REFERENCE: R-5963A

PROJECT: 48599

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5963A	1	47

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *CHATHAM*

PROJECT DESCRIPTION *NEW ROUTE FROM CHATHAM PARKWAY, US 15/US 501 SOUTH OF PITTSBORO TO US 64 BUSINESS, CONSTRUCT ROADWAY ON NEW LOCATION*

PAVEMENT AND SUBGRADE INVESTIGATION

CONTENTS

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.

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2. 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

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DATE *OCTOBER 2024*

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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,
VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

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.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LL < 31
MODERATELY COMPRESSIBLE	LL = 31 - 50
HIGHLY COMPRESSIBLE	LL > 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT, DPT, DMT, VST, PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

RECOMMENDATION SYMBOLS

- UNDERCUT
- SHALLOW UNDERCUT
- UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE
- UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK
- UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

S - BULK
SS - SPLIT SPOON
ST - SHELBY TUBE
RS - ROCK
RT - RECOMPACTED TRIAXIAL
CBR - CALIFORNIA BEARING RATIO

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] CME-45C
- [ ] CME-55
- [ ] CME-550X
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] MOBILE B-29
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 4" SOLID STEM AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [X] CORE BIT (4-INCH DIAMETER)
- [ ] _____

HAMMER TYPE:
- [ ] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [ ] -N _____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [X] DUAL MASS DCP

ROCK DESCRIPTION

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:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED 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.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

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 DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK: N/A

ELEVATION: FEET

NOTES:

ROADWAY DESIGN FILES PROVIDED BY NCDOT

- PAVEMENT CORE WITH DCP
- BULK SAMPLE

DATE: 8-15-14

PROJECT REFERENCE NO.	SHEET NO.
R–5963A	2A

Tip No. R-5963A| WBS No. 48599.1.1| Chatham County

ABBREVIATIONS

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
FR = From

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 Subgrade
SG = Subgrade
AF= Artificial Fill
FDR = Full Depth Reclamation
HP = Highly Plastic
MP = Moderately Plastic
SAA = Same as Above
FEA = Flattened and Elongated Aggregate
SA = Sand Asphalt

DATE: 8-15-14

09/08/99

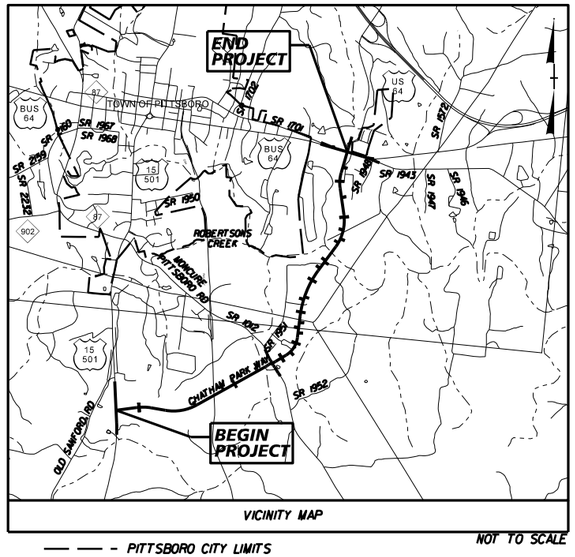
TIP PROJECT: R-5963A

CONTRACT:

$FILE$

$DATE$

SEE SHEET 1A FOR INDEX OF SHEETS
SEE SHEET 1B FOR CONVENTIONAL PLAN SHEET SYMBOLS



RW PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

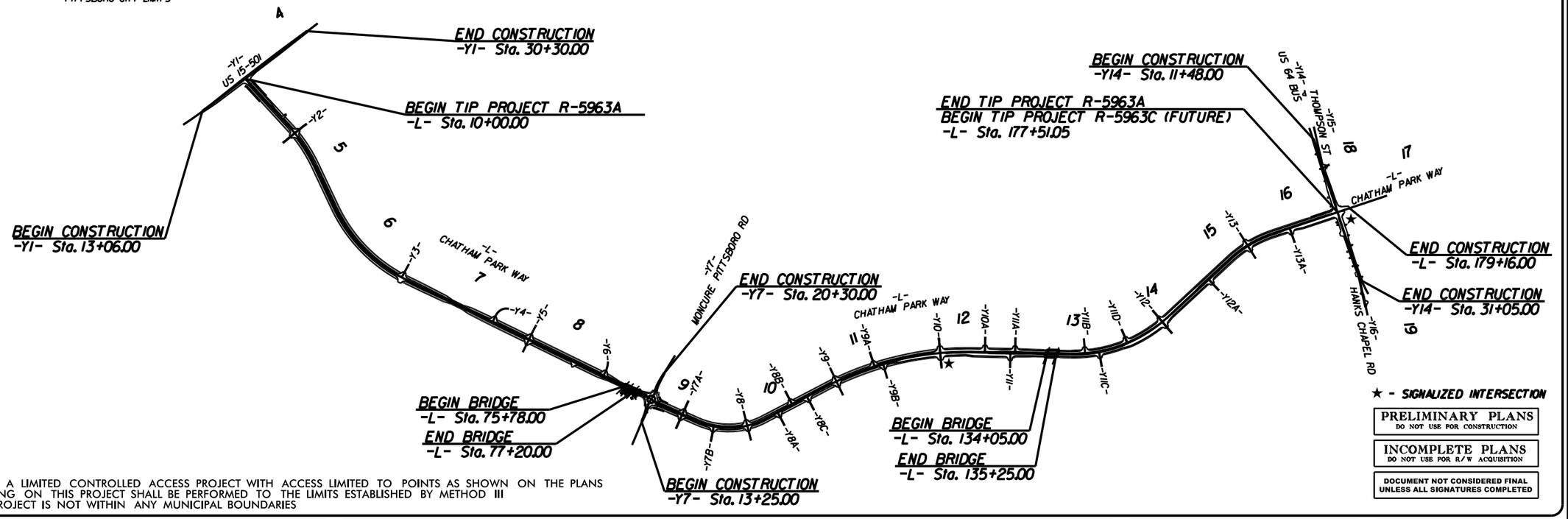
CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5963A	3	47
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
48599.1.1		P.E.	

LOCATION: *NEW ROUTE, FROM CHATHAM PARKWAY, US 15/US 501 SOUTH OF PITTSBORO TO US 64 BUSINESS, CONSTRUCT ROADWAY ON NEW LOCATON*

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

NC GRID
NAD 1983/NA 2011



★ - SIGNALIZED INTERSECTION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS IS A LIMITED CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

R-5963A DESIGN DATA

ADT 2025 = 0
ADT 2045 = 31000
K = 7%
D = 55
T = 5%*
V = 50 MPH
* (TTST 2% + DUAL 3%)
FUNCTIONAL CLASSIFICATION:
RURAL
MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5963A	=	3.114 MILES
LENGTH STRUCTURE TIP PROJECT R-5963A	=	0.059 MILES
TOTAL LENGTH TIP PROJECT R-5963A	=	3.173 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn
© 2024
NC LICENSE #F-0102
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NORTH CAROLINA 27601
PHONE: (919) 677-2000

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 19, 2024

LETTING DATE:
MARCH 18, 2025

VANCE W. BLANTON, P.E.
PROJECT ENGINEER

TYLER G. SPRING, P.E.
PROJECT DESIGN ENGINEER

JEFFREY A. STRODER, P.E.
PROJECT MANAGER
NCDOT HIGHWAY DIVISION 8

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	4

0 50 100
FEET

NC GRID NAD 83 NA 2011

BEGIN TIP PROJECT R-5963A&B
-L- POT Sta. 10+00.00
-Y1- POT Sta. 20+08.41

C-1 -Y1- STA. 16+91 LT PS 2.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	10.50 in
ABC	10.00 in

C-2 -Y1- STA. 16+91 RT LN 2.7 FT LT FW	
PAVEMENT SECTION	
ASPHALT	12.25 in
ABC	8.25 in

C-3 -Y1- STA. 16+91 RT PS 2.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	9.25 in
ABC	11.75 in

15+00

C-1 LT PS

C-2 RT LN

C-3 RT PS

BULK-4

-Y1-
US 15-501

20+00

CHATHAM PARK WAY

-L-

13+00

BULK-1

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	5

0 50 100
FEET

NAD 83 NC GRID NA 2011

BEGIN TIP PROJECT R-5963A&B
-L- POT Sta. 10+00.00
-Y1- POT Sta.20+08.41

20+00

CHATHAM PARK

-L-

C-4 -Y1- STA. 24+91 LT PS 1.5 FT RT FW	
PAVEMENT SECTION	
ASPHALT	9.50 in
ABC	10.50 in

C-5 -Y1- STA. 24+91 LT LN 2.5 FT LT FW	
PAVEMENT SECTION	
ASPHALT	12.00 in
ABC	9.00 in

25+00

C-4 LT PS
C-5 LT LN
C-6 RT PS

C-6 -Y1- STA. 24+91 RT PS 2.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	10.25 in
ABC	10.25 in

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	6

0 50 100
FEET

-RBT- POC Sta. 10+00.00 =
-RBT- POC Sta. 13+45.57

NAD 83 NC grid

C-7 -Y7- STA. 13+84	
LT PS 1.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	12.50 in

C-8 -Y7- STA. 13+84	
RT LN 2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	12.50 in

C-9 -Y7- STA. 13+84	
RT PS 0.7 FT RT FW	
PAVEMENT SECTION	
ASPHALT	10.50 in

C-10 -Y7- STA. 18+65	
LT PS 0.5 FT RT FW	
PAVEMENT SECTION	
ASPHALT	10.25 in
UTILITY PRESENT	

C-11 -Y7- STA. 18+65	
LT LN 2.5 FT LT FW	
PAVEMENT SECTION	
ASPHALT	8.25 in
UTILITY PRESENT	

C-12 -Y7- STA. 18+65	
RT PS 1.2 FT RT FW	
PAVEMENT SECTION	
ASPHALT	12.50 in
UTILITY PRESENT	

C-7 LT PS
C-8 RT LN
C-9 RT PS
C-10 LT PS
C-11 LT LN
C-12 RT PS
15+00
20+00
-Y7-
BULK-5

-L- POC Sta. 79+66.87 =
-Y7- POT Sta. 16+46.76

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	7

0 50 100
FEET

-Y14- POT Sta. 10+00.00

-Y15- POT Sta. 10+00.00

NC GRID
NAD 83 NA 2011

-DRW1- POT Sta. 11+00.00

-Y15- POT Sta. 15+00.00 =
-Y14- POT Sta. 15+00.00 (8' LT)

BEGIN CONSTRUCTION
-Y15- Sta. 13+40.00

C-15 -Y15- STA. 12+50 LANE 5.7 FT LT FW	
PAVEMENT SECTION	
ASPHALT	3.00 in
CONCRETE	6.00 in
SAND	1.50 in

-Y15- SR 1701
THOMPSON ST

C-15 LANE

C-14 LT LN

C-13 RT LN

-Y14-
US 64 BUS

C-14 -Y14- STA. 12+53 LT LN 2.0 FT LT FW		C-13 -Y14- STA. 12+53 RT LN 2.7 FT LT FW	
PAVEMENT SECTION		PAVEMENT SECTION	
ASPHALT	6.75 in	ASPHALT	5.50 in
CONCRETE	8.50 in	CONCRETE	8.75 in
SAND	3.00 in	SAND	4.00 in

BEGIN CONSTRUCTION
-Y14- Sta. 11+48.00

-Y14- POT Sta. 15+53.97 =
-DRW1- POT Sta. 10+00.00

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	8

0 50 100
FEET

NC GRID
NAD 83 NA 2011

END CONSTRUCTION
-L- 179+16.00

180+00

-L-

CHATHAM PARK WAY

END TIP PROJECT R-5963A&B
-L- POT Sta. 177+51.05
-Y14- POT Sta. 21+59.34

BULK-6

C-19 -Y14- STA. 23+18 LT PS 1.3 FT RT FW	
PAVEMENT SECTION	
ASPHALT	18.50 in

C-18 -Y14- STA. 23+18 LT LN 2.4 FT LT FW	
PAVEMENT SECTION	
ASPHALT	11.00 in

20+00

C-20 LTL
C-21 RT LN

-Y14-
US 64 BUS

C-19 LT PS
C-18 LT LN
C-17 MEDIAN
C-16 RT LN

25+00

C-20 -Y14- STA. 20+38 LTL 17.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	14.00 in
CONCRETE	6.50 in
SAND	4.00 in

C-21 -Y14- STA. 20+38 RT LN 2.8 FT LT FW	
PAVEMENT SECTION	
ASPHALT	14.00 in
CSS	10.00 in

C-17 -Y14- STA. 23+18 MEDIAN 14.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	13.00 in
CONCRETE	7.00 in

C-16 -Y14- STA. 23+18 RT LN 2.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	11.25 in
CSS	10.75 in

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	9

0 50 100
FEET

NC GRID
NAD 83 NA 2011

-Y14- PT Sta. 33+00.00

-Y16- POT Sta.10+00.00 =
-Y14- PCC Sta. 30+14.09
-Y14- POC Sta. 29+59.88

C-22 LT PS
C-23 RT PS
30+00

C-22 -Y14- STA. 28+33 LT PS 1.0 FT RT FW	
PAVEMENT SECTION	
ASPHALT	10.50 in
C-23 -Y14- STA. 28+33 RT PS 1.1 FT RT FW	
PAVEMENT SECTION	
ASPHALT	9.75 in

C-24 -Y14- STA. 32+86 RT LN 17.3 FT LT FW	
PAVEMENT SECTION	
ASPHALT	13.50 in
C-25 -Y14- STA. 32+86 RTL 3.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	9.50 in
UTILITY PRESENT	

-Y14-
US 64 BUS

C-24 RT LN
C-25 RTL

-Y16- PT Sta. 13+59.38

C-26 LT LN
C-27 LTL

C-26 -Y14- STA. 34+44 LT LN 2.0 FT LT FW	
PAVEMENT SECTION	
ASPHALT	12.00 in
UTILITY PRESENT	
C-27 -Y14- STA. 34+44 LTL 20.2 FT LT FW	
PAVEMENT SECTION	
ASPHALT	13.00 in
CONCRETE	7.00 in

-Y16- PC Sta. 12+22.25

15+00

SR 1948
RIDDLE RD

END CONSTRUCTION
-Y16- Sta. 14+37.00

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	10

0 50 100
FEET

NC GRID
NAD 83 NA 2011

-L- POT Sta. 158+24.17
-Y12A- POT Sta. 10+00.00

N 13° 44' 21.0" W

CR

155+00

BULK-3

-L-
CHATHAM PARK WAY

PROJECT REFERENCE NO.	SHEET NO.
R-5963A	11

0 50 100
FEET

NC GRID
NAD 83 NA 2011

Sta 14+89.77
Δ = 7° 36' 59.6" (LT)
D = 8° 11' 06.4"
L = 93.05'
T = 46.60'
R = 700.00'

PI Sta 15+70.66
Δ = 15° 41' 01.4" (RT)
D = 22° 55' 05.9"
L = 68.43'
T = 34.43'
R = 250.00'

BEGIN BRIDGE
-L- Sta.75+78.00

-Y6- PT Sta.10+00.00

END BRIDGE
-L- Sta.77+20.00

75+00

BULK-2

CR

CR

-L- CHATHAM PARK WAY

-Y6- PC Sta.11+25.53

-L- POT Sta.72+70.87
-Y6- POT Sta.12+00.00

70+00

SEWER
SSMH
INV IN
INV OUT

PAVEMENT INVESTIGATION DATA SHEET

Project:	48599.1.1
TIP:	R-5963A

Route:	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
County:	Chatham

Date Performed:	8/14 & 8/15/2024
Field Personnel:	T. Wenner, CG2 Exploration

		Width (ft)		(ft)	(in)	Thickness (in)						Subgrade						GPS Coordinates	
Test Location	Cut/Fill (Est. of Amount) (ft)	Lane	Shoulder	Offset Distance (See Notes)	Crown "Cr" or Super "S"	Gross to Top of Soil	Asphalt	ABC/Drainage Sand	Stabilized Subgrade	Concrete	Pavement Layering	Description (Depth - ft)	Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)	Asphalt Notes	Northing	Easting
C-1 -Y1- Sta. 16+91 LT PS	12.0 Cut	12.0	4.0 PS	2.0 RT FW	Cr	20.50	10.50	10.00			Asphalt ABC SG	1.7 - 4.0: RES - Tan, Silty CLAY, MP 4.0 - 5.0: WR - Tan, Metavolcanic Rock	S-1	A-7-6(18)	W	5.0	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	704,571	1,947,286
C-2 -Y1- Sta. 16+91 RT LN	3.0 Cut	12.0	4.0 PS	2.7 LT FW	Cr	20.50	12.25	8.25			Asphalt ABC SG	1.7 - 4.5: RES - Tan, Silty CLAY, MP 4.5 - 5.0: WR - Orange-Tan, Metavolcanic Rock	Ref-1	A-7-6	W	5.0	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	704,574	1,947,308
C-3 -Y1- Sta. 16+91 RT PS	3.0 Cut	12.0	4.0 PS	2.0 RT FW	Cr	21.00	9.25	11.75			Asphalt ABC SG	1.8 - 5.0: RES - Tan, Fine Sandy CLAY	S-3	A-6(9)	M	5.0	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	704,575	1,947,313
C-4 -Y1- Sta. 24+91 LT PS	3.5 Fill	12.0	4.0 PS	1.5 RT FW	Cr	20.00	9.50	10.50			Asphalt ABC SG	1.7 - 3.5: RE - Brown, Fine to Coarse Sandy CLAY, with trace gravel 3.5: WR - Metavolcanic Rock	Ref-5	A-6	M	3.5 AR	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed **5.5 Inch Top Down Crack in Core**	705,363	1,947,169
C-5 -Y1- Sta. 24+91 LT LN	3.5 Fill	12.0	4.0 PS	2.5 LT FW	Cr	21.00	12.00	9.00			Asphalt ABC SG	1.8 - 3.5: RE - Brown, Fine to Coarse Sandy CLAY, with trace gravel 3.5: WR - Metavolcanic Rock	S-5	A-6(2)	M	3.5 AR	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	705,363	1,947,173
C-6 -Y1- Sta. 24+91 RT PS	20.0 Cut	12.0	4.0 PS	2.0 RT FW	Cr	20.50	10.25	10.25			Asphalt ABC SG	1.7 - 2.8: RE - Brown, Fine to Coarse Sandy SILT, with trace gravel 2.8: WR - Metavolcanic Rock	S-6	A-4(1)	M	2.8 AR	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	705,367	1,947,197
C-7 -Y7- Sta. 13+84 LT PS	5.0 Fill	10.0	2.5 PS	1.0 RT FW	Cr	12.50	12.50				Asphalt SG	1.0 - 5.0: RE - Orange-Brown, Silty CLAY, MP, with trace gravel	S-7	A-7-6(6)	M	5.0	Low Severity Longitudinal and Transverse Cracking	707,265	1,953,630
C-8 -Y7- Sta. 13+84 RT LN	5.0 Fill	10.0	3.0 PS	2.0 LT FW	Cr	12.50	12.50				Asphalt SG	1.0 - 5.0: RE - Orange-Brown, Fine to Coarse Sandy CLAY, MP	S-8	A-6(6)	M	5.0	Low Severity Longitudinal and Transverse Cracking **Asphalt Thickness Measured from Borehole, Missing 3.0 Inches of Asphalt**	707,277	1,953,644
C-9 -Y7- Sta. 13+84 RT PS	5.0 Fill	10.0	3.0 PS	0.7 RT FW	Cr	10.50	10.50				Asphalt SG	0.9 - 5.0: RE - Orange-Brown, Fine to Coarse Sandy CLAY, MP	Ref-8	A-6	W	5.0	Low Severity Longitudinal and Transverse Cracking	707,279	1,953,646
C-10 -Y7- Sta. 18+65 LT PS	3.0 Fill	10.0	2.0 PS	0.5 RT FW	S	10.25	10.25				Asphalt SG	0.8 - 3.0: RE - Orange, Silty CLAY, MP DCP and Auger not performed to full depth due to utility	Ref-11	A-7-6	M	3.0	Low Severity Longitudinal and Transverse Cracking	707,649	1,953,340
C-11 -Y7- Sta. 18+65 LT LN	3.0 Fill	10.0	2.0 PS	2.5 LT FW	S	8.25	8.25				Asphalt SG	0.7 - 3.0: RE - Orange, Silty CLAY, MP DCP and Auger not performed to full depth due to utility	S-11	A-7-6(16)	M	3.0	Low Severity Longitudinal and Transverse Cracking	707,651	1,953,342
C-12 -Y7- Sta. 18+65 RT PS	3.0 Fill	10.0	2.0 PS	1.2 RT FW	S	-	12.50				Asphalt SG	RE - Orange, Silty CLAY, MP DCP not performed to full depth and no auger due to utility	Ref-11	A-7-6	M	-	Low Severity Longitudinal and Transverse Cracking	707,661	1,953,359
C-14 -Y14- Sta. 12+53 LT LN	4.0 Fill	12.0	-	2.0 LT FW	Cr	18.25	6.75	3.00 Drainage Sand		8.50	Asphalt Concrete/SAND SG	1.5 - 4.0: RE - Brown, Fine to Coarse Sandy CLAY 4.0 - 5.0: RES - Orange-Tan, Silty CLAY, MP	Ref-13A Ref-13A	A-6 A-7-6	W M	5.0	Moderate to High Severity Transverse Reflection Cracking (22.0 to 30.0 feet spaced), Moderate to High Severity Joint Cracking Between Lanes	716,658	1,954,812
C-13 -Y14- Sta. 12+53 RT LN	4.0 Fill	12.0	1.0 PS	2.7 LT FW	Cr	18.25	5.50	4.00 Drainage Sand		8.75	Asphalt Concrete/SAND SG	1.5 - 4.0: RE - Brown, Fine to Coarse Sandy CLAY 4.0 - 5.0: RES - Orange-Tan, Silty CLAY, MP	S-13 S-13A	A-6(9) A-7-6(22)	W M	5.0	Moderate to High Severity Transverse Reflection Cracking (22.0 to 30.0 feet spaced), Moderate to High Severity Joint Cracking Between Lanes	716,642	1,954,809
C-20 -Y14- Sta. 20+38 LTL	5.0 Fill	12.0	-	17.3 LT FW	Cr	24.50	14.00	4.00 Drainage Sand		6.50	Asphalt Concrete/SAND SG	2.0- 5.0: RE - Brown, Fine to Coarse Sandy CLAY	S-20	A-6(3)	M	5.0	Low to Moderate Severity Longitudinal and Transverse Cracking **Two, 2.5 Inch Bottom Up Cracks in Core, Bottom of Asphalt Highly Degraded**	716,505	1,955,582

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

Prepared by: CTW
Reviewed by: DMB

PAVEMENT INVESTIGATION DATA SHEET

Project:	48599.1.1
TIP:	R-5963A

Route:	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
County:	Chatham

Date Performed:	8/14 & 8/15/2024
Field Personnel:	T. Wenner, CG2 Exploration

		Width (ft)		(ft)	(in)	Thickness (in)						Subgrade						GPS Coordinates	
Test Location	Cut/Fill (Est. of Amount) (ft)	Lane	Shoulder	Offset Distance (See Notes)	Crown "Cr" or Super "S"	Gross to Top of Soil	Asphalt	ABC/Drainage Sand	Stabilized Subgrade	Concrete	Pavement Layering	Description (Depth - ft)	Soil Sample Number	AASHTO Classification	Soil Moisture	Boring Depth (ft)	Asphalt Notes	Northing	Easting
C-21 -Y14- Sta. 20+38 RT LN	5.0 Fill	12.0	2.0 PS	2.8 LT FW	Cr	24.00	14.00		10.00		Asphalt CSS SG	2.0 - 5.0: RE - Brown, Fine to Coarse Sandy SILT	S-21	A-4(5)	M	5.0	Low to Moderate Severity Longitudinal and Transverse Cracking	716,490	1,955,579
C-19 -Y14- Sta. 23+18 LT PS	4.0 Cut	10.0	2.0 PS	1.3 RT FW	Cr	18.50	18.50				Asphalt SG	1.5 - 3.5: RES - Orange-Tan, Silty CLAY, MP	Ref-18	A-7-6	M	3.5	Low Severity Longitudinal Cracking	716,469	1,955,860
C-18 -Y14- Sta. 23+18 LT LN	4.0 Cut	10.0	2.0 PS	2.4 LT FW	Cr	11.00	11.00				Asphalt SG	0.9 - 5.0: RES - Orange-Tan, Silty CLAY, MP	S-18	A-7-6(20)	W	5.0	Low Severity Longitudinal Cracking	716,465	1,955,859
C-17 -Y14- Sta. 23+18 MEDIAN	3.0 Fill	8.0	-	14.3 LT FW	Cr	20.00	13.00			7.00	Asphalt Concrete SG	1.7 - 3.0: RE - Orange-Brown, Silty CLAY, MP 3.0 - 5.0: RES - Orange- Tan, Silty CLAY, HP	S-17 S-17A	A-7-6(21) A-7-6(35)	W M	5.0	Low Severity Longitudinal Cracking	716,454	1,955,857
C-16 -Y14- Sta. 23+18 RT LN	At Grade	12.0	2.5 PS	2.3 LT FW	Cr	22.00	11.25		10.75		Asphalt CSS SG	1.8 - 5.0: RES - Orange-Tan, Silty CLAY, HP	Ref-17A	A-7-6	M	5.0	Low Severity Longitudinal and Transverse Cracking **1.0 Inch Top Down Crack In Core**	716,441	1,955,855
C-22 -Y14- Sta. 28+33 LT PS	1.3 Fill	11.0	2.0 PS	1.0 RT FW	Cr	10.50	10.50				Asphalt SG	0.9 - 1.3: RE - Brown, Silty Fine to Coarse SAND, with trace gravel 1.3 - 5.0: RES - Orange-Tan, Silty CLAY, MP	- S-22	A-2-4 A-7-6(20)	M W	5.0	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	716,371	1,956,366
C-23 -Y14- Sta. 28+33 RT PS	1.3 Fill	11.0	2.5 PS	1.1 RT FW	Cr	9.75	9.75				Asphalt SG	0.8 - 1.3: RE - Brown, Silty Fine to Coarse SAND, with trace gravel 1.3 - 5.0: RES - Orange-Tan, Fine to Coarse Sandy CLAY, MP	- S-23	A-2-4 A-6(9)	M M	5.0	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	716,346	1,956,362
C-24 -Y14- Sta. 32+86 RT LN	5.0 Fill	11.0	-	17.3 LT FW	S	13.50	13.50				Asphalt SG	1.1 - 3.0: RE - Orange-Tan, Fine to Coarse Sandy CLAY, MP 3.0 - 5.0: RES - Orange-Brown, Silty CLAY, HP	S-24 S-24A	A-6(9) A-7-6(15)	M M	5.0	Moderate to High Severity Longitudinal and Transverse Cracking (IS/OSWP), some cracks sealed	716,303	1,956,814
C-25 -Y14- Sta. 32+86 RTL	5.0 Fill	12.0	2.5 PS	3.0 LT FW	S	9.50	9.50				Asphalt SG	RE - RE - Orange-Tan, Fine to Coarse Sandy CLAY, MP DCP not performed to full depth and no auger due to utility	Ref-24	A-6	M	-	Low to Moderate Severity Longitudinal and Transverse Cracking	716,289	1,956,814
C-26 -Y14- Sta. 34+44 LT LN	At Grade	12.0	4.0 PS	2.0 LT FW	S	12.00	12.00				Asphalt SG	RE - RES - Orange-Tan, Silty CLAY, HP DCP not performed to full depth and no auger due to utility	Ref-27	A-7-6	W	-	Moderate to High Severity Longitudinal and Transverse Cracking, Moderate to High Severity Fatigue Cracking (IS/OSWP), some cracks sealed **2.0 Inch Top Down Crack in Core, Bottom of Core Disintegrated**	716,339	1,956,967
C-27 -Y14- Sta. 34+44 LTL	At Grade	12.0	-	20.2 LT FW	S	20.00	13.00			7.00	Asphalt Concrete SG	1.7 - 5.0: RES - Orange-Tan, Silty CLAY, HP	S-27	A-7-6(29)	W	5.0	High Severity Transverse Cracking, Low to Moderate Severity Longitudinal Cracking, some cracks sealed **Full Depth Crack in Core, Asphalt Highly Degraded, Concrete Degraded**	716,321	1,956,970
C-15 -Y15- Sta. 12+50 LANE	At Grade	15.0	-	5.7 LT FW	Cr	10.50	3.00	1.50 Drainage Sand		6.00	Asphalt Concrete/SAND SG	0.8 - 5.0: RES - Orange-Tan, Silty CLAY, MP	S-15	A-7-5(26)	W	5.0	Low to Moderate Severity Longitudinal and Transverse Cracking **1.0 Inch Top Down Crack in Core, Asphalt Thickness Measured from Borehole,** **3.0 Inch Top Down Crack in Concrete**	716,685	1,954,816

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

Prepared by: CTW
Reviewed by: DMB

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET	WBS NO.	PROJECT TIP I.D.	ROUTE
	48599.1.1	R-5963A	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
	COUNTY	FIELD PROFESSIONAL	FIELD CREW
	Chatham	T. Wenner	CG2 Exploration

Test Location	Date Run	Test Location	Date Run
C-1 LT PS -Y1- Sta. 16+91 2.0 RT FW	8/15/2024	C-2 RT LN -Y1- Sta. 16+91 2.7 LT FW	8/15/2024

Type	Test Interval				Datum		Cut/Fill		Type	Test Interval				Datum		Cut/Fill	
DCP	Cumulative cm per blow				ABC		12.0 Cut		DCP	Cumulative cm per blow				ABC		3.0 Cut	
0.92	19.87	96.74							0.74	8.29	20.64	66.51					
1.33	20.27	97.13							1.01	8.34	21.03	67.44					
1.89	20.75	97.57							1.30	8.38	21.59	68.30					
2.40	21.05	97.96							1.61	8.43	21.76	69.17					
2.85	21.38	98.47							1.78	8.47	21.89	70.02					
3.50	21.75	98.78							1.93	8.52	22.14	71.14					
3.94	22.12	99.15							2.13	8.90	22.85	72.02					
4.37	22.33	99.43							2.26	9.19	23.38	72.89					
4.74	22.84	99.63							2.41	9.39	24.01	73.82					
5.12	23.35	99.83							2.57	9.82	24.56	75.08					
5.51	23.79	100.37							2.65	10.09	25.79	76.16					
5.69	24.14	100.99							2.80	10.21	27.27	77.14					
5.96	24.60	101.42							2.97	10.42	28.89	78.27					
6.37	24.99	101.86							3.09	10.61	30.55	79.36					
6.69	25.39	102.17							3.15	10.77	32.29	80.15					
6.93	26.05	102.33							3.21	10.91	33.34	81.02					
7.34	27.11	102.65							3.26	11.23	34.27	82.18					
7.56	27.64	103.25							3.32	11.41	35.14	82.96					
7.86	28.78	103.74							3.38	11.54	35.68	83.87					
8.33	29.75	103.96							3.44	11.75	36.10	84.44					
8.74	30.68	104.39							3.50	12.10	36.46	85.39					
8.94	31.58	105.09							3.55	12.21	36.80	86.28					
9.13	32.83	105.57							3.61	12.35	37.32	87.15					
9.47	34.29	106.28							3.67	12.46	37.77	88.10					
9.78	36.37	106.59							3.99	12.62	38.01	88.94					
9.95	37.79	107.59							4.21	12.69	38.37	89.54					
10.13	40.56	108.09							4.32	12.85	38.67	90.40					
10.39	43.04	108.93							4.43	13.01	39.15	91.22					
10.80	46.07	109.34							4.53	13.29	39.43	92.03					
10.96	48.57	109.82							4.64	13.51	39.87	92.94					
11.23	51.03	110.47							4.82	13.73	40.26	93.58					
11.39	54.03	110.87							5.08	13.87	40.68	94.26					
11.71	57.76	111.40							5.23	14.05	40.95	95.07					
11.90	62.11	111.61							5.47	14.28	41.45	95.53					
12.08	65.97	112.04							5.68	14.45	41.76	96.09					
12.41	67.44	112.38							5.86	14.57	42.23	96.55					
12.60	69.44	112.46							6.15	14.72	42.58	97.07					
12.77	71.81	112.54							6.32	14.80	42.86	97.55					
13.06	74.09	112.62							6.49	14.95	43.39	97.97					
13.35	76.91	112.70							6.99	15.13	43.92	98.35					
13.55	79.20	112.78							7.14	15.46	44.43	98.66					
13.76	80.57	112.86							7.19	15.71	45.12	98.92					
13.85	81.12	112.94							7.23	15.87	45.72	99.25					
14.08	81.85	113.02							7.28	16.02	46.39	99.83					
14.37	82.18	113.10							7.32	16.19	47.22	100.30					
14.64	82.63	113.18							7.37	16.38	48.52	100.50					
14.92	83.72	113.36							7.42	16.62	49.64	100.94					
15.17	84.50	113.53							7.46	16.79	50.70	101.25					
15.39	85.12	113.71							7.51	16.99	52.02	101.70					
15.64	85.63	113.88							7.55	17.11	52.32	102.07					
15.87	86.16	114.06							7.60	17.27	53.16	102.41					
16.09	86.86	114.23							7.65	17.42	54.10	102.86					
16.30	87.47	114.41							7.69	17.67	55.13	103.43					
16.57	88.51	114.58							7.74	17.79	56.22	103.71					
16.71	89.55	114.76							7.78	18.04	56.95	104.07					
17.02	90.33	114.93							7.83	18.28	57.84	104.24					
17.27	91.07	115.10							7.88	18.49	58.74	104.43					
17.44	91.80	115.26							7.92	18.77	59.51	104.60					
17.73	92.77	115.43							7.97	18.99	60.19	104.92					
18.02	93.10	115.59							8.01	19.12	61.36	105.13					
18.31	93.74	115.76							8.06	19.26	61.96	105.31					
18.54	94.26	116.13							8.11	19.54	62.75	105.71					
18.71	94.89								8.15	19.69	63.70	106.30					
19.00	95.45								8.20	19.98	64.49	106.48					
19.41	96.05								8.24	20.15	65.49	107.01					

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET	WBS NO.	PROJECT TIP I.D.	ROUTE
	48599.1.1	R-5963A	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
	COUNTY	FIELD PROFESSIONAL	FIELD CREW
	Chatham	T. Wenner	CG2 Exploration

Test Location	Date Run	Test Location	Date Run
C-3 RT PS -Y1- Sta. 16+91 2.0 RT FW	8/15/2024	C-4 LT PS -Y1- Sta. 24+91 1.5 RT FW	8/15/2024

Type	Test Interval				Datum		Cut/Fill		Type	Test Interval				Datum		Cut/Fill	
DCP	Cumulative cm per blow				ABC		3.0 Cut		DCP	Cumulative cm per blow				ABC		3.5 Fill	
2.76	23.30	97.98							6.20	28.99	58.63	87.08					
3.72	23.61	99.48							7.46	29.33	58.93	87.10					
4.14	24.09	100.84							8.98	29.95	59.31	87.12					
4.45	24.38	103.07							9.46	30.51	59.84	87.14					
4.77	24.76	104.48							9.92	31.04	60.08	87.16					
5.14	25.47	106.29							10.50	31.90	60.29	87.18					
5.39	26.09	107.95							10.80	33.23	60.62	87.20					
5.81	26.91	109.70							11.12	35.13	61.00	87.22					
6.14	27.98	110.36							11.51	37.41	61.47	87.24					
6.48	28.91	111.39							11.80	38.58	62.11	87.27					
6.68	30.84	112.33							12.15	39.27	63.05	87.29					
6.90	32.26	113.19							12.41	39.92	64.43	87.31					
7.13	33.74	114.08							12.72	40.59	65.19	87.33					
7.48	35.06	114.71							13.02	40.94	66.11	87.35					
7.69	36.71	115.44							13.22	41.49	66.92	87.37					
7.88	37.93	115.96							13.45	41.88	68.05	87.39					
8.21	38.92	116.48							13.69	42.29	69.25	87.41					
8.48	39.79	117.17							14.01	42.53	70.03	87.43					
8.71	40.54	117.90							14.11	42.77	71.05	87.45					
9.07	41.40	118.44							14.33	42.97	71.44	87.48					
9.49	42.18	119.10							14.63	43.23	72.09	87.50					
9.69	43.29	119.96							14.86	43.57	73.06	87.52					
10.00	45.03	120.60							15.14	43.78	73.97	87.54					
10.37	46.39	121.37							15.43	44.08	74.58	87.56					
10.57	48.07	121.99							15.59	44.39	75.87	87.58					
10.81	49.92	122.71							15.77	44.81	77.04	DCP REF					
11.05	51.71								15.98	45.03	78.42	50/0.5"					
11.38	54.01								16.08	45.29	79.16						
11.67	56.00								16.18	45.55	80.00						
12.02	57.85								16.27	45.98	81.03						
12.24	59.43								16.37	46.17	81.23						
12.43	60.39								16.47	46.44	81.85						
12.67	61.87								16.71	46.80	82.38						
13.00	63.06								16.95	47.23	82.82						
13.26	64.52								17.25	47.52	83.43						
13.91	65.66								17.51	47.65	84.27						
14.25	66.91								17.81	47.97	85.34						
14.43	68.25								18.21	48.26	85.87						
14.66	69.59								18.42	48.58	86.14						
15.05	70.69								18.74	48.94	86.53						
15.30	72.02								19.02	49.21	86.55						
15.56	73.40								19.38	49.53	86.57						
15.69	74.82								19.74	49.80	86.59						
16.04	76.27								20.12	50.15	86.61						
16.41	77.65								20.53	50.42	86.64						
16.64	78.64								20.90	50.68	86.66						
16.91	79.77								21.33	50.99	86.68						
17.36	80.94								21.82	51.39	86.70						
17.57	82.06								22.08	52.01	86.72						
17.70	82.97								22.54	52.30	86.74						
18.06	83.78								22.98	52.67	86.76						
18.44	84.49								23.40	52.99	86.78						
18.83	85.30								23.84	53.36	86.80						
19.03	86.03								24.44	54.02	86.82						
19.41	86.79								24.67	54.64	86.85						
19.79	87.40								24.89	54.93	86.87						
20.17	88.36								25.35	55.47	86.89						
20.61	89.34								25.83	55.65	86.91						
20.99	90.31								26.21	56.22	86.93						
21.44	91.28								26.65	56.69	86.95						
21.55	92.38								27.01	57.04	86.97						
21.94	93.38								27.34	57.35	86.99						
22.21	94.25								27.60	57.53	87.01						
22.54	95.33								28.00	57.78	87.03						
22.89	96.70								28.56	58.12	87.06						

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						48599.1.1		R-5963A				New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Chatham		T. Wenner				CG2 Exploration			
Test Location						Date Run		Test Location						Date Run	
C-5 LT LN -Y1- Sta. 24+91 2.5 LT FW						8/15/2024		C-6 RT PS -Y1- Sta. 24+91 2.0 RT FW						8/15/2024	
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill	
DCP	Cumulative cm per blow			ABC		3.5 Fill		DCP	Cumulative cm per blow			ABC		20.0 Cut	
0.77	23.78	57.52						0.86	18.21	55.13					
1.47	24.02	58.11						1.52	18.45	55.20					
1.81	24.52	58.62						2.09	18.63	55.26					
2.18	25.48	59.20						2.39	18.98	55.33					
2.52	26.25	60.09						2.66	19.41	55.39					
2.79	28.87	60.80						2.99	19.82	55.45					
3.22	31.32	61.98						3.21	20.42	55.52					
3.49	33.09	63.19						3.44	20.62	55.58					
3.68	34.42	64.12						3.62	20.77	55.65					
4.00	35.33	65.29						3.73	21.22	55.71					
4.43	36.16	65.94						3.99	21.83	55.78					
4.74	36.77	66.41						4.29	22.10	55.86					
5.00	37.32	66.84						4.45	22.24	55.93					
5.24	38.12	67.45						4.59	22.85	56.00					
5.76	38.50	68.48						4.94	23.31	56.08					
6.23	38.97	69.11						5.16	23.81	56.15					
6.66	39.27	70.13						5.48	24.31	56.22					
7.00	39.73	70.81						5.71	24.58	56.29					
7.20	40.04	71.40						5.89	25.02	56.37					
7.44	40.38	71.86						6.07	25.63	56.44					
7.76	40.58	DCP REF						6.26	26.29	56.46					
8.10	41.00	50/0.0"						6.69	27.42	56.48					
8.53	41.22							7.07	28.38	56.50					
8.80	41.57							7.39	30.06	56.52					
9.07	41.95							7.69	31.16	56.54					
9.28	42.18							8.17	32.28	56.55					
9.54	42.65							8.37	33.25	56.57					
9.79	43.00							8.65	33.97	56.59					
10.04	43.29							8.90	34.87	56.61					
10.30	43.71							9.06	35.66	56.63					
10.59	43.98							9.27	36.59	56.65					
10.88	44.45							9.51	37.65	56.67					
11.05	44.77							9.79	38.34	56.69					
11.36	45.01							10.00	39.40	56.71					
11.59	45.37							10.17	40.88	56.73					
12.10	45.65							10.40	41.92	56.74					
12.38	45.99							10.68	42.88	56.76					
12.72	46.36							10.90	43.60	56.78					
12.89	46.78							11.20	44.47	56.80					
13.45	47.01							11.44	44.97	56.82					
13.66	47.25							11.83	45.49	56.84					
13.85	47.50							12.06	46.06	56.86					
14.28	47.93							12.24	46.86	56.88					
14.68	48.05							12.44	47.61	56.90					
14.87	48.40							12.63	48.29	56.92					
15.12	48.57							12.76	48.95	56.93					
15.35	48.97							12.94	49.62	56.95					
15.76	49.17							13.12	50.24	56.97					
16.35	49.59							13.61	50.66	56.99					
16.71	50.05							13.88	51.14	57.01					
17.04	50.38							14.22	51.41	DCP REF					
17.42	50.95							14.42	51.65	50/1.0"					
17.75	51.43							14.58	51.92						
18.10	51.79							14.86	52.43						
18.53	52.12							15.10	52.66						
18.90	52.87							15.32	53.04						
19.40	53.37							15.48	53.31						
19.82	53.68							15.80	53.57						
20.27	54.06							16.20	53.69						
20.82	54.39							16.55	53.80						
21.29	54.86							16.70	54.05						
21.84	55.42							16.87	54.35						
22.42	55.85							17.16	54.59						
22.89	56.36							17.53	54.93						
23.52	56.96							17.81	55.07						

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						48599.1.1		R-5963A				New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Chatham		T. Wenner				CG2 Exploration			
Test Location						Date Run		Test Location						Date Run	
C-7 LT PS -Y7- Sta. 13+84 1.0 RT FW						8/15/2024		C-8 RT LN -Y7- Sta. 13+84 2.0 LT FW						8/15/2024	
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill	
DCP	Cumulative cm per blow			SG (A-7-6(6))		5.0 Fill		DCP	Cumulative cm per blow			SG (A-6(6))		5.0 Fill	
3.60	114.38							0.36	70.56	114.98					
6.42	115.11							0.64	71.05	115.41					
8.74	115.56							1.12	71.60	115.66					
12.09	116.32							1.45	72.11	116.08					
15.09	117.13							1.85	72.73	116.42					
18.07								2.40	73.07	116.71					
21.42								2.86	73.52	117.11					
24.29								3.17	74.01	117.45					
26.79								3.54	74.27	117.81					
28.82								3.82	74.89	118.34					
29.53								4.15	75.20	118.87					
30.04								4.52	75.56	119.78					
30.65								4.83	76.65	120.44					
31.28								5.42	77.28	121.11					
31.68								6.03	78.38	122.07					
32.30								6.39	79.63	123.11					
33.03								7.07	80.54	123.85					
33.90								8.02	81.85						
35.04								9.64	82.70						
37.77								12.42	83.66						
41.26								15.91	84.81						
44.62								18.80	85.71						
47.15								21.57	86.52						
50.19								24.41	87.39						
52.81								26.85	88.33						
55.62								28.64	88.88						
57.83								30.39	89.40						
61.16								32.26	90.15						
63.56								34.15	90.81						
66.55								35.84	91.55						
67.94								37.50	92.32						
69.43								39.04	93.03						
71.05								40.71	93.90						
72.06								42.29	94.62						
73.45								44.21	95.14						
75.00								45.65	96.07						
76.47								47.31	96.98						
77.93								48.53	98.01						
79.72								49.31	99.35						
81.20								50.54	99.85						
83.05								51.55	100.93						
86.28								52.58	101.87						
89.58								53.61	102.96						
91.78								54.54	103.85						
94.25								55.45	104.85						
96.65								56.53	105.73						
98.63								57.27	106.36						
100.51								58.21	106.69						
101.77								58.91	107.46						
102.70								59.75	107.99						
103.91								60.07	108.49						
104.50								60.58	108.96						
105.15								60.97	109.54						
106.23								61.63	110.21						
107.01								62.08	110.93						
107.47								62.47	111.16						
108.31								63.13	111.46						
109.17								63.72	112.04						
109.77								64.62	112.58						
110.36								65.90	112.89						
110.93								66.96	113.28						
111.77								68.25	113.63						
112.33								68.98	113.82						
113.02								69.40	114.24						
113.58								69.95	114.65						

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.						ROUTE			
						48599.1.1		R-5963A						New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL						FIELD CREW			
						Chatham		T. Wenner						CG2 Exploration			
Test Location						Date Run		Test Location						Date Run			
C-9 RT PS -Y7- Sta. 13+84 0.7 RT FW						8/15/2024		C-10 LT PS -Y7- Sta. 18+65 0.5 RT FW						8/14/2024			
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill			
DCP	Cumulative cm per blow			SG (A-6)		5.0 Fill		DCP	Cumulative cm per blow			SG (A-7-6)		3.0 Fill			
2.27								1.09									
5.32								4.18									
7.13								6.59									
8.09								8.79									
9.10								11.39									
10.42								13.33									
12.28								14.03									
14.89								14.32									
17.68								14.66									
21.49								15.01									
25.07								15.32									
29.75								15.52									
32.38								15.95									
34.67								16.22									
36.43								16.59									
39.24								17.13									
42.24								17.61									
44.59								18.01									
46.85								18.73									
49.69								19.49									
52.80								20.64									
55.87								21.56									
58.15								22.87									
59.88								23.78									
61.55								25.17									
63.47								26.24									
65.98								27.32									
68.87								28.50									
72.76								29.38									
76.19								30.75									
79.94								31.38									
83.60								32.18									
87.74								33.13									
90.24								33.97									
93.85								35.03									
97.14								35.76									
99.88								36.69									
102.05								37.56									
104.07								38.53									
106.83								39.23									
109.61								40.90									
112.23								42.31									
113.78								43.21									
115.93								44.51									
118.12								45.36									
120.47								46.28									
123.53								Utility									
125.89								Present									

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.						ROUTE			
						48599.1.1		R-5963A						New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL						FIELD CREW			
						Chatham		T. Wenner						CG2 Exploration			
Test Location						Date Run		Test Location						Date Run			
C-11 LT LN -Y7- Sta. 18+65 2.5 LT FW						8/14/2024		C-12 RT PS -Y7- Sta. 18+65 1.2 RT FW						8/14/2024			
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill			
DCP	Cumulative cm per blow			SG (A-7-6(16))		3.0 Fill		DCP	Cumulative cm per blow			SG (A-7-6)		3.0 Fill			
0.51								3.73									
2.01								6.21									
3.22								7.69									
4.13								8.90									
5.54								9.60									
6.89								10.17									
8.67								10.66									
11.40								11.05									
13.43								11.77									
15.54								12.30									
17.68								12.67									
19.80								13.08									
21.12								13.94									
22.09								14.35									
23.46								15.67									
24.61								16.92									
25.68								18.60									
27.33								20.40									
28.79								22.63									
30.55								25.67									
32.33								26.59									
34.59								27.65									
36.67								28.32									
39.11								29.33									
40.82								31.26									
43.19								33.22									
45.47								35.98									
46.56								38.91									
47.87								42.39									
48.57								44.96									
Utility								47.48									
Present								Utility									
								Present									

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						48599.1.1		R-5963A				New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Chatham		T. Wenner				CG2 Exploration			
Test Location						Date Run		Test Location						Date Run	
C-14 LT LN -Y14- Sta. 12+53 2.0 LT FW						8/14/2024		C-13 RT LN -Y14- Sta. 12+53 2.7 LT FW						8/14/2024	
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill	
DCP	Cumulative cm per blow			Drainage Sand		4.0 Fill		DCP	Cumulative cm per blow			Drainage Sand		4.0 Fill	
2.65								3.12	108.15						
5.24								4.46	109.32						
9.88								5.79	110.60						
11.76								7.57	111.98						
13.26								11.13							
16.84								17.16							
20.55								24.11							
24.15								30.51							
28.19								36.17							
31.61								39.65							
34.96								41.76							
38.01								43.56							
40.88								45.53							
43.72								47.63							
46.38								49.56							
48.84								51.28							
51.19								52.47							
52.99								54.00							
55.38								55.10							
57.62								57.10							
59.75								58.47							
61.60								60.00							
63.75								61.34							
65.59								62.78							
67.31								64.04							
69.11								65.41							
70.76								66.91							
72.36								68.05							
73.85								69.30							
75.24								70.42							
76.49								71.32							
77.94								72.19							
79.24								73.16							
80.34								74.27							
81.30								75.06							
82.50								76.25							
83.63								76.84							
84.85								77.91							
85.70								78.82							
86.75								79.57							
87.95								80.49							
90.31								81.45							
91.11								82.65							
92.38								83.45							
93.06								84.51							
93.83								85.60							
94.80								86.42							
95.84								87.55							
97.04								90.13							
97.90								91.19							
99.12								91.86							
100.00								92.92							
101.22								94.02							
102.20								95.30							
103.46								96.10							
104.48								96.92							
105.45								98.32							
106.31								99.60							
107.43								100.48							
108.19								101.65							
109.30								102.62							
110.10								103.75							
111.18								104.67							
								105.63							
								107.04							

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						48599.1.1		R-5963A				New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Chatham		T. Wenner				CG2 Exploration			
Test Location						Date Run		Test Location						Date Run	
C-20 LTL -Y14- Sta. 20+ 38 17.3 LT FW						8/14/2024		C-21 RT LN -Y14- Sta. 20+ 38 2.8 LT FW						8/14/2024	
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval			Datum		Cut/Fill	
DCP	Cumulative cm per blow			Drainage Sand		5.0 Fill		DCP	Cumulative cm per blow			CSS		5.0 Fill	
9.88								2.03	107.10						
14.88								2.92	109.35						
17.73								3.87	111.27						
20.87								4.77							
24.59								5.54							
28.05								6.22							
31.96								7.41							
35.96								7.84							
39.05								8.62							
41.86								8.90							
43.64								9.38							
45.73								9.80							
47.82								10.30							
49.91								10.80							
52.10								11.29							
54.50								11.79							
56.40								12.40							
58.32								12.91							
60.27								13.60							
61.93								14.25							
63.69								15.06							
65.52								15.48							
67.18								16.08							
69.27								17.03							
71.15								17.84							
72.89								18.95							
74.50								20.14							
76.04								21.30							
77.94								22.69							
79.77								24.37							
81.89								25.98							
83.96								27.36							
86.59								28.80							
89.09								30.24							
91.15								31.59							
93.43								33.26							
95.72								35.68							
98.01								37.60							
								39.13							
								41.02							
								42.55							
								43.67							
								44.36							
								46.04							
								47.96							
								50.31							
								52.23							
								54.52							
								57.32							
								60.50							
								63.85							
								66.65							
								69.96							
								73.36							
								76.70							
								79.62							
								82.64							
								85.04							
								87.99							
								90.98							
								94.05							
								96.64							
								99.52							
								102.19							
								104.58							

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.		ROUTE	
						48599.1.1		R-5963A		New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location	
						COUNTY		FIELD PROFESSIONAL		FIELD CREW	
						Chatham		T. Wenner		CG2 Exploration	
Test Location						Date Run		Test Location			Date Run
C-19 LT PS -Y14- Sta. 23+18 1.3 RT FW						8/14/2024		C-18 LT LN -Y14- Sta. 23+18 2.4 LT FW			8/14/2024
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval		Datum		Cut/Fill	
DCP	Cumulative cm per blow			SG (A-7-6)		4.0 Cut		DCP	Cumulative cm per blow		SG (A-7-6(20))		4.0 Cut	
5.49								0.38	80.86	112.99				
8.98								0.98	81.50	113.53				
14.34								1.92	81.85	114.51				
17.26								2.80	82.26	115.00				
19.44								3.55	82.62	115.41				
21.49								4.02	82.98	115.72				
23.20								4.46	83.28	116.68				
25.08								5.21	83.80					
27.30								6.24	84.33					
29.32								8.21	84.94					
31.28								11.21	85.27					
33.21								13.73	85.89					
35.14								14.83	86.44					
36.51								16.19	86.94					
38.17								18.74	87.46					
39.19								21.42	87.94					
40.16								23.86	88.58					
41.21								26.62	88.92					
42.11								29.76	89.60					
43.12								32.93	89.87					
44.12								35.62	90.29					
45.11								38.10	90.80					
46.12								39.98	91.30					
47.19								42.01	91.64					
48.22								43.70	92.48					
49.23								45.47	92.85					
50.48								47.40	93.18					
51.82								48.97	93.65					
53.13								50.37	93.98					
54.60								51.99	94.54					
55.59								53.09	95.10					
56.44								54.60	95.57					
57.09								55.70	96.03					
57.64								57.09	96.42					
58.38								58.28	96.88					
59.08								59.72	97.45					
59.47								61.06	98.06					
59.82								62.15	98.56					
60.02								63.10	99.16					
60.76								64.06	99.52					
61.16								65.38	100.00					
61.61								66.51	100.76					
62.15								67.58	101.20					
62.67								68.81	101.66					
Utility								69.72	101.86					
Present								70.40	102.79					
								70.88	103.39					
								71.82	103.92					
								72.07	104.70					
								72.83	104.98					
								73.45	105.33					
								74.02	105.86					
								74.27	106.45					
								74.91	106.96					
								75.37	107.41					
								76.02	107.81					
								76.47	108.41					
								77.02	108.73					
								77.70	109.42					
								78.23	109.81					
								78.59	110.68					
								78.96	111.07					
								79.42	111.62					
								79.99	111.89					
								80.49	112.50					

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.		ROUTE	
						48599.1.1		R-5963A		New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location	
						COUNTY		FIELD PROFESSIONAL		FIELD CREW	
						Chatham		T. Wenner		CG2 Exploration	
Test Location						Date Run		Test Location			Date Run
C-17 MEDIAN -Y14- Sta. 23+18 14.3 LT FW						8/14/2024		C-16 RT LN -Y14- Sta. 23+18 2.3 LT FW			8/14/2024
Type	Test Interval			Datum		Cut/Fill		Type	Test Interval		Datum		Cut/Fill	
DCP	Cumulative cm per blow			SG (A-7-6(21))		3.0 Fill		DCP	Cumulative cm per blow		CSS		At Grade	
4.15								1.30	84.83					
8.38								2.62	85.39					
12.84								3.56	85.88					
17.22								4.86	86.45					
20.67								6.13	86.75					
24.29								7.86	86.97					
27.15								8.96	87.42					
29.79								10.23	87.88					
31.92								11.71	88.44					
33.41								13.24	88.99					
34.95								14.80	89.71					
36.56								16.17	90.21					
37.56								17.70	90.94					
39.37								19.24	91.63					
40.73								20.37	92.24					
42.17								21.96	92.82					
43.83								22.99	93.60					
45.24								23.82	94.12					
46.67								24.58	94.69					
48.05								25.16	95.21					
49.54								26.19	95.49					
51.14								27.20	96.15					
52.45								28.26	96.78					
53.69								29.33	97.07					
54.62								30.62	97.65					
56.12								31.87	98.12					
57.26								33.62	98.65					
58.42								35.13	99.17					
59.58								37.52	99.80					
60.80								40.72	100.57					
62.33								43.76	101.09					
63.75								46.33	101.74					
65.20								49.18	102.31					
66.51								51.92	103.10					
67.65								54.14	104.02					
68.78								56.92	105.09					
70.12								59.23	105.98					
71.19								61.94	107.03					
72.22								64.52	107.61					
73.28								67.34	108.92					
74.47								69.76	109.88					
75.91								72.35	111.03					
77.08								74.25	111.85					
78.37								75.20	113.00					
79.87								75.75	114.06					
81.29								76.39	114.97					
82.85								76.59	115.76					
84.60								77.15	116.43					
85.99								77.52						
87.32								78.01						
88.61								78.40						
89.66								78.72						
91.26								79.14						
91.93								79.72						
93.25								80.04						
94.19								80.70						
95.28								81.15						
96.60								81.58						
97.34								81.92						
98.45								82.32						
								82.59						
								83.07						
								83.67						
								83.99						
								84.42						

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						48599.1.1		R-5963A				New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Chatham		T. Wenner				CG2 Exploration			
Test Location						Date Run		Test Location						Date Run	
C-22 LT PS -Y14- Sta. 28+33 1.0 RT FW						8/14/2024		C-23 RT PS -Y14- Sta. 28+33 1.1 RT FW						8/14/2024	
Type	Test Interval				Datum		Cut/Fill	Type	Test Interval				Datum		Cut/Fill
DCP	Cumulative cm per blow				SG (A-2-4)		1.3 Fill	DCP	Cumulative cm per blow				SG (A-2-4)		1.3 Fill
2.68	97.04							1.53	83.88						
3.58	97.58							2.47	84.21						
4.05	98.19							2.90	84.68						
4.50	99.10							3.46	85.46						
5.05	99.53							4.04	86.12						
5.60	100.14							4.52	86.82						
6.90	100.84							5.06	87.58						
7.70	101.32							5.39	88.60						
8.74	101.92							5.83	89.88						
10.38	102.47							6.17	90.65						
12.64	103.06							6.35	91.20						
15.26	103.70							6.51	91.83						
18.30	104.13							6.86	92.72						
21.05	104.79							7.13	93.43						
24.14	105.32							7.38	95.07						
27.54	105.88							7.84	96.16						
30.49	106.43							8.20	97.14						
33.52	107.03							8.73	98.60						
37.25	107.58							9.04	99.66						
39.97	107.98							9.54	100.84						
42.84	108.80							9.88	102.31						
45.95	109.23							10.44	103.21						
49.06	109.76							10.88	104.45						
52.58	109.98							11.53	105.79						
54.83	110.78							12.33	106.84						
56.34	111.40							13.39	107.44						
58.08	111.80							13.75	108.00						
59.85	112.21							14.96	108.96						
61.33	112.82							16.47	109.42						
63.23	113.35							17.60	109.84						
64.42	113.95							18.28	110.38						
65.95	114.45							18.81	110.83						
67.83	114.84							19.49	111.38						
69.36	115.48							19.84	112.36						
70.56	116.21							20.18	113.27						
72.11	116.94							20.68	114.40						
73.28	117.47							21.35	115.68						
74.43	117.74							22.18	116.93						
75.79	118.12							23.22	118.82						
77.19	118.55							24.47	120.35						
78.38	118.93							26.53	121.90						
79.49	119.38							30.09	123.84						
80.58	120.16							34.37							
81.54	120.63							37.34							
82.50	120.87							40.31							
82.96								43.32							
83.68								46.49							
84.42								49.75							
85.31								53.44							
86.07								56.95							
86.97								60.59							
87.54								63.61							
88.29								66.67							
88.85								69.70							
89.69								72.48							
90.34								75.24							
91.14								77.42							
91.84								79.95							
92.53								80.64							
93.16								81.01							
93.96								81.55							
94.61								81.98							
95.20								82.53							
95.60								82.94							
96.42								83.46							

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET						WBS NO.		PROJECT TIP I.D.				ROUTE			
						48599.1.1		R-5963A				New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location			
						COUNTY		FIELD PROFESSIONAL				FIELD CREW			
						Chatham		T. Wenner				CG2 Exploration			
Test Location						Date Run		Test Location						Date Run	
C-24 RT LN -Y14- Sta. 32+86 17.3 LT FW						8/14/2024		C-25 RTL -Y14- Sta. 32+86 3.0 LT FW						8/14/2024	
Type	Test Interval				Datum		Cut/Fill	Type	Test Interval				Datum		Cut/Fill
DCP	Cumulative cm per blow				SG (A-6(9))		5.0 Fill	DCP	Cumulative cm per blow				SG (A-6)		5.0 Fill
3.30	103.54							3.48							
5.81	103.98							6.36							
9.10	104.32							8.42							
12.37	104.72							11.23							
15.55	105.05							13.71							
18.34	105.61							16.11							
20.22	105.99							18.60							
22.04	106.55							21.02							
23.74	107.06							22.87							
25.50	107.28							25.10							
27.66	108.21							26.62							
30.51	108.56							27.38							
34.20	108.98							28.40							
37.07	109.55							29.39							
39.93	109.72							30.38							
42.87	110.28							31.45							
45.63	111.03							32.63							
48.14	111.48							33.81							
50.75	112.34							34.84							
52.66	113.06							35.85							
54.22	113.61							36.83							
55.80	114.27							38.27							
57.11	115.01							39.87							
58.28	115.77							41.79							
59.64	116.11							45.39							
61.06	116.51							46.89							
62.71	116.80							48.07							
64.23								Utility							
65.99								Present							
67.58															
69.28															
70.79															
72.52															
73.90															
75.22															
76.38															
77.84															
78.94															
79.85															
80.93															
82.02															
82.96															
83.98															
85.13															
85.93															
86.88															
87.78															
88.92															
89.81															
90.70															
91.48															
92.38															
93.03															
93.86															
95.23															
96.33															
97.09															
98.26															
99.53															
100.41															
101.04															
101.63															
102.00															
102.54															
103.08															

CAROLINAS GEOTECHNICAL GROUP

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET	WBS NO.	PROJECT TIP I.D.	ROUTE
	48599.1.1	R-5963A	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
	COUNTY	FIELD PROFESSIONAL	FIELD CREW
	Chatham	T. Wenner	CG2 Exploration

Test Location	Date Run	Test Location	Date Run
C-26 LT LN -Y14- Sta. 34+44 2.0 LT FW	8/14/2024	C-27 LTL -Y14- Sta. 34+44 20.2 LT FW	8/14/2024

Type	Test Interval	Datum	Cut/Fill	Type	Test Interval	Datum	Cut/Fill
DCP	Cumulative cm per blow	SG (A-7-6)	At Grade	DCP	Cumulative cm per blow	SG (A-7-6(29))	At Grade
1.38				6.17	99.92		
3.03				11.99			
4.29				15.63			
6.03				19.16			
7.26				22.98			
7.92				27.27			
8.97				30.91			
9.91				33.66			
11.27				36.10			
13.03				38.17			
15.70				40.08			
18.90				42.07			
20.47				43.91			
21.46				45.45			
22.89				47.34			
24.99				48.91			
26.64				50.22			
28.24				51.65			
30.70				53.01			
34.12				54.12			
38.95				55.37			
43.36				56.64			
48.45				58.05			
53.24				59.25			
Utility				60.63			
Present				62.20			
				63.18			
				64.29			
				65.22			
				66.16			
				67.11			
				68.20			
				68.80			
				70.09			
				70.79			
				71.93			
				72.63			
				73.68			
				74.55			
				75.41			
				76.30			
				77.47			
				78.67			
				79.74			
				80.89			
				81.80			
				82.96			
				84.13			
				85.17			
				85.98			
				86.89			
				87.78			
				88.67			
				89.58			
				90.47			
				91.38			
				92.31			
				93.20			
				93.91			
				94.72			
				95.65			
				96.38			
				97.38			
				98.17			
				98.93			

DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET	WBS NO.	PROJECT TIP I.D.	ROUTE
	48599.1.1	R-5963A	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
	COUNTY	FIELD PROFESSIONAL	FIELD CREW
	Chatham	T. Wenner	CG2 Exploration

Test Location	Date Run	Test Location	Date Run
C-15 LANE -Y15- Sta. 12+50 5.7 LT FW	8/14/2024		

Type	Test Interval	Datum	Cut/Fill	Type	Test Interval	Datum	Cut/Fill
DCP	Cumulative cm per blow	Drainage Sand	At Grade	DCP	Cumulative cm per blow		
3.92	112.90						
5.39	114.78						
6.34	115.83						
7.03	117.28						
7.65	118.79						
8.18	120.34						
8.67	121.68						
9.36	122.87						
10.22	124.33						
11.05	125.69						
12.17	127.26						
14.05	128.78						
16.11							
18.11							
19.26							
20.27							
21.42							
22.18							
23.45							
24.80							
26.70							
28.88							
30.56							
32.33							
34.16							
36.17							
38.13							
40.44							
42.52							
44.46							
46.55							
49.10							
50.12							
52.15							
54.12							
55.91							
57.72							
59.72							
61.35							
63.01							
64.99							
66.90							
68.94							
71.50							
73.90							
75.63							
77.59							
79.26							
80.92							
82.72							
84.50							
86.63							
88.54							
91.21							
93.28							
95.46							
98.02							
99.79							
101.71							
103.57							
104.83							
106.27							
108.00							
109.45							
111.17							

CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

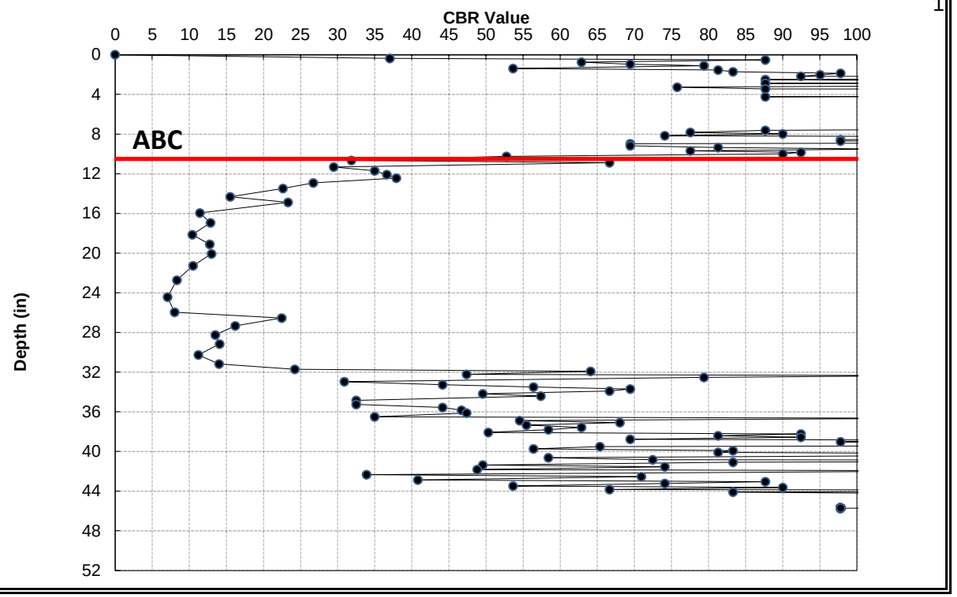
GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-1 LT PS 1
-Y1- Sta. 16+91 2.0 RT FW
Datum = ABC
DCP
12.0 Cut
08/15/24

Interval 0.0 to 10.7	
# of Values	82
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	31.8

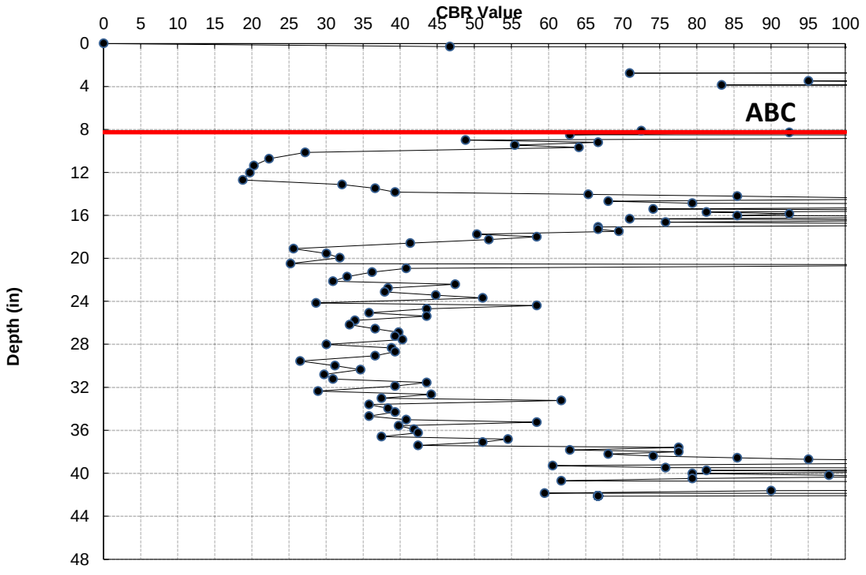
Interval 10.7 to 45.7	
# of Values	110
Avg CBR	100+
Wghtd Avg.	42.5
Max CBR	100+
Min CBR	7.1



C-2 RT LN 2
-Y1- Sta. 16+91 2.7 LT FW
Datum = ABC
DCP
3.0 Cut
08/15/24

Interval 0.0 to 8.3	
# of Values	132
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	46.7

Interval 8.3 to 42.1	
# of Values	128
Avg CBR	73.3
Wghtd Avg.	51.8
Max CBR	100+
Min CBR	18.8



CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

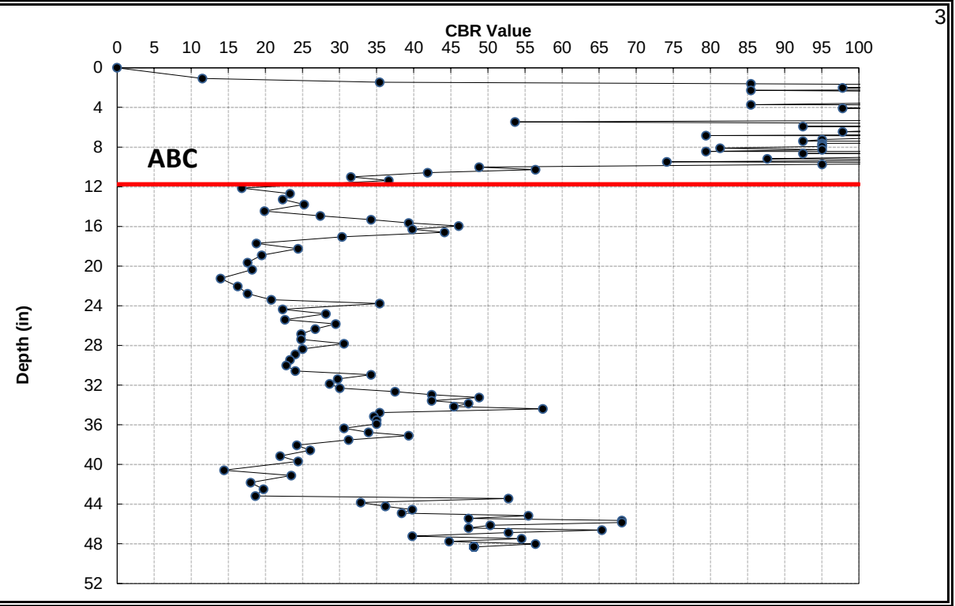
GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-3 RT PS 3
-Y1- Sta. 16+91 2.0 RT FW
Datum = ABC
DCP
3.0 Cut
08/15/24

Interval 0.0 to 12.1	
# of Values	76
Avg CBR	100+
Wghtd Avg.	88.6
Max CBR	100+
Min CBR	11.5

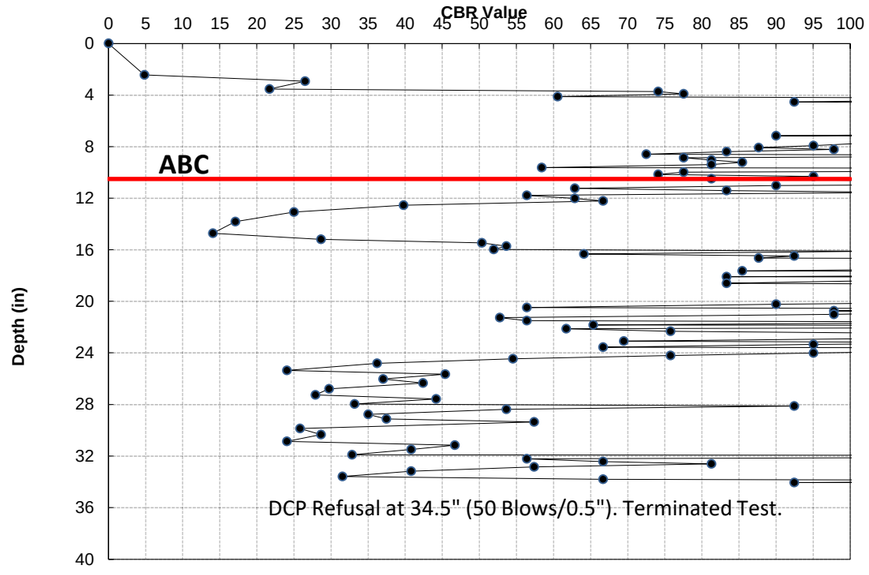
Interval 12.1 to 48.3	
# of Values	80
Avg CBR	33.6
Wghtd Avg.	29.2
Max CBR	68.0
Min CBR	13.9



C-4 LT PS 4
-Y1- Sta. 24+91 1.5 RT FW
Datum = ABC
DCP
3.5 Fill
08/15/24

Interval 0.0 to 10.5	
# of Values	60
Avg CBR	100+
Wghtd Avg.	80.5
Max CBR	100+
Min CBR	4.8

Interval 10.5 to 34.5	
# of Values	160
Avg CBR	100+
Wghtd Avg.	94.8
Max CBR	100+
Min CBR	14.1



CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-5 LT LN 5

-Y1- Sta. 24+91 2.5 LT FW

Datum = ABC

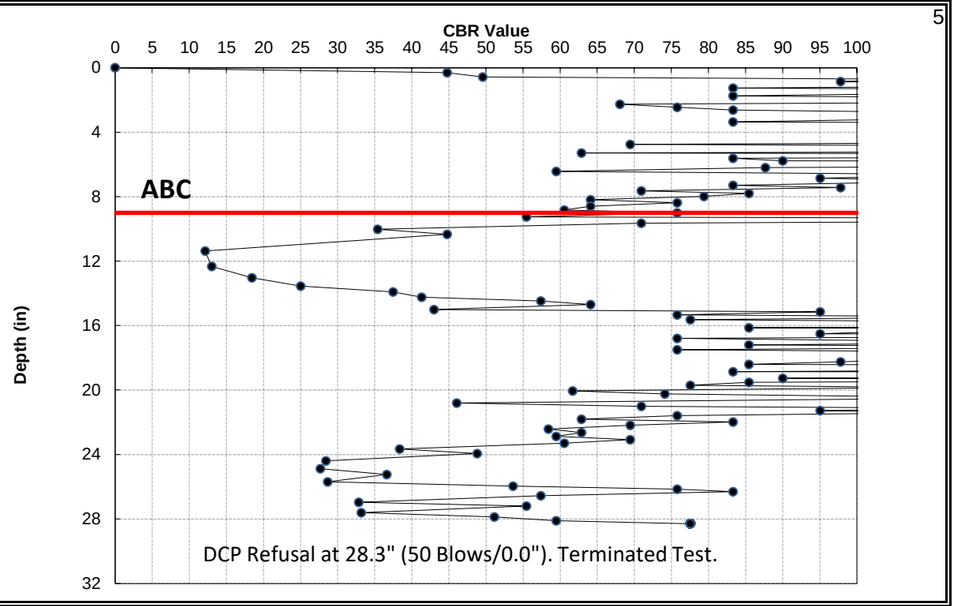
DCP

3.5 Fill

08/15/24

Interval 0.0 to 9.0	
# of Values	64
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	44.8

Interval 9.0 to 28.3	
# of Values	86
Avg CBR	87.7
Wghtd Avg.	61.8
Max CBR	100+
Min CBR	12.1



C-6 RT PS 6

-Y1- Sta. 24+91 2.0 RT FW

Datum = ABC

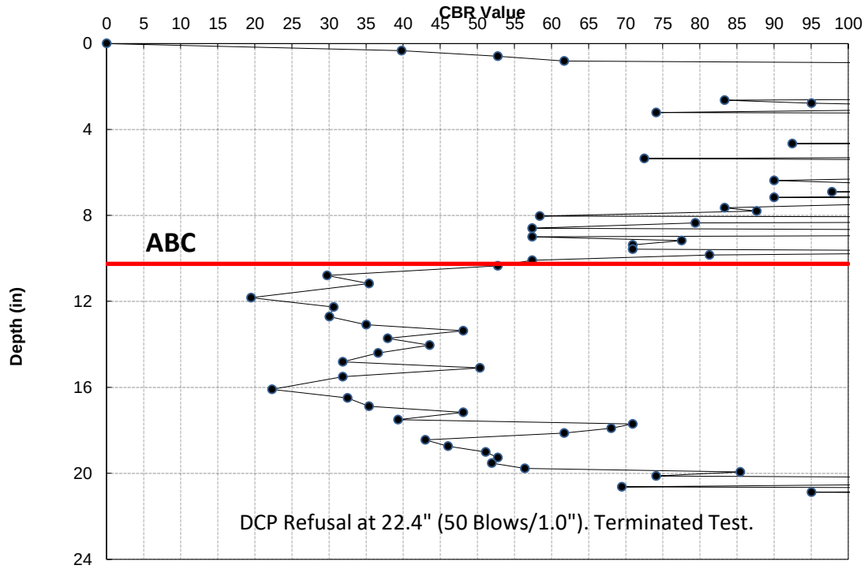
DCP

20.0 Cut

08/15/24

Interval 0.0 to 10.4	
# of Values	86
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	39.8

Interval 10.4 to 22.4	
# of Values	94
Avg CBR	100+
Wghtd Avg.	100+
Max CBR	100+
Min CBR	19.5



CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 22

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-7 LT PS 7

-Y7- Sta. 13+84 1.0 RT FW

Datum = SG (A-7-6(6))

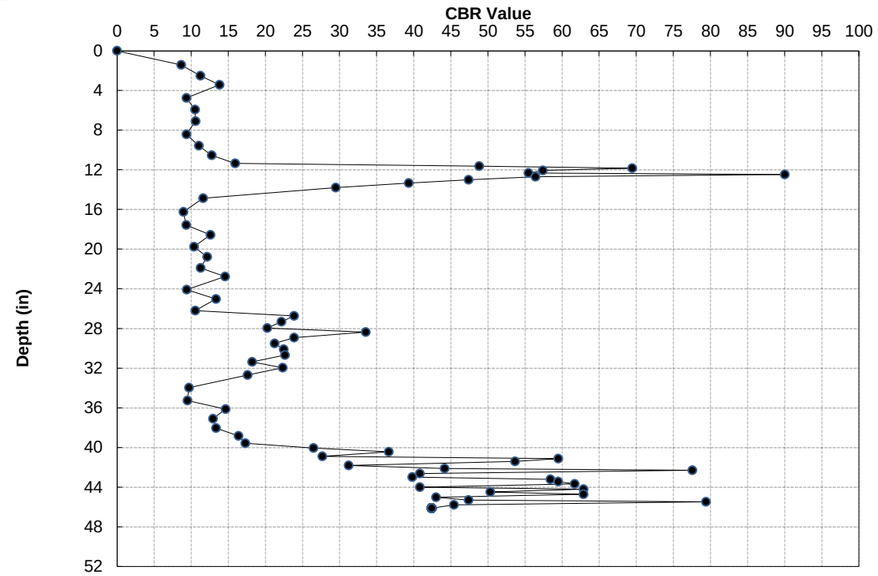
DCP

5.0 Fill

08/15/24

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

Interval 0.0 to 46.1	
# of Values	70
Avg CBR	30.9
Wghtd Avg.	19.6
Max CBR	90.0
Min CBR	8.6



C-8 RT LN 8

-Y7- Sta. 13+84 2.0 LT FW

Datum = SG (A-6(6))

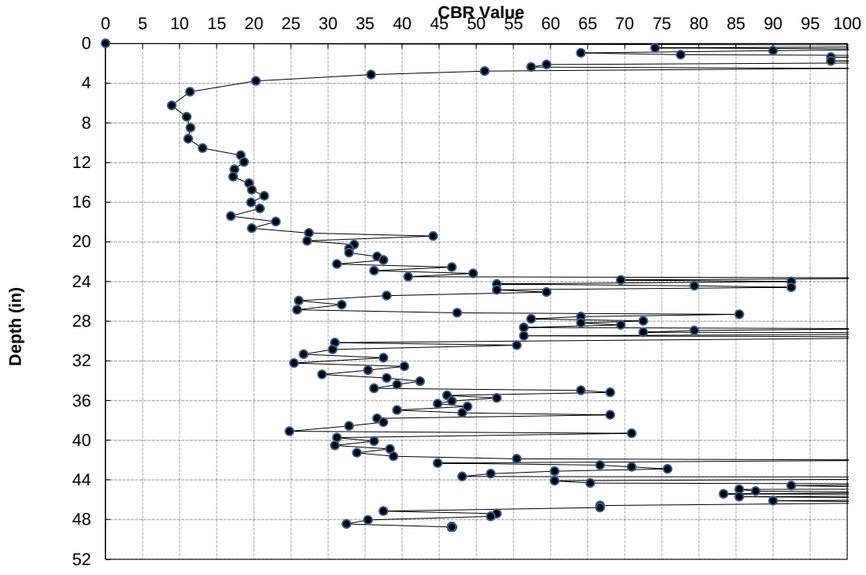
DCP

5.0 Fill

08/15/24

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

Interval 0.0 to 48.8	
# of Values	147
Avg CBR	59.8
Wghtd Avg.	40.7
Max CBR	100+
Min CBR	8.9



CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-9 RT PS — 9

-Y7- Sta. 13+84 0.7 RT FW

Datum = SG (A-6)

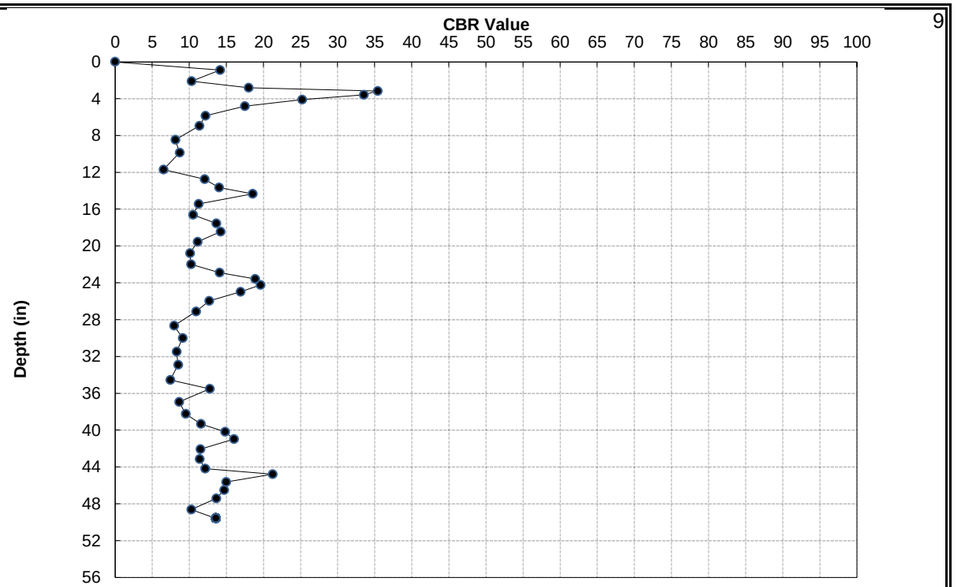
DCP

5.0 Fill

08/15/24

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

Interval 0.0 to 49.6	
# of Values	48
Avg CBR	13.7
Wghtd Avg.	12.1
Max CBR	35.4
Min CBR	6.5



C-10 LT PS — 10

-Y7- Sta. 18+65 0.5 RT FW

Datum = SG (A-7-6)

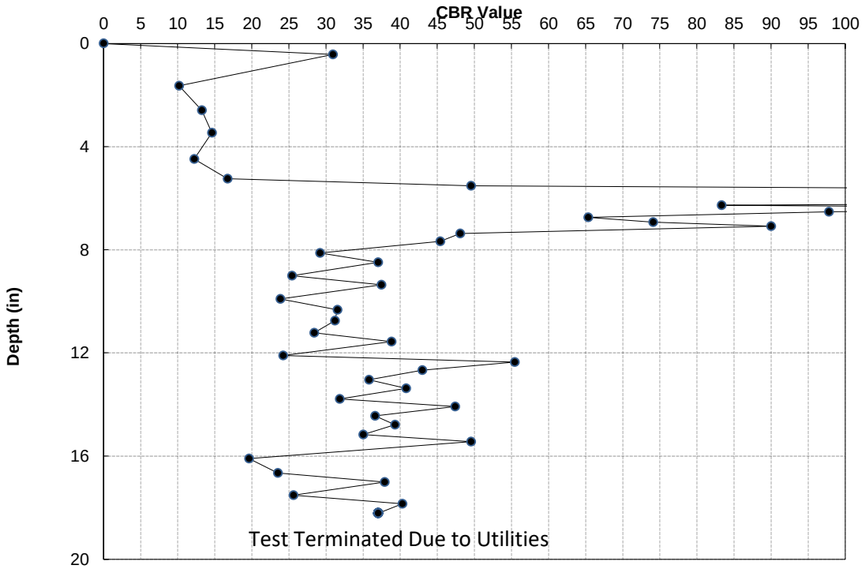
DCP

3.0 Fill

8/14/2024

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

Interval 0.0 to 18.2	
# of Values	46
Avg CBR	50.8
Wghtd Avg.	33.7
Max CBR	100+
Min CBR	10.2



CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 23

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-11 LT LN — 11

-Y7- Sta. 18+65 2.5 LT FW

Datum = SG (A-7-6(16))

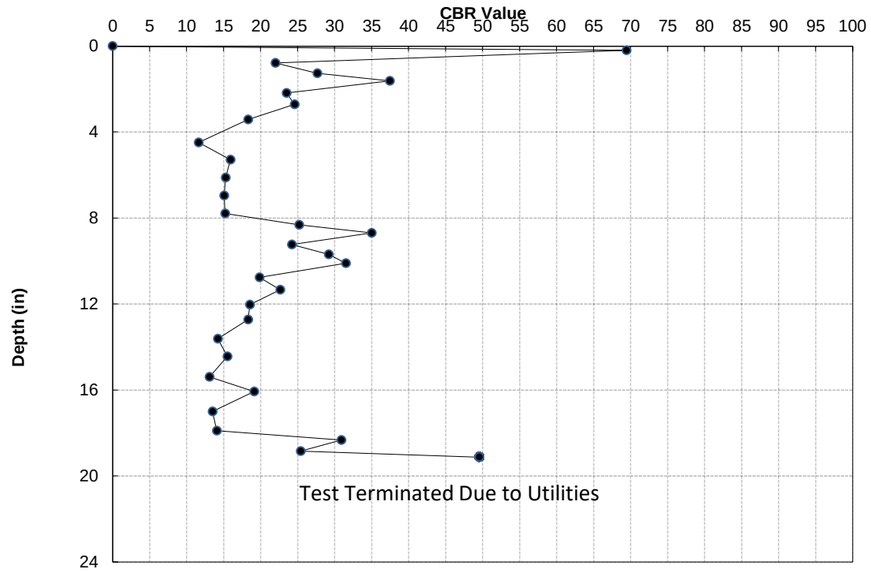
DCP

3.0 Fill

08/14/24

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

Interval 0.0 to 19.1	
# of Values	30
Avg CBR	23.9
Wghtd Avg.	20.3
Max CBR	69.5
Min CBR	11.6



C-12 RT PS — 12

-Y7- Sta. 18+65 1.2 RT FW

Datum = SG (A-7-6)

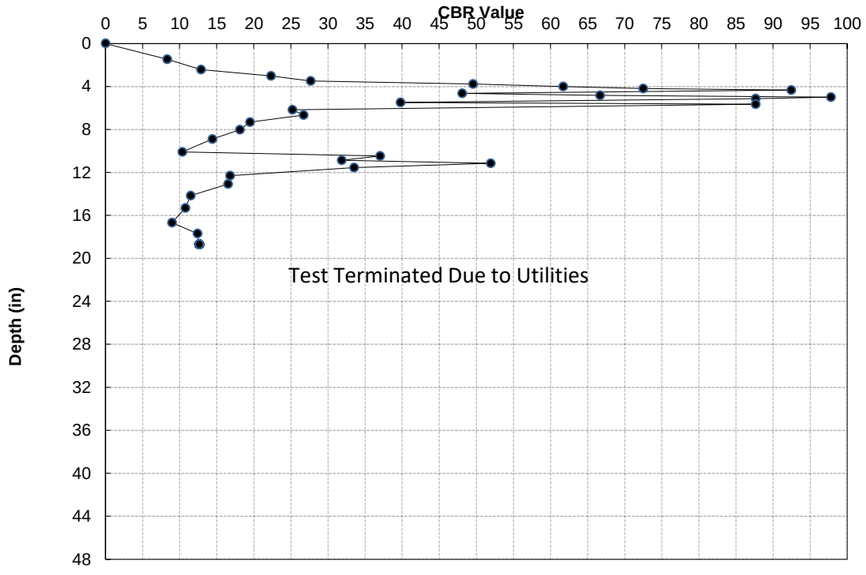
DCP

3.0 Fill

08/14/24

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

Interval 0.0 to 18.7	
# of Values	31
Avg CBR	36.6
Wghtd Avg.	21.5
Max CBR	97.8
Min CBR	8.3



CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-14 LT LN 13

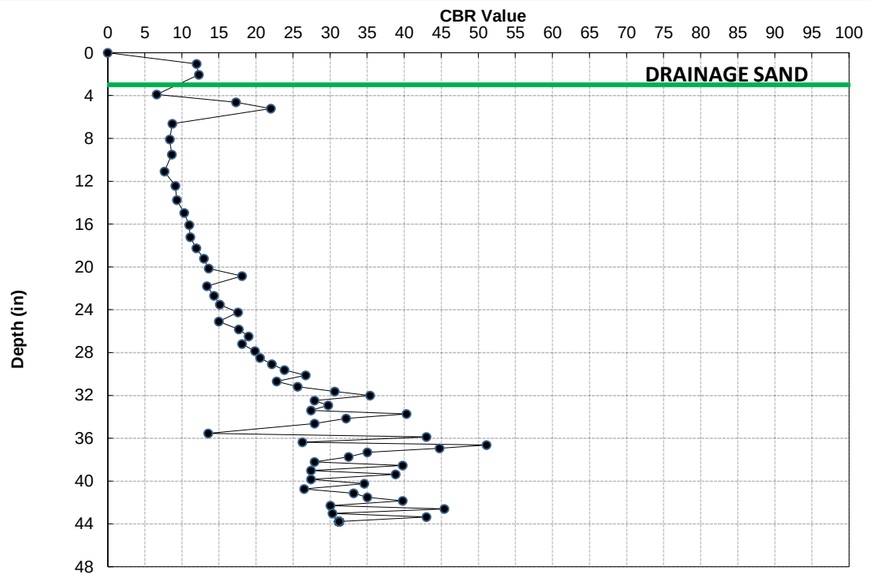
-Y14- Sta. 12+53 2.0 LT FW

Datum = Drainage Sand

DCP

4.0 Fill

08/14/24



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

Interval 0.0 to 43.8	
# of Values	63
Avg CBR	24.0
Wghtd Avg.	18.5
Max CBR	51.1
Min CBR	6.6

C-13 RT LN 14

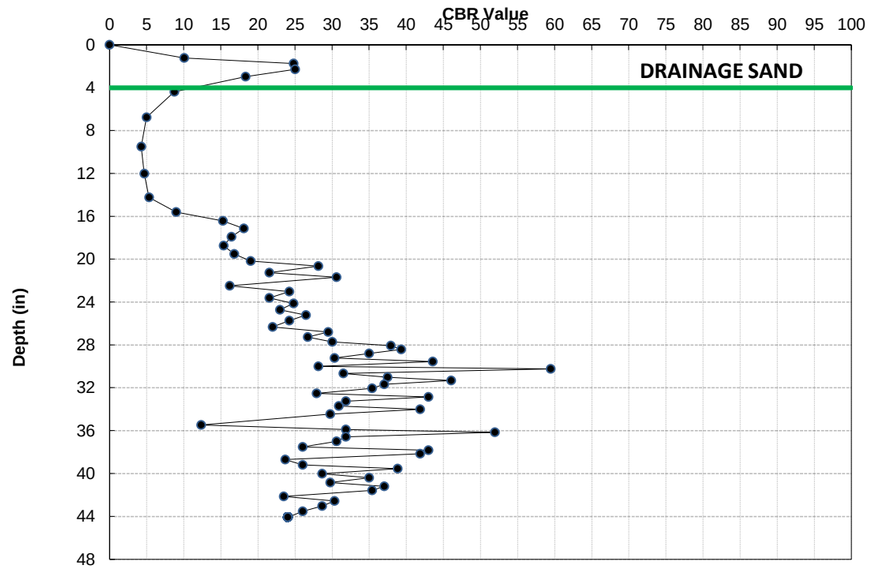
-Y14- Sta. 12+53 2.7 LT FW

Datum = Drainage Sand

DCP

4.0 Fill

08/14/24



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

Interval 0.0 to 44.1	
# of Values	69
Avg CBR	27.4
Wghtd Avg.	20.2
Max CBR	59.5
Min CBR	4.3

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-20 LTL 15

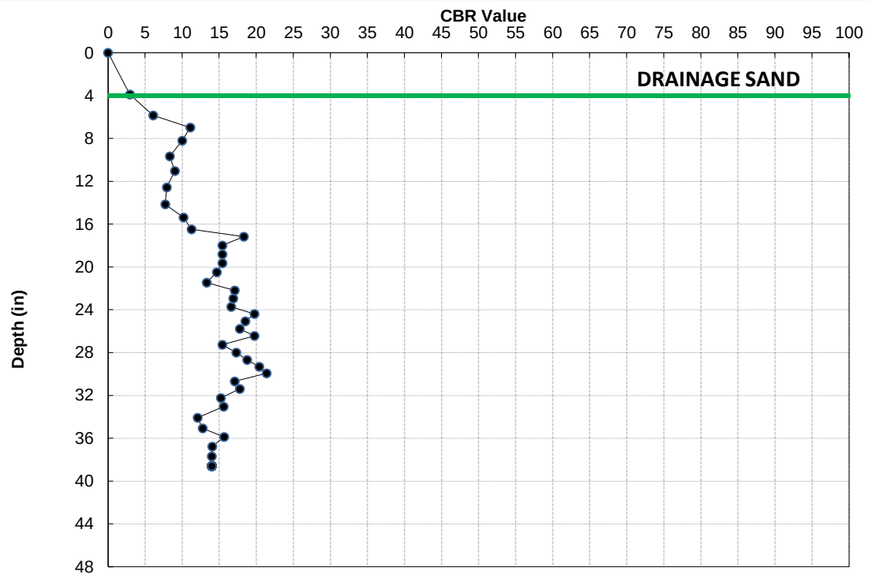
-Y14- Sta. 20+ 38 17.3 LT FW

Datum = Drainage Sand

DCP

5.0 Fill

08/14/24



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

Interval 0.0 to 38.6	
# of Values	38
Avg CBR	14.4
Wghtd Avg.	11.5
Max CBR	21.4
Min CBR	2.9

C-21 RT LN 16

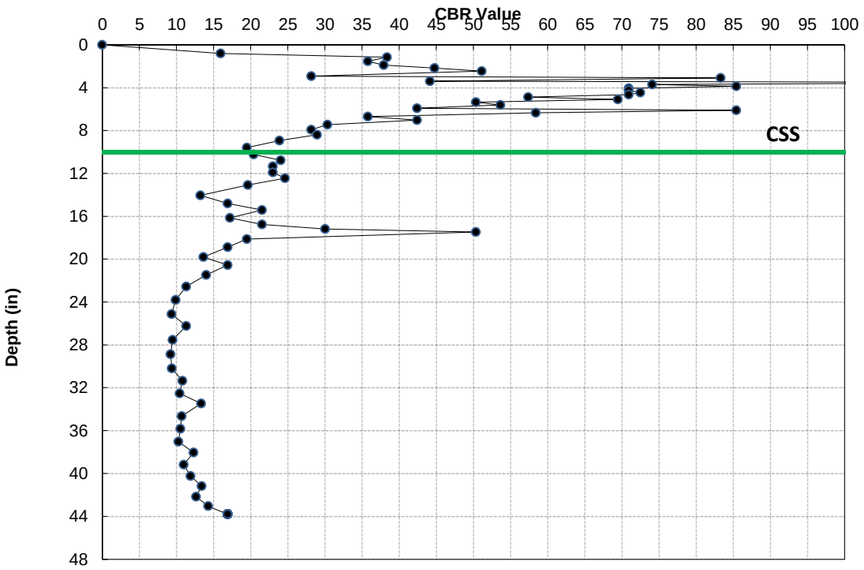
-Y14- Sta. 20+ 38 2.8 LT FW

Datum = CSS

DCP

5.0 Fill

08/14/24



Interval 0.0 to 10.2	
# of Values	31
Avg CBR	51.7
Wghtd Avg.	40.9
Max CBR	100+
Min CBR	15.9

Interval 10.2 to 43.8	
# of Values	37
Avg CBR	16.1
Wghtd Avg.	13.9
Max CBR	50.3
Min CBR	9.2

CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

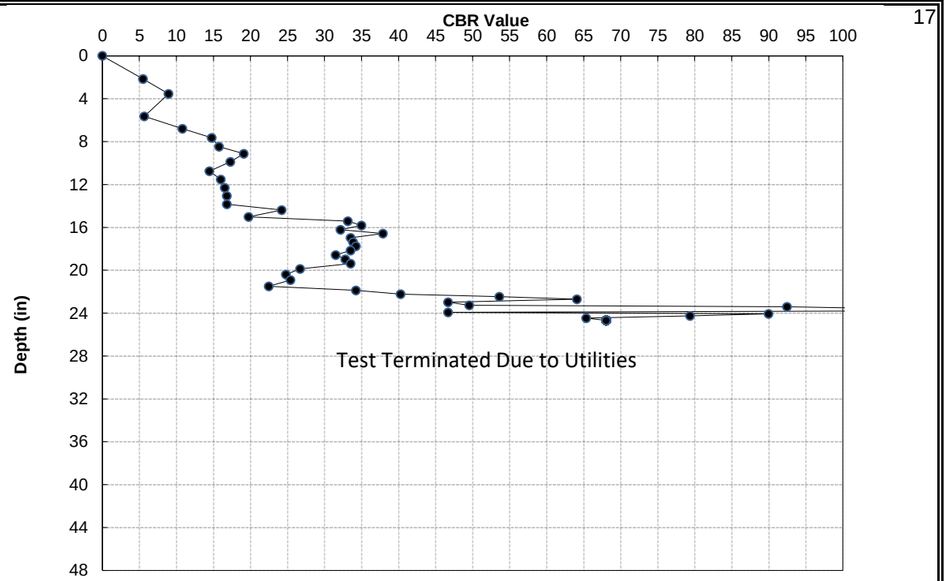
GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-19 LT PS 17
-Y14- Sta. 23+18 1.3 RT FW
Datum = SG (A-7-6)
DCP
4.0 Cut
08/14/24

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

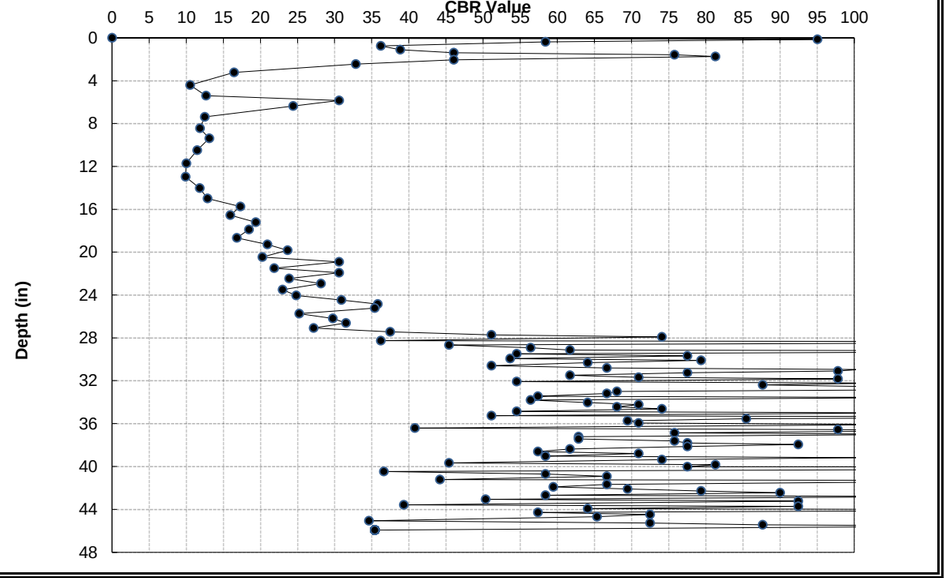
Interval 0.0 to 24.7	
# of Values	44
Avg CBR	39.0
Wghtd Avg.	23.2
Max CBR	100+
Min CBR	5.5



C-18 LT LN 18
-Y14- Sta. 23+18 2.4 LT FW
Datum = SG (A-7-6(20))
DCP
4.0 Cut
08/14/24

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

Interval 0.0 to 45.9	
# of Values	137
Avg CBR	61.7
Wghtd Avg.	40.2
Max CBR	100+
Min CBR	9.9



CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

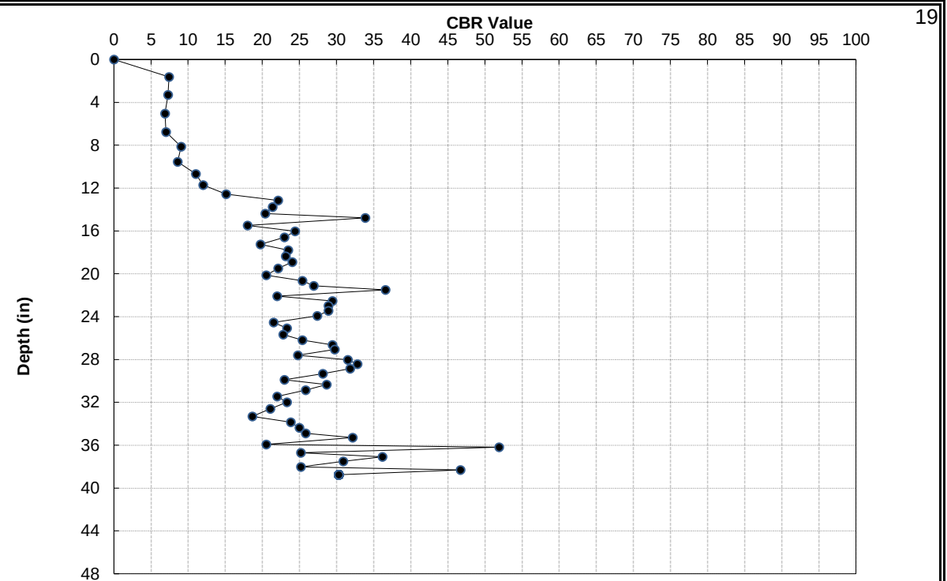
GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-1- to C-16

C-17 MEDIAN 19
-Y14- Sta. 23+18 14.3 LT FW
Datum = SG (A-7-6(21))
DCP
3.0 Fill
08/14/24

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

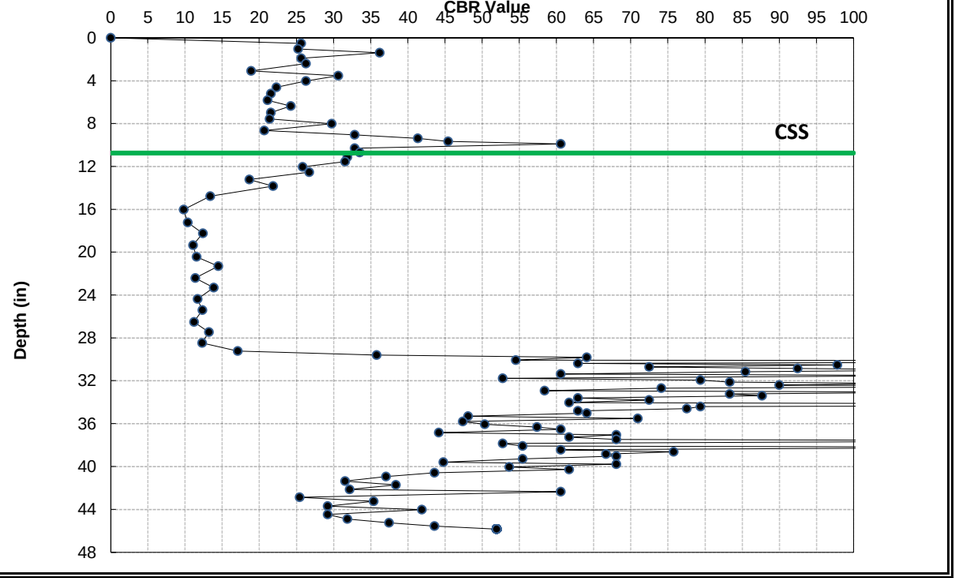
Interval 0.0 to 38.8	
# of Values	60
Avg CBR	24.1
Wghtd Avg.	20.0
Max CBR	51.9
Min CBR	6.9



C-16 RT LN 20
-Y14- Sta. 23+18 2.3 LT FW
Datum = CSS
DCP
At Grade
08/14/24

Interval 0.0 to 10.7	
# of Values	22
Avg CBR	29.3
Wghtd Avg.	27.0
Max CBR	60.6
Min CBR	18.9

Interval 10.7 to 45.8	
# of Values	91
Avg CBR	57.1
Wghtd Avg.	34.6
Max CBR	100+
Min CBR	9.8



CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
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GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-22- to C-15

C-22 LT PS — 21

-Y14- Sta. 28+33 1.0 RT FW

Datum = SG (A-2-4)

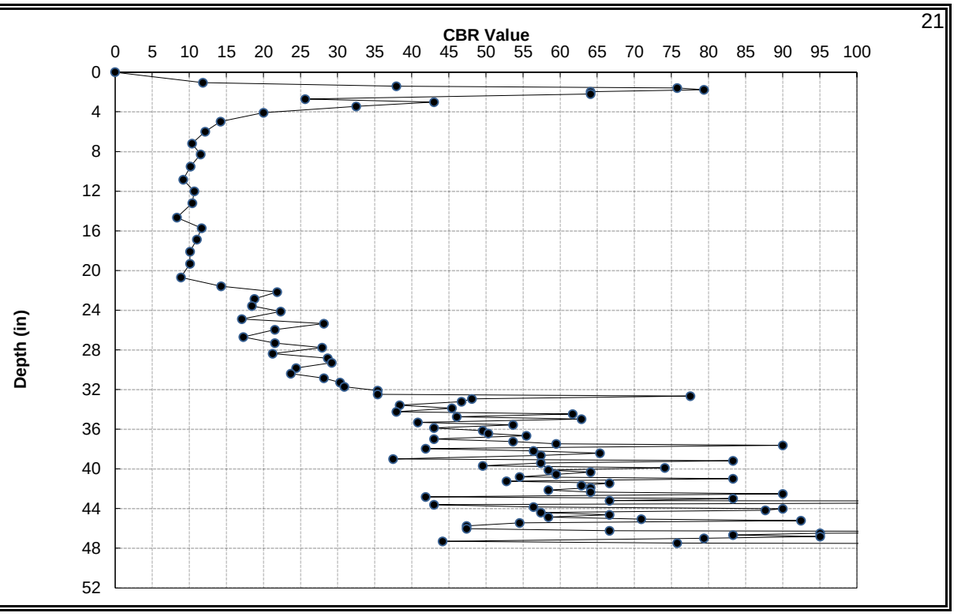
DCP

1.3 Fill

08/14/24

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

Interval 0.0 to 47.6	
# of Values	110
Avg CBR	49.0
Wghtd Avg.	30.6
Max CBR	100+
Min CBR	8.3



C-23 RT PS — 22

-Y14- Sta. 28+33 1.1 RT FW

Datum = SG (A-2-4)

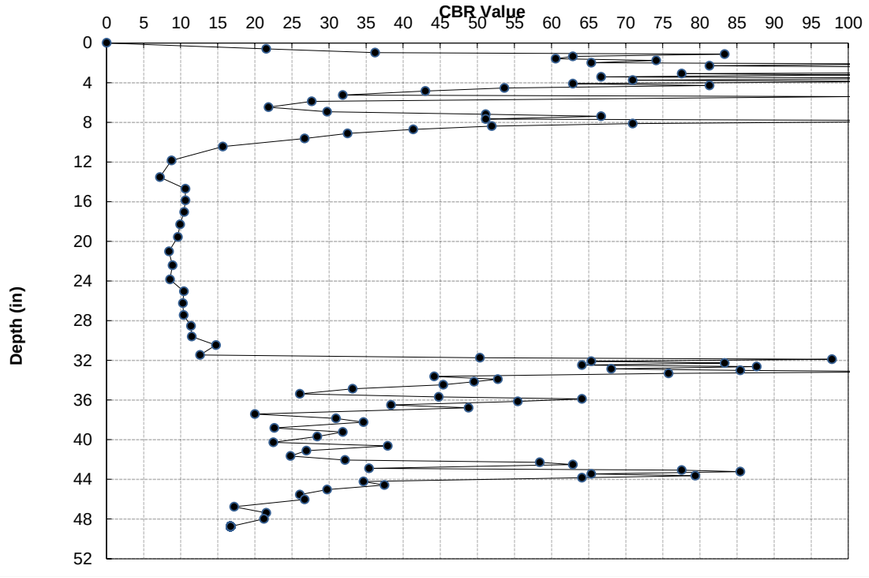
DCP

1.3 Fill

08/14/24

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

Interval 0.0 to 48.8	
# of Values	107
Avg CBR	53.2
Wghtd Avg.	29.0
Max CBR	100+
Min CBR	7.2



CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-22- to C-15

C-24 RT LN — 23

-Y14- Sta. 32+86 17.3 LT FW

Datum = SG (A-6(9))

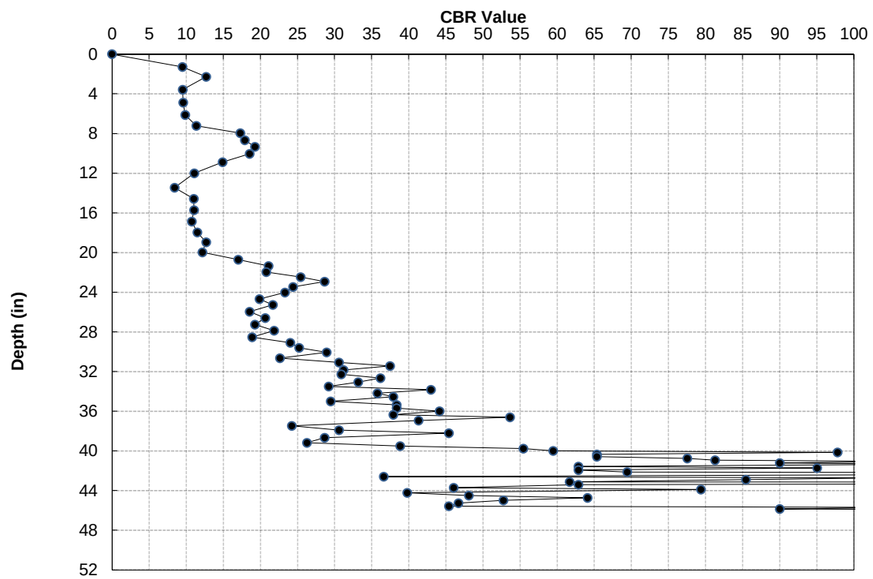
DCP

5.0 Fill

08/14/24

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

Interval 0.0 to 46.0	
# of Values	92
Avg CBR	44.1
Wghtd Avg.	26.3
Max CBR	100+
Min CBR	8.4



C-25 RTL — 24

-Y14- Sta. 32+86 3.0 LT FW

Datum = SG (A-6)

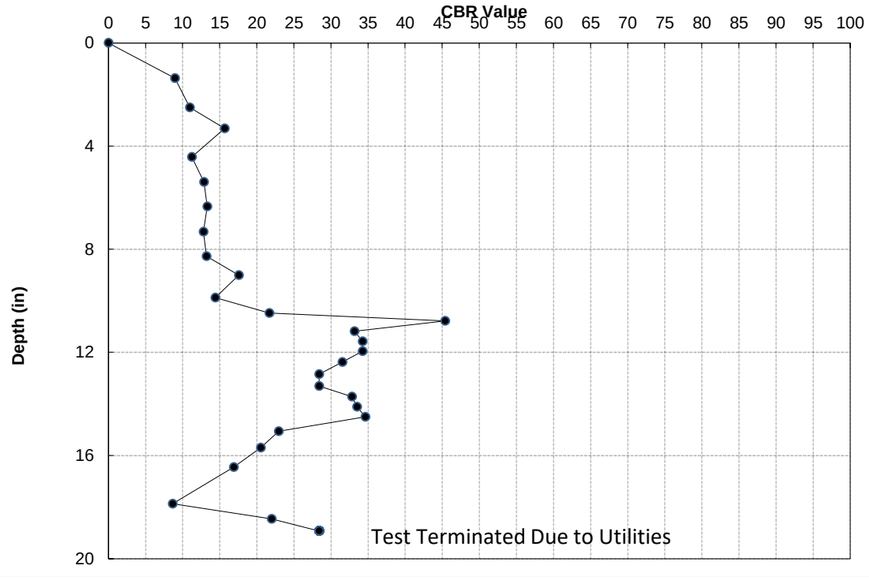
DCP

5.0 Fill

08/14/24

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

Interval 0.0 to 18.9	
# of Values	27
Avg CBR	22.5
Wghtd Avg.	18.3
Max CBR	45.4
Min CBR	8.6



CAROLINAS GEOTECHNICAL GROUP

CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-22- to C-15

C-26 LT LN

-Y14- Sta. 34+44 2.0 LT FW

Datum = SG (A-7-6)

DCP

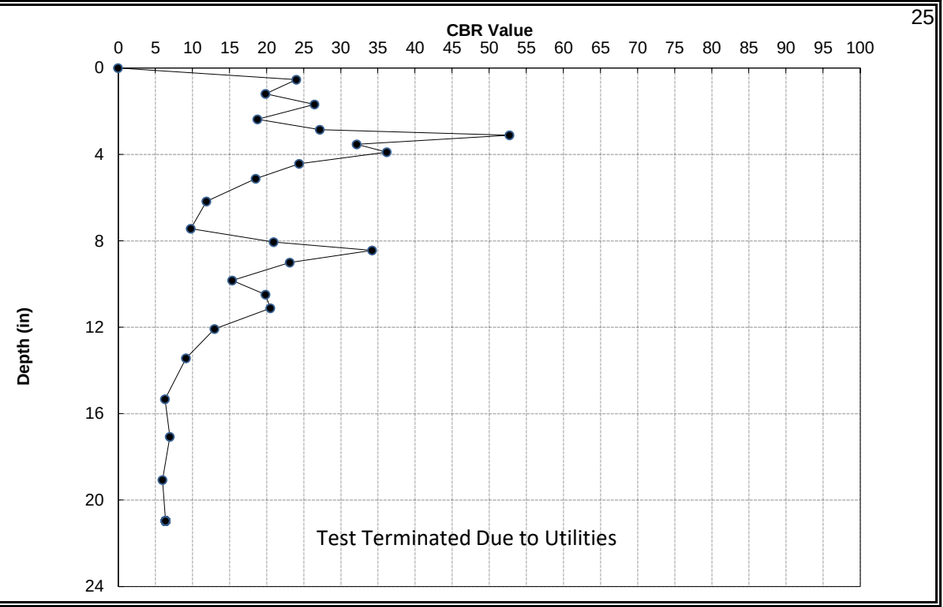
At Grade

08/14/24

25

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

Interval 0.0 to 21.0	
# of Values	24
Avg CBR	20.2
Wghtd Avg.	14.5
Max CBR	52.8
Min CBR	6.0



C-27 LTL

-Y14- Sta. 34+44 20.2 LT FW

Datum = SG (A-7-6(29))

DCP

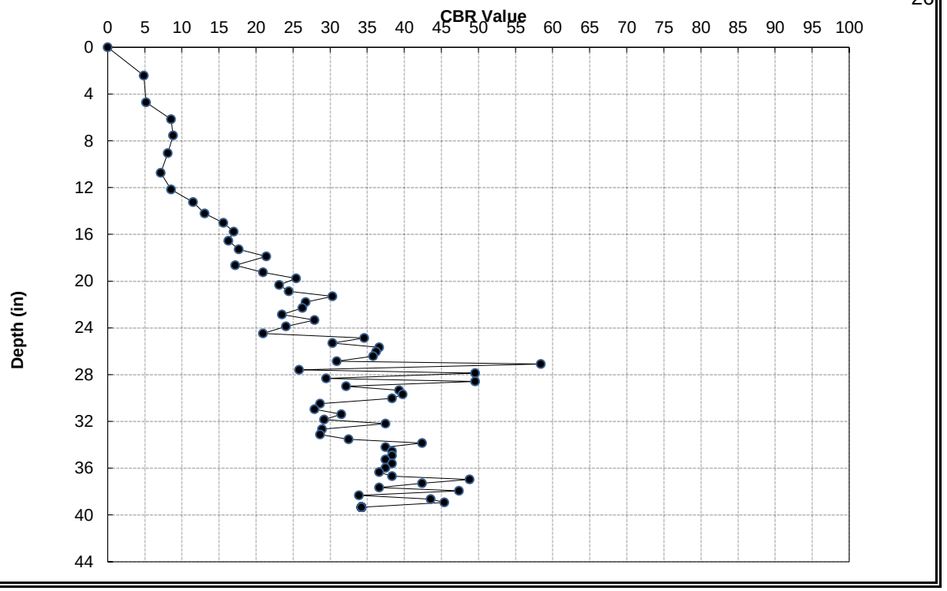
At Grade

08/14/24

26

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

Interval 0.0 to 39.3	
# of Values	66
Avg CBR	29.4
Wghtd Avg.	21.8
Max CBR	58.4
Min CBR	4.9



CONE PENETROMETER RESULTS
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 27

PROJECT NO.	48599.1.1
PROJECT ID	R-5963A
ROUTE	New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
COUNTY	Chatham

GEOLOGIST	T. Wenner
FIELD CREW	CG2 Exploration

FILE	DCP Graphs C-22- to C-15

C-15 LANE

-Y15- Sta. 12+50 5.7 LT FW

Datum = Drainage Sand

DCP

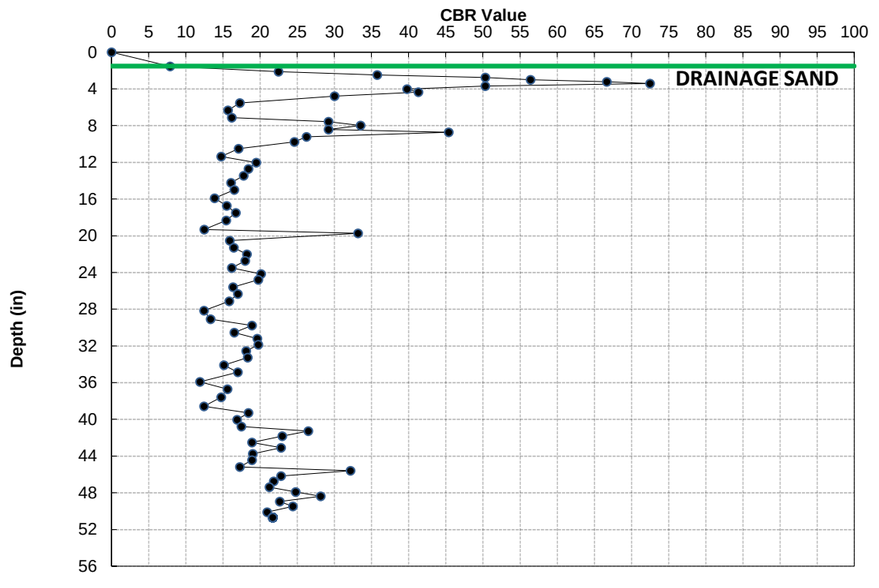
At Grade

08/14/24

27

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

Interval 0.0 to 50.7	
# of Values	77
Avg CBR	23.1
Wghtd Avg.	19.6
Max CBR	72.5
Min CBR	7.9



0

0

Datum = 0

0

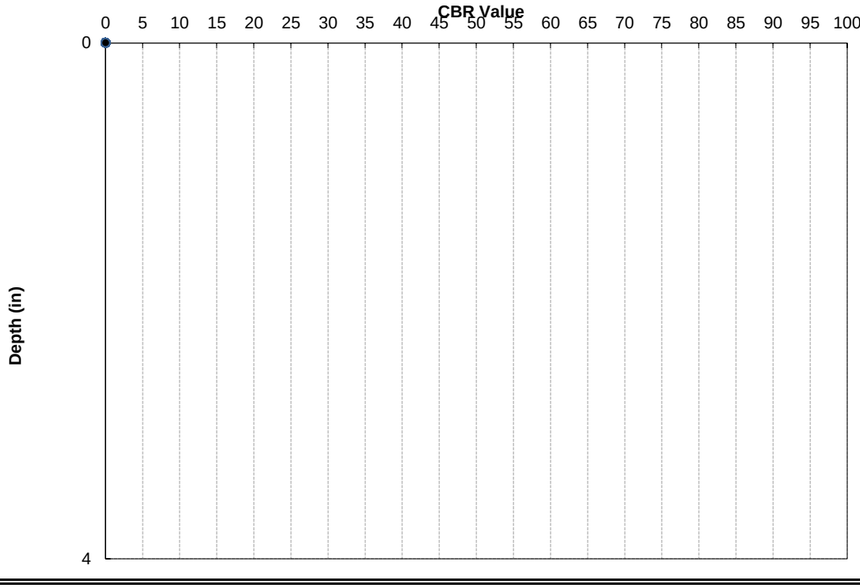
0

01/00/00

28

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

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



R-5963A: New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location

Pavement Core Photographs

C-1 -Y1- Sta. 16+91 LT PS
2.0 RT FW

C-2 -Y1- Sta. 16+91 RT LN
2.7 LT FW

C-3 -Y1- Sta. 16+91 RT PS
2.0 RT FW

C-4 -Y1- Sta. 24+91 LT PS
1.5 RT FW

0 1 2
FEET

C-5 -Y1- Sta. 24+91 LT LN
2.5 LT FW

C-6 -Y1- Sta. 24+91 RT PS
2.0 RT FW

C-7 -Y7- Sta. 13+84 LT PS
1.0 RT FW

C-8 -Y7- Sta. 13+84 RT LN
2.0 LT FW

0 1 2
FEET

C-9 -Y7- Sta. 13+84 RT PS
0.7 RT FW

C-10 -Y7- Sta. 18+65 LT PS
0.5 RT FW

C-11 -Y7- Sta. 18+65 LT LN
2.5 LT FW

C-12 -Y7- Sta. 18+65 RT PS
1.2 RT FW

0 1 2
FEET

C-14 -Y14- Sta. 12+53 LT LN
2.0 LT FW

C-13 -Y14- Sta. 12+53 RT LN
2.7 LT FW

0 1 2
FEET

R-5963A: New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location

Pavement Core Photographs

C-20 -Y14- Sta. 20+ 38 LTL
17.3 LT FW

C-21 -Y14- Sta. 20+38 RT LN
2.8 LT FW

0 1 2
FEET

C-19 -Y14- Sta. 23+18 LT PS
1.3 RT FW

C-18 -Y14- Sta. 23+18 LT LN
2.4 LT FW

0 1 2
FEET

C-17 -Y14- Sta. 23+18 MEDIAN
14.3 LT FW

C-16 -Y14- Sta. 23+18 RT LN
2.3 LT FW

C-22 -Y14- Sta. 28+33 LT PS
1.0 RT FW

0 1 2
FEET

C-23 -Y14- Sta. 28+33 RT PS
1.1 RT FW

C-24 -Y14- Sta. 32+86 RT LN
17.3 LT FW

C-25 -Y14- Sta. 32+86 RTL
3.0 LT FW

C-26 -Y14- Sta. 34+44 LT LN
2.0 LT FW

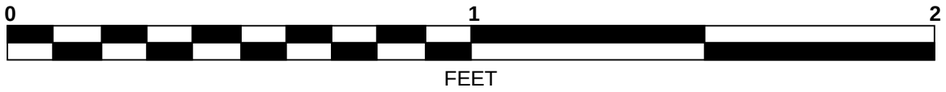
0 1 2
FEET

R-5963A: New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location

Pavement Core Photographs

C-27 -Y14- Sta. 34+44 LTL
20.2 LT FW

C-15 -Y15- Sta. 12+50 LANE
5.7 LT FW



ALIGNMENT	STATION	ABC (in)	LAYER THICKNESS (in)	LAYER	LIFT(S)	REMARKS
-Y1-	C-1 Sta. 16+91 LT PS 2.0 RT FW	10.00	2.00	S	1-2	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			5.00	I	3	Delamination between lifts 2-3, Low Severity Oxidation, Low Severity Stripping, with few small to medium voids, FEA
	10.50" Asphalt		3.50	S	2	Low to Moderate Severity Oxidation, Low Severity Stripping, with few very small to small voids, FEA
-Y1-	C-2 Sta. 16+91 RT LN 2.0 RT LN	8.25	1.50	S	1	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
	12.25" Asphalt		5.25	I	2	Delamination between lifts 1-2, Low Severity Oxidation, Low Severity Stripping, with few small to medium voids, FEA
			5.50	B	1	Low Severity Oxidation, Low to Moderate Severity Stripping, with few small to large voids, FEA
-Y1-	C3 Sta. 16+19 RT PS 2.0 RT FW	11.75	2.75	S	2	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			4.50	I	2	Low Severity Oxidation, Low to Moderate Severity Stripping, with few small to medium voids, FEA
	9.25" Asphalt		2.00	S	2	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few small to medium voids, FEA
-Y1-	C-4 Sta. 24+91 LT PS 1.5 RT FW	10.50	1.75	S	2	Low Severity Oxidation, Low Severity Stripping, with few very small to small voids, FEA
			4.50	I	2	Delamination between lifts 1-2, Low Severity Oxidation, Low to Moderate Severity Stripping, with few very small to small voids, FEA
	9.00" Asphalt		3.25	S	3	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few very small to medium voids, FEA
-Y1-	C-5 Sta. 24+91 LT LN 2.5 2.5 LT FW	9.00	1.75	S	1-2	Moderate to High Severity Oxidation, Moderate Severity Stripping, with some very small to small voids, FEA, contains cracks
			4.75	I	2	Delamination between lifts 1-2, Moderate Severity Oxidation, Moderate Severity Stripping, with few small to large voids, FEA
			0.75	SA	1	Sand Asphalt Layer, Moderate Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
	12.00" Asphalt		2.50	S	1-2	Low to Moderate Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			2.25	I	1	Low to Moderate Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
-Y1-	C-6 Sta. 24+91 RT PS 2.0 RT FW	10.25	2.75	S	2	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			5.00	I	2	Delamination between lifts 1-2, Low Severity Oxidation, Low to Moderate Severity Stripping, with few very small to medium voids, FEA
	10.25" Asphalt		2.50	S	3	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few very small to medium voids, FEA
-Y7-	C-7 Sta. 13+84 LT PS 1.0 RT FW		3.00	S	1-2	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			5.25	I	2	Mechanical Break between S and I layers, Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
	12.50" Asphalt		4.25	S	3-4	Moderate Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
-Y7-	C-8 Sta. 13+84 RT LN 2.0 LT FW		4.75	S	3-4	Low to Moderate Severity Oxidation, Low Severity Stripping, with few very small, FEA
			6.25	SA	1	Sand Asphalt Layer, Low to Moderate Severity Oxidation, Low Severity Stripping, Missing Asphalt in this layer
	12.50" Asphalt		1.50	I	1	Mechanical Break between SA and I layers, Moderate to High Severity Oxidation, Moderate to High Severity Stripping, with few small to medium voids
-Y7-	C-9 Sta. 13+84 RT PS 0.7 RT FW		3.50	S	1-2	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
	10.50" Asphalt		7.00	B	1	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few very small to medium voids, FEA
-Y7-	C-10 Sta. 18+65 LT PS 0.5 RT FW		2.25	S	1	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
	10.25" Asphalt		8.00	B	1	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few very small to medium voids, FEA
-Y7-	C-11 Sta. 18+65 LT LN 2.5 LT FW		5.75	S	5-6	Low to Moderate Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			1.00	SA	1	Sand Asphalt Layer, Low to Moderate Severity Oxidation, Low Severity Stripping, with few very small voids
	8.25" Asphalt		1.50	I	1	Moderate Severity Oxidation, Low Severity Stripping, with few very small voids, FEA, Bleeding
-Y7-	C-12 Sta. 18+65 RT PS 1.2 RT FW		3.00	S	2	Low Severity Oxidation, Low Severity Stripping, with few very small voids, FEA
			6.00	I	1	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few very small to medium voids, FEA
	12.5" Asphalt		3.50	B	1	Low to Moderate Severity Oxidation, Low to Moderate Severity Stripping, with few very small to small voids, FEA

S = Surface Course Asphalt
I = Intermediate Course Asphalt
B = Base Course Asphalt
SA = Sand Asphalt
C = Concrete

ALIGNMENT	STATION	ABC (in)	LAYER THICKNESS (in)	LAYER	LIFT(S)	REMARKS
-Y14-	C-14 Sta. 12+53 LT LN 2.0 LT FW	3.00 Drainage Sand	3.25	S	2	Low Severity Oxidation, Moderate Severity Stripping, with some very small to large voids, FEA, Bleeding
	6.75" Asphalt		3.50	I	1	High Severity Oxidation and Stripping, with numerous very small to small voids
			8.00	C	1	Low Severity Oxidation and Stripping, with few large voids
-Y14-	C-13 Sta. 12+53 RT LN 2.7 LT FW	4.00 Drainage Sand	3.00	S	2	Low Severity Oxidation, Moderate Severity Stripping, with few very small to medium voids, FEA
	5.50" Asphalt		2.50	I	1	High Severity Oxidation and Stripping, with numerous very small to small voids, FEA, Bleeding
			9.00	C	1	Low Severity Oxidation and Stripping, with few large voids
-Y14-	C-20 Sta. 20+38 LTL 17.3 LT FW	4.00 Drainage Sand	2.00	S	2	Low Severity Oxidation and Stripping, with few very small voids
	14.00" Asphalt		3.50	I	2	Low Severity Oxidation, Low to Moderate Severity Stripping, with some very small to small voids, FEA
			8.50	S	7	High Severity Oxidation and Stripping, with numerous very small voids, FEA, Mechanical Break between lifts 6 and 7
			9.50	C	1	Low Severity Oxidation and Stripping, with some very small to medium voids
-Y14-	C-21 Sta. 20+38 RT LN 2.8 LT FW	10.00 CSS	4.50	S	4	Low Severity Oxidation and Stripping, with few very small to small voids, FEA
	14.00" Asphalt		9.50	I	5	Low Severity Oxidation, Low to Moderate Severity Stripping, with some very small to small voids, FEA
-Y14-	C-19 Sta. 23+18 LT PS 1.3 RT FW		4.75	S	4	Low to Moderate Oxidation and Stripping, with few very small voids, FEA, Bleeding
	18.50" Asphalt		10.50	I	5	Mechanical Break between lifts 4-5, Low to Moderate Oxidation and Stripping, with some very small to small voids, FEA
			3.25	B	1	Moderate Severity Oxidation and Stripping, with some small to large voids
-Y14-	C-18 Sta. 23+18 LT LN 2.4 LT FW		4.50	S	4	Low to Moderate Oxidation and Stripping, with some very small to small voids
			1.50	I	1	Low to Moderate Oxidation and Stripping, with some very small to small voids, FEA
	11.00" Asphalt		2.50	S	2	Moderate to High Severity Oxidation and Stripping, with numerous very small voids, FEA, Delamination between I/S
			2.50	I	1	High Severity Oxidation and Stripping, with numerous very small go medium voids, FEA
-Y14-	C-17 Sta. 23+18 MEDIAN 14.3 LT FW		9.75	S	8	Delamination between lifts 3-4 & partial delamination between lifts 4-5, Low to Moderate Oxidation and Stripping, with numerous small voids, FEA
			3.25	B	1	High Severity Oxidation and Stripping, with numerous small to large voids
	13.00" Asphalt		7.00	C	1	Low Severity Oxidation and Stripping, with some very small to small voids
-Y14-	C-16 Sta. 23+18 RT LN 2.3 LT FW	10.75 CSS	4.00	S	4	Low to Moderate Severity Oxidation and Stripping, with some very small to small voids, FEA, Bleeding
	11.25" Asphalt		1.75	I	1	Low Severity Oxidation and Stripping, with few very small voids, FEA
			5.50	S	5	Moderate to High Severity Oxidation and Stripping, with numerous very small to small voids, FEA
-Y14-	C-22 Sta. 28+33 LT PS 1.0 RT FW		5.50	S	3	Delamination between lifts 1-2 & 2-3, Low to Moderate Severity Oxidation and Stripping, with some very small to small voids
	10.50" Asphalt		5.00	B	1	Moderate Severity Oxidation and Stripping, with some very small to small voids
-Y14-	C-23 Sta. 28+33 RT PS 1.1 RT FW		3.75	I	2	Low Severity Oxidation, Moderate Severity Stripping, with few very small to medium voids, FEA
	9.75" Asphalt		6.00	S	5	Low to Moderate Severity Oxidation and Stripping, with some very small to small voids, FEA
-Y14-	C-24 Sta. 32+86 RT LN 17.3 LT FW		3.50	S	4	Mechanical Break in lift 1 & 2, Low to Moderate Severity Oxidation and Stripping, with some very small to small voids, FEA
	13.50" Asphalt		10.00	I	4-5	Low Severity Oxidation and Stripping, with few very small voids, FEA

S = Surface Course Asphalt
I = Intermediate Course Asphalt
B = Base Course Asphalt
SA = Sand Asphalt
C = Concrete

ALIGNMENT	STATION	ABC (in)	LAYER THICKNESS (in)	LAYER	LIFT(S)	REMARKS
-Y14-	C-25 Sta. 32+86 RTL 3.0 LT FW		4.00	I	2	Low Severity Oxidation and Stripping, with few small to large voids, FEA
	9.50" Asphalt		1.50	S	1	Low Severity Oxidation and Stripping, with few very small voids, FEA
			4.00	B	1	Low Severity Oxidation and Stripping, with few very small voids, FEA
-Y14-	C-26 Sta. 34+44 LT LN 2.0 LT FW		3.00	S	2	1" Top-down crack in core, Moderate to High Severity Oxidation and Stripping, with numerous very small to small voids
	12.00" Asphalt		9.00	I	Indistinct	High Severity Oxidation and Stripping, with numerous small to large voids
-Y14-	C-27 Sta. 34+44 LTL 20.2 LT FW		6.00	S	Indistinct	High Severity Oxidation and Stripping, with numerous very small to large voids, FEA, Mechanical Breaks between lifts, Top-down crack
	13.00" Asphalt		7.00	C	1	Moderate Severity Oxidation and Stripping, with some small voids
-Y15-	C-15 Sta. 12+50 LANE 5.7 LT FW	1.50 Drainage Sand	3.00	S	1	Top-down crack in core, Low Severity Oxidation, Moderate Severity Stripping, with some very small to small voids, Bleeding
	3.00" Asphalt		6.00	C	1	Mechanical break in lift, Low to Moderate Severity Oxidation and Stripping, with few small voids

S = Surface Course Asphalt
I = Intermediate Course Asphalt
B = Base Course Asphalt
SA = Sand Asphalt
C = Concrete

F&ME CONSULTANTS, INC.
211 BUSINESS PARK BOULEVARD, COLUMBIA SC 29203
(CERT No.: 130-0212)

Project New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location | **T.I.P. No.** R-5963A | **County** Chatham | **F&ME Job No.** C8806.001 - Task 00030

Date Received 8/16/2024 | **Date Reported** 9/12/2024 | **Tested By** F&ME | **CERT No.:** 130-0212

SOIL TEST RESULTS

SAMPLE NO.	*ALINGMENT*	*STATION*	*LANE*	*OFFSET (ft.)*	*DEPTH INTERVAL (ft.)*	*AASHTO CLASS*	*L.L.*	*P.I.*	*% BY WEIGHT*				*% PASSING (SIEVES)*			*%*	*%*
									C. SAND	*F. SAND*	*SILT*	*CLAY*	*10*	*40*	*200*	*MOISTURE*	*ORGANIC*
S-1	-Y1-	16+91	LT PS	2.0 RT FW	1.7 - 4.0	A-7-6(18)	47	20	8.6%	7.6%	38.5%	45.3%	95.3%	89.3%	81.8%	31.0%	ND
S-3	-Y1-	16+91	RT PS	2.0 RT FW	1.8 - 5.0	A-6(9)	38	11	7.2%	11.1%	45.2%	36.5%	96.4%	92.2%	81.2%	18.6%	ND
S-5	-Y1-	24+91	LT LN	2.5 LT FW	1.8 - 3.5	A-6(2)	28	13	24.8%	21.5%	27.0%	26.7%	77.6%	63.9%	44.7%	9.9%	ND
S-6	-Y1-	24+91	RT PS	2.0 RT FW	1.7 - 2.8	A-4(1)	26	10	27.3%	19.8%	28.4%	24.5%	82.3%	66.5%	46.3%	7.7%	ND
S-7	-Y7-	13+84	LT PS	1.0 RT FW	1.0 - 5.0	A-7-6(6)	43	23	16.3%	10.7%	30.0%	43.0%	60.7%	53.1%	45.6%	21.7%	ND
S-8	-Y7-	13+84	RT LN	2.0 LT FW	1.0 - 5.0	A-6(6)	36	18	13.6%	10.1%	39.6%	36.7%	63.1%	56.7%	49.6%	26.4%	ND
S-11	-Y7-	18+65	LT LN	2.5 LT FW	0.7 - 3.0	A-7-6(16)	46	25	10.8%	6.7%	29.4%	53.1%	82.5%	75.8%	69.3%	21.8%	ND
S-13	-Y14-	12+53	RT LN	2.7 LT FW	1.5 - 4.0	A-6(9)	32	15	7.5%	6.1%	47.8%	38.6%	81.6%	77.1%	72.0%	26.6%	ND
S-13A	-Y14-	12+53	RT LN	2.7 LT FW	4.0 - 5.0	A-7-6(22)	43	24	6.4%	4.0%	38.7%	50.9%	96.6%	91.7%	87.5%	25.0%	ND
S-20	-Y14-	20+38	LTL	17.3LT FW	2.0 - 5.0	A-6(3)	32	13	14.7%	9.6%	39.2%	36.5%	61.8%	54.9%	48.2%	19.3%	ND
S-21	-Y14-	20+38	RT LN	2.8 LT FW	2.0 - 5.0	A-4(5)	28	10	12.0%	5.9%	47.7%	34.4%	86.4%	77.9%	72.2%	15.8%	ND
S-17	-Y14-	23+18	MEDIAN	14.3 LT FW	1.7 - 3.0	A-7-6(21)	46	22	4.6%	7.2%	39.1%	49.2%	97.7%	94.9%	88.2%	32.4%	ND
S-17A	-Y14-	23+18	MEDIAN	14.3 LT FW	3.0 - 5.0	A-7-6(35)	59	33	3.6%	5.8%	38.9%	51.7%	99.8%	97.5%	92.0%	26.9%	ND
S-18	-Y14-	23+18	LT LN	2.4 LT FW	0.9 - 5.0	A-7-6(20)	46	24	6.0%	8.4%	34.1%	51.5%	93.7%	90.0%	82.2%	31.4%	ND
S-22	-Y14-	28+33	LT PS	1.0 RT FW	1.3 - 5.0	A-7-6(20)	48	25	9.4%	4.9%	28.5%	57.2%	89.8%	83.5%	77.9%	30.5%	ND
S-23	-Y14-	28+33	RT PS	1.1 RT FW	1.3 - 5.0	A-6(9)	37	18	16.3%	7.3%	31.7%	44.7%	82.3%	72.2%	64.0%	13.9%	ND
S-24	-Y14-	32+86	RT LN	17.3 LT FW	1.1 - 3.0	A-6(9)	39	21	16.5%	13.9%	34.7%	34.9%	79.0%	69.8%	57.7%	26.8%	ND
S-24A	-Y14-	32+86	RT LN	17.3 LT FW	3.0 - 5.0	A-7-6(15)	53	32	5.4%	6.3%	22.4%	65.9%	62.4%	59.8%	56.2%	29.4%	ND
S-27	-Y14-	34+44	LTL	20.2 LT FW	1.7 - 5.0	A-7-6(29)	55	28	5.7%	3.0%	27.7%	63.6%	98.1%	93.7%	90.4%	35.0%	ND
S-15	-Y15-	12+50	LANE	5.7 LT FW	0.8 - 5.0	A-7-5(26)	52	22	1.5%	2.4%	47.0%	49.1%	99.7%	98.7%	96.3%	34.0%	ND

Alex M Abernathy — Authorized Signature

130-04-0212 — NCDOT Cert. No.

09/12/24 — Date

Prepared in the Office of:
F&ME CONSULTANTS, INC.
COLUMBIA, SOUTH CAROLINA
NCDOT LAB CERT. NO. 130–0212

F&ME CONSULTANTS, INC.
211 BUSINESS PARK BOULEVARD, COLUMBIA SC 29203
(CERT No.: 130-0212)

Project New Route from Chatham Parkway, US 15/US 501 South of Pittsboro to US 64 Business, Construct Roadway on New Location
T.I.P. No. R-5963A
County Chatham
F&ME Job No. C8806.001 - Task 00030
Date Received 8/23/2024
Date Reported 9/25/2024
Tested By F&ME
CERT No.: 130-0212

SOIL TEST RESULTS

SAMPLE NO.	*ALIGNMENT*	*STATION*	*OFFSET (ft.)*	*DEPTH INTERVAL (ft.)*	*AASHTO CLASS*	*L.L.*	*P.I.*	*% BY WEIGHT*				*% PASSING (SIEVES)*			*%*	*%*
								C. SAND	*F. SAND*	*SILT*	*CLAY*	*10*	*40*	*200*	*MOISTURE*	*ORGANIC*
BULK-01	-L-	13+01	63 RT	10.0 - 20.0	A-7-6(17)	43	17	3.6%	7.3%	35.2%	53.9%	99.8%	97.8%	90.6%	35.4%	ND
BULK-02	-L-	73+01	63 LT	5.0 - 15.0	A-6(4)	32	12	19.1%	12.1%	32.4%	36.4%	78.1%	66.7%	55.6%	12.3%	ND
BULK-03	-L-	155+00	CL	5.0 - 15.0	A-6(13)	35	18	10.5%	13.0%	33.5%	43.0%	100.0%	93.9%	79.3%	8.8%	ND
BULK-04	-Y1-	16+91	21 RT	0.0 - 5.0	A-6(4)	34	12	17.9%	9.3%	40.1%	32.7%	75.5%	65.5%	56.3%	20.8%	ND
BULK-05	-L-	80+19	23 LT	0.0 - 10.0	A-7-6(24)	49	24	3.3%	7.5%	46.6%	42.6%	99.7%	98.0%	91.1%	23.4%	ND
BULK-06	-Y14-	18+02	54 LT	0.0 - 5.0	A-7-6(19)	43	21	5.0%	3.7%	38.4%	52.9%	95.7%	92.1%	88.4%	25.2%	ND

*Bulk 1 and 4 collected for classification purposes, CBR testing not performed due to material properties similar to other bulk samples collected.

Alex M Abernathy
Authorized Signature

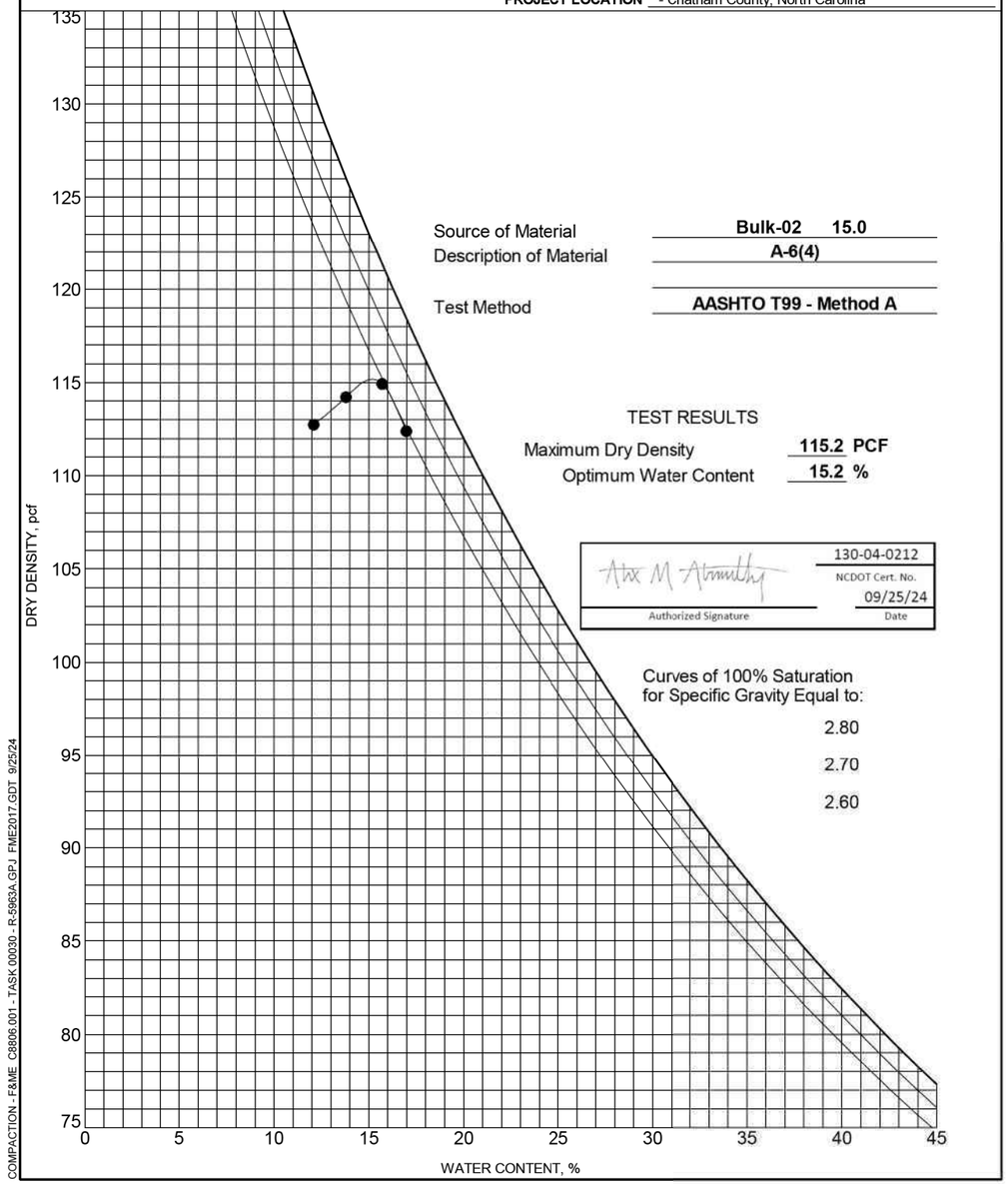
130-04-0212
NCDOT Cert. No.
09/25/24
Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: Bulk-02 15.0

Description of Material: A-6(4)

Test Method: AASHTO T99 - Method A

TEST RESULTS

Maximum Dry Density: 115.2 PCF

Optimum Water Content: 15.2 %

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No.

09/25/24 — Date

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 03/2024

SPECIFIC GRAVITY OF SOILS
(ASTM D854 / AASHTO T100)

Project Name:	Chatham Pkwy from US-501 to US 64 Business	**NCDOT STIP No.:**	R-5963A
FME Lab ID	24-2818	**Depth (ft.):**	5.0 - 15.0
Description of Soil:	A-6(4)	**Date Received:**	8/23/2024
Method:	A X B		
Tested By:	Alex Abernethy	**Date Tested:**	9/12/2024

Boring No.	Bulk-02			
Sample Depth (ft.)	5.0 - 15.0			
Volume of Flask at 20° C	500 mL			
Method of Air Removal	Boiling			
Mass Flask + Water + Soil (Wb)	767.21			
Test Temperature ° C (Tx)	24.0			
Mass Flask + Water (Wa)	704.71			
Container No.	A			
Mass of Container + Oven Dry Soil	306.75			
Mass of Container	206.75			
Mass of Oven Dry Soil (Wo)	100.00			
Specific Gravity @ Test Temperature Wo/[Wo+(Wa-Wb)]	2.667			
Specific Gravity (SG) K x Specific Gravity @ Test Temperature	2.664			

Remarks:

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No

9/25/2024 — Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

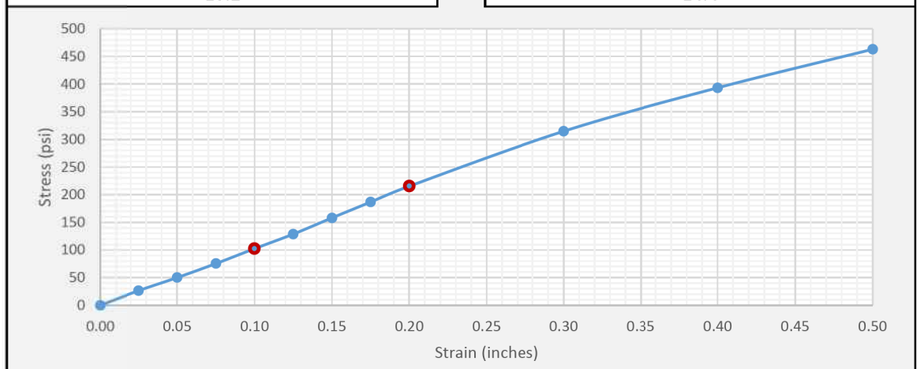
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-02 (Specimen A)			FME Lab ID	24-2818
Soil Description	A-6(4)			Depth/Elev.	5.0 - 15.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	115.2	Optimum Moisture Content (%)	15.2
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
10.2	**14.4**



Before Soaking	
Dry Density (lb/ft^3)	116.2
Moisture Content	14.7%
Percent Compaction	100.9%
Percent Shrink/Swell	--

After Soaking	
Dry Density (lb/ft^3)	114.2
Moisture Content (Top 1")	19.6%
Percent Compaction	99.1%
Percent Shrink/Swell	1.1%

ADDITIONAL COMMENTS

Target %Compaction = 100%

F&ME Consultants, Inc.
211 Business Park Blvd., Columbia, South Carolina 29203

Authorized Signature

130-04-0212
NCDOT Cert. No.

09/25/24
Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

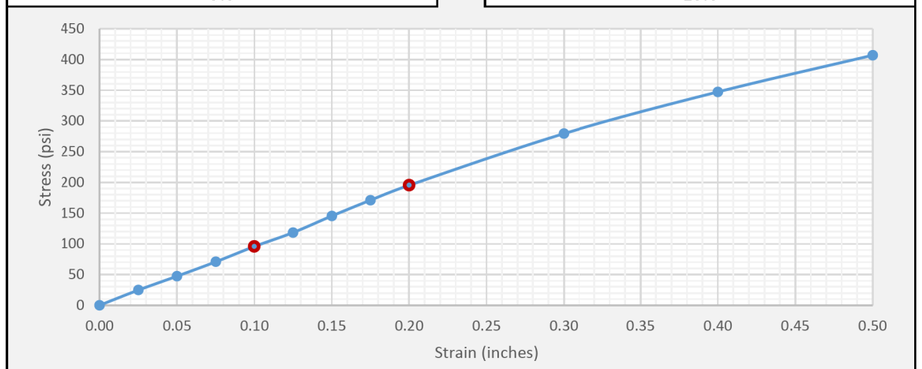
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-02 (Specimen B)			FME Lab ID	24-2818
Soil Description	A-6(4)			Depth/Elev.	5.0 - 15.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	115.2	Optimum Moisture Content (%)	15.2
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
9.6	**13.0**



Before Soaking	
Dry Density (lb/ft^3)	116.2
Moisture Content	14.4%
Percent Compaction	100.9%
Percent Shrink/Swell	--

After Soaking	
Dry Density (lb/ft^3)	112.4
Moisture Content (Top 1")	20.1%
Percent Compaction	97.6%
Percent Shrink/Swell	1.1%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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211 Business Park Blvd., Columbia, South Carolina 29203

Authorized Signature

130-04-0212
NCDOT Cert. No.

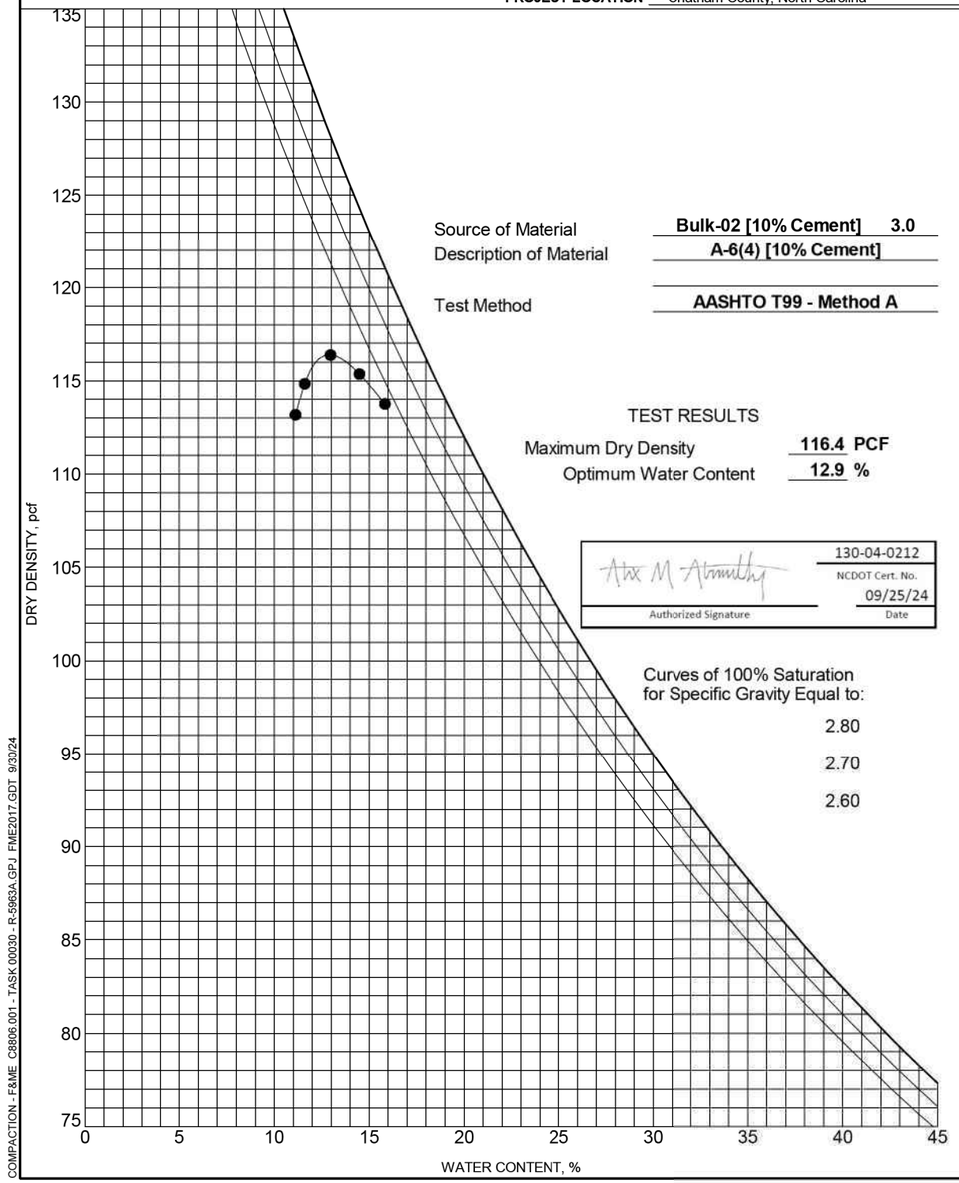
09/25/24
Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: **Bulk-02 [10% Cement] 3.0**

Description of Material: **A-6(4) [10% Cement]**

Test Method: **AASHTO T99 - Method A**

TEST RESULTS

Maximum Dry Density **116.4** PCF

Optimum Water Content **12.9** %

Atx M Atmuthy — Authorized Signature

130-04-0212 — NCDOT Cert. No.

09/25/24 — Date

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/30/24

REV 08/2021

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

SAMPLE INFORMATION

Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP #	R-5963A
Sample Location	Bulk-02			FME Lab ID	24-2818
Soil Description	A-6(4)			Depth/Elev.	5.0 - 15.0
Station	--			Offset	--
Date Sampled	--	Sampled By:	CG2	Date Received	08/22/24
Date Molded	09/20/24	Date Tested	09/27/24	Tested By	A. Abernethy

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Cement Added to Proctor	10%
Max Dry Density (lb/ft^3)	116.4	Optimum Moisture Content (%)	12.9

TESTING RESULTS

% Cement	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in.^{2})	Maximum Load (lbf)	Compressive Strength (psi)	Avgerage Compressive Strength (psi)
8%	7	12.2%	4.69	4.00	12.57	2,611	210	**210**
8%	7	12.2%	4.70	4.00	12.59	2,626	210	
10%	7	12.2%	5.04	4.00	12.53	3,528	280	**290**
10%	7	12.2%	4.70	4.00	12.59	3,701	295	

ADDITIONAL COMMENTS

F&ME CONSULTANTS

F&ME Consultants, Inc.

211 Business Park Blvd, Columbia, SC 29203

Atx M Atmuthy — Authorized Signature

130-04-0212 — NCDOT Certification No.

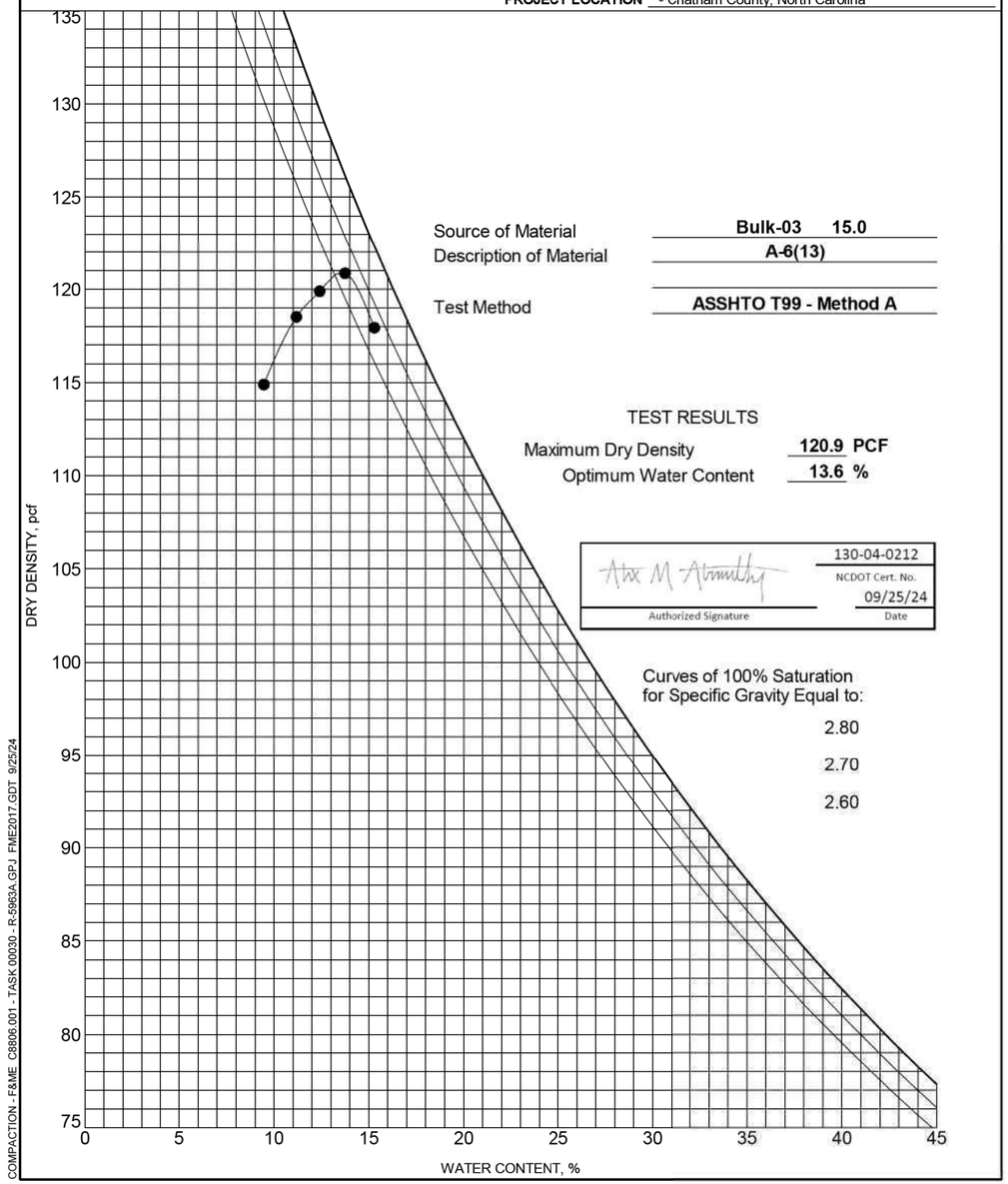
09/30/24 — Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: Bulk-03 15.0

Description of Material: A-6(13)

Test Method: ASSHTO T99 - Method A

TEST RESULTS

Maximum Dry Density: 120.9 PCF

Optimum Water Content: 13.6 %

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No.

09/25/24 — Date

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 03/2024

SPECIFIC GRAVITY OF SOILS
(ASTM D854 / AASHTO T100)

Project Name:	Chatham Pkwy from US-501 to US 64 Business	**NCDOT STIP No.:**	R-5963A
FME Lab ID	24-2819	**Depth (ft.):**	5.0 - 15.0
Description of Soil:	A-6(13)	**Date Received:**	8/23/2024
Method:	A X B		
Tested By:	Alex Abernethy	**Date Tested:**	9/12/2024

Boring No.	Bulk-03			
Sample Depth (ft.)	5.0 - 15.0			
Volume of Flask at 20° C	500 mL			
Method of Air Removal	Boiling			
Mass Flask + Water + Soil (Wb)	755.26			
Test Temperature ° C (Tx)	24.0			
Mass Flask + Water (Wa)	692.62			
Container No.	D			
Mass of Container + Oven Dry Soil	294.83			
Mass of Container	194.83			
Mass of Oven Dry Soil (Wo)	100.00			
Specific Gravity @ Test Temperature Wo/[Wo+(Wa-Wb)]	2.677			
Specific Gravity (SG) K x Specific Gravity @ Test Temperature	2.674			

Remarks:

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No

9/25/2024 — Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

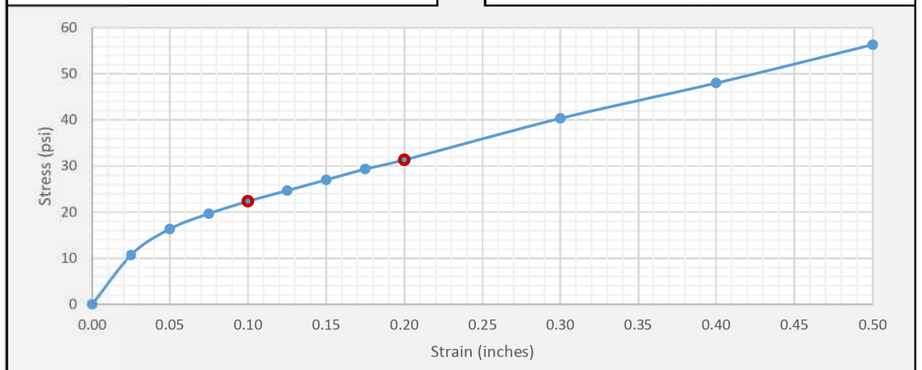
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-03 (Specimen A)			FME Lab ID	24-2819
Soil Description	A-6(13)			Depth/Elev.	5.0 - 15.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	120.9	Optimum Moisture Content (%)	13.6
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
2.2	**2.1**



Before Soaking	
Dry Density (lb/ft^3)	121.9
Moisture Content	12.5%
Percent Compaction	100.8%
Percent Shrink/Swell	--

After Soaking	
Dry Density (lb/ft^3)	108.0
Moisture Content (Top 1")	25.8%
Percent Compaction	89.4%
Percent Shrink/Swell	7.2%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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Authorized Signature

130-04-0212
NCDOT Cert. No.

09/25/24
Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

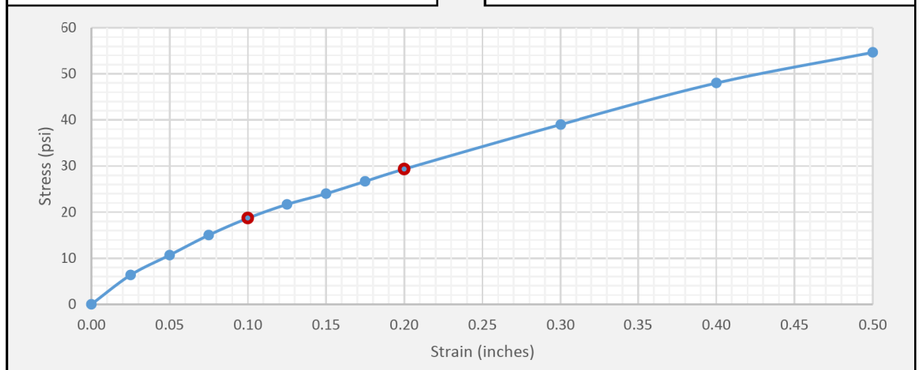
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-03 (Specimen B)			FME Lab ID	24-2819
Soil Description	A-6(13)			Depth/Elev.	5.0 - 15.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	120.9	Optimum Moisture Content (%)	13.6
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
1.9	**2.0**



Before Soaking	
Dry Density (lb/ft^3)	122.2
Moisture Content	12.3%
Percent Compaction	101.0%
Percent Shrink/Swell	--

After Soaking	
Dry Density (lb/ft^3)	108.7
Moisture Content (Top 1")	25.1%
Percent Compaction	89.9%
Percent Shrink/Swell	7.2%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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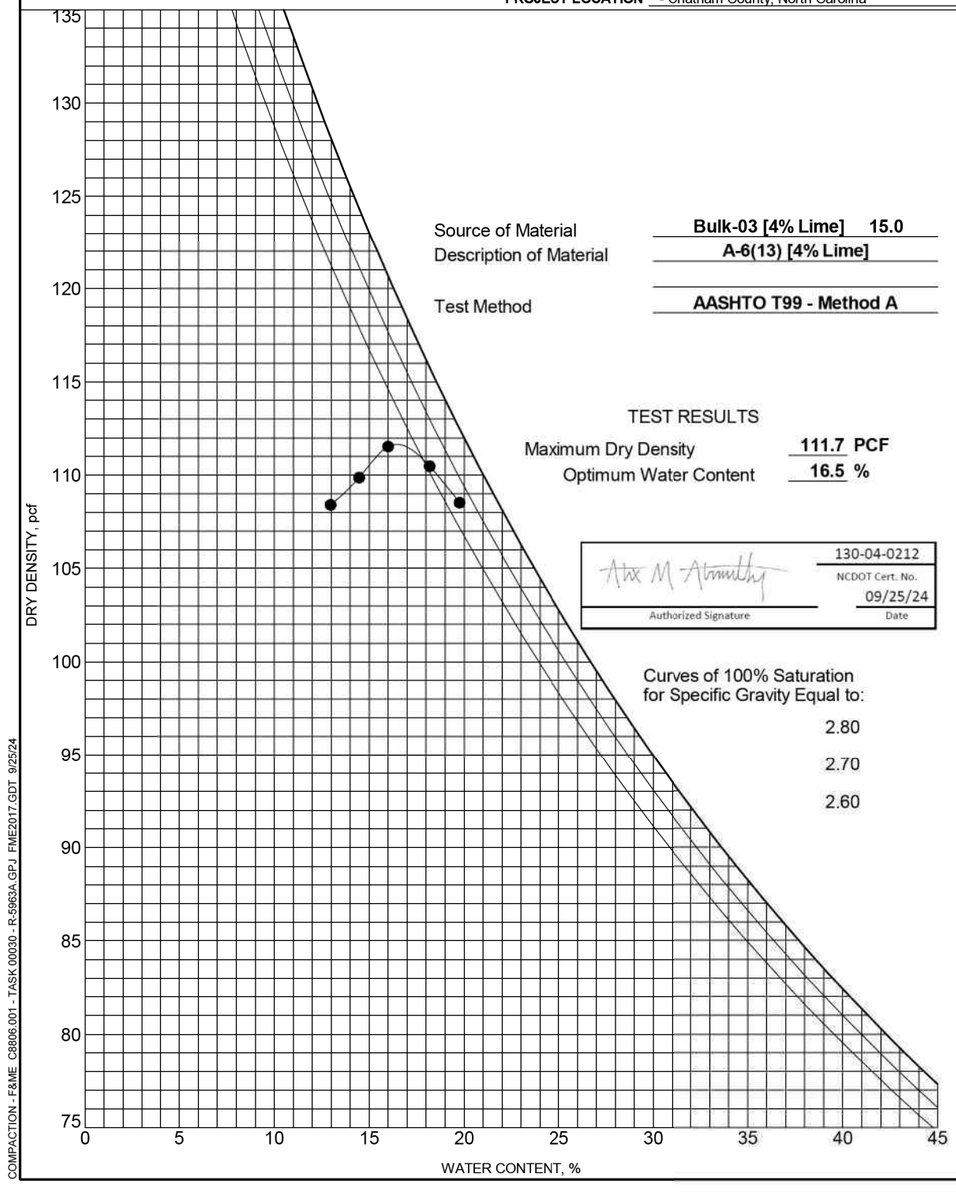
09/25/24
Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: **Bulk-03 [4% Lime] 15.0**

Description of Material: **A-6(13) [4% Lime]**

Test Method: **AASHTO T99 - Method A**

TEST RESULTS

Maximum Dry Density **111.7 PCF**

Optimum Water Content **16.5 %**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

Alex M Abernethy — Authorized Signature

130-04-0212 NCDOT Cert. No.

09/25/24 Date

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 08/2021

COMPRESSIVE STRENGTH OF MOLDED SOIL-LIME CYLINDERS
ASTM D-5102

SAMPLE INFORMATION

Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP #	R-5963A
Sample Location	Bulk-03			FME Lab ID	24-2819
Soil Description	A-6(13)			Depth/Elev.	5.0 - 15.0
Station	--			Offset	--
Date Sampled	--	Sampled By:	CG2	Date Received	08/22/24
Date Molded	09/12/24	Date Tested	09/19/24	Tested By	A. Abernethy

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Lime Added to Proctor	4%
Max Dry Density (lb/ft^3)	111.7	Optimum Moisture Content (%)	16.5

TESTING RESULTS

% Lime	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in.^{2})	Maximum Load (lbf)	Compressive Strength (psi)	Avgerage Compressive Strength (psi)
3%	7	16.0%	4.83	3.99	12.50	1,011	80	**80**
3%	7	16.0%	4.76	3.99	12.50	1,025	80	
5%	7	15.7%	4.75	3.99	12.50	1,246	100	**105**
5%	7	15.7%	4.92	3.98	12.44	1,288	105	

ADDITIONAL COMMENTS

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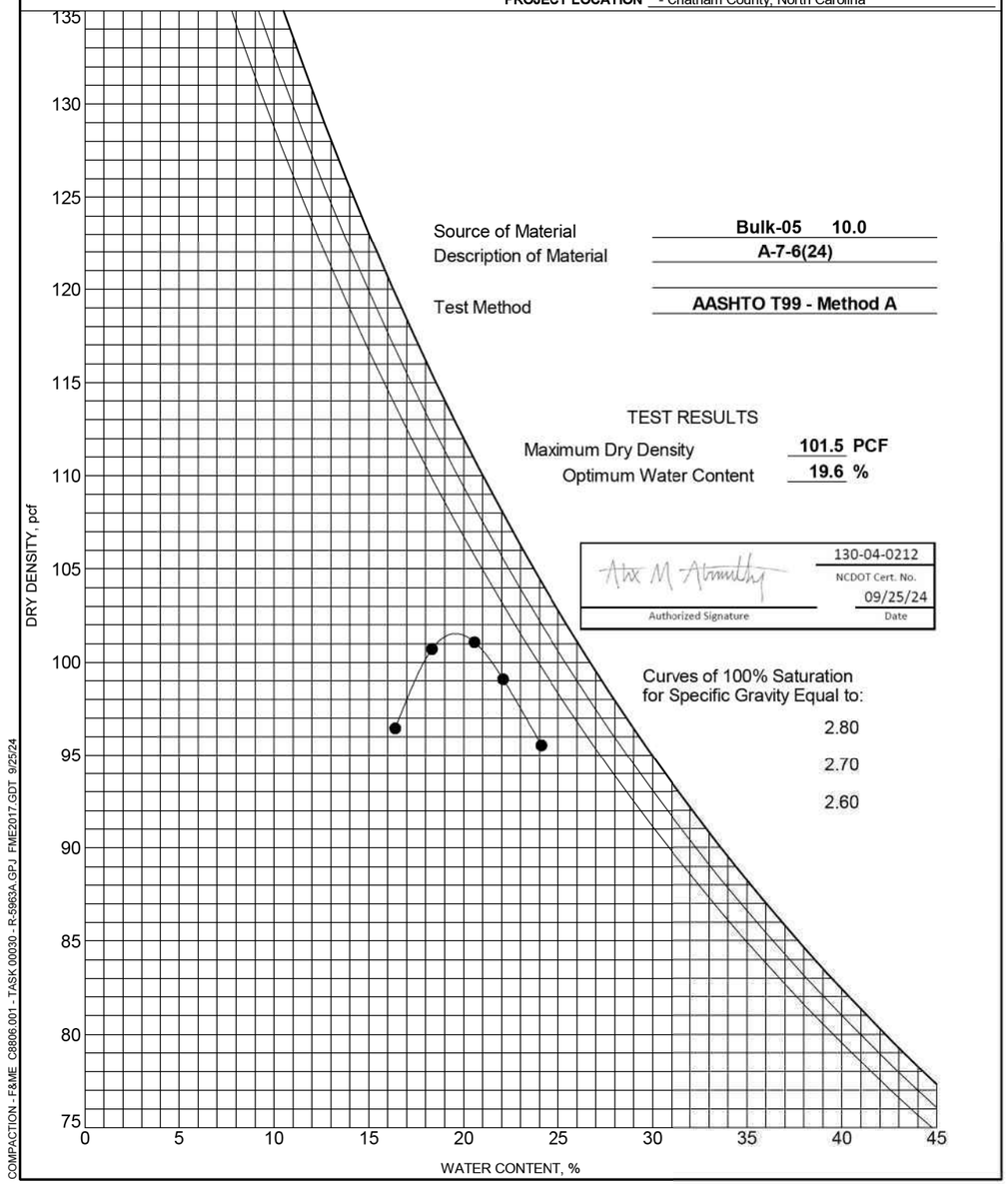
09/23/24 Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: Bulk-05 10.0

Description of Material: A-7-6(24)

Test Method: AASHTO T99 - Method A

TEST RESULTS

Maximum Dry Density: 101.5 PCF

Optimum Water Content: 19.6 %

Alex M Abernethy — Authorized Signature

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09/25/24 — Date

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 03/2024

SPECIFIC GRAVITY OF SOILS
(ASTM D854 / AASHTO T100)

Project Name:	Chatham Pkwy from US-501 to US 64 Business	**NCDOT STIP No.:**	R-5963A
FME Lab ID	24-2903	**Depth (ft.):**	0.0 - 10.0
Description of Soil:	A-7-6(24)	**Date Received:**	8/23/2024
Method:	A X B		
Tested By:	Alex Abernethy	**Date Tested:**	9/12/2024

Boring No.	Bulk-05			
Sample Depth (ft.)	0.0 - 10.0			
Volume of Flask at 20° C	500 mL			
Method of Air Removal	Boiling			
Mass Flask + Water + Soil (Wb)	759.79			
Test Temperature ° C (Tx)	24.0			
Mass Flask + Water (Wa)	697.26			
Container No.	J			
Mass of Container + Oven Dry Soil	299.28			
Mass of Container	199.28			
Mass of Oven Dry Soil (Wo)	100.00			
Specific Gravity @ Test Temperature Wo/[Wo+(Wa-Wb)]	2.669			
Specific Gravity (SG) K x Specific Gravity @ Test Temperature	2.666			

Remarks:

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No

9/25/2024 — Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

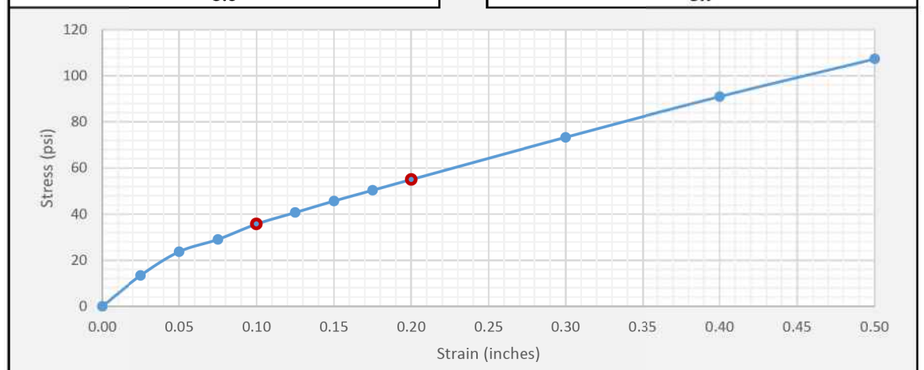
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-05 (Specimen A)			FME Lab ID	24-2903
Soil Description	A-7-6(24)			Depth/Elev.	0.0 - 10.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	101.5	Optimum Moisture Content (%)	19.6
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
3.6	**3.7**



Before Soaking	
Dry Density (lb/ft^3)	101.9
Moisture Content	19.1%
Percent Compaction	100.4%
Percent Shrink/Swell	--

After Soaking	
Dry Density (lb/ft^3)	94.8
Moisture Content (Top 1")	30.1%
Percent Compaction	93.4%
Percent Shrink/Swell	4.8%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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NCDOT Cert. No.

09/25/24
Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

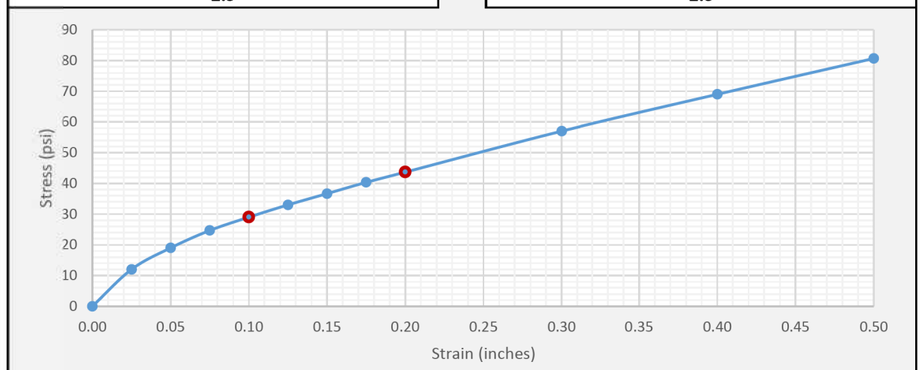
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-05 (Specimen B)			FME Lab ID	24-2903
Soil Description	A-7-6(24)			Depth/Elev.	0.0 - 10.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	101.5	Optimum Moisture Content (%)	19.6
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
2.9	**2.9**



Before Soaking	
Dry Density (lb/ft^3)	101.8
Moisture Content	19.1%
Percent Compaction	100.3%
Percent Shrink/Swell	--

After Soaking	
Dry Density (lb/ft^3)	94.5
Moisture Content (Top 1")	31.1%
Percent Compaction	93.1%
Percent Shrink/Swell	4.8%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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Authorized Signature

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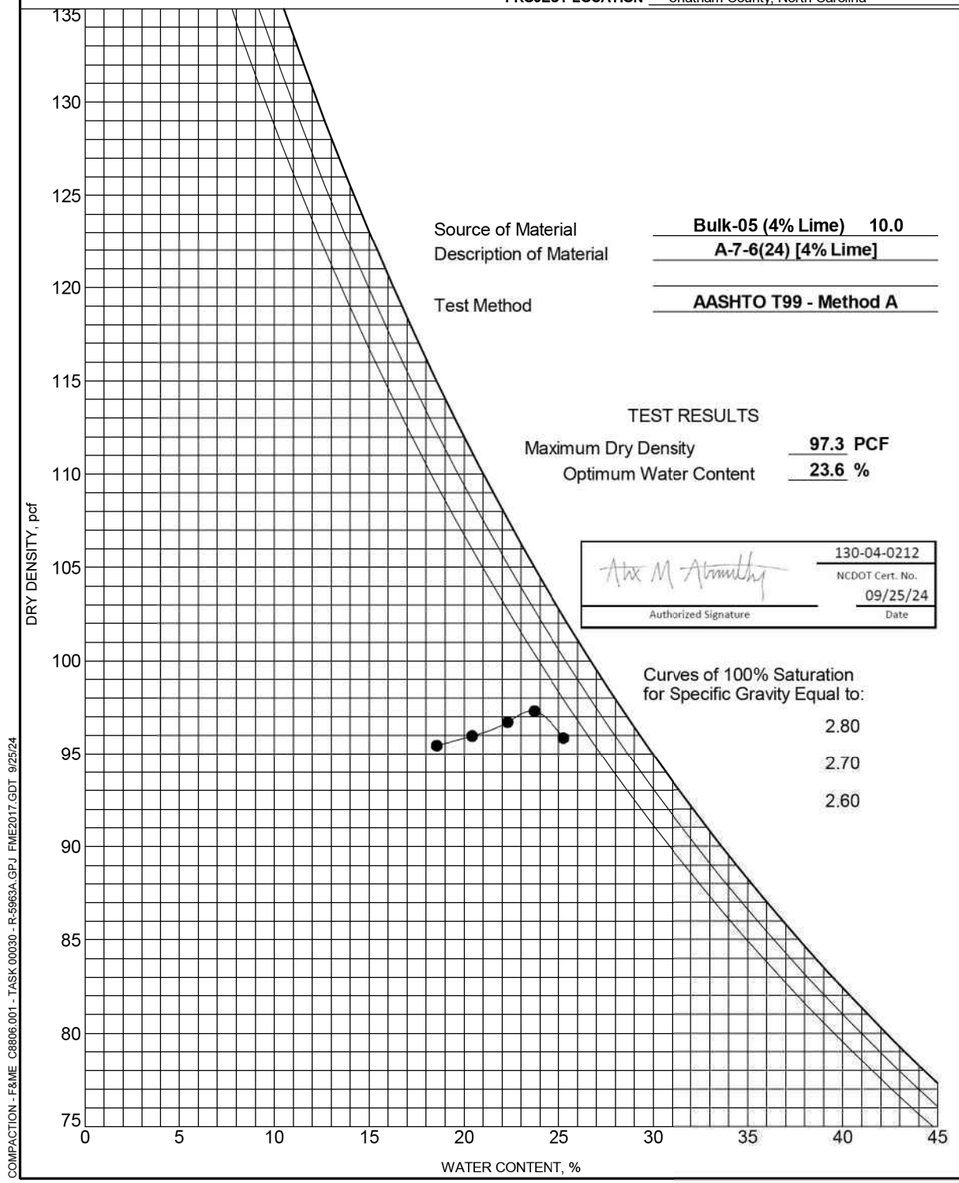
09/25/24
Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: **Bulk-05 (4% Lime) 10.0**

Description of Material: **A-7-6(24) [4% Lime]**

Test Method: **AASHTO T99 - Method A**

TEST RESULTS

Maximum Dry Density **97.3** PCF

Optimum Water Content **23.6** %

Authorized Signature — NCDOT Cert. No. 130-04-0212 — Date 09/25/24

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 08/2021

COMPRESSIVE STRENGTH OF MOLDED SOIL-LIME CYLINDERS
ASTM D-5102

SAMPLE INFORMATION

Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP #	R-5963A
Sample Location	Bulk-05			FME Lab ID	24-2821
Soil Description	A-7-6(24)			Depth/Elev.	0.0 - 10.0
Station	--			Offset	--
Date Sampled	--	Sampled By:	CG2	Date Received	08/22/24
Date Molded	09/12/24	Date Tested	09/19/24	Tested By	A. Abernethy

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Lime Added to Proctor	4%
Max Dry Density (lb/ft^3)	97.3	Optimum Moisture Content (%)	23.6

TESTING RESULTS

% Lime	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in.^{2})	Maximum Load (lbf)	Compressive Strength (psi)	Avgerage Compressive Strength (psi)
3%	7	22.9%	4.95	4.02	12.69	1,590	125	**125**
3%	7	22.6%	4.94	3.99	12.50	1,583	125	
5%	7	22.5%	4.90	3.99	12.50	1,744	140	**140**
5%	7	22.5%	4.95	3.99	12.50	1,758	140	

ADDITIONAL COMMENTS

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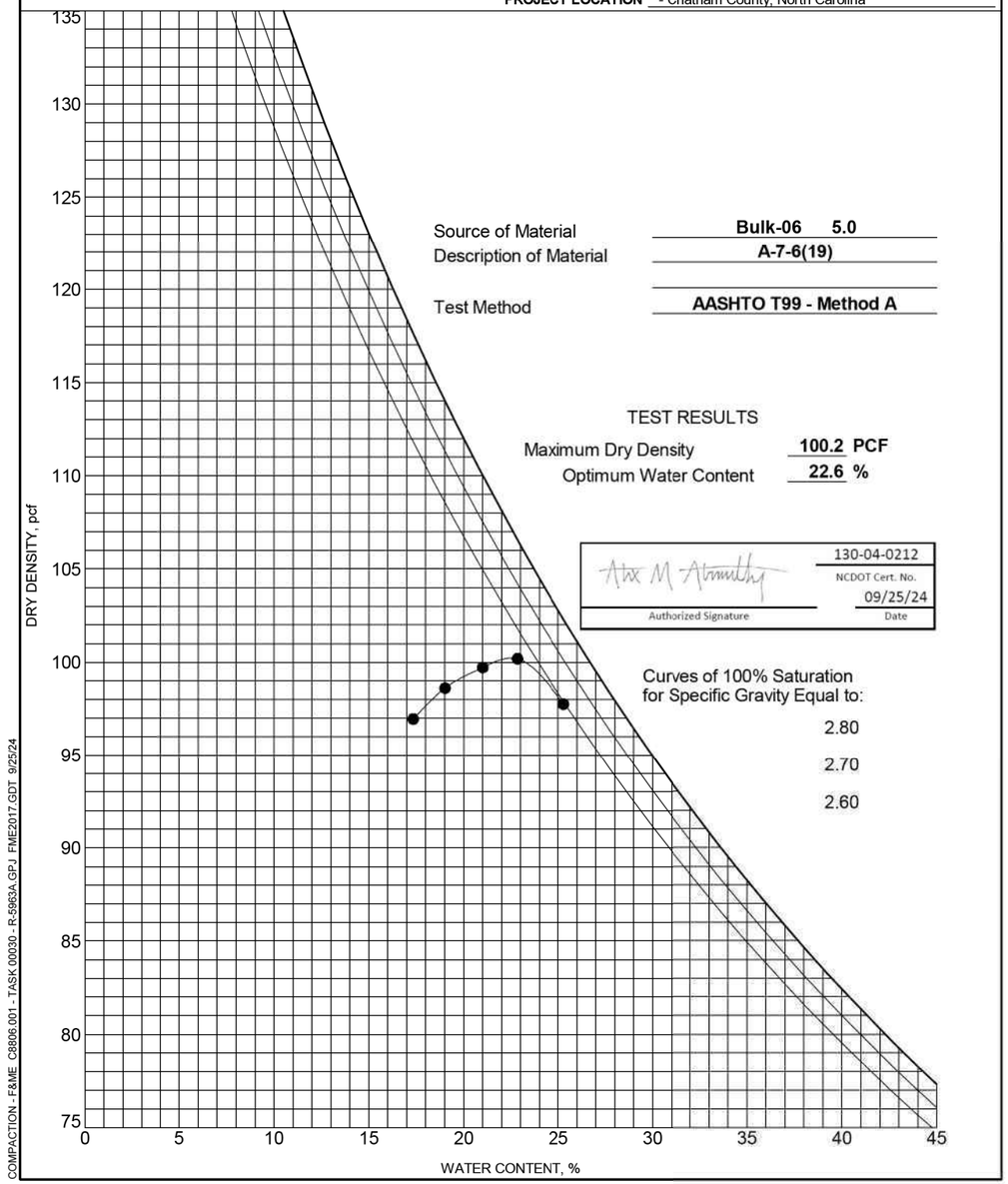
REV 03/2024

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: Bulk-06 5.0

Description of Material: A-7-6(19)

Test Method: AASHTO T99 - Method A

TEST RESULTS

Maximum Dry Density: 100.2 PCF

Optimum Water Content: 22.6 %

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No.

09/25/24 — Date

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

SPECIFIC GRAVITY OF SOILS
(ASTM D854 / AASHTO T100)

Project Name:	Chatham Pkwy from US-501 to US 64 Business	**NCDOT STIP No.:**	R-5963A
FME Lab ID	24-2820	**Depth (ft.):**	0.0 - 5.0
Description of Soil:	A-7-6(19)	**Date Received:**	8/23/2024
Method:	A X	**B**	
Tested By:	Alex Abernethy	**Date Tested:**	9/12/2024

Boring No.	Bulk-06			
Sample Depth (ft.)	0.0 - 5.0			
Volume of Flask at 20° C	500 mL			
Method of Air Removal	Boiling			
Mass Flask + Water + Soil (Wb)	763.88			
Test Temperature ° C (Tx)	24.0			
Mass Flask + Water (Wa)	701.46			
Container No.	K			
Mass of Container + Oven Dry Soil	303.73			
Mass of Container	203.73			
Mass of Oven Dry Soil (Wo)	100.00			
Specific Gravity @ Test Temperature Wo/[Wo+(Wa-Wb)]	2.661			
Specific Gravity (SG) K x Specific Gravity @ Test Temperature	2.659			

Remarks:

Alex M Abernethy — Authorized Signature

130-04-0212 — NCDOT Cert. No

9/25/2024 — Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

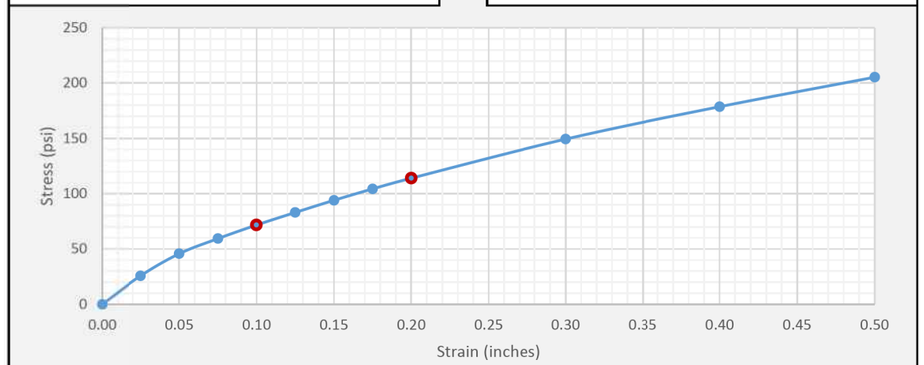
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-06 (Specimen A)			FME Lab ID	24-2820
Soil Description	A-7-6(19)			Depth/Elev.	0.0 - 5.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	100.2	Optimum Moisture Content (%)	22.6
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
7.2	**7.6**



Before Soaking		After Soaking	
Dry Density (lb/ft^3)	100.4	Dry Density (lb/ft^3)	100.3
Moisture Content	22.4%	Moisture Content (Top 1")	24.5%
Percent Compaction	100.2%	Percent Compaction	100.1%
Percent Shrink/Swell	--	Percent Shrink/Swell	0.5%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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130-04-0212
NCDOT Cert. No.

09/25/24
Date

REV 01/2023

CALIFORNIA BEARING RATIO (CBR)
AASHTO T193

SAMPLE INFORMATION

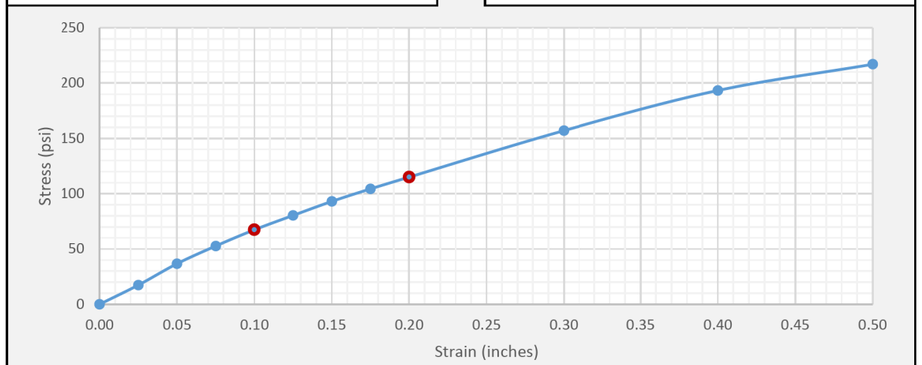
Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP NO.	R-5963A
Sample Location	Bulk-06 (Specimen B)			FME Lab ID	24-2820
Soil Description	A-7-6(19)			Depth/Elev.	0.0 - 5.0
Date Sampled	--	Sampled By:	CG2	Date Received	8/23/2024
Date Test Began	9/6/2024	Date Completed	9/10/2024	Tested By	AA/DH

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft^3)	100.2	Optimum Moisture Content (%)	22.6
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

TESTING RESULTS

CBR at 0.10-inch penetration	CBR at 0.20-inch penetration
6.7	**7.7**



Before Soaking		After Soaking	
Dry Density (lb/ft^3)	101.6	Dry Density (lb/ft^3)	100.1
Moisture Content	22.0%	Moisture Content (Top 1")	26.1%
Percent Compaction	101.4%	Percent Compaction	99.9%
Percent Shrink/Swell	--	Percent Shrink/Swell	0.5%

ADDITIONAL COMMENTS

Target %Compaction = 100%

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211 Business Park Blvd., Columbia, South Carolina 29203

Authorized Signature

130-04-0212
NCDOT Cert. No.

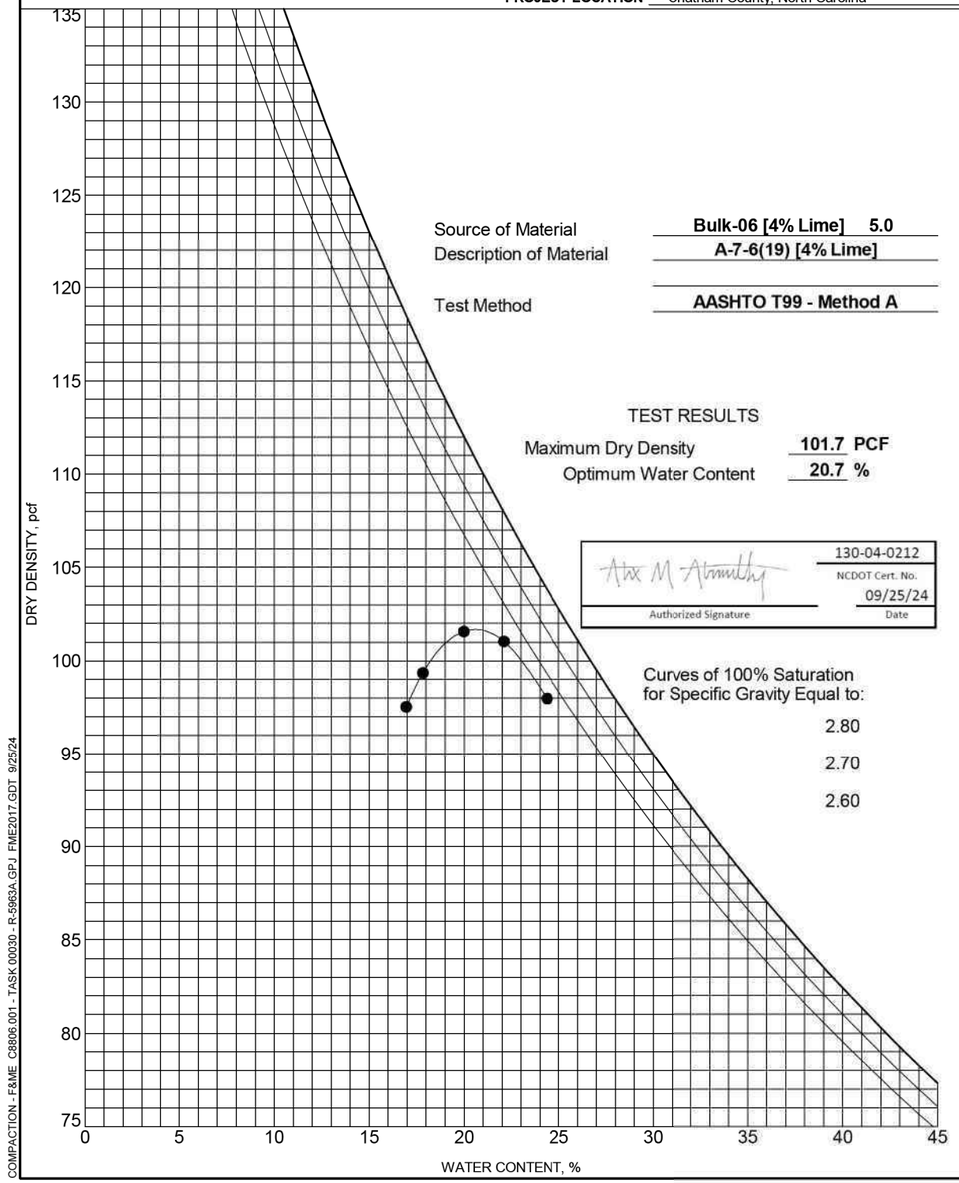
09/25/24
Date

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: **Bulk-06 [4% Lime] 5.0**

Description of Material: **A-7-6(19) [4% Lime]**

Test Method: **AASHTO T99 - Method A**

TEST RESULTS

Maximum Dry Density: **101.7 PCF**

Optimum Water Content: **20.7 %**

Authorized Signature — NCDOT Cert. No. 130-04-0212 — Date 09/25/24

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 08/2021

COMPRESSIVE STRENGTH OF MOLDED SOIL-LIME CYLINDERS
ASTM D-5102

SAMPLE INFORMATION

Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP #	R-5963A
Sample Location	Bulk-06			FME Lab ID	24-2820
Soil Description	A-7-6(19)			Depth/Elev.	0.0 - 5.0
Station	--			Offset	--
Date Sampled	--	Sampled By:	CG2	Date Received	08/22/24
Date Molded	09/12/24	Date Tested	09/19/24	Tested By	A. Abernethy

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Lime Added to Proctor	4%
Max Dry Density (lb/ft^3)	101.7	Optimum Moisture Content (%)	20.7

TESTING RESULTS

% Lime	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in.^{2})	Maximum Load (lbf)	Compressive Strength (psi)	Avgerage Compressive Strength (psi)
3%	7	20.7%	4.89	3.99	12.50	811	65	65
3%	7	20.7%	5.00	3.99	12.50	783	65	
5%	7	20.4%	4.92	3.99	12.50	883	70	75
5%	7	20.4%	4.95	4.00	12.57	918	75	

ADDITIONAL COMMENTS

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F&ME Consultants, Inc.
211 Business Park Blvd, Columbia, SC 29203

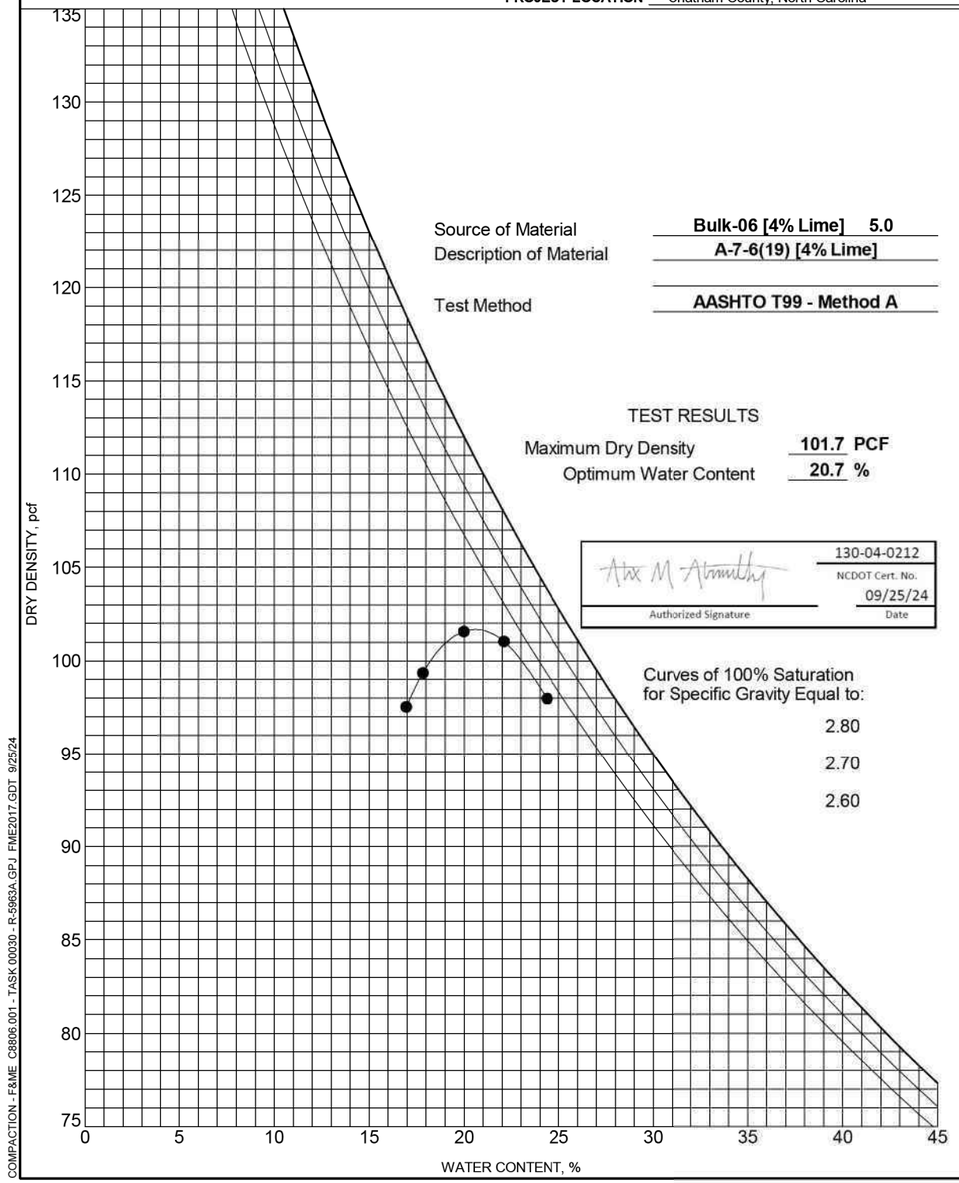
Authorized Signature — NCDOT Certification No. 130-04-0212 — Date 09/23/24

MOISTURE-DENSITY RELATIONSHIP

F&ME CONSULTANTS

PROJECT ID C8806.001 - Task 00031 (NCDOT TIP No. U-5875) **PROJECT NAME** Chatham Parkway from US 15 - 501 to US 64 Business

PROJECT LOCATION - Chatham County, North Carolina



Source of Material: **Bulk-06 [4% Lime] 5.0**

Description of Material: **A-7-6(19) [4% Lime]**

Test Method: **AASHTO T99 - Method A**

TEST RESULTS

Maximum Dry Density: **101.7 PCF**

Optimum Water Content: **20.7 %**

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Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION - F&ME C8806.001 - TASK 00030 - R-5963A.GPJ FME2017.GDT 9/25/24

REV 08/2021

COMPRESSIVE STRENGTH OF MOLDED SOIL-LIME CYLINDERS
ASTM D-5102

SAMPLE INFORMATION

Project Name	Chatham Parkway from US 15 - 501 to US 64 Business			NCDOT STIP #	R-5963A
Sample Location	Bulk-06			FME Lab ID	24-2820
Soil Description	A-7-6(19)			Depth/Elev.	0.0 - 5.0
Station	--			Offset	--
Date Sampled	--	Sampled By:	CG2	Date Received	08/22/24
Date Molded	09/12/24	Date Tested	09/19/24	Tested By	A. Abernethy

MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Lime Added to Proctor	4%
Max Dry Density (lb/ft^3)	101.7	Optimum Moisture Content (%)	20.7

TESTING RESULTS

% Lime	Age (Days)	Moisture Content	Height (in.)	Diameter (in.)	Area (in.^{2})	Maximum Load (lbf)	Compressive Strength (psi)	Avgerage Compressive Strength (psi)
3%	7	20.7%	4.89	3.99	12.50	811	65	65
3%	7	20.7%	5.00	3.99	12.50	783	65	
5%	7	20.4%	4.92	3.99	12.50	883	70	75
5%	7	20.4%	4.95	4.00	12.57	918	75	

ADDITIONAL COMMENTS

F&ME CONSULTANTS

F&ME Consultants, Inc.
211 Business Park Blvd, Columbia, SC 29203

Authorized Signature — NCDOT Certification No. 130-04-0212 — Date 09/23/24