

REFERENCE: A-0009C

PROJECT: 32572

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009C	1	68

**ROADWAY  
SUBSURFACE INVESTIGATION**

COUNTY GRAHAM  
PROJECT DESCRIPTION WIDEN US 129, NC 143, AND NC 28 (CLIMBING/PASSING LANE) FROM ROBBINSVILLE TO STECOAH

**PAVEMENT AND SUBGRADE INVESTIGATION**

**CONTENTS**

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2, 2A	LEGEND (SOIL & ROCK), ABBREVIATIONS
3, 3A, 3B	ROADWAY TITLE SHEETS
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**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.

FIELD PERSONNEL

M. BREWER  
R. KRAL  
L. ARD

INVESTIGATED BY CG2  
DRAWN BY M. BREWER, P.E.  
CHECKED BY R. KRAL, P.E.  
SUBMITTED BY CG2  
DATE MAY 2022

Prepared in the Office of:



**CAROLINAS  
GEOTECHNICAL  
GROUP**  
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CHARLOTTE, NC 28227  
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DocuSigned by:  
D. Matthew Brewer 5/4/2022  
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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																													
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>										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.										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:										ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (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. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																													
<b>SOIL LEGEND AND AASHTO CLASSIFICATION</b>										<b>ANGULARITY OF GRAINS</b>										<b>WEATHERED ROCK (WR)</b>										<b>NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES &gt; 100 BLOWS PER FOOT IF TESTED.</b>																													
<b>MINERALOGICAL COMPOSITION</b>										<b>CRYSTALLINE ROCK (CR)</b>										<b>FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</b>										<b>NON-CRYSTALLINE ROCK (NCR)</b>										<b>FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.</b>																			
<b>COMPRESSION</b>										<b>COASTAL PLAIN SEDIMENTARY ROCK (CP)</b>										<b>COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</b>																																							
<b>PERCENTAGE OF MATERIAL</b>										<b>WEATHERING</b>										<b>FRESH</b>										<b>ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</b>																													
<b>GROUND WATER</b>										<b>VERY SLIGHT (IV SLI.)</b>										<b>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.</b>										<b>SLIGHT (SLI.)</b>										<b>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.</b>																			
<b>MISCELLANEOUS SYMBOLS</b>										<b>MODERATE (MOD.)</b>										<b>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.</b>										<b>MODERATELY SEVERE (MOD. SEV.)</b>										<b>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. IF TESTED, WOULD YIELD SPT REFUSAL</b>																			
<b>RECOMMENDATION SYMBOLS</b>										<b>SEVERE (SEV.)</b>										<b>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. IF TESTED, WOULD YIELD SPT N VALUES &gt; 100 BPF</b>										<b>VERY SEVERE (IV SEV.)</b>										<b>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. IF TESTED, WOULD YIELD SPT N VALUES &lt; 100 BPF</b>																			
<b>ABBREVIATIONS</b>										<b>COMPLETE</b>										<b>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.</b>										<b>ROCK HARDNESS</b>										<b>VERY HARD</b>										<b>CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</b>									
<b>SOIL MOISTURE - CORRELATION OF TERMS</b>										<b>HARD</b>										<b>CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</b>										<b>MODERATELY HARD</b>										<b>CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.</b>																			
<b>PLASTICITY</b>										<b>MEDIUM HARD</b>										<b>CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</b>										<b>SOFT</b>										<b>CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.</b>																			
<b>EQUIPMENT USED ON SUBJECT PROJECT</b>										<b>VERY SOFT</b>										<b>CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.</b>										<b>FRACTURE SPACING</b>										<b>BEDDING</b>																			
<b>DRILL UNITS:</b>										<b>EXTREMELY IN DURATED</b>										<b>SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</b>										<b>TERM</b>										<b>THICKNESS</b>																			
<b>ADVANCING TOOLS:</b>										<b>INDURATION</b>										<b>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</b>										<b>VERY WIDE</b>										<b>MORE THAN 10 FEET</b>																			
<b>HAMMER TYPE:</b>										<b>FRIABLE</b>										<b>RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</b>										<b>WIDE</b>										<b>3 TO 10 FEET</b>																			
<b>CORE SIZE:</b>										<b>MODERATELY IN DURATED</b>										<b>GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</b>										<b>MODERATELY CLOSE</b>										<b>1 TO 3 FEET</b>																			
<b>HAND TOOLS:</b>										<b>INDURATED</b>										<b>GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</b>										<b>CLOSE</b>										<b>0.16 TO 1 FOOT</b>																			
<b>POST HOLE DIGGER</b>										<b>EXTREMELY IN DURATED</b>										<b>SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</b>										<b>VERY CLOSE</b>										<b>LESS THAN 0.16 FEET</b>																			
<b>HAND AUGER</b>										<b>NOTES:</b>										<b>ROADWAY DESIGN FILES DATED 01/25/22 PROVIDED BY NCDOT</b>										<b>ELEVATION:</b>										<b>FEET</b>																			
<b>SOUNDING ROD</b>										<b>PAVEMENT CORE WITH DCP</b>										<b>PAVEMENT CORE ONLY</b>										<b>MOBILE B-29</b>										<b>BULK SAMPLE</b>																			
<b>VANE SHEAR TEST</b>										<b>INDURATION</b>										<b>INDURATION</b>										<b>INDURATION</b>										<b>INDURATION</b>																			
<b>PORTABLE HOIST</b>										<b>INDURATION</b>										<b>INDURATION</b>										<b>INDURATION</b>										<b>INDURATION</b>																			
<b>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.</b>										<b>INDURATION</b>										<b>INDURATION</b>										<b>INDURATION</b>										<b>INDURATION</b>																			

## Tip No. A-0009C | WBS No. 32572.1.FS10 | Graham County

### ABBREVIATIONS

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RT LN = Right Lane

LT LN = Left Lane

OSL = Outside Lane

ISL = Inside Lane

OSML = Outside Mid-Lane

ISML = Inside Mid-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

S- = Soil Grab Sample

Ref- = Soil Reference Sample

SS- = Split Spoon Sample

RE = Roadway Embankment

F. = Fine

Cse. = Coarse

ABC = Aggregate Base Course

STBC = Soil Type Base Course

CSS = Cement Stabilized Soil

SG = Subgrade

Sa. = Sand/Sandy

Si. = Silt/Silty

Cl. = Clay/Clayey

WR = Weathered Rock

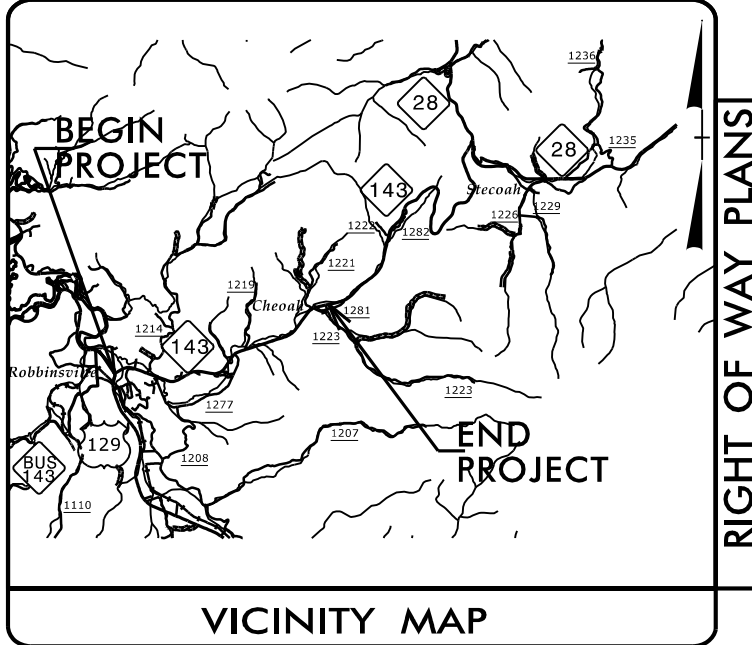
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009CA	3	68
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32572.1.13	APD-0074(178)	PE	
32572.2.13	APD-0074(178)	ROW,UTIL.	
32572.3.13	APD-0074(178)	CONST.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

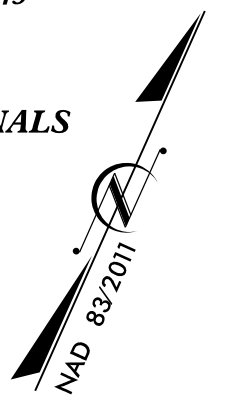
**GRAHAM COUNTY**

**LOCATION:** UPGRADE US 129 FROM SOUTH OF SR 1275 (FIVE POINTS ROAD) TO NC 143 AND UPGRADE NC 143 FROM US 129 TO SR 1223 (BEECH CREEK ROAD)

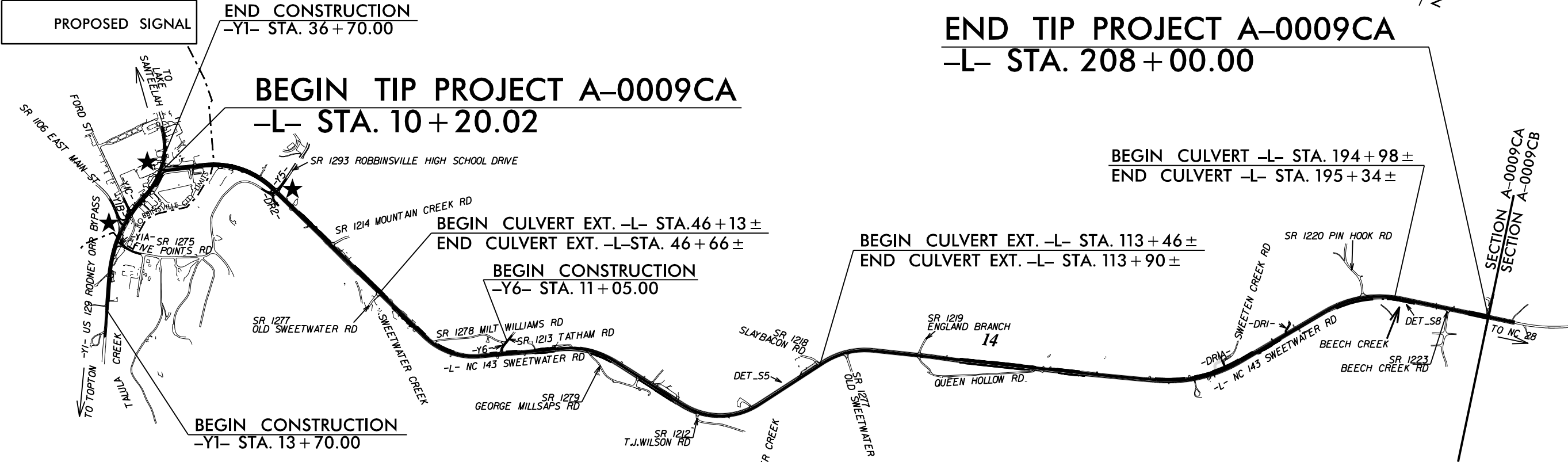
**TYPE OF WORK:** GRADING, PAVING, DRAINAGE, CULVERTS, RETAINING WALLS, AND SIGNALS



RIGHT OF WAY PLANS



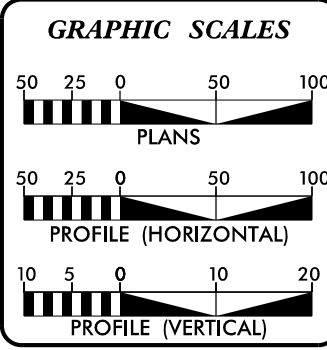
**TIP PROJECT: A-0009CA**



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II. A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF TOWN OF ROBBINSVILLE.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**CONTRACT:**



**DESIGN DATA**

ADT 2019 =	6300
ADT 2045 =	8800
K =	11 %
D =	57.5 %
T =	7 % *

50MPH - BEGIN PROJECT TO FIVE POINTS RD  
60MPH - FIVE POINTS RD TO END OF PROJECT  
\* TTST = 2% DUAL = 5%  
FUNC CLASS = RURAL ARTERIAL REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT A-0009CA =	3.746 MILES
LENGTH STRUCTURE TIP PROJECT A-0009CA =	0.027 MILES
TOTAL LENGTH TIP PROJECT A-0009CA =	3.746 MILES

NCDOT CONTACT: WANDA H. AUSTIN, PE

PLANS PREPARED BY: <b>TGS ENGINEERS</b> 201 W. MARION ST SHELBY, NC 28150 PH 1704-476-0003 CORP. LICENSE NO. C-0275	PLANS PREPARED FOR: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 14 252 Webster Rd Sylva, NC 28779
RIGHT OF WAY DATE: JULY 16, 2021	JIMMY L. TERRY, PE PROJECT ENGINEER
LETTING DATE: AUGUST 16, 2022	AUSTIN TURNER, PE PROJECT DESIGN ENGINEER
2018 STANDARD SPECIFICATIONS	

**HYDRAULICS ENGINEER**

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

**ROADWAY DESIGN ENGINEER**

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



03-MAY-2022 15:47 C:\Users\jmbrewer\OneDrive - Carolinas Geotechnical Group, PLLC\Projects\0068 - A-0009C - Future US 74\_TGS\CADD\_GEO\TECH\PlanProf\A-0009C\_GEO\_PDL.Rdy.-tsh.dgn \$\$\$\$SERVNAME\$\$\$

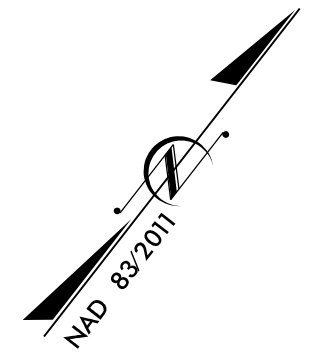
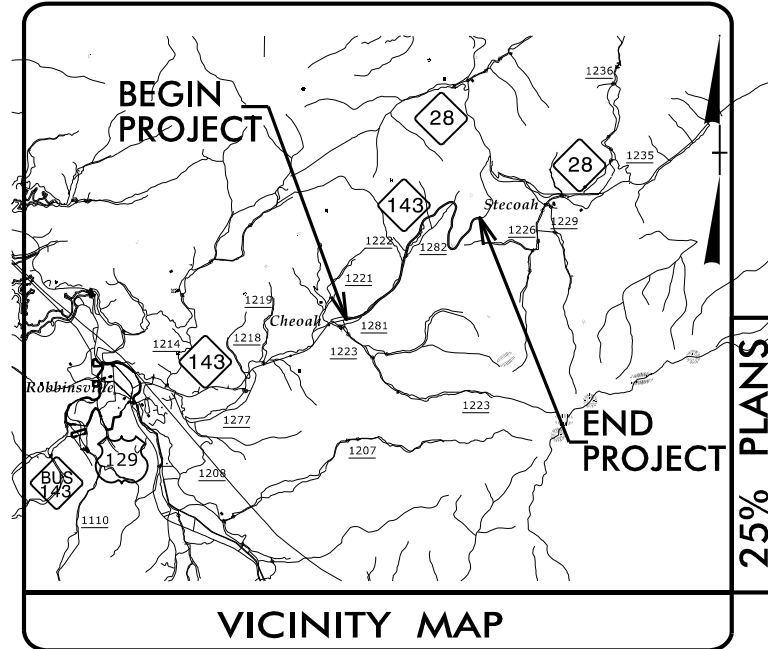
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009CB	3A	68
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32572.1.FS10	APD-0074(178)	PE	
32572.2.13	APD-0074(178)	ROW,UTIL.	
32572.3.13	APD-0074(178)	CONST.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GRAHAM COUNTY**

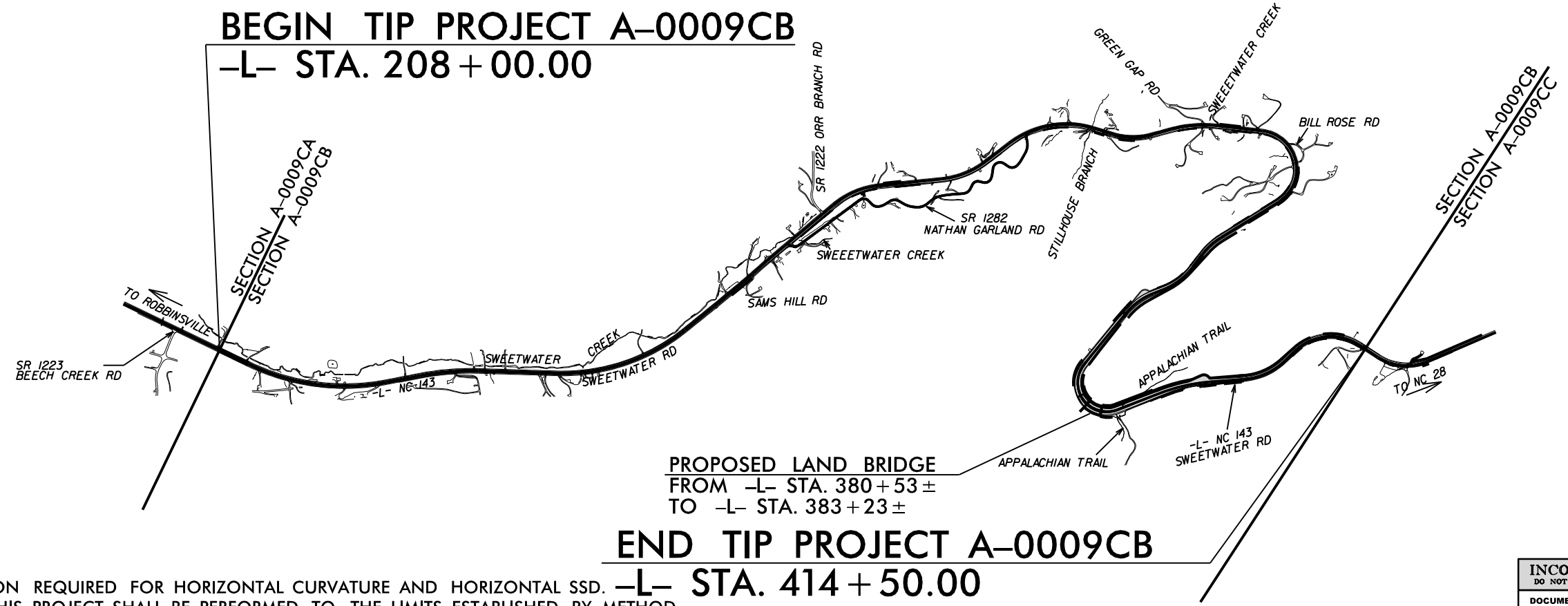
LOCATION: UPGRADE NC 143 FROM SR 1223 (BEECH CREEK RD) TO 0.5 MILES NORTH OF APPALACHIAN TRAIL

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERTS, RETAINING WALLS, AND LAND BRIDGE



**TIP PROJECT: A-0009CB**

**BEGIN TIP PROJECT A-0009CB**  
-L- STA. 208 + 00.00

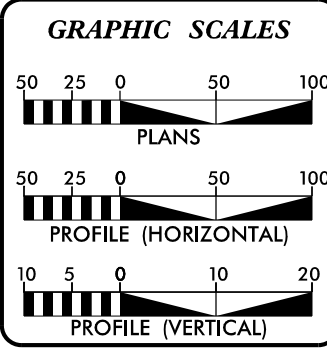


**END TIP PROJECT A-0009CB**  
-L- STA. 414 + 50.00

DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND HORIZONTAL SSD. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_ THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

**CONTRACT:**



**DESIGN DATA**

ADT 2019 =	6300
ADT 2045 =	8800
K =	11 %
D =	57.5 %
T =	7 % *
V =	60 MPH
* TTST =	2% DUAL = 5%
FUNC CLASS =	RURAL ARTERIAL
REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT A-0009CB =	3.911 MILES
TOTAL LENGTH TIP PROJECT A-0009CB =	3.911 MILES

**NC DOT CONTACT: WANDA H. AUSTIN, PE**

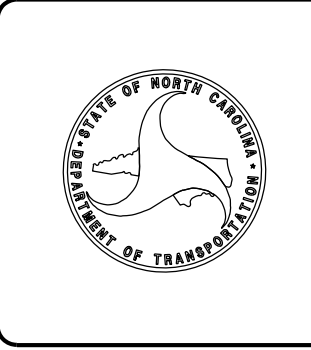
<b>PLANS PREPARED BY:</b>  <b>TGS ENGINEERS</b> 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO. C-0275	<b>PLANS PREPARED FOR:</b> <b>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION</b> DIVISION 14 252 Webster Rd Sylva, NC 28779
<b>RIGHT OF WAY DATE:</b> SEPTEMBER 2021	<b>JIMMY L. TERRY, PE</b> PROJECT ENGINEER
<b>LETTING DATE:</b> SEPTEMBER 20, 2022	<b>AUSTIN TURNER, PE</b> PROJECT DESIGN ENGINEER
2018 STANDARD SPECIFICATIONS	

**HYDRAULICS ENGINEER**

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

**ROADWAY DESIGN ENGINEER**

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



03-MAY-2022 15:47 C:\Users\mbrswee\OneDrive - Carolinas Geotechnical Group, PLLC\Projects\0068 - A-0009C - Future US 74\_TGS\CADD\_GEO\TECH\PlanProf\A-0009C\_GEO\_PDL.Rdy.-tsh.dgn \$\$\$SERVNAME\$\$\$

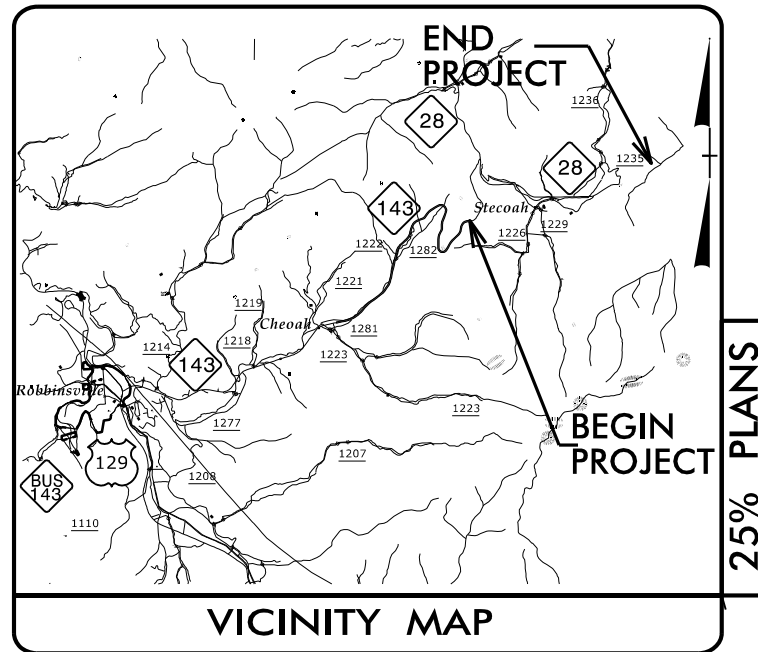
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009CC	3B	68
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32572.1.15	APD-0074(178)	PE	
32572.2.15	APD-0074(178)	ROW,UTIL.	
32572.3.15	APD-0074(178)	CONST.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GRAHAM COUNTY**

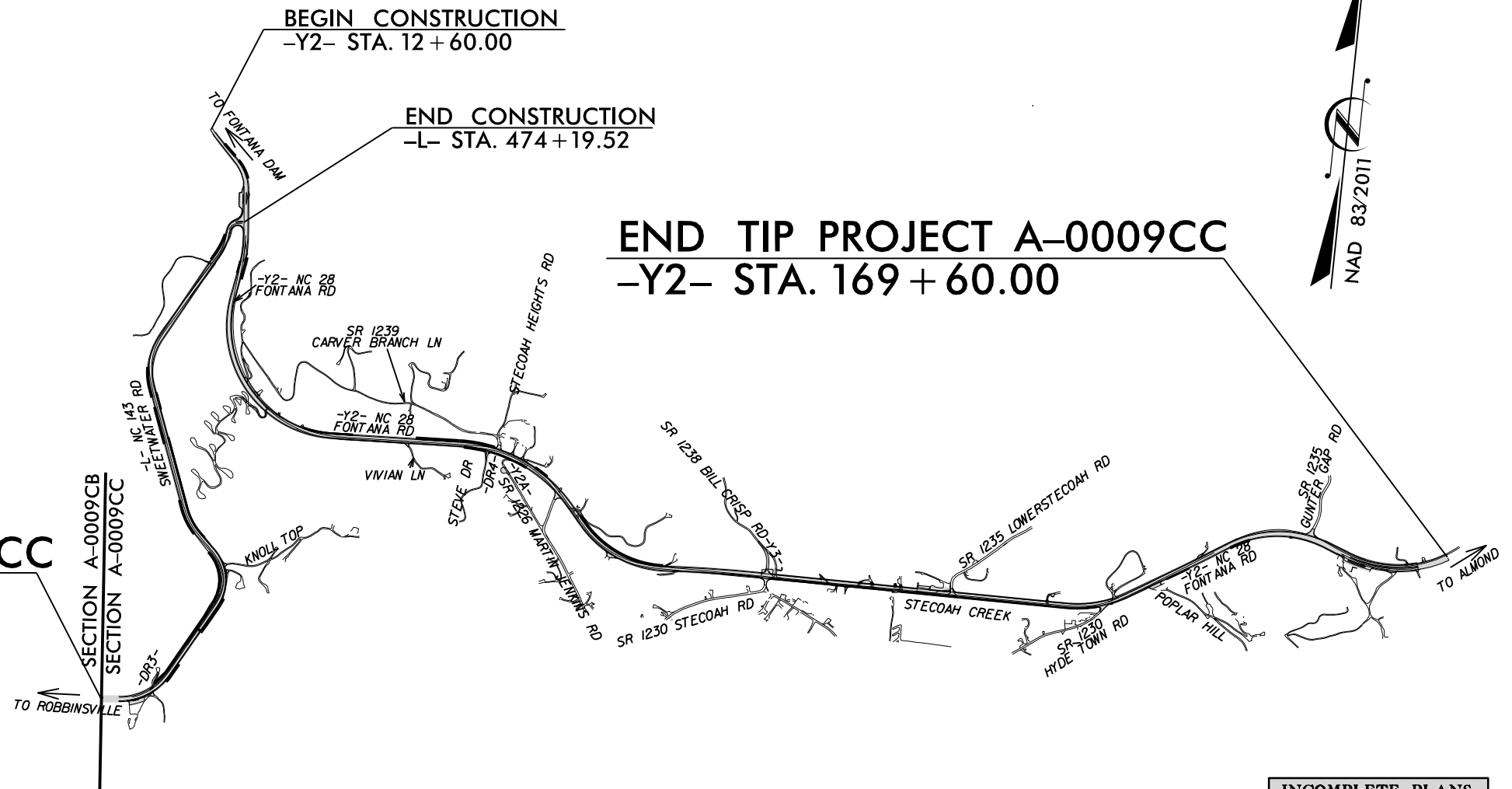
**LOCATION:** UPGRADE NC 143 FROM 0.5 MILES NORTH OF APPALACHIAN TRAIL TO NC 28  
UPGRADE NC 28 FROM 0.2 MILES WEST OF NC 143 TO 0.3 MILES EAST  
OF SR 1235 (GUNTERS GAP RD)

**TYPE OF WORK:** GRADING, PAVING, DRAINAGE, CULVERTS, CURB AND GUTTER, & RETAINING WALLS



3R GUIDELINES WERE USED FROM  
-L- 414+50 TO -L- STA 474+20  
AND FROM -Y2- 12+60± TO 23+00±  
TO MINIMIZE IMPACTS TO USFD PROPERTY  
AND NATURAL RESOURCES.

**BEGIN TIP PROJECT A-0009CC**  
-L- STA. 414 + 50.00

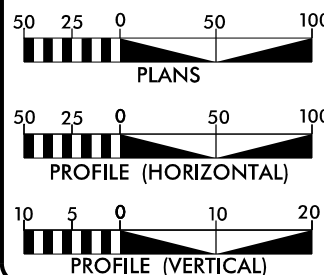


DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND HORIZONTAL SSD.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

**CONTRACT:**

**GRAPHIC SCALES**



**-L- DESIGN DATA**

ADT 2022 = 6590  
ADT 2045 = 8800  
K = 11 %  
D = 57.5 %  
T = 7 % \*  
V = 60 MPH  
\* TTST = 2% DUAL = 5%  
FUNC CLASS =  
RURAL ARTERIAL  
REGIONAL TIER

**-Y2- DESIGN DATA**

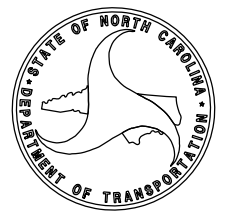
ADT 2022 = 3800  
ADT 2045 = 5200  
K = 11 %  
D = 67.5 %  
T = 7 % \*  
V = 50 MPH  
\* TTST = 2% DUAL = 5%  
FUNC CLASS =  
RURAL ARTERIAL  
REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP  
PROJECT A-0009CC = 1.131 MILES  
-L- = 2.973 MILES  
TOTAL LENGTH TIP  
PROJECT A-0009CC = 4.104 MILES

NCDOT CONTACT: WANDA H. AUSTIN, PE	
PLANS PREPARED BY: <b>TGS ENGINEERS</b> 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH 17041 476-0003 CORP. LICENSE NO. C-0275	PLANS PREPARED FOR: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 14 252 Webster Rd Sylva, NC 28779
RIGHT OF WAY DATE: SEPTEMBER 2021	JIMMY L. TERRY, PE PROJECT ENGINEER
LETTING DATE: OCTOBER 18, 2022	AUSTIN TURNER, PE PROJECT DESIGN ENGINEER
2018 STANDARD SPECIFICATIONS	

HYDRAULICS ENGINEER	
SIGNATURE: _____ P.E.	
ROADWAY DESIGN ENGINEER	
SIGNATURE: _____ P.E.	

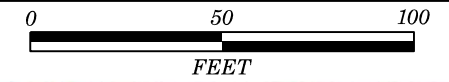


03-MAY-2022 15:48 C:\Users\jmbrewer\OneDrive - Carolinas Geotechnical Group, PLLC\Projects\0068 - A-0009CC - Future US 74\_TGS\CADD\_GEO\TECH\PlanProf\A-0009CC\_GEO\_PDL.Rdy.-tsh.dgn \$\$\$USERNAME\$\$\$

**TIP PROJECT: A-0009CC**

See Sheet 1A For Index of Sheets

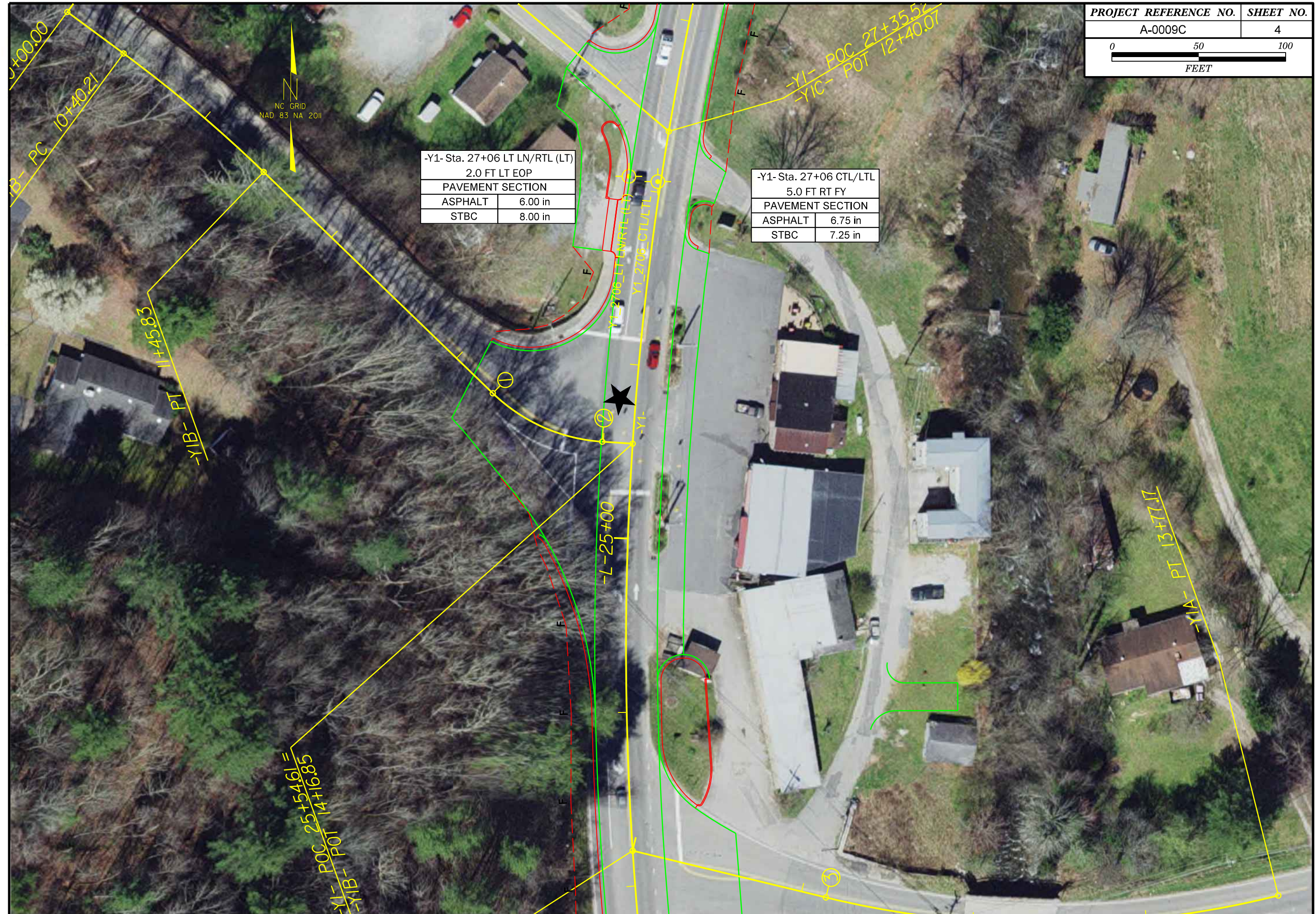
25% PLANS



NC GRID  
NAD 83 NA 2011

-Y1- Sta. 27+06 LT LN/RTL (LT)	
2.0 FT LT EOP	
PAVEMENT SECTION	
ASPHALT	6.00 in
STBC	8.00 in

-Y1- Sta. 27+06 CTL/LTL	
5.0 FT RT FY	
PAVEMENT SECTION	
ASPHALT	6.75 in
STBC	7.25 in



NC GRID  
NAD 83 NA 2011

-Y1- Sta. 35+96 LT LN	-Y1- Sta. 35+96 LTL (LT)
8.0 FT RT FW	4.5 FT RT FY
PAVEMENT SECTION	PAVEMENT SECTION
ASPHALT 4.75 in	ASPHALT 5.50 in
STBC 12.25 in	STBC 12.50 in

-L- Sta. 11+25 RTL (LT)	-L- Sta. 11+25 CTL
1.5 FT LT C&G EOP	5.7 FT RT FY
PAVEMENT SECTION	PAVEMENT SECTION
ASPHALT 3.50 in	ASPHALT 4.75 in
ABC 12.50 in	STBC 10.25 in

-L- Sta. 11+25 LT LN/LTL (LT)
3.0 FT RT FY
PAVEMENT SECTION
ASPHALT 4.75 in
ABC 10.25 in

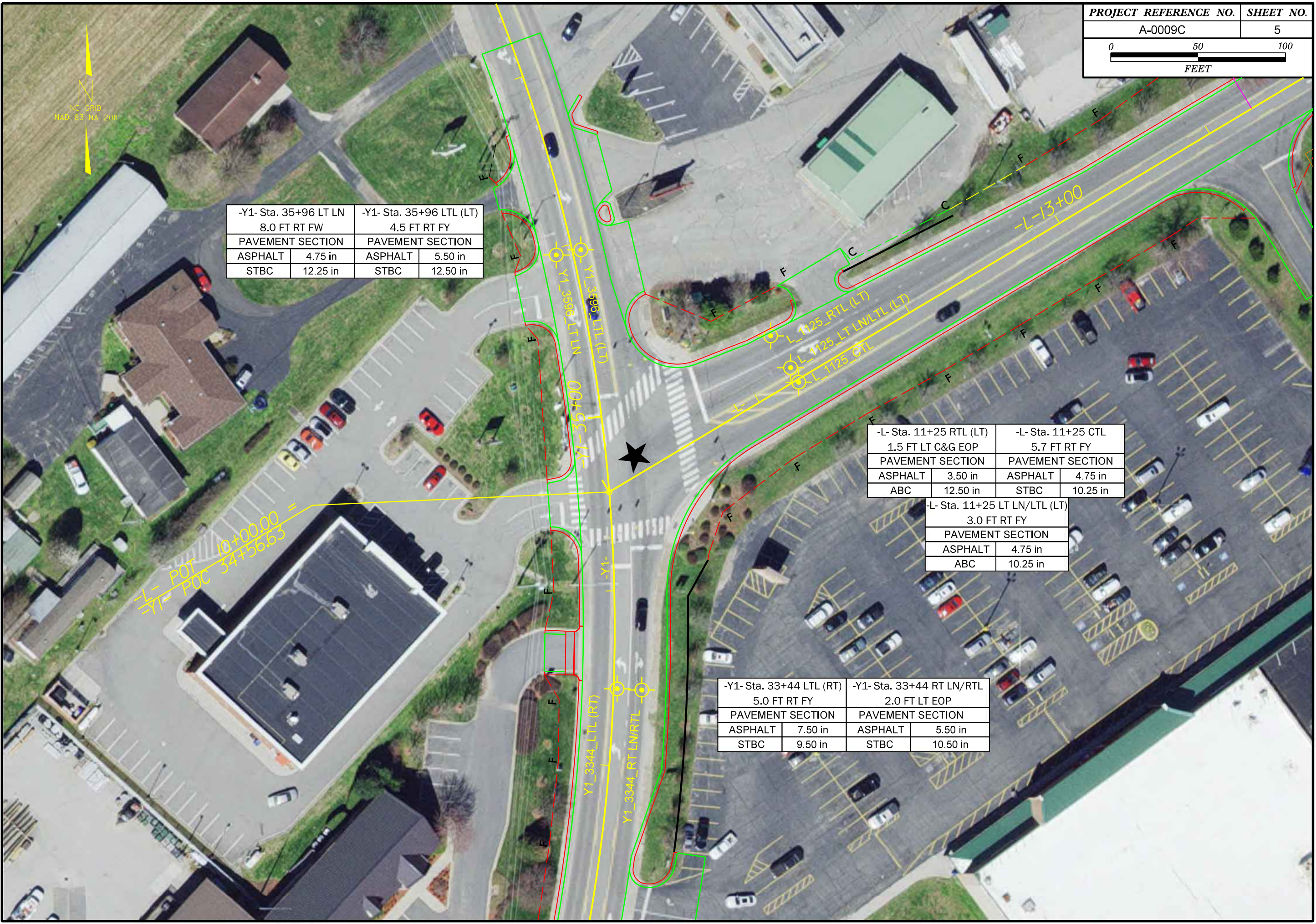
-Y1- Sta. 33+44 LTL (RT)	-Y1- Sta. 33+44 RT LN/RTL
5.0 FT RT FY	2.0 FT LT EOP
PAVEMENT SECTION	PAVEMENT SECTION
ASPHALT 7.50 in	ASPHALT 5.50 in
STBC 9.50 in	STBC 10.50 in

POT 10+00.00 =  
POC 34+56.63

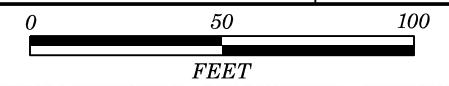
Y1\_3596\_LTL (LT)  
Y1\_3596\_LN (LT)

L\_1125\_RTL (LT)  
L\_1125\_LTL (LT)  
L\_1125\_CTL

Y1\_3344\_LTL (RT)  
Y1\_3344\_RT\_LN/RTL



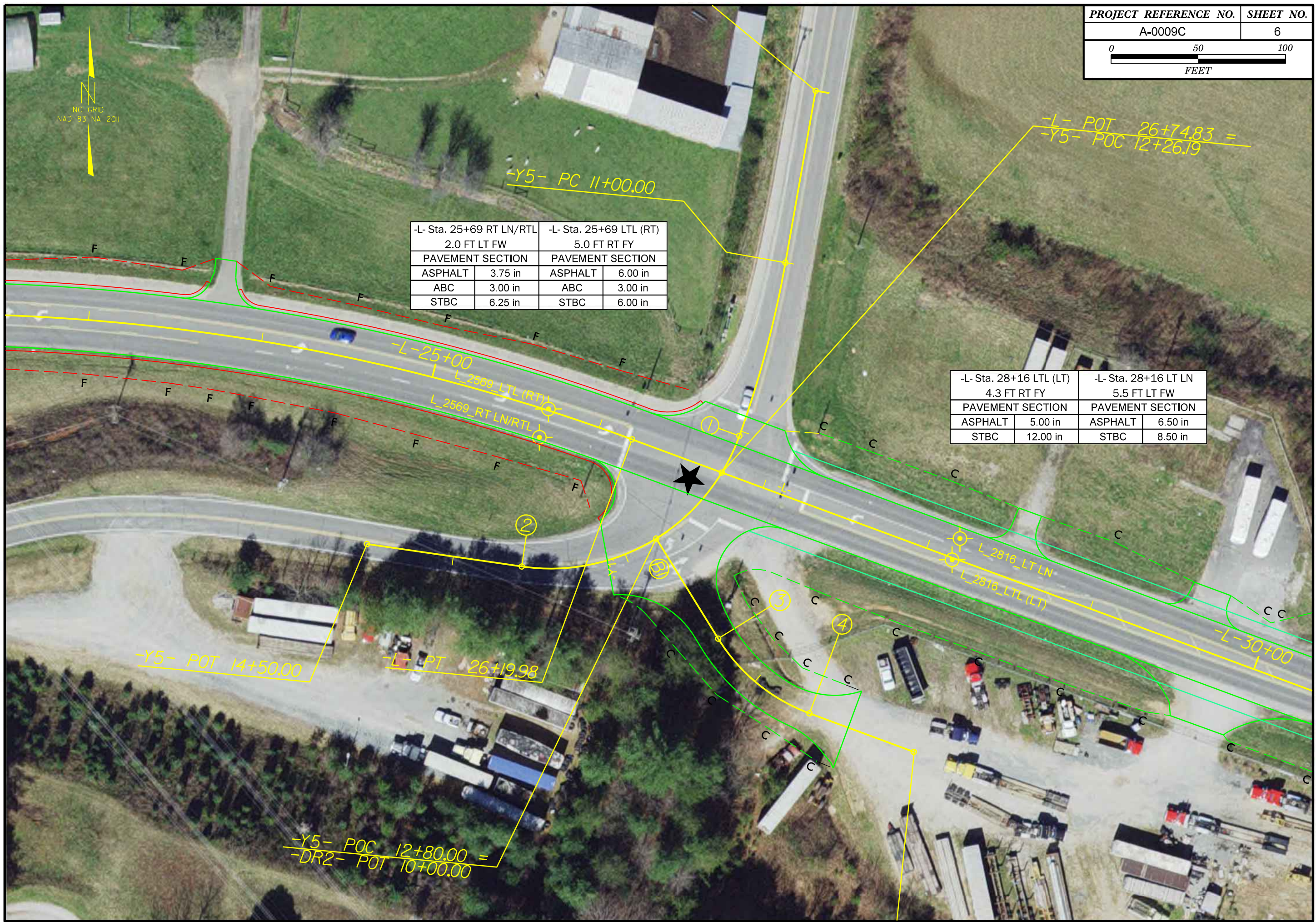




NC GRID  
NAD 83 NA 2011

-L- Sta. 25+69 RT LN/RTL		-L- Sta. 25+69 LTL (RT)	
2.0 FT LT FW		5.0 FT RT FY	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	3.75 in	ASPHALT	6.00 in
ABC	3.00 in	ABC	3.00 in
STBC	6.25 in	STBC	6.00 in

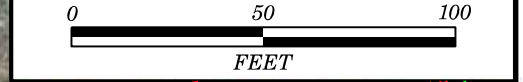
-L- Sta. 28+16 LTL (LT)		-L- Sta. 28+16 LT LN	
4.3 FT RT FY		5.5 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	5.00 in	ASPHALT	6.50 in
STBC	12.00 in	STBC	8.50 in



NC GRID  
NAD 83 NA 2011



-L- Sta. 45+24 RT LN/RTL		-L- Sta. 45+24 RT PS	
2.0 FT LT FW		0.2 FT RT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	8.00 in	ASPHALT	8.25 in
STBC	8.00 in	STBC	8.75 in



-L- PT 63+18.65

-L- Sta. 64+87 LT LN	
6.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.50 in
STBC	8.50 in

-L-65+00  
L\_6487\_LT LN

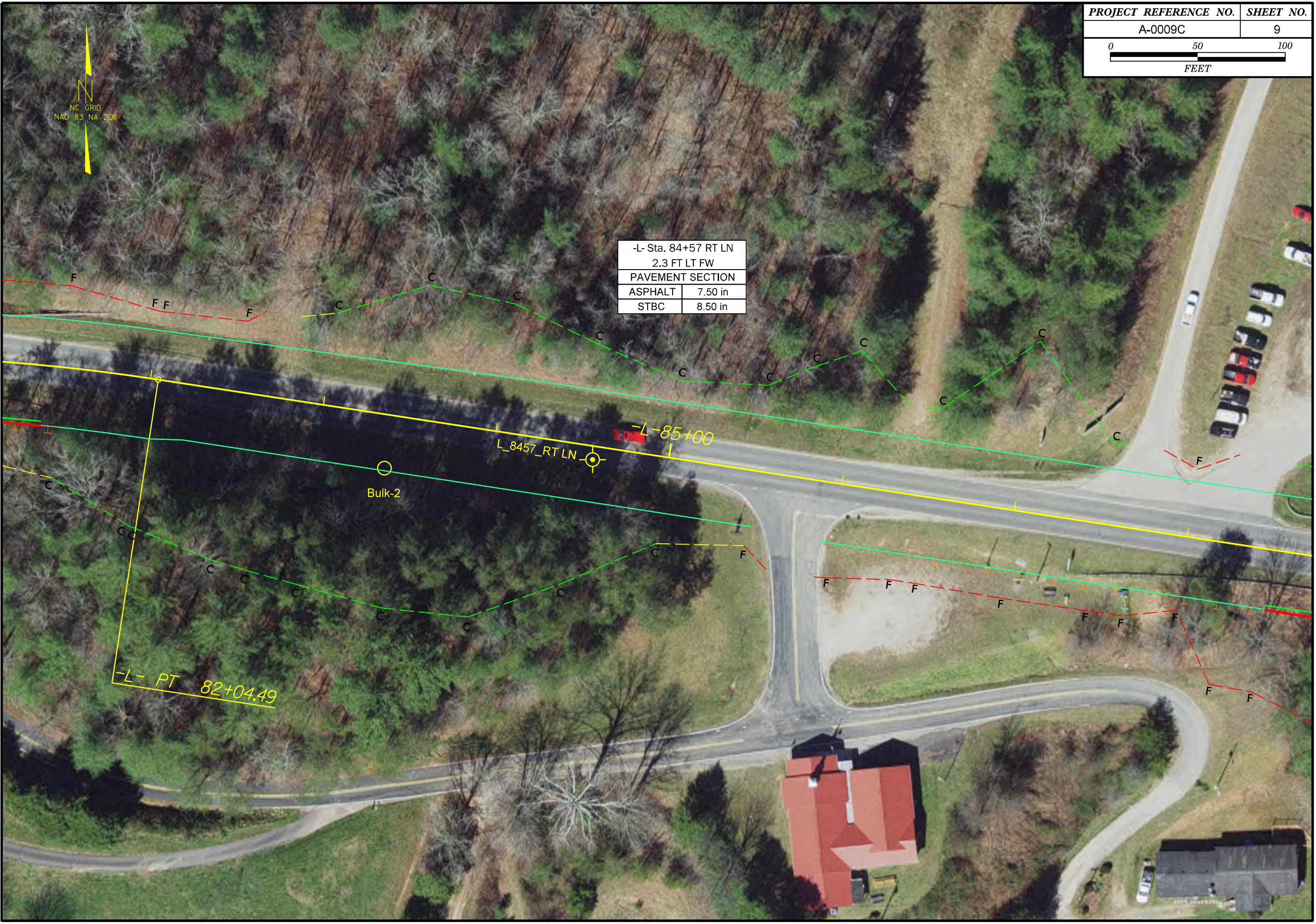
-L- POT 66+11.28 =  
-Y6-POT 13+03.70

Bulk-1





-L- Sta. 84+57 RT LN	
2.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.50 in
STBC	8.50 in





-L- Sta. 104+90 LT LN	
2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.75 in
STBC	7.25 in



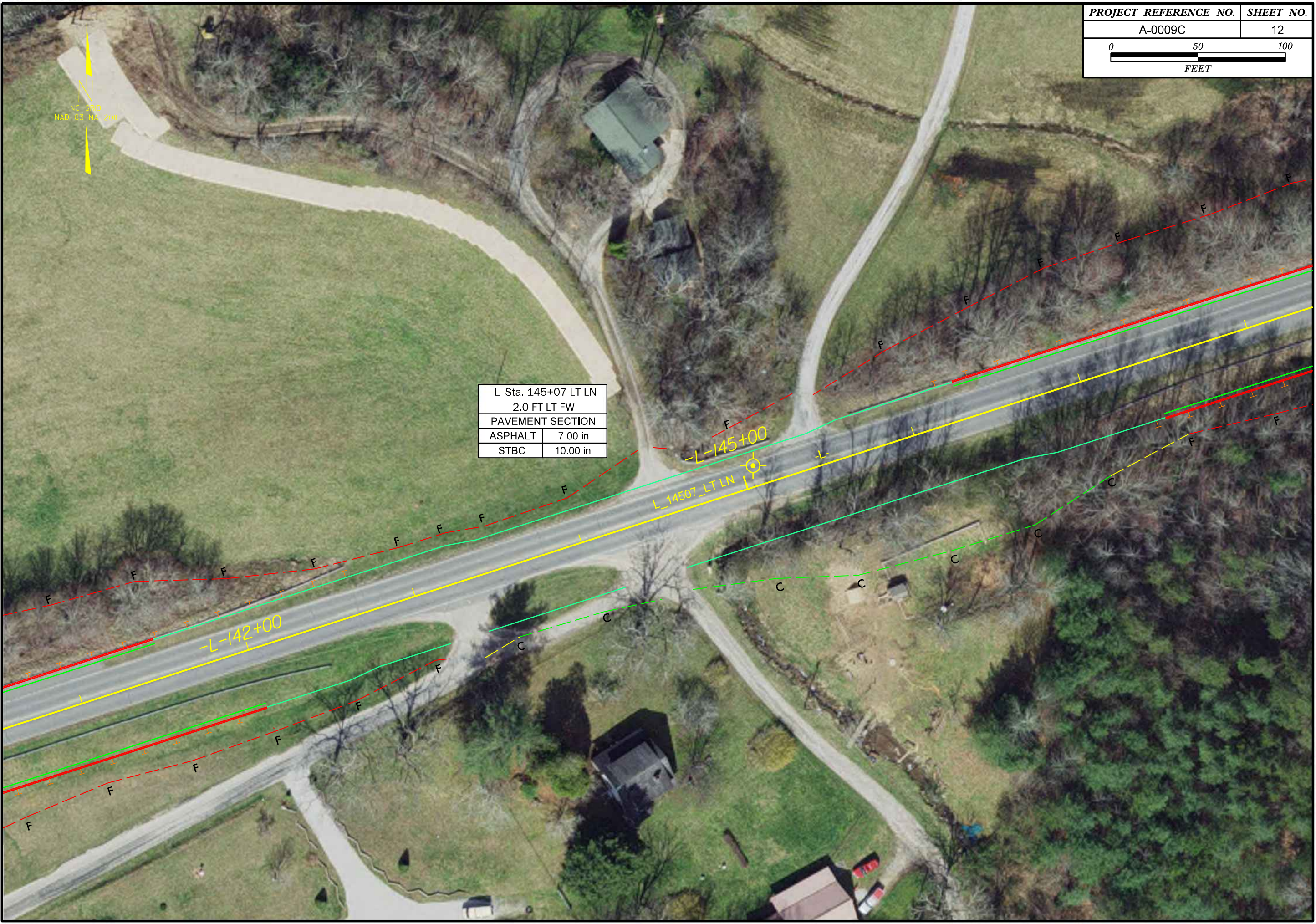
NC GRID  
NAD 83 NA 2011

-L- Sta. 125+06 RT LN	
2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	8.00 in
STBC	9.00 in

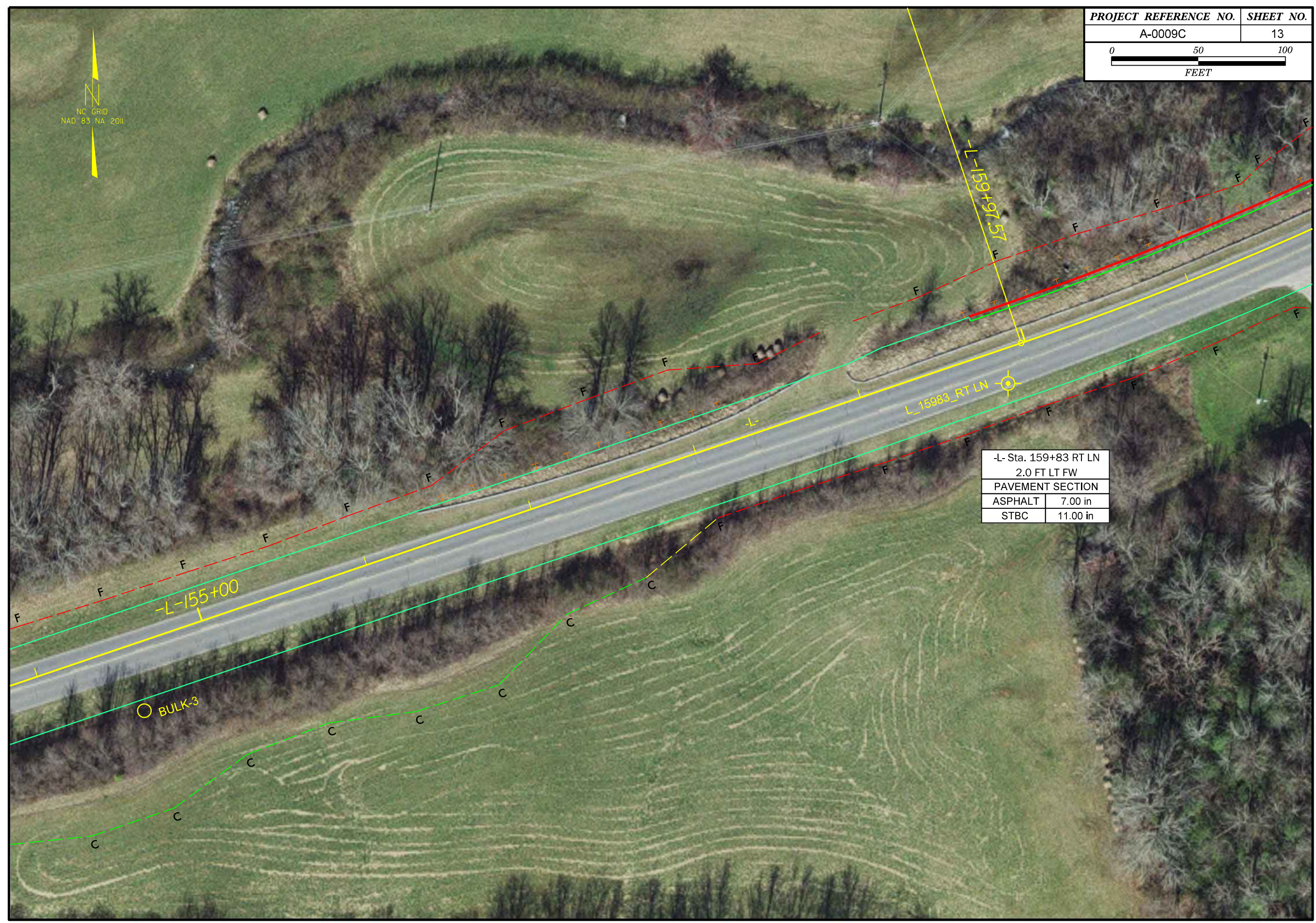


NC GRID  
NAD 83 NA 2011

-L- Sta. 145+07 LT LN	
2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.00 in
STBC	10.00 in



NC GRID  
NAD 83 NA 2011



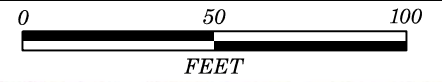
-L- Sta. 159+83 RT LN	
2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.00 in
STBC	11.00 in



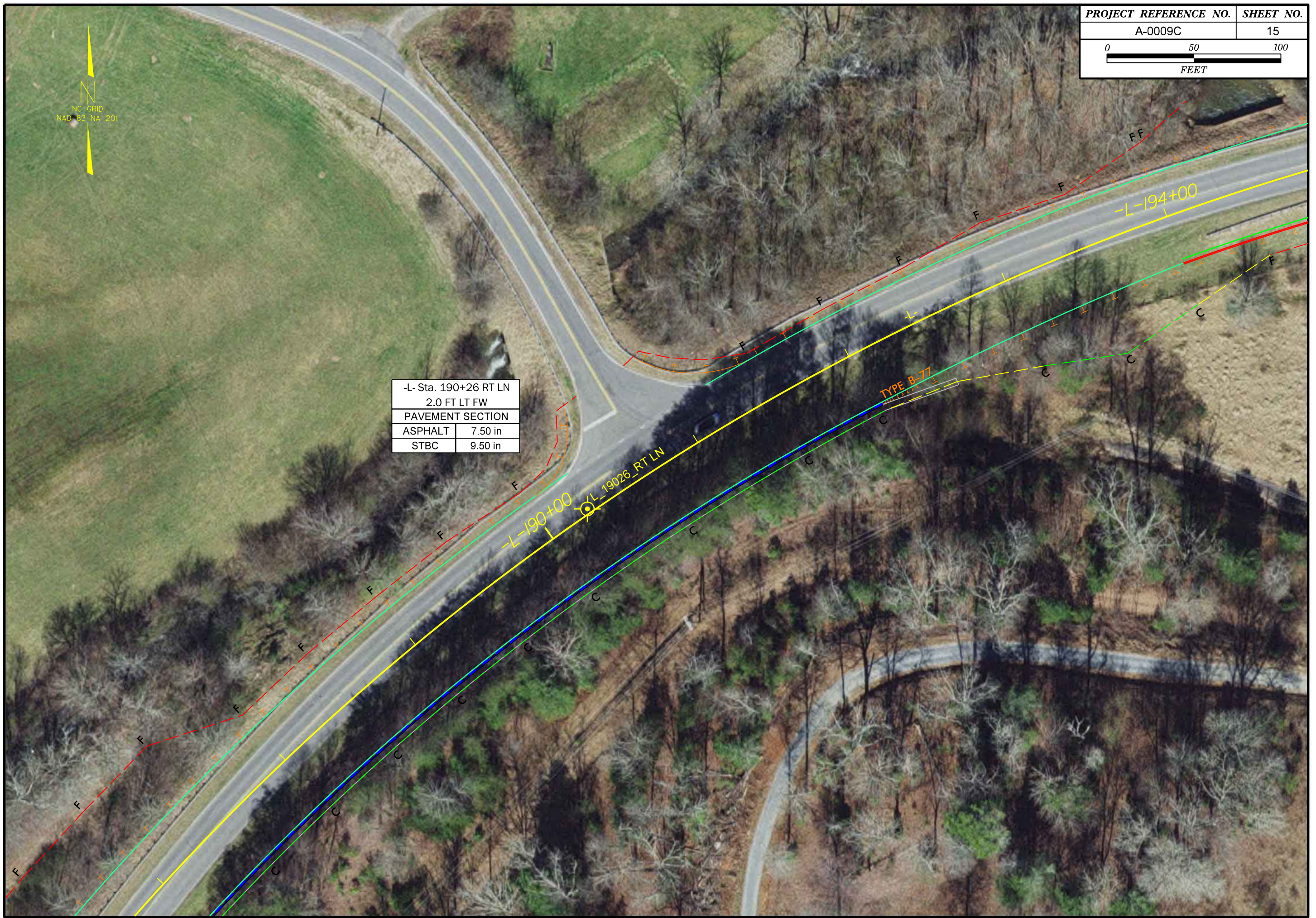


-L- Sta. 173+11 LT PS		-L- Sta. 173+11 LT LN	
1.7 FT RT FW		2.3 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	4.50 in	ASPHALT	7.50 in
STBC	12.00 in	STBC	9.50 in





-L- Sta. 190+26 RT LN	
2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.50 in
STBC	9.50 in



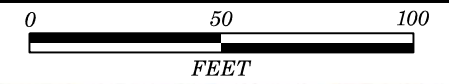


NC GRID  
NAD 83 NA 2011

-L- Sta. 204+46 LT LN	
2.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	8.50 in
STBC	8.50 in

END SECTION A-0009C  
BEGIN SECTION A-0009C  
AT STATION 208+00

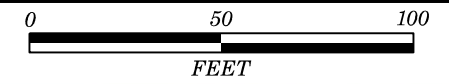




NC GRID  
NAD 83 NA 2011

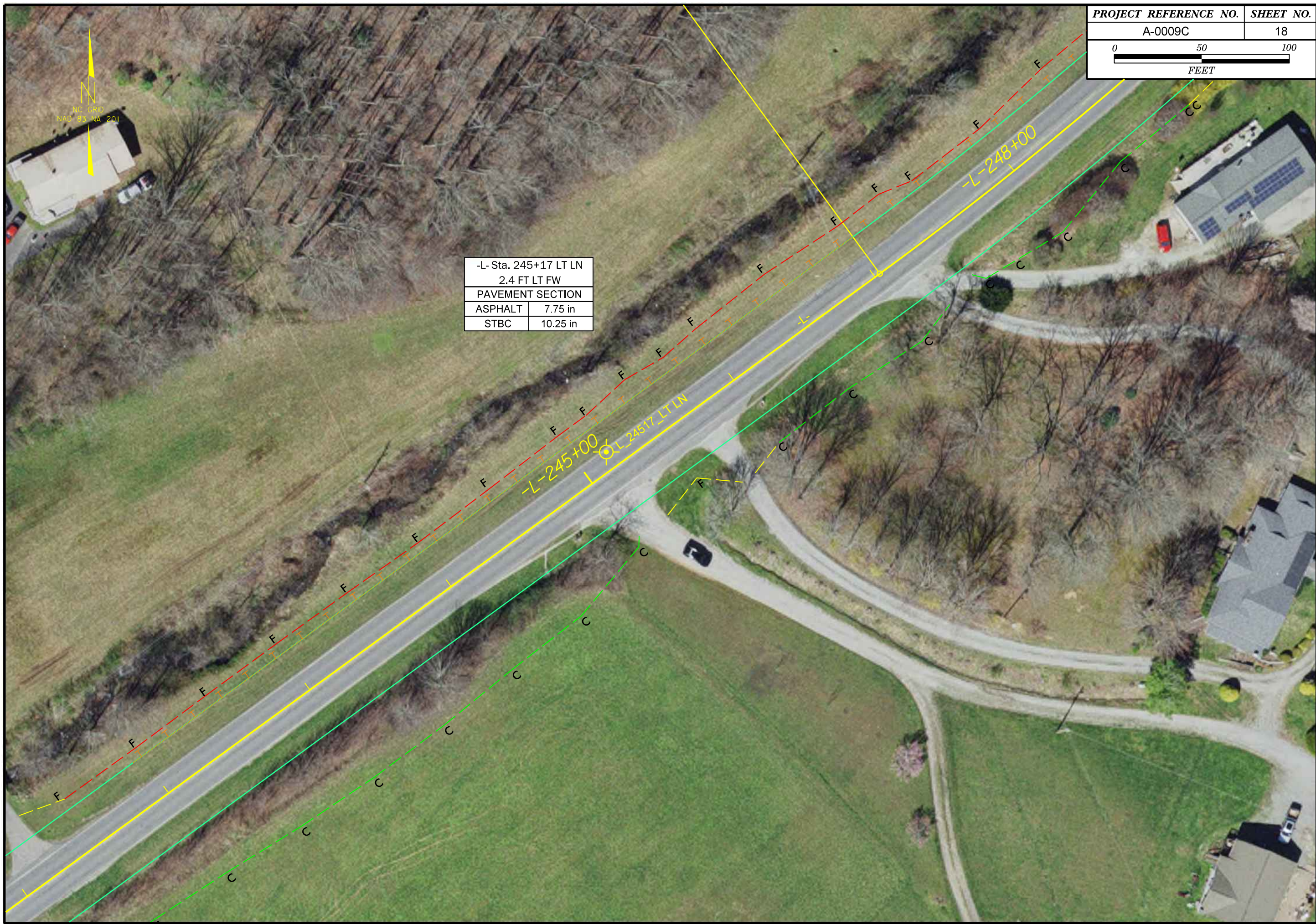


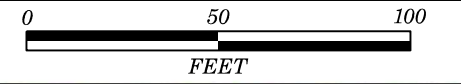
-L- Sta. 225+17 RT LN	
2.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	8.75 in
STBC	10.25 in



NC GRID  
NAD 83 NA 2011

-L- Sta. 245+17 LT LN	
2.4 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.75 in
STBC	10.25 in





-L- PC 266+64.11

-L- Sta. 264+94 RT LN	
1.5 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.50 in
STBC	9.50 in

-L- 265+00

L 264+94 RT LN

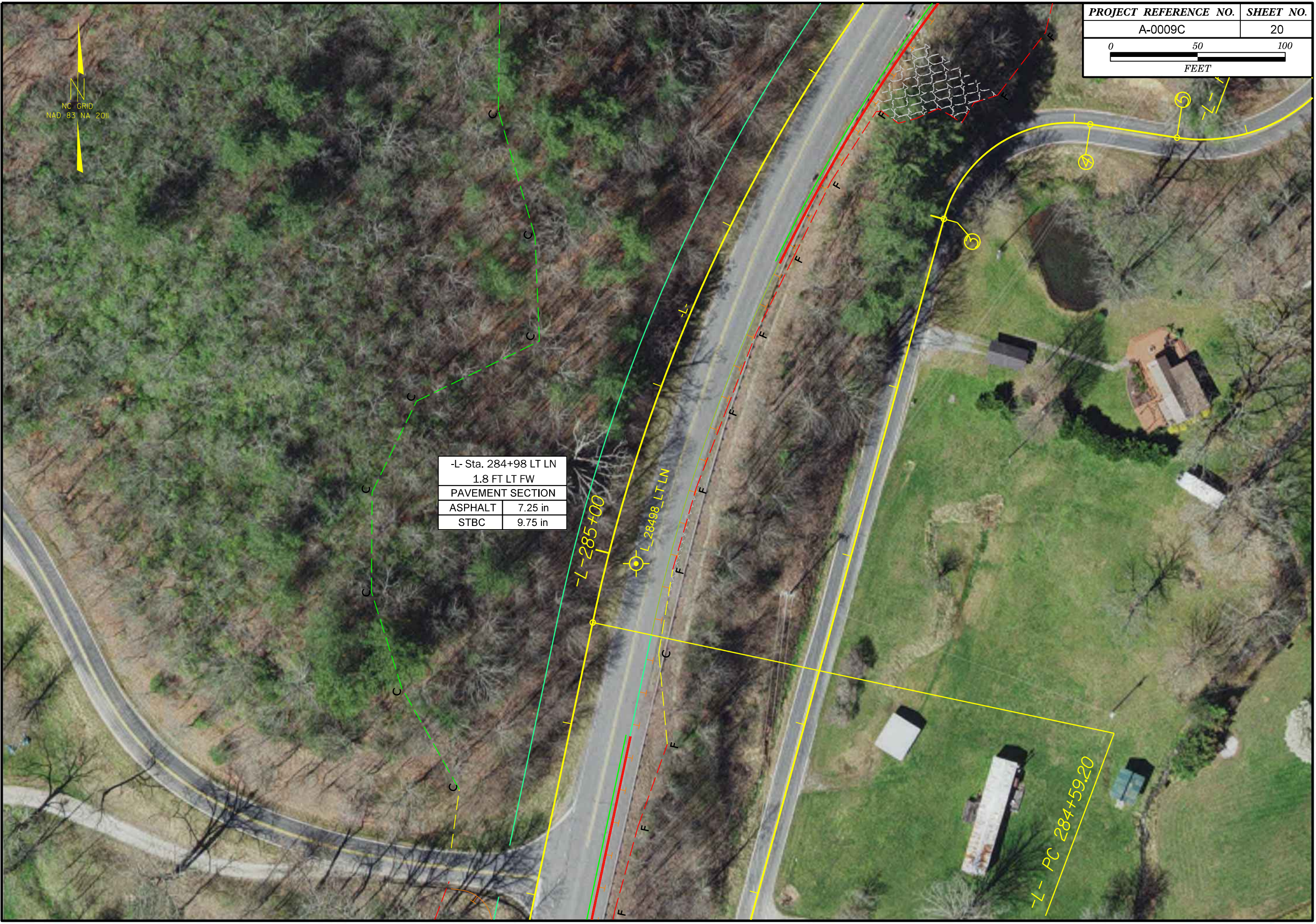
-L- 268+00

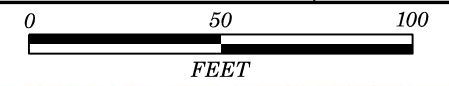
7.47





-L- Sta. 284+98 LT LN	
1.8 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.25 in
STBC	9.75 in





NC GRID  
NAD 83 NA 2011

-L- PT 302+92.61

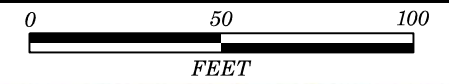
-L- 305+00

-L- PC 306+20.9

-L- Sta. 304+62 RT PS	
2.4 FT RT FW	
PAVEMENT SECTION	
ASPHALT	7.75 in
STBC	10.25 in







NC 8304  
NAD 83 NAV 2011

-L- Sta. 324+92 LT LN	
2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.50 in
STBC	9.50 in

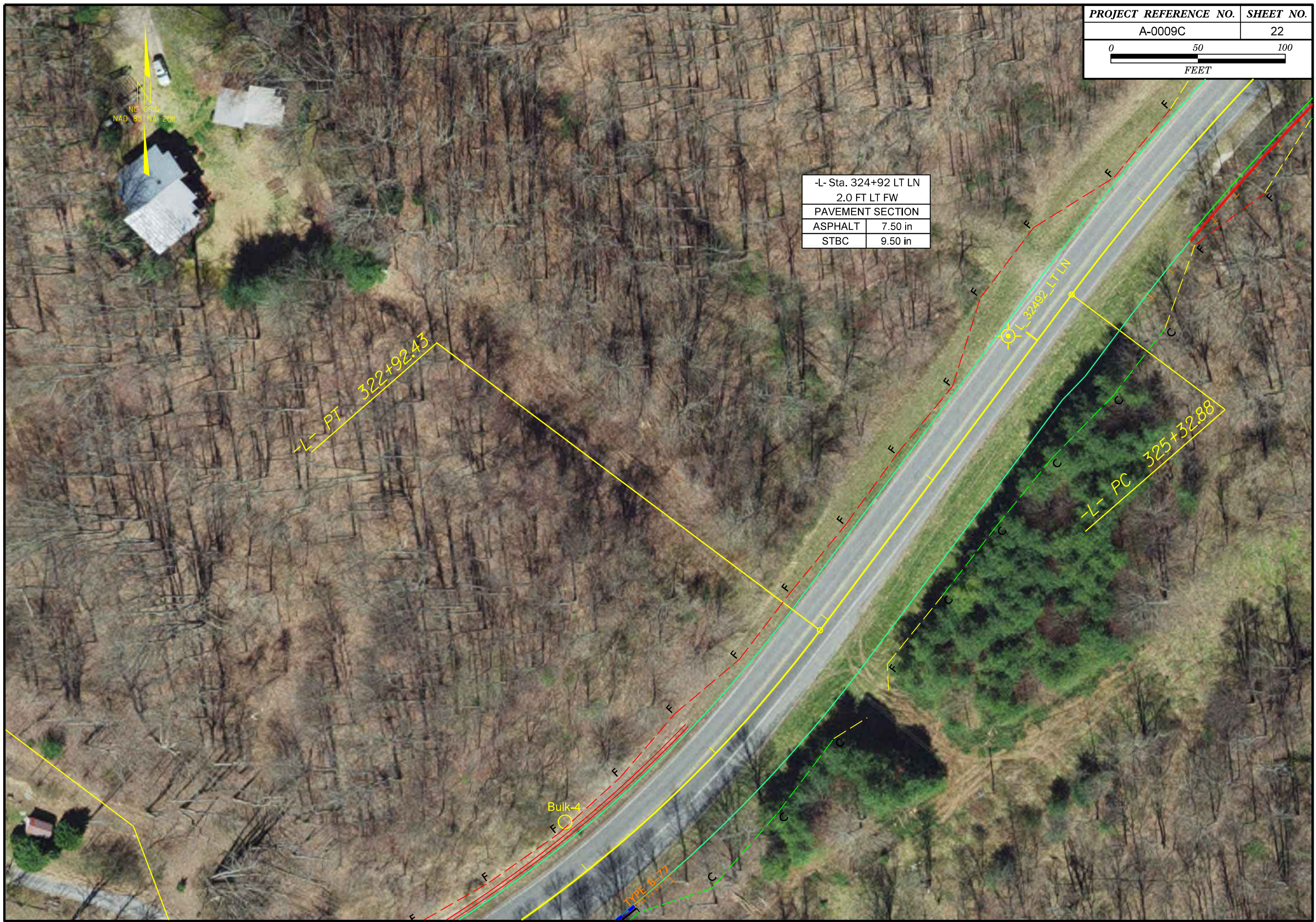
L- PT 322+92.43

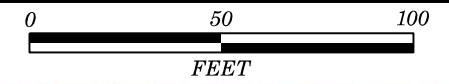
L- 32492 LT LN

L- PC 325+32.88

Bulk-4

TYPE 4-77





NC GRID  
NAD 83 NA 2011

Bulk-5

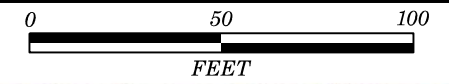
-L-340+00

-L- PC 335+70.20

-L- Sta. 344+21 RT LN	
2.2 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.25 in
STBC	9.75 in

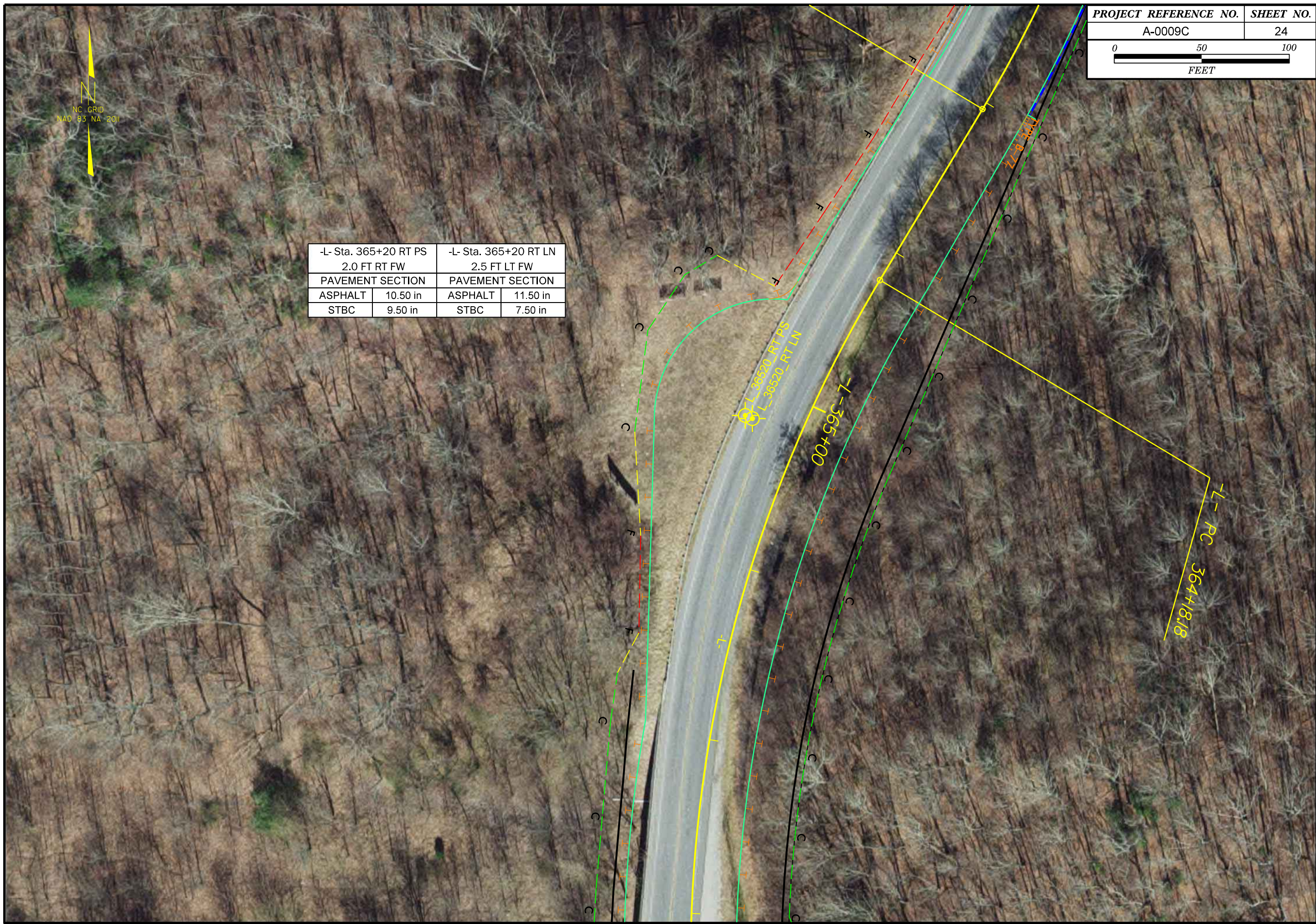
L 34421 RT LN





NC GRID  
NAD 83 NA 2011

-L- Sta. 365+20 RT PS 2.0 FT RT FW		-L- Sta. 365+20 RT LN 2.5 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	10.50 in	ASPHALT	11.50 in
STBC	9.50 in	STBC	7.50 in



NC GRID  
NAD 83 NA 2011

L-PT 384+17.58

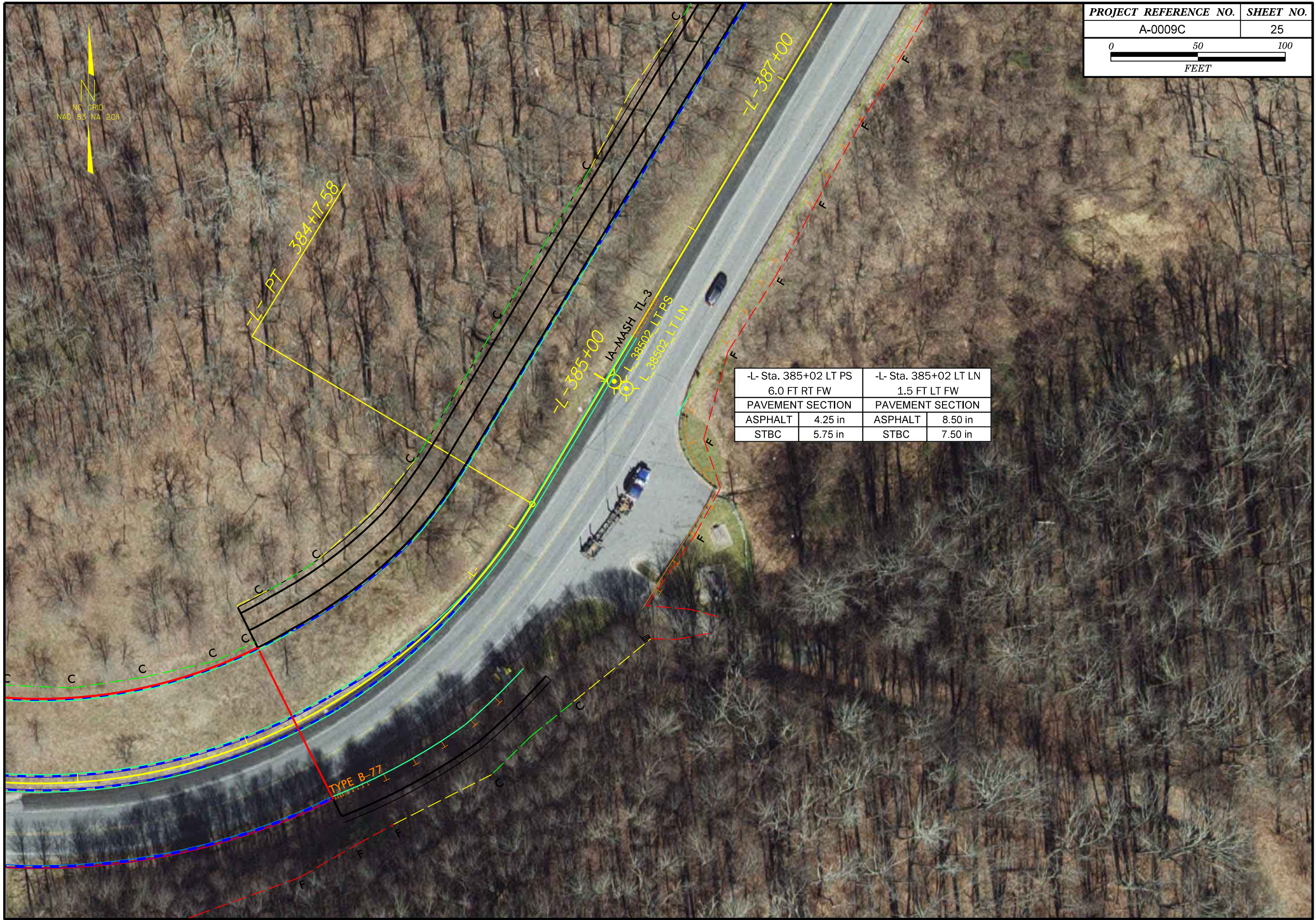
L-385+00

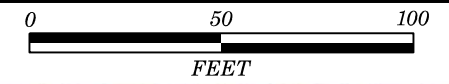
L-387+00

IA-MASH TL-3  
L 38502 LT PS  
L 38502 LT LN

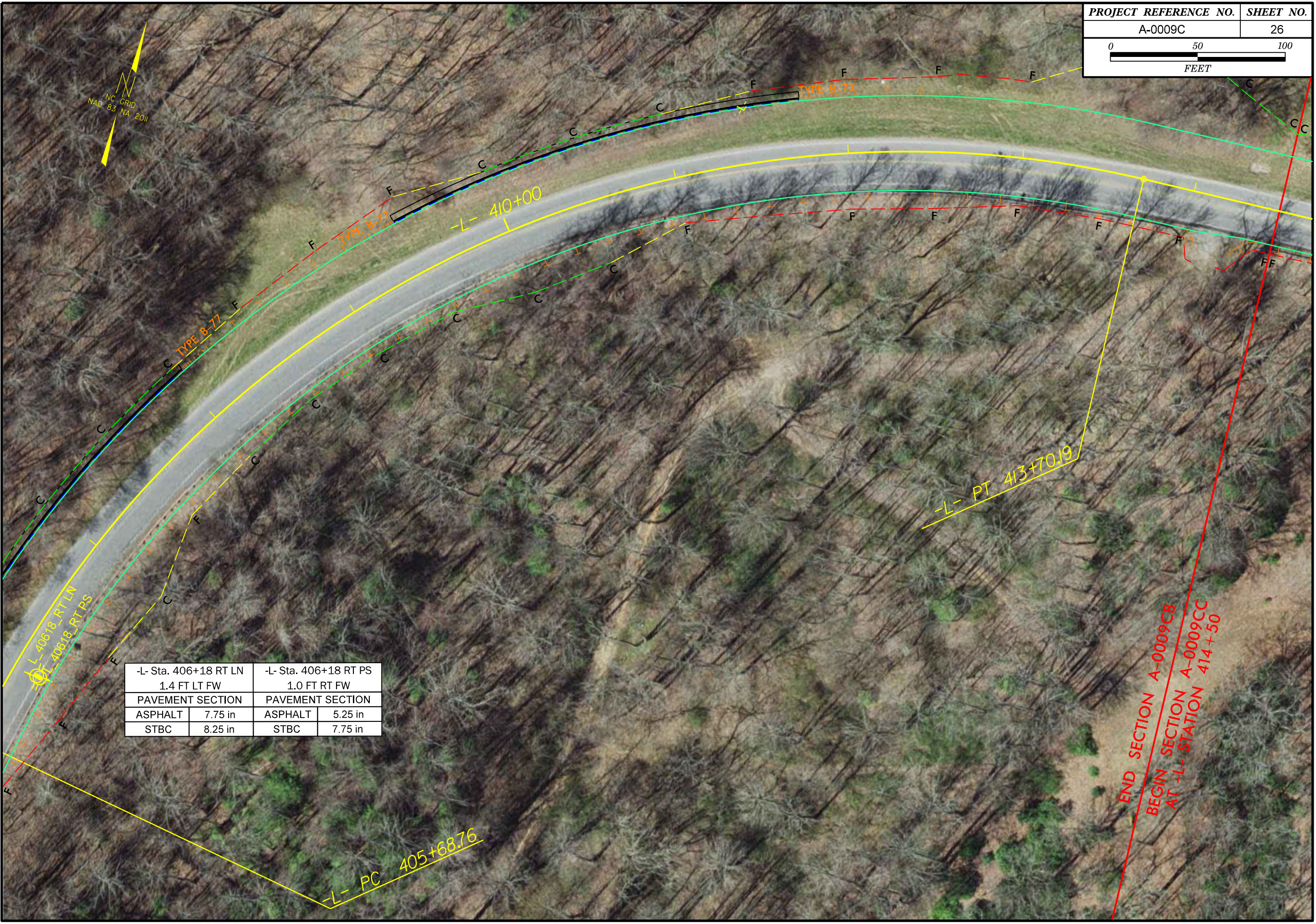
TYPE B-77

-L- Sta. 385+02 LT PS		-L- Sta. 385+02 LT LN	
6.0 FT RT FW		1.5 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	4.25 in	ASPHALT	8.50 in
STBC	5.75 in	STBC	7.50 in



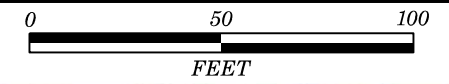


NC GRID  
NAD 83 NA 2011



-L- Sta. 406+18 RT LN		-L- Sta. 406+18 RT PS	
1.4 FT LT FW		1.0 FT RT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	7.75 in	ASPHALT	5.25 in
STBC	8.25 in	STBC	7.75 in

END SECTION A-0009CB  
BEGIN SECTION A-0009CC  
AT -L- STATION 414+50



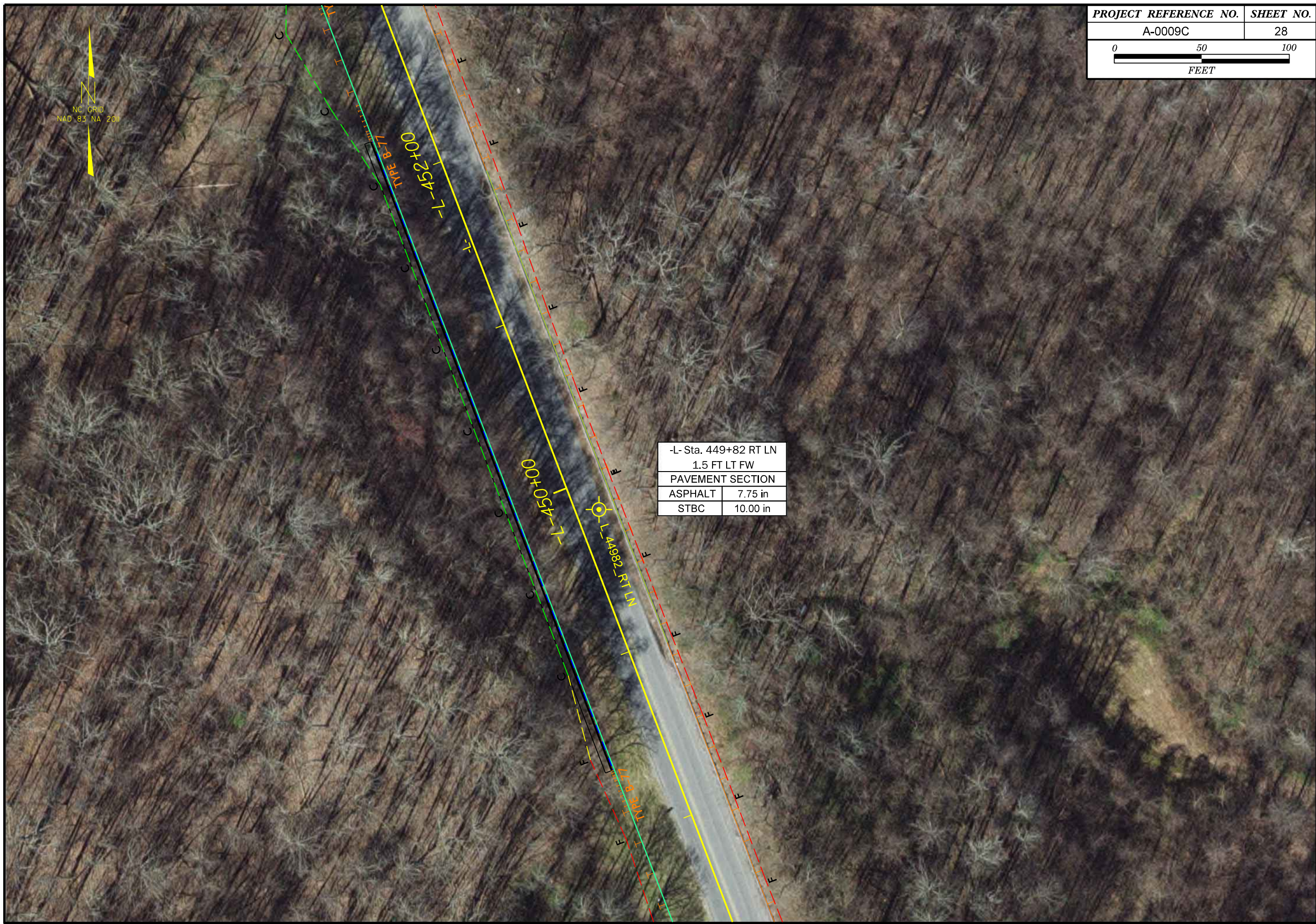
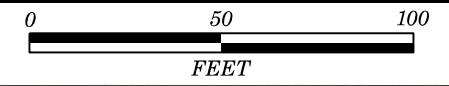
DS



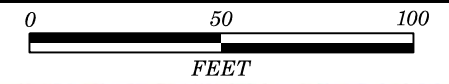
DR3- POT 10+00.00  
L- PT 422+13.30

-L- Sta. 425+03 LT LN	
1.5 FT LT FW	
PAVEMENT SECTION	
ASPHALT	10.00 in
STBC	10.00 in



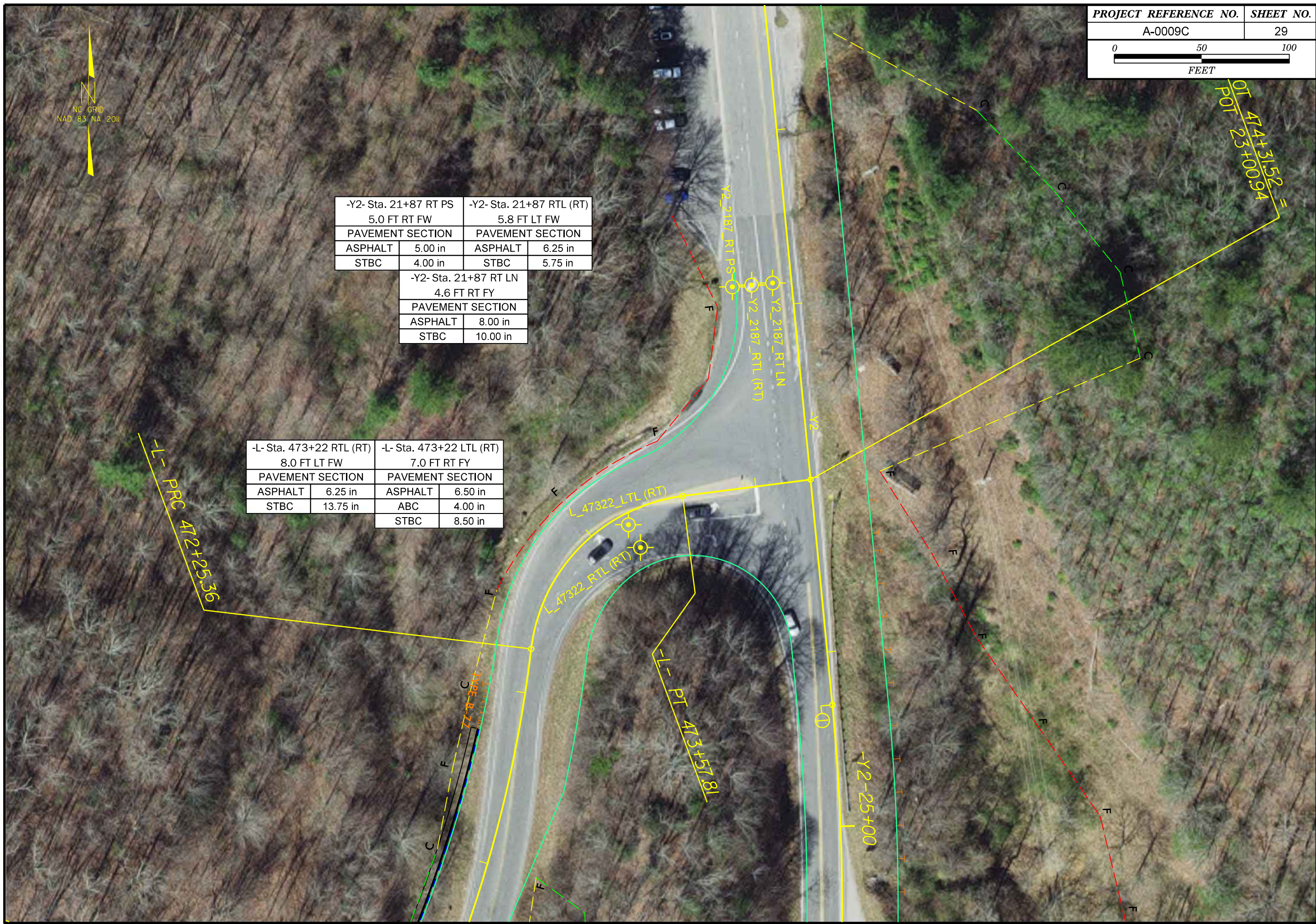


-L- Sta. 449+82 RT LN	
1.5 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.75 in
STBC	10.00 in

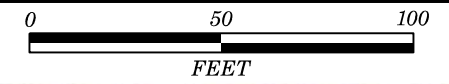


-Y2- Sta. 21+87 RT PS		-Y2- Sta. 21+87 RTL (RT)	
5.0 FT RT FW		5.8 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	5.00 in	ASPHALT	6.25 in
STBC	4.00 in	STBC	5.75 in
-Y2- Sta. 21+87 RT LN			
4.6 FT RT FY			
PAVEMENT SECTION			
ASPHALT	8.00 in		
STBC	10.00 in		

-L- Sta. 473+22 RTL (RT)		-L- Sta. 473+22 LTL (RT)	
8.0 FT LT FW		7.0 FT RT FY	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	6.25 in	ASPHALT	6.50 in
STBC	13.75 in	ABC	4.00 in
		STBC	8.50 in

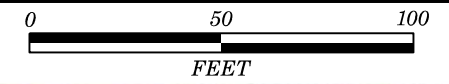




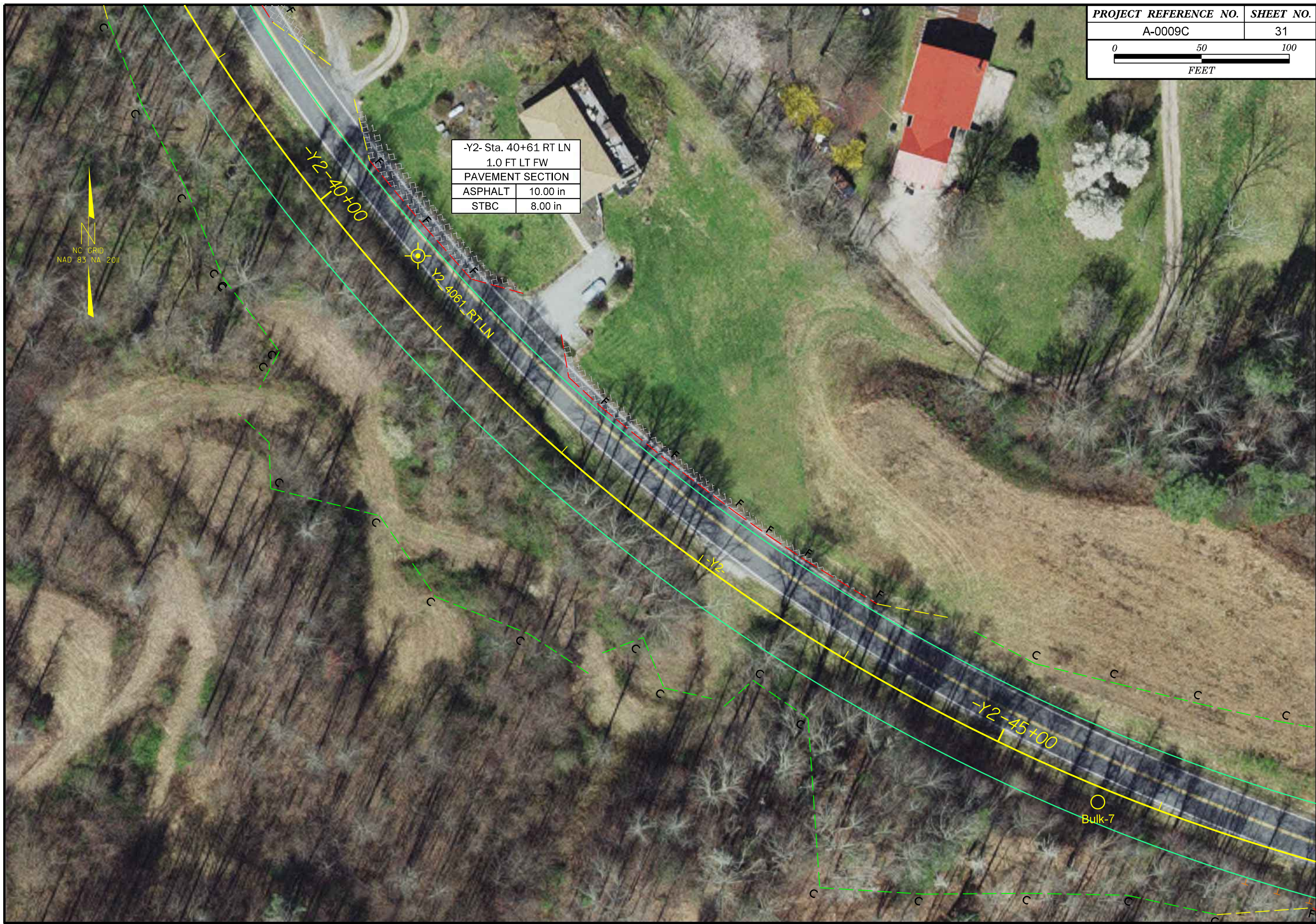


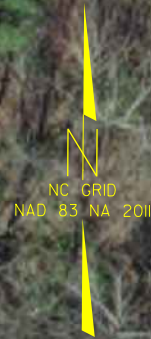
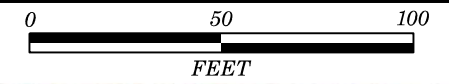
NC GRID  
MAD 83 NA 2011





-Y2- Sta. 40+61 RT LN	
1.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	10.00 in
STBC	8.00 in





-Y2- Sta. 60+51 LT LN	
1.4 FT LT FW	
PAVEMENT SECTION	
ASPHALT	10.50 in
STBC	9.00 in



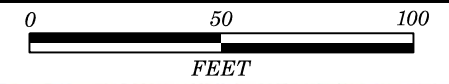
-Y2-  
-D

NC GRID  
 NAD 83 NA 2011

PT 76+34.95

-Y2- Sta. 79+85 RT LN	
0.6 FT LT FW	
PAVEMENT SECTION	
ASPHALT	7.75 in
STBC	8.25 in





NC GRID  
NAD 83 NA 2011

-Y2- PT 96+97.32

-Y2- POT 98+65.27 =  
-Y3- POT 14+20.24 =  
-Y3A- POT 10+00.00

-Y2- Sta. 100+31 LT LN	
1.4 FT LT FW	
PAVEMENT SECTION	
ASPHALT	9.50 in
STBC	8.50 in

-Y2- 100+00

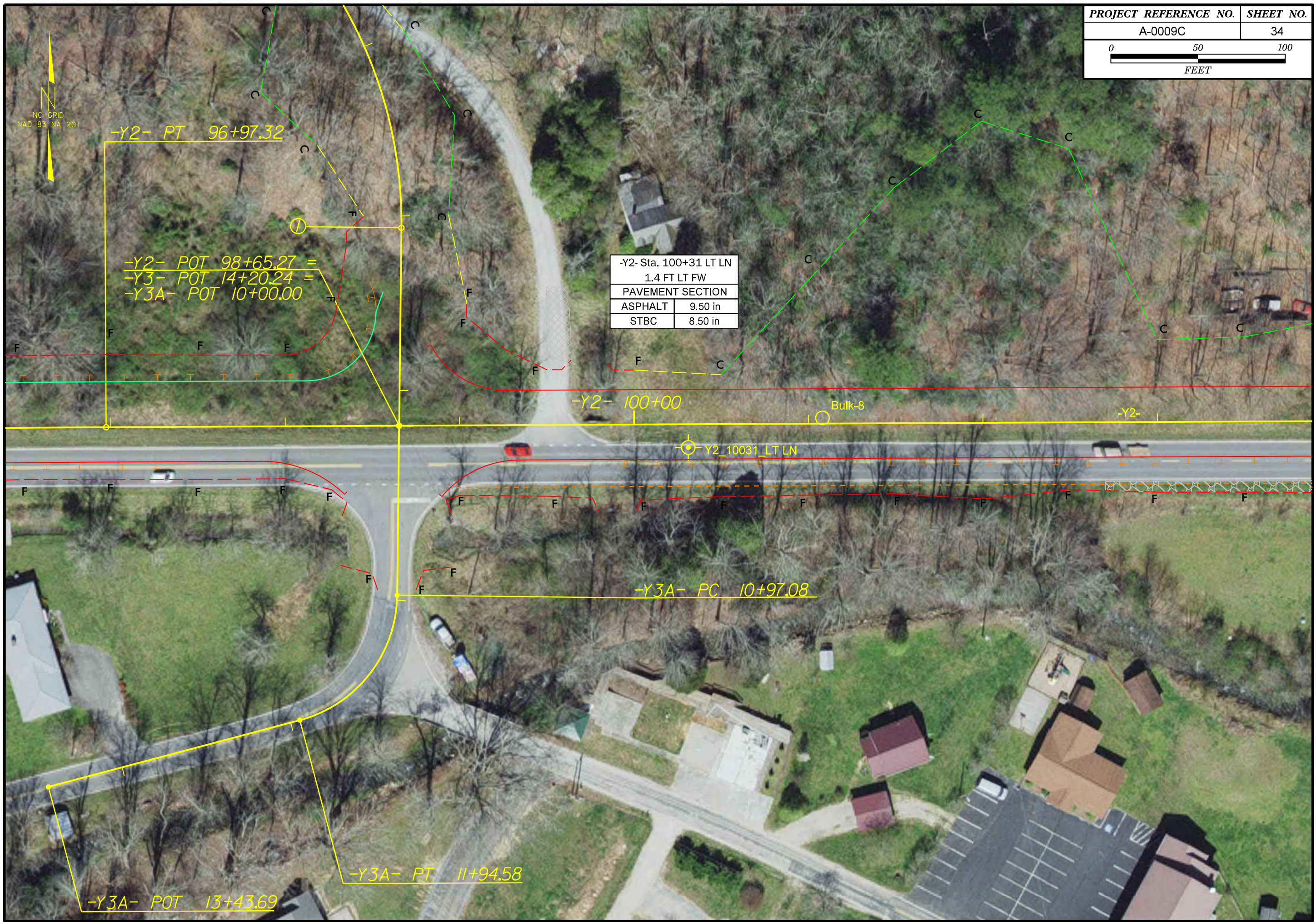
Bulk-8

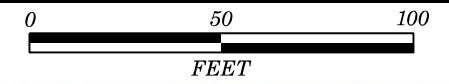
-Y2\_10031\_LT LN

-Y3A- PC 10+97.08

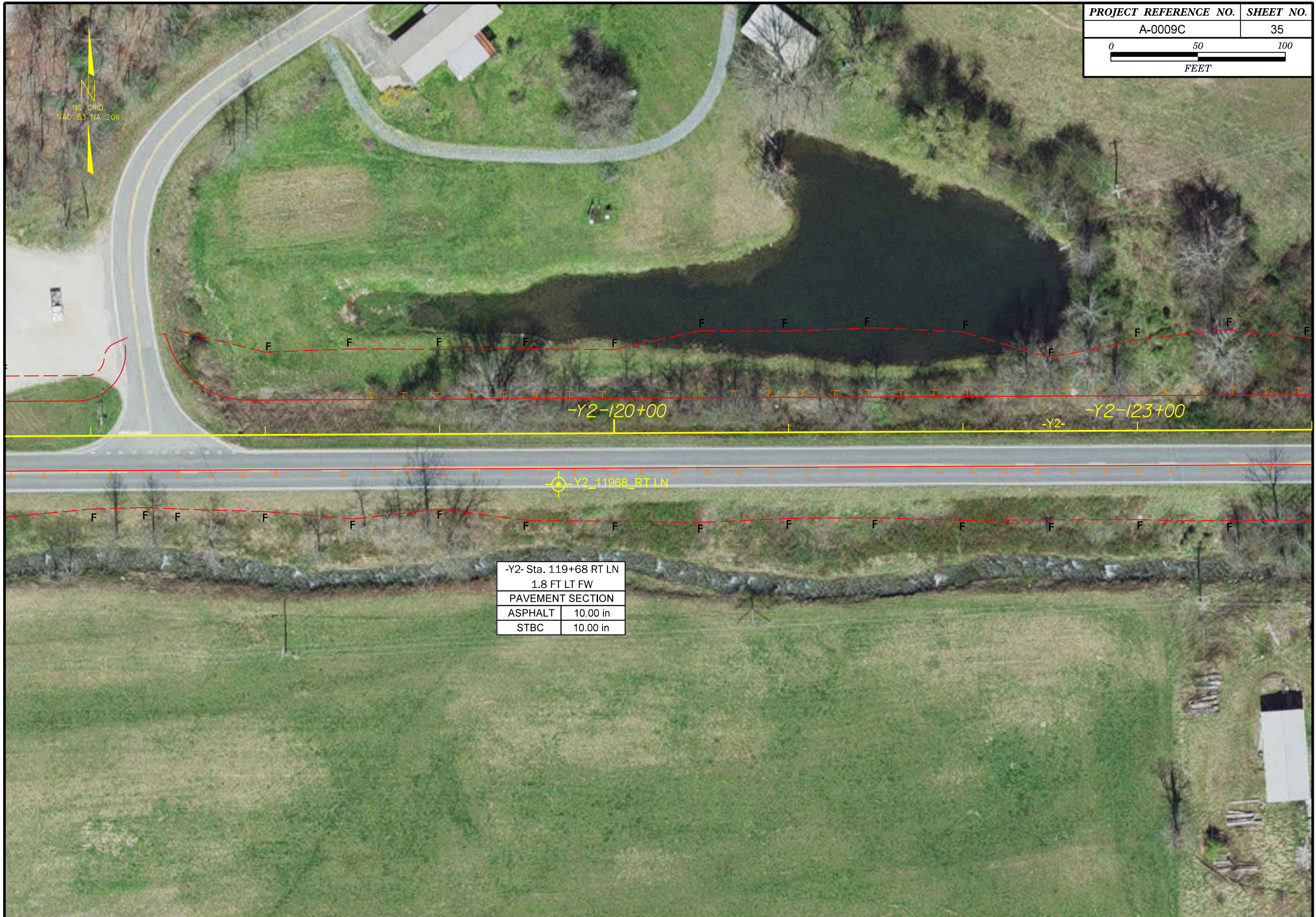
-Y3A- PT 11+94.58

-Y3A- POT 13+43.69





NC GRID  
NAD 83 NA 2011

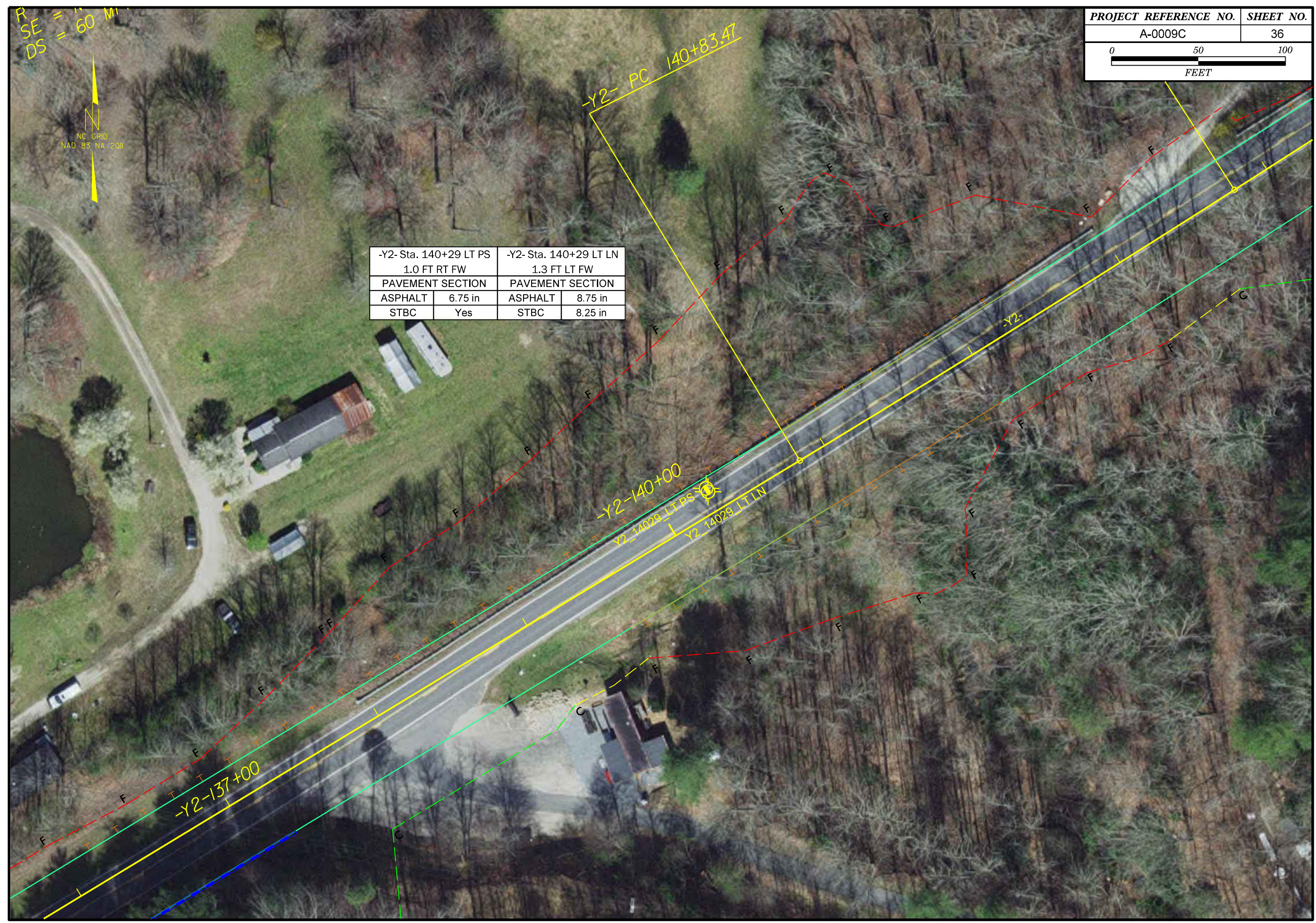


-Y2- Sta. 119+68 RT LN	
1.8 FT LT FW	
PAVEMENT SECTION	
ASPHALT	10.00 in
STBC	10.00 in

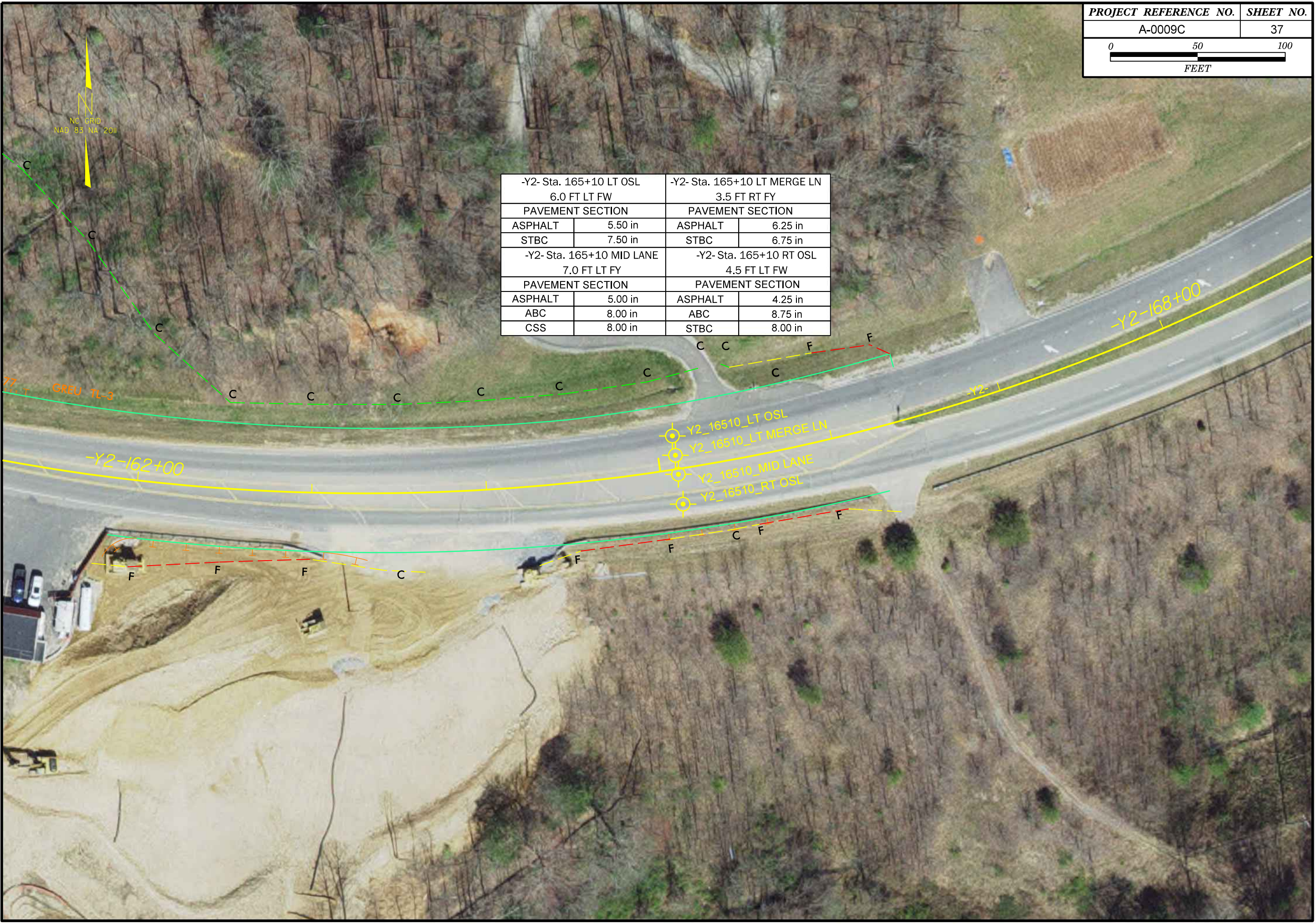
R  
SE = 11  
DS = 60 MI

NC GRID  
NAD 83 NA 2011

-Y2- Sta. 140+29 LT PS		-Y2- Sta. 140+29 LT LN	
1.0 FT RT FW		1.3 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	6.75 in	ASPHALT	8.75 in
STBC	Yes	STBC	8.25 in



-Y2- Sta. 165+10 LT OSL 6.0 FT LT FW		-Y2- Sta. 165+10 LT MERGE LN 3.5 FT RT FY	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	5.50 in	ASPHALT	6.25 in
STBC	7.50 in	STBC	6.75 in
-Y2- Sta. 165+10 MID LANE 7.0 FT LT FY		-Y2- Sta. 165+10 RT OSL 4.5 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	5.00 in	ASPHALT	4.25 in
ABC	8.00 in	ABC	8.75 in
CSS	8.00 in	STBC	8.00 in



NC GRID  
NAD 83 NA 2011

GREU TL-3

-Y2-162+00

-Y2-168+00

- Y2\_16510\_LT OSL
- Y2\_16510\_LT MERGE LN
- Y2\_16510\_MID LANE
- Y2\_16510\_RT OSL



PAVEMENT INVESTIGATION DATA SHEET

Project:	32572.1.FS10
TIP:	A-0009C

Route:	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
County:	Graham

Date Performed:	12/27/21, 12/28/21, 1/04/22, 1/13/22
Field Personnel:	M. Brewer, R. Kral, L. Ard

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		Offset Distance (See Notes)	Crown "C" or Super "S"	Gross to Top of Soil	Thickness (in)				Chemical Stabilized Subgrade (CSS)	Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates	
		Lane	Shoulder				Asphalt	ABC	STBC	Description (Depth - ft)			Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)	Northing		Easting	
Y1_2706_LT LN/RTL (LT) -Y1- 27+06 LT LN/RTL (LT)	At Grade	11.0	Concrete Curb & Gutter	2.0 LT EOP	Cr.	14.00	6.00		8.00		Asphalt STBC SG	1.2-5.0: RE - Gray-Brown, Fine to Coarse Sandy SILT	Ref-59	A-4	M	5	Moderate Severity Fatigue Cracking (OSWP), High Severity Longitudinal and Transverse Cracking 0.5-inch rutting, <b>2-Inch Top-Down Crack in Core</b>	606,771	567,949	
Y1_2706_CTL/LTL -Y1- 27+06 CTL/LTL	At Grade	11.0	-	5.0 RT FY	Cr.	14.00	6.75		7.25		Asphalt STBC SG	1.2-5.0: RE - Gray-Brown, Fine to Coarse Sandy SILT	Ref-59	A-4	M	5	Moderate Severity Fatigue Cracking (OSWP), 0.5-inch rutting	606,767	567,965	
Y1_3344_RT LN/RTL -Y1- 33+44 RT LN/RTL	At Grade	11.0	-	2.0 LT EOP	Cr.	16.00	5.50		10.50		Asphalt STBC SG	1.4-5.0: RE - Gray-Brown, Fine to Coarse Sandy SILT	Ref-59	A-4	M	5	Moderate Severity Fatigue Cracking (OSWP), 0.5-inch rutting	607,389	568,119	
Y1_3344_LTL (RT) -Y1- 33+44 LTL (RT)	At Grade	10.0	-	5.0 RT FY	Cr.	17.00	7.50		9.50		Asphalt STBC SG	1.4-5.0: RE - Gray-Brown, Fine to Coarse Sandy SILT	Ref-59	A-4	M	5	Moderate Severity Fatigue Cracking (OSWP), 0.5-inch rutting	607,389	568,105	
Y1_3596_LT LN -Y1- 35+96 LT LT LN	Fill 5.0	11.0	Concrete Curb & Gutter	8.0 RT FW	Cr.	17.00	4.75	12.25			Asphalt ABC SG	1.4-5.0: RE - Brown, Fine to Coarse Sandy SILT	S-59	A-4(0)	M	5	Low to Moderate Severity Transverse and Longitudinal Cracking	607,637	568,070	
Y1_3596_LTL (LT) -Y1- 35+96 LTL (LT)	Fill 5.0	11.0	-	4.5 RT FY	Cr.	18.00	5.50		12.50		Asphalt STBC SG	1.5-5.0: RE - Brown, Fine to Coarse Sandy SILT	Ref-59	A-4	M	5	Low to Moderate Severity Transverse and Longitudinal Cracking	607,640	568,084	
L_1125_CTL -L- 11+25 CTL	Fill 5.0	12.0	-	5.7 RT FY	Cr.	15.00	4.75		10.25		Asphalt STBC SG	1.3-5.0: RE - Brown, Fine to Coarse Sandy SILT, trace gravel	S-8	A-4(0)	M	5	0.5-inch rutting (OSWP/ISWP), Low to Moderate Transverse and Block Cracking, Low Severity Longitudinal Cracking (ISWP), <b>Full-Depth Top-Down Crack in Core</b>	607,565	568,209	
L_1125_LT LN/LTL (LT) -L- 11+25 LT LN/LTL (LT)	Fill 5.0	12.5	-	3.0 RT FY	Cr.	15.00	4.75		10.25		Asphalt STBC SG	1.3-5.0: RE - Brown-Orange, Fine to Coarse Sandy SILT	Ref-8	A-4	M	5	0.5-inch rutting (OSWP/ISWP), Low to Moderate Transverse and Block Cracking, Low Severity Longitudinal Cracking (ISWP)	607,573	568,204	
L_1125_RTL (LT) -L- 11+25 RTL (LT)	Fill 5.0	12.5	Concrete Curb & Gutter	1.5 LT C&G EOP	Cr.	16.00	3.50	12.50			Asphalt ABC SG	1.3-5.0: RE - Red, Silty, Fine to Coarse Sandy CLAY	S-10	A-6(7)	M	5	0.5-inch rutting (OSWP/ISWP), Low to Moderate Transverse and Block Cracking, Low Severity Longitudinal Cracking (ISWP)	607,591	568,192	
L_2569_LTL (RT) -L- 25+69 LTL (RT)	At Grade	12.0	-	5.0 RT FY	Cr.	15.00	6.00	3.00	6.00		Asphalt ABC/STBC SG	1.3-5.0: RE - Brown, Fine to Coarse Sandy SILT, trace gravel	S-11	A-4(0)	M	5	Low to Moderate Severity Longitudinal, Transverse, and Fatigue Cracking (ISWP/OSWP)	607,913	569,551	
L_2569_RT LN/RTL -L- 25+69 RT LN/RTL	At Grade	11.0	1.0 PS	2.0 LT FW	Cr.	13.00	3.75	3.00	6.25		Asphalt ABC/STBC SG	1.1-5.0: RE - Red-Orange, Silty, Fine to Coarse Sandy CLAY	Ref-13	A-6	M	5	High Severity Longitudinal, Transverse, and Fatigue Cracking (OSWP), 0.5 to 1.0-inch rutting	607,897	569,545	
L_2816_LT LN -L- 28+16 LT LN	At Grade	11.5	1.5 PS	5.5 LT FW	Cr.	15.00	6.50		8.50		Asphalt STBC SG	1.3-5.0: RE - Red, Silty, Fine to Coarse Sandy CLAY	S-13	A-6(6)	M	5	High Severity Longitudinal and Fatigue Cracking (OSWP/ISWP), High Severity Transverse Cracking, Raveling, Very High Distress Area, <b>Full-Depth Bottom-Up Crack in Core</b>	607,839	569,787	
L_2816_LTL (LT) -L- 28+16 LTL (LT)	At Grade	11.0	-	4.3 RT FY	Cr.	17.00	5.00		12.00		Asphalt STBC SG	1.4-5.0: RE - Gray-Brown-Orange, Silty, Fine to Coarse Sandy CLAY	Ref-13	A-6	M	5	Moderate to High Severity Longitudinal Cracking (ISWP/OSWP), Low Severity Transverse Cracking, Moderate Severity Fatigue Cracking	607,827	569,782	
L_4524_RT LN/RTL -L- 45+24 RT LN/RTL	Fill 10.0	11.0	1.0 PS	2.0 LT FW	Cr.	16.00	8.00		8.00		Asphalt STBC SG	1.3-5.0: RE - Brown, Fine to Coarse Sandy SILT	S-15	A-4(0)	M	5	Low to Moderate Severity Longitudinal and Transverse Cracking (ISWP)	607,231	571,383	
L_4524_RT PS -L- 45+24 RT PS	Fill 10.0	11.0	1.0 PS	0.2 RT FW	Cr.	17.00	8.25		8.75		Asphalt STBC SG	1.4-5.0: RE - Brown, Fine to Coarse Sandy SILT	Ref-15	A-4	M	5	Low to Moderate Severity Longitudinal and Transverse Cracking (ISWP)	607,229	571,382	

Notes:

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

Prepared by: CTW  
Reviewed by: REK

PAVEMENT INVESTIGATION DATA SHEET

Project:	32572.1.FS10
TIP:	A-0009C

Route:	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
County:	Graham

Date Performed:	12/27/21, 12/28/21, 1/04/22, 1/13/22
Field Personnel:	M. Brewer, R. Kral, L. Ard

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		(ft)	Offset Distance (See Notes)	Crown "C" or Super "S"	Gross to Top of Soil	Thickness (in)				Chemical Stabilized Subgrade (CSS)	Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates	
		Lane	Shoulder					Asphalt	ABC	STBC	Description (Depth - ft)			Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)	Northing		Easting	
L_6487_LT LN -L 64+87 LT LN	Fill 20.0	11.5	0.5 PS	6.3 LT FW	Cr.	16.00	7.50		8.50		Asphalt STBC SG	1.3-5.0: RE - Brown-Gray, Fine to Coarse Sandy SILT, trace gravel	S-17	A-4(0)	M	5	Low Severity Transverse and Longitudinal Cracking (ISWP)	607,057	573,237		
L_8457_RT LN -L 84+57 RT LN	Cut 20.0	12.0	0.5 PS	2.3 LT FW	Cr.	16.00	7.50		8.50		Asphalt STBC SG	1.3-5.0: RES - Brown-Red, Fine to Coarse Sandy SILT	Ref-21	A-4	M	5	Low to Moderate Transverse and Longitudinal Cracking (OSWP/ISWP), Edge Cracking at Shoulder	607,600	575,059		
L_10490_LT LN -L 104+90 LT LN	Fill 25.0	11.0	0.3 PS	2.0 LT FW	Cr.	15.00	7.75		7.25		Asphalt STBC SG	1.3-5.0: RE - Brown-Gray, Fine to Coarse Sandy SILT	S-19	A-4(0)	M	5	Moderate to High Severity Longitudinal Cracking (ISWP/OSWP), Moderate Severity Transverse and Fatigue Cracking	608,015	576,874		
L_12506_RT LN -L 125+06 RT LN	Fill 3.0	12.0	0.5 PS	2.0 LT FW	Cr.	17.00	8.00		9.00		Asphalt STBC SG	1.4-3.0: RE - Red, Clayey, Fine to Coarse Sandy SILT 3.0-5.0: RES - Brown, Fine to Coarse Sandy SILT	S-20 Ref-21	A-4(3) A-4	M M	5	Low Severity Longitudinal (OSWP/ISWP), Low to Moderate Transverse Cracking	609,321	578,301		
L_14507_LT LN -L 145+07 LT LN	Fill 5.0	11.0	1.0 PS	2.0 LT FW	Cr.	17.00	7.00		10.00		Asphalt STBC SG	1.4-5.0: RE - Brown, Fine to Coarse Sandy SILT	S-21	A-4(0)	M	5	Moderate to High Severity Longitudinal (ISWP), Low to Moderate Transverse Cracking, Low Severity Longitudinal Cracking (OSWP)	609,956	580,198		
L_15983_RT LN -L 159+83 RT LN	Fill 7.0	12.0	0.5 PS	2.0 LT FW	Cr.	18.00	7.00		11.00		Asphalt STBC SG	1.5-5.0: RE - Brown, Fine to Coarse Sandy SILT, trace gravel	Ref-21	A-4	M	5	Moderate to High Severity Longitudinal (ISWP), Low to Moderate Transverse Cracking, Low Severity Longitudinal Cracking (OSWP), <b>1-Inch Top-Down Crack in Core</b>	610,395	581,608		
L_17311_LT PS -L 173+11 LT PS	Fill 20.0	11.5	7.0 PS Concrete Gutter	1.7 RT FW	Cr.	16.50	4.50		12.00		Asphalt STBC SG	1.4-5.0: RE, Brown-Tan-Orange, Fine to Coarse Sandy SILT	Ref-25	A-4	M	5	No Observed Distress	611,226	582,615		
L_17311_LT LN -L 173+11 LT LN	Fill 20.0	11.5	7.0 PS Concrete Gutter	2.3 LT FW	Cr.	17.00	7.50		9.50		Asphalt STBC SG	1.4-5.0: RE - Tan-Orange, Fine to Coarse Sandy SILT	S-25	A-4(0)	M	5	Moderate to High Severity Longitudinal Cracking (ISWP/OSWP), Moderate Severity Transverse Cracking, patch observed	611,224	582,618		
L_19026_RT LN -L 190+26 RT LN	Cut 20.0	12.0	0.5 PS	2.0 LT FW	Cr.	17.00	7.50		9.50		Asphalt STBC SG	1.4-5.0: RES - Brown, Fine to Coarse Sandy SILT	S-26	A-4(0)	M	5	Moderate Severity Longitudinal Cracking (OSWP), Low Severity Transverse Cracking	612,560	583,683		
L_20446_LT LN -L 204+46 LT LN	Fill 7.0	10.5	1.0 PS	2.3 LT FW	Cr.	17.00	8.50		8.50		Asphalt STBC SG	1.4-3.0: RE - Brown, Fine to Coarse Sandy SILT 3.0: RE - Boulder Fill, Auger Refusal	S-27	A-4(0)	M	3 AR	High Severity Longitudinal Cracking (ISWP/OSWP), Moderate Severity Block and Transverse Cracking, <b>1-Inch Top-Down Crack in Core</b>	612,972	585,033		
L_22517_RT LN -L 225+17 RT LN	At Grade	10.5	1.0 PS	2.3 LT FW	Cr.	19.00	8.75		10.25		Asphalt STBC SG	1.6-5.0: RES - Tan, Fine to Coarse Sandy SILT	Ref-31	A-4	M	5	Moderate Severity Longitudinal Cracking (ISWP/OSWP), Moderate Severity Transverse Cracking Cracking Patched, <b>1.25-Inch Bottom-Up Crack in Core</b>	613,726	586,930		
L_24517_LT LN -L 245+17 LT LN	Fill 4.0	11.0	1.0 PS	2.4 LT FW	Cr.	18.00	7.75		10.25		Asphalt STBC SG	1.5-4.0: RE - Tan-Brown, Fine to Coarse Sandy SILT 4.0-5.0: RES - Tan, Fine to Coarse Sandy SILT	S-29 Ref-31	A-4(0) A-4	M M	5	Moderate Severity Longitudinal Cracking (ISWP/OSWP), Moderate Severity Transverse Cracking, Cracking Sealed	615,076	588,395		
L_26494_RT LN -L 264+94 RT LN	Fill 6.0	11.5	1.0 PS	1.5 LT FW	Cr.	17.00	7.50		9.50		Asphalt STBC SG	1.4-5.0: RE - Tan-Gray-Orange, Fine to Coarse Sandy SILT	Ref-29	A-4	M	5	Low (OSWP) to Moderate (ISWP) Severity Longitudinal Cracking, Low Severity Transverse Cracking	616,677	589,445		
L_28498_LT LN -L 284+98 LT LN	Cut 30.0	11.5	0.5 PS	1.8 LT FW	Cr.	17.00	7.25		9.75		Asphalt STBC SG	1.4-5.0: RES - Tan-Orange, Fine to Coarse Sandy SILT	S-31	A-4(0)	M	5	High Severity Longitudinal Cracking (OSWP), Low Severity Longitudinal Cracking (ISWP) Low Severity Transverse Cracking	618,635	589,871		
L_30462_RT PS -L 304+62 RT PS	Fill 4.0	12.0	5.5 PS Concrete Curb	2.4 RT FW	Cr.	18.00	7.75		10.25		Asphalt STBC SG	1.5-4.0: RE - Tan-Brown, Fine to Coarse Sandy SILT 4.0-5.0: RES - Tan-Orange, Fine to Coarse Sandy SILT	Ref-29 Ref-31	A-4 A-4	M M	5	Moderate Severity Longitudinal Cracking (ISWP/OSWP), Moderate Severity Transverse Cracking, patched	620,213	590,974		

Notes:

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

Prepared by: CTW  
Reviewed by: REK

PAVEMENT INVESTIGATION DATA SHEET

Project:	32572.1.FS10
TIP:	A-0009C

Route:	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
County:	Graham

Date Performed:	12/27/21, 12/28/21, 1/04/22, 1/13/22
Field Personnel:	M. Brewer, R. Kral, L. Ard

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		(ft)	Offset Distance (See Notes)	Crown "C" or Super "S"	Gross to Top of Soil	Thickness (in)				Chemical Stabilized Subgrade (CSS)	Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates	
		Lane	Shoulder					Asphalt	ABC	STBC	Description (Depth - ft)			Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)	Northing		Easting	
L_32492_LT LN -L- 324+92 LT LN	Fill 6.0	11.5	1.0 PS	2.0 LT FW	Cr.	17.00	7.50		9.50		Asphalt STBC SG	1.4-5.0: RE - Tan-Gray-Orange, Fine to Coarse Sandy SILT	S-33	A-4(0)	M	5	Moderate Severity Longitudinal Cracking (ISWP/OSWP), Low Severity Transverse Cracking	621,605	592,299		
L_34421_RT LN -L- 344+21 RT LN	Fill 10.0	12.5	3.5 PS	2.2 LT FW	S	17.00	7.25		9.75		Asphalt STBC SG	1.4-3.5: RE - Brown, Fine to Coarse Sandy SILT 3.5: RE - Boulder Fill, Auger Refusal	Ref-33	A-4	M	3.5 AR	High Severity Fatigue Cracking (ISWP), <b>1.25-inch Bottom-Up Crack in Core</b>	621,944	593,778		
L_36520_RT LN -L- 365+20 RT LN	Cut 10.0	11.5	4.5 PS	2.5 LT FW	S	19.00	11.50		7.50		Asphalt STBC SG	1.6-5.0: RES - Tan, Fine Sandy SILT	S-35	A-4(2)	M	5	Moderate to High Severity Fatigue Cracking (ISWP/OSWP), Moderate Severity Longitudinal Cracking	619,967	593,243		
L_36520_RT PS -L- 365+20 RT PS	Cut 10.0	11.5	4.5 PS	2.0 RT FW	S	20.00	10.50		9.50		Asphalt STBC SG	1.7-5.0: RES - Tan, Fine Sandy SILT	Ref-35	A-4	M	5	Moderate to High Severity Fatigue Cracking (ISWP/OSWP), Moderate Severity Longitudinal Cracking	619,969	593,239		
L_38502_LT PS -L- 385+02 LT PS	Cut 40.0	-	10.5 PS	6.0 RT FW	Cr.	10.00	4.25		5.75		Asphalt STBC SG	0.8-5.0: RES - Tan, Fine to Coarse Sandy SILT, trace gravel	Ref-38	A-4	M	5	Moderate Severity Block Cracking, Low Severity Longitudinal Cracking	618,825	593,850		
L_38502_LT LN -L- 385+02 LT LN	Cut 40.0	12.0	-	1.5 LT FW	Cr.	16.00	8.50		7.50		Asphalt STBC SG	1.3-4.0: RES - Brown, Fine to Coarse Sandy SILT, trace gravel 4.0-5.0: WR - (Meta-Sandstone)	S-38	A-4(0) WR	M	5	Moderate to High Severity Fatigue Cracking (OSWP/ISWP), Moderate Severity Transverse Cracking	618,821	593,857		
L_40618_RT LN -L- 406+18 RT LN	Fill 20.0	12.5	4.5 PS Concrete Curb	1.4 LT FW	S	16.00	7.75		8.25		Asphalt STBC SG	1.3-5.0: RE - Brown, Fine to Coarse Sandy SILT, trace gravel	Ref-40	A-4	M	5	High Severity Edge Cracking (OSWP), Low Severity Longitudinal Cracking (ISWP) Moderate to High Severity Longitudinal Cracking (OSWP), Low Severity Transverse Cracking	620,549	594,998		
L_40618_RT PS -L- 406+18 RT PS	Fill 20.0	12.5	4.5 PS Concrete Curb	1.0 RT FW	S	13.00	5.25		7.75		Asphalt STBC SG	1.1-5.0: RE - Brown, Fine to Coarse Sandy SILT, trace gravel	S-40	A-4(0)	M	5	High Severity Edge Cracking (OSWP), Low Severity Longitudinal Cracking (ISWP) Moderate to High Severity Longitudinal Cracking (OSWP), Low Severity Transverse Cracking	620,548	595,000		
L_42503_LT LN -L- 425+03 LT LN	Cut 60.0	11.5	1.0 PS	1.5 LT FW	Cr.	20.00	10.00		10.00		Asphalt STBC SG	1.7-3.0: RES - Brown, Fine to Coarse Sandy SILT 3.0-5.0: WR - (Meta-Sandstone)	S-41 NSR	A-4(0) WR	M	5	No Observed Distress, Recent Overlay (Landslide)	621,607	596,368		
L_44982_RT LN -L- 449+82 RT LN	Cut 30.0	12.0	1.0 PS	1.5 LT FW	Cr.	17.75	7.75		10.00		Asphalt STBC SG	1.5-5.0: RES - Brown, Fine to Coarse Sandy SILT	Ref-41	A-4	M	5	High Severity Fatigue Cracking (OSWP), Moderate Severity Edge Cracking, Low Severity Longitudinal Cracking (ISWP)	623,791	595,946		
L_47322_RTL (RT) -L- 473+22 RTL(RT)	Cut 20.0	14.0	-	7.0 RT FY	S	20.00	6.25		13.75		Asphalt STBC SG	1.7-5.0: RES - Tan, Fine to Coarse Sandy SILT, trace gravel	S-43	A-4(0)	M	5	Low to Moderate Severity Transverse and Longitudinal Cracking (ISWP)	625,922	596,429		
L_47322_LTL (RT) -L- 473+22 LTL(RT)	Cut 20.0	15.5	1.0 PS	8.0 LT FW	S	19.00	6.50	4.00	8.50		Asphalt ABC/STBC SG	1.6-5.0: RES - Tan, Fine to Coarse Sandy SILT	Ref-43	A-4	M	5	Moderate Severity Transverse and Longitudinal Cracking (ISWP)	625,908	596,434		
Y2_2187_RT LN -Y2- 21+87 RT LN	Fill 4.0	11.0	-	4.6 RT FY	Cr.	18.00	8.00		10.00		Asphalt STBC SG	1.5-4.0 : RE - Tan, Fine to Coarse Sandy SILT 4.0-5.0: RES - Tan, Fine to Coarse Sandy SILT	Ref-46 Ref-47	A-4 A-4	M M	5	No Observed Distress (RTL/N), Low Severity Longitudinal Cracking (ISWP/OSWP/LTLN)	626,059	596,509		
Y2_2187_RTL (RT) -Y2- 21+87 RTL(RT)	Fill 3.0	12.0	-	5.8 LT FW	Cr.	12.00	6.25		5.75		Asphalt STBC SG	1.0-3.0: RE - Tan, Fine to Coarse Sandy SILT 3.0-5.0: RES - Tan, Fine to Coarse Sandy SILT	S-46 Ref-47	A-4(0) A-4	M M	5	Low Severity Longitudinal Cracking (ISWP)	626,058	596,497		
Y2_2187_RT PS -Y2- 21+87 RT PS	Cut 20.0	-	11.5 PS	5.0 RT FW	Cr.	9.00	5.00		4.00		Asphalt STBC SG	0.8-5.0: RES - Tan, Fine to Coarse Sandy SILT	S-47	A-4(1)	M	5	Moderate Severity Edge Cracking at RT LN/PS, Low Severity Tranverse Cracking	626,057	596,486		

Notes:

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

Prepared by: CTW  
Reviewed by: REK

**PAVEMENT INVESTIGATION DATA SHEET**

Project:	32572.1.FS10
TIP:	A-0009C

Route:	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
County:	Graham

Date Performed:	12/27/21, 12/28/21, 1/04/22, 1/13/22
Field Personnel:	M. Brewer, R. Kral, L. Ard

Test Location	Cut/Fill (Est. of Amount) (ft)	Width (ft)		Offset Distance (See Notes)	Crown "C" or Super "S"	Gross to Top of Soil	Thickness (in)				Chemical Stabilized Subgrade (CSS)	Pavement Layering	Subgrade					Asphalt Notes	GPS Coordinates	
		Lane	Shoulder				Asphalt	ABC	STBC	Description (Depth - ft)			Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)	Northing		Easting	
Y2_4061_RT LN -Y2- 40+61 RT LN	Cut 15.0	10.5	1.0 PS	1.0 LT FW		18.00	10.00		8.00		Asphalt STBC SG	1.5-5.0: RES - Tan, Fine to Coarse Sandy SILT	S-48	A-4(1)	M	5	No Observed Distress, <b>1.0-inch Bottom-Up Crack in Core</b>	624,278	596,760	
Y2_6051_LT LN -Y2- 60+51 LT LN	Fill 30.0	11.0	1.0 PS	1.4 LT FW	Cr.	19.50	10.50		9.00		Asphalt Concrete STBC/SG	1.6-5.0: RE - Brown-Tan-Red, Fine to Coarse Sandy SILT, trace gravel	Ref-50	A-4	M	5	No Observed Distress	623,931	598,626	
Y2_7985_RT LN -Y2- 79+85 RT LN	Fill 15.0	10.5	0.5 PS	0.6 LT FW	S	16.00	7.75		8.25		Asphalt STBC SG	1.3-5.0: RE - Brown-Tan, Fine to Coarse Sandy SILT	S-50	A-4(0)	M	5	No Observed Distress	623,173	600,284	
Y2_10031_LT LN -Y2- 100+31 IT LN	Fill 5.0	10.0	0.5 PS	1.4 LT FW	Cr.	18.00	9.50		8.50		Asphalt STBC SG	1.5-5.0: RE - Red-Brown, Fine to Coarse Sandy SILT	S-51	A-4(0)	M	5	Low Severity Longitudinal Cracking (ISWP)	622,944	602,278	
Y2_11968_RT LN -Y2- 119+68 RT LN	Fill 15.0	11.0	1.0 PS	1.8 LT FW	Cr.	20.00	10.00		10.00		Asphalt STBC SG	1.7-5.0: RE - Tan-Brown, Fine to Coarse Sandy SILT, trace gravel	Ref-50	A-4	M	5	Low Severity Longitudinal Cracking (OSWP), Low Severity Transverse Cracking	622,940	604,216	
Y2_14029_LT PS -Y2- 140+29 LT PS	Fill 30.0	10.0	2.0 PS	1.0 RT FW	Cr.	6.75	6.75		Yes		Asphalt STBC SG	Utility Present, Auger not performed	-	-	-	-	No Observed Distress	623,423	606,163	
Y2_14029_LT LN -Y2- 140+29 LT LN	Fill 30.0	10.0	2.0 PS	1.3 LT FW	Cr.	17.00	8.75		8.25		Asphalt STBC SG	1.4-5.0: RE - Tan-Brown, Fine to Coarse Sandy SILT	S-54	A-4(0)	M	5	No Observed Distress	623,421	606,164	
Y2_16510_LT OSL -Y2- 165+10 LT OSL	At Grade	11.5	1.5 PS	6.0 LT FW	S	13.00	5.50		7.50		Asphalt STBC SG	1.1-5.0: RES - Brown-Tan, Fine to Coarse Sandy SILT, trace gravel	S-55	A-4(0)	M	5	Moderate Severity Longitudinal Cracking (ISWP)	623,721	608,482	
Y2_16510_LT MERGE LN -Y2- 165+10 LT MERGE LN	Fill 5.0	9.0	-	3.5 RT FY	S	13.00	6.25		6.75		Asphalt STBC SG	1.1-5.0: RE - Red-Brown, Fine to Coarse Sandy SILT, trace gravel	Ref-57	A-4	M	5	No Observed Distress	623,710	608,484	
Y2_16510_MID LANE -Y2- 165+10 MID LANE	Fill 10.0	17.5	-	7.0 LT FY	S	21.00	5.00	8.00		8.00	Asphalt ABC CSS/SG	1.8-5.0: RE - Red, Fine to Coarse Sandy SILT, trace gravel	S-57	A-4(0)	M	5	No Observed Distress	623,699	608,485	
Y2_16510_RT OSL -Y2- 165+10 RT OSL	Fill 10.0	12.0	1.0 PS	4.5 LT FW	S	21.00	4.25	8.75		8.00	Asphalt ABC CSS/SG	1.8-5.0: RE - Red, Fine to Coarse Sandy SILT, trace gravel	Ref-57	A-4	M	5	Low Severity Longitudinal Cracking (OSWP)	623,682	608,488	

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

Prepared by: CTW  
Reviewed by: REK



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.	PROJECT TIP I.D.	ROUTE
										32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
										COUNTY	FIELD PROFESSIONAL	FIELD CREW
										Graham	M. Brewer	L. Ard/R. Kral
Test Location					Date Run	Test Location					Date Run	
-Y1- Sta. 35+96 LT LN 8.0 FT RT FW					12/27/21 to 1/13/22	-Y1- Sta. 35+96 LTL (LT) 4.5 FT RT FY					12/27/21 to 1/13/22	
Type	Test Interval		Datum		Cut/Fill	Type	Test Interval		Datum		Cut/Fill	
DCP	Cumulative cm per blow		ABC		5.0 ft. Fill	DCP	Cumulative cm per blow		STBC		5.0 ft. Fill	
0.50	19.82	45.30	86.18	123.20		1.00	18.70	32.60	61.20	79.80	116.50	
0.90	20.10	45.50	86.42	123.80		1.50	18.80	33.10	61.60	79.90	117.50	
1.40	20.38	45.60	86.66	124.50		1.90	19.00	33.60	61.90	80.00	118.60	
1.60	20.66	46.40	86.90	125.00		2.10	19.30	33.70	62.30	80.50	119.40	
1.70	20.94	46.50	87.54	125.10		2.50	19.40	34.10	62.40	81.00	119.50	
2.40	21.22	46.90	88.18	126.00		2.90	19.60	34.50	63.20	81.50	120.30	
2.50	21.50	47.50	88.82	126.30		3.30	19.90	34.80	63.30	82.00	120.60	
2.90	21.72	47.90	89.46	127.00		3.60	20.10	35.10	64.40	82.30	121.50	
3.40	21.94	48.10	90.10	127.10		4.00	20.40	35.60	64.90	82.50	121.90	
3.50	22.16	48.50	90.38	127.90		4.50	20.50	36.30	65.30	82.90	122.30	
3.60	22.38	49.00	90.66	128.90		4.90	20.60	36.50	65.70	83.40	123.20	
3.90	22.60	49.50	90.94	129.10		5.10	20.67	37.20	66.00	83.50	124.40	
4.10	22.78	49.80	91.22	129.60		5.60	20.73	37.60	66.30	84.10	125.40	
4.50	22.96	50.10	91.50	130.10		5.90	20.80	38.10	66.60	84.60	126.30	
5.60	23.14	50.40	92.00	130.70		6.20	20.87	38.30	66.70	85.00	127.50	
6.40	23.32	51.10	92.30	130.80		6.40	20.93	38.70	66.80	85.30	128.30	
7.00	23.50	51.40	92.60	131.10		6.56	21.00	39.50	67.00	85.90	128.90	
7.50	23.68	51.90	93.40	131.50		6.72	21.12	39.60	67.10	86.20	129.50	
8.10	23.86	52.50	93.90			6.88	21.24	39.70	67.30	86.90	130.20	
9.00	24.04	52.90	94.50			7.04	21.36	40.00	67.50	87.50	130.90	
10.10	24.22	53.90	95.60			7.20	21.48	40.30	67.65	87.80		
10.40	24.40	54.50	96.50			7.40	21.60	40.80	67.80	88.10		
10.70	24.82	55.00	97.90			7.60	22.10	41.10	67.95	88.40		
11.00	25.24	55.90	98.00			7.80	22.36	41.50	68.10	88.70		
11.10	25.66	56.10	99.50			8.00	22.62	41.90	68.25	89.00		
11.50	26.08	57.00	100.10			8.20	22.88	42.30	68.40	89.40		
11.60	26.50	57.50	101.00			8.46	23.14	42.40	68.64	89.90		
11.90	26.90	58.00	101.10			8.72	23.40	42.90	68.88	90.50		
12.10	27.10	58.50	102.00			8.98	23.55	43.60	69.12	91.00		
12.40	27.50	58.90	102.50			9.24	23.70	44.20	69.36	91.50		
12.60	28.00	59.00	103.60			9.50	23.85	44.90	69.60	91.90		
12.90	28.50	59.50	103.70			9.78	24.00	45.50	69.77	92.40		
13.10	28.90	60.00	104.50			10.06	24.15	45.70	69.94	93.00		
13.50	29.30	61.00	104.60			10.34	24.30	46.30	70.11	93.90		
13.70	29.70	62.10	105.90			10.62	24.36	46.60	70.28	94.20		
13.90	30.10	63.40	106.40			10.90	24.42	46.70	70.45	94.70		
14.00	30.60	63.50	107.20			11.20	24.48	47.20	70.62	95.10		
14.10	31.00	64.00	107.80			11.50	24.54	47.60	70.79	95.60		
14.30	31.40	64.50	107.90			11.80	24.60	48.00	70.96	95.90		
14.40	31.90	65.50	108.90			12.10	24.75	48.40	71.13	96.80		
14.60	32.50	66.70	109.10			12.40	24.90	48.90	71.30	97.40		
14.90	33.40	67.80	109.90			12.70	25.05	49.60	71.60	97.90		
15.04	34.40	68.80	110.50			13.00	25.20	50.10	71.90	98.30		
15.18	34.50	69.20	111.00			13.30	25.35	50.60	72.20	98.90		
15.32	35.40	69.90	111.30			13.60	25.50	51.20	72.50	99.50		
15.46	35.90	70.50	111.60			13.90	25.92	51.90	72.80	100.10		
15.60	36.40	71.40	112.00			14.22	26.34	52.30	73.10	100.90		
15.86	36.90	72.50	112.70			14.54	26.76	52.90	73.40	101.50		
16.12	37.50	73.10	113.00			14.86	27.18	53.40	73.70	102.30		
16.38	38.10	74.00	114.00			15.18	27.60	53.60	74.00	102.90		
16.64	38.40	75.00	114.60			15.50	27.73	54.10	74.30	103.50		
16.90	38.60	75.60	115.30			15.80	27.87	54.30	74.90	104.30		
17.10	39.40	76.30	115.70			16.10	28.00	54.80	75.50	105.10		
17.30	39.70	77.10	116.50			16.30	28.13	54.90	75.70	106.00		
17.50	40.10	78.00	117.10			16.70	28.27	55.60	76.10	106.80		
17.70	40.50	79.00	117.50			17.30	28.40	56.20	76.20	107.80		
17.90	41.50	80.00	118.00			17.50	28.78	57.00	76.50	108.40		
18.06	41.60	81.20	118.60			17.60	29.16	57.50	76.60	109.50		
18.22	42.50	82.20	119.40			17.90	29.54	58.00	77.00	110.50		
18.38	42.90	83.20	119.60			18.00	29.92	58.40	77.10	111.40		
18.54	43.50	84.20	120.20			18.12	30.30	59.20	77.50	112.40		
18.70	43.60	84.90	120.40			18.24	30.76	59.60	77.90	113.40		
18.98	44.00	85.20	121.60			18.36	31.22	59.90	78.50	114.30		
19.26	44.50	85.70	122.40			18.48	31.68	60.60	78.60	115.00		
19.54	44.70	85.94	122.90			18.60	32.14	60.70	79.30	115.50		

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.	PROJECT TIP I.D.	ROUTE
										32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
										COUNTY	FIELD PROFESSIONAL	FIELD CREW
										Graham	M. Brewer	L. Ard/R. Kral
Test Location					Date Run	Test Location					Date Run	
-L- Sta. 11+25 CTL 5.7 FT RT FY					12/27/21 to 1/13/22	-L- Sta. 11+25 LT LN/LTL (LT) 3.0 FT RT FY					12/27/21 to 1/13/22	
Type	Test Interval		Datum		Cut/Fill	Type	Test Interval		Datum		Cut/Fill	
DCP	Cumulative cm per blow		STBC		5.0 ft. Fill	DCP	Cumulative cm per blow		STBC		5.0 ft. Fill	
1.50	47.90	64.50	112.90			1.20	24.10	62.50	106.50			
2.10	48.40	65.00	113.10			2.00	24.80	63.00	107.00			
2.50	48.50	65.80	114.60			3.00	25.90	63.40	108.00			
3.10	48.90	66.40	115.70			3.40	27.40	64.20	108.50			
3.60	49.00	67.20	116.50			3.62	28.90	64.80	109.20			
4.00	49.10	67.60	117.40			3.84	30.50	65.50	110.00			
4.50	49.20	68.20	118.10			4.06	31.90	66.10	110.50			
5.10	49.30	68.70	119.00			4.28	33.10	67.00	111.20			
5.60	49.40	69.40	120.00			4.50	34.50	67.50	111.50			
6.00	49.58	69.90	121.00			4.72	35.50	68.10	112.30			
6.30	49.76	70.50	121.90			4.94	36.50	68.90	113.30			
6.70	49.94	71.00	122.60			5.16	37.50	69.40	114.00			
7.00	50.12	71.60				5.38	38.40	70.30	114.60			
7.80	50.30	72.50				5.60	39.40	70.40	115.40			
7.90	50.48	73.20				5.78	40.20	71.10	115.90			
8.40	50.66	73.50				5.96	40.50	71.40	116.60			
8.60	50.84	74.50				6.14	41.10	73.30	117.20			
9.10	51.02	74.73				6.32	41.50	74.40	118.30			
9.30	51.20	74.97				6.50	42.40	75.00	118.60			
9.70	51.36	75.20				6.72	42.60	75.60	119.70			
10.00	51.52	76.50				6.94	43.20	76.50	120.10			
10.40	51.68	77.70				7.16	43.30	76.70	121.20			
10.60	51.84	78.10				7.38	43.50	77.70				
11.30	52.00	79.40				7.60	44.40	78.00				
11.40	52.17	80.40				7.90	44.58	78.60				
11.60	52.33	85.10				8.20	44.76	79.10				
12.10	52.50	85.90				8.50	44.94	80.00				
12.40	52.67	86.10				8.80	45.12	80.60				
12.90	52.83	86.50				9.10	45.30	81.50				
13.50	53.00	87.50				9.40	45.82	82.10				
13.60	53.18	88.40				9.70	46.34	83.10				
14.40	53.37	89.10				10.00	46.86	83.60				
15.00	53.55	90.00				10.30	47.38	84.50				
16.00	53.73	90.60				10.60	47.90	85.40				
17.00	53.92	91.60				10.82	48.30	86.40				
18.00	54.10	92.50				11.03	49.50	87.20				
19.10	54.28	93.20				11.25	50.00	88.30				
21.20	54.47	94.40				11.47	50.30	89.00				
22.60	54.65	94.60				11.68	51.00	89.60				
24.10	54.83	95.40				11.90	51.80	90.90				
25.20	55.02	96.00				12.12	52.00	91.90				
26.30	5											



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.		PROJECT TIP I.D.		ROUTE			
				32573.1.FS10		A-0009C		Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
				COUNTY		FIELD PROFESSIONAL		FIELD CREW			
				Graham		M. Brewer		L. Ard/R. Kral			
Test Location				Date Run		Test Location				Date Run	
-L- Sta. 11+25 RTL (LT) 1.5 FT LT C&G EOP				12/27/21 to 1/13/22		-L- Sta. 25+69 LTL (RT) 5.0 FT RT FY				12/27/21 to 1/13/22	
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill		
DCP	Cumulative cm per blow		ABC	5.0 ft. Fill	DCP	Cumulative cm per blow		ABC/STBC	At Grade		
1.90	13.30	50.60	104.40		0.50	49.60	69.10				
3.00	13.35	51.40	106.00		1.00	50.50	69.18				
4.20	13.40	52.60	108.00		1.40	51.00	69.27				
4.30	13.45	53.60	108.40		1.60	51.50	69.35				
4.70	13.50	54.60	109.60		2.00	52.50	69.43				
5.30	13.55	55.60			2.50	53.00	69.52				
5.40	13.60	57.00			2.90	54.00	69.60				
5.60	13.64	57.70			3.30	54.30	69.70				
5.90	13.68	58.40			3.50	54.80	69.80				
6.30	13.72	59.50			3.90	55.10	69.90				
6.50	13.76	61.00			4.10	55.50	70.00				
6.70	13.80	62.50			4.50	56.00	70.10				
7.00	13.84	63.40			5.10	56.50	70.14				
7.10	13.88	64.20			5.60	56.90	70.18				
7.50	13.92	65.10			5.90	57.80	70.22				
7.60	13.96	66.10			6.50	58.20	70.26				
7.90	14.00	67.10			7.10	58.60	70.30				
8.00	DCP REF	68.20			7.90	59.40	70.35				
8.30	AUGER 7.9	68.50			8.90	59.50	70.40				
8.40	to 21.9 cm	70.60			9.50	60.50	70.45				
8.50	0.60	72.00			10.90	60.90	70.50				
8.60	1.20	73.20			12.50	61.00	70.55				
8.70	1.50	74.40			13.90	61.20	70.60				
9.10	1.70	75.60			15.40	61.50	70.65				
9.20	1.90	76.20			16.50	61.60	70.70				
9.50	2.00	77.20			17.30	62.10	70.75				
9.60	2.30	77.70			18.30	62.20	70.80				
9.70	2.70	78.20			19.30	62.30	70.85				
9.80	3.60	78.50			20.40	62.60	70.90				
9.90	4.60	78.70			21.40	62.90	70.95				
10.00	5.50	79.10			22.40	63.40	71.00				
10.10	6.20	79.50			23.50	63.50	71.05				
10.20	7.10	79.80			24.60	63.90	71.10				
10.30	8.10	80.00			25.40	64.00	71.15				
10.40	8.20	80.20			26.10	64.10	71.20				
10.50	8.40	80.60			26.80	64.20	71.25				
10.60	8.70	80.80			27.37	64.30	71.30				
10.70	9.00	81.10			27.93	64.40	71.32				
10.80	9.30	81.60			28.50	64.52	71.34				
10.90	9.60	82.00			29.00	64.64	71.36				
11.00	9.90	82.60			30.10	64.76	71.38				
11.10	10.50	83.10			31.50	64.88	71.40				
11.20	10.60	83.50			32.38	65.00	71.42				
11.30	11.10	83.70			33.25	65.17	71.44				
11.40	11.40	84.10			34.13	65.33	71.46				
11.50	12.00	84.60			35.00	65.50	71.48				
11.68	12.70	85.60			36.00	65.67	71.50				
11.86	13.90	85.70			37.50	65.83	DCP REF				
12.04	15.50	87.00			38.00	66.00	50/1.2"				
12.22	17.00	87.20			38.30	66.17					
12.40	19.10	88.40			39.00	66.33					
12.44	21.50	89.40			39.50	66.50					
12.48	23.10	90.20			40.60	66.67					
12.52	26.40	91.10			41.50	66.83					
12.56	29.30	92.00			42.20	67.00					
12.60	31.70	93.10			43.30	67.17					
12.68	34.40	94.10			44.00	67.33					
12.77	37.00	95.40			44.50	67.50					
12.85	39.30	96.40			45.10	67.67					
12.93	42.10	97.40			46.00	67.83					
13.02	44.40	98.20			46.50	68.00					
13.10	46.30	99.20			47.00	68.22					
13.15	48.20	100.20			47.50	68.44					
13.20	49.10	101.70			48.50	68.66					
13.25	50.00	103.10			49.50	68.88					

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.		PROJECT TIP I.D.		ROUTE			
				32573.1.FS10		A-0009C		Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
				COUNTY		FIELD PROFESSIONAL		FIELD CREW			
				Graham		M. Brewer		L. Ard/R. Kral			
Test Location				Date Run		Test Location				Date Run	
-L- Sta. 25+69 RT LN/RTL 2.0 FT LT FW				12/27/21 to 1/13/22		-L- Sta. 28+16 LT LN 5.5 FT LT FW				12/27/21 to 1/13/22	
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill		
DCP	Cumulative cm per blow		ABC/STBC	At Grade	DCP	Cumulative cm per blow		STBC	At Grade		
0.80	52.60	100.50			0.90	29.90	95.40				
1.20	53.70	101.30			1.20	30.60	96.50				
1.80	54.50	101.50			1.70	31.10	97.50				
2.10	56.10	101.90			2.10	31.90	98.20				
2.40	57.10	102.50			3.00	32.60	99.30				
2.60	58.60	103.00			3.30	33.50	100.20				
3.00	60.00	103.50			4.00	34.10	101.00				
3.40	61.00	104.00			4.50	35.20	101.20				
3.60	62.20	104.30			4.70	36.00	102.50				
3.90	63.40	104.90			5.00	37.10	103.50				
4.30	64.60	105.30			5.30	38.60	104.40				
4.70	65.60	105.50			5.50	39.90	105.20				
5.00	66.50	106.10			5.90	40.10	106.30				
5.50	67.40	106.50			6.10	41.50	107.00				
5.60	68.10	107.00			6.40	42.60	107.60				
6.00	68.40	107.50			6.60	43.40	108.40				
6.90	69.60	107.90			7.00	44.20	109.50				
7.00	70.40	108.40			7.10	44.50	110.20				
7.30	71.40	109.00			7.50	45.40	111.20				
7.50	72.40	109.30			7.80	46.40	112.00				
7.90	73.50	110.00			7.90	47.60	112.60				
8.10	73.70	110.40			8.10	48.50	113.00				
8.60	74.60	110.90			8.40	49.50	114.40				
8.90	74.80	111.10			8.60	50.90	115.40				
9.30	75.50	111.50			8.90	52.10	115.90				
9.90	76.60	112.00			9.30	53.20	116.00				
10.30	77.10	112.30			9.80	54.30	117.50				
10.40	77.80	112.80			10.00	55.00	118.50				
10.60	78.60	113.40			10.40	56.00	119.00				
11.00	79.50	113.60			10.80	57.20	119.50				
11.50	80.50	114.10			11.10	58.40	120.30				
11.90	80.60	114.50			11.50	59.50	121.30				
12.30	81.10	114.90			12.00	60.40	122.00				
12.50	81.80	115.30			12.40	61.40	122.50				
13.00	82.50	115.90			12.80	62.30	123.20				
13.30	83.00	116.00			13.00	62.90	123.90				
13.90	83.40	116.50			13.10	63.90	124.70				
14.10	83.90	117.50			13.80	64.90	125.50				
14.40	84.90	117.90			13.90	65.10	126.00				
14.80	85.60	118.10			14.80	66.50	127.00				
15.00	86.60				15.00	67.70	127.50				
15.40	87.10				15.50	68.90	128.20				
15.90	87.60				15.90	69.90	128.80				
16.50	88.60				16.00	70.10	129.50				
17.10	89.10				16.60	71.20	130.40				
17.50	89.80				16.90	72.40	131.10				
18.50	90.10				17.50	73.50					
19.40	90.90				18.50	74.60					
20.10	91.40				19.10	75.90					
21.30	92.10				19.50	76.40					
22.90	92.50				20.10	77.90					
24.00	93.10				20.50	79.50					
25.50	93.80				21.50	80.90					
27.80	94.30				22.00	82.30					
30.40	95.00				22.50	83.40					
33.40	95.50				23.10	84.90					
34.50	96.20				23.50	85.10					
36.40	97.00				24.50	86.50					
37.90	97.50				25.00	87.40					
40.40	97.90				25.60	88.60					
42.40	98.30				26.40	89.90					
45.50	98.90				27.00	90.90					
47.00	99.10				27.60	92.00					
49.00	99.50				28.40	93.10					
50.50	100.10				29.30	94.40					



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET											WBS NO.	PROJECT TIP I.D.	ROUTE							
											32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah							
											COUNTY	FIELD PROFESSIONAL	FIELD CREW							
											Graham	M. Brewer	L. Ard/R. Kral							
Test Location				Date Run	Test Location				Date Run											
-L- Sta. 28+16 LTL (LT) 4.3 FT RT FY				12/27/21 to 1/13/22	-L- Sta. 45+24 RT LN/RTL 2.0 FT LT FW				12/27/21 to 1/13/22											
Type	Test Interval			Datum	Cut/Fill	Type	Test Interval			Datum	Cut/Fill									
DCP	Cumulative cm per blow			STBC	At Grade	DCP	Cumulative cm per blow			STBC	10.0 ft. Fill									
0.50	22.60	66.10	116.40			0.80	11.64	23.90	44.50	75.60	111.70									
0.60	22.90	66.90	116.90			1.50	11.76	24.20	44.90	76.40	112.10									
1.00	23.10	68.30	117.40			1.90	11.88	24.60	45.00	77.00	112.30									
1.40	23.20	69.30	118.00			2.20	12.00	25.20	45.30	77.50	113.00									
1.80	23.40	70.10	118.50			2.28	12.18	25.50	45.50	77.90	113.10									
2.10	23.60	71.90	118.60			2.36	12.36	25.60	45.90	78.50	113.60									
2.40	24.00	73.20	119.10			2.44	12.54	26.20	46.30	79.90	114.00									
2.60	24.10	74.40	119.80			2.52	12.72	26.60	47.40	80.20	115.00									
3.00	24.50	75.60	120.70			2.60	12.90	27.20	48.20	80.50	116.10									
3.40	24.60	76.70	121.50			2.78	13.04	27.60	48.60	80.90	116.90									
3.50	24.70	77.90	121.60			2.96	13.18	28.30	48.90	81.30	117.30									
3.60	25.00	78.90	122.40			3.14	13.32	29.00	49.50	81.90	117.60									
4.10	25.20	79.90	122.60			3.32	13.46	29.30	50.00	82.10	118.50									
4.20	25.60	80.70	123.10			3.50	13.60	30.00	50.50	82.60	118.70									
4.60	26.00	81.50	124.00			3.78	13.68	31.00	50.90	82.70	119.40									
4.70	26.40	82.50	124.30			4.06	13.76	31.60	51.50	83.10	119.60									
5.00	26.70	83.60	124.80			4.34	13.84	32.10	52.00	83.50	120.60									
5.10	27.00	84.50	125.80			4.62	13.92	32.60	52.50	83.90	121.10									
5.40	27.40	85.40	126.30			4.90	14.00	33.40	53.00	84.20	122.00									
5.60	27.60	86.10	126.40			5.00	14.20	34.10	53.60	84.50	122.40									
5.70	28.10	86.90	127.00			5.10	14.40	35.00	53.70	85.00	122.50									
6.00	28.50	87.70	127.60			5.20	14.60	35.80	54.20	85.40										
6.10	29.00	88.50	127.90			5.30	14.80	36.10	54.80	85.90										
6.20	29.40	89.10	128.50			5.40	15.00	36.60	55.00	86.40										
6.40	30.00	90.40	128.90			5.60	15.06	37.20	55.60	86.90										
6.60	30.50	91.10	129.10			5.80	15.12	37.30	56.20	87.30										
6.70	31.10	92.10	129.80			6.00	15.18	37.80	56.30	88.00										
6.80	31.20	92.60	130.00			6.20	15.24	38.50	56.90	88.50										
6.90	31.90	93.50	130.60			6.40	15.30	38.60	57.40	88.60										
7.10	32.30	94.10				6.60	15.36	38.90	57.60	89.00										
7.20	33.00	95.10				6.80	15.42	39.00	58.10	89.50										
7.50	34.20	95.70				7.00	15.48	39.60	58.50	89.90										
7.60	35.00	96.10				7.20	15.54	40.20	59.00	90.00										
7.70	36.20	97.00				7.40	15.60	40.70	59.60	90.10										
7.80	37.80	97.50				7.46	15.62	41.00	60.00	90.60										
8.40	39.20	98.10				7.52	15.64	41.30	60.10	91.10										
8.60	40.90	98.80				7.58	15.66	41.50	61.00	91.60										
8.90	41.90	99.70				7.64	15.68	41.57	61.30	92.50										
9.50	43.00	100.50				7.70	15.70	41.64	61.60	93.30										
9.90	43.80	101.00				7.86	16.00	41.70	62.30	94.00										
10.40	44.00	101.50				8.02	16.10	41.77	62.70	95.30										
11.00	44.80	101.70				8.18	16.40	41.84	63.00	95.90										
11.50	45.60	102.30				8.34	16.60	41.91	63.60	96.40										
12.00	46.30	102.90				8.50	16.90	41.98	64.10	96.50										
12.50	47.30	103.50				8.60	17.00	42.04	64.50	97.40										
13.50	48.40	104.10				8.70	17.50	42.11	65.00	97.60										
14.20	49.50	104.70				8.80	17.60	42.18	65.30	98.50										
14.90	50.60	105.10				8.90	18.20	42.25	66.10	99.40										
15.20	51.70	105.70				9.00	18.40	42.32	66.60	100.10										
15.50	52.80	106.50				9.14	18.60	42.38	67.20	100.60										
16.50	54.00	107.00				9.28	18.90	42.45	67.60	100.80										
16.70	55.00	107.50				9.42	19.40	42.52	68.10	101.10										
17.00	56.00	108.00				9.56	19.50	42.59	69.00	101.60										
17.10	57.50	108.90				9.70	19.70	42.66	69.10	102.30										
17.80	58.60	109.90				9.86	20.00	42.72	69.90	103.00										
17.90	60.00	110.50				10.02	20.10	42.79	70.10	103.90										
18.30	60.30	110.90				10.18	20.50	42.86	70.80	104.60										
18.60	61.50	111.50				10.34	20.60	42.93	71.30	105.40										
19.00	62.20	112.00				10.50	21.20	43.00	71.90	106.20										
19.50	62.40	112.50				10.68	21.50	43.06	72.60	106.60										
20.10	62.60	113.40				10.86	22.00	43.13	73.50	107.10										
20.60	63.20	113.80				11.04	22.50	43.20	74.00	107.60										
21.10	63.90	114.90				11.22	22.70	43.30	74.50	108.30										
21.50	64.50	115.40				11.40	23.00	44.10	75.00	109.50										
22.50	65.10	115.90				11.52	23.40	44.20	75.50	110.60										

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET											WBS NO.	PROJECT TIP I.D.	ROUTE							
											32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah							
											COUNTY	FIELD PROFESSIONAL	FIELD CREW							
											Graham	M. Brewer	L. Ard/R. Kral							
Test Location				Date Run	Test Location				Date Run											
-L- Sta. 45+24 RT PS 0.2 FT RT FW				12/27/21 to 1/13/22	-L- Sta. 64+87 LT LN 6.3 FT LT FW				12/27/21 to 1/13/22											
Type	Test Interval			Datum	Cut/Fill	Type	Test Interval			Datum	Cut/Fill									
DCP	Cumulative cm per blow			STBC	10.0 ft. Fill	DCP	Cumulative cm per blow			STBC	20.0 ft. Fill									
0.90	31.70	72.90	120.00			0.10	15.10	50.31												
1.30	32.00	73.30	121.20			0.40	15.60	50.34												
1.60	32.60	74.20				0.60	16.90	50.36												
2.00	33.60	74.50				1.00	17.00	50.38												
2.50	34.90	75.00				1.30	17.10	50.41												
2.90	35.10	75.50				1.90	18.50	50.43												
3.10	36.10	76.00				2.00	18.60	50.46												
3.40	37.50	76.50				2.30	19.00	50.48												
3.90	38.70	76.90				2.50	19.40	50.50												
4.40	40.70	77.30				2.60	19.50	50.53												
4.90	41.20	77.70				2.90	19.90	50.55												
5.20	41.90	77.90				3.30	20.50	50.58												
5.60	42.30	78.20				4.00	21.00	50.60												
5.90	42.90	78.50				4.30	21.50	50.62												
6.30	43.20	78.60				4.50	22.00	50.63												



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.	PROJECT TIP I.D.	ROUTE
										32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
										COUNTY	FIELD PROFESSIONAL	FIELD CREW
										Graham	M. Brewer	L. Ard/R. Kral
Test Location					Date Run	Test Location					Date Run	
-L- Sta. 84+57 RT LN 2.3 FT LT FW					12/27/21 to 1/13/22	-L- Sta. 104+90 LT LN 2.0 FT LT FW					12/27/21 to 1/13/22	
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. Fill	
0.60	23.50	101.00				0.90	25.50	70.60				
0.90	24.20	101.40				1.40	27.00	70.70				
1.10	25.10	102.00				1.60	28.30	71.10				
1.40	26.60	102.60				2.00	29.50	71.20				
1.70	28.00	103.50				2.40	30.50	71.30				
1.90	29.20	103.70				2.60	31.00	72.00				
2.30	30.40	104.60				3.00	31.20	72.12				
3.00	31.40	105.40				3.10	32.50	72.24				
3.20	32.70	106.00				3.50	32.70	72.36				
3.60	34.00	106.40				3.60	33.00	72.48				
3.90	35.40	107.20				4.00	33.50	72.60				
4.00	37.00	107.80				4.30	34.00	72.76				
4.20	38.00	108.30				4.60	34.30	72.92				
4.60	39.20	109.00				4.90	35.00	73.08				
4.70	40.80	109.50				5.10	35.60	73.24				
5.00	42.00	110.20				5.40	35.70	73.40				
5.20	43.50	110.60				5.50	36.30	73.46				
5.70	45.00	111.30				5.90	36.90	73.51				
6.50	46.00	111.60				6.00	37.50	73.57				
6.70	47.60	112.10				6.20	38.50	73.62				
7.20	48.60	112.50				6.50	39.00	73.68				
7.50	50.10	113.10				6.60	39.90	73.73				
7.60	51.10	113.60				7.00	40.60	73.79				
7.90	52.40	114.30				7.40	41.50	73.84				
8.40	53.40	115.20				7.60	42.30	73.90				
8.50	54.60	115.50				7.90	43.30	74.01				
8.60	55.60	116.00				8.00	44.40	74.12				
9.00	57.30	116.50				8.30	45.50	74.23				
9.10	58.50	116.90				8.40	46.60	74.34				
9.40	59.20	117.40				8.50	47.50	74.45				
9.50	60.40	118.00				8.60	48.50	74.56				
9.90	61.10	119.00				8.90	50.00	74.67				
10.10	62.40	119.50				9.20	50.40	74.78				
10.30	63.60	120.00				9.60	51.00	74.89				
10.50	65.00	120.60				9.70	51.50	75.00				
10.60	66.00	121.40				10.00	52.20	75.07				
10.70	67.20					10.20	53.00	75.14				
10.90	68.50					10.50	54.00	75.21				
11.40	69.80					10.60	55.50	75.28				
11.60	71.00					10.90	56.30	75.35				
12.00	72.00					11.30	57.20	75.42				
12.20	73.20					11.60	58.00	75.49				
12.40	74.20					11.90	58.50	75.56				
13.00	75.50					12.00	59.30	75.63				
13.40	76.90					12.50	59.40	75.70				
13.50	77.50					12.90	60.00	75.73				
13.90	78.50					13.00	60.50	75.76				
14.10	79.60					13.40	60.60	75.79				
14.50	80.60					13.60	61.10	75.82				
14.90	82.00					14.00	61.50	75.85				
15.00	83.40					14.30	61.60	75.88				
15.50	85.10					14.60	62.30	75.91				
16.10	86.00					15.00	62.50	75.94				
16.30	87.60					15.50	63.00	75.97				
16.60	89.90					15.60	65.00	76.00				
17.00	90.20					16.00	65.10	DCP REF				
17.60	91.40					16.50	65.30	50/1.5"				
18.00	92.50					16.90	66.30					
18.60	93.90					17.50	67.00					
19.20	95.50					18.00	67.20					
19.60	96.50					18.50	67.50					
20.30	97.50					19.50	68.10					
21.00	98.60					20.60	69.80					
21.90	99.50					22.40	70.10					
22.40	100.10					24.00	70.20					

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.	PROJECT TIP I.D.	ROUTE
										32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
										COUNTY	FIELD PROFESSIONAL	FIELD CREW
										Graham	M. Brewer	L. Ard/R. Kral
Test Location					Date Run	Test Location					Date Run	
-L- Sta. 125+06 RT LN 2.0 FT LT FW					12/27/21 to 1/13/22	-L- Sta. 145+07 LT LN 2.0 FT LT FW					12/27/21 to 1/13/22	
Type	Test Interval		Datum		Cut/Fill	Type	Test Interval		Datum		Cut/Fill	
DCP	Cumulative cm per blow		STBC		3.0 ft. Fill	DCP	Cumulative cm per blow		STBC		5.0 ft. Fill	
0.80	33.00	114.90				1.00	DCP REF	54.60	96.10			
1.50	34.10	116.30				1.50	AUGER TO	55.10	96.40			
2.30	35.00	117.50				2.00	23.4 cm	55.50	96.70			
2.70	36.00	118.70				3.00	0.60	55.70	97.00			
3.10	37.00					3.50	1.50	56.20	97.30			
3.80	37.90					3.55	2.10	56.70	97.60			
4.20	38.90					3.60	2.70	58.50	97.90			
4.60	40.20					3.65	3.60	58.70	98.20			
4.90	41.70					3.70	4.10	59.50	98.50			
5.50	43.50					3.75	4.50	60.50	98.80			
5.90	44.00					3.80	4.60	62.10	99.10			
6.50	46.20					3.85	5.90	63.20	99.46			
6.60	47.50					3.90	6.70	64.30	99.82			
7.00	49.00					3.95	6.80	64.90	100.18			
7.40	49.90					4.00	7.70	65.30	100.54			
7.70	51.60					4.05	7.80	65.70	100.90			
8.00	53.00					4.10	8.20	66.10				
8.40	55.00					4.15	8.80	66.50				
8.50	56.30					4.20	9.90	66.90				
8.60	57.60					4.25	10.60	67.34				
8.90	59.20					4.30	12.50	67.78				
9.30	60.70					4.35	13.30	68.22				
9.70	61.70					4.40	14.20	68.66				
10.40	62.60					4.45	14.60	69.10				
10.50	64.30					4.50	15.60	69.66				
11.00	66.60					4.51	17.70	70.22				
11.20	68.00					4.52	18.80	70.78				
11.60	69.90					4.53	19.90	71.34				
11.70	70.70					4.54	20.70	71.90				
12.30	72.50					4.55	22.20	73.10				
12.90	73.90					4.56	22.70	74.10				
13.10	75.00					4.57	23.60	75.10				
13.50	76.60					4.58	24.20	76.10				
14.40	77.40					4.59	24.80	77.90				
14.60	79.00					4.60	25.60	79.10				
15.00	79.50					4.68	27.50	81.60				
15.30	80.00					4.76	28.10	82.60				
15.90	81.40					4.84	28.70	83.50				
16.30	82.50					4.92	30.70	84.20				
16.70	83.60					5.00	31.10	84.50				
17.20	84.70					5.08	32.00	85.20				
17.60	87.70					5.16	33.50	86.10				
18.20	88.20					5.24	35.10	86.70				
18.70	89.60					5.32	36.00	88.10				
18.90	91.00					5.40	37.10	89.11				
19.20	92.50					5.51	38.70	89.60				
19.50	94.00					5.62	39.50	90.10				
20.10	95.00					5.73	40.90	90.60				
20.50	96.00					5.84	42.10	91.10				
20.60	97.30					5.95	42.80	91.60				
21.40	97.60					6.06	43.80	92.10				
22.00	100.00					6.17	45.70	92.20				
22.30	101.00					6.28	46.70	92.30				
22.70	101.60					6.39	47.70	92.40				
23.50	102.90					6.50	48.20	92.50				
24.40	103.40					6.64	48.70	92.60				
24.90	104.00					6.78	49.10	93.00				
25.60	104.60					6.92	49.70	93.40				
26.40	106.00					7.06	51.20	93.80				
27.40	107.00					7.20	51.70	94.20				
28.40	108.70					7.34	52.60	94.60				
29.20	109.90					7.48	53.10	94.90				
30.00	110.60					7.62	53.50	95.20				
31.00	112.00					7.76	54.00	95.50				
32.00	113.00					7.90	54.50	95.80				



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.	PROJECT TIP I.D.	ROUTE
										32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
										COUNTY	FIELD PROFESSIONAL	FIELD CREW
										Graham	M. Brewer	L. Ard/R. Kral
Test Location				Date Run	Test Location				Date Run			
-L Sta. 159+83 RT LN 2.0 FT LT FW				12/27/21 to 1/13/22	-L Sta. 173+11 LT PS 1.7 FT RT FW				12/27/21 to 1/13/22			
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	20.0 ft. Fill			
1.20	18.10	70.20			0.10	62.40	109.10					
2.00	18.50	71.50			0.80	63.70	110.00					
2.50	18.90	72.90			1.90	64.70	110.50					
3.00	19.00	73.50			2.50	65.50	110.90					
3.30	19.50	74.10			3.20	66.10	111.20					
3.50	19.90	75.10			4.00	66.70	111.50					
3.90	20.50	76.60			4.50	67.60	111.80					
4.10	20.90	78.20			5.00	68.40	112.10					
4.50	21.10	80.10			5.70	69.10	112.60					
4.60	21.30	81.40			6.30	69.60	113.20					
4.86	21.60	83.60			6.90	70.00	113.70					
5.12	21.70	86.10			7.10	71.70	114.30					
5.38	22.00	88.40			7.70	72.00	114.60					
5.64	22.30	90.10			8.20	72.60	115.10					
5.90	22.90	91.10			8.70	73.30	115.50					
6.02	23.50	93.00			9.30	73.90	115.90					
6.14	23.80	94.30			9.90	74.60	116.40					
6.26	24.50	95.40			10.10	75.10	116.90					
6.38	25.50	96.60			10.60	75.60	117.50					
6.50	27.50	97.90			11.10	76.60	118.00					
6.66	28.00	99.10			11.60	77.10	118.70					
6.82	28.60	100.40			12.10	78.00	119.20					
6.98	29.00	101.20			12.70	79.00	119.60					
7.14	30.00	101.50			13.10	79.90	120.20					
7.30	31.00	102.50			13.50	80.90	120.60					
7.54	31.50	104.00			14.70	81.70	121.20					
7.78	32.50	104.50			15.40	82.20	121.90					
8.02	33.00	105.90			16.00	83.10	122.50					
8.26	33.20	107.00			16.50	83.40	123.30					
8.50	33.90	108.30			17.40	83.60	123.90					
8.70	34.10	109.50			17.90	84.10	124.90					
8.90	35.00	111.00			18.60	85.00	125.80					
9.10	36.00	112.00			19.10	85.40	126.40					
9.30	37.00	113.00			19.70	85.70	127.30					
9.50	38.00	114.50			20.50	86.30	128.30					
9.70	39.90	115.50			21.40	86.80	129.00					
9.90	41.50	116.90			22.10	87.40						
10.10	43.50	118.10			23.00	87.70						
10.30	45.70	119.30			24.10	88.20						
10.50	48.00	120.50			25.20	88.80						
10.72	49.30	121.60			26.10	89.50						
10.94	50.60	123.50			26.70	90.10						
11.16	51.60	124.50			27.70	90.50						
11.38	52.90	125.60			28.40	91.00						
11.60	54.20	127.00			29.40	91.90						
11.86	55.00	128.90			31.60	92.40						
12.12	56.00	130.40			33.00	92.90						
12.38	57.00				35.00	93.60						
12.64	58.50				37.10	94.30						
12.90	59.30				38.60	95.00						
13.14	60.10				39.90	95.90						
13.38	60.90				41.60	96.80						
13.62	61.90				43.10	97.50						
13.86	62.40				44.50	98.40						
14.10	63.50				45.90	99.30						
14.50	64.00				47.40	100.30						
14.90	64.50				48.70	101.20						
15.10	65.00				50.30	102.10						
15.50	65.40				51.20	102.80						
15.90	65.90				52.90	103.90						
16.10	66.30				54.70	104.70						
16.50	67.90				56.20	105.50						
17.00	68.10				57.90	106.30						
17.30	69.50				59.30	107.90						
17.90	70.10				60.80	109.00						

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.	PROJECT TIP I.D.	ROUTE
										32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah
										COUNTY	FIELD PROFESSIONAL	FIELD CREW
										Graham	M. Brewer	L. Ard/R. Kral
Test Location				Date Run	Test Location				Date Run			
-L Sta. 173+11 LT LN 2.3 FT LT FW				12/27/21 to 1/13/22	-L Sta. 190+26 RT LN 2.0 FT LT FW				12/27/21 to 1/13/22			
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			
1.10	18.60	72.40	98.60	127.20					2.50	29.50	75.19	102.40
1.50	19.00	72.60	99.00	127.60					3.60	30.00	75.30	102.70
1.70	19.50	72.80	99.50	127.90					4.60	30.80	75.58	103.00
2.00	19.80	72.90	99.90	128.40					4.90	31.40	75.86	103.10
2.20	20.20	73.40	100.50	129.00					5.20	31.80	76.14	103.30
2.60	20.60	73.70	101.20						5.60	32.50	76.42	103.40
2.80	21.10	74.20	102.00						6.20	33.00	76.70	103.47
3.10	21.50	74.30	102.40						6.70	33.50	76.98	103.54
3.50	22.10	74.50	103.10						7.00	34.50	77.26	103.61
3.80	22.40	75.30	103.60						7.20	35.30	77.54	103.68
4.20	23.10	75.70	104.40						7.60	36.20	77.82	103.75
4.50	23.70	76.20	105.10						8.10	37.20	78.10	103.82
4.64	24.40	76.60	105.30						8.50	38.20	78.80	103.89
4.78	25.40	77.30	105.80						8.68	39.20	79.40	103.96
4.92	26.00	77.70	106.30						8.86	40.50	80.10	104.03
5.06	26.60	78.30	106.80						9.04	41.60	80.90	104.10
5.20	27.30	78.80	107.00						9.22	43.00	81.40	104.23
5.30	27.80	79.20	107.70						9.40	44.20	81.90	104.36
5.56	28.70	79.90	108.10						9.66	44.90	82.20	104.49
5.82	29.70	80.20	108.60						9.92	46.40	82.60	104.62
6.08	30.60	80.90	109.00						10.18	48.10	83.20	104.75
6.34	31.90	81.30	109.40						10.44	50.30	84.00	104.88
6.60	32.70	82.00	109.80						10.70	51.90	84.20	105.01
6.84	33.30	82.50	110.10						10.98	54.00	85.00	105.14
7.08	34.10	82.80	110.30						11.26	56.00	85.60	105.27
7.32	35.10	83.40	110.80						11.54	57.50	86.00	105.40
7.56	36.30	83.90	111.30						11.82	59.20	86.60	105.45
7.80	37.80	84.60	111.80						12.10	60.90	87.00	105.50
8.04	39.10	84.90	112.40						12.32	62.60	87.40	105.55
8.28	40.10	85.50	112.70						12.54	64.10	87.90	105.60
8.52	41.30	86.00	112.90						12.76	65.80	88.30	105.65
8.76	42.50	86.40	113.20						12.98	66.90	88.60	105.70
9.00	44.00	86.90	113.70						13.20	68.30	89.00	105.75
9.18	45.50	87.10	114.00						13.50	69.30	89.40	105.80
9.36	46.40	87.60	114.40						13.80	69.90	89.60	105.85
9.54	47.60	88.00	114.60						14.10	70.70	89.70	105.90
9.72	48.90	88.60	114.70						14.40	71.00	89.90	105.97
9.90	49.90	88.90	114.90						14.70	71.13	90.10	106.04
10.12	51.20	89.00	115.10						15.06	71.26	90.50	106.11
10.34	52.30	89.30	115.40						15.42	71.39	91.10	106.18
10.56	53.60	89.60	115.70						15.78	71.52	91.70	106.25
10.78	54.80	89.90	116.10						16.14	71.65	92.50	106.32
11.00	56.20	90.30	116.70						16.50	71.78	93.10	106.39
11.30	58.00	90.60	117.20						16.90	71.91	93.70	106.46
11.60	59.10	91.00	117.80						17.30	72.04	94.30	106.53
11.90	60.30	91.40	118.20						17.70	72.17	94.80	106.60
12.20	61.60	91.80	118.70						18.10	72.30	95.20	
12.50	63.00	92.20	119.10						18.50	72.49	95.60	
12.80	64.60	92.50	119.60						19.10	72.68	96.30	
13.10	65.00	92.90	120.20						19.70	72.87	96.80	
13.40	65.60	93.12	120.80						20.10	73.06	97.00	
13.70	65.80	93.34	121.00						20.50	73.25	97.50	
14.00	66											

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET							WBS NO.	PROJECT TIP I.D.	ROUTE				
							32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah				
							COUNTY	FIELD PROFESSIONAL	FIELD CREW				
							Graham	M. Brewer	L. Ard/R. Kral				
Test Location							Date Run	Test Location				Date Run	
-L- Sta. 204+46 LT LN 2.3 FT LT FW							12/27/21 to 1/13/22	-L- Sta. 225+17 RT LN 2.3 FT LT FW				12/27/21 to 1/13/22	
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		At Grade	
1.00	15.78	55.10					1.60	0.80	37.10	60.60	95.80		
2.30	16.00	56.00					1.80	1.00	37.50	60.90	96.00		
3.20	16.32	56.40					2.30	1.40	37.90	61.20	96.30		
3.80	16.64	56.70					2.60	1.60	38.50	61.40	96.50		
4.20	16.96	57.10					2.80	2.00	38.90	61.60	96.60		
4.60	17.28	57.60					3.20	2.40	39.30	61.80	96.90		
5.00	17.60	58.20					3.50	2.80	39.60	62.00	97.30		
5.10	18.00	58.70					3.60	3.40	39.80	62.60	97.70		
5.20	18.40	59.00					3.70	3.60	40.10	63.20	97.90		
5.30	19.30	59.30					4.00	3.80	40.50	63.50	98.20		
5.60	19.60	59.70					4.20	4.10	40.70	63.80	98.70		
5.90	19.90	60.00					4.34	4.80	40.80	64.30	99.20		
6.10	20.30	60.10					4.48	5.10	41.00	64.50	99.60		
6.50	20.70	60.20					4.62	5.40	41.40	65.00	100.00		
6.70	21.40	61.40					4.76	5.80	41.70	65.60	100.40		
6.90	21.90	DCP REF					4.90	6.10	42.00	66.00	100.70		
7.10	22.50	50/0.0*					5.00	6.30	42.20	66.30	101.30		
7.20	23.00						5.10	6.60	42.40	66.70	101.60		
7.30	23.70						5.20	7.00	42.70	67.10	101.90		
7.40	24.00						5.30	7.30	42.90	67.50	102.40		
7.50	24.70						5.40	8.20	43.10	67.70	102.80		
7.60	25.30						5.54	8.30	43.30	67.90	103.30		
7.72	26.00						5.68	8.90	43.70	68.00	103.40		
7.84	26.50						5.82	9.50	44.30	68.40	103.50		
7.96	27.20						5.96	10.30	44.70	68.60	103.60		
8.08	27.80						6.10	11.10	44.90	69.00	103.70		
8.20	28.30						6.16	11.90	45.30	69.20	103.80		
8.40	28.80						6.22	13.00	46.00	69.40	103.83		
8.60	29.10						6.28	13.70	46.40	70.10	103.86		
8.80	29.80						6.34	14.60	47.00	70.50	103.89		
9.00	29.90						6.40	15.50	47.50	71.00	103.92		
9.20	30.10						6.44	16.70	48.10	71.30	103.95		
9.38	30.60						6.48	17.50	48.70	71.60	103.98		
9.56	31.10						6.52	18.60	48.80	72.20	104.01		
9.74	31.50						6.56	19.60	49.00	72.80	104.04		
9.92	32.10						6.60	20.70	49.30	73.00	104.07		
10.10	32.60						6.64	22.60	49.60	73.90	104.10		
10.28	33.10						6.68	23.40	50.00	74.40			
10.46	33.60						6.72	25.00	50.20	74.70			
10.64	34.10						6.76	26.40	50.40	75.40			
10.82	34.80						6.80	27.90	50.70	76.10			
11.00	35.20						6.82	29.40	50.90	76.70			
11.16	35.80						6.84	31.00	51.10	77.30			
11.32	36.50						6.86	32.20	51.70	77.90			
11.48	37.50						6.88	32.40	52.20	78.50			
11.64	38.30						6.90	32.60	52.70	79.50			
11.80	39.10						6.92	32.90	52.90	80.20			
11.96	40.80						6.94	33.10	53.50	81.10			
12.12	41.50						6.96	33.30	54.00	82.20			
12.28	42.40						6.98	33.40	54.40	83.20			
12.44	43.10						7.00	33.50	54.90	84.40			
12.60	44.10						7.05	33.72	55.40	85.40			
12.82	45.00						7.10	33.94	56.10	86.60			
13.04	45.80						7.15	34.16	56.30	87.60			
13.26	46.60						7.20	34.38	57.00	88.80			
13.48	47.50						7.25	34.60	57.10	89.80			
13.70	48.80						7.30	34.94	57.30	90.80			
13.94	49.50						7.35	35.28	57.50	92.20			
14.18	50.10						7.40	35.62	58.00	92.90			
14.42	50.80						7.45	35.96	58.50	93.40			
14.66	51.20						7.50	36.30	58.90	93.70			
14.90	51.80						DCP REF	36.46	59.60	94.10			
15.12	52.80						AUGER 13.1	36.62	59.90	94.50			
15.34	53.30						TO 20.6 cm	36.78	60.30	95.10			
15.56	54.00						0.60	36.94	60.50	95.60			

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET							WBS NO.	PROJECT TIP I.D.	ROUTE				
							32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah				
							COUNTY	FIELD PROFESSIONAL	FIELD CREW				
							Graham	M. Brewer	L. Ard/R. Kral				
Test Location							Date Run	Test Location				Date Run	
-L- Sta. 245+17 LT LN 2.4 FT LT FW							12/27/21 to 1/13/22	-L- Sta. 264+94 RT LN 1.5 FT LT FW				12/27/21 to 1/13/22	
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		6.0 ft. Fill	
0.80	21.50	53.10	93.50				0.60	52.20					
1.20	22.10	53.40	94.80				1.00	53.00					
1.80	23.20	53.60	96.00				1.20	53.50					
2.20	24.20	54.00	97.20				1.40	54.50					
2.40	24.90	54.40	98.30				1.90	55.50					
2.70	25.90	54.60	99.90				2.10	56.50					
2.80	27.30	55.00	101.30				2.60	57.20					
3.10	28.30	55.30	102.70				2.90	57.80					
3.50	28.90	55.60	103.90				3.10	58.60					
3.70	29.20	55.90	104.80				3.40	59.00					
3.90	29.70	56.30	105.80				3.50	60.10					
4.00	30.00	56.90	106.80				4.50	61.10					
4.26	30.40	57.20	107.60				5.30	62.00					
4.52	31.00	57.70	108.50				5.90	63.00					
4.78	31.24	58.10	109.50				6.40	63.50					
5.04	31.48	58.70	110.60				6.90	64.10					
5.30	31.72	59.10	111.30				7.90	64.70					
5.58	31.96	59.80	112.40				8.60	64.90					
5.86	32.20	60.60	113.30				9.40	66.90					
6.14	32.48	61.30	114.00				10.10	67.50					
6.42	32.76	62.10	115.00				10.50	68.00					
6.70	33.04	63.00	116.00				11.40	68.90					
7.04	33.32	63.50	116.80				12.10	69.70					
7.38	33.60	64.70	117.40				13.10	70.60					
7.72	34.50	65.30	118.20				14.00	71.60					
8.06	35.00	66.10	118.90				15.10	72.60					
8.40	35.70	66.90	119.60				16.50	73.28					
8.56	36.50	67.40	120.40				17.00	73.96					
8.72	37.00	68.00	121.30				17.90	74.64					
8.88	37.60	68.60	122.50				19.90	75.32					
9.04	38.30	69.00	123.90				20.50	76.00					
9.20	38.90	69.60	125.20				22.50	78.00					
9.40	39.70	70.00	126.40				24.50	79.00					
9.60	40.10	70.70	127.30				26.50	80.90					
9.80	40.60	71.60	127.90				28.60	81.10					
10.00	41.00	72.20					29.10	83.00					
10.20	41.20	72.60					29.90	84.80					
10.40	42.00	73.10					30.10	86.00					
10.60	42.30	73.60					31.10	88.10					
10.80	42.60	74.20					31.60	90.10					
11.00	43.00	74.70					32.50	92.10					
11.20	43.40	75.40					33.30	94.50					
11.45	43.70	75.90					33.60	97.00					
11.70	44.30	76.80					34.10	99.40					
11.95	44.70	77.50					34.60	102.30					
12.20	45.10	78.30					35.50	105.00					
12.45	45.60	78.80					36.40	108.00					
12.70	46.10	79.50											





DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET								WBS NO.		PROJECT TIP I.D.				ROUTE			
								32573.1.FS10		A-0009C				Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
								COUNTY		FIELD PROFESSIONAL				FIELD CREW			
								Graham		M. Brewer				L. Ard/R. Kral			
Test Location				Date Run		Test Location				Date Run							
-L- Sta. 365+20 RT LN 2.5 FT LT FW				12/27/21 to 1/13/22		-L- Sta. 365+20 RT PS 2.0 FT RT FW				12/27/21 to 1/13/22							
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		10.0 ft. Cut				
0.60	29.90	74.00	103.60				0.30	26.60	67.50	88.70							
1.00	30.50	74.10	104.20				0.60	27.10	68.00	89.10							
1.20	31.50	75.00	104.80				1.00	27.50	68.40	89.50							
1.30	32.60	75.30	105.10				1.50	28.10	68.80	89.80							
1.50	33.60	75.60	105.50				1.70	28.70	68.90	90.10							
1.60	34.70	76.10	106.10				2.10	29.60	69.10	91.00							
1.90	35.90	76.50	106.40				2.50	30.60	69.20	91.10							
2.10	36.60	76.90	107.00				2.80	31.60	69.40	91.70							
2.30	37.90	77.30	107.50				3.00	32.10	69.90	92.20							
2.50	38.90	77.50	108.10				3.40	33.10	70.10	92.40							
2.60	39.90	78.00	108.40				3.60	34.30	70.40	92.80							
2.70	40.50	78.50	109.00				3.70	35.60	70.90	93.30							
3.00	41.50	78.90	109.60				4.00	36.60	71.00	94.00							
3.10	42.30	79.20	110.00				4.40	37.70	71.40	94.40							
3.40	44.00	79.50	110.40				4.60	38.30	71.70	94.90							
3.60	44.30	80.00	111.10				5.10	39.50	72.10	95.30							
4.00	45.90	80.30	111.90				5.30	40.40	72.20	95.80							
4.30	46.50	80.90	112.50				5.80	41.00	72.60	96.20							
4.60	47.30	81.00	113.00				6.10	41.30	72.90	96.60							
5.00	48.20	81.50	113.50				6.30	42.00	73.10	97.00							
5.10	49.20	82.10	113.60				6.60	42.80	73.40	97.30							
5.30	50.00	82.30					7.00	43.50	73.60	98.90							
5.60	51.00	82.90					7.50	44.30	73.70	99.20							
5.90	51.90	83.30					8.00	44.50	73.80	99.90							
6.10	52.40	83.60					8.40	45.10	74.10	100.10							
6.20	53.30	84.00					8.90	45.90	74.20	100.70							
6.30	54.20	84.40					9.00	46.50	74.60	101.30							
7.00	55.00	85.90					9.60	47.20	74.80	101.50							
7.60	56.10	86.30					10.00	47.80	75.20	101.90							
8.20	56.80	86.40					10.40	48.60	75.60	102.50							
8.60	57.50	87.10					10.70	49.50	76.00	103.00							
9.00	58.00	87.50					11.00	50.10	76.40	103.30							
9.30	58.50	87.60					11.20	51.10	76.60	103.90							
9.60	59.30	87.90					11.60	52.00	76.90	104.10							
9.70	59.50	88.60					12.10	52.80	77.20	104.60							
10.20	59.60	89.30					12.70	53.40	77.40	105.00							
10.60	60.10	89.80					12.80	54.00	77.70	105.50							
11.00	60.30	90.30					13.70	54.80	78.20	105.60							
11.30	60.60	90.90					14.30	55.80	78.40	106.20							
11.60	60.90	91.10					14.70	56.30	78.90	106.60							
12.00	61.30	91.50					15.10	56.90	79.20	107.60							
12.50	61.60	92.00					15.70	57.40	79.70	107.80							
13.00	61.70	92.60					16.30	57.80	80.00	108.50							
13.10	62.00	93.00					16.60	58.30	80.20	109.20							
13.60	63.00	93.40					17.10	58.90	80.50	109.70							
14.40	63.50	94.30					17.70	59.30	81.00	110.00							
14.70	63.90	94.90					18.40	59.50	81.20	110.60							
15.50	64.00	95.30					18.80	60.20	81.70	111.20							
15.90	64.50	96.00					19.40	61.00	81.90	111.60							
16.40	64.90	96.50					20.00	61.40	82.70	112.60							
17.00	65.10	97.10					20.60	61.70	83.20	113.20							
17.40	66.60	97.50					21.40	62.40	83.40	113.60							
18.10	67.30	98.10					21.90	62.70	83.90	114.30							
18.60	68.00	98.50					22.00	62.90	84.50	114.70							
19.90	68.30	98.80					22.40	63.20	85.10	115.30							
20.40	68.90	99.50					22.60	63.70	85.70	115.80							
21.10	69.30	99.90					23.05	64.20	85.90	116.90							
22.40	70.00	100.20					23.50	64.40	86.00	117.70							
23.60	70.60	100.60					23.95	64.70	86.40								
24.90	70.90	101.40					24.40	65.20	86.60								
25.00	71.50	101.90					24.90	65.70	87.10								
26.40	72.10	102.40					25.20	65.90	87.70								
27.60	72.60	102.60					25.40	66.10	87.80								
28.90	73.00	103.00					25.70	66.60	88.10								
29.00	73.50	103.50					26.00	67.20	88.30								

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET								WBS NO.		PROJECT TIP I.D.				ROUTE			
								32573.1.FS10		A-0009C				Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
								COUNTY		FIELD PROFESSIONAL				FIELD CREW			
								Graham		M. Brewer				L. Ard/R. Kral			
Test Location				Date Run		Test Location				Date Run							
-L- Sta. 385+02 LT PS 6.0 FT RT FW				12/27/21 to 1/13/22		-L- Sta. 385+02 LT LN 1.5 FT LT FW				12/27/21 to 1/13/22							
Type	Test Interval			Datum		Cut/Fill	Type	Test Interval			Datum		Cut/Fill				
DCP	Cumulative cm per blow			STBC		40.0 ft. Cut	DCP	Cumulative cm per blow			STBC		40.0 ft. Cut				
1.00	30.20	72.60	136.10				0.80	33.50	75.80								
1.40	30.80	73.40	137.90				1.20	34.00	75.90								
2.00	31.60	74.00	138.50				1.50	35.00	76.00								
2.40	31.70	74.50					1.90	36.00	76.10								
2.80	32.50	75.00					2.10	36.40	76.22								
3.20	32.80	75.60					2.50	36.90	76.34								
3.80	33.20	76.30					2.90	37.40	76.46								
4.10	33.40	76.70					3.00	38.00	76.58								
4.50	33.50	77.40					3.10	38.10	76.70								
5.20	34.00	77.90					3.20	39.10	76.82								
5.50	34.68	78.40					3.30	39.60	76.94								
6.50	35.36	79.00					3.50	40.00	77.06								
6.80	36.04	79.60					4.50	40.60	77.18								
7.20	36.72	80.10					5.90	40.70	77.30								
7.50	37.40	81.10					6.50	41.40	77.46								
7.80	38.60	81.70					6.80	42.30	77.62								
8.10	39.00	82.20					7.50	42.60	77.78								
8.40	39.70	82.70					8.50	43.20	77.93								
8.80	40.50	83.30					9.00	44.10	78.09								
9.20	41.20	83.90					10.10	44.60	78.25								
9.50	42.00	84.50					10.90	45.30	78.41								
10.00	42.70	85.20					11.50	45.90	78.57								
10.40	43.30	86.10					11.60	46.50	78.73								
11.40	43.80	87.90					12.10	46.90	78.88								
12.10	44.40	88.50					12.20	47.90	79.04								
12.50	44.80	89.20					12.60	48.50	79.20								
13.00	45.33	90.10					12.90	49.20	79.43								
13.60	45.87	91.00					13.10	50.00	79.66								
14.10	46.40	91.90					13.60	51.00	79.89								
14.70	46.87	92.20					13.70	52.00	80.12								
15.30	47.33	93.50					14.40	52.90	80.35								
15.80	47.80	94.70					14.90	53.60	80.58								
16.50	48.70	95.50					15.30	54.70	80.81								
17.00	49.40	96.60					15.60	55.60	81.04								
17.30	50.60	97.30					16.10	56.20	81.27								
17.70	51.30	98.30					17.50	57.00	81.50								
18.05	52.00	99.30					18.40	57.50	81.66								
18.40	52.80	100.40					19.20	58.10	81.83								
19.15	53.50	101.50					20.00	59.30	81.99								
19.90	54.30	102.60					20.90	60.30	82.15								
21.00	55.30	104.00					21.90	61.10	82.32								
21.30	56.50	105.30					22.40	62.00	82.48								
21.70	57.80	107.50					23.50	63.00	82.65								
22.20	58.80	108.10															



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET																			
WBS NO.				PROJECT TIP I.D.				ROUTE											
32573.1.FS10				A-0009C				Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah											
COUNTY				FIELD PROFESSIONAL				FIELD CREW											
Graham				M. Brewer				L. Ard/R. Kral											
Test Location				Date Run				Test Location				Date Run							
-L- Sta. 406+18 RT LN 1.4 FT LT FW				12/27/21 to 1/13/22				-L- Sta. 406+18 RT PS 1.0 FT RT FW				12/27/21 to 1/13/22							
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. Fill		
0.50	18.10	55.48							0.70	35.40	65.90	105.00							
0.60	18.90	55.55							1.70	35.80	66.50	106.30							
0.90	19.60	55.62							2.20	36.10	67.10	107.00							
1.20	20.40	55.69							3.10	36.40	67.90	108.10							
1.70	21.00	55.76							3.80	36.70	68.30	108.90							
2.00	21.90	55.83							4.80	37.20	69.00	109.40							
2.50	22.30	55.90							5.80	37.60	69.60	110.10							
2.80	23.40	55.94							6.70	38.10	70.50	110.70							
3.10	24.60	55.98							7.50	38.60	70.90	111.50							
3.40	25.60	56.02							7.70	39.00	71.80	112.20							
3.60	26.30	56.06							8.50	39.20	72.20	113.00							
3.90	27.20	56.10							9.30	40.10	73.60	114.00							
4.10	28.00	56.14							9.70	40.70	73.90	114.80							
4.20	28.60	56.18							10.10	41.20	74.40	115.50							
4.42	29.30	56.22							10.60	41.90	74.80	116.10							
4.64	29.90	56.26							10.90	42.50	75.40	116.90							
4.86	30.10	56.30							11.30	43.00	75.80	117.80							
5.08	30.90	56.33							11.90	43.50	76.40	118.50							
5.30	31.30	56.36							12.80	43.90	76.90	119.00							
5.60	32.00	56.39							13.20	44.00	77.50	119.60							
5.90	32.60	56.42							13.30	44.50	78.20	120.20							
6.10	33.50	56.45							13.50	44.70	78.90	120.60							
6.20	34.10	56.48							13.90	45.10	79.50	120.90							
6.50	35.00	56.51							14.40	45.50	80.30	121.40							
6.70	35.60	56.54							14.70	45.80	80.70	122.00							
7.00	36.30	56.57							15.50	46.00	81.60	122.50							
7.20	37.00	56.60							16.00	46.30	83.00	122.90							
7.50	37.60	56.63							16.30	46.60	83.30	123.50							
7.70	38.20	56.66							16.60	46.80	83.90	124.00							
8.20	39.40	56.69							17.10	47.10	84.70	124.80							
8.30	39.90	56.72							17.60	47.50	85.20	125.40							
8.50	40.40	56.75							18.60	48.00	85.70	126.10							
8.80	41.00	56.78							18.70	48.50	86.00	126.80							
9.20	41.80	56.81							20.20	49.10	86.50	127.10							
9.40	42.30	56.84							21.70	49.50	86.70	127.70							
9.60	43.10	56.87							22.60	50.00	87.30	128.30							
9.80	43.40	56.90							23.30	50.50	88.00	128.90							
9.90	43.70	56.93							24.70	50.70	88.70	129.80							
10.10	44.40	56.96							25.40	51.00	89.50	130.30							
10.40	45.00	56.99							26.00	51.70	90.30	131.00							
10.50	45.50	57.02							26.30	52.10	91.00	131.30							
10.70	46.10	57.05							26.70	52.40	91.20	132.10							
10.90	46.70	57.08							27.00	52.50	91.70	132.60							
11.10	47.30	57.11							27.40	52.70	92.60	133.20							
11.30	47.90	57.14							27.80	53.10	92.70								
11.50	48.60	57.17							28.00	53.50	92.90								
11.80	49.20	57.20							28.10	54.10	93.40								
12.10	49.90	DCP REF							28.50	55.00	94.10								
12.20	50.30	50/0.8*							28.70	55.60	94.70								
12.60	50.60								28.90	56.00	94.90								
12.90	50.90								29.40	56.40	95.10								
13.30	51.40								29.60	57.00	95.50								
13.50	51.70								30.00	57.20	96.10								
13.60	52.00								30.40	58.00	96.70								
14.00	52.30								31.00	58.60	97.30								
14.20	52.60								31.60	59.60	97.90								
14.50	53.00								32.20	60.00	98.50								
14.70	53.20								32.50	60.10	99.20								
15.10	53.60								32.80	60.80	100.10								
15.20	54.10								33.40	61.40	100.60								
15.50	54.80								33.60	62.00	101.03								
16.10	55.20								33.80	62.90	102.30								
16.50	55.27								34.40	63.40	103.10								
17.10	55.34								34.80	64.10	103.50								
17.60	55.41								35.20	65.40	104.10								

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET																			
WBS NO.				PROJECT TIP I.D.				ROUTE											
32573.1.FS10				A-0009C				Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah											
COUNTY				FIELD PROFESSIONAL				FIELD CREW											
Graham				M. Brewer				L. Ard/R. Kral											
Test Location				Date Run				Test Location				Date Run							
-L- Sta. 425+03 LT LN 1.5 FT LT FW				12/27/21 to 1/13/22				-L- Sta. 449+82 RT LN 1.5 FT LT FW				12/27/21 to 1/13/22							
Type	Test Interval			Datum			Cut/Fill			Type	Test Interval			Datum			Cut/Fill		
DCP	Cumulative cm per blow			STBC			60.0 ft. Cut			DCP	Cumulative cm per blow			STBC			30.0 ft. Cut		
0.60	49.30	71.34	91.72	111.30					1.70	33.10	56.00	81.30	106.40						
1.10	50.20	71.52	92.00	111.50					2.80	33.70	56.20	82.30	106.50						
1.60	51.10	71.70	92.60	111.70					3.10	34.10	56.70	83.00	106.60						
1.80	51.90	71.88	93.40	111.90					3.60	34.70	56.90	83.60	106.74						
2.20	53.20	72.06	93.90	112.06					4.00	35.20	57.40	84.30	106.88						
2.70	53.70	72.24	94.20	112.22					4.20	35.60	57.70	85.10	107.02						
2.90	54.50	72.42	94.70	112.38					4.50	36.20	57.90	85.80	107.16						
3.10	55.20	72.60	95.00	112.54					4.70	36.70	58.10	86.40	107.30						
3.40	56.20	72.86	95.40	112.70					4.90	36.80	58.40	86.90	107.44						
3.70	56.40	73.12	96.20	112.90					5.10	37.60	58.60	87.70	107.58						
3.80	56.90	73.38	96.70	113.10					5.30	37.90	58.90	88.30	107.72						
3.90	57.20	73.64	97.30	113.30					5.50	38.00	59.20	89.00	107.86						
4.50	57.90	73.90	98.10	113.50					5.60	38.50	59.90	89.70	108.00						
5.20	58.00	74.04	98.60	113.70					5.80	39.10	60.40	90.30	108.22						
5.90	58.10	74.18	99.00	113.96					6.00	39.60	60.60	91.00	108.44						
6.50	58.40	74.32	99.50	114.22					6.20	40.00	60.80	91.70	108.66						
7.60	58.80	74.46	99.90	114.48					6.40	40.50	61.30	92.10	108.88						
8.30	59.40	74.60	100.30	114.74					6.50	40.70	61.60	92.70	109.10						
9.20	59.50	74.82	100.80	115.00					6.80	41.30	61.80	93.10	109.24						
10.10	59.80	75.04	100.96						7.10	41.60	62.10	93.70	109.38						
10.90	60.20	75.26	101.12						7.30	42.00	62.60	94.10	109.52						
12.00	60.30	75.48	101.28						8.10	42.40	62.80	94.30	109.66						
12.70	60.80	75.70	101.44						8.50	42.70	63.00	94.70	109.80						



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.		PROJECT TIP I.D.				ROUTE			
										32573.1.FS10		A-0009C				Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
										COUNTY		FIELD PROFESSIONAL				FIELD CREW			
										Graham		M. Brewer				L. Ard/R. Kral			
Test Location										Date Run		Test Location				Date Run			
-L- Sta. 473+22 RTL (RT) 8.0 FT LT FW										12/27/21 to 1/13/22		-L- Sta. 473+22 LTL (RT) 7.0 FT RT FY				12/27/21 to 1/13/22			
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			ABC/STBC			20.0 ft. Cut			
1.70	10.60	36.00	73.34	102.50					0.90	44.90	88.90								
2.00	10.70	37.00	73.72	103.20					1.90	45.00	89.10								
2.50	10.80	38.10	74.10						2.80	45.08	90.90								
2.90	10.90	39.30	74.44						3.50	45.17	92.50								
3.00	11.00	43.60	74.78						4.30	45.25	94.00								
3.20	11.10	46.80	75.12						4.50	45.33	95.50								
3.60	11.20	49.90	75.46						4.90	45.42	96.70								
3.90	DCP REF	51.20	75.80						5.10	45.50	97.90								
4.10	AUGER 8.0	52.00	76.20						5.20	45.64	98.90								
4.70	to 19.2 CM	52.60	76.60						5.50	45.78	99.50								
5.00	0.10	53.30	77.00						6.70	45.92	100.50								
5.10	0.70	54.20	77.40						7.90	46.06	100.90								
5.30	1.10	55.00	77.80						8.60	46.20	101.50								
5.50	1.20	55.80	78.16						9.90	46.50	101.90								
5.60	1.90	56.40	78.52						10.40	47.50	102.50								
5.80	2.30	57.00	78.88						11.50	48.70	103.50								
6.00	2.40	57.80	79.24						12.10	49.50	104.10								
6.14	2.70	58.30	79.60						13.50	50.50	104.90								
6.28	2.90	59.00	80.02						14.50	51.10	105.50								
6.42	3.30	59.50	80.44						15.40	52.00	106.40								
6.56	3.50	59.80	80.86						16.40	53.00	107.40								
6.70	3.70	60.40	81.28						17.50	53.20	108.10								
6.77	4.10	60.60	81.70						18.60	53.40	109.40								
6.84	4.40	60.90	82.10						19.90	53.60	110.90								
6.91	4.60	61.50	82.50						22.00	53.80	111.90								
6.98	4.80	61.70	82.90						22.50	54.00	112.90								
7.05	5.10	61.80	83.30						22.90	54.24	114.50								
7.12	5.30	62.10	83.70						23.40	54.48	115.90								
7.19	5.60	62.40	84.14						23.90	54.72	117.50								
7.26	5.80	62.60	84.58						24.40	54.96	119.10								
7.33	6.00	62.90	85.02						25.50	55.20	120.90								
7.40	6.30	63.20	85.46						25.90	55.94	122.40								
7.47	6.60	63.60	85.90						26.90	56.68	123.90								
7.54	7.00	64.00	86.40						27.50	57.42	124.90								
7.61	7.50	64.20	86.90						28.40	58.16	125.90								
7.68	7.80	64.30	87.40						28.90	58.90	127.00								
7.75	8.20	64.60	87.90						29.40	59.04									
7.82	8.70	65.00	88.40						30.90	59.18									
7.89	9.10	65.40	88.88						31.50	59.32									
7.96	9.50	65.80	89.36						32.90	59.46									
8.03	10.30	66.20	89.84						34.40	59.60									
8.10	10.90	66.60	90.32						35.50	60.13									
8.19	11.50	67.00	90.80						36.90	60.67									
8.28	12.20	67.26	91.16						37.40	61.20									
8.37	12.70	67.52	91.52						38.50	62.30									
8.46	13.20	67.78	91.88						38.90	63.30									
8.55	13.70	68.04	92.24						39.50	64.50									
8.64	14.40	68.30	92.60						40.10	65.60									
8.73	14.80	68.54	93.04						41.10	66.70									
8.82	14.90	68.78	93.48						41.60	67.90									
8.91	15.60	69.02	93.92						42.00	69.10									
9.00	16.50	69.26	94.36						42.30	70.40									
9.12	17.40	69.50	94.80						42.44	71.90									
9.24	18.00	69.70	95.50						42.58	73.40									
9.36	18.70	69.90	96.40						42.72	74.90									
9.48	19.70	70.10	96.80						42.86	75.90									
9.60	21.20	70.30	97.30						43.00	76.10									
9.72	23.90	70.50	97.60						43.30	77.30									
9.84	25.60	70.84	100.20						43.60	78.30									
9.96	27.60	71.18	100.80						43.90	80.00									
10.08	28.30	71.52	101.00						44.20	81.40									
10.20	29.60	71.86	101.50						44.50	82.60									
10.30	31.00	72.20	101.90						44.60	84.00									
10.40	32.70	72.58	102.10						44.70	85.90									
10.50	34.10	72.96	102.30						44.80	87.90									

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET										WBS NO.		PROJECT TIP I.D.				ROUTE			
										32573.1.FS10		A-0009C				Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
										COUNTY		FIELD PROFESSIONAL				FIELD CREW			
										Graham		M. Brewer				L. Ard/R. Kral			
Test Location										Date Run		Test Location				Date Run			
-Y2- Sta. 21+87 RT LN 4.6 FT RT FY										12/27/21 to 1/13/22		-Y2- Sta. 21+87 RTL (RT) 5.8 FT LT FW				12/27/21 to 1/13/22			
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			3.0 ft. Fill			
0.90	13.20	44.10	96.78	127.20					1.20	59.50									
1.20	13.60	45.00	96.90	127.60					2.00	61.50									
1.60	13.90	46.10	97.02	128.50					2.40	64.40									
2.00	14.10	47.10	97.14	129.50					3.90	66.50									
2.40	14.50	48.10	97.26	130.00					4.50	68.50									
2.90	14.60	49.20	97.38						5.40	70.50									
3.10	15.10	50.20	97.50						6.00	72.30									
3.40	15.40	51.90	97.65						6.50	74.60									
3.50	15.80	52.90	97.80						7.30	75.60									
3.90	16.00	54.10	97.95						8.00	76.70									
4.00	16.10	55.30	98.10						8.90	77.40									
4.10	17.00	56.10	98.25						10.10	77.60									
4.20	17.50	57.00	98.40						10.50	78.50									
4.50	17.80	58.10	98.55						11.90	79.50									
4.70	18.10	59.30	98.70						12.60	80.90									
4.90	18.50	60.90	98.85						13.40	82.60									
5.10	18.90	62.50	99.00						14.10	84.40									
5.30	19.10	64.10	99.25						15.20	85.90									
5.50	19.50	65.50	99.50						16.50	87.60									
5.60	20.00	66.50	99.75						17.40	89.10									
5.70	20.10	67.50	100.00						18.30	92.60									
5.80	20.90	68.50	100.10						19.00	92.70									
5.90	21.00	69.00	100.60						20.00	93.60									
6.00	21.50	70.00	101.00						21.00	94.30									
6.02	21.90	71.00	101.50						22.30	95.90									
6.04	22.30	71.50	101.90						23.20	96.70									
6.06	22.50	72.20	102.10						24.40	97.50									
6.08	22.90	73.30	102.50						26.00	98.50									
6.10	23.10	74.00	103.50						26.50	99.90									
6.22	23.50	74.80	104.00						28.20	100.00									
6.34	23.90	75.00	104.60						29.60	101.20									
6.46	24.40	76.60	104.90						31.00	102.00									
6.58	24.60	78.00	105.60						32.50	103.00									
6.70	25.00	79.00	106.10						34.20										



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE					
				32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah					
				COUNTY	FIELD PROFESSIONAL	FIELD CREW					
Graham				M. Brewer		L. Ard/R. Kral					
Test Location				Date Run	Test Location				Date Run		
-Y2- Sta. 21+87 RT PS 5.0 FT RT FW				12/27/21 to 1/13/22	-Y2- Sta. 40+61 RT LN 1.0 FT LT FW				12/27/21 to 1/13/22		
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	15.0 ft. Cut
1.00	40.90	81.10	127.40			0.60	21.40	69.10			
1.50	41.50	81.60	127.90			1.00	22.10	69.90			
2.50	43.00	82.00				1.60	23.00	70.40			
3.00	44.50	83.00				1.90	24.00	71.10			
3.10	46.50	83.50				2.20	25.20	71.70			
3.90	48.00	84.00				2.40	26.40	72.50			
4.10	49.00	84.50				2.90	27.60	73.30			
4.50	50.00	85.10				3.20	28.60	74.30			
5.00	50.60	85.60				3.50	29.60	74.60			
5.30	51.40	86.50				3.80	30.60	76.20			
5.60	53.50	87.70				4.20	31.40	76.80			
6.10	55.00	87.80				4.50	32.20	77.80			
7.10	56.90	88.50				4.80	33.20	78.80			
7.90	57.90	89.40				4.90	34.10	79.40			
8.00	58.90	90.40				5.00	35.00	79.90			
8.50	60.10	91.90				5.30	35.70	80.20			
9.50	60.20	92.90				5.50	36.40	80.40			
10.40	61.20	93.50				5.90	37.40	80.70			
10.90	62.40	94.00				6.30	38.70	81.10			
11.90	63.40	94.50				6.40	40.10	81.40			
12.80	64.40	95.00				6.60	41.10	81.50			
13.50	65.40	96.00				6.90	42.10	81.80			
14.50	66.10	97.30				7.30	43.60	82.00			
15.50	67.30	98.00				7.40	44.90	82.30			
16.00	67.90	99.00				7.60	46.40	82.60			
16.50	68.90	100.00				7.90	47.80	83.00			
16.90	69.60	101.00				8.20	49.00	83.20			
17.40	70.10	101.90				8.70	50.30	83.46			
18.00	70.50	102.90				9.20	51.30	83.72			
18.50	70.90	103.50				9.30	51.90	83.98			
18.80	71.60	104.50				9.80	52.40	84.24			
19.90	71.90	105.00				10.00	52.90	84.50			
20.50	72.60	105.90				10.10	53.60	85.10			
21.30	73.00	106.50				10.20	54.00	85.60			
22.00	73.10	107.50				10.40	54.70	86.10			
22.50	73.30	108.20				10.60	55.40	86.90			
23.50	73.50	109.00				10.80	56.30	87.20			
24.50	74.00	109.80				11.00	57.30	87.80			
24.60	74.20	110.50				11.20	58.50	88.90			
25.30	74.40	111.60				11.42	59.60	89.00			
25.90	74.60	112.50				11.64	60.80	90.10			
26.40	74.80	113.00				11.86	62.00	90.50			
26.60	75.00	113.90				12.08	63.30	91.70			
27.40	75.20	114.50				12.30	63.50	92.50			
27.90	75.40	115.00				12.50	63.80	93.20			
28.00	75.60	115.60				12.60	64.20	94.10			
28.90	75.80	116.50				12.90	64.40	95.30			
29.10	76.00	116.90				13.00	64.50	97.00			
29.90	76.25	117.50				13.30	64.90	98.10			
30.10	76.50	118.50				13.80	65.14	99.60			
30.90	76.75	118.60				14.00	65.38	99.80			
31.40	77.00	119.10				14.30	65.62	100.00			
31.90	77.25	119.50				14.50	65.86	100.20			
32.50	77.50	120.30				14.70	66.10	100.40			
33.00	77.75	120.90				15.60	66.32	100.60			
34.00	78.00	121.40				16.00	66.54				
35.00	78.25	122.00				16.20	66.76				
35.50	78.50	122.50				16.70	66.98				
35.60	78.82	123.10				17.40	67.20				
36.00	79.13	123.60				17.60	67.42				
37.00	79.45	124.30				18.00	67.64				
37.40	79.77	124.80				18.60	67.86				
37.50	80.08	125.10				19.30	68.08				
38.90	80.40	125.90				20.00	68.30				
39.60	80.60	126.10				20.70	68.90				

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.	ROUTE					
				32573.1.FS10	A-0009C	Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah					
				COUNTY	FIELD PROFESSIONAL	FIELD CREW					
Graham				M. Brewer		L. Ard/R. Kral					
Test Location				Date Run	Test Location				Date Run		
-Y2- Sta. 60+51 LT LN 1.4 FT LT FW				12/27/21 to 1/13/22	-Y2- Sta. 79+85 RT LN 0.6 FT LT FW				12/27/21 to 1/13/22		
Type	Test Interval			Datum	Cut/Fill	Type	Test Interval			Datum	Cut/Fill
DCP	Cumulative cm per blow			STBC	30.0 ft. Fill	DCP	Cumulative cm per blow			STBC	15.0 ft. Fill
1.20	79.30	96.90				1.70	33.00				
2.10	79.90	97.30				1.80	34.20				
2.80	80.50	97.70				2.50	35.20				
3.80	80.90	98.20				2.90	36.90				
4.40	81.20	98.50				3.30	38.60				
5.30	81.80	99.00				4.00	41.00				
5.80	82.30	99.40				4.70	42.20				
6.50	82.40	99.50				4.90	43.80				
7.10	82.90	99.70				5.20	44.80				
7.80	83.30	100.20				5.40	45.50				
8.20	83.60	100.50				5.80	46.30				
8.90	84.00	101.00				6.10	47.50				
9.20	84.50	101.10				6.40	48.70				
9.30	84.90	101.28				6.70	50.40				
9.90	85.20	101.46				7.10	52.70				
10.00	85.60	101.64				7.50	55.00				
10.40	85.90	101.82				7.70	57.60				
10.80	86.30	102.00				8.20	60.70				
11.20	86.50	102.50				8.60	62.70				
11.90	87.20	102.60				9.00	64.70				
12.60	87.80	103.20				9.40	67.00				
13.00	88.10	103.60				9.80	69.60				
13.60	88.40	103.80				10.10	71.80				
14.40	88.70	104.40				10.50	73.80				
15.00	89.20	105.30				10.90	75.60				
15.60	89.40	106.10				11.40	78.00				
16.10	89.80	106.40				11.70	80.40				
17.20	90.00	106.80				12.00	82.70				
18.10	90.20	107.20				12.30	85.10				
18.60	90.70	108.00				12.60	86.60				
19.90	90.80	108.50				13.20	87.70				
22.90	90.94	109.60				13.50	89.10				
26.40	91.08	110.40				14.10	90.00				
30.00	91.22	110.90				14.40	93.80				
32.00	91.36					14.80	96.80				
34.40	91.50					15.10	99.10				
37.10	91.64					15.60	102.30				
40.60	91.78					16.10	104.60				
44.60	91.92					16.60	106.20				
47.80	92.06					17.10	107.90				
50.80	92.20					17.40	109.50				
52.70	92.36					17.90	110.60				
54.20	92.52					18.40	112.00				
56.60	92.68					19.00	113.30				
58.60	92.84					19.70	114.90				
60.90	93.00					20.10	116.60				
62.70	93.28					20.30	118.80				
64.60	93.56					20.60	120.60				
66.20	93.84					21.00	122.60				
67.50	94.12					21.80	123.90				
68.40	94.40					22.00	124.60				
69.50	94.78					22.60	125.70				
70.30	95.16					23.00	126.10				
71.00	95.54					23.30	127.00				
72.00	95.92					23.60	127.60				
72.70	96.30					24.10	128.20				
73.10	96.36					24.50	128.80				
74.20	96.42					25.10	129.40				
75.00	96.48					25.50	130.40				
75.80	96.54					26.20	131.50				
76.50	96.60					27.20					
77.40	96.66					28.60					
78.20	96.72					29.70					
78.70	96.78					30.90					
79.00	96.84					32.20					



DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.			ROUTE			
				32573.1.FS10	A-0009C			Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
				COUNTY	FIELD PROFESSIONAL			FIELD CREW			
				Graham	M. Brewer			L. Ard/R. Kral			
Test Location				Date Run	Test Location				Date Run		
-Y2- Sta. 100+31 LT LN 1.4 FT LT FW				12/27/21 to 1/13/22	-Y2- Sta. 119+68 RT LN 1.8 FT LT FW				12/27/21 to 1/13/22		
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill		
DCP	Cumulative cm per blow		STBC	5.0 ft. Fill	DCP	Cumulative cm per blow		STBC	15.0 ft. Fill		
2.10	20.90	124.80			1.20	24.00	94.00				
2.50	21.30				1.80	24.80	95.60				
3.60	21.50				2.60	25.70	96.60				
4.20	22.20				3.30	26.30	98.90				
4.50	22.70				3.70	26.70	100.10				
4.80	23.50				4.10	27.40	101.50				
5.10	24.20				4.60	28.30	103.00				
5.50	25.20				4.80	29.80	104.60				
5.80	26.40				5.04	30.80	106.10				
6.00	27.60				5.28	32.10	107.20				
6.40	28.40				5.52	33.00	108.50				
6.60	29.80				5.76	34.00	109.40				
7.00	31.00				6.00	35.20	110.50				
7.30	31.90				6.30	36.40	111.30				
7.60	32.20				6.60	37.40	112.00				
8.10	33.30				6.90	37.80	113.40				
8.30	34.20				7.20	38.40	114.80				
8.40	34.90				7.50	39.00	116.10				
8.60	35.90				7.68	39.90	117.60				
8.80	36.40				7.86	40.80	119.10				
9.00	37.20				8.04	42.00	120.40				
9.20	38.40				8.22	43.00					
9.40	40.10				8.40	44.20					
9.60	42.00				8.52	45.70					
9.80	43.30				8.64	46.60					
10.00	44.60				8.76	48.90					
10.20	45.40				8.88	50.80					
10.42	46.20				9.00	52.90					
10.64	47.20				9.20	54.90					
10.86	48.20				9.40	56.60					
11.08	49.70				9.60	58.00					
11.30	50.80				9.80	59.20					
11.54	51.50				10.00	60.30					
11.78	52.70				10.20	61.50					
12.02	53.70				10.40	62.10					
12.26	54.90				10.60	62.70					
12.50	56.60				10.80	62.90					
12.68	58.10				11.00	63.30					
12.86	59.40				11.20	63.50					
13.04	61.30				11.40	63.90					
13.22	62.30				11.60	64.70					
13.40	63.70				11.80	64.90					
13.66	65.40				12.00	65.50					
13.92	67.30				12.26	66.20					
14.18	69.20				12.52	67.30					
14.44	71.30				12.78	68.70					
14.70	73.30				13.04	69.40					
15.04	75.30				13.30	69.80					
15.38	76.50				13.74	70.50					
15.72	78.20				14.18	71.70					
16.06	79.90				14.62	72.80					
16.40	81.70				15.06	73.70					
16.64	83.90				15.50	74.30					
16.88	85.70				15.90	74.80					
17.12	87.80				16.40	75.50					
17.36	89.40				16.80	76.40					
17.60	91.40				17.20	77.80					
17.94	94.60				17.90	79.50					
18.28	98.00				18.90	81.40					
18.62	101.20				19.70	83.00					
18.96	105.10				20.60	84.80					
19.30	109.60				21.90	86.80					
19.70	116.90				22.60	88.50					
20.10	117.40				23.00	89.40					
20.50	121.00				23.50	91.90					

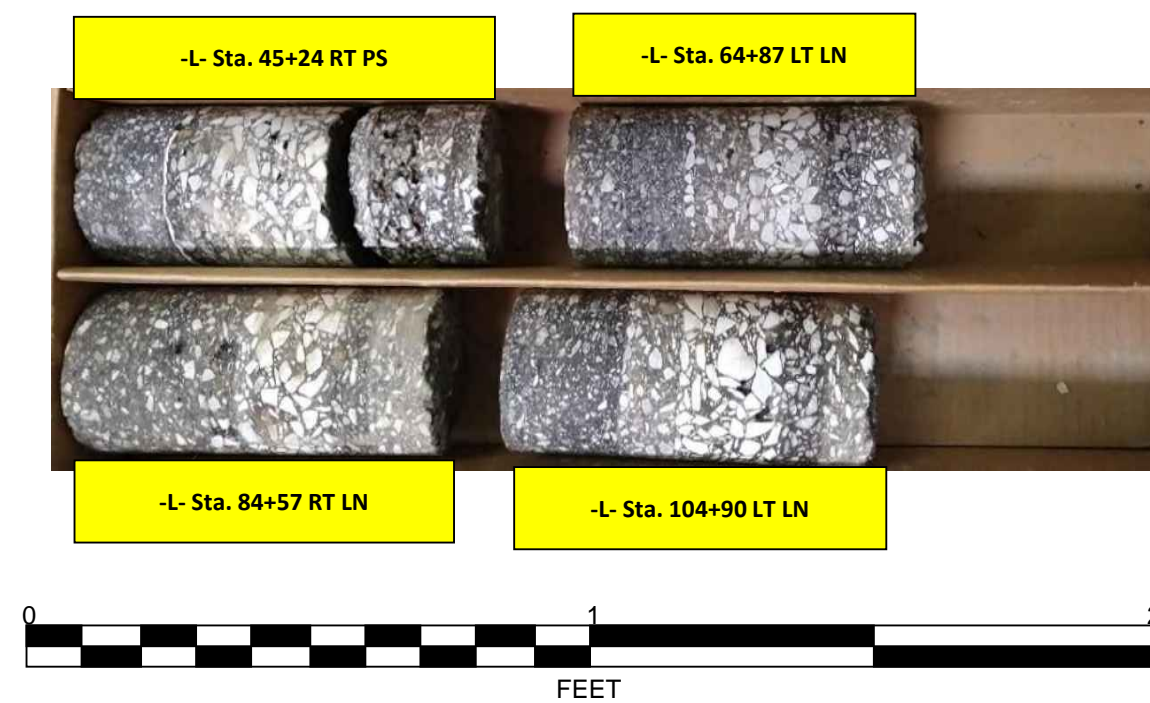
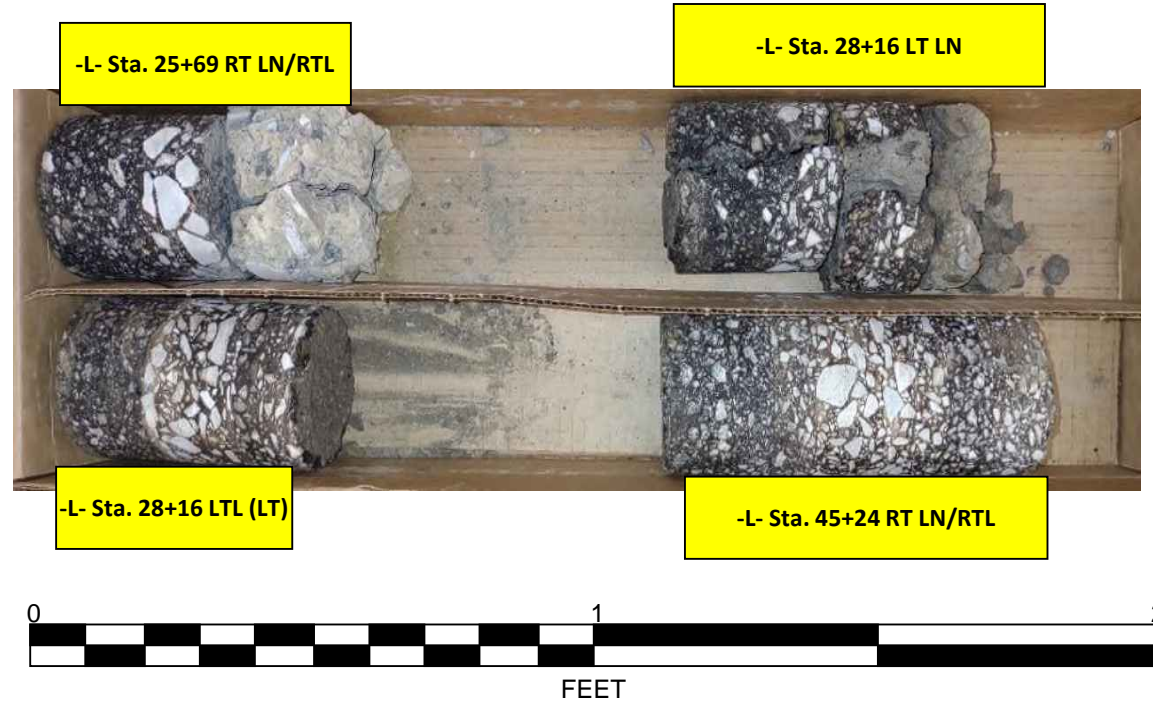
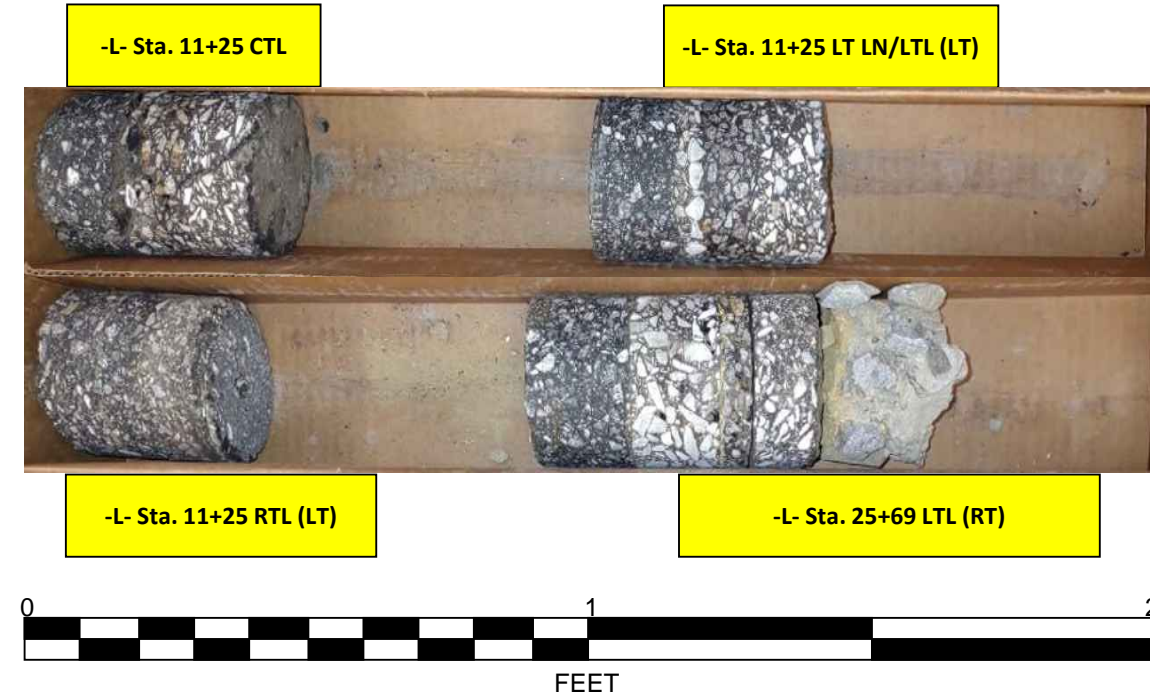
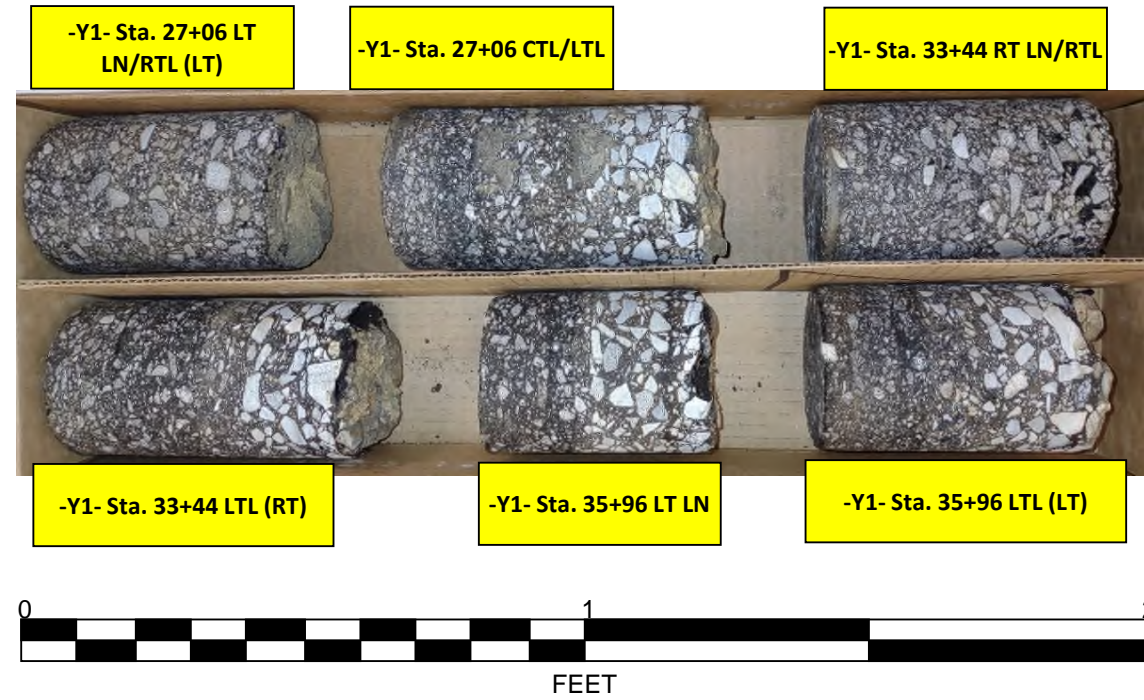
DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET				WBS NO.	PROJECT TIP I.D.			ROUTE			
				32573.1.FS10	A-0009C			Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah			
				COUNTY	FIELD PROFESSIONAL			FIELD CREW			
				Graham	M. Brewer			L. Ard/R. Kral			
Test Location				Date Run	Test Location				Date Run		
-Y2- Sta. 140+29 LT LN 1.3 FT LT FW				12/27/21 to 1/13/22	-Y2- Sta. 165+10 LT OSL 6.0 FT LT FW				12/27/21 to 1/13/22		
Type	Test Interval		Datum	Cut/Fill	Type	Test Interval		Datum	Cut/Fill		
DCP	Cumulative cm per blow		STBC	30.0 ft. Fill	DCP	Cumulative cm per blow		STBC	At Grade		
1.00	16.30	41.90	74.70	104.80	1.10	10.30	4.34	87.10			
1.40	16.70	42.40	75.60	105.00	1.40	10.35	4.40	88.00			
1.80	17.20	42.80	76.00	105.40	1.80	10.40	AUGER TO	89.20			
1.90	17.60	43.10	76.50	105.70	2.90	10.51	20.7cm	89.70			
2.00	18.00	43.90	77.00	106.40	3.10	10.62	1.10	92.20			
2.10	18.40	44.10	77.60	106.90	3.40	10.73	1.80	93.80			
2.20	18.80	44.50	78.20	107.50	3.50	10.84	2.20	95.90			
2.30	19.20	45.10	79.00	108.30	3.90	10.95	2.90	97.40			
2.40	20.00	45.40	79.20	108.80	4.20	11.06	3.70	98.20			
2.50	20.40	45.70	79.60	109.70	4.40	11.17	4.30				
2.60	20.70	46.10	79.70	110.50	4.60	11.28	4.90				
2.92	21.30	46.30	80.00	111.20	4.80	11.39	5.70				
3.24	21.60	46.60	80.20	112.20	5.10	11.50	6.40				
3.56	21.90	46.90	80.50	113.20	5.30	DCP REF	7.10				
3.88	22.20	47.10	81.00	114.00	5.50	AUGER 5.1	7.70				
4.20	22.40	47.50	81.40	114.70	5.70	TO 16.6 CM	8.50				
4.46	22.70	47.90	81.50	115.10	5.90	0.90	9.20				
4.72	22.80	48.40	81.80	115.60	6.10	1.00	10.10				
4.98	23.20	48.90	82.10	116.00	6.22	1.10	10.70				
5.24	23.60	49.50	82.30	116.20	6.34	1.20	11.60				
5.50	23.90	50.00	82.50	116.50	6.46	1.30	12.60				
5.68	24.30	50.40	82.80	116.90	6.58	1.40	12.90				
5.86	24.50	50.90	83.00	117.30	6.70	1.50	13.10				
6.04	24.90	51.30	83.50	117.90	6.82	1.60	13.60				
6.22	25.10	51.70	84.00	118.30	6.94	1.70	13.70				
6.40	25.60	52.00	84.80	118.70	7.06	1.80	14.30				
6.64	26.00	52.50	85.30	119.00	7.18	1.90	15.50				
6.88	26.50	53.00	85.80	119.40	7.30	1.99	17.40				
7.12	26.70	53.40	86.00	119.70	7.36	2.08	18.10				
7.36	27.30	53.60	86.10	120.20	7.42	2.17	19.00				
7.60	27.50	54.10	86.60	120.70	7.48	2.26	21.00				
7.82	28.20	54.60	87.00	121.20	7.54	2.35	22.30				
8.04	28.80	54.80	87.60	121.90	7.60	2.44	23.60				
8.26	29.80	55.40	88.20	122.60	7.66	2.53	24.70				
8.48	30.80	55.56	88.90	123.50	7.72	2.62	25.70				
8.70	31.70	55.72	89.70	124.20	7.78	2.71	26.90				
8.92	32.50	55.88	90.60	125.20	7.84	2.80	27.50				
9.14	33.20	56.04	91.10		7.90	2.86	28.80				
9.36	33.80	56.20	91.90		8.00	2.92	30.10				
9.58	34.20	56.56	92.40		8.10	2.98	31.30				
9.80	34.60	56.92	92.90		8.20	3.04	32.50				
10.02	35.30	57.28	93.30		8.30	3.10	34.50				
10.24	35.60	57.64	93.90		8.40	3.16	36.40				
10.46	36.00	58.00	94.60		8.50	3.22	37.80				
10.68	36.40	58.44	95.30		8.60	3.28	40.40				
10.90	36.80	58.88	96.10		8.70	3.34	42.90				
11.12	37.40	59.32	96.70		8.80	3.40	45.20				
11.34	37.80	59.76	97.30		8.90	3.44	47.00				
11.56	38.30	60.20	98.00		9.00	3.48	49.00				
11.78	38.50	61.00	99.00		9.10	3.52	50.30				
12.00	38.80	61.90	99.50		9.20	3.56	52.20				
12.28	39.00	62.90	100.10		9.30	3.60	53.80				
12.56	39.10	63.70	100.80		9.40	3.64	55.70				
12.84	39.40	64.60	101.30		9.50	3.68	57.20				
13.12	39.50	65.60	101.60		9.60	3.72	58.70				
13.40	39.60	66.40	102.00		9.70	3.76	60.60				
13.64	40.00	67.70	102.20		9.80	3.80	62.40				
13.88	40.10	68.60	102.40		9.90	3.86	64.60				
14.12	40.40	69.70	102.70		9.95	3.92	67.00				
14.36	40.60	70.20	103.00		10.00	3.98	69.50				
14.60	40.70	70.70	103.40		10.05	4.04	71.50				
14.94	40.80	71.60	103.60		10.10	4.10	74.70				
15.28	40.90	72.30	103.80		10.15	4.16	78.70				
15.62	41.20	73.00	104.10		10.20	4.22	81.90				
15.96	41.50	73.70	104.40		10.25	4.28	85.10				





## Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah

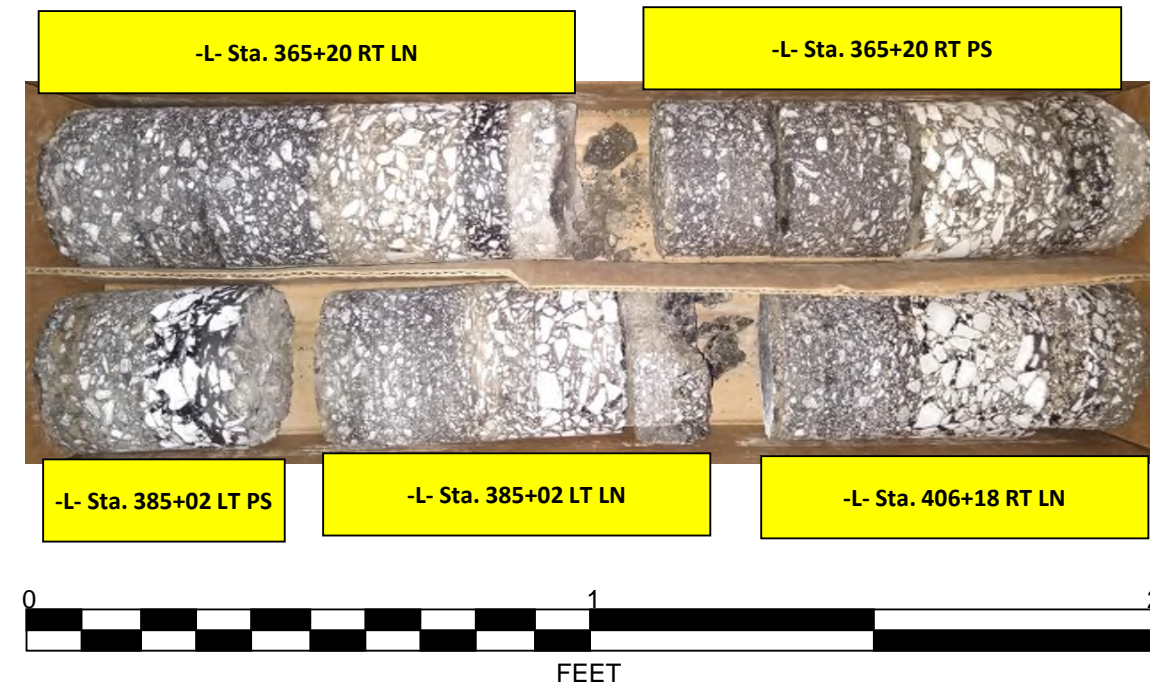
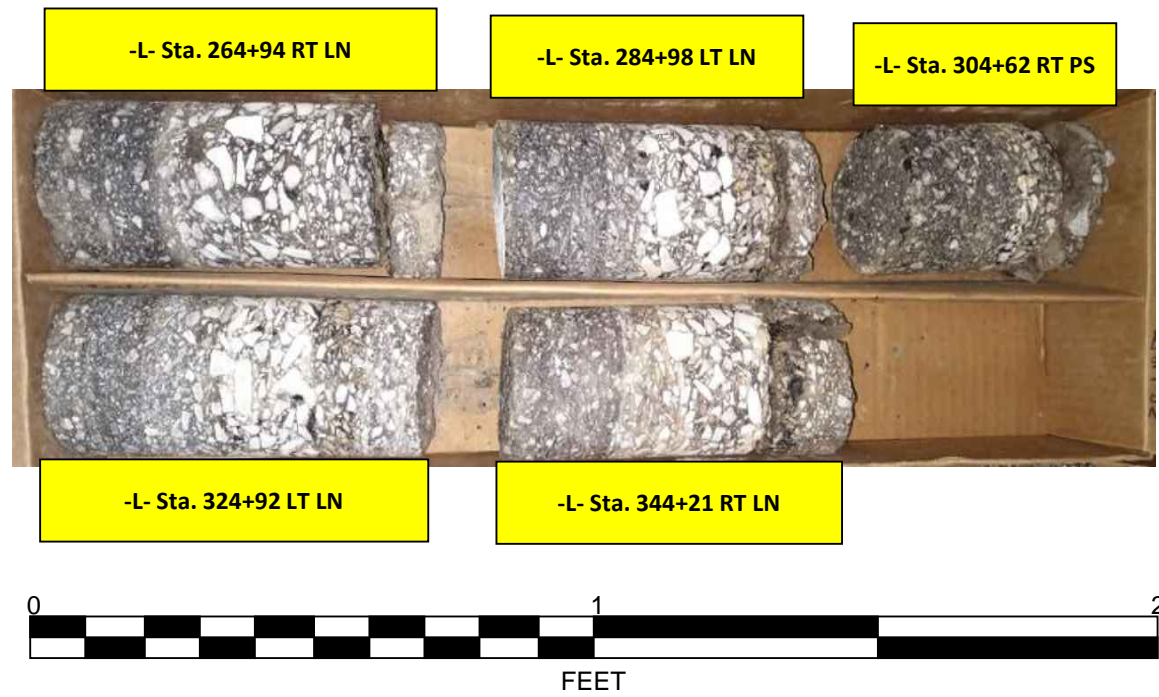
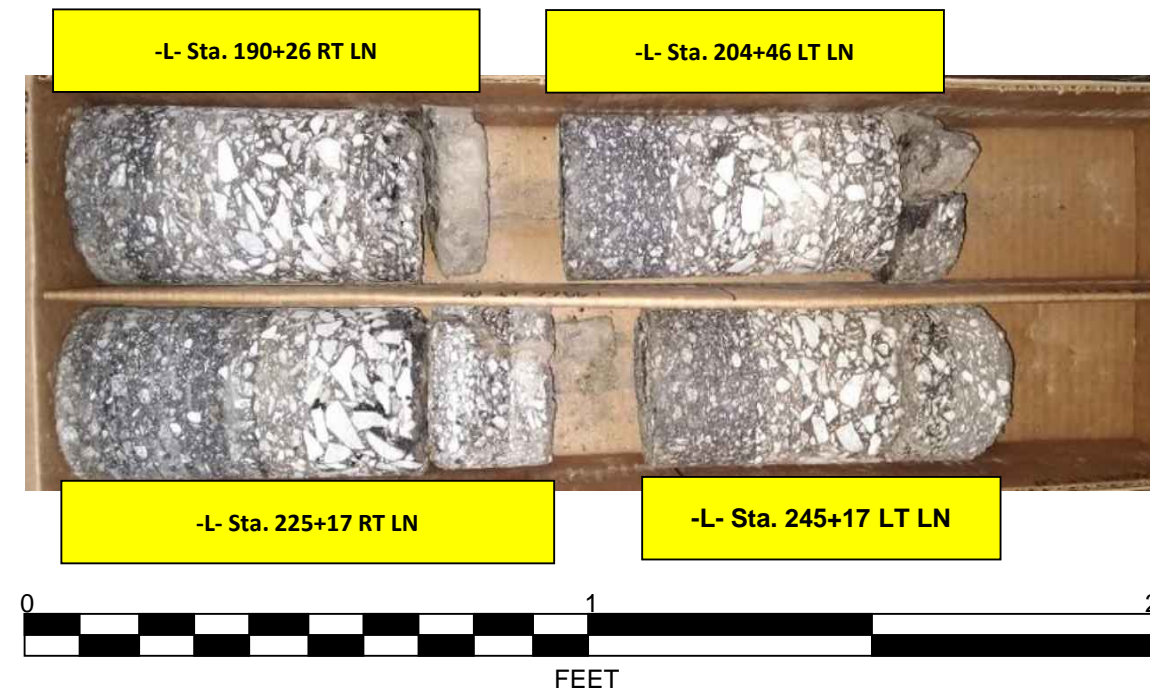
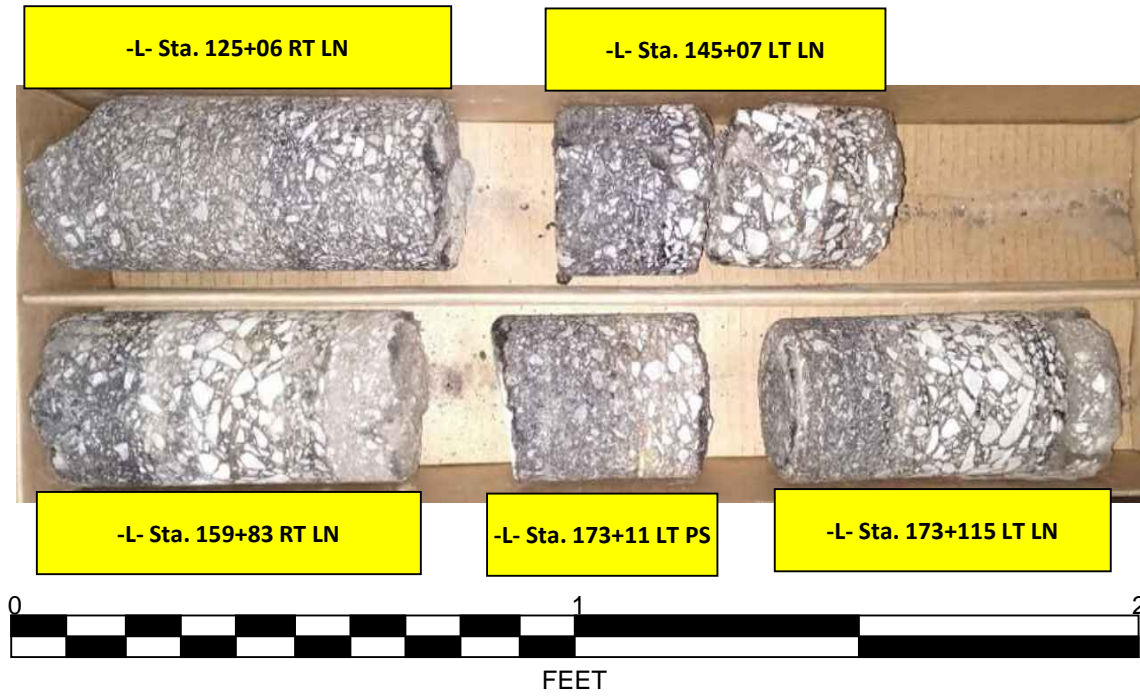
### Pavement Core Photographs





## Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah

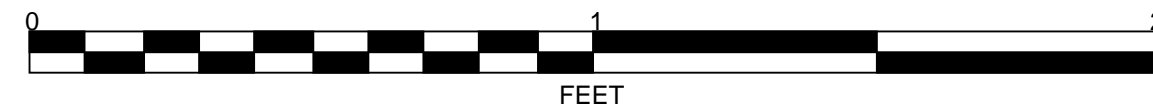
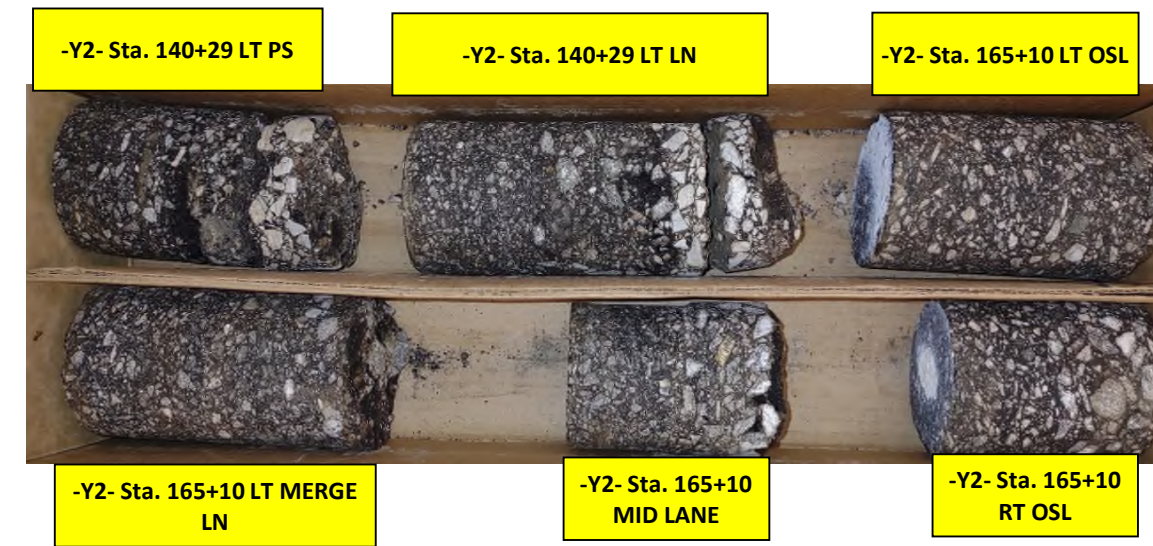
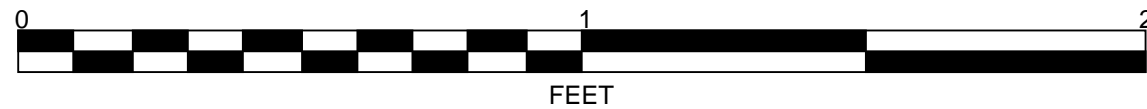
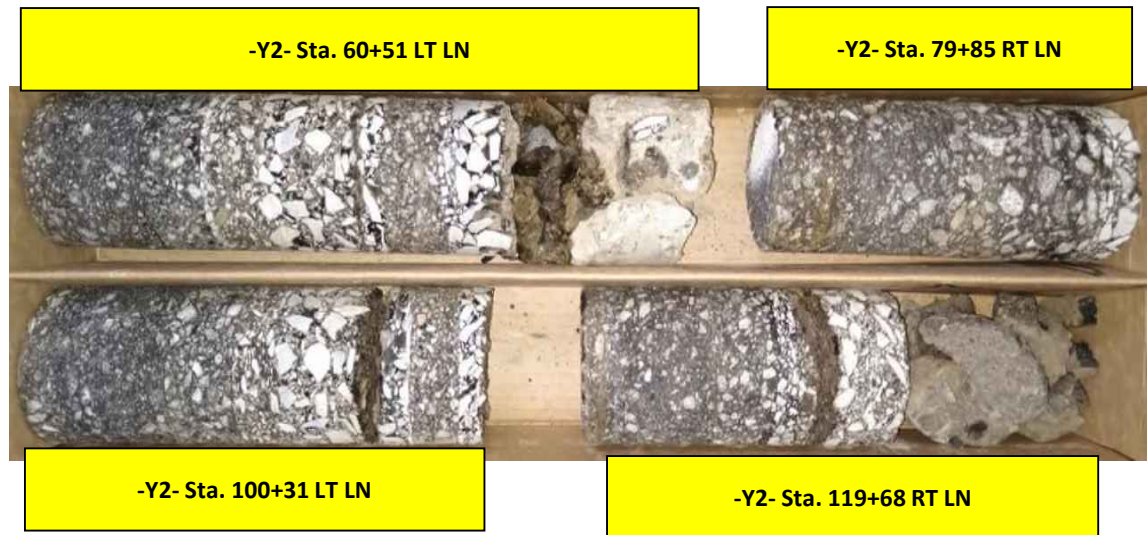
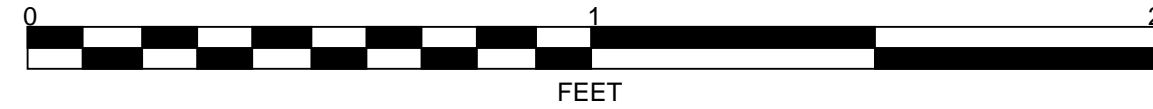
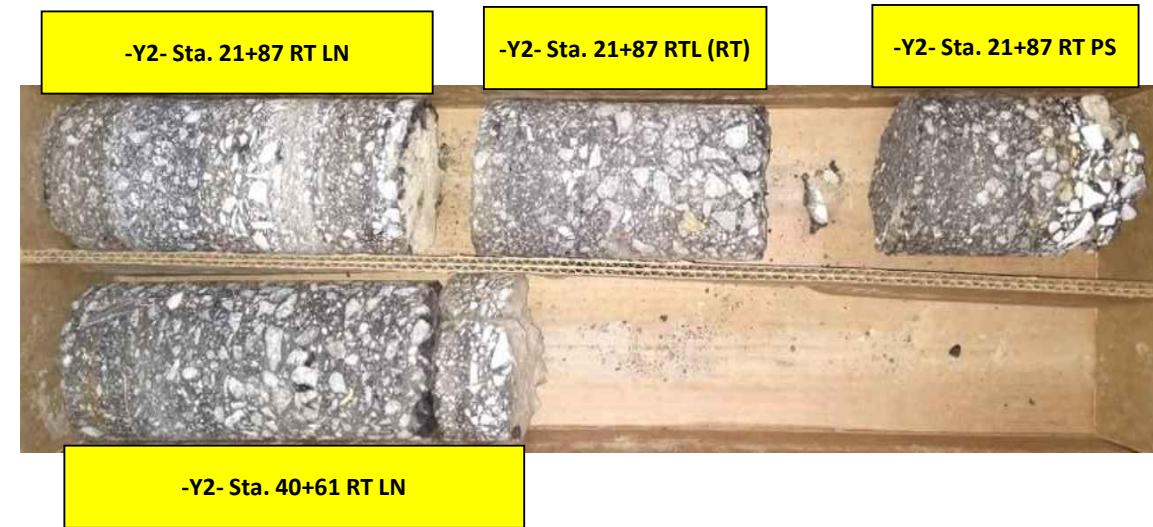
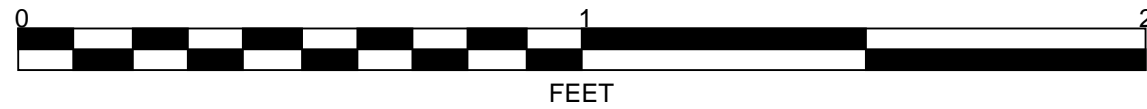
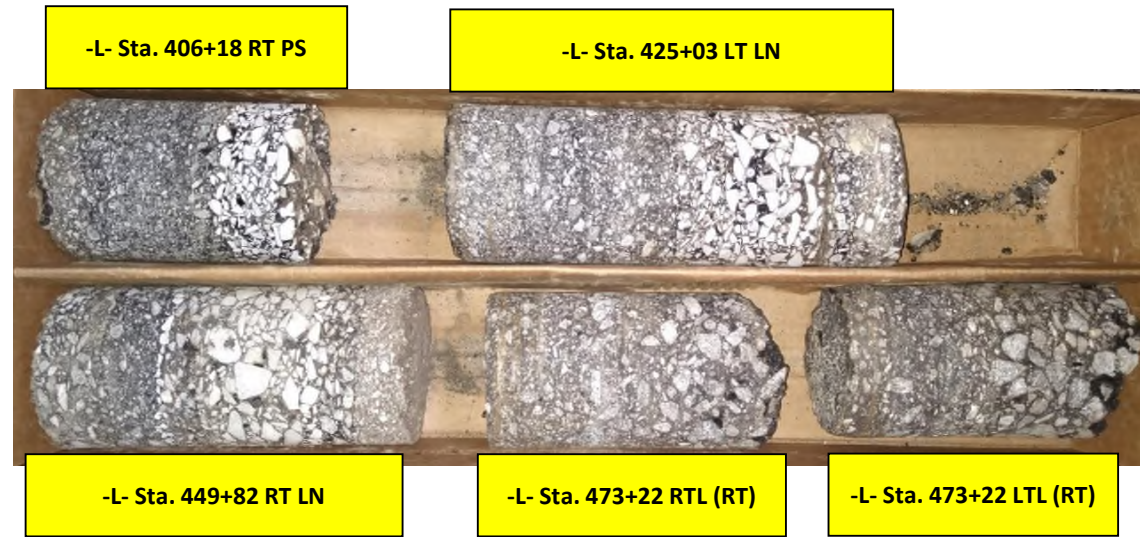
### Pavement Core Photographs





## Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah

### Pavement Core Photographs





### LABORATORY TEST RESULTS

Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah  
Greenville, NC

NCDOT Project: A-0009C

Falcon Engineering Project No: G21039.00

NO.	SAMPLE LOCATION	DEPTH INTERVAL	AASHTO CLASS.	ATTERBERG LIMITS		PERCENT BY WEIGHT				PERCENT PASSING SIEVE			MOISTURE (%)	BULK DENSITY (pcf)	ORGANICS (%)
				LL	PI	C.SAND	F.SAND	SILT	CLAY	#10	#40	#200			
Bulk-1	-L-62+07	1.0-3.0	A-4(0)	34	0	21	47	16	16	100	89	43	28	102.5	N/A
Bulk-2	-L-83+40	1.0-3.0	A-4(0)	30	0	13	56	25	6	100	94	47	18	101.1	N/A
Bulk-3	-L-154+52	1.0-3.0	A-4(0)	30	0	13	57	26	4	100	93	45	20	96.6	N/A
Bulk-4	-L-321+08	1.0-3.0	A-4(0)	23	0	29	39	24	8	100	87	42	18	101.7	N/A
Bulk-5	-L-336+69	15.0-20.0	A-4(0)	30	1	15	22	46	17	99	87	71	19	101.5	N/A
Bulk-6	-Y2-29+49	1.0-3.0	A-4(1)	34	0	7	36	46	11	100	96	73	11	93.6	N/A
Bulk-7	-Y2-46+66	1.0-3.0	A-4(0)	31	2	19	33	25	23	100	89	56	30	103.1	N/A
Bulk-8	-Y2-101+08	1.0-3.0	A-4(0)	26	0	24	30	36	10	100	85	55	20	102.1	N/A
S-08	-L-11+25	1.3-5.0	A-4(0)	21	0	23	43	20	14	98	86	41	13	N/A	N/A
S-10	-L-11+25	1.3-5.0	A-6(7)	35	15	12	30	18	40	96	91	62	23	N/A	N/A
S-11	-L-25+69	1.3-5.0	A-4(0)	27	7	24	28	24	24	74	62	40	11	N/A	N/A
S-13	-L-28+16	1.3-5.0	A-6(6)	34	11	11	28	23	38	97	92	65	19	N/A	N/A
S-15	-L-45+24	1.3-5.0	A-4(0)	26	0	9	42	34	15	99	95	62	16	N/A	N/A
S-17	-L-64+87	1.3-5.0	A-4(0)	29	1	6	26	49	19	96	92	76	16	N/A	N/A
S-19	-L-104+90	1.3-5.0	A-4(0)	25	1	17	37	31	15	86	77	49	13	N/A	N/A
S-20	-L-125+06	1.4-3.0	A-4(3)	30	7	12	25	32	31	98	90	69	19	N/A	N/A
S-21	-L-145+07	1.4-5.0	A-4(0)	26	0	16	33	30	21	92	83	56	16	N/A	N/A
S-25	-L-173+11	1.4-5.0	A-4(0)	32	0	13	29	39	19	91	83	62	17	N/A	N/A
S-26	-L-190+26	1.4-5.0	A-4(0)	27	0	15	31	36	18	86	77	55	16	N/A	N/A
S-27	-L-204+46	1.4-3.0	A-4(0)	30	1	10	31	40	19	100	94	69	19	N/A	N/A
S-29	-L-245+17	1.5-4.0	A-4(0)	27	1	16	25	39	20	86	77	58	15	N/A	N/A
S-31	-L-284+98	1.4-5.0	A-4(0)	24	1	9	43	29	19	99	95	58	14	N/A	N/A
S-33	-L-324+92	1.4-5.0	A-4(0)	22	1	22	36	26	16	97	85	48	11	N/A	N/A
S-35	-L-365+20	1.6-5.0	A-4(2)	33	1	1	26	55	18	100	100	87	14	N/A	N/A
S-38	-L-385+02	1.3-4.0	A-4(0)	28	0	14	29	40	17	70	63	48	14	N/A	N/A
S-40	-L-406+18	1.1-5.0	A-4(0)	25	0	17	23	43	17	80	71	55	13	N/A	N/A
S-41	-L-425+03	1.7-3.0	A-4(0)	22	0	17	31	35	17	100	89	61	11	N/A	N/A
S-43	-L-473+22	1.7-5.0	A-4(0)	28	1	11	30	42	17	96	89	69	16	N/A	N/A
S-46	-Y2-21+87	1.0-3.0	A-4(0)	29	0	12	24	43	21	92	84	69	16	N/A	N/A
S-47	-Y2-21+87	0.8-5.0	A-4(1)	34	1	9	27	46	18	93	87	70	23	N/A	N/A

Reviewed By

Certification: 105-0803

Falcon Engineering, Inc. 1210 Trinity Road, Suite 110, Cary, NC 27513



### LABORATORY TEST RESULTS

Widen US 129, NC 143, and NC 28 (Climbing/Passing Lane) from Robbinsville to Stecoah  
Greenville, NC

NCDOT Project: A-0009C

Falcon Engineering Project No: G21039.00

NO.	SAMPLE LOCATION	DEPTH INTERVAL	AASHTO CLASS.	ATTERBERG LIMITS		PERCENT BY WEIGHT				PERCENT PASSING SIEVE			MOISTURE (%)	BULK DENSITY (pcf)	ORGANICS (%)
				LL	PI	C.SAND	F.SAND	SILT	CLAY	#10	#40	#200			
S-48	-Y2-40+61	1.5-5.0	A-4(1)	32	1	9	24	44	23	93	87	72	17	N/A	N/A
S-50	-Y2-79+85	1.3-5.0	A-4(0)	31	0	11	22	48	19	95	87	74	18	N/A	N/A
S-51	-Y2-100+31	1.5-5.0	A-4(0)	28	0	14	26	43	17	100	91	70	18	N/A	N/A
S-54	-Y2-140+29	1.4-5.0	A-4(0)	26	0	15	23	47	15	85	76	60	18	N/A	N/A
S-55	-Y2-165+10	1.1-5.0	A-4(0)	26	0	18	25	41	16	83	73	54	15	N/A	N/A
S-57	-Y2-165+10	1.8-5.0	A-4(0)	31	0	17	27	32	24	99	88	63	17	N/A	N/A
S-59	-Y1-35+96	1.4-4.0	A-4(0)	25	0	19	46	21	14	96	86	44	11	N/A	N/A

Reviewed By

Certification: 105-0803

Falcon Engineering, Inc. 1210 Trinity Road, Suite 110, Cary, NC 27513

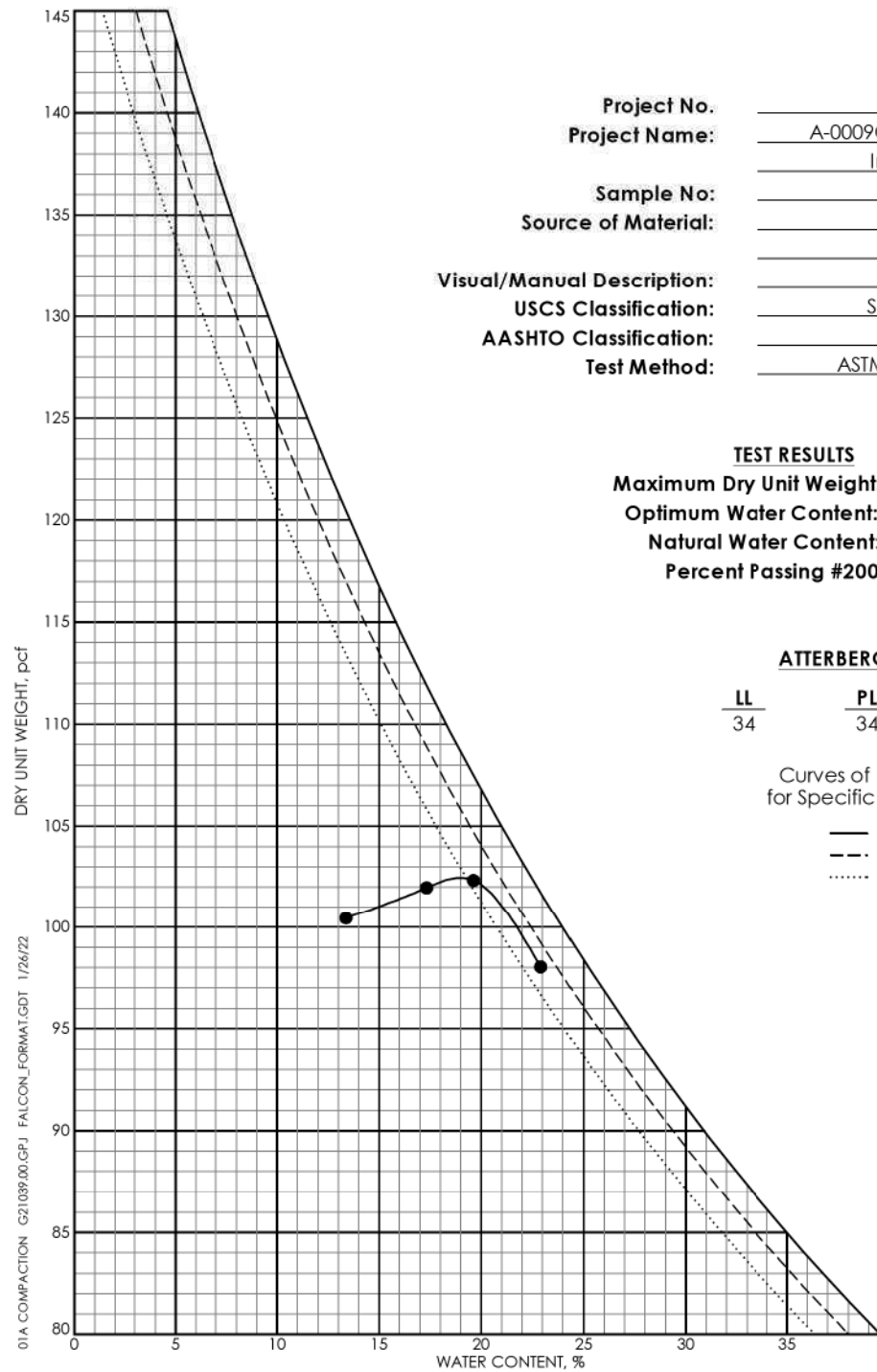


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LABORATORY COMPACTION TEST RESULTS

PAGE 1 OF 8



Project No: G21039.00  
Project Name: A-0009C Proposed Corridor Improvements  
Sample No: Bulk-1  
Source of Material: -L-62+07  
Visual/Manual Description: Dark Brown  
USCS Classification: SILTY SAND(SM)  
AASHTO Classification: A-4  
Test Method: ASTM D698 Method A

**TEST RESULTS**  
Maximum Dry Unit Weight: 102.5 PCF  
Optimum Water Content: 19.0 %  
Natural Water Content: 27.6 %  
Percent Passing #200: 43.5 %

**ATTERBERG LIMITS**  
LL / 34      PL / 34      PI / NP

Curves of 100% Saturation for Specific Gravity Equal to:

- 2.6
- - - 2.5
- ..... 2.4

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CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 / ASTM D-1883

PROJECT #: G21039.00      TEST PERFORMED BY: JG / CS      DATE: 1/21/2022

PROJECT NAME: CG2 A-0009C

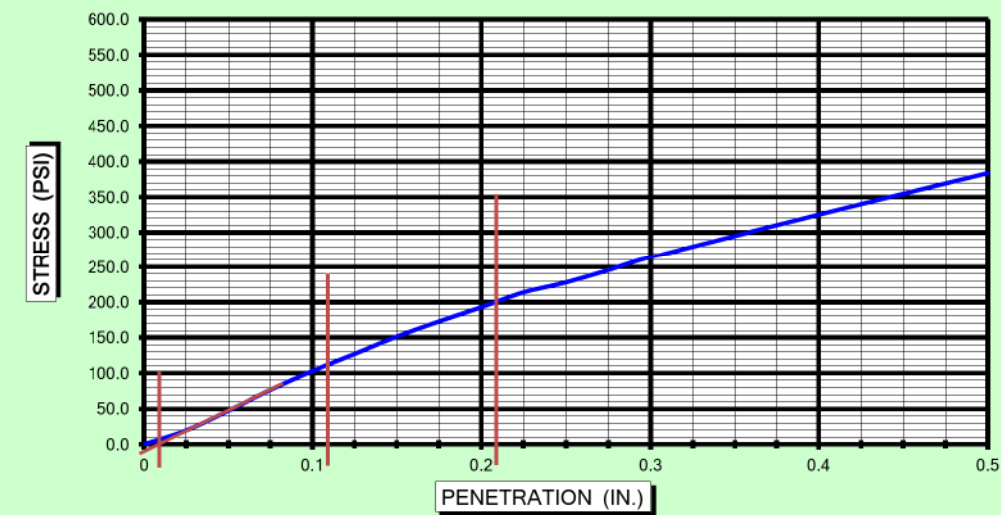
Boring #: Bulk-1      SAMPLE #: Bulk-1      DEPTH: 1.0-3.0

SOIL DESCRIPTION: Silty Sand (SM) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	102.5 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.0%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	100.7 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.1%	FINAL MOISTURE CONTENT	22.5%
PERCENT COMPACTION	98.3%	SWELL	0.15%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	10.3	11.3
CBR VALUE AT .2"	12.8	13.3

STRESS-PENETRATION CURVE



LIQUID LIMIT 34      PLASTIC LIMIT NP      PLASTIC INDEX NP



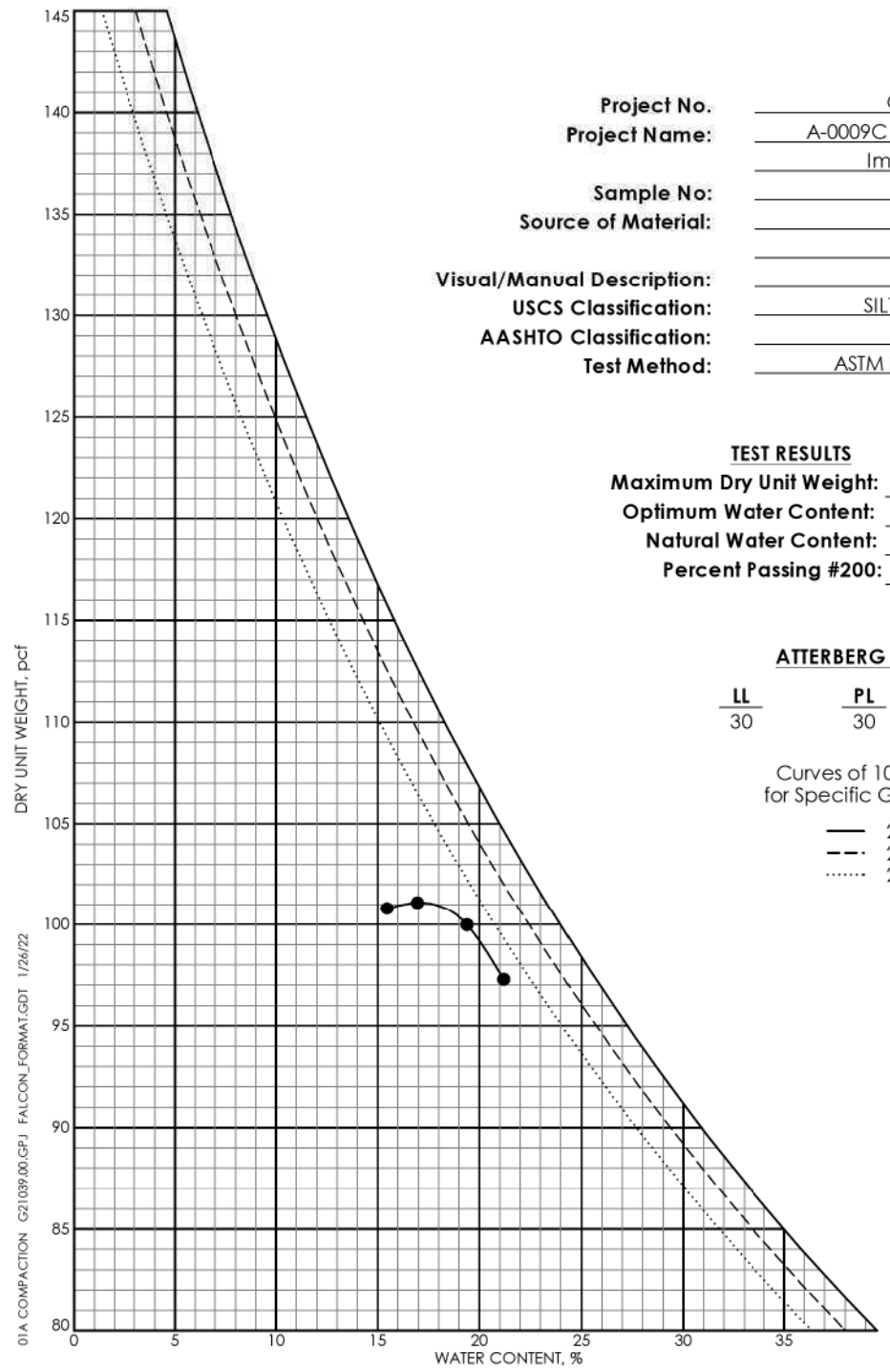


**LABORATORY COMPACTION TEST RESULTS**  
PAGE 2 OF 8

Project No: G21039.00  
 Project Name: A-0009C Proposed Corridor Improvements  
 Sample No: Bulk-2  
 Source of Material: -L-83+40  
 Visual/Manual Description: Brown  
 USCS Classification: SILTY SAND(SM)  
 AASHTO Classification: A-4  
 Test Method: ASTM D698 Method A

**TEST RESULTS**  
 Maximum Dry Unit Weight: 101.1 PCF  
 Optimum Water Content: 17.1 %  
 Natural Water Content: 17.7 %  
 Percent Passing #200: 46.6 %

**ATTERBERG LIMITS**  
 LL / 30    PL / 30    PI / NP  
 Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.6  
 - - - 2.5  
 ..... 2.4



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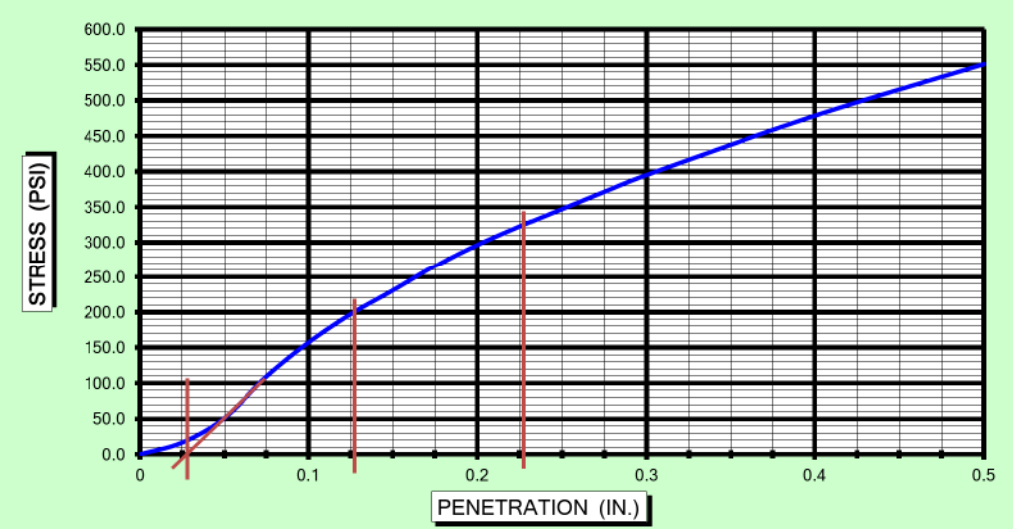
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 / ASTM D-1883  
 PROJECT #: G21039.00 TEST PERFORMED BY: JG / CS DATE: 1/21/2022  
 PROJECT NAME: CG2 A-0009C  
 Boring #: Bulk-2 SAMPLE #: Bulk-2 DEPTH: 1.0-3.0  
 SOIL DESCRIPTION: Silty Sand (SM) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	101.1 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	17.1%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	99.4 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	17.0%	FINAL MOISTURE CONTENT	24.0%
PERCENT COMPACTION	98.4%	SWELL	0.09%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	15.7	20.0
CBR VALUE AT .2"	19.7	21.7

**STRESS-PENETRATION CURVE**



LIQUID LIMIT	30	PLASTIC LIMIT	NP	PLASTIC INDEX	NP
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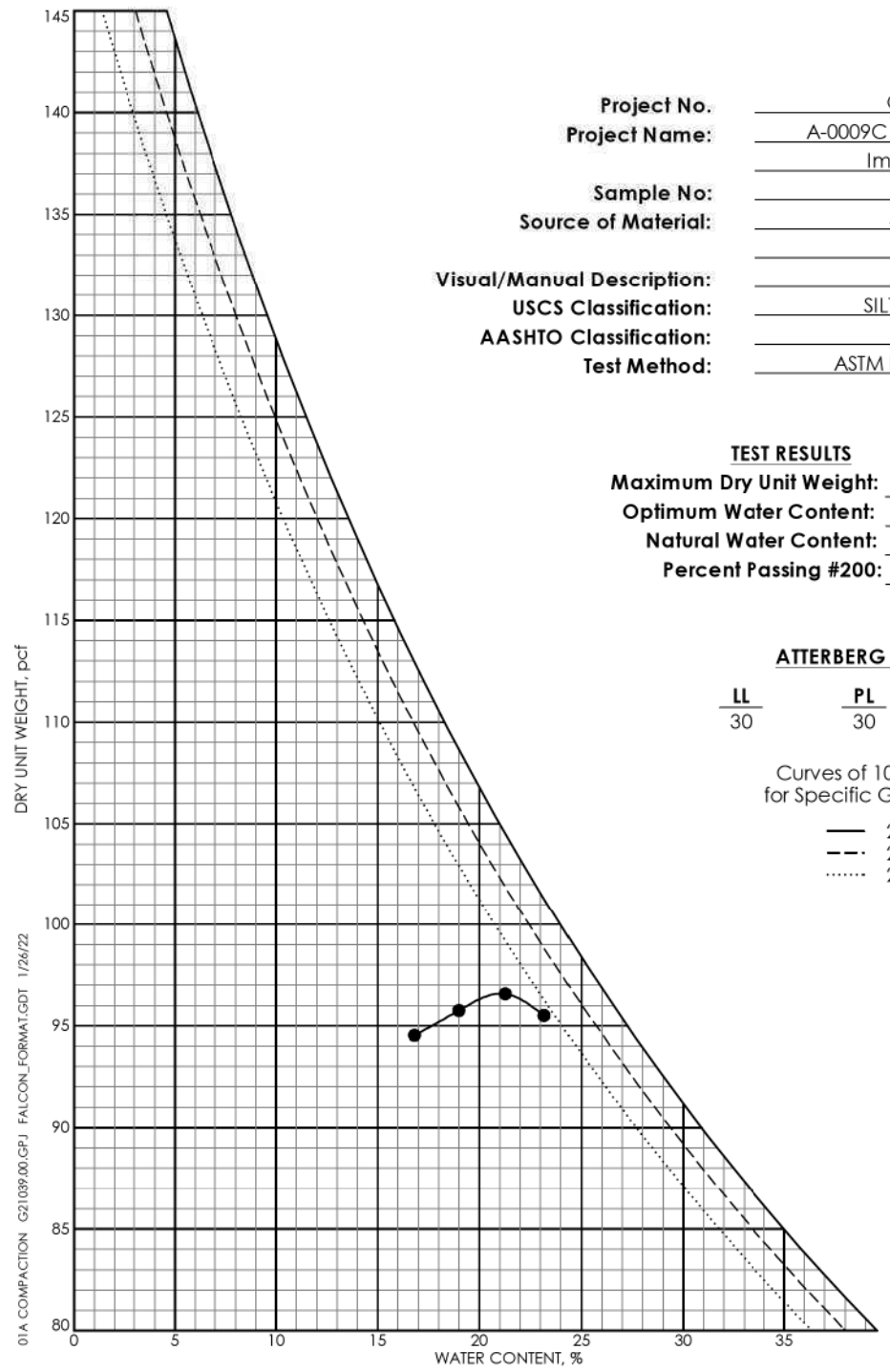


**LABORATORY COMPACTION TEST RESULTS**  
PAGE 3 OF 8

Project No: G21039.00  
 Project Name: A-0009C Proposed Corridor Improvements  
 Sample No: Bulk-3  
 Source of Material: -L-154+52  
 Visual/Manual Description: Brown  
 USCS Classification: SILTY SAND(SM)  
 AASHTO Classification: A-4  
 Test Method: ASTM D698 Method A

**TEST RESULTS**  
 Maximum Dry Unit Weight: 96.6 PCF  
 Optimum Water Content: 21.0 %  
 Natural Water Content: 19.9 %  
 Percent Passing #200: 45.0 %

**ATTERBERG LIMITS**  
 LL / 30    PL / 30    PI / NP  
 Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.6  
 - - - 2.5  
 ..... 2.4



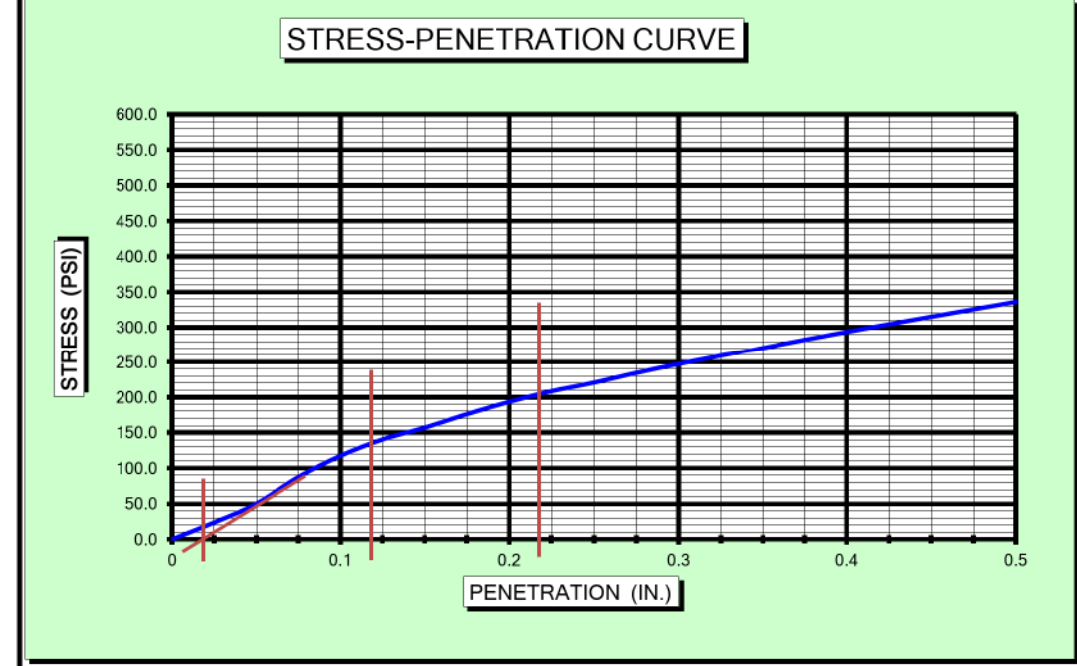
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**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 / ASTM D-1883  
 PROJECT #: G21039.00 TEST PERFORMED BY: JG / CS DATE: 1/21/2022  
 PROJECT NAME: CG2 A-0009C  
 Boring #: Bulk-3 SAMPLE #: Bulk-3 DEPTH: 1.0-3.0  
 SOIL DESCRIPTION: Silty Sand (SM) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	96.6 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	21.0%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	94.8 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	21.1%	FINAL MOISTURE CONTENT	27.4%
PERCENT COMPACTION	98.2%	SWELL	0.28%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	11.7	13.5
CBR VALUE AT .2"	12.9	13.5



LIQUID LIMIT	30	PLASTIC LIMIT	NP	PLASTIC INDEX	NP
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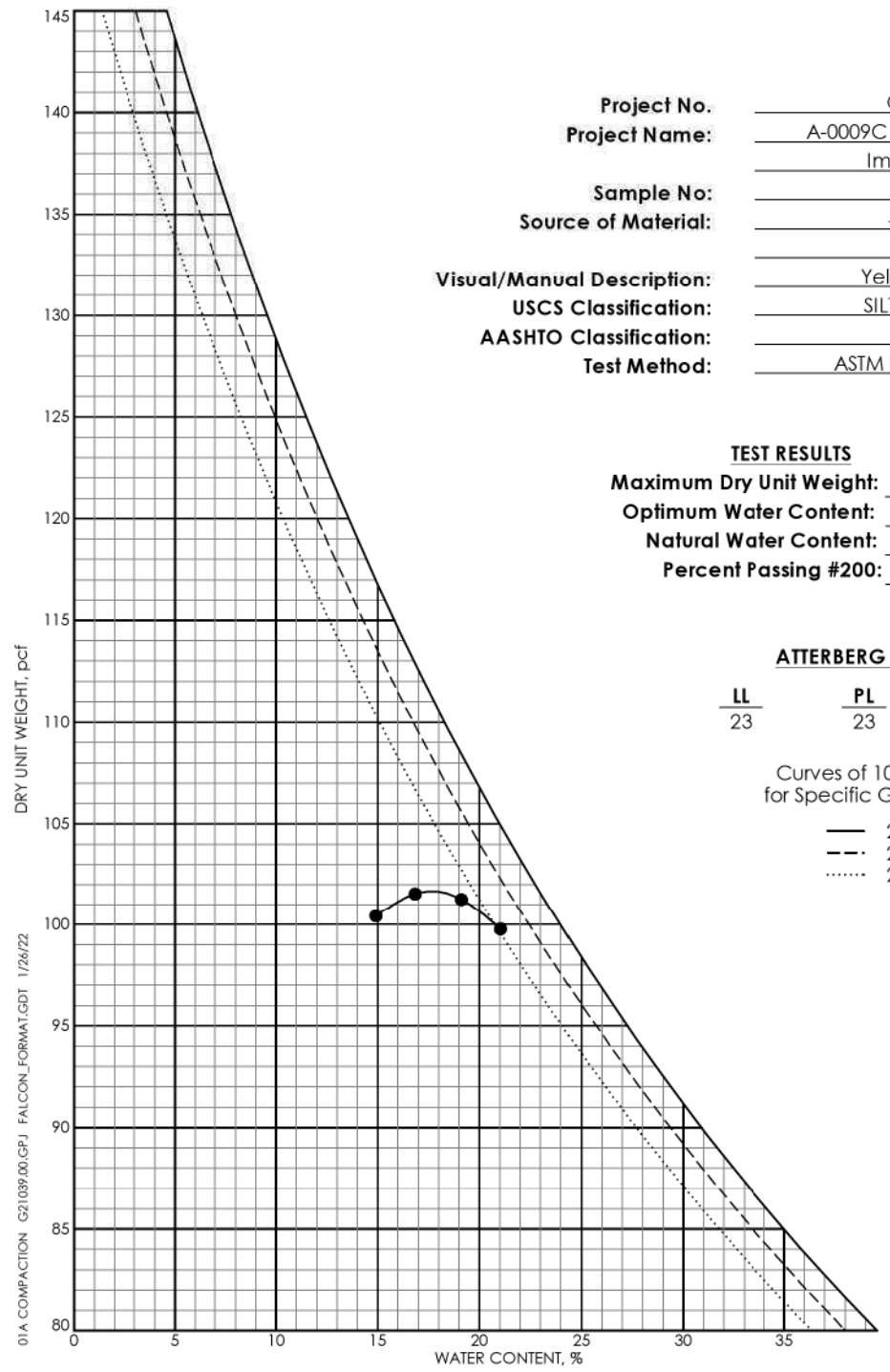


**LABORATORY COMPACTION TEST RESULTS**  
PAGE 4 OF 8

Project No: G21039.00  
 Project Name: A-0009C Proposed Corridor Improvements  
 Sample No: Bulk-4  
 Source of Material: -L-321+08  
 Visual/Manual Description: Yellowish Brown  
 USCS Classification: SILTY SAND(SM)  
 AASHTO Classification: A-4  
 Test Method: ASTM D698 Method A

**TEST RESULTS**  
 Maximum Dry Unit Weight: 101.7 PCF  
 Optimum Water Content: 17.7 %  
 Natural Water Content: 18.1 %  
 Percent Passing #200: 42.3 %

**ATTERBERG LIMITS**  
 LL / 23      PL / 23      PI / NP  
 Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.6  
 - - - 2.5  
 ..... 2.4



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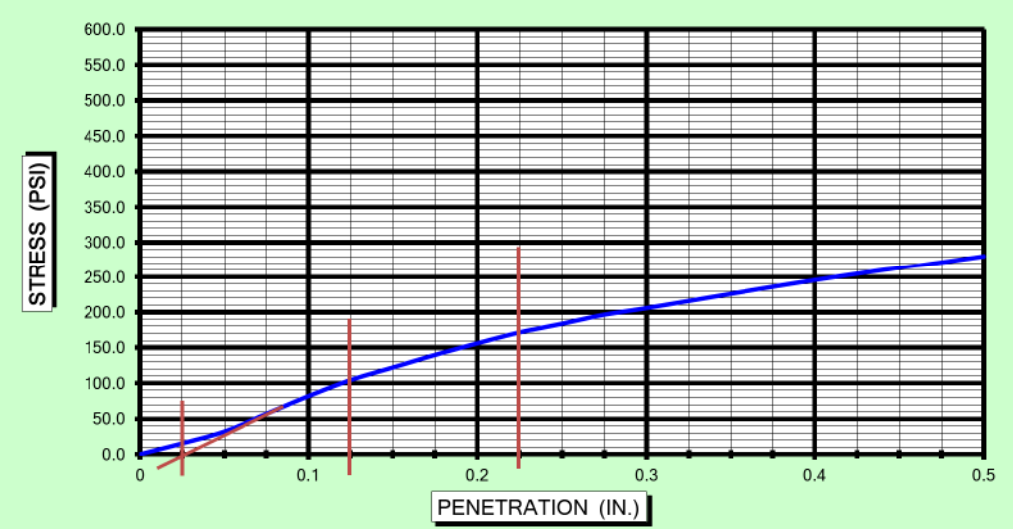
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 / ASTM D-1883  
 PROJECT #: G21039.00 TEST PERFORMED BY: JG / CS DATE: 1/21/2022  
 PROJECT NAME: CG2 A-0009C  
 Boring #: Bulk-4 SAMPLE #: Bulk-4 DEPTH: 1.0-3.0  
 SOIL DESCRIPTION: Silty Sand (SM) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	101.7 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	17.7%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	99.9 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	17.7%	FINAL MOISTURE CONTENT	26.7%
PERCENT COMPACTION	98.2%	SWELL	0.93%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	8.2	10.4
CBR VALUE AT .2"	10.4	11.4

**STRESS-PENETRATION CURVE**



LIQUID LIMIT	23	PLASTIC LIMIT	NP	PLASTIC INDEX	NP
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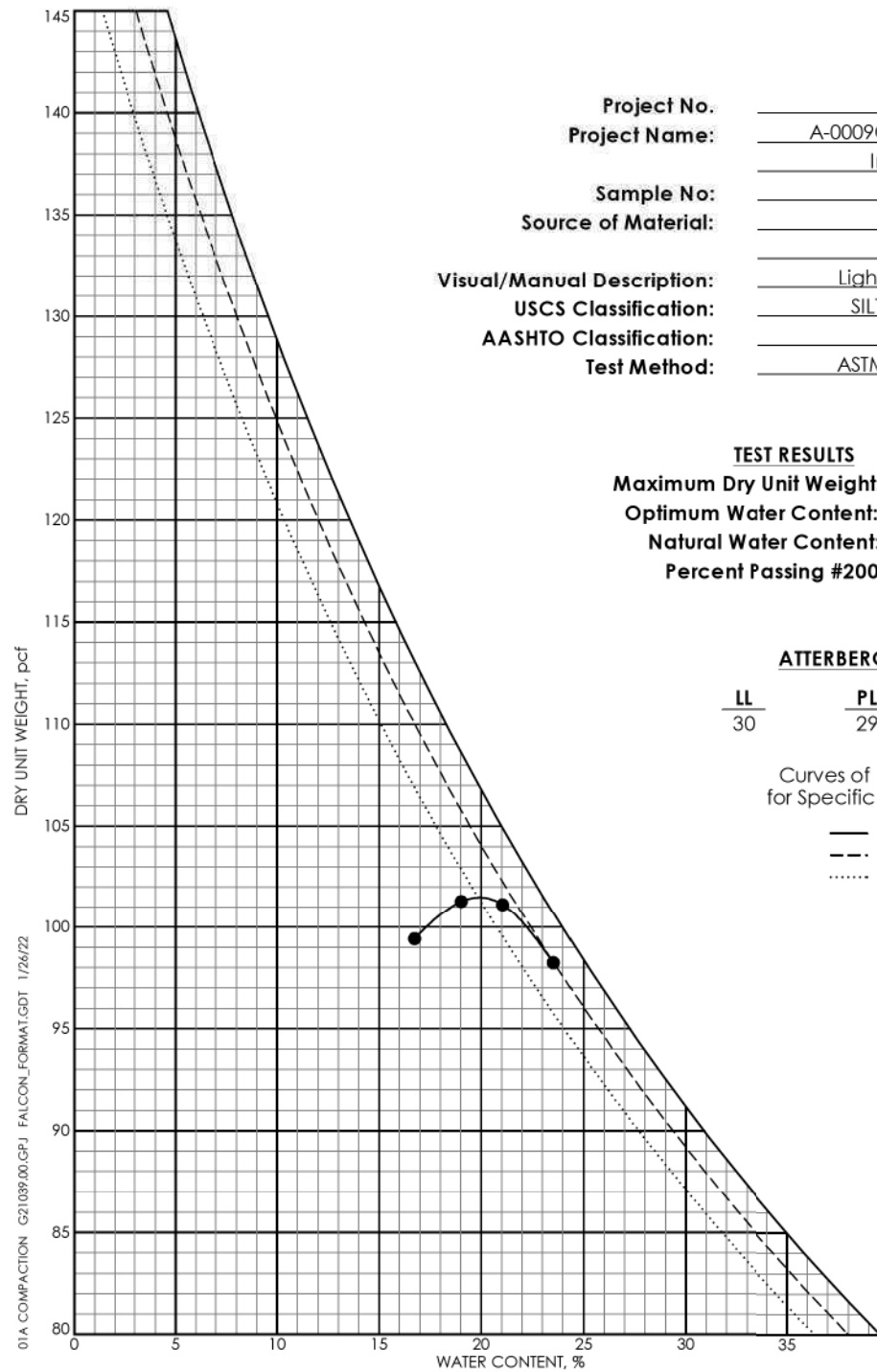


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LABORATORY COMPACTION TEST RESULTS

PAGE 5 OF 8



Project No: G21039.00  
Project Name: A-0009C Proposed Corridor Improvements  
Sample No: Bulk-5  
Source of Material: -L-336+69  
Visual/Manual Description: Light Yellowish Brown  
USCS Classification: SILT with SAND (ML)  
AASHTO Classification: A-4  
Test Method: ASTM D698 Method A

**TEST RESULTS**  
Maximum Dry Unit Weight: 101.5 PCF  
Optimum Water Content: 19.9 %  
Natural Water Content: 18.8 %  
Percent Passing #200: 71.4 %

**ATTERBERG LIMITS**  
LL / 30      PL / 29      PI / 1

Curves of 100% Saturation for Specific Gravity Equal to:

- 2.6
- - - 2.5
- ..... 2.4

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CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 / ASTM D-1883

PROJECT #: G21039.00      TEST PERFORMED BY: JG / CS      DATE: 1/21/2022

PROJECT NAME: CG2 A-0009C

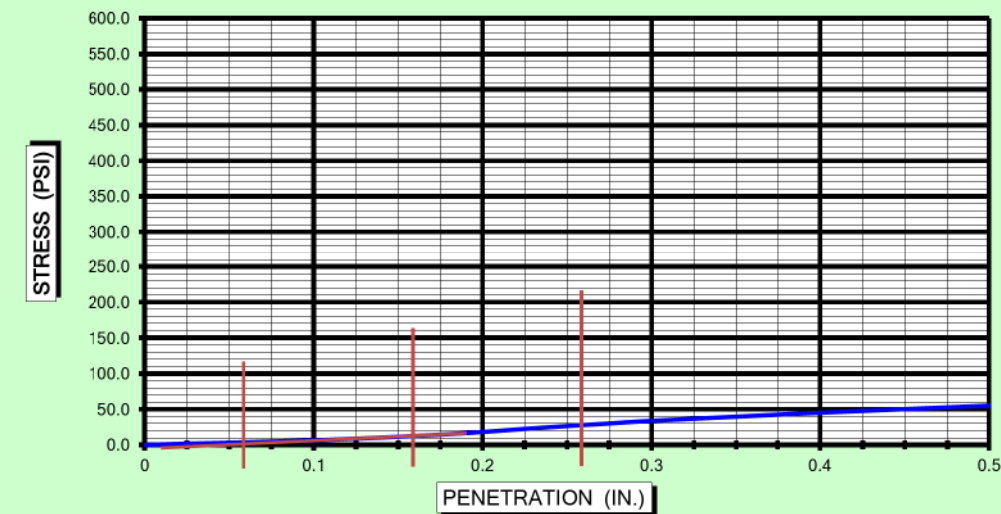
Boring #: Bulk-5      SAMPLE #: Bulk-5      DEPTH: 15.0-20.0

SOIL DESCRIPTION: Silt with Sand (ML) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	101.5 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.9%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	99.6 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.9%	FINAL MOISTURE CONTENT	32.6%
PERCENT COMPACTION	98.1%	SWELL	4.04%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	0.6	1.2
CBR VALUE AT .2"	1.2	1.9

STRESS-PENETRATION CURVE



LIQUID LIMIT 30      PLASTIC LIMIT 29      PLASTIC INDEX 1

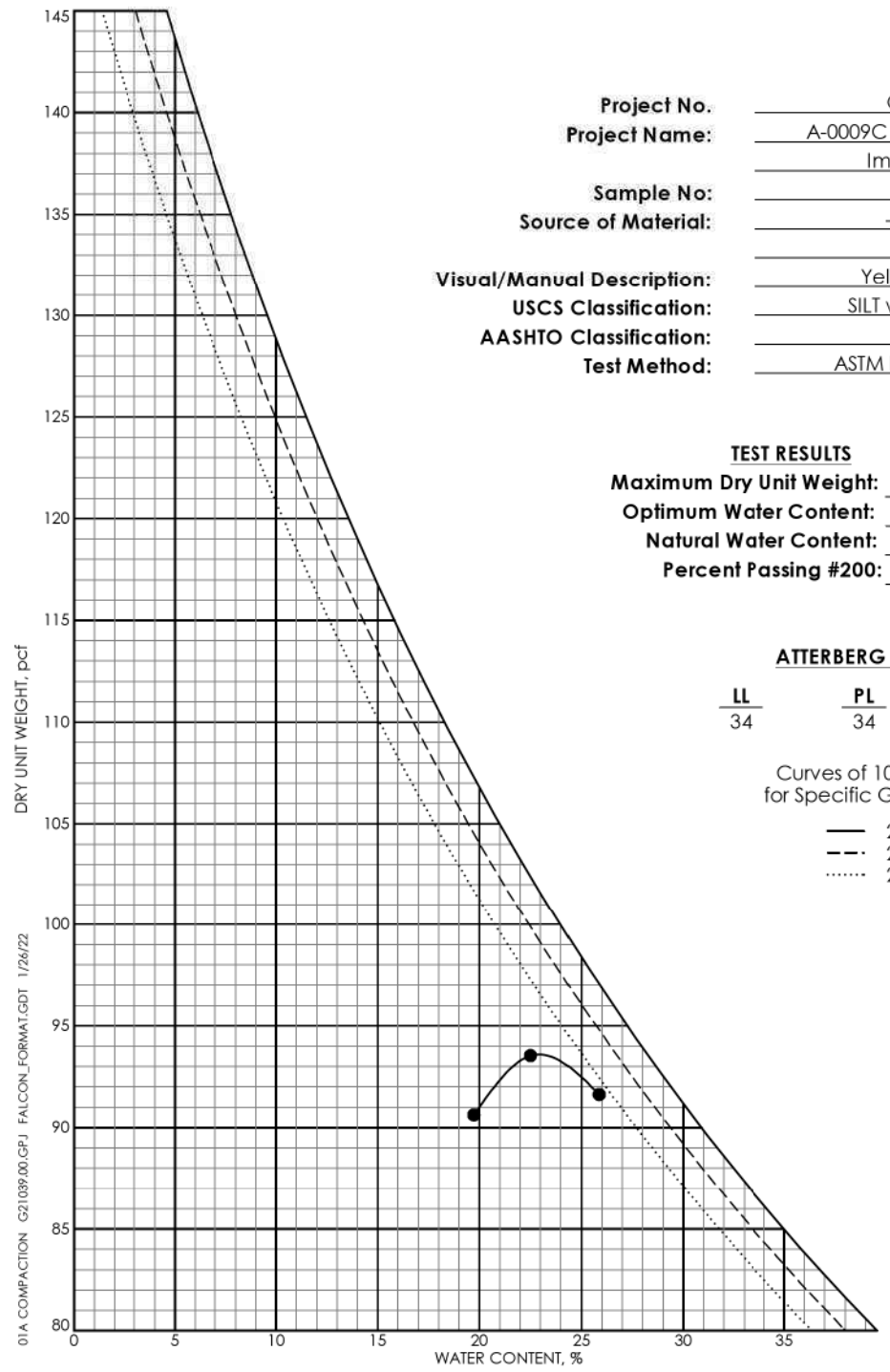


**LABORATORY COMPACTION TEST RESULTS**  
PAGE 6 OF 8

Project No: G21039.00  
 Project Name: A-0009C Proposed Corridor Improvements  
 Sample No: Bulk-6  
 Source of Material: -Y2-29+49  
 Visual/Manual Description: Yellowish Brown  
 USCS Classification: SILT with SAND (ML)  
 AASHTO Classification: A-4  
 Test Method: ASTM D698 Method A

**TEST RESULTS**  
 Maximum Dry Unit Weight: 93.6 PCF  
 Optimum Water Content: 22.9 %  
 Natural Water Content: 10.9 %  
 Percent Passing #200: 73.4 %

**ATTERBERG LIMITS**  
 LL / 34      PL / 34      PI / NP  
 Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.6  
 - - - 2.5  
 ..... 2.4



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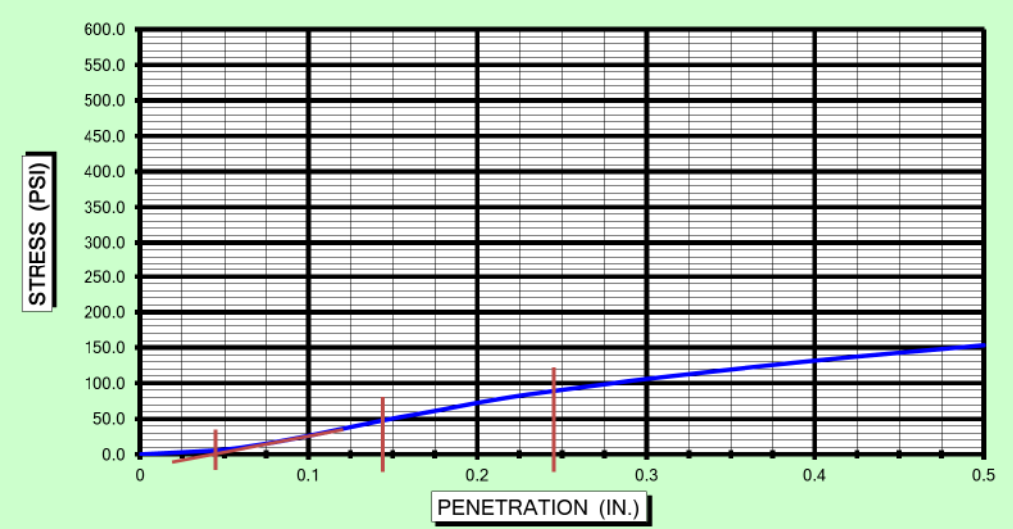
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 / ASTM D-1883  
 PROJECT #: G21039.00 TEST PERFORMED BY: JG / CS DATE: 1/21/2022  
 PROJECT NAME: CG2 A-0009C  
 Boring #: Bulk-6 SAMPLE #: Bulk-6 DEPTH: 1.0-3.0  
 SOIL DESCRIPTION: Silt with Sand (ML) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	93.6 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	22.9%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	91.7 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	22.9%	FINAL MOISTURE CONTENT	35.6%
PERCENT COMPACTION	98.0%	SWELL	2.26%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	2.6	4.8
CBR VALUE AT .2"	4.8	5.9

**STRESS-PENETRATION CURVE**



LIQUID LIMIT	34	PLASTIC LIMIT	NP	PLASTIC INDEX	NP
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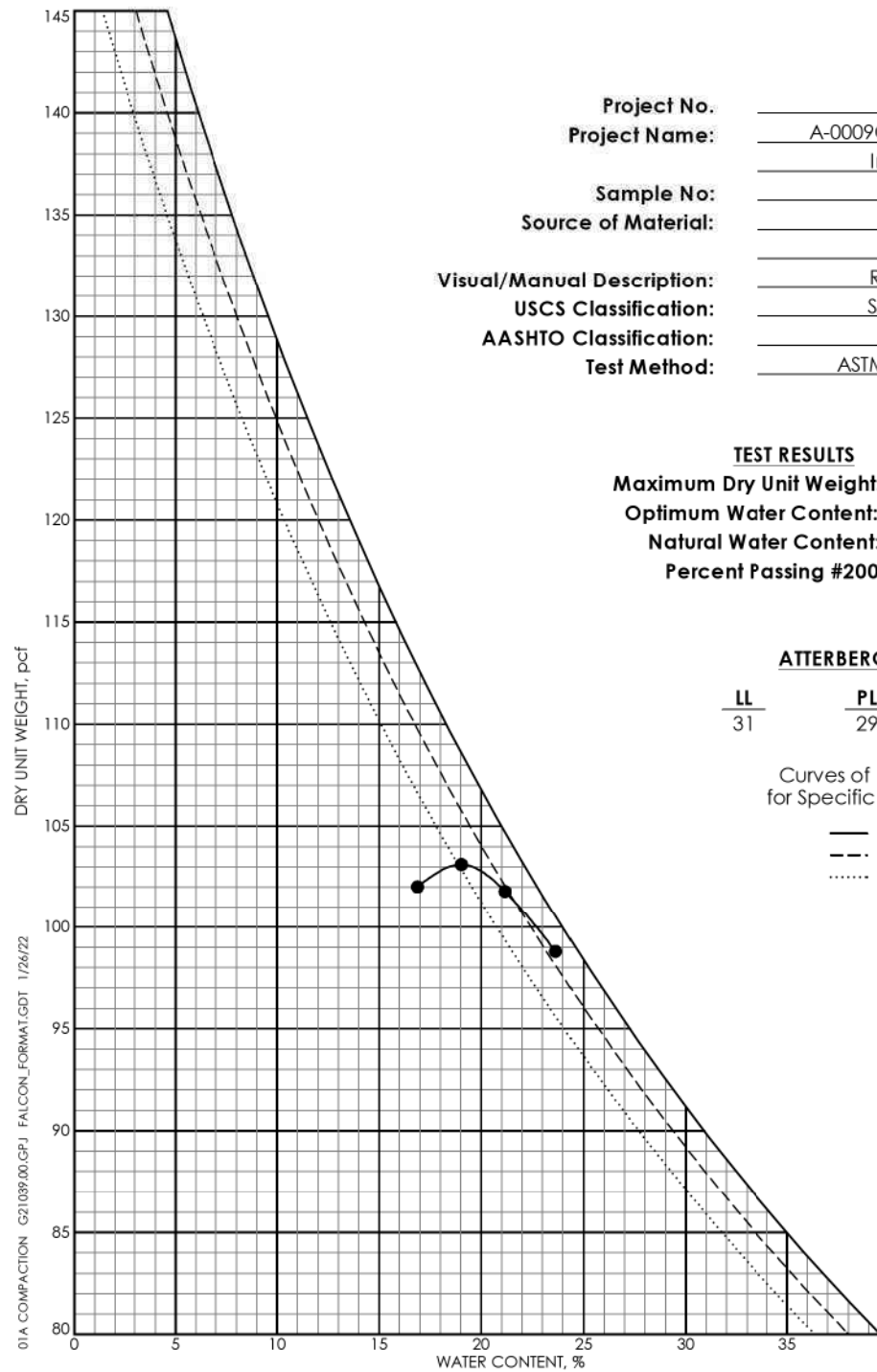


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LABORATORY COMPACTION TEST RESULTS

PAGE 7 OF 8



Project No: G21039.00  
Project Name: A-0009C Proposed Corridor Improvements  
Sample No: Bulk-7  
Source of Material: -Y2-46+66  
Visual/Manual Description: Reddish Brown  
USCS Classification: SANDY SILT (ML)  
AASHTO Classification: A-4  
Test Method: ASTM D698 Method A

**TEST RESULTS**  
Maximum Dry Unit Weight: 103.1 PCF  
Optimum Water Content: 19.0 %  
Natural Water Content: 30.4 %  
Percent Passing #200: 56.1 %

**ATTERBERG LIMITS**  
LL / 31      PL / 29      PI / 2

Curves of 100% Saturation for Specific Gravity Equal to:

- 2.6
- - - 2.5
- ..... 2.4

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CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

AASHTO T-193 / ASTM D-1883

PROJECT #: G21039.00      TEST PERFORMED BY: JG / CS      DATE: 1/21/2022

PROJECT NAME: CG2 A-0009C

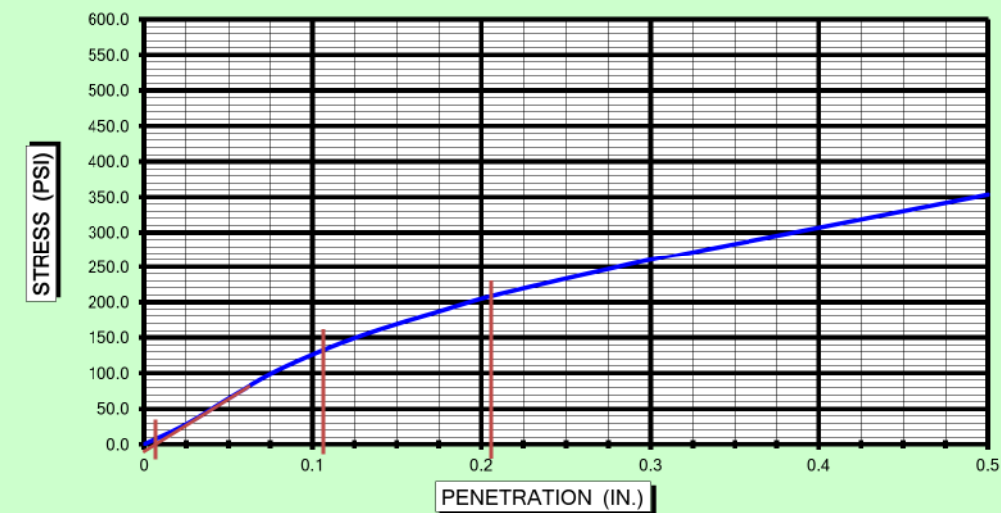
Boring #: Bulk-7      SAMPLE #: Bulk-7      DEPTH: 1.0-3.0

SOIL DESCRIPTION: Sandy Silt (ML) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	103.1 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.0%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	101.5 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.0%	FINAL MOISTURE CONTENT	26.7%
PERCENT COMPACTION	98.5%	SWELL	0.69%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	12.6	13.2
CBR VALUE AT .2"	13.6	13.9

STRESS-PENETRATION CURVE



LIQUID LIMIT      31      PLASTIC LIMIT      29      PLASTIC INDEX      2

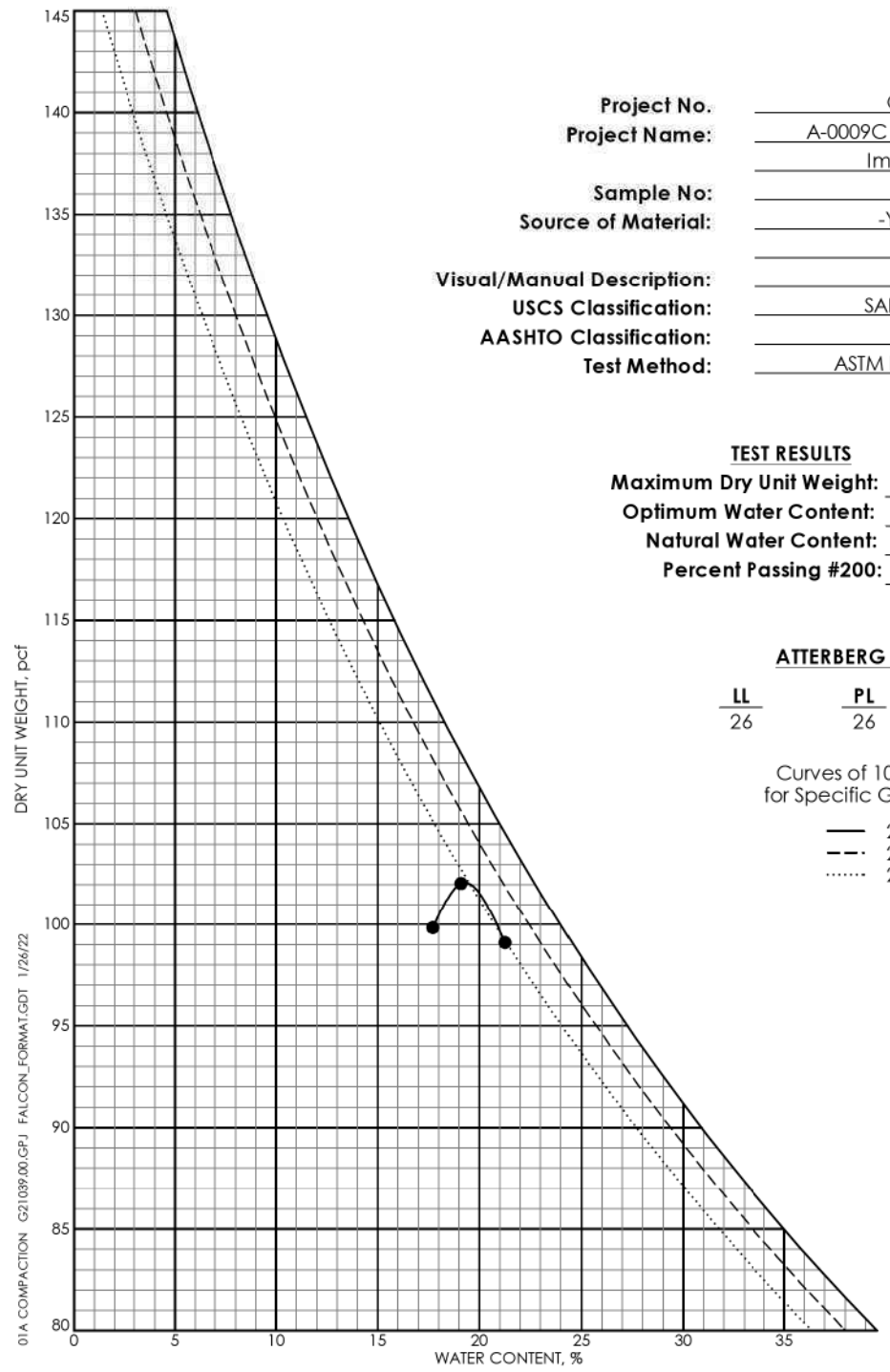


**LABORATORY COMPACTION TEST RESULTS**  
PAGE 8 OF 8

Project No: G21039.00  
 Project Name: A-0009C Proposed Corridor Improvements  
 Sample No: Bulk-8  
 Source of Material: -Y2-101+08  
 Visual/Manual Description: Brown  
 USCS Classification: SANDY SILT (ML)  
 AASHTO Classification: A-4  
 Test Method: ASTM D698 Method A

**TEST RESULTS**  
 Maximum Dry Unit Weight: 102.1 PCF  
 Optimum Water Content: 19.3 %  
 Natural Water Content: 19.6 %  
 Percent Passing #200: 54.9 %

**ATTERBERG LIMITS**  
 LL / 26      PL / 26      PI / NP  
 Curves of 100% Saturation for Specific Gravity Equal to:  
 — 2.6  
 - - - 2.5  
 ..... 2.4



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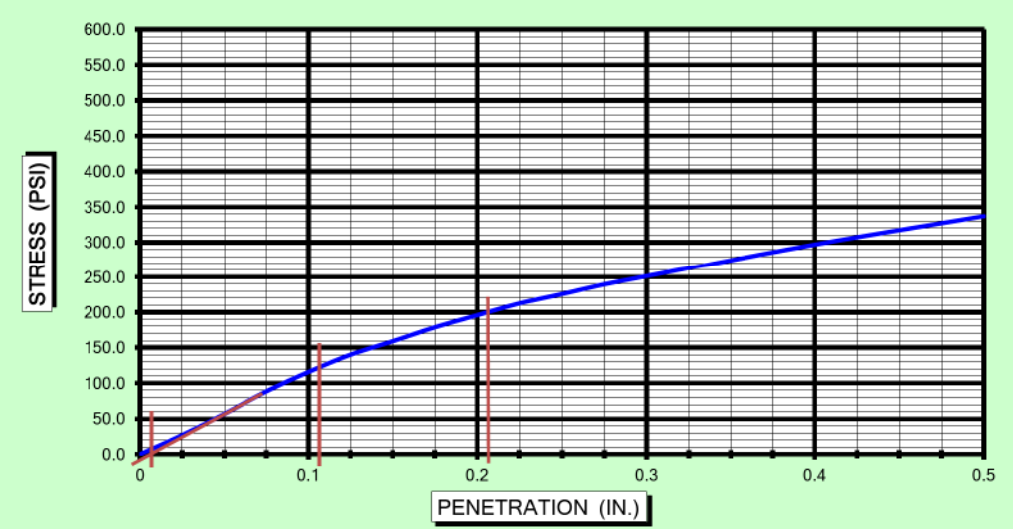
**CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL**

AASHTO T-193 / ASTM D-1883  
 PROJECT #: G21039.00 TEST PERFORMED BY: JG / CS DATE: 1/21/2022  
 PROJECT NAME: CG2 A-0009C  
 Boring #: Bulk-8 SAMPLE #: Bulk-8 DEPTH: 1.0-3.0  
 SOIL DESCRIPTION: Sandy Silt (ML) | A-4

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	102.1 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	19.3%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	
DRY DENSITY	100.0 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	19.5%	FINAL MOISTURE CONTENT	25.7%
PERCENT COMPACTION	97.9%	SWELL	0.54%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	11.6	12.3
CBR VALUE AT .2"	13.0	13.3

**STRESS-PENETRATION CURVE**



LIQUID LIMIT	26	PLASTIC LIMIT	NP	PLASTIC INDEX	NP
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