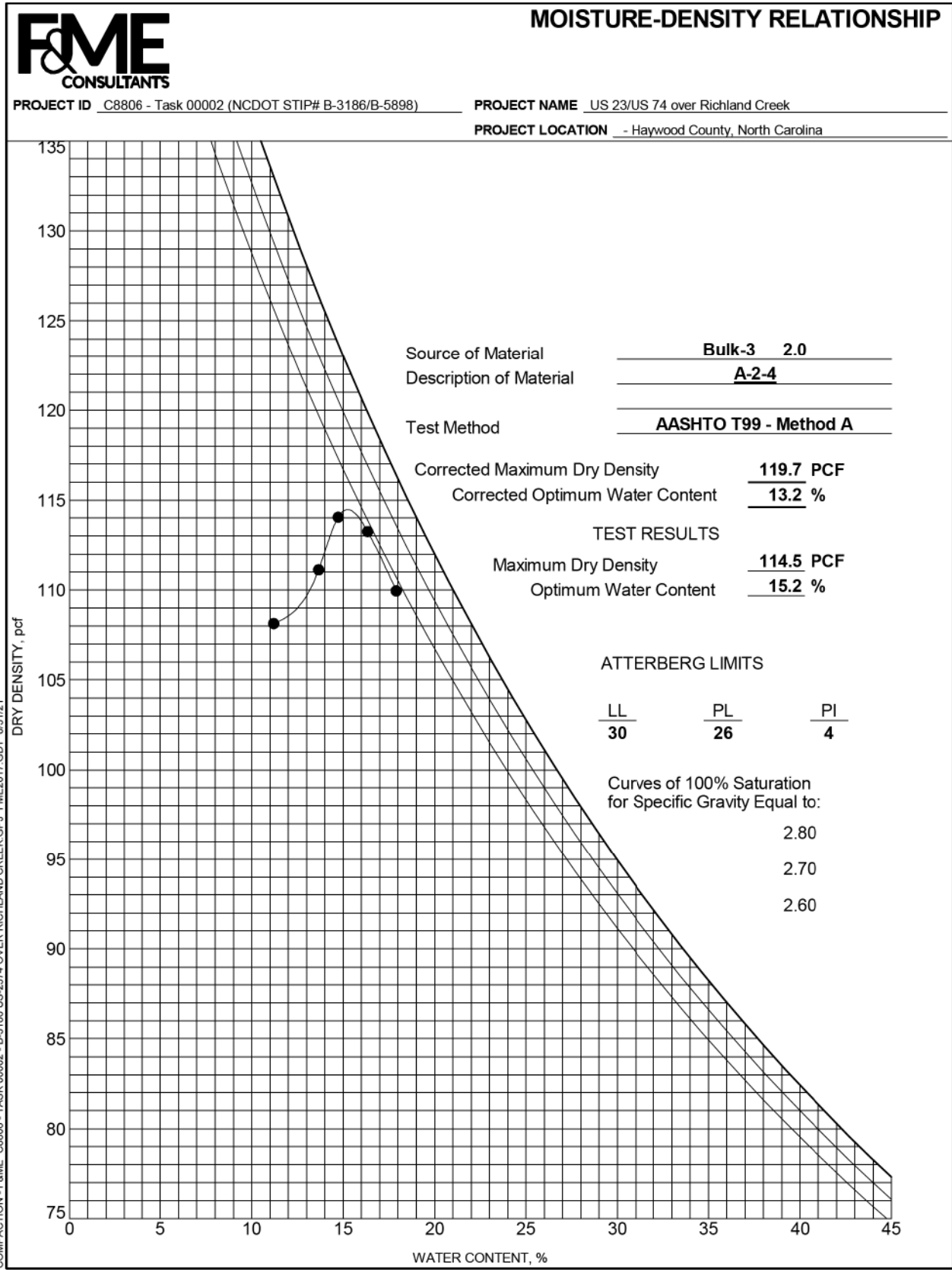
% Cement	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in. <sup>2</sup> )	Maximum Load (lbf)	Compressive Strength (psi)	Average Compressive Strength (psi)
8%	7	19.8%	4.626	4.002	12.58	3720	295	280
8%	7	19.8%	4.619	3.999	12.56	3270	260	
10%	7	19.1%	4.614	4.002	12.58	4160	330	325
10%	7	19.1%	4.619	4.002	12.58	3950	315	

**ADDITIONAL COMMENTS**

**Bulk Soil Sample Data (without Cement Added):**  
 LL=37, PL=NP, PI=NP  
 %Passing #200 Sieve = 68.0%  
 As-Received Natural Moisture Content = 21.7%

<p><b>F&amp;ME Consultants, Inc.</b>                  3112 Devine Street, Columbia, SC 29205</p>	 Reviewed By	130-04-0212 NCDOT Certification No. 8/31/2021 Date
	Date	

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REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

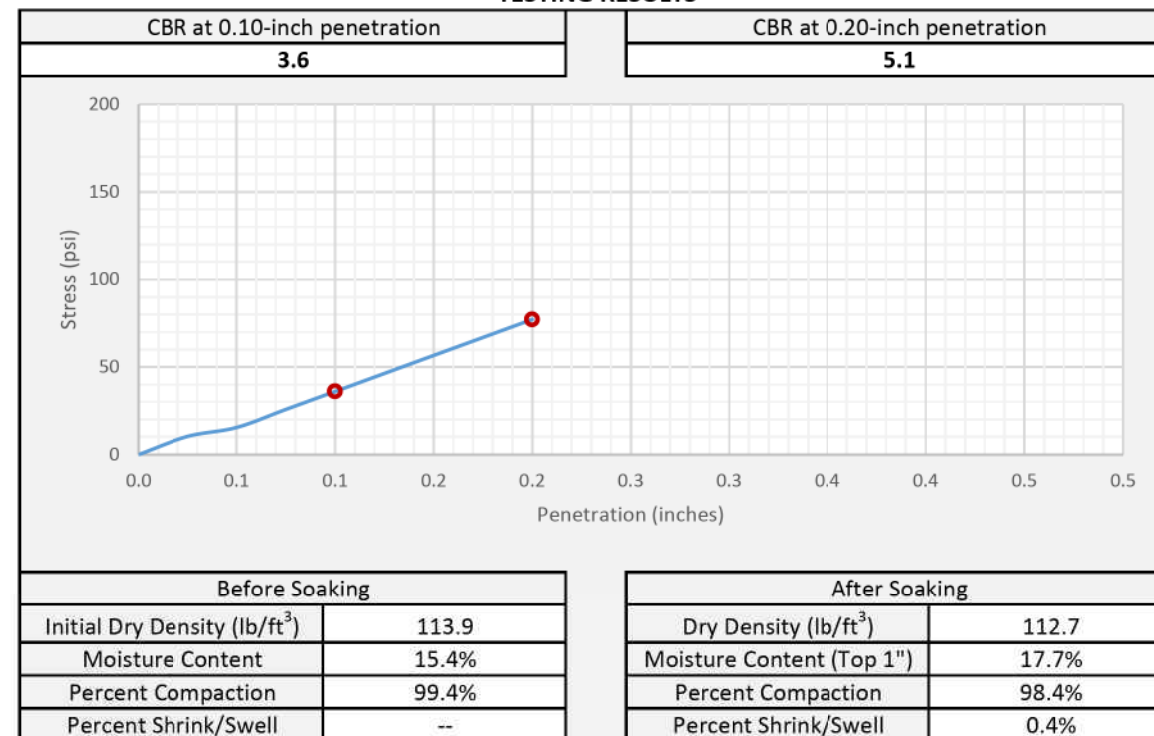
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-3		FME Lab ID	21-1760	
Soil Description	A-2-4		Depth/Elev.	1.0' - 2.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	5%
Max Dry Density (lb/ft <sup>3</sup> )	114.5	Optimum Moisture Content (%)	15.2
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=30, PL=26, PI=4, %Passing #200 Sieve = 34.3  
63+31, 2' LT



**F&ME Consultants, Inc.**  
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*Jerry P. Davis*

Reviewed By

130-04-0212

NCDOT Certification No.

8/18/2021

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REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

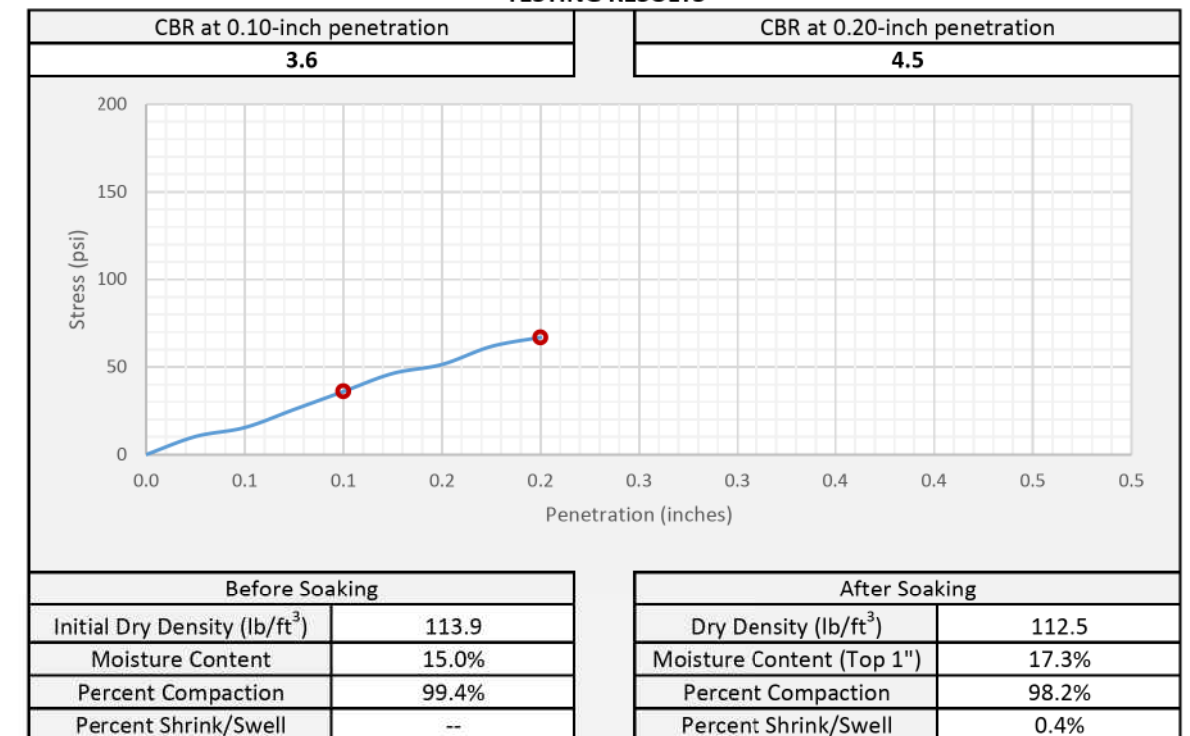
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-3		FME Lab ID	21-1760	
Soil Description	A-2-4		Depth/Elev.	1.0' - 2.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	5%
Max Dry Density (lb/ft <sup>3</sup> )	114.5	Optimum Moisture Content (%)	15.2
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=30, PL=26, PI=4, %Passing #200 Sieve = 34.3  
63+31, 2' LT



**F&ME Consultants, Inc.**  
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*Jerry P. Davis*

Reviewed By

130-04-0212

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REV 08/2021

**COMPRESSIVE STRENGTH OF MOLDED SOIL-CEMENT CYLINDERS  
ASTM D-1633**

**SAMPLE INFORMATION**

Project Name	US 23 / US 74 over Richland Creek	NCDOT STIP #	B-3186/B-5898
Sample Location	Bulk-3	FME Lab ID	21-1760
Soil Description	A-2-4	Depth/Elev.	1.0 - 2.0 ft.
Station	65+31	Offset	2' LT
Date Sampled	7/28/2021	Sampled By:	CG2
Date Molded	8/19/2021	Date Tested	8/26/2021
		Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

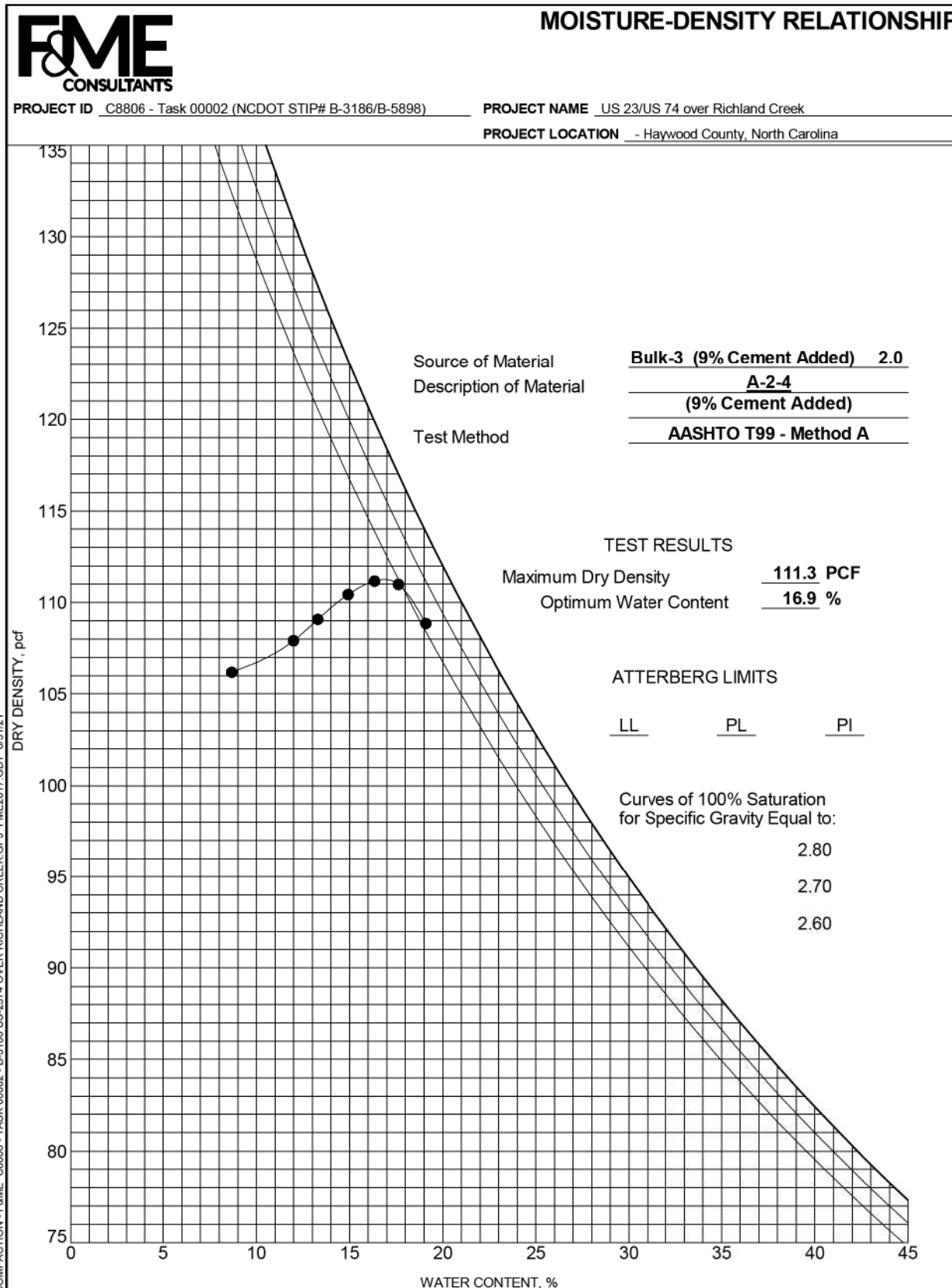
Method	AASHTO T99 - Method A	% Cement Added to Proctor	9%
Max Dry Density (lb/ft <sup>3</sup> )	111.3	Optimum Moisture Content (%)	16.9

**TESTING RESULTS**

% Cement	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in. <sup>2</sup> )	Maximum Load (lbf)	Compressive Strength (psi)	Average Compressive Strength (psi)
8%	7	16.3%	4.623	4.001	12.57	4440	355	345
8%	7	16.3%	4.638	3.998	12.55	4160	330	
10%	7	16.4%	4.612	4.000	12.57	5440	435	435
10%	7	16.4%	4.613	4.001	12.57	5410	430	

**ADDITIONAL COMMENTS**

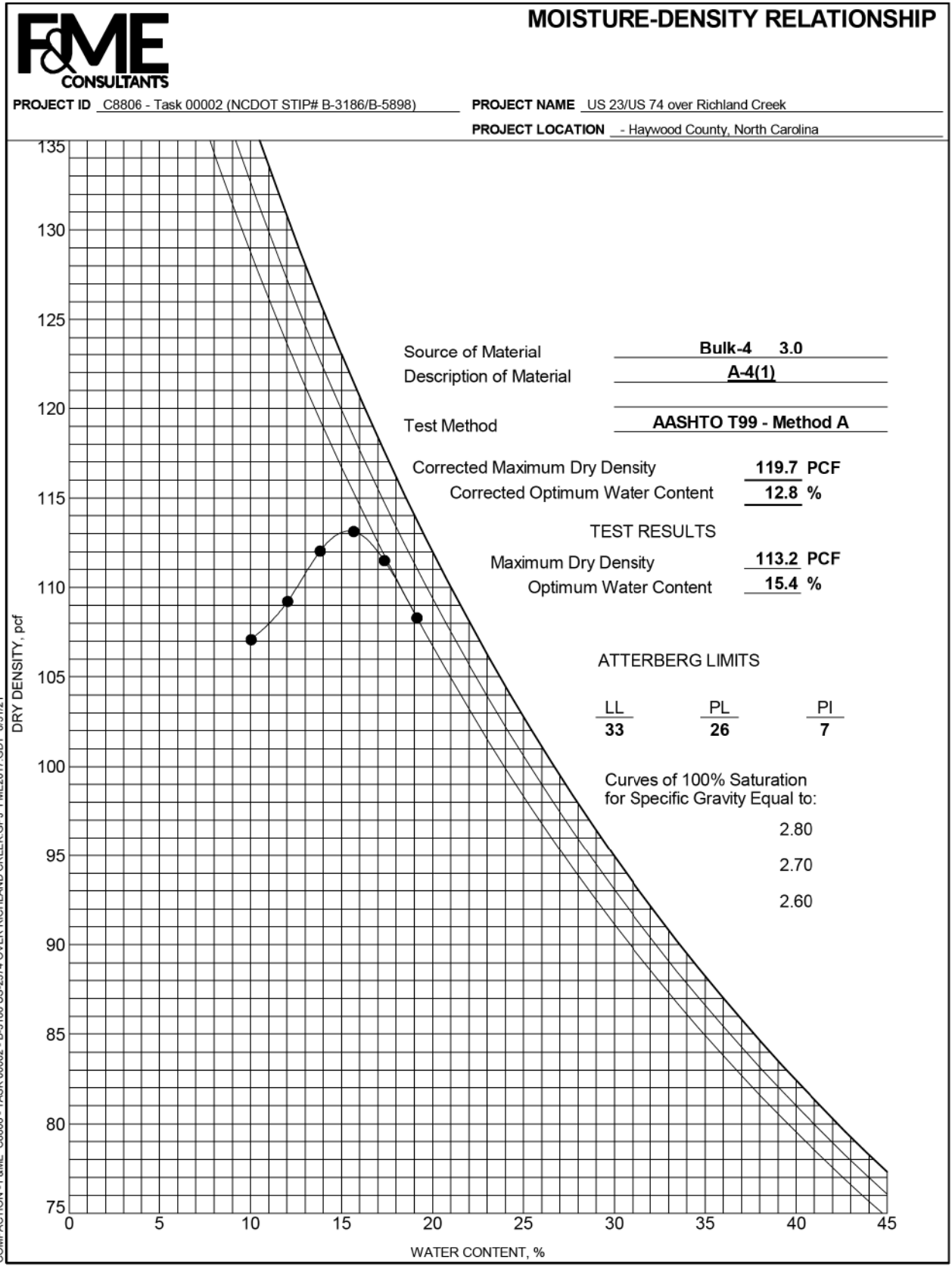
**Bulk Soil Sample Data (without Cement Added):**  
 LL=30, PL=26, PI=4  
 %Passing #200 Sieve = 34.3%  
 As-Received Natural Moisture Content = 11.4%



	<b>F&amp;ME Consultants, Inc.</b> 3112 Devine Street, Columbia, SC 29205	130-04-0212 NCDOT Certification No.
		Reviewed By <u>Jerry P. Davis</u> Date <u>8/31/2021</u>

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REV 08/2021

**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

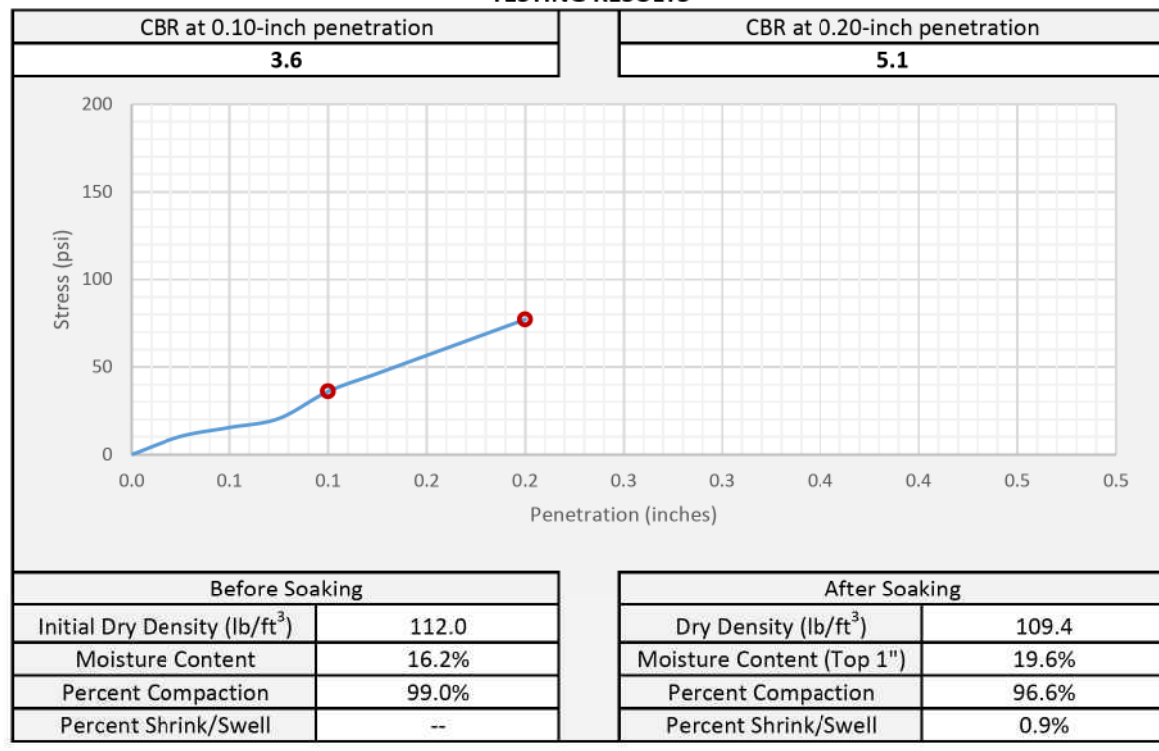
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-4		FME Lab ID	21-1761	
Soil Description	A-4(1)		Depth/Elev.	1.0' - 3.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	6%
Max Dry Density (lb/ft <sup>3</sup> )	113.2	Optimum Moisture Content (%)	15.4
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=33, PL=26, PI=7, %Passing #200 Sieve = 45.7  
77+10, 71' RT

	<b>F&amp;ME Consultants, Inc.</b> <small>3112 Devine Street, Columbia, SC 29205</small>		130-04-0212 <small>NCDOT Certification No.</small> <b>8/10/2021</b> <small>Date</small>
		<small>Reviewed By</small>	<small>Date</small>

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**CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193**

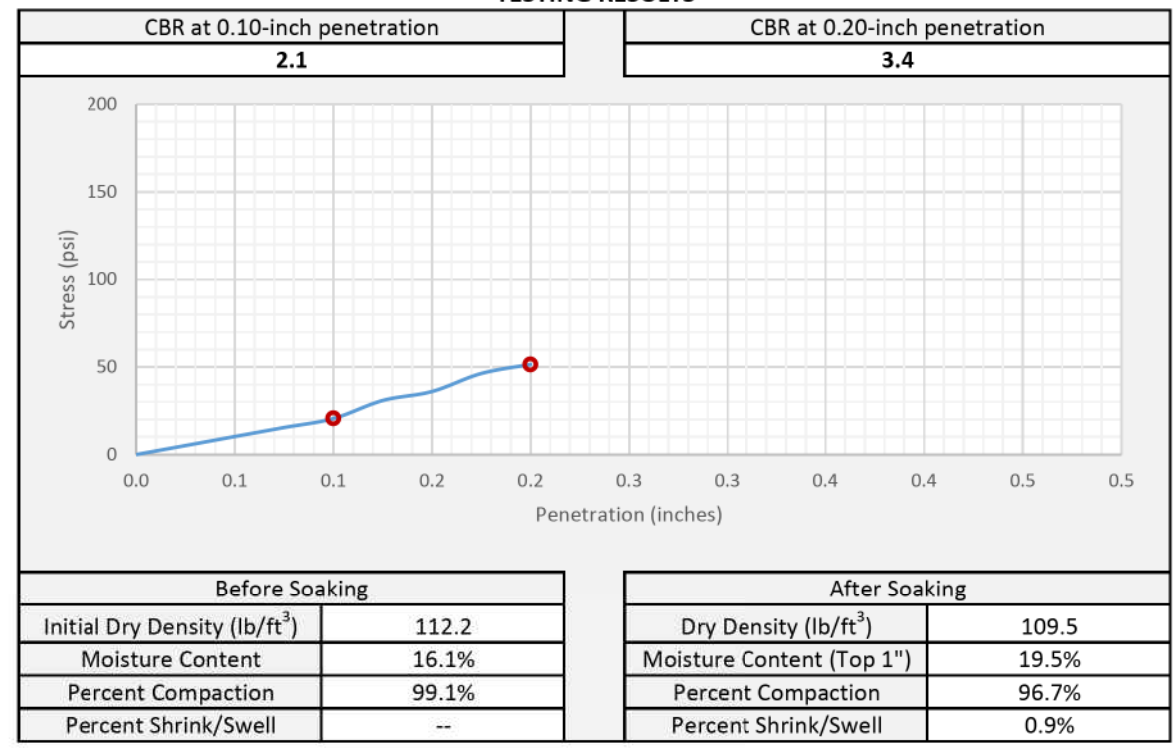
**SAMPLE INFORMATION**

Project Name	US 23 / US 74 Over Richland Creek		NCDOT STIP #	B-3186/B-5898	
Sample Location	Bulk-4		FME Lab ID	21-1761	
Soil Description	A-4(1)		Depth/Elev.	1.0' - 3.0'	
Date Sampled	7/28/2021	Sampled By:	CG2	Date Received	8/4/2021
Date Test Began	8/13/2021	Date Completed	8/17/2021	Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	6%
Max Dry Density (lb/ft <sup>3</sup> )	113.2	Optimum Moisture Content (%)	15.4
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

**TESTING RESULTS**



**ADDITIONAL COMMENTS**

LL=33, PL=26, PI=7, %Passing #200 Sieve = 45.7  
77+10, 71' RT

	<b>F&amp;ME Consultants, Inc.</b> <small>3112 Devine Street, Columbia, SC 29205</small>		130-04-0212 <small>NCDOT Certification No.</small> <b>8/18/2021</b> <small>Date</small>
		<small>Reviewed By</small>	<small>Date</small>

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REV 08/2021

**COMPRESSIVE STRENGTH OF MOLDED SOIL-LIME CYLINDERS  
ASTM D-1633**

**SAMPLE INFORMATION**

Project Name	US 23 / US 74 over Richland Creek	NCDOT STIP #	B-3186/B-5898
Sample Location	Bulk-4	FME Lab ID	21-1761
Soil Description	A-4(1)	Depth/Elev.	1.0 - 3.0 ft.
Station	77+10	Offset	71' RT
Date Sampled	7/28/2021	Sampled By:	CG2
Date Molded	8/19/2021	Date Tested	9/3/2021
		Tested By	M. Johnson

**MOLDING CHARACTERISTICS**

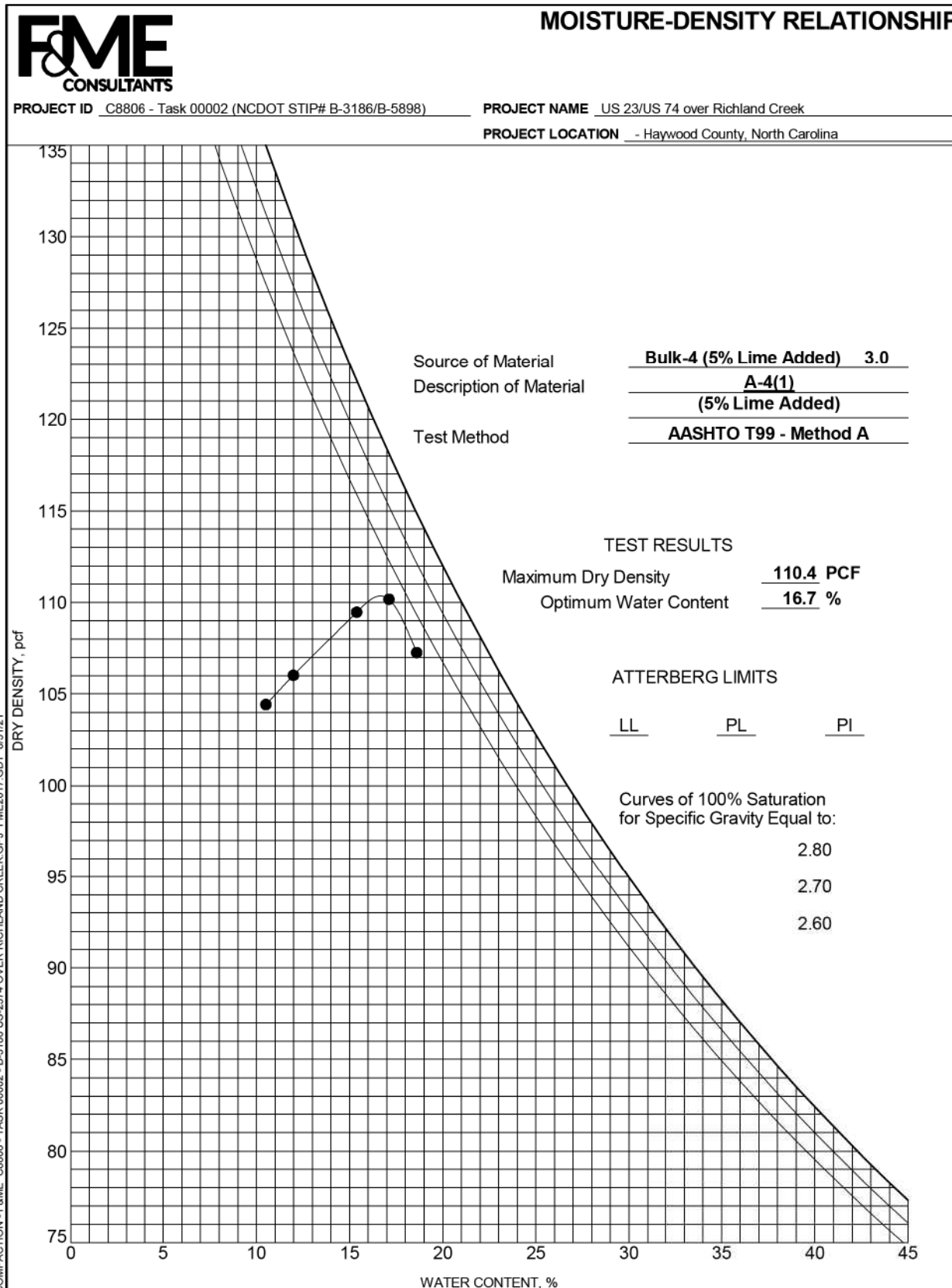
Method	AASHTO T99 - Method A	% Lime Added to Proctor	5%
Max Dry Density (lb/ft <sup>3</sup> )	110.1	Optimum Moisture Content (%)	16.7

**TESTING RESULTS**

% Lime	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in. <sup>2</sup> )	Maximum Load (lbf)	Compressive Strength (psi)	Average Compressive Strength (psi)
4%	7	16.8%	4.628	3.993	12.52	730	60	60
4%	7	16.7%	4.608	3.995	12.53	750	60	
6%	7	16.9%	4.635	3.992	12.52	770	60	60
6%	7	16.7%	4.630	3.997	12.55	770	60	

**ADDITIONAL COMMENTS**

**Bulk Soil Sample Data (without Lime Added):**  
 LL=33, PL=24, PI=7  
 %Passing #200 Sieve = 45.7%  
 As-Received Natural Moisture Content = 8.9%



	<b>F&amp;ME Consultants, Inc.</b> 3112 Devine Street, Columbia, SC 29205	Reviewed By	130-04-0212 NCDOT Certification No.
		Date	9/8/2021

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**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
------	--------------------------

C-1 -L- 15+32 EB OSS

5.0 FT RT FW

Datum = STBC

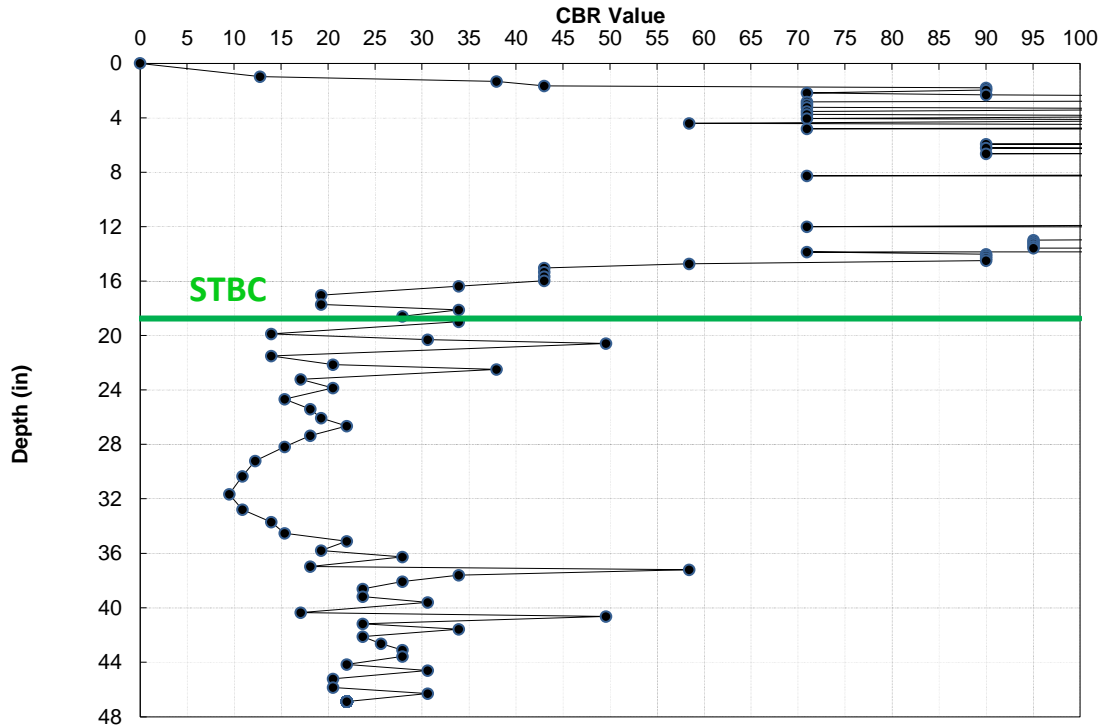
RAW

Fill

08/04/21

Interval	
0.0	to 18.6
# of Values	148
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	12.8

Interval	
18.6	to 46.9
# of Values	45
Avg CBR	24.0
Wghtd Avg.	20.6
Max CBR	58.4
Min CBR	9.5



1

C-5 -L- 25+35 EB ISS

1.4 FT LT FY

Datum = STBC

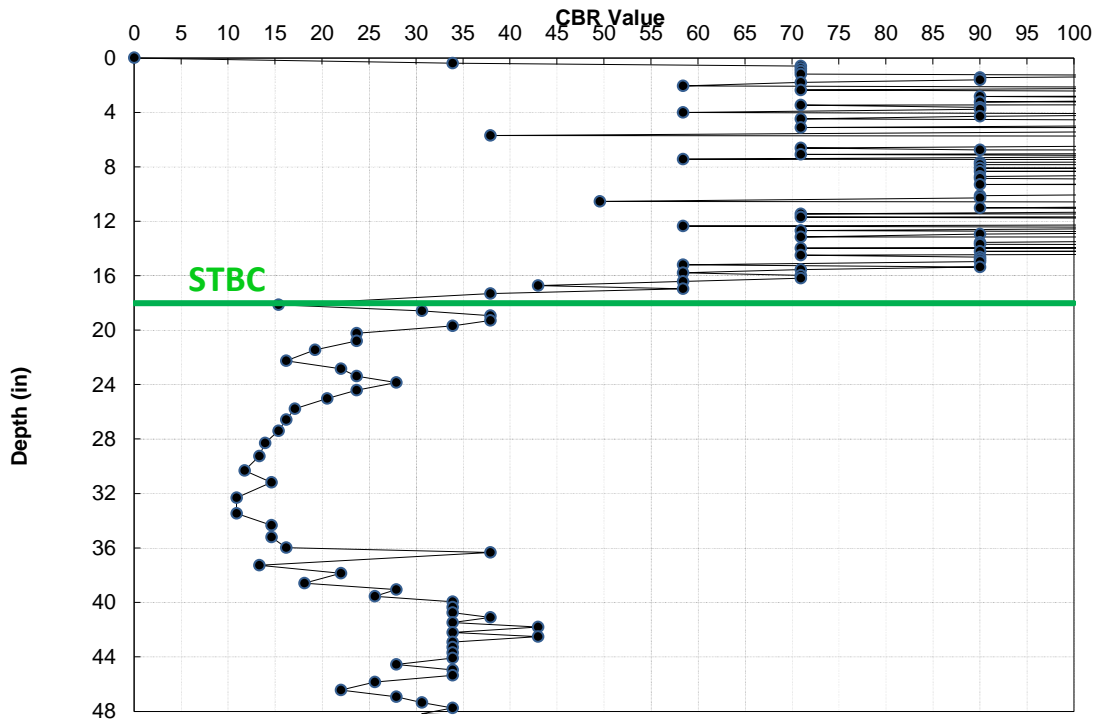
RAW

Fill

08/04/21

Interval	
0.0	to 18.1
# of Values	122
Avg CBR	100+
Wghtd Avg.	95.6
Max CBR	100+
Min CBR	15.4

Interval	
18.1	to 56.9
# of Values	73
Avg CBR	28.0
Wghtd Avg.	24.7
Max CBR	43.0
Min CBR	10.9



2



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

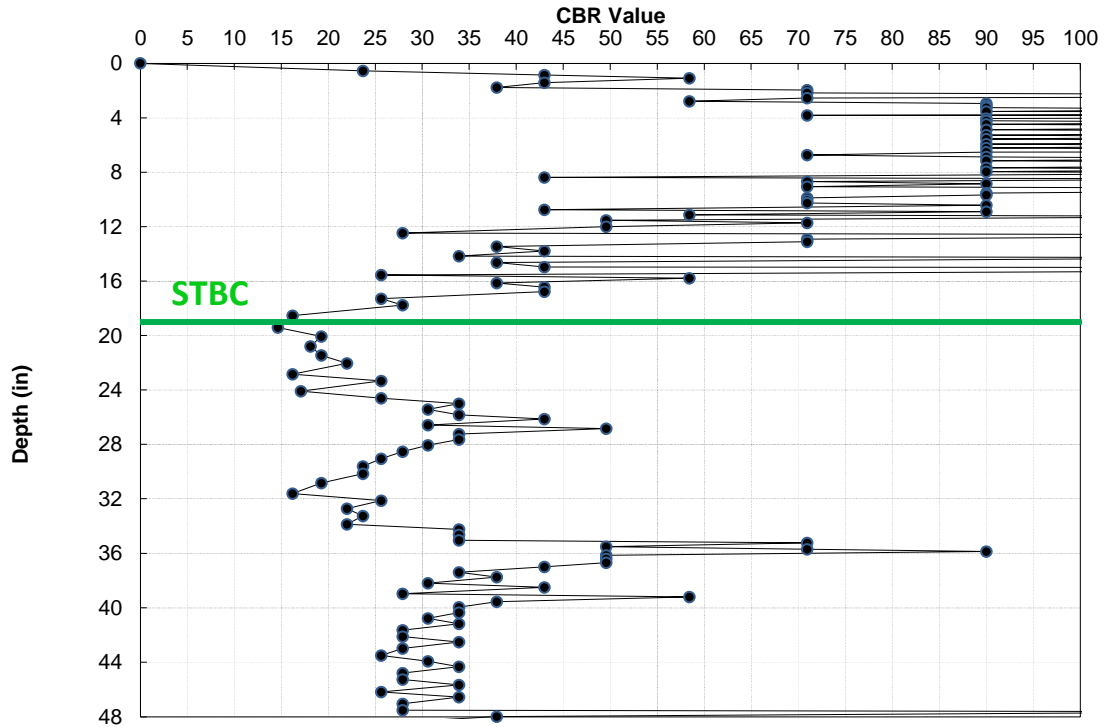
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-6 -L- 25+35 EB OSS  
5.4 FT RT FW  
Datum = STBC  
RAW  
Fill  
08/04/21

Interval	
0.0	to 19.4
# of Values	92
Avg CBR	90.4
Wghtd Avg.	65.9
Max CBR	100+
Min CBR	14.6

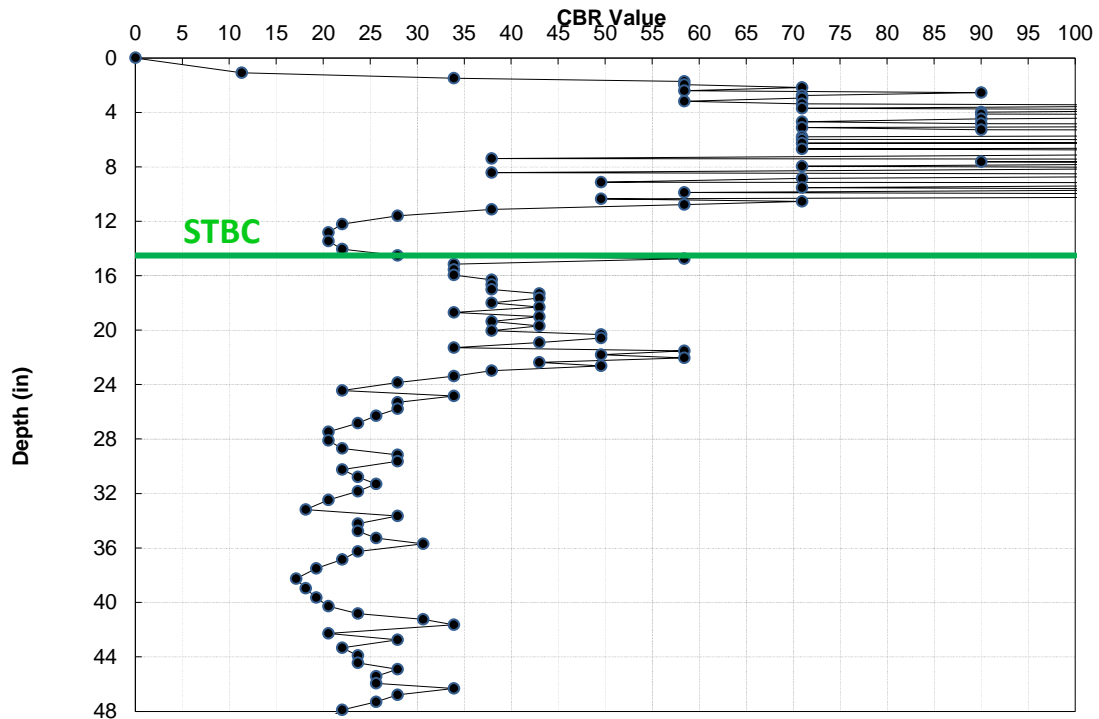
Interval	
19.4	to 56.3
# of Values	87
Avg CBR	35.3
Wghtd Avg.	31.3
Max CBR	100+
Min CBR	16.2



C-7 -L- 29+86 EB ISS  
1.3 FT LT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 14.5
# of Values	67
Avg CBR	96.8
Wghtd Avg.	64.0
Max CBR	100+
Min CBR	11.3

Interval	
14.5	to 57.2
# of Values	87
Avg CBR	29.5
Wghtd Avg.	26.8
Max CBR	58.4
Min CBR	17.1



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

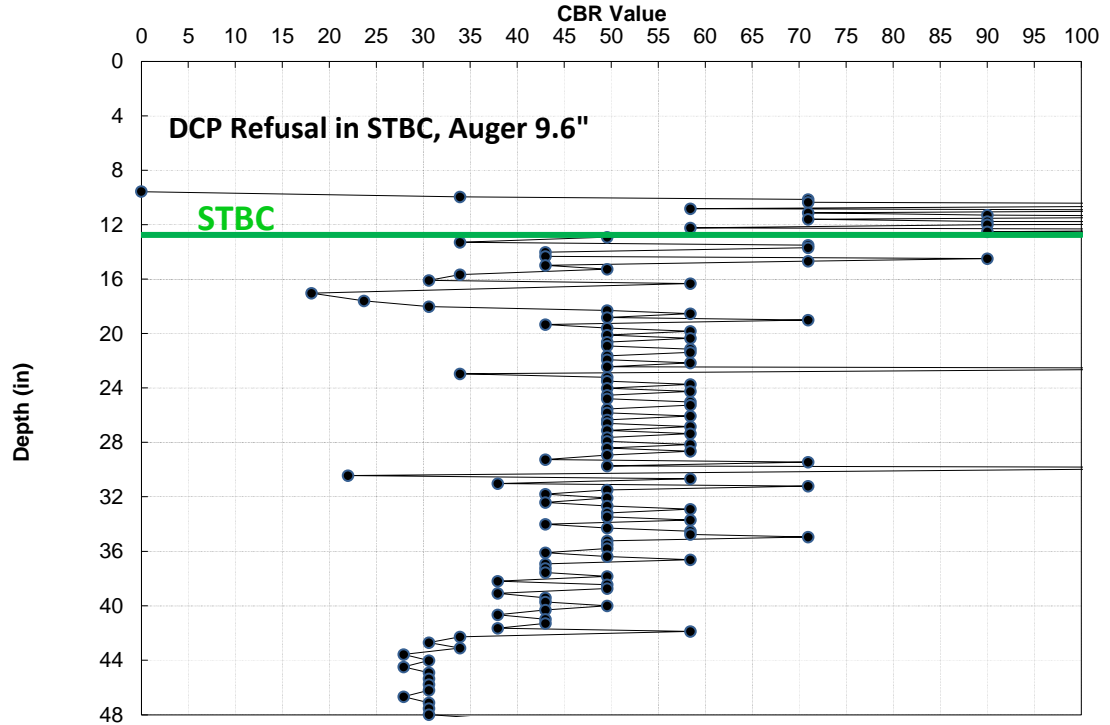
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-8 -L- 29+86 EB ISL  
8.0 FT RT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
9.6	to 12.9
# of Values	19
Avg CBR	93.0
Wghtd Avg.	79.9
Max CBR	100+
Min CBR	33.9

Interval	
12.9	to 51.5
# of Values	127
Avg CBR	48.6
Wghtd Avg.	44.7
Max CBR	100+
Min CBR	18.1

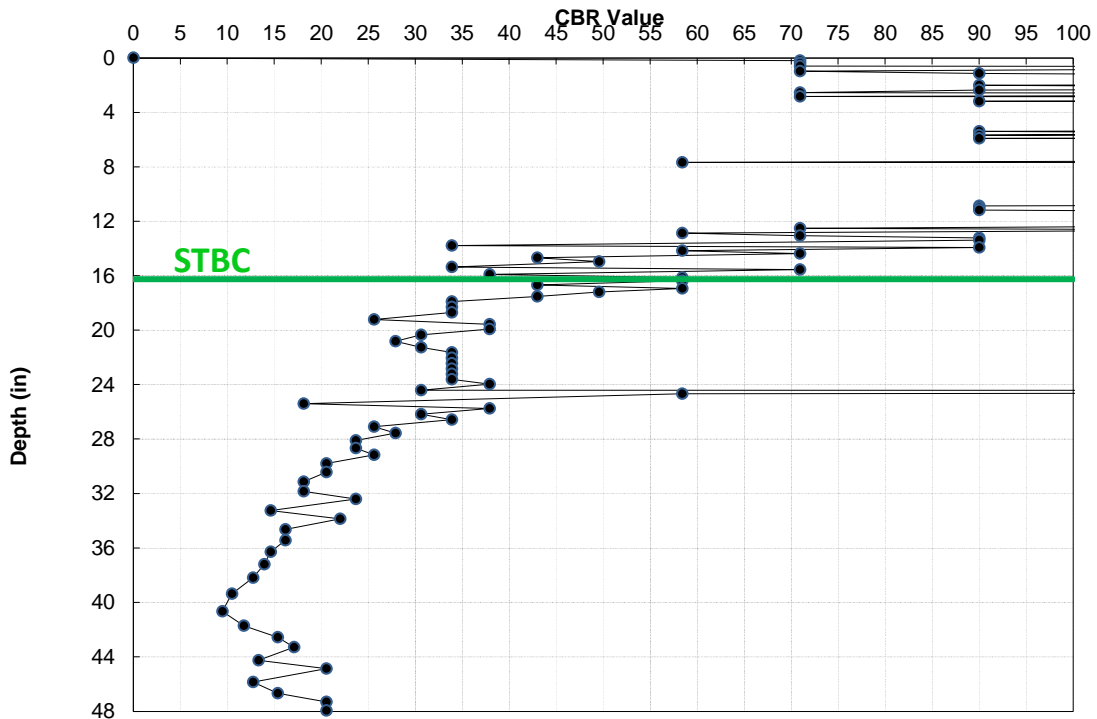


5

C-10 -L- 35+32 EB ISS  
2.0 FT LT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 16.4
# of Values	151
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	33.9

Interval	
16.4	to 60.1
# of Values	74
Avg CBR	31.4
Wghtd Avg.	22.0
Max CBR	100+
Min CBR	9.5



6



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

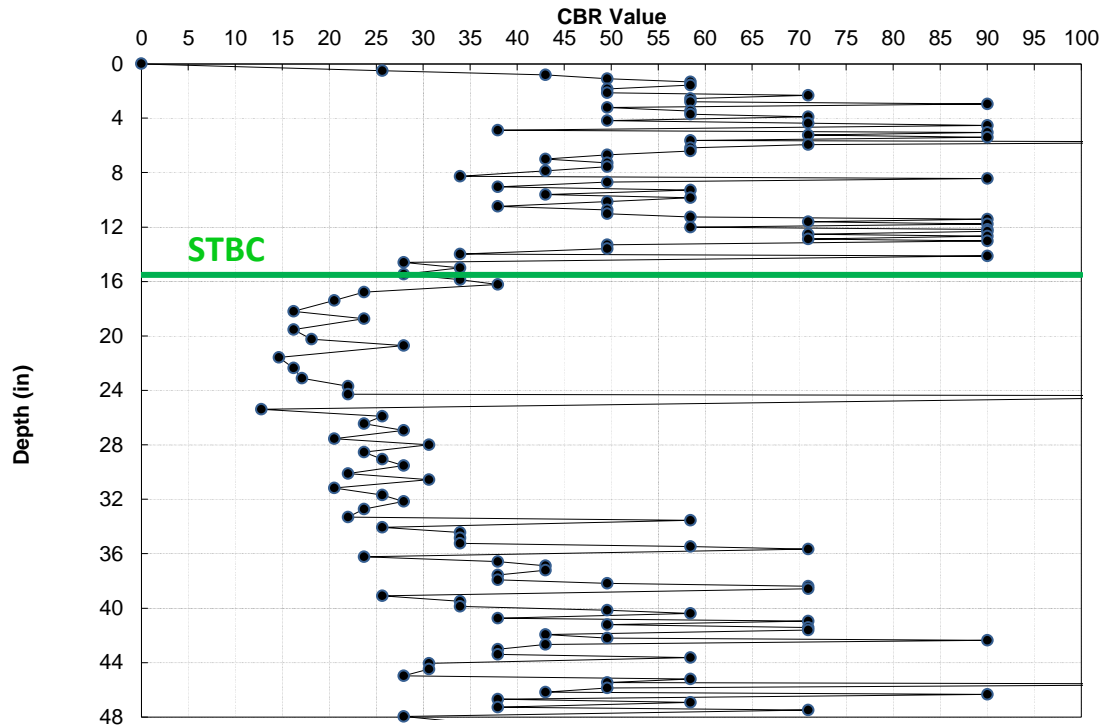
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-11 -L- 35+34 EB OSS  
5.5 FT RT FW  
Datum = STBC  
RAW  
Fill  
08/04/21

Interval	
0.0	to 15.5
# of Values	61
Avg CBR	60.5
Wghtd Avg.	54.1
Max CBR	100+
Min CBR	25.6

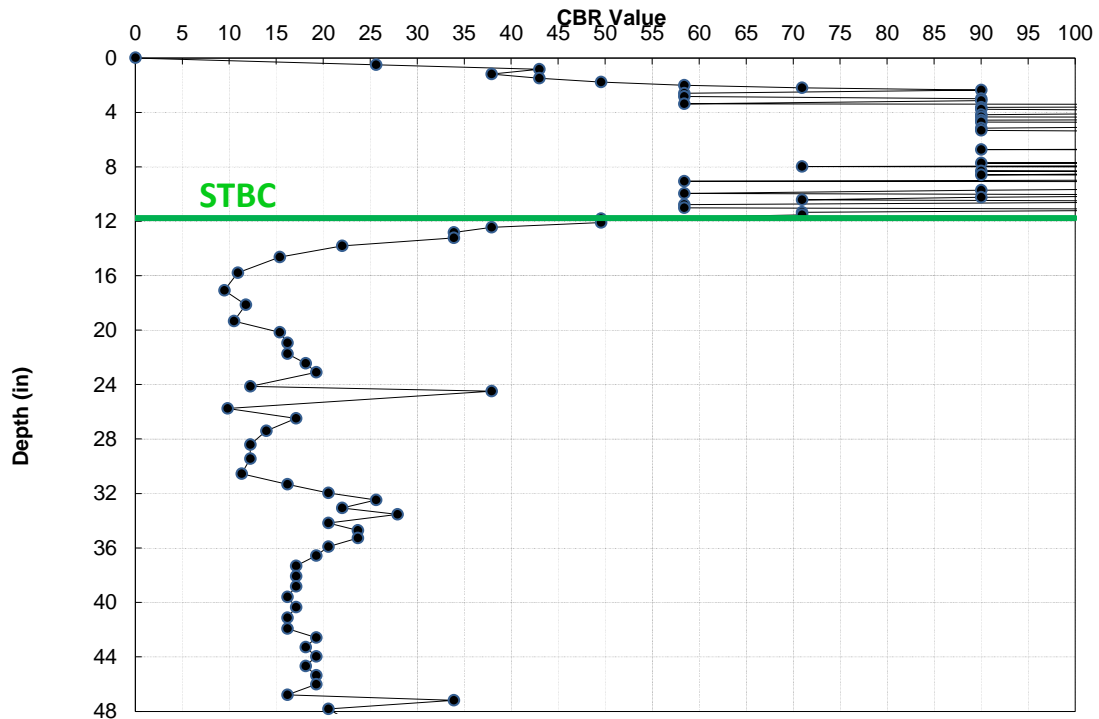
Interval	
15.5	to 62.2
# of Values	127
Avg CBR	46.1
Wghtd Avg.	36.4
Max CBR	100+
Min CBR	12.8



C-12 -L- 61+63 EB ISS  
0.7 FT LT FY  
Datum = STBC  
RAW  
Fill  
08/04/21

Interval	
0.0	to 11.8
# of Values	81
Avg CBR	60.5
Wghtd Avg.	54.1
Max CBR	100+
Min CBR	25.6

Interval	
11.8	to 55.4
# of Values	62
Avg CBR	20.4
Wghtd Avg.	18.2
Max CBR	49.6
Min CBR	9.5



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

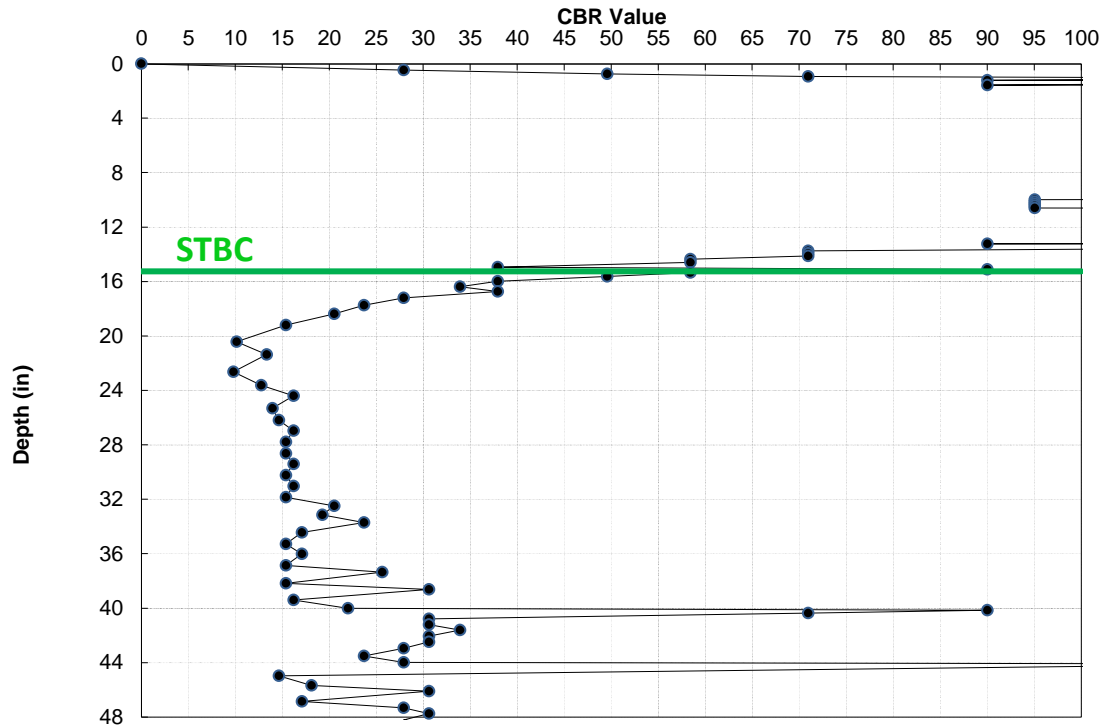
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-13 -L- 61+63 EB ISL  
5.3 FT RT FY  
Datum = STBC  
RAW  
Fill  
08/04/21

Interval	
0.0	to 15.1
# of Values	189
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	27.9

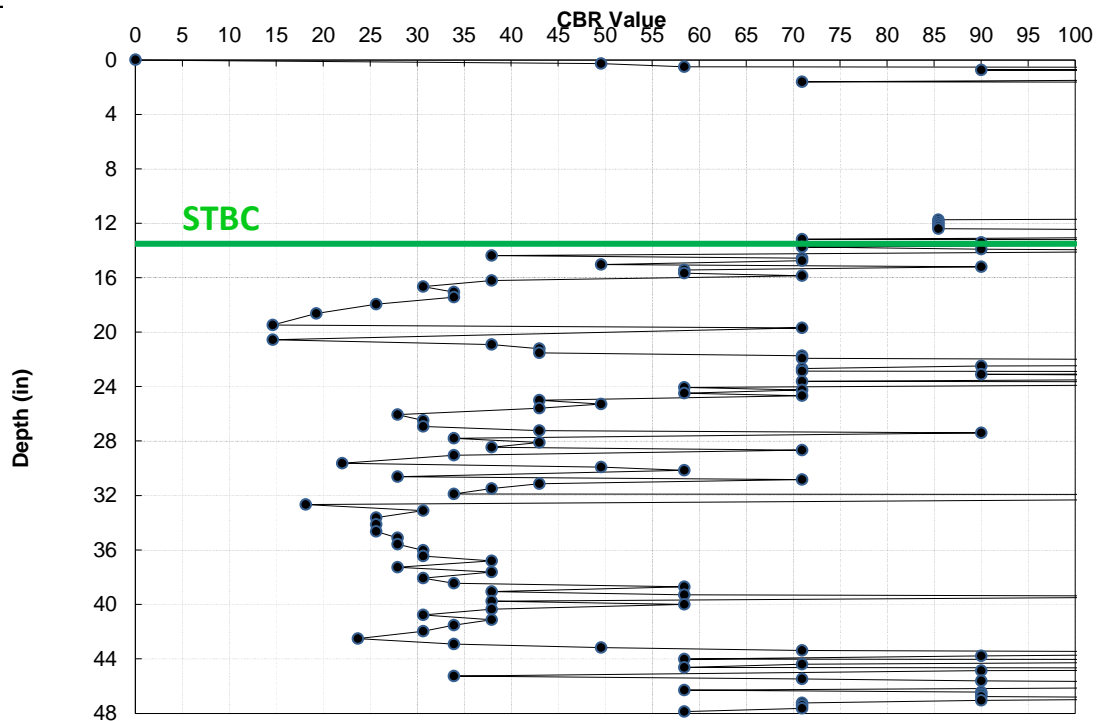
Interval	
15.1	to 55.8
# of Values	72
Avg CBR	29.0
Wghtd Avg.	23.0
Max CBR	100+
Min CBR	9.8



C-14 -L- 61+64 EB OSL  
2.2 FT LT FW  
Datum = STBC  
RAW  
Fill  
8/4/2021

Interval	
0.0	to 13.5
# of Values	228
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	49.6

Interval	
13.5	to 59.4
# of Values	157
Avg CBR	63.8
Wghtd Avg.	46.5
Max CBR	100+
Min CBR	14.6





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NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-15 -L- 61+64 EB OSS

1.0 FT RT FW

Datum = STBC

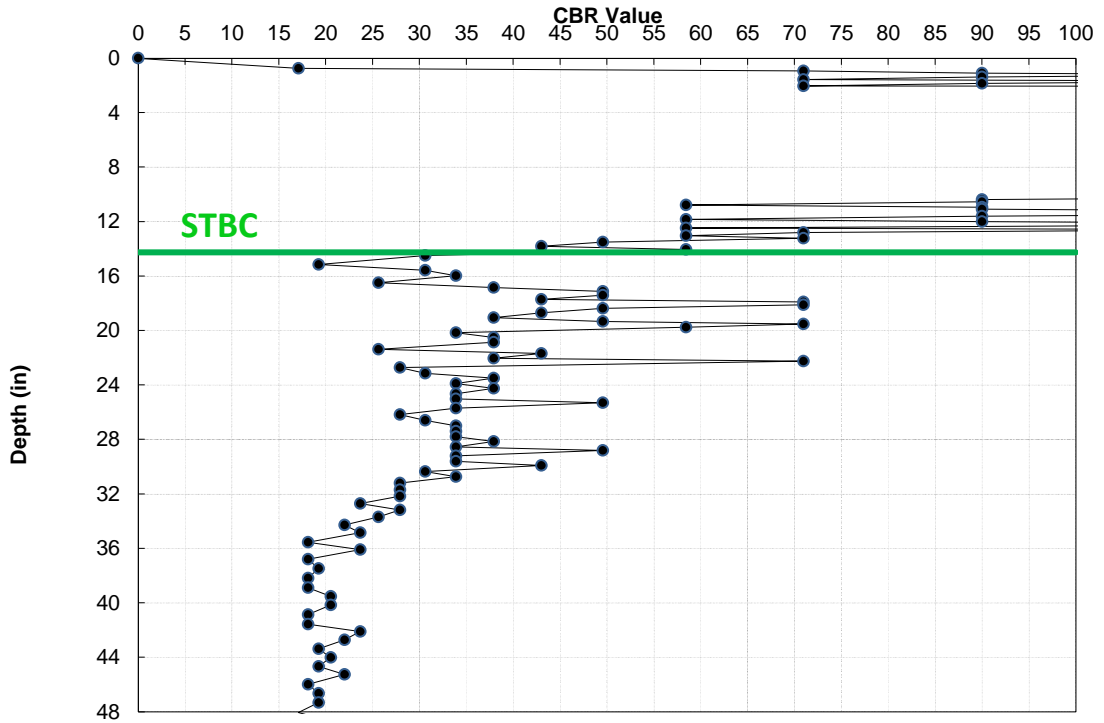
RAW

Fill

08/04/21

Interval	
0.0	to 14.1
# of Values	122
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	17.1

Interval	
14.1	to 53.5
# of Values	83
Avg CBR	31.8
Wghtd Avg.	27.7
Max CBR	70.9
Min CBR	17.1



11

C-19 -L- 76+90 EB ISS

2.2 FT LT FY

Datum = STBC

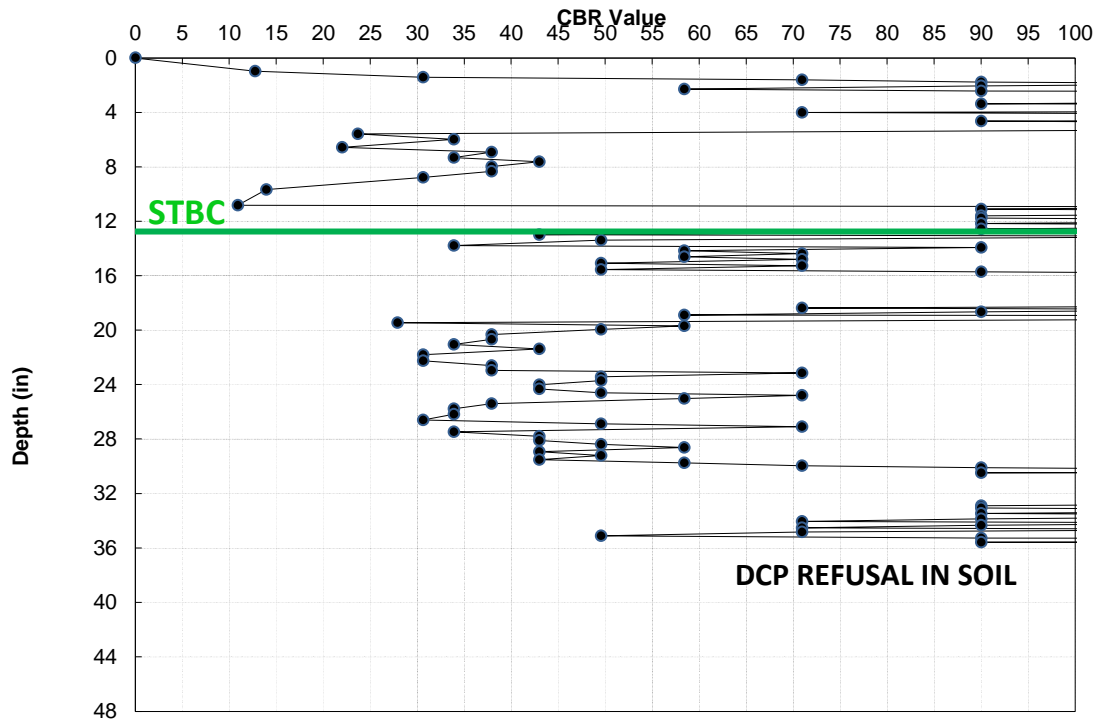
RAW

Cut

08/04/21

Interval	
0.0	to 12.7
# of Values	58
Avg CBR	100+
Wghtd Avg.	63.5
Max CBR	100+
Min CBR	10.9

Interval	
12.7	to 36.7
# of Values	214
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	27.9



12

**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

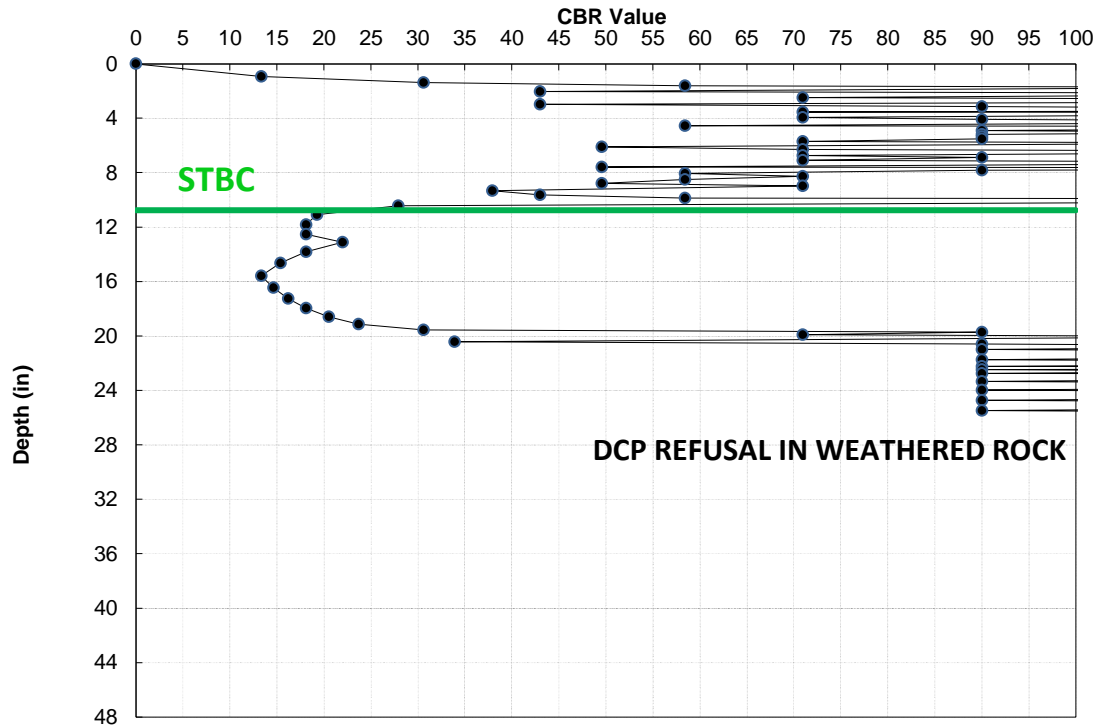
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-21 -L- 76+90 EB OSL  
2.2 FT LT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 11.1
# of Values	54
Avg CBR	93.0
Wghtd Avg.	67.7
Max CBR	100+
Min CBR	13.3

Interval	
11.1	to 25.8
# of Values	59
Avg CBR	95.1
Wghtd Avg.	55.1
Max CBR	100+
Min CBR	13.3

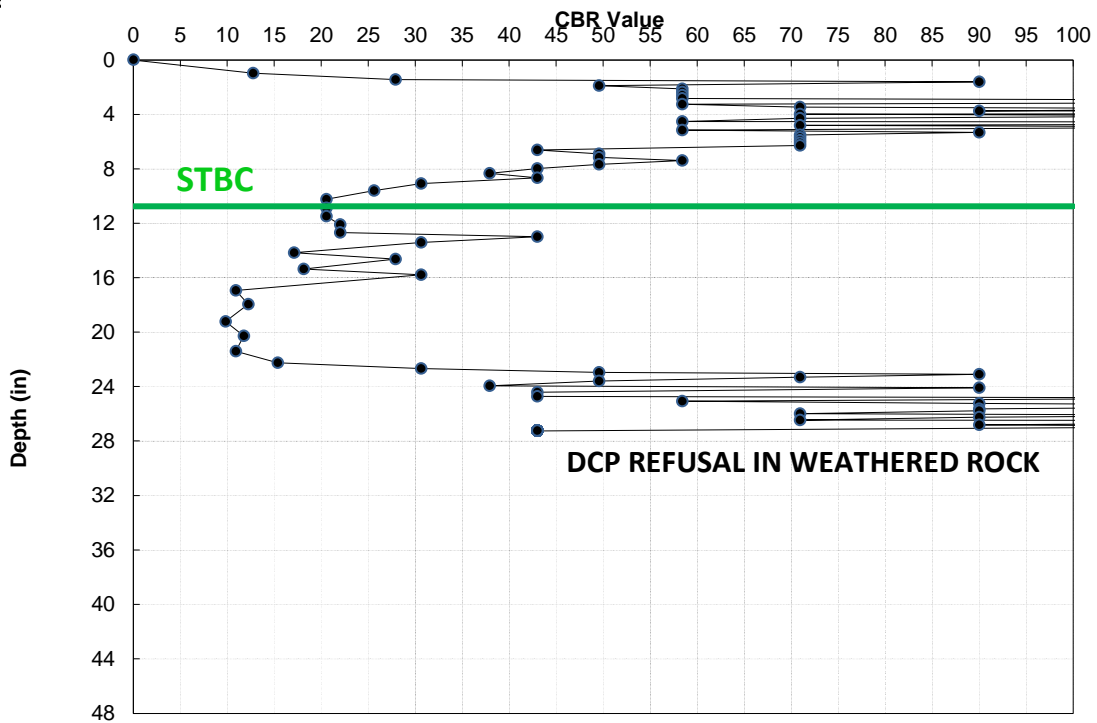


13

C-22 -L- 76+90 EB OSS  
3.5 FT RT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 10.9
# of Values	41
Avg CBR	76.6
Wghtd Avg.	51.7
Max CBR	100+
Min CBR	12.8

Interval	
10.9	to 27.2
# of Values	40
Avg CBR	60.6
Wghtd Avg.	32.5
Max CBR	100+
Min CBR	9.8



14



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

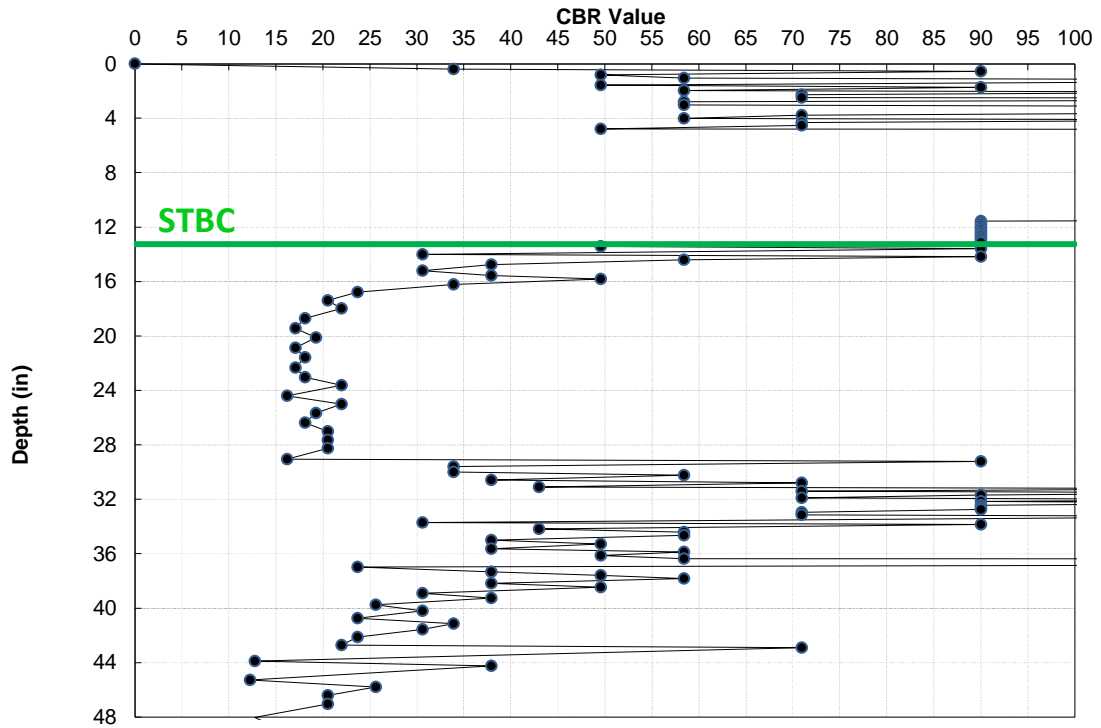
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-23 -L- 80+22 EB ISS  
2.3 FT LT FY  
Datum = STBC  
RAW  
Fill  
08/04/21

Interval	
0.0	to 13.1
# of Values	132
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	33.9

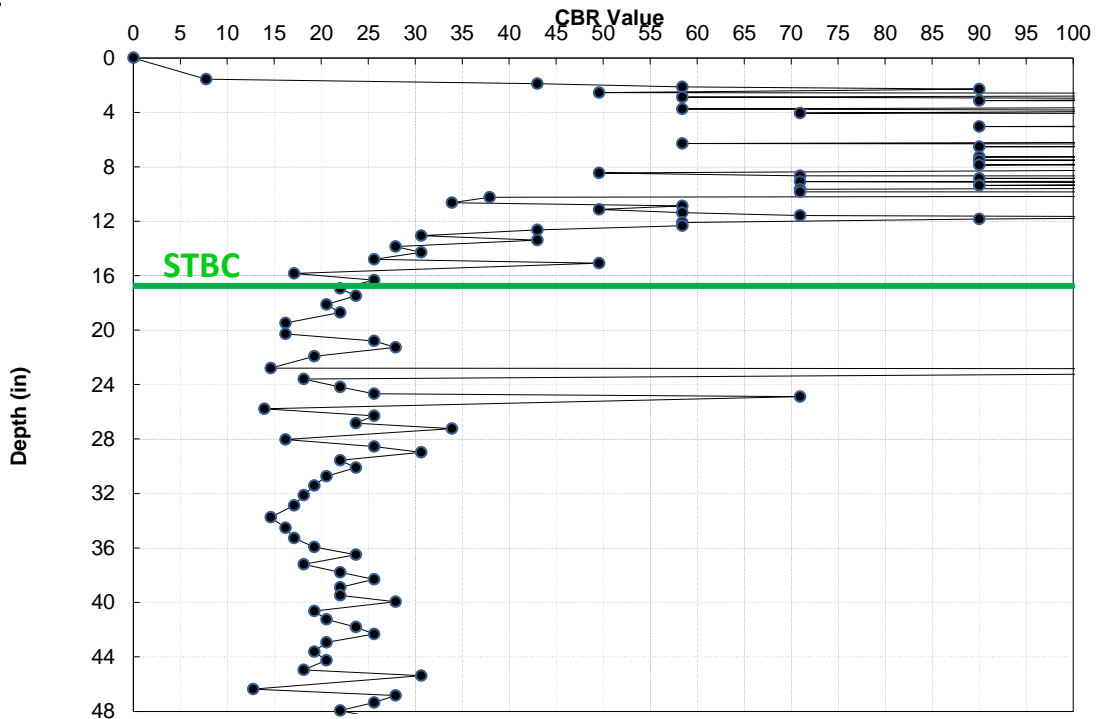
Interval	
13.1	to 60.2
# of Values	106
Avg CBR	45.4
Wghtd Avg.	29.8
Max CBR	100+
Min CBR	12.2



C-24 -L- 80+22 EB OSS  
1.9 FT RT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 16.9
# of Values	89
Avg CBR	100+
Wghtd Avg.	73.6
Max CBR	100+
Min CBR	7.7

Interval	
16.9	to 56.2
# of Values	68
Avg CBR	26.2
Wghtd Avg.	22.5
Max CBR	100+
Min CBR	12.8

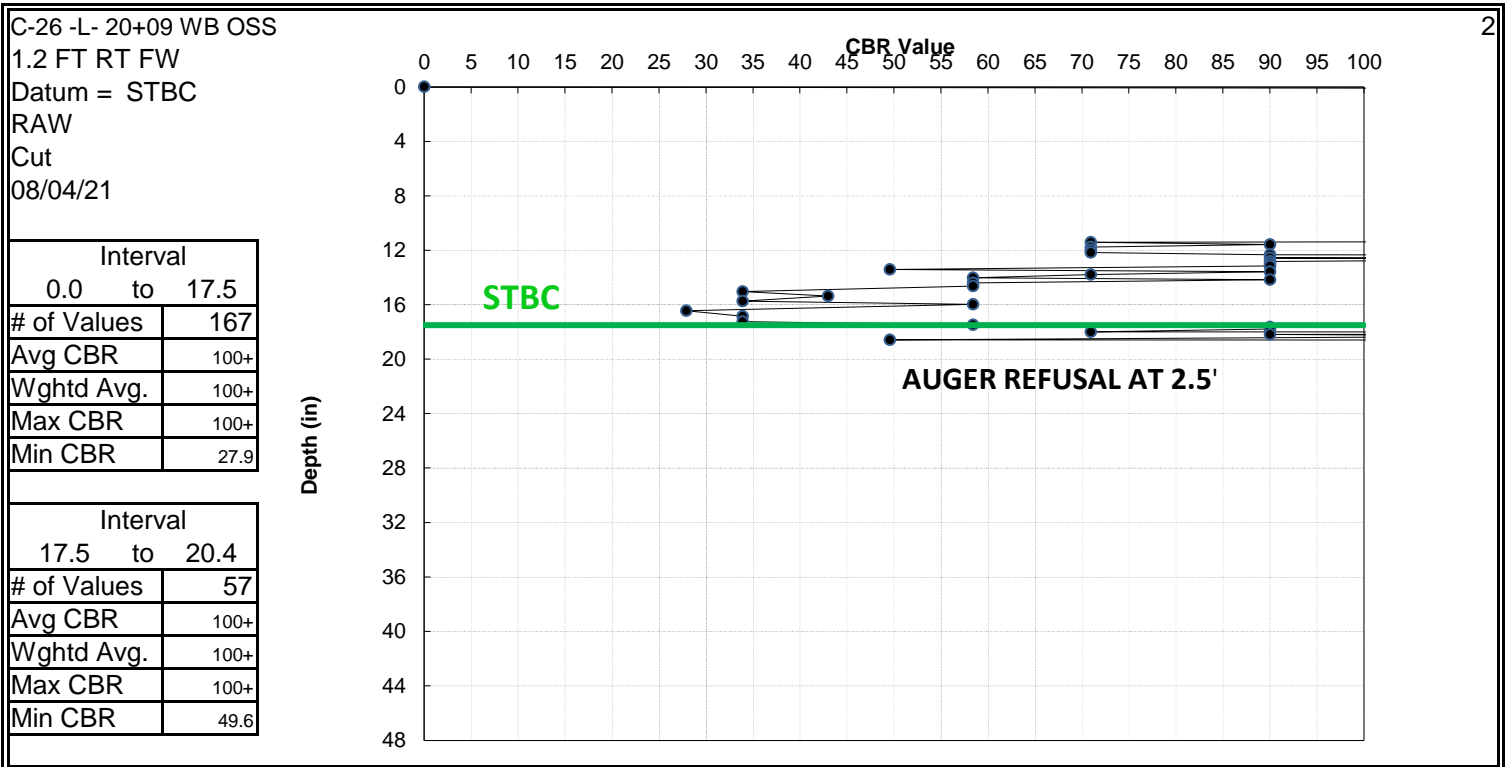
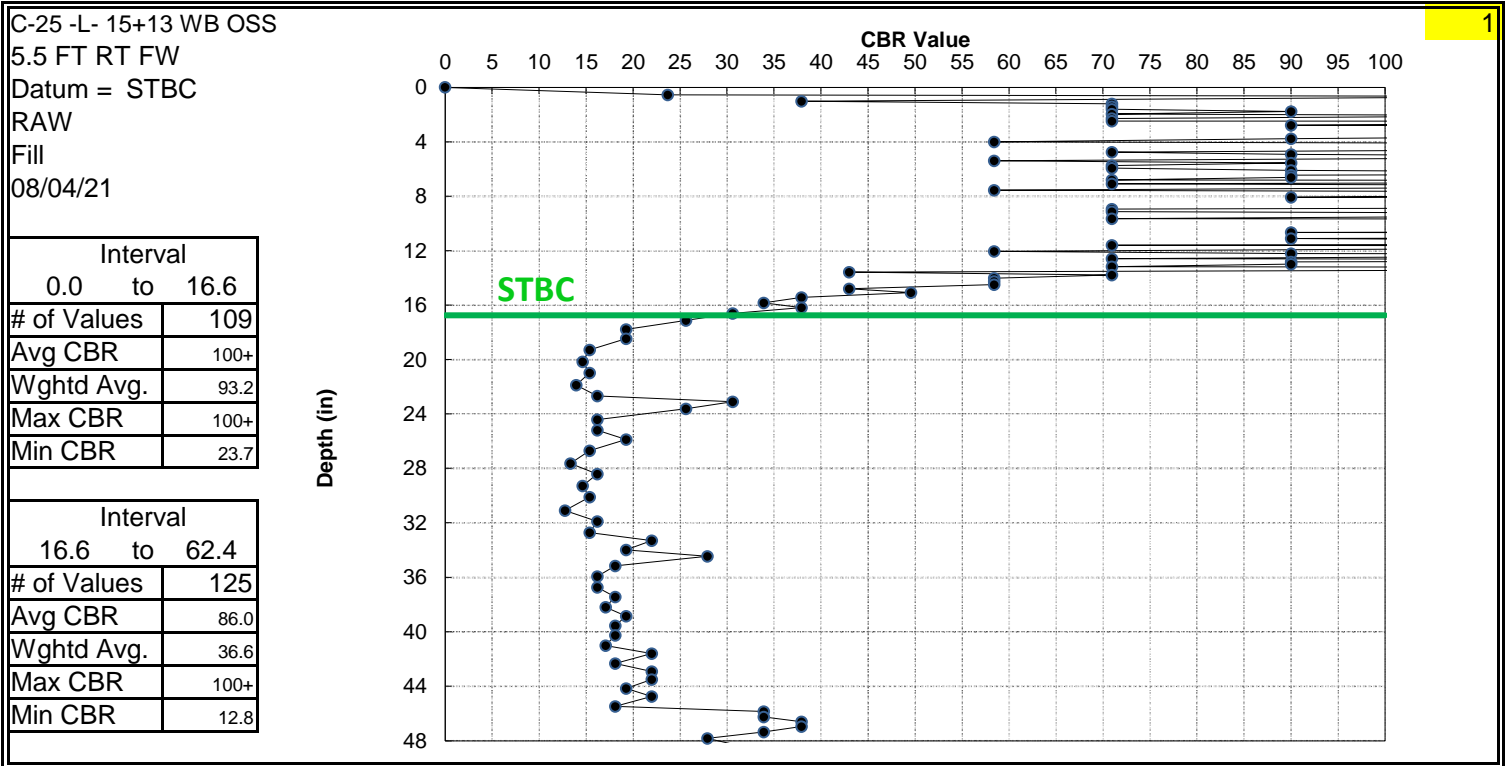


**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

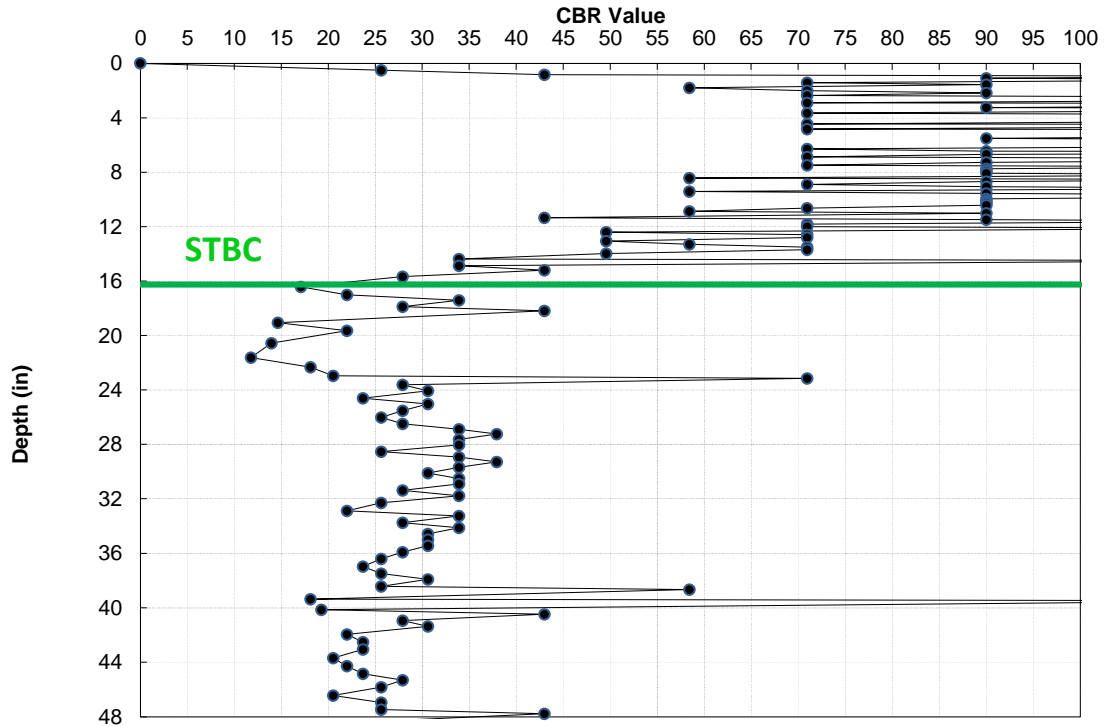
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-28 -L- 20+09 WB ISS  
2.4 FT LT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 16.4
# of Values	92
Avg CBR	96.0
Wghtd Avg.	78.8
Max CBR	100+
Min CBR	17.1

Interval	
16.4	to 60.7
# of Values	89
Avg CBR	29.1
Wghtd Avg.	26.4
Max CBR	100+
Min CBR	11.8

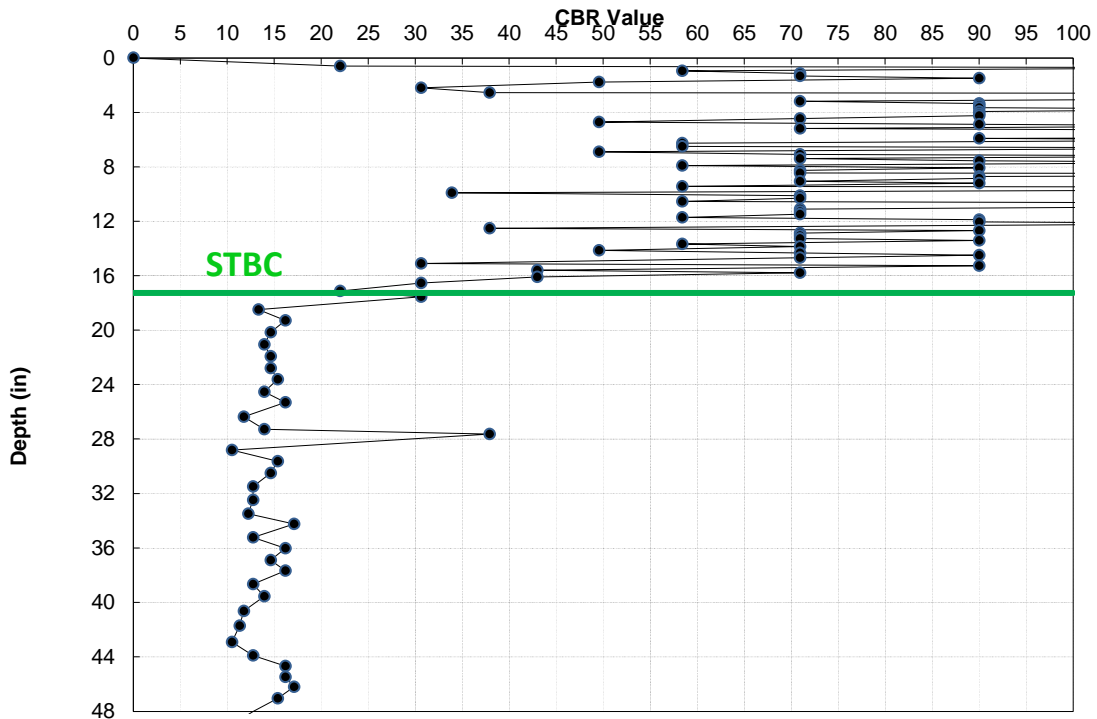


**3**

C-29 -L- 25+50 WB OSS  
5.7 FT RT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 17.1
# of Values	86
Avg CBR	85.0
Wghtd Avg.	70.1
Max CBR	100+
Min CBR	22.0

Interval	
17.1	to 60.0
# of Values	49
Avg CBR	15.4
Wghtd Avg.	14.5
Max CBR	37.9
Min CBR	9.5



**4**

**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

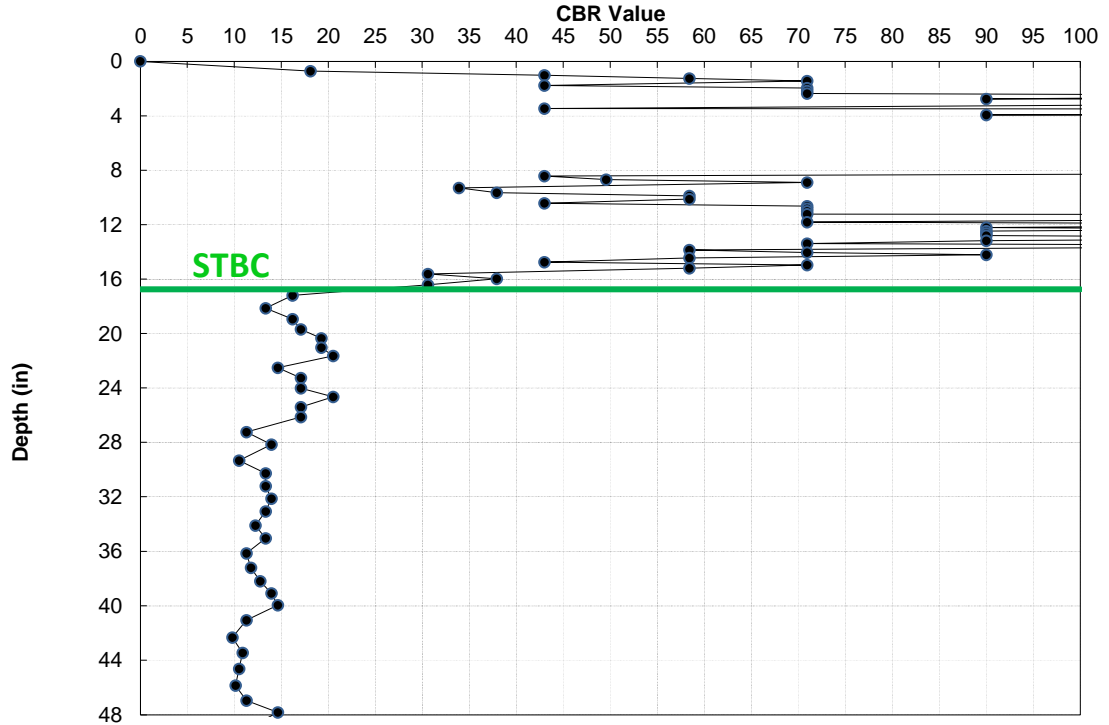
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
------	--------------------------

C-30 -L- 25+50 WB ISS  
1.8 FT RT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 16.4
# of Values	104
Avg CBR	100+
Wghtd Avg.	89.8
Max CBR	100+
Min CBR	18.1

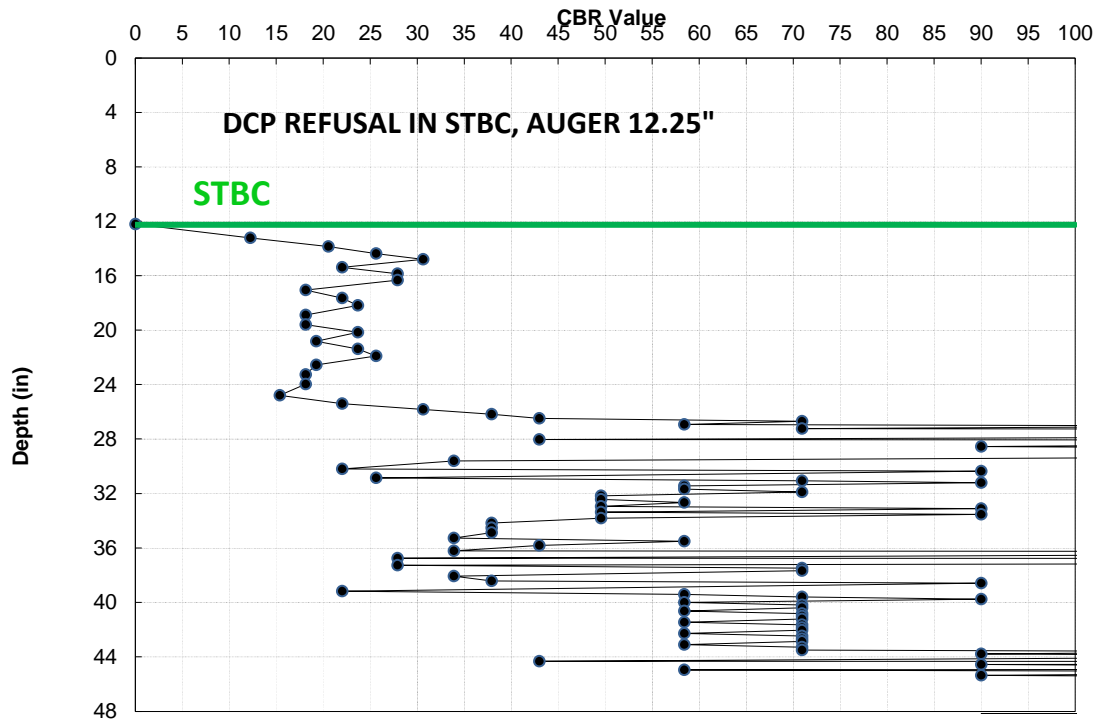
Interval	
16.4	to 58.4
# of Values	45
Avg CBR	14.0
Wghtd Avg.	13.5
Max CBR	20.5
Min CBR	9.8



C-32 -L- 30+33 WB ISL  
5.5 FT RT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
12.2	to 0.0
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval	
12.2	to 59.1
# of Values	216
Avg CBR	100+
Wghtd Avg.	63.9
Max CBR	100+
Min CBR	12.2



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

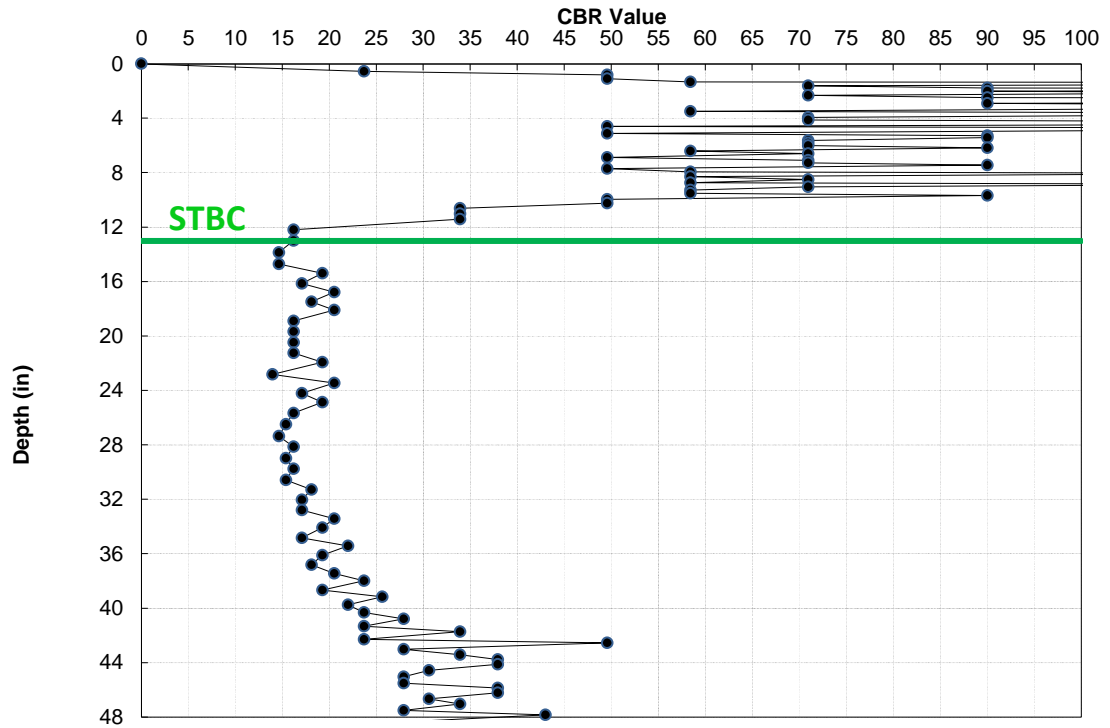
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
------	--------------------------

C-33 -L- 30+33 WB ISS  
2.0 FT LT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 13.0
# of Values	60
Avg CBR	84.9
Wghtd Avg.	64.1
Max CBR	100+
Min CBR	16.2

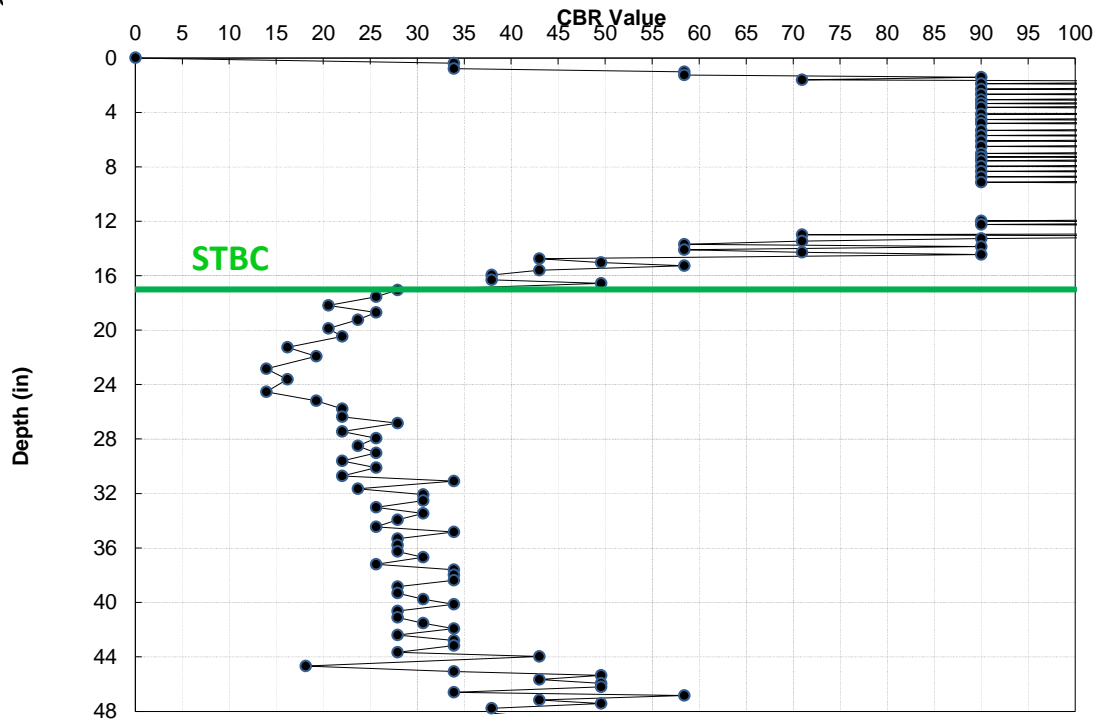
Interval	
13.0	to 59.7
# of Values	84
Avg CBR	26.1
Wghtd Avg.	23.4
Max CBR	49.6
Min CBR	13.9



C-34 -L- 35+34 WB OS<sup>c</sup>  
6.0 FT RT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 17.0
# of Values	122
Avg CBR	84.9
Wghtd Avg.	64.1
Max CBR	100+
Min CBR	16.2

Interval	
17.0	to 63.1
# of Values	111
Avg CBR	35.7
Wghtd Avg.	32.0
Max CBR	70.9
Min CBR	13.9





**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

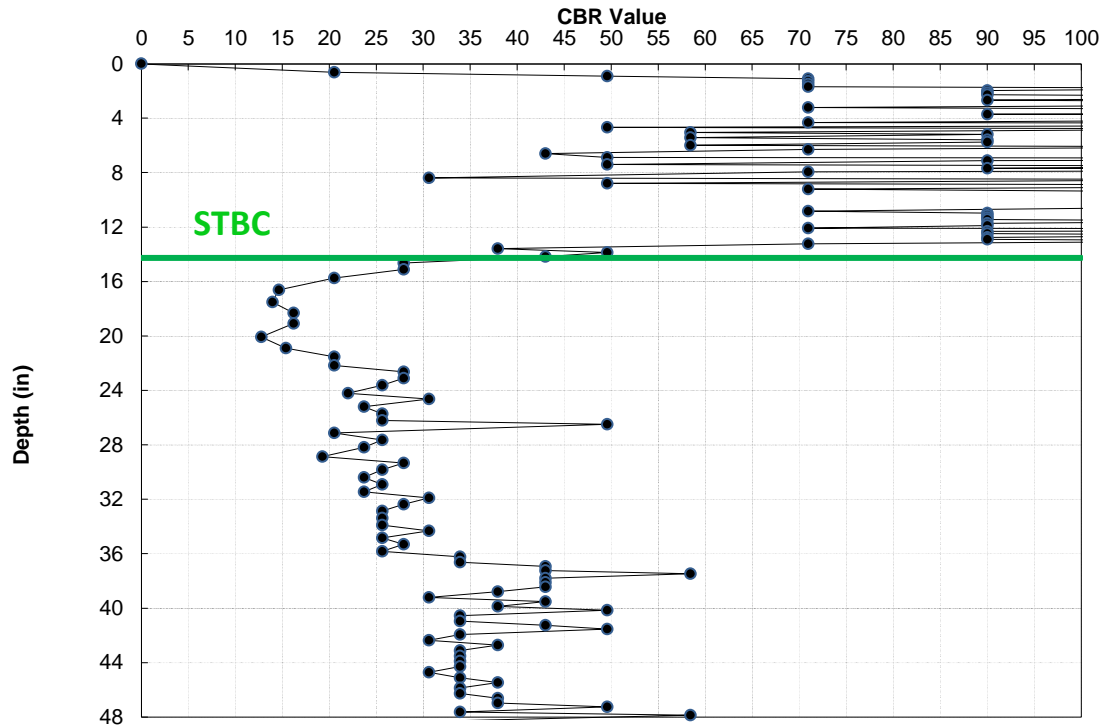
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
------	--------------------------

C-35 -L- 35+35 WB ISS  
2.3 FT LT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 14.2
# of Values	83
Avg CBR	98.8
Wghtd Avg.	82.6
Max CBR	100+
Min CBR	20.5

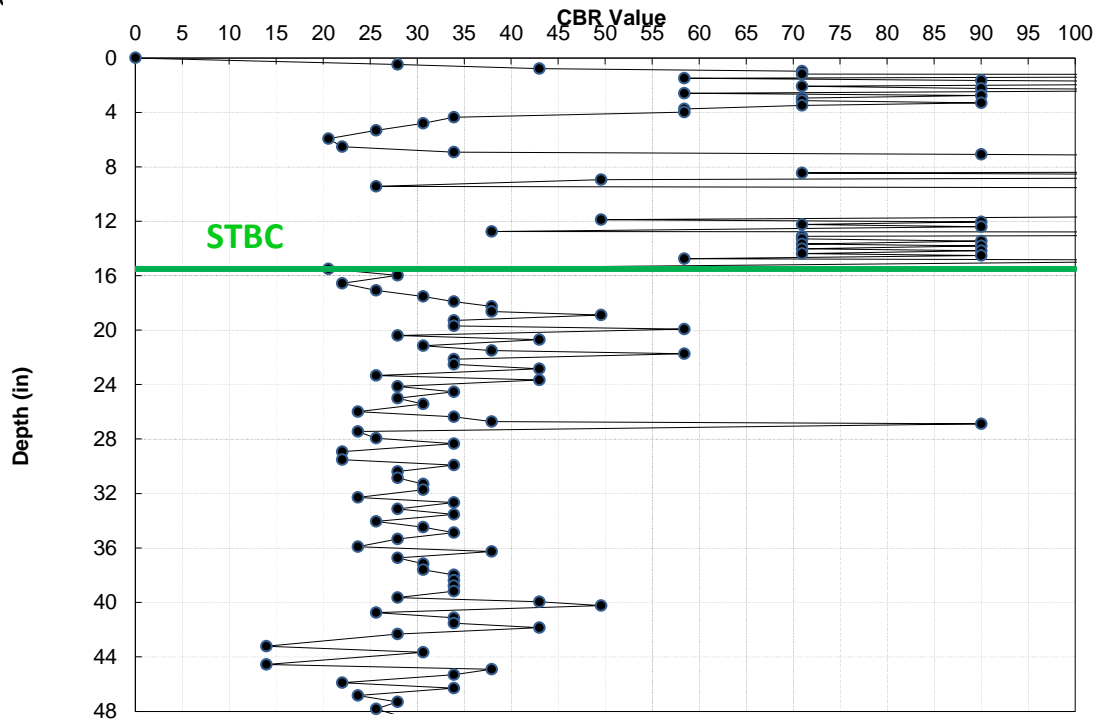
Interval	
14.2	to 55.3
# of Values	100
Avg CBR	39.5
Wghtd Avg.	32.3
Max CBR	100+
Min CBR	12.8



C-36 -L- 56+85 WB OS<sup>c</sup>  
1.0 FT RT FW  
Datum = STBC  
RAW  
Cut  
8/4/2021

Interval	
0.0	to 15.5
# of Values	85
Avg CBR	100+
Wghtd Avg.	76.9
Max CBR	100+
Min CBR	20.5

Interval	
15.5	to 56.1
# of Values	92
Avg CBR	32.2
Wghtd Avg.	30.0
Max CBR	90.0
Min CBR	13.9



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

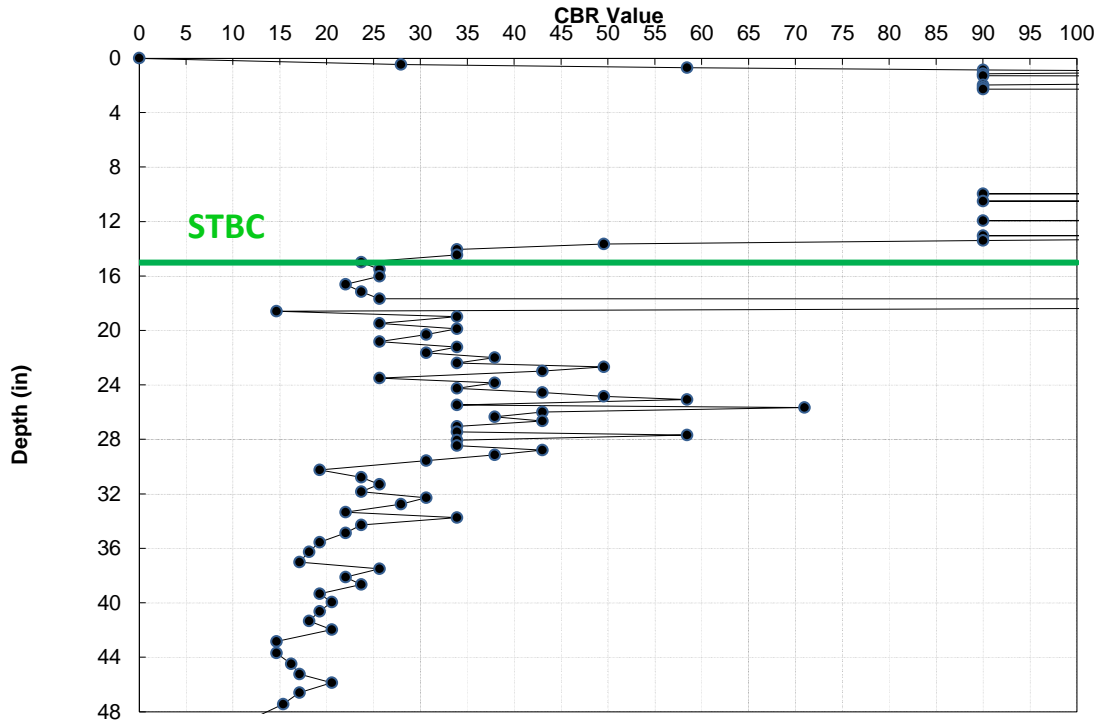
FILE	B-3186_B-5898 DCP Graphs
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C-37 -L- 56+85 WB OSL

2.3 FT LT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 15.0
# of Values	172
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	23.7

Interval	
15.0	to 55.9
# of Values	72
Avg CBR	32.7
Wghtd Avg.	22.9
Max CBR	100+
Min CBR	8.4

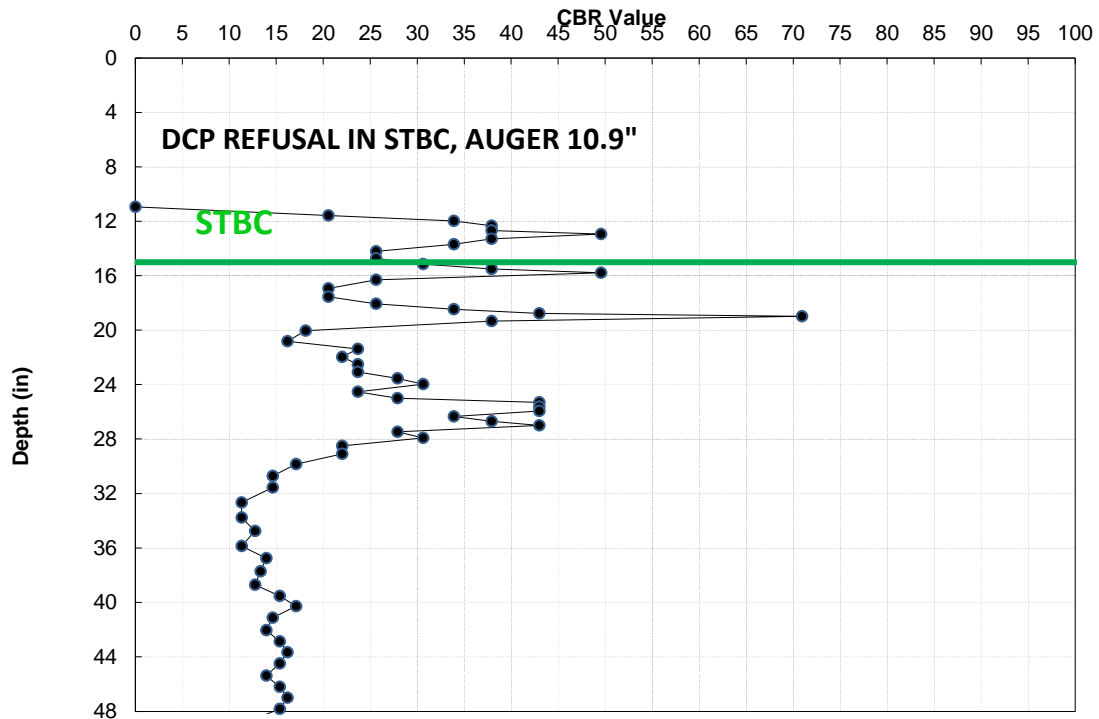


C-38 -L- 56+85 WB ISL

2.0 FT RT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
10.9	to 15.2
# of Values	10
Avg CBR	33.3
Wghtd Avg.	31.5
Max CBR	49.6
Min CBR	20.5

Interval	
15.2	to 54.0
# of Values	58
Avg CBR	23.4
Wghtd Avg.	19.2
Max CBR	70.9
Min CBR	11.3



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

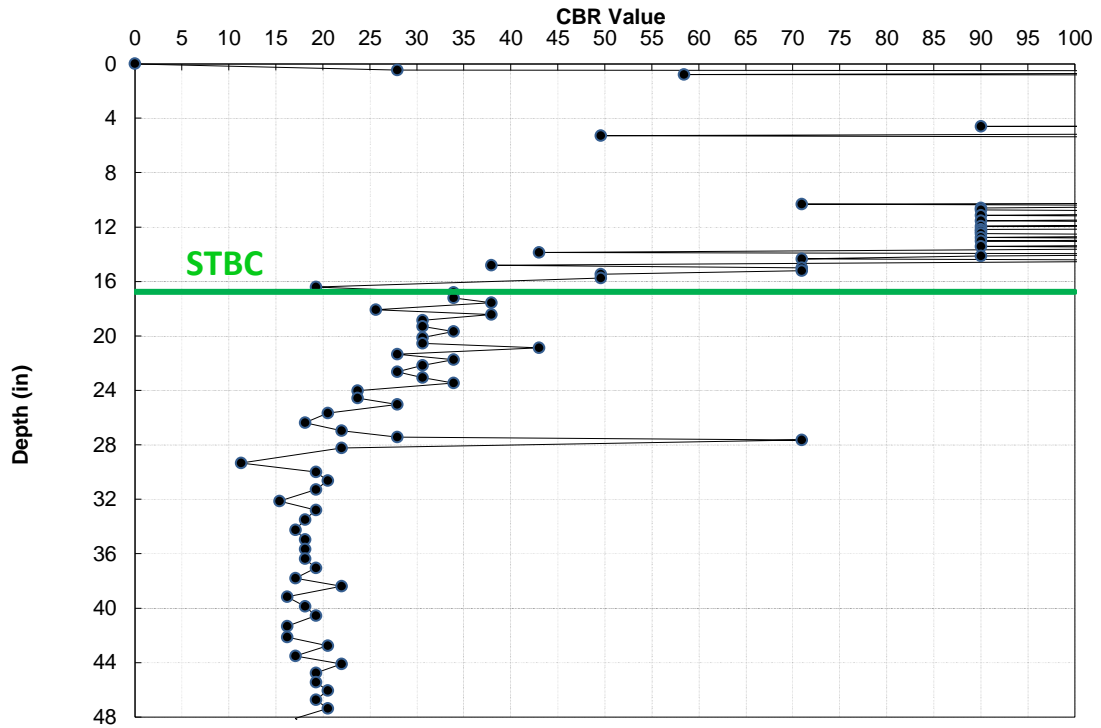
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-39 -L- 65+56 WB OSS  
2.0 FT RT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 16.8
# of Values	148
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	19.2

Interval	
16.8	to 59.9
# of Values	69
Avg CBR	22.8
Wghtd Avg.	20.7
Max CBR	70.9
Min CBR	9.5

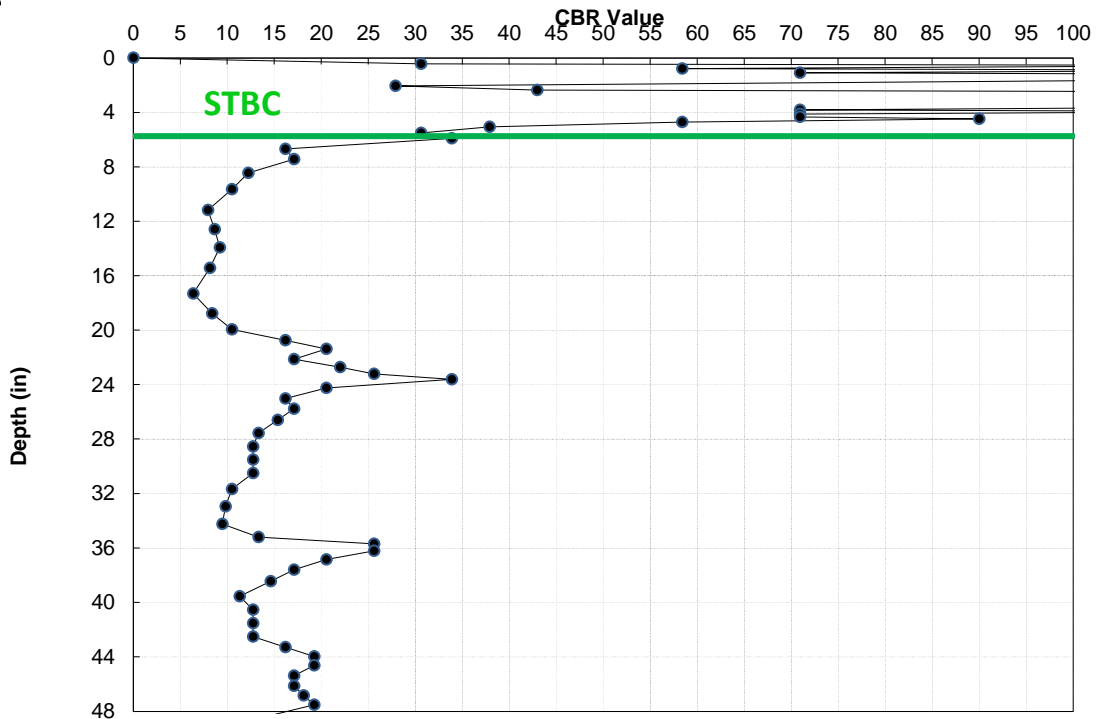


13

C-41 -L- 70+40 WB OSS  
4.0 FT RT FW  
Datum = STBC  
RAW  
Fill  
08/04/21

Interval	
0.0	to 5.9
# of Values	30
Avg CBR	89.7
Wghtd Avg.	70.9
Max CBR	100+
Min CBR	27.9

Interval	
5.9	to 54.7
# of Values	54
Avg CBR	15.5
Wghtd Avg.	14.0
Max CBR	33.9
Min CBR	6.4



14



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

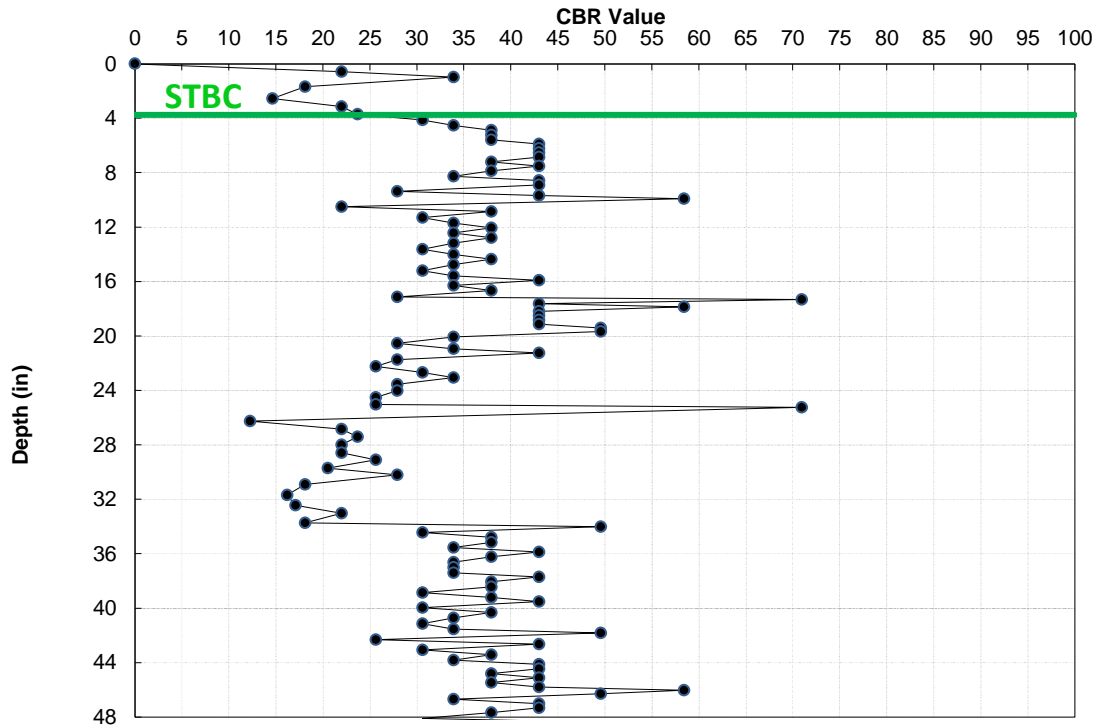
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-42 -L- 75+03 WB OSS  
5.0 FT RT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 3.7
# of Values	6
Avg CBR	22.4
Wghtd Avg.	21.0
Max CBR	33.9
Min CBR	14.6

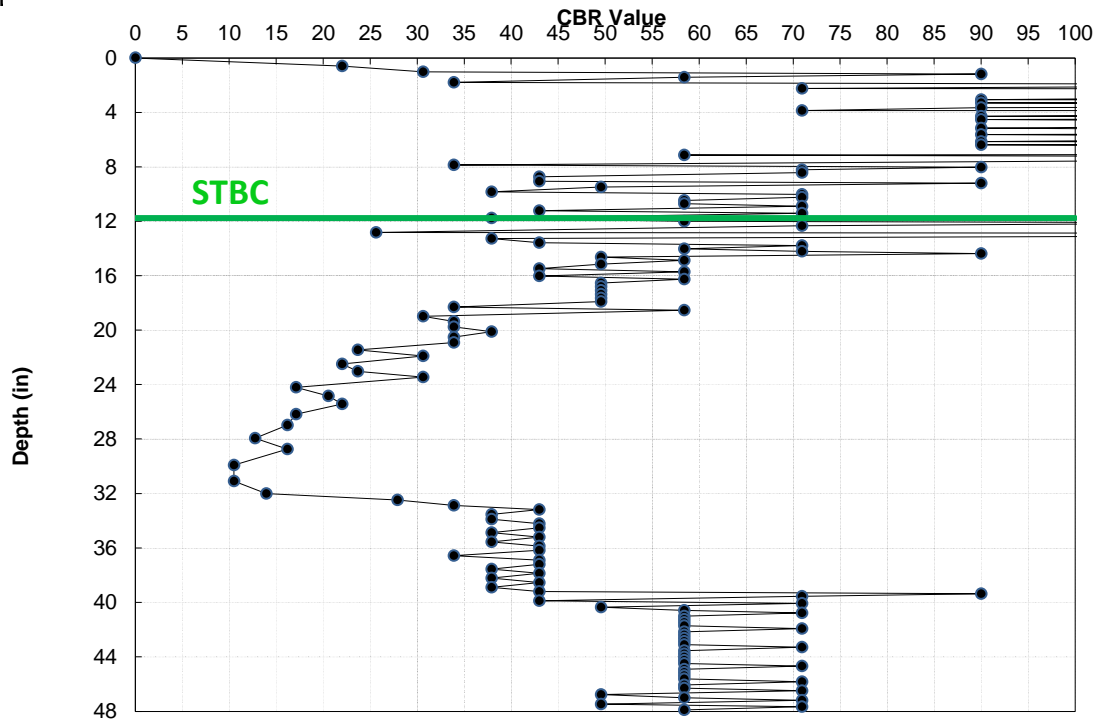
Interval	
3.7	to 53.1
# of Values	133
Avg CBR	43.5
Wghtd Avg.	36.0
Max CBR	100+
Min CBR	12.2



C-43 -L- 75+03 WB OSI  
8.0 FT LT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 11.8
# of Values	68
Avg CBR	100+
Wghtd Avg.	81.4
Max CBR	100+
Min CBR	22.0

Interval	
11.8	to 53.0
# of Values	128
Avg CBR	51.8
Wghtd Avg.	42.0
Max CBR	100+
Min CBR	10.5



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

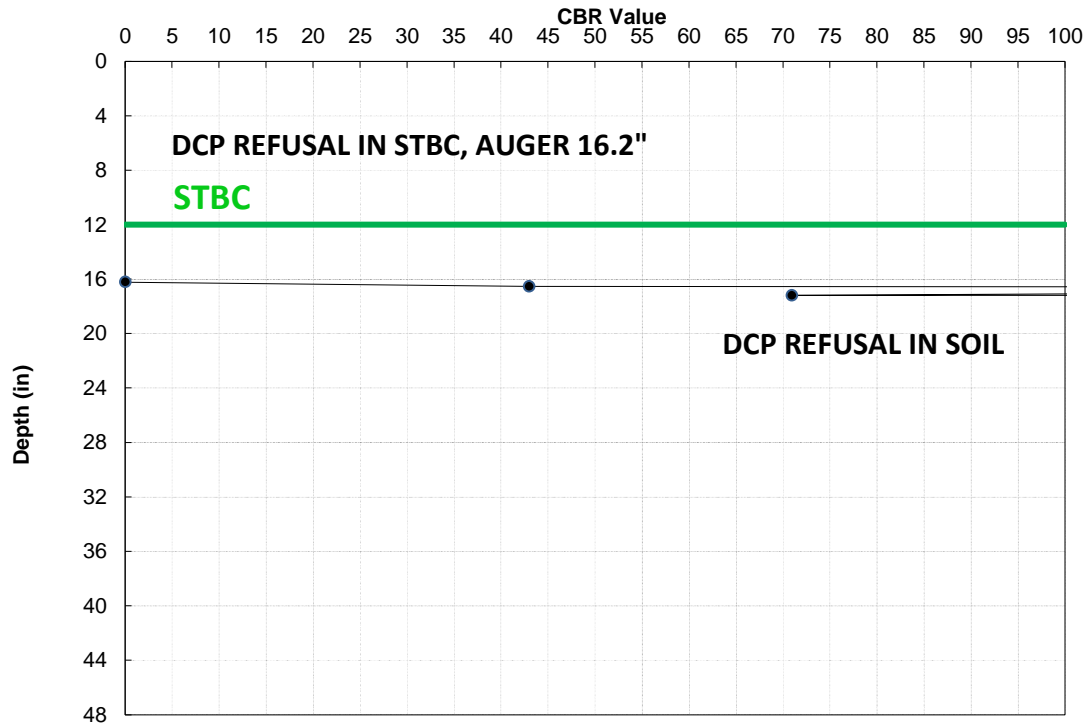
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-44 -L- 75+03 WB ISL  
5.5 FT RT FY  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 0.0
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

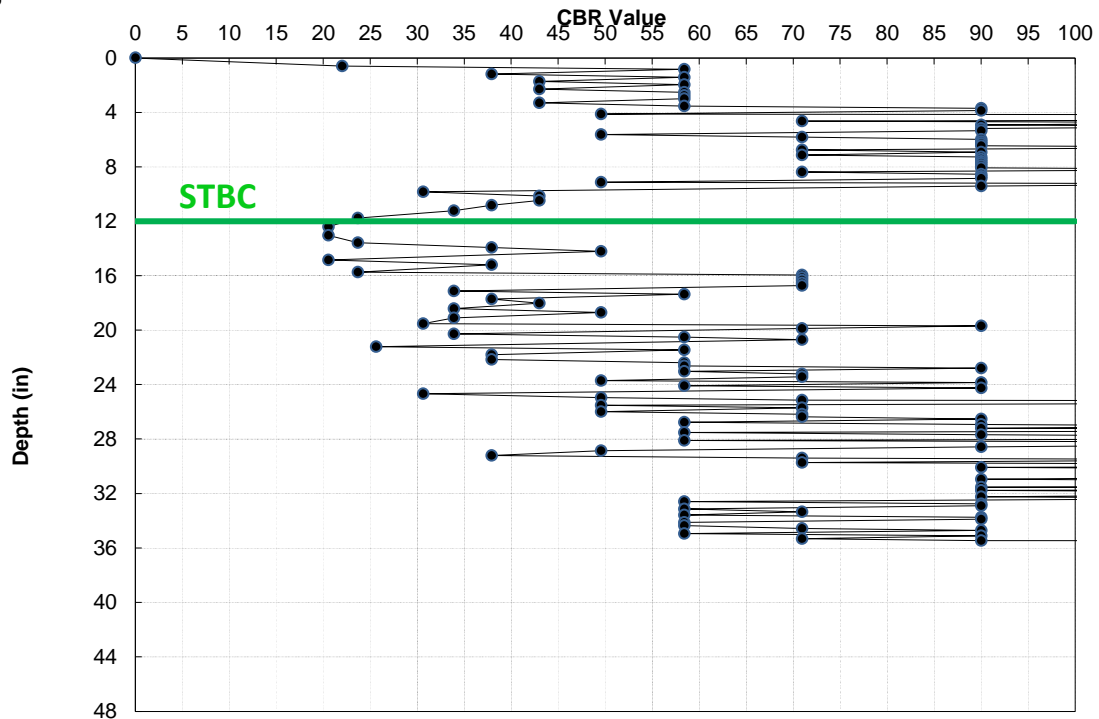
Interval	
16.2	to 18.7
# of Values	71
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	43.0



C-45 -L- 75+03 WB ISS  
2.5 FT LT FW  
Datum = STBC  
RAW  
Cut  
08/04/21

Interval	
0.0	to 11.8
# of Values	55
Avg CBR	81.4
Wghtd Avg.	64.9
Max CBR	100+
Min CBR	22.0

Interval	
11.8	to 36.5
# of Values	167
Avg CBR	100+
Wghtd Avg.	96.3
Max CBR	100+
Min CBR	20.5



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

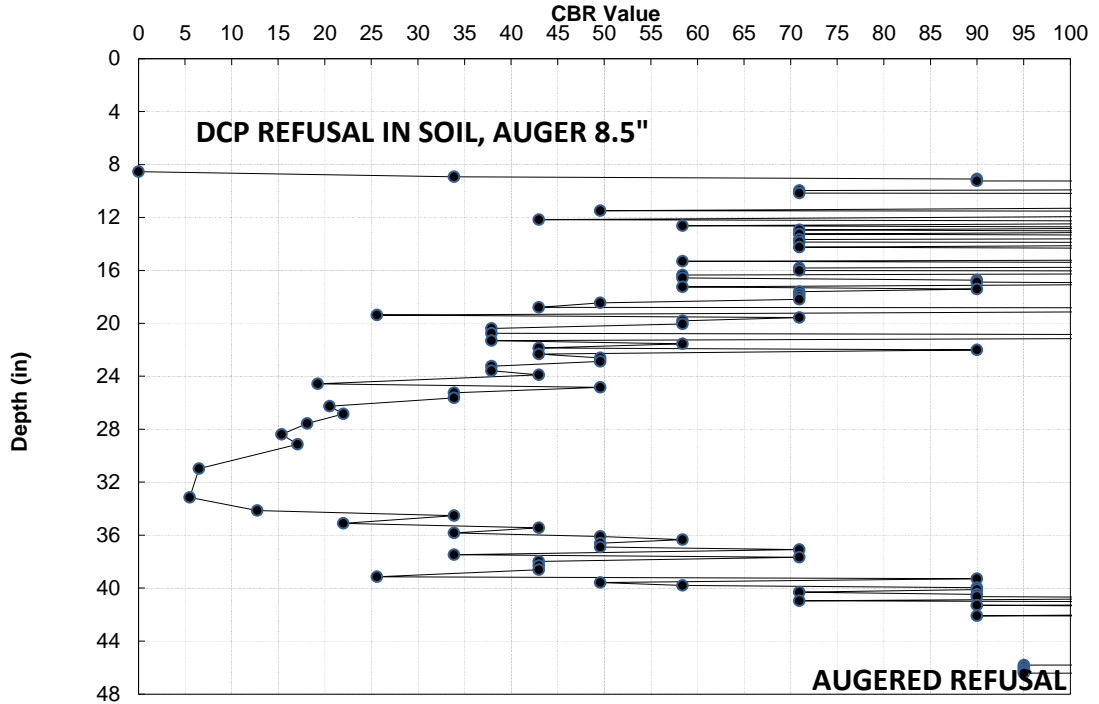
GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-47 -Y1LT- 13+66 US 19 WB RTL  
6.0 FT RT C&G  
Datum = SG  
RAW  
Cut  
08/06/21

Interval	
0.0	to 0.0
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

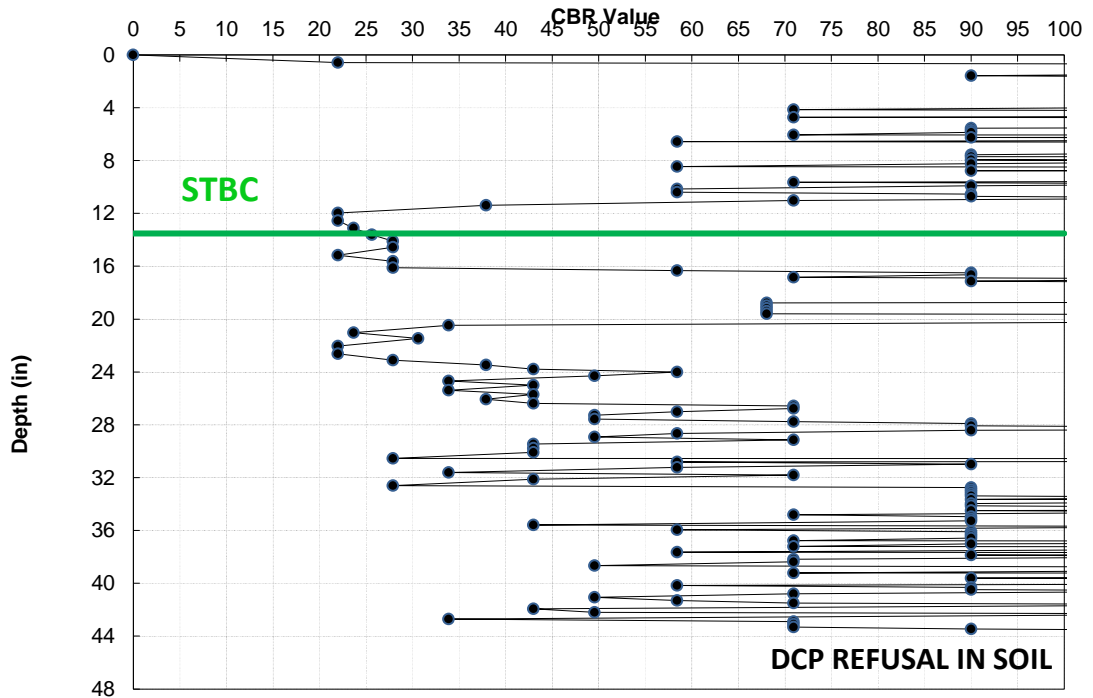
Interval	
8.5	to 52.0
# of Values	245
Avg CBR	100+
Wghtd Avg.	79.2
Max CBR	100+
Min CBR	5.5



C-48 -Y1LT- 13+66 US 19 WB OSL  
15.5 FT LT C&G (RT)  
Datum = STBC  
RAW  
Cut  
08/06/21

Interval	
0.0	to 13.6
# of Values	101
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	22.0

Interval	
13.6	to 45.8
# of Values	204
Avg CBR	100+
Wghtd Avg.	89.9
Max CBR	100+
Min CBR	22.0





**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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C-49 -Y1LT- 13+67 US 19 WB ISL

2.8 FT RT C&G (FACE)

Datum = STBC

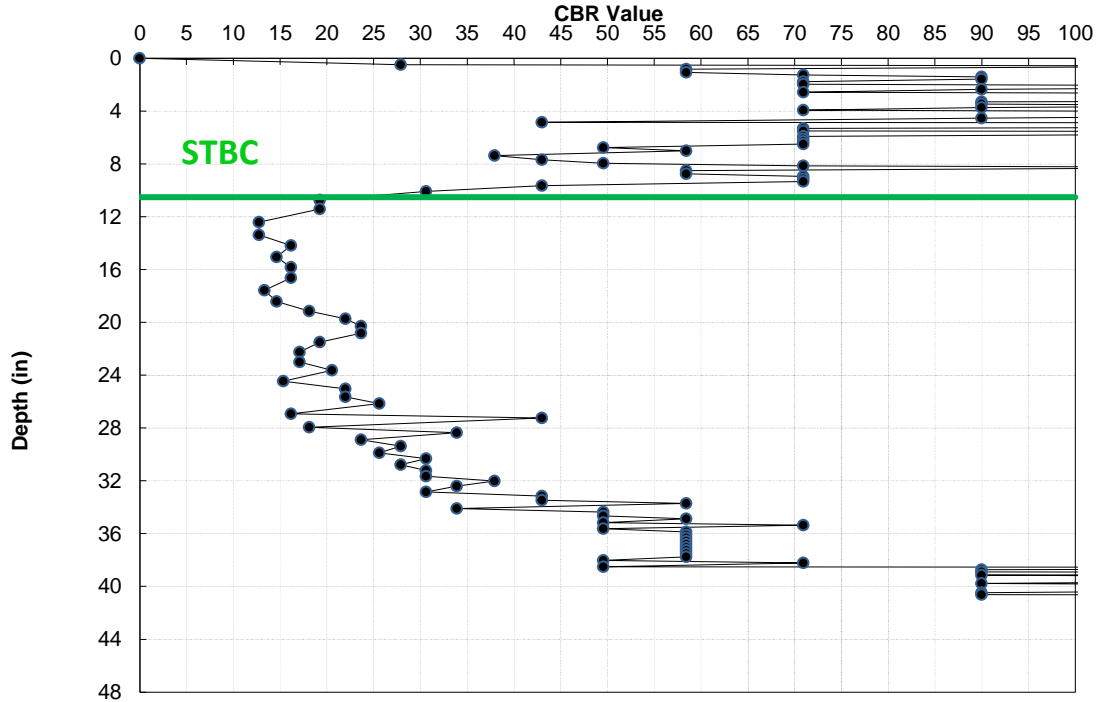
RAW

Fill

08/06/21

Interval	
0.0	to 10.7
# of Values	56
Avg CBR	93.5
Wghtd Avg.	72.9
Max CBR	100+
Min CBR	19.2

Interval	
10.7	to 45.3
# of Values	135
Avg CBR	100+
Wghtd Avg.	53.6
Max CBR	100+
Min CBR	12.8



C-50 -Y1RT- 13+67 US 19 EB ISL

1.0 FT RT FY

Datum = SG

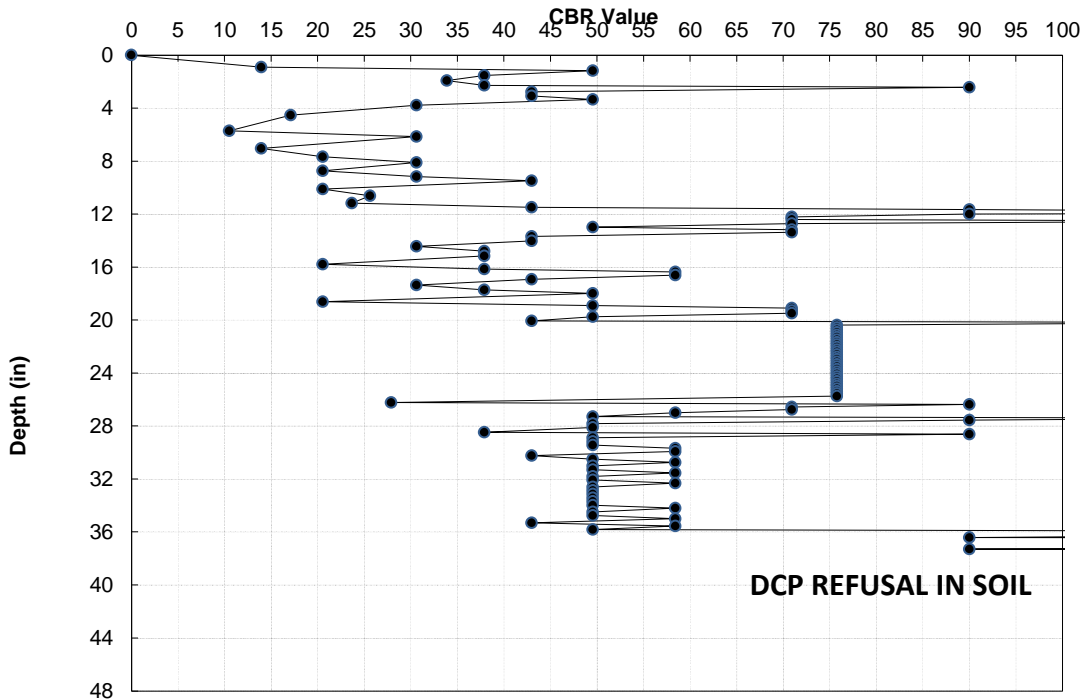
RAW

Fill

08/06/21

Interval	
0.0	to 0.0
# of Values	0
Avg CBR	#DIV/0!
Wghtd Avg.	#DIV/0!
Max CBR	0.0
Min CBR	0.0

Interval	
0.0	to 42.1
# of Values	245
Avg CBR	100+
Wghtd Avg.	81.9
Max CBR	100+
Min CBR	10.5



**CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT**

PROJECT NO.	38332.1.FS1
PROJECT ID	B-3186_B-5898
ROUTE	US 23-74
COUNTY	HAYWOOD

GEOLOGIST	J. B. BARFIELD
GEOTECHS	CG2

FILE	B-3186_B-5898 DCP Graphs
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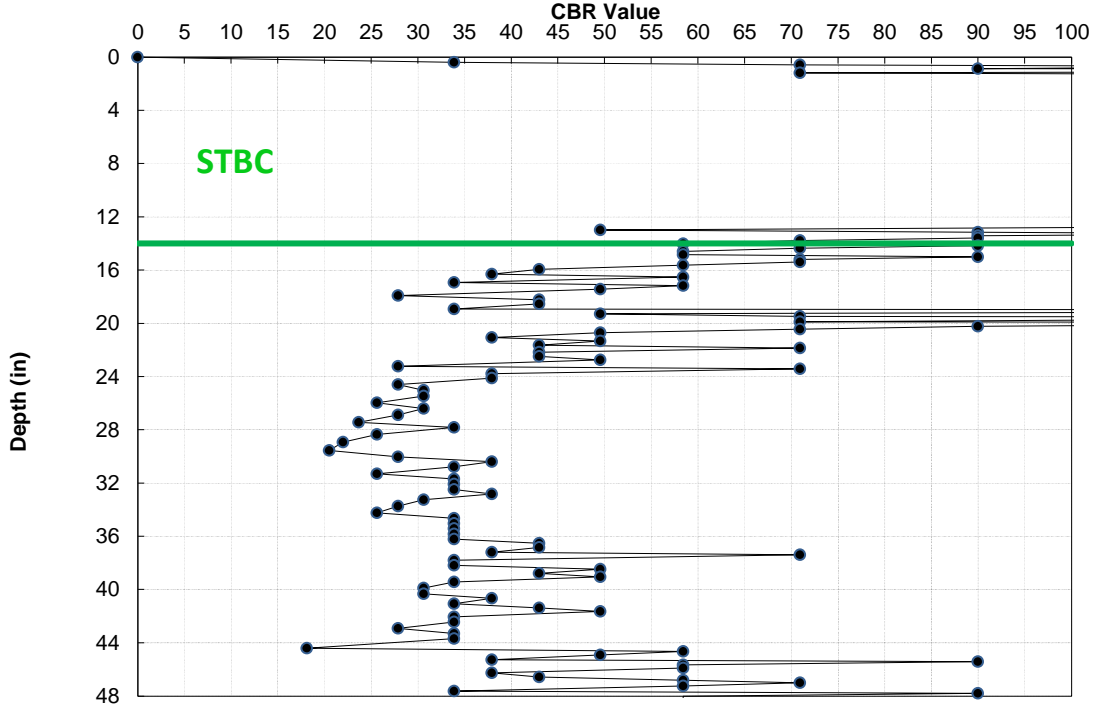
C-51 -Y1RT- 14+30 US 19 EB OSL

**5**

1.5 FT LT FW  
Datum = STBC  
RAW  
Fill  
08/06/21

Interval	
0.0	to 14.0
# of Values	293
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	33.9

Interval	
14.0	to 55.2
# of Values	142
Avg CBR	62.5
Wghtd Avg.	46.9
Max CBR	100+
Min CBR	18.1



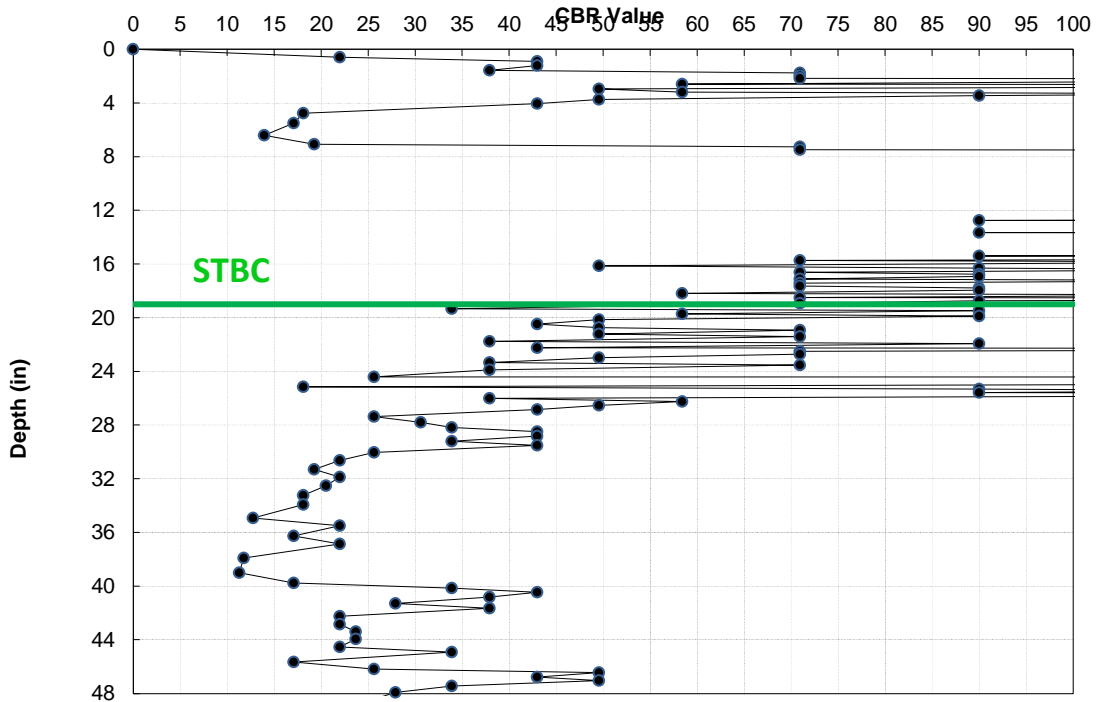
C-52 -Y1RT- 14+30 US 19 EB OSS

**6**

1.8 FT RT FW  
Datum = STBC  
RAW  
Fill  
08/06/21

Interval	
0.0	to 18.9
# of Values	128
Avg CBR	100+
Wghtd Avg.	96.2
Max CBR	100+
Min CBR	13.9

Interval	
18.9	to 60.9
# of Values	100
Avg CBR	46.9
Wghtd Avg.	31.6
Max CBR	100+
Min CBR	11.3



PAVEMENT CORE EVALUATION  
38332.1.FS1 (B-3186, B-5898) Haywood County

LINE	STATION	ABC (in)	LAYER THICKNESS (in)	LAYER	LIFT(S)	REMARKS
-L-	15+32 EB OSS	-	4.50	S	3	lift 2 delaminated from lift 3 (mechanical break)
	Asphalt 5.25"		0.75	B	1	delaminated from upper lift
-L-	25+35 EB ISS	-	4.00	S	4	low severity oxidation in lift 1
	Asphalt 4"		0.50	B	1	
-L-	25+35 EB OSS	-	4.50	S	4	
	Asphalt 5"		0.50	B	1	aggregate missing, weathered, some pieces missing (possibly mechanical)
-L-	29+86 EB ISS	-	5.00	S	5	last 2 lifts, highly oxidized, delaminated, rubble, bottom up crack from lift 5 to lift 2
	Asphalt 5.50"					
-L-	29+86 EB ISL	-	7.00	S	5	
	Asphalt 9.75"		2.75	B	1	
-L-	35+32 EB ISS	-	4.50	S	2	top down crack through full core, roots through core, lifts delaminated
	Asphalt 5.25"					
-L-	35+34 EB OSS	-	4.50	S	4	full depth top down crack, initial signs of delamination between lifts 2 & 3, missing aggregate at base
	Asphalt 4.5"					
-L-	61+63 EB ISS	-	3.25	S	2	full depth crack
	Asphalt 3.25"		6.25	C	1	old concrete, moderate to high severity stripping, some large aggregate sections missing
-L-	61+63 EB ISL	-	5.00	S	4	6.5" top down crack, delaminated between lift 2 & 3, lift 3 & 4
	Asphalt 8.75"		3.50	B	1	
-L-	61+64 EB OSL	-	1.50	S	1	
	Asphalt 9"		3.00	I	1	
			1.50	S	1	low severity oxidation in lift 1
			3.00	I	1	
-L-	61+64 EB OSS	-	1.25	S	1	
	Asphalt 9.75"		3.00	I	1	
			5.00	B	1	
-L-	76+90 EB ISS	-	4.00	S	4	
	Asphalt 8.50"		4.50	B	1	mechanical break, missing aggregate at base
-L-	76+90 EB OSL	-	2.75	S	2	
	Asphalt 9.75"		7.00	B	2	low severity stripping with some small voids
-L-	76+90 EB OSS	-	5.00	S	4	
	Asphalt 8.25"		3.25	I	1	very low severity stripping with few small voids
-L-	80+20 EB ISS	-	4.50	S	4	low stripping between lifts 2 & 3
	Asphalt 5"		0.75	B	1	
-L-	80+20 EB OSS	-	3.75	S	3	low stripping in lift 1
	Asphalt 8.75"		3.00	I	2	
			1.75	S	1	some pieces of aggregate missing
-L-	15+13 WB OSS	-	4.25	S	4	
	Asphalt 5.25"		0.75	B	1	low severity stripping with some medium to small voids



PAVEMENT CORE EVALUATION  
38332.1.FS1 (B-3186, B-5898) Haywood County

LINE	STATION	ABC (in)	LAYER THICKNESS (in)	LAYER	LIFT(S)	REMARKS
-L-	20+09 WB OSS	-	1.50	S	1	
	Asphalt 5.50"		3.50	I	1	bottom 1.5" mechanical break, low to moderate severity stripping with some small voids
-L-	20+09 WB ISS	-	4.75	S	3	low severity stripping with some small voids between lift 2 & 3
	Asphalt 5.75"		0.75	B	1	low severity stripping with some small voids
-L-	25+50 WB OSS	-	4.00	S	3	full-depth crack, half of lift 3 delaminated from lift 2, bottom lift of core rubble
	Asphalt 4.75"					
-L-	25+50 WB ISS	-	6.00	S	4	full-depth crack with roots, on one side of crack lift 1 delaminated, lift 2 partially delaminated, lift 4 rubble & delaminated, 5 delaminated, highly stripped
	Asphalt 6.25"					
-L-	30+33 WB ISL	-	6.00	S	4	mechanical break between lift 2 & 3
	Asphalt 8.75"		2.50	B	1	low severity stripping with some small voids
-L-	30+33 WB ISS	-	6.00	S	4	low severity stripping with few small voids between lift 2 & 3
	Asphalt 7"		1.00	B	1	low severity stripping with some small voids
-L-	35+34 WB OSS	-	4.00	S	3	
	Asphalt 5"		1.00	B	1	
-L-	35+35 WB ISS	-	7.25	S	5	low severity stripping and oxidation on top and bottom border of lift 2
	Asphalt 8.75"		1.25	B	1	low to moderate severity stripping with many medium to small voids
-L-	56+85 WB OSS	-	6.75	S	3	2" top down crack through lift 1, lift 2 delaminated, lift 3 highly oxidized
	Asphalt 6.5"					
-L-	56+85 WB OSL	-	1.25	S	1	
	Asphalt 8"		2.50	I	1	
			1.00	S	1	
			3.00	I	1	
-L-	56+85 WB ISL	-	6.00	S	3	full-depth crack, half of lift 1 delaminated, lift 3 delaminated from lift 2, lift 3 oxidized
	Asphalt 8.5"		3.00	I	1	
-L-	65+56 WB OSS	-	1.50	S	1	
	Asphalt 5.25"		3.25	I	1	last 1" low to moderate severity stripping with some small voids
-L-	70+40 WB OSS	-	5.50	S	3-4	lifts indistinguishable
	Asphalt 14.25"		8.75	B	1	
-L-	75+03 WB OSS	-	1.50	S	1	
	Asphalt 10.25"		3.50	I	1	
			5.25	B	1	
-L-	75+03 OSL	-	5.75	S	4	moderate oxidation, low severity bleeding, full-depth crack, lift 1 delaminated, part of lift 2 rubble
	Asphalt 9.25"		3.50	B	1	moderate oxidation, low severity bleeding
-L-	75+03 WB ISL	-	5.50	S	3	
	Asphalt 9"		3.50	I	1	
-L-	75+03 WB ISS	-	2.25	S	2	full-depth crack
	Asphalt 9"		2.25	I	1	intermediate delaminated from base (possible mechanical break)
			4.00	B	1	some larger chunks of aggregate missing in bottom 1"

PAVEMENT CORE EVALUATION  
38332.1.FS1 (B-3186, B-5898) Haywood County

LINE	STATION	ABC (in)	LAYER THICKNESS (in)	LAYER	LIFT(S)	REMARKS
-Y1LT-	13+66 US19 WB RTL	-	3.50	S	3-4	lifts indistinguishable, low severity stripping with some small voids
	Asphalt 7.25"		3.50	B	1	low severity stripping, few small voids
-Y1LT-	13+66 US19 WB OSL	-	5.00	S	4	
	Asphalt 8.5"		3.50	I	1	
-Y1LT-	13+67 US19 WB ISL	-		S		
	Asphalt 11.5"					
-Y1RT-	13+67 US19 EB ISL	-	6.00	S	4	some intermediate mix wedging in lift 3, low severity stripping, few small voids
	Asphalt 12.5"		6.00	I/B	1	delaminated from surface
-Y1RT-	14+30 US19 EB OSL	-	4.50	S	4	low severity oxidation in lift 1, delaminated
	Asphalt 7"		2.75	I	1	
-Y1RT-	14+30 US19 EB OSS	-	3.00	S	2	
	Asphalt 4"		1.00	I	1	low to moderate severity stripping with some small voids