

REFERENCE: U-4913A

PROJECT: 40543

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

ROADWAY  
SUBSURFACE INVESTIGATION

COUNTY MECKLENBURG

PROJECT DESCRIPTION PROPOSING TO WIDEN  
IDLEWILD ROAD (SR 3174) FROM DAVIS TRACE  
DRIVE TO I-485 INNER RAMPS AND REALIGN  
STALLINGS ROAD (SR 3175) FROM ITS CURRENT  
TERMINUS AT IDLEWILD ROAD TO DAVIS TRACE  
DRIVE

PAVEMENT AND SUBGRADE INVESTIGATION

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C.  | U-4913A                     | 1         | 36           |

CAUTION NOTICE

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

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

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

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

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SUBMITTED BY CG2, PLLC.

DATE JULY 2024

Prepared in the Office of:



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07/16/2024

SIGNATUREDATE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**

**GEOTECHNICAL ENGINEERING UNIT**

## ***SUBSURFACE INVESTIGATION***

## SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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<br>(≤ 35% PASSING #200) |             |                                 |             | SILT-CLAY MATERIALS<br>(> 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-4, A-5    | A-6, A-7   |  |
| 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 35 MX                                 | 35 MX 35 MX | 36 MN 36 MN | 36 MN 36 MN  | 36 MN 36 MN       |             |            |  |
| 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 |            |  |
| 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 |  |

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| 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 35 MX                                 | 35 MX 35 MX | 36 MN 36 MN | 36 MN 36 MN  | 36 MN 36 MN       |             |            |  |
| 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 |            |  |
| GROUP INDEX                    | 0                                          | 0           | 0                               | 4 MX        | 8 MX                                        | 12 MX       | 16 MX       | NO MX        |                   |             |            |  |
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| 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 35 MX                                 | 35 MX 35 MX | 36 MN 36 MN | 36 MN 36 MN  | 36 MN 36 MN       |             |            |  |
| 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 |            |  |
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| USUAL TYPES OF MAJOR MATERIALS | STONE FRAGS, GRAVEL, AND SAND              | FINE SAND   | SILTY OR CLAYEY GRAVEL AND SAND |             |                                             |             | SILTY SOILS | CLAYEY SOILS |                   |             |            |  |
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|----------------|--------------------------------------------|---|--|--|---------------------------------------------|--|--|--|-------------------|--|--|--|
| GROUP CLASS.   | A-1                                        | A |  |  |                                             |  |  |  |                   |  |  |  |

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          |
| LITTLE ORGANIC MATTER   | 3 - 5%         | 5 - 12%           | LITTLE         |
| MODERATELY ORGANIC      | 5 - 10%        | 12 - 20%          | SOME           |
| HIGHLY ORGANIC          | > 10%          | > 20%             | HIGHLY         |

GROUND WATER

WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING  
STATIC WATER LEVEL AFTER 24 HOURS  
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  
DIP & DIP DIRECTION OF ROCK STRUCTURES  
TEST BORING  
AUGER BORING  
CORE BORING  
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  
HL - 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  
γd - 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  
☒ MOBILE B-29

ADVANCING TOOLS:  
☐ CLAY BITS  
☐ 6" CONTINUOUS FLIGHT AUGER  
☒ 4" SOLID STEM AUGERS  
☐ HARD FACED FINGER BITS  
☐ TUNG-CARBIDE INSERTS  
☐ CASING ☐ W/ ADVANCER  
☐ TRICONE \_\_\_\_\_ " STEEL TEETH  
☐ TRICONE \_\_\_\_\_ " TUNG-CARB.  
☒ 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  
☒ 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 YIELD 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 FINGER NAIL.

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

Tip No. U-4913A| WBS No. 40543.1.3| Mecklenburg County

ABBREVIATIONS

|                           |                                         |
|---------------------------|-----------------------------------------|
| RT LN = Right Lane        | CR = Crown                              |
| LT LN = Left Lane         | S = Super                               |
| OSL = Outside Lane        | C = Cut                                 |
| ISL = Inside Lane         | F = Fill                                |
| OSML = Outside Mid-Lane   | DCP = Dynamic Cone Penetrometer         |
| ISML = Inside Mid-Lane    | M = Moist                               |
| PS = Paved Shoulder       | W = Wet                                 |
| LTL = Left Turn Lane      | N/A = Not Observed                      |
| RTL = Right Turn Lane     | NSR = No Sample Recovered               |
| MID = Middle Lane         | S- = Soil Grab Sample                   |
| CTL = Center Turn Lane    | Ref- = Soil Reference Sample            |
| ISWP = Inside Wheel Path  | SS- = Split Spoon Sample                |
| OSWP = Outside Wheel Path | RE = Roadway Embankment                 |
| PS = Paved Shoulder       | F. = Fine                               |
| FW = From White Line      | Cse. = Coarse                           |
| FY = From Yellow Line     | ABC = Aggregate Base Course             |
| RT = Right                | STBC = Soil Type Base Course            |
| LT = Left                 | CSS = Cement Stabilized Subgrade        |
| (I) = Inside              | SG = Subgrade                           |
| (O) = Outside             | AF= Artificial Fill                     |
| BOC = Back of Curb        | FDR = Full Depth Reclamation            |
| C&G = Curb and Gutter     | HP = Highly Plastic                     |
| EOP = Edge of Pavement    | MP = Moderately Plastic                 |
|                           | SAA = Same as Above                     |
|                           | FEA = Flattened and Elongated Aggregate |

| PROJECT REFERENCE NO. | SHEET NO. |
|-----------------------|-----------|
| U-4913A               | 3         |

***THIS SHEET LEFT INTENTIONALLY BLANK AS A PLACEHOLDER  
UNTIL A ROADWAY TITLESHEET BECOMES AVAILABLE***

NC GRID  
NAD 83 NA 2011

|                          |         |
|--------------------------|---------|
| C-3 -L- STA. 12+18 LT LN |         |
| 0.3 FT LT FW             |         |
| PAVEMENT SECTION         |         |
| ASPHALT                  | 9.75 in |

|                              |         |
|------------------------------|---------|
| C-2 -L- STA. 12+18 RT LN (I) |         |
| 2.6 FT LT FW                 |         |
| PAVEMENT SECTION             |         |
| ASPHALT                      | 7.75 in |
| ABC                          | 6.25    |
| C-1 -L- STA. 12+18 RT LN (O) |         |
| 0.2 FT LT FW                 |         |
| PAVEMENT SECTION             |         |
| ASPHALT                      | 9.25 in |

C-3 LT LN  
C-2 RT LN (I)  
C-1 RT LN (O)

-Y2- END 11+10.07

15+00

10+00

N  
NAD 83 NA 2011

|                          |          |
|--------------------------|----------|
| C-4 -L- STA. 22+10 LT LN |          |
| 1.2 FT LT FW             |          |
| PAVEMENT SECTION         |          |
| ASPHALT                  | 19.00 in |
| UTILITY PRESENT          |          |

|                        |         |                          |         |
|------------------------|---------|--------------------------|---------|
| C-5 -L- STA. 22+10 LTL |         | C-6 -L- STA. 22+10 RT LN |         |
| 6.0 FT RT FY           |         | 1.2 FT LT FW             |         |
| PAVEMENT SECTION       |         | PAVEMENT SECTION         |         |
| ASPHALT                | 7.00 in | ASPHALT                  | 9.25 in |
| ABC                    | 7.00 in | ABC                      | 6.75 in |

CUR DATA -L-  
MC 21+44.57  
Ac = 103°37'28.5" (RT)  
D = ###  
Lc = 90.71  
Tc = 45.46  
B = 140  
SE = 0.000

NC GRID  
NAD 83 NA 2011

|                          |          |
|--------------------------|----------|
| C-7 -L- STA. 28+50 LT LN |          |
| 0.5 FT LT FW             |          |
| PAVEMENT SECTION         |          |
| ASPHALT                  | 15.00 in |
| UTILITY PRESENT          |          |

|                          |          |
|--------------------------|----------|
| C-8 -L- STA. 28+50 RT LN |          |
| 1.0 FT LT FW             |          |
| PAVEMENT SECTION         |          |
| ASPHALT                  | 11.00 in |

CUR DATA -L-  
Pic #  
Δc = (LT)  
D =  
Lc = 123.19  
H = 1.63  
R = 1450  
SE = 0.000

|                          |               |
|--------------------------|---------------|
| C-9 -L- STA. 33+40 LT PS |               |
| 2.3 FT RT FW             |               |
| PAVEMENT SECTION         |               |
| ASPHALT                  | 10.25 in      |
| ABC                      | 6.00 in (+/-) |
| UTILITY PRESENT          |               |

|                           |          |                             |          |
|---------------------------|----------|-----------------------------|----------|
| C-10 -L- STA. 33+40 LT LN |          | C-11 -L- STA. 33+40 LTL(LT) |          |
| 2.0 FT LT FW              |          | 4.0 FT RT FY                |          |
| PAVEMENT SECTION          |          | PAVEMENT SECTION            |          |
| ASPHALT                   | 10.25 in | ASPHALT                     | 11.25 in |
| ABC                       | 7.75 in  | ABC                         | 6.75 in  |

|                             |          |                            |               |
|-----------------------------|----------|----------------------------|---------------|
| C-12 -L- STA. 33+40 LTL(RT) |          | C-13 -L- STA. 33+40 RT ISL |               |
| 6.8 FT RT FY                |          | 18.3 FT LT FW              |               |
| PAVEMENT SECTION            |          | PAVEMENT SECTION           |               |
| ASPHALT                     | 11.00 in | ASPHALT                    | 12.75 in      |
| ABC                         | 8.00 in  | ABC                        | 7.25 in       |
| C-14 -L- STA. 33+40 RT OSL  |          | C-15 -L- STA. 33+40 RT PS  |               |
| 3.0 FT LT FW                |          | 2.0 FT RT FW               |               |
| PAVEMENT SECTION            |          | PAVEMENT SECTION           |               |
| ASPHALT                     | 11.00 in | ASPHALT                    | 11.50 in      |
| ABC                         | 8.00 in  | ABC                        | 6.00 in (+/-) |
|                             |          | UTILITY PRESENT            |               |

NC GRID  
NAD 83 NA 2011

CUR DATA -Y3-  
PIC 20+85.92  
 $\Delta c = 04.59266'$  (RT)  
D = #1#  
LC = 201.70  
TC = 103.41  
R = 2.35d  
SE = 0.000

|                            |          |
|----------------------------|----------|
| C-17 -Y3- STA. 30+48 RT PS |          |
| 0.3 FT RT FW               |          |
| PAVEMENT SECTION           |          |
| ASPHALT                    | 11.00 in |
| C-18 -Y3- STA. 30+48 RT LN |          |
| 2.2 FT LT FW               |          |
| PAVEMENT SECTION           |          |
| ASPHALT                    | 8.75 in  |
| ABC                        | 5.50 in  |

|                            |          |
|----------------------------|----------|
| C-16 -Y3- STA. 30+48 LT LN |          |
| 0.3 FT LT FW               |          |
| PAVEMENT SECTION           |          |
| ASPHALT                    | 11.25 in |
| UTILITY PRESENT            |          |

PAVEMENT INVESTIGATION DATA SHEET

|          |           |
|----------|-----------|
| Project: | 40543.1.3 |
| TIP:     | U-4913A   |

|         |                                                                                                                                                                                                       |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Route:  | Proposing to widen Idlewild Road (SR 3174) from Davis Trace Drive to I-485 Inner Ramps and realign Stallings Road (SR 3174) from its current terminus at Idlewild Road (SR 3174) to Davis Trace Drive |
| County: | Mecklenburg                                                                                                                                                                                           |

|                  |                               |
|------------------|-------------------------------|
| Date Performed:  | 4/3/2024 - 4/4/2024 (1 Night) |
| 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           | Stabilized Subgrade | Concrete | Pavement Layering    | Description (Depth - ft)                                                                                                      | Soil Sample Number | AASHTO Classification | Soil Moisture | Boring Depth (ft) | Asphalt Notes                                                                                          | Northing        | Easting   |
| C-3<br>-L- Sta. 12+18<br>LT LN     | Cut<br>8.0                     | 11.0       | 1.0 PS    | 0.3 LT<br>FW                | Cr                      | 9.75                 | 9.75    | -             | -                   | -        | Asphalt<br>SG        | 0.8 - 5.0: RES, Orange-Tan Silty CLAY, HP                                                                                     | S-3                | A-7-5(43)             | W             | 5.0               | Low to Moderate Severity Longitudinal and Transverse Cracking                                          | 507,057         | 1,502,286 |
| C-2<br>-L- Sta. 12+18<br>RT LN (I) | Cut<br>5.0                     | 11.0       | 1.0 PS    | 2.6 LT<br>FW                | Cr                      | 14.00                | 7.75    | 6.25          | -                   | -        | Asphalt<br>ABC<br>SG | 1.2 - 5.0: RES, Orange-Tan Silty CLAY, HP                                                                                     | S-2                | A-7-6(27)             | W             | 5.0               | Low to Moderate Severity Longitudinal and Transverse Cracking                                          | 507,040         | 1,502,277 |
| C-1<br>-L- Sta. 12+18<br>RT LN (O) | Cut<br>5.0                     | 11.0       | 1.0 PS    | 0.2 LT<br>FW                | Cr                      | 9.25                 | 9.25    | -             | -                   | -        | Asphalt<br>SG        | 0.8 - 5.0: RES, Orange-Tan Silty CLAY, HP                                                                                     | Ref-2              | A-7-6                 | W             | 5.0               | Low to Moderate Severity Longitudinal and Transverse Cracking                                          | 507,038         | 1,502,275 |
| C-4<br>-L- Sta. 22+10<br>LT LN     | At<br>Grade                    | 11.0       | 1.0 PS    | 1.2 LT<br>FW                | Cr                      | 19.00                | 19.00   | -             | -                   | -        | Asphalt<br>SG        | RES, Orange-Tan Silty CLAY, HP<br>Utility near test location, DCP not performed to full depth, no auger performed             | Ref-5              | A-7-5                 | M             | -                 | Low to Moderate Severity Joint Crack (LT LN/LTL), Low to Moderate Severity Transverse Cracking         | 506,554         | 1,503,156 |
| C-5<br>-L- Sta. 22+10<br>LTL       | At<br>Grade                    | 11.0       | -         | 6.0 RT<br>FY                | Cr                      | 14.00                | 7.00    | 7.00          | -                   | -        | Asphalt<br>ABC<br>SG | 1.2 - 5.0: RES, Orange-Tan Silty CLAY, HP                                                                                     | S-5                | A-7-5(37)             | M             | 5.0               | Low to Moderate Severity Join Crack (LT LN/LTL), Low to Moderate Severity Transverse Cracking          | 506,541         | 1,503,144 |
| C-6<br>-L- Sta. 22+10<br>RT LN     | At<br>Grade                    | 11.0       | 1.0 PS    | 1.2 LT<br>FW                | Cr                      | 16.00                | 9.25    | 6.75          | -                   | -        | Asphalt<br>ABC<br>SG | 1.3 - 5.0: RES, Orange-Tan Silty CLAY, MP                                                                                     | S-6                | A-7-5(18)             | M             | 5.0               | Low to Moderate Severity Transverse Cracking<br><b>Full Depth Crack In Core</b>                        | 506,530         | 1,503,134 |
| C-7<br>-L- Sta. 28+50<br>LT LN     | Cut<br>5.0                     | 11.0       | 3.0 PS    | 0.5 LT<br>FW                | Cr                      | 15.00                | 15.00   | -             | -                   | -        | Asphalt<br>SG        | RES, Orange-Tan, Silty CLAY, HP<br>Utility near test location, DCP not performed to full depth, no auger performed            | Ref-8              | A-7-5                 | M             | -                 | No Distress Observed                                                                                   | 506,156         | 1,503,650 |
| C-8<br>-L- Sta. 28+50<br>RT LN     | Cut<br>5.0                     | 11.0       | 1.0 PS    | 1.0 LT<br>FW                | Cr                      | 11.00                | 11.00   | -             | -                   | -        | Asphalt<br>SG        | 0.9 - 5.0: RES, Orange-Tan, Silty CLAY, HP                                                                                    | S-8                | A-7-5(44)             | M             | 5.0               | No Distress Observed                                                                                   | 506,134         | 1,503,628 |
| C-9<br>-L- Sta. 33+40<br>LT PS     | Fill<br>5.0                    | 11.0       | 6.0 PS    | 2.3 RT<br>FW                | Cr                      | 16.25                | 10.25   | 6.00<br>(+/-) | -                   | -        | Asphalt<br>ABC       | RE - Orange-Tan, Silty CLAY<br>Utility near test location, DCP not performed to full depth, no auger performed                | Ref-10             | A-7-5                 | M             | -                 | Moderate to High Severity Longitudinal and Transverse Cracking, Low to Moderate Severity Edge Cracking | 505,825         | 1,504,007 |
| C-10<br>-L- Sta. 33+40<br>LT LN    | 5.0<br>Fill                    | 11.0       | 6.0<br>PS | 2.0 LT<br>FW                | Cr                      | 18.00                | 10.25   | 7.75          | -                   | -        | Asphalt<br>ABC<br>SG | 1.5-5.0: RE - Orange-Tan, Silty CLAY                                                                                          | S-10               | A-7-5(11)             | W             | 5.0               | Moderate to High Severity Longitudinal and Transverse Cracking                                         | 505,821         | 1,504,004 |
| C-11<br>-L- Sta. 33+40<br>LTL(LT)  | 5.0<br>Fill                    | 12.0       | -         | 4.0 RT<br>FY                | Cr                      | 18.00                | 11.25   | 6.75          | -                   | -        | Asphalt<br>ABC<br>SG | 1.5-5.0: RE - Orange-Tan Fine to Coarse Sandy CLAY, MP                                                                        | S-11               | A-6(7)                | M             | 5.0               | Moderate to High Severity Longitudinal and Transverse Cracking<br><b>4 Inch Top-down Crack in Core</b> | 505,808         | 1,503,993 |
| C-12<br>-L- Sta. 33+40<br>LTL(RT)  | 5.0<br>Fill                    | 12.0       | -         | 6.8 RT<br>FY                | Cr                      | 19.00                | 11.00   | 8.00          | -                   | -        | Asphalt<br>ABC<br>SG | 1.6-5.0: RE - Orange-Tan, Silty CLAY, MP                                                                                      | S-12               | A-7-6(10)             | W             | 5.0               | Moderate to High Severity Longitudinal and Transverse Cracking<br><b>Full Depth Crack In Core</b>      | 505,799         | 1,503,985 |
| C-13<br>-L- Sta. 33+40<br>RT ISL   | 5.0<br>Fill                    | 12.0       | -         | 18.3 LT<br>FW               | Cr                      | 20.00                | 12.75   | 7.25          | -                   | -        | Asphalt<br>ABC<br>SG | 1.7-5.0: RE - Orange-Tan, Fine to Coarse Sandy CLAY                                                                           | Ref-14             | A-6                   | M             | 5.0               | Moderate to High Severity Longitudinal and Transverse Cracking<br><b>2 Inch Top-down Crack In Core</b> | 505,792         | 1,503,978 |
| C-14<br>-L- Sta. 33+40<br>RT OSL   | 5.0<br>Fill                    | 11.0       | 4.5<br>PS | 3.0 LT<br>FW                | Cr                      | 19.00                | 11.00   | 8.00          | -                   | -        | Asphalt<br>ABC<br>SG | 1.6-5.0: RE - Orange-Tan Fine to Coarse Sandy CLAY                                                                            | S-14               | A-6(4)                | M             | 5.0               | Moderate to High Severity Longitudinal and Transverse Cracking<br><b>8 Inch Top-down Crack in Core</b> | 505,780         | 1,503,968 |
| C-15<br>-L- Sta. 33+40<br>RT PS    | 5.0<br>Fill                    | 11.0       | 4.5<br>PS | 2.0 RT<br>FW                | Cr                      | 17.50                | 11.50   | 6.00<br>(+/-) | -                   | -        | Asphalt<br>ABC       | RE - Orange-Tan, Fine to Coarse Sandy CLAY<br>Utility near test location, DCP not performed to full depth, no auger performed | Ref-14             | A-6                   | M             | -                 | Moderate to High Severity Longitudinal & Transverse Cracking, Low to Moderate Severity Edge Cracking   | 505,776         | 1,503,965 |

Notes:  
Offset Distance: Left and Right Relative to the Direction of Travel  
(+/-) ABC thickness estimated from DCP results

Prepared by:  
Reviewed by:

CTW  
DMB

# PAVEMENT INVESTIGATION DATA SHEET

|          |           |
|----------|-----------|
| Project: | 40543.1.3 |
| TIP:     | U-4913A   |

|         |                                                                                                                                                                                                       |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Route:  | Proposing to widen Idlewild Road (SR 3174) from Davis Trace Drive to I-485 Inner Ramps and realign Stallings Road (SR 3174) from its current terminus at Idlewild Road (SR 3174) to Davis Trace Drive |
| County: | Mecklenburg                                                                                                                                                                                           |

|                  |                               |
|------------------|-------------------------------|
| Date Performed:  | 4/3/2024 - 4/4/2024 (1 Night) |
| Field Personnel: | T. Wenner, CG2 Exploration    |

[illegible]

Notes:

Offset Distance: Left and Right Relative to the Direction of Travel  
(+/-) ABC thickness estimated from DCP results

Prepared by:  
Reviewed by:

CTW  
DME

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |  |            |  |  | WBS NO.                                | PROJECT TIP I.D.   | ROUTE                                                                  |  |       |  |              |          |
|------------------------------------------------|------------------------|--|------------|--|--|----------------------------------------|--------------------|------------------------------------------------------------------------|--|-------|--|--------------|----------|
|                                                |                        |  |            |  |  | 40543.1.3                              | U-4913A            | Idlewild Road (SR 3174) from David Trace<br>Drive to I-485 Inner Ramps |  |       |  |              |          |
|                                                |                        |  |            |  |  | COUNTY                                 | FIELD PROFESSIONAL | FIELD CREW                                                             |  |       |  |              |          |
|                                                |                        |  |            |  |  | Mecklenburg                            | T. Wenner          | CG2 Exploration                                                        |  |       |  |              |          |
| Test Location                                  |                        |  |            |  |  | Test Location                          |                    |                                                                        |  |       |  | Date Run     |          |
| C-3 -L- Sta. 12+18 LT LN 0.3 LT FW             |                        |  |            |  |  | C-2 -L- Sta. 12+18 RT LN (I) 2.6 LT FW |                    |                                                                        |  |       |  | 4/3-4/4/2024 |          |
| Type                                           | Test Interval          |  | Datum      |  |  | Cut/Fill                               | Type               | Test Interval                                                          |  | Datum |  |              | Cut/Fill |
| DCP                                            | Cumulative cm per blow |  | SG (A-7-5) |  |  | 8.0 Cut                                | DCP                | Cumulative cm per blow                                                 |  | ABC   |  |              | 5.0 Cut  |
| 3.46                                           | 104.94                 |  |            |  |  |                                        | 1.88               | 92.95                                                                  |  |       |  |              |          |
| 6.05                                           | 105.96                 |  |            |  |  |                                        | 2.96               | 93.94                                                                  |  |       |  |              |          |
| 7.69                                           | 106.72                 |  |            |  |  |                                        | 4.26               | 94.46                                                                  |  |       |  |              |          |
| 8.45                                           | 107.52                 |  |            |  |  |                                        | 5.77               | 95.22                                                                  |  |       |  |              |          |
| 9.09                                           | 108.29                 |  |            |  |  |                                        | 8.79               | 95.86                                                                  |  |       |  |              |          |
| 9.83                                           | 108.99                 |  |            |  |  |                                        | 12.53              | 96.39                                                                  |  |       |  |              |          |
| 10.61                                          | 109.82                 |  |            |  |  |                                        | 15.79              | 97.28                                                                  |  |       |  |              |          |
| 10.99                                          | 110.60                 |  |            |  |  |                                        | 18.29              | 97.85                                                                  |  |       |  |              |          |
| 11.93                                          | 111.42                 |  |            |  |  |                                        | 21.54              | 98.64                                                                  |  |       |  |              |          |
| 12.59                                          | 112.28                 |  |            |  |  |                                        | 24.08              | 99.23                                                                  |  |       |  |              |          |
| 13.99                                          | 113.06                 |  |            |  |  |                                        | 26.20              | 100.00                                                                 |  |       |  |              |          |
| 16.09                                          | 113.85                 |  |            |  |  |                                        | 28.25              | 100.42                                                                 |  |       |  |              |          |
| 20.05                                          | 114.56                 |  |            |  |  |                                        | 30.48              | 101.03                                                                 |  |       |  |              |          |
| 23.60                                          | 115.54                 |  |            |  |  |                                        | 32.84              | 101.69                                                                 |  |       |  |              |          |
| 27.35                                          | 116.28                 |  |            |  |  |                                        | 34.49              | 102.28                                                                 |  |       |  |              |          |
| 30.84                                          | 117.23                 |  |            |  |  |                                        | 36.46              | 102.84                                                                 |  |       |  |              |          |
| 33.89                                          | 118.08                 |  |            |  |  |                                        | 38.35              | 103.71                                                                 |  |       |  |              |          |
| 36.48                                          | 119.00                 |  |            |  |  |                                        | 40.18              | 104.09                                                                 |  |       |  |              |          |
| 39.24                                          | 119.51                 |  |            |  |  |                                        | 42.21              | 104.66                                                                 |  |       |  |              |          |
| 41.55                                          | 119.95                 |  |            |  |  |                                        | 43.98              | 105.11                                                                 |  |       |  |              |          |
| 43.80                                          | 120.62                 |  |            |  |  |                                        | 45.99              | 105.87                                                                 |  |       |  |              |          |
| 46.30                                          | 121.29                 |  |            |  |  |                                        | 47.54              | 106.29                                                                 |  |       |  |              |          |
| 48.75                                          | 122.03                 |  |            |  |  |                                        | 49.20              | 107.06                                                                 |  |       |  |              |          |
| 50.81                                          | 123.05                 |  |            |  |  |                                        | 51.01              | 107.49                                                                 |  |       |  |              |          |
| 53.09                                          |                        |  |            |  |  |                                        | 52.85              | 108.14                                                                 |  |       |  |              |          |
| 55.05                                          |                        |  |            |  |  |                                        | 54.05              | 108.72                                                                 |  |       |  |              |          |
| 56.79                                          |                        |  |            |  |  |                                        | 55.89              | 109.20                                                                 |  |       |  |              |          |
| 58.46                                          |                        |  |            |  |  |                                        | 57.66              | 109.70                                                                 |  |       |  |              |          |
| 60.07                                          |                        |  |            |  |  |                                        | 59.00              | 110.36                                                                 |  |       |  |              |          |
| 61.68                                          |                        |  |            |  |  |                                        | 60.23              | 111.01                                                                 |  |       |  |              |          |
| 62.92                                          |                        |  |            |  |  |                                        | 61.87              | 111.68                                                                 |  |       |  |              |          |
| 64.99                                          |                        |  |            |  |  |                                        | 63.13              | 112.18                                                                 |  |       |  |              |          |
| 67.16                                          |                        |  |            |  |  |                                        | 64.36              | 112.80                                                                 |  |       |  |              |          |
| 68.32                                          |                        |  |            |  |  |                                        | 65.64              | 113.51                                                                 |  |       |  |              |          |
| 69.79                                          |                        |  |            |  |  |                                        | 66.85              | 114.37                                                                 |  |       |  |              |          |
| 71.18                                          |                        |  |            |  |  |                                        | 67.95              | 114.85                                                                 |  |       |  |              |          |
| 72.84                                          |                        |  |            |  |  |                                        | 69.25              | 115.54                                                                 |  |       |  |              |          |
| 74.12                                          |                        |  |            |  |  |                                        | 70.22              | 116.21                                                                 |  |       |  |              |          |
| 75.50                                          |                        |  |            |  |  |                                        | 71.16              | 117.00                                                                 |  |       |  |              |          |
| 76.97                                          |                        |  |            |  |  |                                        | 71.96              | 117.67                                                                 |  |       |  |              |          |
| 78.23                                          |                        |  |            |  |  |                                        | 72.71              | 118.13                                                                 |  |       |  |              |          |
| 79.66                                          |                        |  |            |  |  |                                        | 73.68              | 118.92                                                                 |  |       |  |              |          |
| 81.17                                          |                        |  |            |  |  |                                        | 74.54              |                                                                        |  |       |  |              |          |
| 82.65                                          |                        |  |            |  |  |                                        | 75.69              |                                                                        |  |       |  |              |          |
| 83.88                                          |                        |  |            |  |  |                                        | 76.50              |                                                                        |  |       |  |              |          |
| 85.19                                          |                        |  |            |  |  |                                        | 77.28              |                                                                        |  |       |  |              |          |
| 86.55                                          |                        |  |            |  |  |                                        | 77.94              |                                                                        |  |       |  |              |          |
| 87.75                                          |                        |  |            |  |  |                                        | 78.75              |                                                                        |  |       |  |              |          |
| 88.90                                          |                        |  |            |  |  |                                        | 79.56              |                                                                        |  |       |  |              |          |
| 90.10                                          |                        |  |            |  |  |                                        | 80.39              |                                                                        |  |       |  |              |          |
| 91.15                                          |                        |  |            |  |  |                                        | 81.10              |                                                                        |  |       |  |              |          |
| 92.18                                          |                        |  |            |  |  |                                        | 82.09              |                                                                        |  |       |  |              |          |
| 93.25                                          |                        |  |            |  |  |                                        | 82.87              |                                                                        |  |       |  |              |          |
| 94.36                                          |                        |  |            |  |  |                                        | 83.89              |                                                                        |  |       |  |              |          |
| 95.21                                          |                        |  |            |  |  |                                        | 84.68              |                                                                        |  |       |  |              |          |
| 96.23                                          |                        |  |            |  |  |                                        | 85.43              |                                                                        |  |       |  |              |          |
| 97.00                                          |                        |  |            |  |  |                                        | 86.12              |                                                                        |  |       |  |              |          |
| 98.12                                          |                        |  |            |  |  |                                        | 86.98              |                                                                        |  |       |  |              |          |
| 99.14                                          |                        |  |            |  |  |                                        | 87.82              |                                                                        |  |       |  |              |          |
| 100.11                                         |                        |  |            |  |  |                                        | 88.44              |                                                                        |  |       |  |              |          |
| 100.99                                         |                        |  |            |  |  |                                        | 89.38              |                                                                        |  |       |  |              |          |
| 101.60                                         |                        |  |            |  |  |                                        | 90.37              |                                                                        |  |       |  |              |          |
| 102.47                                         |                        |  |            |  |  |                                        | 91.05              |                                                                        |  |       |  |              |          |
| 103.15                                         |                        |  |            |  |  |                                        | 91.83              |                                                                        |  |       |  |              |          |
| 104.02                                         |                        |  |            |  |  |                                        | 92.34              |                                                                        |  |       |  |              |          |

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |        |  |            |  | WBS NO.      |  | PROJECT TIP I.D.                   |                        |  |  | ROUTE                                                               |  |              |  |
|------------------------------------------------|------------------------|--------|--|------------|--|--------------|--|------------------------------------|------------------------|--|--|---------------------------------------------------------------------|--|--------------|--|
|                                                |                        |        |  |            |  | 40543.1.3    |  | U-4913A                            |                        |  |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |              |  |
|                                                |                        |        |  |            |  | COUNTY       |  | FIELD PROFESSIONAL                 |                        |  |  | FIELD CREW                                                          |  |              |  |
|                                                |                        |        |  |            |  | Mecklenburg  |  | T. Wenner                          |                        |  |  | CG2 Exploration                                                     |  |              |  |
| Test Location                                  |                        |        |  |            |  | Date Run     |  | Test Location                      |                        |  |  |                                                                     |  | Date Run     |  |
| C-1 -L- Sta. 12+18 RT LN (O) 0.2 LT FW         |                        |        |  |            |  | 4/3-4/4/2024 |  | C-4 -L- Sta. 22+10 LT LN 1.2 LT FW |                        |  |  |                                                                     |  | 4/3-4/4/2024 |  |
| Type                                           | Test Interval          |        |  | Datum      |  | Cut/Fill     |  | Type                               | Test Interval          |  |  | Datum                                                               |  | Cut/Fill     |  |
| DCP                                            | Cumulative cm per blow |        |  | SG (A-7-6) |  | 5.0 Cut      |  | DCP                                | Cumulative cm per blow |  |  | SG (A-7-5)                                                          |  | At Grade     |  |
| 2.43                                           | 84.36                  | 116.94 |  |            |  |              |  | 5.04                               |                        |  |  |                                                                     |  |              |  |
| 5.68                                           | 84.91                  | 117.65 |  |            |  |              |  | 9.21                               |                        |  |  |                                                                     |  |              |  |
| 7.69                                           | 85.49                  | 118.09 |  |            |  |              |  | 13.12                              |                        |  |  |                                                                     |  |              |  |
| 8.80                                           | 85.94                  | 118.49 |  |            |  |              |  | 17.39                              |                        |  |  |                                                                     |  |              |  |
| 9.40                                           | 86.52                  | 118.99 |  |            |  |              |  | 22.16                              |                        |  |  |                                                                     |  |              |  |
| 10.42                                          | 87.01                  | 119.50 |  |            |  |              |  | 26.66                              |                        |  |  |                                                                     |  |              |  |
| 11.33                                          | 87.67                  | 119.94 |  |            |  |              |  | 32.11                              |                        |  |  |                                                                     |  |              |  |
| 12.25                                          | 88.34                  | 120.58 |  |            |  |              |  | 37.47                              |                        |  |  |                                                                     |  |              |  |
| 13.96                                          | 88.76                  | 121.22 |  |            |  |              |  | 42.34                              |                        |  |  |                                                                     |  |              |  |
| 15.68                                          | 89.46                  | 121.43 |  |            |  |              |  | 47.53                              |                        |  |  |                                                                     |  |              |  |
| 17.49                                          | 89.96                  | 121.97 |  |            |  |              |  | UTILITY                            |                        |  |  |                                                                     |  |              |  |
| 19.88                                          | 90.43                  | 122.51 |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 22.77                                          | 90.97                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 24.65                                          | 91.55                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 27.40                                          | 92.13                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 30.10                                          | 92.62                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 32.15                                          | 93.26                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 34.56                                          | 93.72                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 36.38                                          | 94.28                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 38.33                                          | 94.90                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 40.50                                          | 95.57                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 42.52                                          | 95.95                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 44.57                                          | 96.46                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 46.63                                          | 96.92                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 48.39                                          | 97.54                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 50.04                                          | 97.95                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 51.64                                          | 98.41                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 53.15                                          | 98.82                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 54.59                                          | 99.50                  |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 55.85                                          | 100.04                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 56.88                                          | 100.45                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 58.02                                          | 101.02                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 59.00                                          | 101.53                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 60.02                                          | 102.06                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 61.14                                          | 102.71                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 62.11                                          | 103.19                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 62.84                                          | 103.57                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 63.68                                          | 104.04                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 64.57                                          | 104.35                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 65.65                                          | 104.97                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 66.58                                          | 105.35                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 67.48                                          | 105.71                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 68.29                                          | 106.22                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 69.29                                          | 106.50                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 69.86                                          | 107.04                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 70.65                                          | 107.62                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 71.59                                          | 107.96                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 72.18                                          | 108.32                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 72.88                                          | 108.99                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 73.85                                          | 109.30                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 74.75                                          | 109.80                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 75.17                                          | 110.45                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 75.90                                          | 110.81                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 76.51                                          | 111.31                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 77.34                                          | 111.79                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 78.20                                          | 112.44                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 78.80                                          | 112.89                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 79.37                                          | 113.40                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 79.91                                          | 113.91                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 80.78                                          | 114.46                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 81.30                                          | 114.74                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 81.90                                          | 115.42                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 82.49                                          | 115.85                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 83.09                                          | 116.21                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |
| 83.93                                          | 116.58                 |        |  |            |  |              |  |                                    |                        |  |  |                                                                     |  |              |  |

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |  |  |       |  |  | WBS NO.      |  | PROJECT TIP I.D.                  |                        |  |  | ROUTE                                                               |  |              |          |  |
|------------------------------------------------|------------------------|--|--|-------|--|--|--------------|--|-----------------------------------|------------------------|--|--|---------------------------------------------------------------------|--|--------------|----------|--|
|                                                |                        |  |  |       |  |  | 40543.1.3    |  | U-4913A                           |                        |  |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |              |          |  |
|                                                |                        |  |  |       |  |  | COUNTY       |  | FIELD PROFESSIONAL                |                        |  |  | FIELD CREW                                                          |  |              |          |  |
|                                                |                        |  |  |       |  |  | Mecklenburg  |  | T. Wenner                         |                        |  |  | CG2 Exploration                                                     |  |              |          |  |
| Test Location                                  |                        |  |  |       |  |  | Date Run     |  | Test Location                     |                        |  |  |                                                                     |  | Date Run     |          |  |
| C-5 -L-Sta. 22+10 LTL 6.0 RT FY                |                        |  |  |       |  |  | 4/3-4/4/2024 |  | C-6 -L-Sta. 22+10 RT LN 1.2 LT FW |                        |  |  |                                                                     |  | 4/3-4/4/2024 |          |  |
| Type                                           | Test Interval          |  |  | Datum |  |  | Cut/Fill     |  | Type                              | Test Interval          |  |  | Datum                                                               |  |              | Cut/Fill |  |
| DCP                                            | Cumulative cm per blow |  |  | ABC   |  |  | At Grade     |  | DCP                               | Cumulative cm per blow |  |  | ABC                                                                 |  |              | At Grade |  |
| 3.20                                           | 98.89                  |  |  |       |  |  |              |  | 1.12                              | 69.69                  |  |  |                                                                     |  |              |          |  |
| 6.00                                           | 100.34                 |  |  |       |  |  |              |  | 1.62                              | 71.52                  |  |  |                                                                     |  |              |          |  |
| 7.15                                           | 101.55                 |  |  |       |  |  |              |  | 2.36                              | 73.45                  |  |  |                                                                     |  |              |          |  |
| 7.99                                           | 103.07                 |  |  |       |  |  |              |  | 2.63                              | 75.41                  |  |  |                                                                     |  |              |          |  |
| 8.54                                           | 104.34                 |  |  |       |  |  |              |  | 2.98                              | 77.24                  |  |  |                                                                     |  |              |          |  |
| 9.01                                           | 105.85                 |  |  |       |  |  |              |  | 3.26                              | 79.15                  |  |  |                                                                     |  |              |          |  |
| 9.63                                           | 107.37                 |  |  |       |  |  |              |  | 3.42                              | 80.84                  |  |  |                                                                     |  |              |          |  |
| 10.24                                          | 108.84                 |  |  |       |  |  |              |  | 3.75                              | 82.54                  |  |  |                                                                     |  |              |          |  |
| 10.69                                          | 110.61                 |  |  |       |  |  |              |  | 4.15                              | 84.43                  |  |  |                                                                     |  |              |          |  |
| 11.27                                          | 112.07                 |  |  |       |  |  |              |  | 4.48                              | 86.25                  |  |  |                                                                     |  |              |          |  |
| 11.79                                          | 113.41                 |  |  |       |  |  |              |  | 4.96                              | 87.81                  |  |  |                                                                     |  |              |          |  |
| 12.06                                          | 114.78                 |  |  |       |  |  |              |  | 5.10                              | 89.39                  |  |  |                                                                     |  |              |          |  |
| 12.52                                          | 116.12                 |  |  |       |  |  |              |  | 5.29                              | 91.25                  |  |  |                                                                     |  |              |          |  |
| 12.93                                          | 117.60                 |  |  |       |  |  |              |  | 5.62                              | 93.15                  |  |  |                                                                     |  |              |          |  |
| 13.27                                          | 119.01                 |  |  |       |  |  |              |  | 5.99                              | 94.91                  |  |  |                                                                     |  |              |          |  |
| 13.78                                          | 120.36                 |  |  |       |  |  |              |  | 6.29                              | 96.61                  |  |  |                                                                     |  |              |          |  |
| 14.25                                          | 121.77                 |  |  |       |  |  |              |  | 6.54                              | 98.39                  |  |  |                                                                     |  |              |          |  |
| 14.77                                          | 123.18                 |  |  |       |  |  |              |  | 7.02                              | 100.07                 |  |  |                                                                     |  |              |          |  |
| 15.40                                          | 124.66                 |  |  |       |  |  |              |  | 7.35                              | 101.60                 |  |  |                                                                     |  |              |          |  |
| 15.94                                          | 126.30                 |  |  |       |  |  |              |  | 7.64                              | 103.49                 |  |  |                                                                     |  |              |          |  |
| 16.49                                          |                        |  |  |       |  |  |              |  | 7.87                              | 105.12                 |  |  |                                                                     |  |              |          |  |
| 17.19                                          |                        |  |  |       |  |  |              |  | 8.25                              | 106.65                 |  |  |                                                                     |  |              |          |  |
| 17.87                                          |                        |  |  |       |  |  |              |  | 8.49                              | 108.40                 |  |  |                                                                     |  |              |          |  |
| 19.10                                          |                        |  |  |       |  |  |              |  | 8.93                              | 110.20                 |  |  |                                                                     |  |              |          |  |
| 20.99                                          |                        |  |  |       |  |  |              |  | 9.15                              | 111.74                 |  |  |                                                                     |  |              |          |  |
| 23.41                                          |                        |  |  |       |  |  |              |  | 9.53                              | 113.14                 |  |  |                                                                     |  |              |          |  |
| 26.02                                          |                        |  |  |       |  |  |              |  | 9.87                              | 114.80                 |  |  |                                                                     |  |              |          |  |
| 28.64                                          |                        |  |  |       |  |  |              |  | 10.30                             | 116.57                 |  |  |                                                                     |  |              |          |  |
| 31.09                                          |                        |  |  |       |  |  |              |  | 10.49                             | 118.23                 |  |  |                                                                     |  |              |          |  |
| 33.87                                          |                        |  |  |       |  |  |              |  | 11.13                             | 120.02                 |  |  |                                                                     |  |              |          |  |
| 36.92                                          |                        |  |  |       |  |  |              |  | 11.44                             | 121.86                 |  |  |                                                                     |  |              |          |  |
| 39.71                                          |                        |  |  |       |  |  |              |  | 11.90                             | 123.56                 |  |  |                                                                     |  |              |          |  |
| 42.39                                          |                        |  |  |       |  |  |              |  | 12.21                             |                        |  |  |                                                                     |  |              |          |  |
| 45.06                                          |                        |  |  |       |  |  |              |  | 12.40                             |                        |  |  |                                                                     |  |              |          |  |
| 47.85                                          |                        |  |  |       |  |  |              |  | 12.79                             |                        |  |  |                                                                     |  |              |          |  |
| 50.48                                          |                        |  |  |       |  |  |              |  | 13.39                             |                        |  |  |                                                                     |  |              |          |  |
| 52.95                                          |                        |  |  |       |  |  |              |  | 13.57                             |                        |  |  |                                                                     |  |              |          |  |
| 55.36                                          |                        |  |  |       |  |  |              |  | 13.89                             |                        |  |  |                                                                     |  |              |          |  |
| 57.56                                          |                        |  |  |       |  |  |              |  | 14.30                             |                        |  |  |                                                                     |  |              |          |  |
| 59.62                                          |                        |  |  |       |  |  |              |  | 14.93                             |                        |  |  |                                                                     |  |              |          |  |
| 61.43                                          |                        |  |  |       |  |  |              |  | 15.46                             |                        |  |  |                                                                     |  |              |          |  |
| 63.31                                          |                        |  |  |       |  |  |              |  | 16.05                             |                        |  |  |                                                                     |  |              |          |  |
| 65.19                                          |                        |  |  |       |  |  |              |  | 16.75                             |                        |  |  |                                                                     |  |              |          |  |
| 66.97                                          |                        |  |  |       |  |  |              |  | 17.35                             |                        |  |  |                                                                     |  |              |          |  |
| 68.80                                          |                        |  |  |       |  |  |              |  | 18.23                             |                        |  |  |                                                                     |  |              |          |  |
| 70.44                                          |                        |  |  |       |  |  |              |  | 19.38                             |                        |  |  |                                                                     |  |              |          |  |
| 72.01                                          |                        |  |  |       |  |  |              |  | 20.79                             |                        |  |  |                                                                     |  |              |          |  |
| 73.49                                          |                        |  |  |       |  |  |              |  | 22.89                             |                        |  |  |                                                                     |  |              |          |  |
| 75.05                                          |                        |  |  |       |  |  |              |  | 25.68                             |                        |  |  |                                                                     |  |              |          |  |
| 76.40                                          |                        |  |  |       |  |  |              |  | 28.98                             |                        |  |  |                                                                     |  |              |          |  |
| 77.94                                          |                        |  |  |       |  |  |              |  | 32.76                             |                        |  |  |                                                                     |  |              |          |  |
| 79.78                                          |                        |  |  |       |  |  |              |  | 36.26                             |                        |  |  |                                                                     |  |              |          |  |
| 81.02                                          |                        |  |  |       |  |  |              |  | 39.96                             |                        |  |  |                                                                     |  |              |          |  |
| 82.45                                          |                        |  |  |       |  |  |              |  | 43.63                             |                        |  |  |                                                                     |  |              |          |  |
| 83.77                                          |                        |  |  |       |  |  |              |  | 46.85                             |                        |  |  |                                                                     |  |              |          |  |
| 85.22                                          |                        |  |  |       |  |  |              |  | 49.61                             |                        |  |  |                                                                     |  |              |          |  |
| 86.85                                          |                        |  |  |       |  |  |              |  | 51.90                             |                        |  |  |                                                                     |  |              |          |  |
| 87.99                                          |                        |  |  |       |  |  |              |  | 54.40                             |                        |  |  |                                                                     |  |              |          |  |
| 89.54                                          |                        |  |  |       |  |  |              |  | 56.67                             |                        |  |  |                                                                     |  |              |          |  |
| 90.74                                          |                        |  |  |       |  |  |              |  | 58.36                             |                        |  |  |                                                                     |  |              |          |  |
| 92.56                                          |                        |  |  |       |  |  |              |  | 60.10                             |                        |  |  |                                                                     |  |              |          |  |
| 93.56                                          |                        |  |  |       |  |  |              |  | 61.79                             |                        |  |  |                                                                     |  |              |          |  |
| 95.04                                          |                        |  |  |       |  |  |              |  | 63.95                             |                        |  |  |                                                                     |  |              |          |  |
| 96.34                                          |                        |  |  |       |  |  |              |  | 65.90                             |                        |  |  |                                                                     |  |              |          |  |
| 97.59                                          |                        |  |  |       |  |  |              |  | 67.78                             |                        |  |  |                                                                     |  |              |          |  |

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |  |  |            |  | WBS NO.         |  | PROJECT TIP I.D.                   |                        |        |  | ROUTE                                                               |  |              |  |
|------------------------------------------------|------------------------|--|--|------------|--|-----------------|--|------------------------------------|------------------------|--------|--|---------------------------------------------------------------------|--|--------------|--|
|                                                |                        |  |  |            |  | 40543.1.3       |  | U-4913A                            |                        |        |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |              |  |
|                                                |                        |  |  |            |  | COUNTY          |  | FIELD PROFESSIONAL                 |                        |        |  | FIELD CREW                                                          |  |              |  |
|                                                |                        |  |  |            |  | CG2 Exploration |  | T. Wenner                          |                        |        |  | CG2 Exploration                                                     |  |              |  |
| Test Location                                  |                        |  |  |            |  | Date Run        |  | Test Location                      |                        |        |  |                                                                     |  | Date Run     |  |
| C-7 -L- Sta. 28+50 LT LN 0.5 LT FW             |                        |  |  |            |  | 4/3-4/4/2024    |  | C-8 -L- Sta. 28+50 RT LN 1.0 LT FW |                        |        |  |                                                                     |  | 4/3-4/4/2024 |  |
| Type                                           | Test Interval          |  |  | Datum      |  | Cut/Fill        |  | Type                               | Test Interval          |        |  | Datum                                                               |  | Cut/Fill     |  |
| DCP                                            | Cumulative cm per blow |  |  | SG (A-7-5) |  | 5.0 Cut         |  | DCP                                | Cumulative cm per blow |        |  | SG (A-7-5)                                                          |  | 5.0 Cut      |  |
| 2.95                                           |                        |  |  |            |  |                 |  | 1.78                               | 69.58                  | 106.40 |  |                                                                     |  |              |  |
| 5.93                                           |                        |  |  |            |  |                 |  | 3.91                               | 70.20                  | 106.86 |  |                                                                     |  |              |  |
| 8.95                                           |                        |  |  |            |  |                 |  | 5.29                               | 70.96                  | 107.05 |  |                                                                     |  |              |  |
| 12.41                                          |                        |  |  |            |  |                 |  | 6.46                               | 71.86                  | 107.56 |  |                                                                     |  |              |  |
| 15.39                                          |                        |  |  |            |  |                 |  | 7.52                               | 72.31                  | 108.10 |  |                                                                     |  |              |  |
| 17.38                                          |                        |  |  |            |  |                 |  | 8.66                               | 73.02                  | 108.52 |  |                                                                     |  |              |  |
| 19.02                                          |                        |  |  |            |  |                 |  | 9.90                               | 73.52                  | 109.19 |  |                                                                     |  |              |  |
| 20.89                                          |                        |  |  |            |  |                 |  | 11.21                              | 74.08                  | 109.78 |  |                                                                     |  |              |  |
| 24.98                                          |                        |  |  |            |  |                 |  | 12.45                              | 74.58                  | 110.33 |  |                                                                     |  |              |  |
| 29.72                                          |                        |  |  |            |  |                 |  | 13.87                              | 75.26                  | 110.55 |  |                                                                     |  |              |  |
| 34.63                                          |                        |  |  |            |  |                 |  | 14.91                              | 75.86                  | 111.24 |  |                                                                     |  |              |  |
| 38.81                                          |                        |  |  |            |  |                 |  | 16.40                              | 76.72                  | 111.72 |  |                                                                     |  |              |  |
| 43.18                                          |                        |  |  |            |  |                 |  | 17.64                              | 77.10                  | 112.33 |  |                                                                     |  |              |  |
| 47.28                                          |                        |  |  |            |  |                 |  | 18.88                              | 77.70                  | 112.88 |  |                                                                     |  |              |  |
| UTILITY                                        |                        |  |  |            |  |                 |  | 20.38                              | 78.34                  | 113.51 |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 21.55                              | 78.94                  | 114.22 |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 22.91                              | 79.49                  | 114.63 |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 24.40                              | 79.97                  | 115.11 |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 25.54                              | 81.00                  | 115.49 |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 27.16                              | 81.36                  | 116.37 |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 27.98                              | 82.01                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 29.48                              | 82.83                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 30.88                              | 83.44                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 32.31                              | 83.97                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 33.42                              | 84.69                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 34.44                              | 85.56                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 35.84                              | 86.05                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 36.97                              | 86.56                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 38.01                              | 87.23                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 39.08                              | 87.68                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 40.33                              | 88.37                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 41.45                              | 88.82                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 42.37                              | 89.41                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 43.71                              | 89.95                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 44.86                              | 90.59                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 45.83                              | 91.11                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 47.05                              | 91.48                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 48.04                              | 91.90                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 49.03                              | 92.14                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 50.33                              | 92.78                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 51.06                              | 93.45                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 51.95                              | 94.01                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 52.97                              | 94.32                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 53.95                              | 94.92                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 54.70                              | 95.06                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 55.59                              | 95.65                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 56.48                              | 96.13                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 57.28                              | 96.74                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 58.05                              | 97.23                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 58.71                              | 97.56                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 59.37                              | 98.16                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 60.24                              | 98.60                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 60.89                              | 99.14                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 61.52                              | 99.69                  |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 62.55                              | 100.12                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 63.01                              | 100.69                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 63.83                              | 101.10                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 64.54                              | 101.35                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 65.34                              | 101.93                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 66.02                              | 102.18                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 66.70                              | 103.07                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 67.36                              | 103.71                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 67.83                              | 104.55                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 68.41                              | 105.17                 |        |  |                                                                     |  |              |  |
|                                                |                        |  |  |            |  |                 |  | 68.89                              | 105.77                 |        |  |                                                                     |  |              |  |

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |  |  |       |  |  | WBS NO.       |  | PROJECT TIP I.D.                    |                        |  |  | ROUTE                                                               |  |              |  |
|------------------------------------------------|------------------------|--|--|-------|--|--|---------------|--|-------------------------------------|------------------------|--|--|---------------------------------------------------------------------|--|--------------|--|
|                                                |                        |  |  |       |  |  | 40543.1.3     |  | U-4913A                             |                        |  |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |              |  |
|                                                |                        |  |  |       |  |  | COUNTY        |  | FIELD PROFESSIONAL                  |                        |  |  | FIELD CREW                                                          |  |              |  |
|                                                |                        |  |  |       |  |  | Mecklenburg   |  | T. Wenner                           |                        |  |  | CG2 Exploration                                                     |  |              |  |
| Test Location                                  |                        |  |  |       |  |  | Date Run      |  | Test Location                       |                        |  |  |                                                                     |  | Date Run     |  |
| C-9 -L- Sta. 33+40 LT PS 2.3 RT FW             |                        |  |  |       |  |  | 4/3, 4/4/2024 |  | C-10 -L- Sta. 33+40 LT LN 2.0 LT FW |                        |  |  |                                                                     |  | 4/3-4/4/2024 |  |
| Type                                           | Test Interval          |  |  | Datum |  |  | Cut/Fill      |  | Type                                | Test Interval          |  |  | Datum                                                               |  | Cut/Fill     |  |
| DCP                                            | Cumulative cm per blow |  |  | ABC   |  |  | 5.0 Fill      |  | DCP                                 | Cumulative cm per blow |  |  | ABC                                                                 |  | 5.0 Fill     |  |
| 0.92                                           |                        |  |  |       |  |  |               |  | 0.87                                | 91.45                  |  |  |                                                                     |  |              |  |
| 1.58                                           |                        |  |  |       |  |  |               |  | 1.39                                | 92.86                  |  |  |                                                                     |  |              |  |
| 2.01                                           |                        |  |  |       |  |  |               |  | 1.96                                | 94.17                  |  |  |                                                                     |  |              |  |
| 2.73                                           |                        |  |  |       |  |  |               |  | 2.44                                | 95.19                  |  |  |                                                                     |  |              |  |
| 2.83                                           |                        |  |  |       |  |  |               |  | 3.01                                | 96.43                  |  |  |                                                                     |  |              |  |
| 3.23                                           |                        |  |  |       |  |  |               |  | 3.26                                | 97.67                  |  |  |                                                                     |  |              |  |
| 3.66                                           |                        |  |  |       |  |  |               |  | 3.63                                | 98.69                  |  |  |                                                                     |  |              |  |
| 3.94                                           |                        |  |  |       |  |  |               |  | 3.91                                | 99.58                  |  |  |                                                                     |  |              |  |
| 4.60                                           |                        |  |  |       |  |  |               |  | 4.30                                | 100.54                 |  |  |                                                                     |  |              |  |
| 5.11                                           |                        |  |  |       |  |  |               |  | 4.98                                | 101.70                 |  |  |                                                                     |  |              |  |
| 5.72                                           |                        |  |  |       |  |  |               |  | 5.34                                | 102.81                 |  |  |                                                                     |  |              |  |
| 6.13                                           |                        |  |  |       |  |  |               |  | 5.69                                | 103.87                 |  |  |                                                                     |  |              |  |
| 6.77                                           |                        |  |  |       |  |  |               |  | 6.00                                | 105.00                 |  |  |                                                                     |  |              |  |
| 7.19                                           |                        |  |  |       |  |  |               |  | 6.41                                | 105.96                 |  |  |                                                                     |  |              |  |
| 7.89                                           |                        |  |  |       |  |  |               |  | 6.82                                | 107.06                 |  |  |                                                                     |  |              |  |
| 8.42                                           |                        |  |  |       |  |  |               |  | 7.18                                | 107.73                 |  |  |                                                                     |  |              |  |
| 8.78                                           |                        |  |  |       |  |  |               |  | 7.38                                | 108.56                 |  |  |                                                                     |  |              |  |
| 9.32                                           |                        |  |  |       |  |  |               |  | 7.78                                | 109.34                 |  |  |                                                                     |  |              |  |
| 9.95                                           |                        |  |  |       |  |  |               |  | 8.17                                | 110.34                 |  |  |                                                                     |  |              |  |
| 10.47                                          |                        |  |  |       |  |  |               |  | 8.58                                | 111.19                 |  |  |                                                                     |  |              |  |
| 11.33                                          |                        |  |  |       |  |  |               |  | 8.99                                | 112.14                 |  |  |                                                                     |  |              |  |
| 11.92                                          |                        |  |  |       |  |  |               |  | 9.32                                | 113.17                 |  |  |                                                                     |  |              |  |
| 12.79                                          |                        |  |  |       |  |  |               |  | 9.97                                | 113.81                 |  |  |                                                                     |  |              |  |
| 13.33                                          |                        |  |  |       |  |  |               |  | 10.27                               | 114.69                 |  |  |                                                                     |  |              |  |
| 13.86                                          |                        |  |  |       |  |  |               |  | 10.65                               | 115.44                 |  |  |                                                                     |  |              |  |
| 14.95                                          |                        |  |  |       |  |  |               |  | 11.11                               | 115.99                 |  |  |                                                                     |  |              |  |
| 16.38                                          |                        |  |  |       |  |  |               |  | 11.60                               | 116.93                 |  |  |                                                                     |  |              |  |
| 16.81                                          |                        |  |  |       |  |  |               |  | 12.08                               | 117.56                 |  |  |                                                                     |  |              |  |
| 18.01                                          |                        |  |  |       |  |  |               |  | 12.64                               | 118.40                 |  |  |                                                                     |  |              |  |
| 20.10                                          |                        |  |  |       |  |  |               |  | 13.36                               | 119.08                 |  |  |                                                                     |  |              |  |
| 23.77                                          |                        |  |  |       |  |  |               |  | 14.13                               | 119.78                 |  |  |                                                                     |  |              |  |
| 30.90                                          |                        |  |  |       |  |  |               |  | 14.61                               | 120.91                 |  |  |                                                                     |  |              |  |
| 36.20                                          |                        |  |  |       |  |  |               |  | 15.18                               |                        |  |  |                                                                     |  |              |  |
| 40.83                                          |                        |  |  |       |  |  |               |  | 15.99                               |                        |  |  |                                                                     |  |              |  |
| 45.87                                          |                        |  |  |       |  |  |               |  | 16.80                               |                        |  |  |                                                                     |  |              |  |
| 50.12                                          |                        |  |  |       |  |  |               |  | 17.73                               |                        |  |  |                                                                     |  |              |  |
| UTILITY                                        |                        |  |  |       |  |  |               |  | 18.90                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 21.36                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 26.79                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 31.92                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 37.14                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 41.48                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 45.44                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 49.25                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 52.29                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 53.45                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 54.70                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 55.99                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 58.04                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 60.01                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 61.95                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 64.33                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 66.49                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 68.89                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 70.95                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 72.87                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 74.96                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 76.67                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 79.08                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 80.83                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 82.77                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 84.67                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 86.43                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 87.98                               |                        |  |  |                                                                     |  |              |  |
|                                                |                        |  |  |       |  |  |               |  | 89.72                               |                        |  |  |                                                                     |  |              |  |

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |        |  |       |  | WBS NO.         |  | PROJECT TIP I.D.                      |                        |  |  | ROUTE                                                               |  |              |  |
|------------------------------------------------|------------------------|--------|--|-------|--|-----------------|--|---------------------------------------|------------------------|--|--|---------------------------------------------------------------------|--|--------------|--|
|                                                |                        |        |  |       |  | 40543.1.3       |  | U-4913A                               |                        |  |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |              |  |
|                                                |                        |        |  |       |  | COUNTY          |  | FIELD PROFESSIONAL                    |                        |  |  | FIELD CREW                                                          |  |              |  |
|                                                |                        |        |  |       |  | CG2 Exploration |  | T. Wenner                             |                        |  |  | CG2 Exploration                                                     |  |              |  |
| Test Location                                  |                        |        |  |       |  | Date Run        |  | Test Location                         |                        |  |  |                                                                     |  | Date Run     |  |
| C-11 -L- Sta. 33+40 LTL(LT) 4.0 RT FY          |                        |        |  |       |  | 4/3-4/4/2024    |  | C-12 -L- Sta. 33+40 LTL(RT) 6.8 RT FY |                        |  |  |                                                                     |  | 4/3-4/4/2024 |  |
| Type                                           | Test Interval          |        |  | Datum |  | Cut/Fill        |  | Type                                  | Test Interval          |  |  | Datum                                                               |  | Cut/Fill     |  |
| DCP                                            | Cumulative cm per blow |        |  | ABC   |  | 5.0 Fill        |  | DCP                                   | Cumulative cm per blow |  |  | ABC                                                                 |  | 5.0 Fill     |  |
| 0.88                                           | 63.39                  | 114.35 |  |       |  |                 |  | 1.34                                  | 74.67                  |  |  |                                                                     |  |              |  |
| 1.43                                           | 64.57                  | 115.35 |  |       |  |                 |  | 2.13                                  | 75.16                  |  |  |                                                                     |  |              |  |
| 1.99                                           | 65.56                  | 116.67 |  |       |  |                 |  | 2.75                                  | 76.05                  |  |  |                                                                     |  |              |  |
| 2.44                                           | 66.25                  |        |  |       |  |                 |  | 3.22                                  | 76.82                  |  |  |                                                                     |  |              |  |
| 2.86                                           | 67.24                  |        |  |       |  |                 |  | 3.78                                  | 77.99                  |  |  |                                                                     |  |              |  |
| 3.42                                           | 68.33                  |        |  |       |  |                 |  | 4.02                                  | 79.16                  |  |  |                                                                     |  |              |  |
| 3.75                                           | 69.17                  |        |  |       |  |                 |  | 4.28                                  | 80.52                  |  |  |                                                                     |  |              |  |
| 3.98                                           | 70.25                  |        |  |       |  |                 |  | 4.81                                  | 81.88                  |  |  |                                                                     |  |              |  |
| 4.43                                           | 71.23                  |        |  |       |  |                 |  | 5.17                                  | 83.37                  |  |  |                                                                     |  |              |  |
| 4.93                                           | 72.05                  |        |  |       |  |                 |  | 5.57                                  | 84.83                  |  |  |                                                                     |  |              |  |
| 5.18                                           | 72.85                  |        |  |       |  |                 |  | 6.05                                  | 86.27                  |  |  |                                                                     |  |              |  |
| 5.55                                           | 74.03                  |        |  |       |  |                 |  | 6.50                                  | 87.63                  |  |  |                                                                     |  |              |  |
| 5.77                                           | 75.11                  |        |  |       |  |                 |  | 6.73                                  | 88.81                  |  |  |                                                                     |  |              |  |
| 6.57                                           | 76.09                  |        |  |       |  |                 |  | 6.99                                  | 90.00                  |  |  |                                                                     |  |              |  |
| 6.78                                           | 77.59                  |        |  |       |  |                 |  | 7.37                                  | 90.38                  |  |  |                                                                     |  |              |  |
| 7.19                                           | 78.65                  |        |  |       |  |                 |  | 7.85                                  | 91.22                  |  |  |                                                                     |  |              |  |
| 7.72                                           | 80.01                  |        |  |       |  |                 |  | 8.11                                  | 91.74                  |  |  |                                                                     |  |              |  |
| 7.98                                           | 81.10                  |        |  |       |  |                 |  | 8.37                                  | 92.59                  |  |  |                                                                     |  |              |  |
| 8.54                                           | 82.33                  |        |  |       |  |                 |  | 8.51                                  | 93.22                  |  |  |                                                                     |  |              |  |
| 9.12                                           | 83.62                  |        |  |       |  |                 |  | 8.89                                  | 93.87                  |  |  |                                                                     |  |              |  |
| 9.57                                           | 84.66                  |        |  |       |  |                 |  | 9.51                                  | 95.06                  |  |  |                                                                     |  |              |  |
| 9.71                                           | 85.52                  |        |  |       |  |                 |  | 10.07                                 | 96.12                  |  |  |                                                                     |  |              |  |
| 10.21                                          | 85.80                  |        |  |       |  |                 |  | 11.02                                 | 97.30                  |  |  |                                                                     |  |              |  |
| 10.91                                          | 86.16                  |        |  |       |  |                 |  | 11.53                                 | 98.68                  |  |  |                                                                     |  |              |  |
| 11.83                                          | 86.50                  |        |  |       |  |                 |  | 12.05                                 | 100.36                 |  |  |                                                                     |  |              |  |
| 12.56                                          | 87.01                  |        |  |       |  |                 |  | 12.92                                 | 101.70                 |  |  |                                                                     |  |              |  |
| 13.11                                          | 87.33                  |        |  |       |  |                 |  | 13.78                                 | 103.48                 |  |  |                                                                     |  |              |  |
| 14.03                                          | 87.69                  |        |  |       |  |                 |  | 14.55                                 | 104.62                 |  |  |                                                                     |  |              |  |
| 14.68                                          | 88.06                  |        |  |       |  |                 |  | 15.45                                 | 105.61                 |  |  |                                                                     |  |              |  |
| 15.60                                          | 88.45                  |        |  |       |  |                 |  | 16.25                                 | 106.69                 |  |  |                                                                     |  |              |  |
| 16.87                                          | 88.54                  |        |  |       |  |                 |  | 17.77                                 | 107.93                 |  |  |                                                                     |  |              |  |
| 18.04                                          | 88.73                  |        |  |       |  |                 |  | 20.51                                 | 108.99                 |  |  |                                                                     |  |              |  |
| 19.13                                          | 89.13                  |        |  |       |  |                 |  | 27.91                                 | 109.88                 |  |  |                                                                     |  |              |  |
| 21.13                                          | 89.39                  |        |  |       |  |                 |  | 31.00                                 | 111.35                 |  |  |                                                                     |  |              |  |
| 26.32                                          | 89.77                  |        |  |       |  |                 |  | 34.17                                 | 112.01                 |  |  |                                                                     |  |              |  |
| 30.56                                          | 89.89                  |        |  |       |  |                 |  | 36.63                                 | 112.65                 |  |  |                                                                     |  |              |  |
| 33.72                                          | 90.08                  |        |  |       |  |                 |  | 40.09                                 | 113.49                 |  |  |                                                                     |  |              |  |
| 37.29                                          | 90.28                  |        |  |       |  |                 |  | 42.79                                 | 114.40                 |  |  |                                                                     |  |              |  |
| 40.52                                          | 90.62                  |        |  |       |  |                 |  | 45.26                                 | 115.01                 |  |  |                                                                     |  |              |  |
| 42.97                                          | 90.91                  |        |  |       |  |                 |  | 47.80                                 | 115.82                 |  |  |                                                                     |  |              |  |
| 45.31                                          | 91.23                  |        |  |       |  |                 |  | 49.90                                 | 116.81                 |  |  |                                                                     |  |              |  |
| 47.47                                          | 91.49                  |        |  |       |  |                 |  | 52.21                                 | 117.58                 |  |  |                                                                     |  |              |  |
| 49.29                                          | 91.80                  |        |  |       |  |                 |  | 54.52                                 | 118.60                 |  |  |                                                                     |  |              |  |
| 50.50                                          | 92.23                  |        |  |       |  |                 |  | 56.42                                 |                        |  |  |                                                                     |  |              |  |
| 51.45                                          | 92.56                  |        |  |       |  |                 |  | 58.34                                 |                        |  |  |                                                                     |  |              |  |
| 51.79                                          | 92.93                  |        |  |       |  |                 |  | 60.31                                 |                        |  |  |                                                                     |  |              |  |
| 52.70                                          | 93.67                  |        |  |       |  |                 |  | 62.02                                 |                        |  |  |                                                                     |  |              |  |
| 53.32                                          | 94.30                  |        |  |       |  |                 |  | 62.90                                 |                        |  |  |                                                                     |  |              |  |
| 53.77                                          | 94.98                  |        |  |       |  |                 |  | 63.45                                 |                        |  |  |                                                                     |  |              |  |
| 54.32                                          | 95.67                  |        |  |       |  |                 |  | 63.81                                 |                        |  |  |                                                                     |  |              |  |
| 54.85                                          | 96.59                  |        |  |       |  |                 |  | 64.47                                 |                        |  |  |                                                                     |  |              |  |
| 55.19                                          | 97.62                  |        |  |       |  |                 |  | 64.90                                 |                        |  |  |                                                                     |  |              |  |
| 55.43                                          | 98.87                  |        |  |       |  |                 |  | 65.62                                 |                        |  |  |                                                                     |  |              |  |
| 55.99                                          | 99.90                  |        |  |       |  |                 |  | 66.01                                 |                        |  |  |                                                                     |  |              |  |
| 56.63                                          | 101.13                 |        |  |       |  |                 |  | 66.51                                 |                        |  |  |                                                                     |  |              |  |
| 57.14                                          | 102.27                 |        |  |       |  |                 |  | 67.06                                 |                        |  |  |                                                                     |  |              |  |
| 57.78                                          | 103.68                 |        |  |       |  |                 |  | 67.70                                 |                        |  |  |                                                                     |  |              |  |
| 58.28                                          | 104.65                 |        |  |       |  |                 |  | 68.20                                 |                        |  |  |                                                                     |  |              |  |
| 59.00                                          | 106.00                 |        |  |       |  |                 |  | 68.84                                 |                        |  |  |                                                                     |  |              |  |
| 59.55                                          | 106.96                 |        |  |       |  |                 |  | 69.63                                 |                        |  |  |                                                                     |  |              |  |
| 59.75                                          | 108.30                 |        |  |       |  |                 |  | 70.23                                 |                        |  |  |                                                                     |  |              |  |
| 60.55                                          | 109.62                 |        |  |       |  |                 |  | 71.18                                 |                        |  |  |                                                                     |  |              |  |
| 61.23                                          | 111.06                 |        |  |       |  |                 |  | 72.40                                 |                        |  |  |                                                                     |  |              |  |
| 62.23                                          | 112.29                 |        |  |       |  |                 |  | 73.07                                 |                        |  |  |                                                                     |  |              |  |
| 62.80                                          | 113.45                 |        |  |       |  |                 |  | 73.84                                 |                        |  |  |                                                                     |  |              |  |

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |  |  |       |  | WBS NO.      |  | PROJECT TIP I.D.                     |                        |  |  | ROUTE                                                               |  |              |  |
|------------------------------------------------|------------------------|--|--|-------|--|--------------|--|--------------------------------------|------------------------|--|--|---------------------------------------------------------------------|--|--------------|--|
|                                                |                        |  |  |       |  | 40543.1.3    |  | U-4913A                              |                        |  |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |              |  |
|                                                |                        |  |  |       |  | COUNTY       |  | FIELD PROFESSIONAL                   |                        |  |  | FIELD CREW                                                          |  |              |  |
|                                                |                        |  |  |       |  | Mecklenburg  |  | T. Wenner                            |                        |  |  | CG2 Exploration                                                     |  |              |  |
| Test Location                                  |                        |  |  |       |  | Date Run     |  | Test Location                        |                        |  |  |                                                                     |  | Date Run     |  |
| C-13 -L- Sta. 33+40 RT ISL 18.3 LT FW          |                        |  |  |       |  | 4/3-4/4/2024 |  | C-14 -L- Sta. 33+40 RT OSL 3.0 LT FW |                        |  |  |                                                                     |  | 4/3-4/4/2024 |  |
| Type                                           | Test Interval          |  |  | Datum |  | Cut/Fill     |  | Type                                 | Test Interval          |  |  | Datum                                                               |  | Cut/Fill     |  |
| DCP                                            | Cumulative cm per blow |  |  | ABC   |  | 5.0 Fill     |  | DCP                                  | Cumulative cm per blow |  |  | ABC                                                                 |  | 5.0 Fill     |  |
| 0.47                                           | 67.11                  |  |  |       |  |              |  | 0.76                                 |                        |  |  |                                                                     |  |              |  |
| 0.96                                           | 67.93                  |  |  |       |  |              |  | 1.14                                 |                        |  |  |                                                                     |  |              |  |
| 1.59                                           | 68.47                  |  |  |       |  |              |  | 1.63                                 |                        |  |  |                                                                     |  |              |  |
| 2.08                                           | 69.34                  |  |  |       |  |              |  | 2.18                                 |                        |  |  |                                                                     |  |              |  |
| 2.36                                           | 69.93                  |  |  |       |  |              |  | 2.58                                 |                        |  |  |                                                                     |  |              |  |
| 2.73                                           | 70.58                  |  |  |       |  |              |  | 2.94                                 |                        |  |  |                                                                     |  |              |  |
| 3.16                                           | 71.30                  |  |  |       |  |              |  | 3.28                                 |                        |  |  |                                                                     |  |              |  |
| 3.46                                           | 71.81                  |  |  |       |  |              |  | 3.64                                 |                        |  |  |                                                                     |  |              |  |
| 3.97                                           | 72.41                  |  |  |       |  |              |  | 4.14                                 |                        |  |  |                                                                     |  |              |  |
| 4.11                                           | 72.93                  |  |  |       |  |              |  | 4.50                                 |                        |  |  |                                                                     |  |              |  |
| 4.43                                           | 73.50                  |  |  |       |  |              |  | 4.78                                 |                        |  |  |                                                                     |  |              |  |
| 4.68                                           | 74.12                  |  |  |       |  |              |  | 5.09                                 |                        |  |  |                                                                     |  |              |  |
| 5.02                                           | 75.04                  |  |  |       |  |              |  | 5.54                                 |                        |  |  |                                                                     |  |              |  |
| 5.23                                           | 75.32                  |  |  |       |  |              |  | 6.10                                 |                        |  |  |                                                                     |  |              |  |
| 5.66                                           | 76.01                  |  |  |       |  |              |  | 6.41                                 |                        |  |  |                                                                     |  |              |  |
| 5.81                                           | 76.36                  |  |  |       |  |              |  | 6.88                                 |                        |  |  |                                                                     |  |              |  |
| 6.20                                           | 76.80                  |  |  |       |  |              |  | 7.19                                 |                        |  |  |                                                                     |  |              |  |
| 6.42                                           | 77.29                  |  |  |       |  |              |  | 7.74                                 |                        |  |  |                                                                     |  |              |  |
| 6.62                                           | 77.82                  |  |  |       |  |              |  | 8.25                                 |                        |  |  |                                                                     |  |              |  |
| 7.01                                           | 78.49                  |  |  |       |  |              |  | 8.74                                 |                        |  |  |                                                                     |  |              |  |
| 7.38                                           | 79.04                  |  |  |       |  |              |  | 9.32                                 |                        |  |  |                                                                     |  |              |  |
| 7.77                                           | 79.57                  |  |  |       |  |              |  | 9.62                                 |                        |  |  |                                                                     |  |              |  |
| 7.96                                           | 80.27                  |  |  |       |  |              |  | 10.02                                |                        |  |  |                                                                     |  |              |  |
| 8.42                                           | 80.85                  |  |  |       |  |              |  | 10.49                                |                        |  |  |                                                                     |  |              |  |
| 8.60                                           | 81.69                  |  |  |       |  |              |  | 11.05                                |                        |  |  |                                                                     |  |              |  |
| 8.98                                           | 82.22                  |  |  |       |  |              |  | 11.79                                |                        |  |  |                                                                     |  |              |  |
| 9.25                                           | 83.06                  |  |  |       |  |              |  | 12.59                                |                        |  |  |                                                                     |  |              |  |
| 9.51                                           | 83.68                  |  |  |       |  |              |  | 13.16                                |                        |  |  |                                                                     |  |              |  |
| 9.89                                           | 84.61                  |  |  |       |  |              |  | 13.91                                |                        |  |  |                                                                     |  |              |  |
| 10.35                                          | 85.33                  |  |  |       |  |              |  | 14.42                                |                        |  |  |                                                                     |  |              |  |
| 10.78                                          | 85.94                  |  |  |       |  |              |  | 14.99                                |                        |  |  |                                                                     |  |              |  |
| 11.09                                          | 86.56                  |  |  |       |  |              |  | 15.52                                |                        |  |  |                                                                     |  |              |  |
| 11.38                                          | 87.42                  |  |  |       |  |              |  | 16.38                                |                        |  |  |                                                                     |  |              |  |
| 11.79                                          | 88.00                  |  |  |       |  |              |  | 17.56                                |                        |  |  |                                                                     |  |              |  |
| 11.94                                          | 88.85                  |  |  |       |  |              |  | 19.61                                |                        |  |  |                                                                     |  |              |  |
| 12.51                                          | 89.25                  |  |  |       |  |              |  | 21.04                                |                        |  |  |                                                                     |  |              |  |
| 12.72                                          | 90.16                  |  |  |       |  |              |  | 22.44                                |                        |  |  |                                                                     |  |              |  |
| 13.21                                          | 90.91                  |  |  |       |  |              |  | 23.55                                |                        |  |  |                                                                     |  |              |  |
| 13.80                                          | 92.08                  |  |  |       |  |              |  | 24.54                                |                        |  |  |                                                                     |  |              |  |
| 14.24                                          | 92.76                  |  |  |       |  |              |  | 25.70                                |                        |  |  |                                                                     |  |              |  |
| 14.76                                          | 93.68                  |  |  |       |  |              |  | 26.76                                |                        |  |  |                                                                     |  |              |  |
| 15.89                                          | 94.98                  |  |  |       |  |              |  | 28.09                                |                        |  |  |                                                                     |  |              |  |
| 16.60                                          | 96.33                  |  |  |       |  |              |  | 29.75                                |                        |  |  |                                                                     |  |              |  |
| 17.65                                          | 97.55                  |  |  |       |  |              |  | 33.30                                |                        |  |  |                                                                     |  |              |  |
| 18.49                                          | 99.02                  |  |  |       |  |              |  | 38.40                                |                        |  |  |                                                                     |  |              |  |
| 20.25                                          | 100.44                 |  |  |       |  |              |  | 44.58                                |                        |  |  |                                                                     |  |              |  |
| 22.81                                          | 101.86                 |  |  |       |  |              |  | 51.35                                |                        |  |  |                                                                     |  |              |  |
| 25.62                                          | 103.27                 |  |  |       |  |              |  | 59.61                                |                        |  |  |                                                                     |  |              |  |
| 28.35                                          | 104.40                 |  |  |       |  |              |  | 63.86                                |                        |  |  |                                                                     |  |              |  |
| 30.76                                          | 105.64                 |  |  |       |  |              |  | 69.20                                |                        |  |  |                                                                     |  |              |  |
| 33.36                                          | 106.64                 |  |  |       |  |              |  | 74.77                                |                        |  |  |                                                                     |  |              |  |
| 36.08                                          | 107.76                 |  |  |       |  |              |  | 80.94                                |                        |  |  |                                                                     |  |              |  |
| 39.59                                          | 108.58                 |  |  |       |  |              |  | 87.49                                |                        |  |  |                                                                     |  |              |  |
| 42.78                                          | 109.66                 |  |  |       |  |              |  | 95.74                                |                        |  |  |                                                                     |  |              |  |
| 45.47                                          | 110.59                 |  |  |       |  |              |  | 102.48                               |                        |  |  |                                                                     |  |              |  |
| 47.77                                          | 111.30                 |  |  |       |  |              |  | 106.30                               |                        |  |  |                                                                     |  |              |  |
| 50.28                                          | 112.14                 |  |  |       |  |              |  | 109.25                               |                        |  |  |                                                                     |  |              |  |
| 52.76                                          | 112.92                 |  |  |       |  |              |  | 114.28                               |                        |  |  |                                                                     |  |              |  |
| 54.60                                          |                        |  |  |       |  |              |  | 119.89                               |                        |  |  |                                                                     |  |              |  |
| 56.54                                          |                        |  |  |       |  |              |  |                                      |                        |  |  |                                                                     |  |              |  |
| 58.83                                          |                        |  |  |       |  |              |  |                                      |                        |  |  |                                                                     |  |              |  |
| 60.76                                          |                        |  |  |       |  |              |  |                                      |                        |  |  |                                                                     |  |              |  |
| 62.38                                          |                        |  |  |       |  |              |  |                                      |                        |  |  |                                                                     |  |              |  |
| 64.23                                          |                        |  |  |       |  |              |  |                                      |                        |  |  |                                                                     |  |              |  |
| 66.01                                          |                        |  |  |       |  |              |  |                                      |                        |  |  |                                                                     |  |              |  |

[illegible]

| DUAL MASS DYNAMIC CONE PENETROMETER DATA SHEET |                        |        |  |       |  | WBS NO.      |  | PROJECT TIP I.D.                     |                        |  |  | ROUTE                                                               |  |          |  |
|------------------------------------------------|------------------------|--------|--|-------|--|--------------|--|--------------------------------------|------------------------|--|--|---------------------------------------------------------------------|--|----------|--|
|                                                |                        |        |  |       |  | 40543.1.3    |  | U-4913A                              |                        |  |  | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |  |          |  |
|                                                |                        |        |  |       |  | COUNTY       |  | FIELD PROFESSIONAL                   |                        |  |  | FIELD CREW                                                          |  |          |  |
|                                                |                        |        |  |       |  | Mecklenburg  |  | T. Wenner                            |                        |  |  | CG2 Exploration                                                     |  |          |  |
| Test Location                                  |                        |        |  |       |  | Date Run     |  | Test Location                        |                        |  |  | Date Run                                                            |  |          |  |
| C-18 -Y3- Sta. 30+48 RT LN 2.2 LT FW           |                        |        |  |       |  | 4/3-4/4/2024 |  | C-17 -Y3- Sta. 30+48 RT PS 0.3 RT FW |                        |  |  | 4/3-4/4/2024                                                        |  |          |  |
| Type                                           | Test Interval          |        |  | Datum |  | Cut/Fill     |  | Type                                 | Test Interval          |  |  | Datum                                                               |  | Cut/Fill |  |
| DCP                                            | Cumulative cm per blow |        |  | ABC   |  | At Grade     |  | DCP                                  | Cumulative cm per blow |  |  | SG (A-7-6)                                                          |  | At Grade |  |
| 3.52                                           | 80.40                  | 111.81 |  |       |  |              |  | 4.04                                 | 107.10                 |  |  |                                                                     |  |          |  |
| 4.51                                           | 80.91                  | 112.40 |  |       |  |              |  | 5.90                                 | 107.89                 |  |  |                                                                     |  |          |  |
| 5.32                                           | 81.49                  | 112.90 |  |       |  |              |  | 7.97                                 | 108.16                 |  |  |                                                                     |  |          |  |
| 6.06                                           | 82.23                  | 113.54 |  |       |  |              |  | 9.93                                 | 108.55                 |  |  |                                                                     |  |          |  |
| 6.78                                           | 82.83                  | 113.78 |  |       |  |              |  | 11.69                                | 109.48                 |  |  |                                                                     |  |          |  |
| 7.15                                           | 83.34                  | 114.28 |  |       |  |              |  | 15.06                                | 109.92                 |  |  |                                                                     |  |          |  |
| 8.16                                           | 83.86                  | 114.73 |  |       |  |              |  | 17.65                                | 110.52                 |  |  |                                                                     |  |          |  |
| 9.26                                           | 84.34                  | 115.22 |  |       |  |              |  | 20.18                                | 111.03                 |  |  |                                                                     |  |          |  |
| 10.69                                          | 85.51                  | 115.72 |  |       |  |              |  | 22.73                                | 111.61                 |  |  |                                                                     |  |          |  |
| 12.35                                          | 86.04                  | 116.83 |  |       |  |              |  | 24.52                                | 112.16                 |  |  |                                                                     |  |          |  |
| 15.10                                          | 86.60                  | 117.32 |  |       |  |              |  | 26.58                                | 114.07                 |  |  |                                                                     |  |          |  |
| 17.74                                          | 87.09                  | 117.82 |  |       |  |              |  | 29.05                                | 114.81                 |  |  |                                                                     |  |          |  |
| 19.61                                          | 87.50                  | 118.25 |  |       |  |              |  | 31.09                                | 115.22                 |  |  |                                                                     |  |          |  |
| 22.81                                          | 88.04                  | 118.69 |  |       |  |              |  | 32.91                                | 115.64                 |  |  |                                                                     |  |          |  |
| 24.84                                          | 88.42                  | 119.21 |  |       |  |              |  | 34.61                                | 116.50                 |  |  |                                                                     |  |          |  |
| 27.13                                          | 88.69                  | 119.69 |  |       |  |              |  | 36.42                                | 116.87                 |  |  |                                                                     |  |          |  |
| 29.00                                          | 89.00                  | 120.05 |  |       |  |              |  | 38.75                                | 117.39                 |  |  |                                                                     |  |          |  |
| 30.99                                          | 89.33                  | 120.34 |  |       |  |              |  | 42.39                                | 118.11                 |  |  |                                                                     |  |          |  |
| 32.93                                          | 89.93                  | 120.83 |  |       |  |              |  | 46.82                                | 118.59                 |  |  |                                                                     |  |          |  |
| 34.69                                          | 90.31                  | 121.20 |  |       |  |              |  | 52.34                                | 119.41                 |  |  |                                                                     |  |          |  |
| 36.45                                          | 90.83                  | 121.54 |  |       |  |              |  | 56.10                                |                        |  |  |                                                                     |  |          |  |
| 38.21                                          | 91.15                  | 121.90 |  |       |  |              |  | 59.03                                |                        |  |  |                                                                     |  |          |  |
| 39.67                                          | 91.49                  | 122.21 |  |       |  |              |  | 61.89                                |                        |  |  |                                                                     |  |          |  |
| 41.50                                          | 91.87                  |        |  |       |  |              |  | 64.04                                |                        |  |  |                                                                     |  |          |  |
| 43.17                                          | 92.32                  |        |  |       |  |              |  | 66.07                                |                        |  |  |                                                                     |  |          |  |
| 44.94                                          | 92.69                  |        |  |       |  |              |  | 67.81                                |                        |  |  |                                                                     |  |          |  |
| 46.78                                          | 93.19                  |        |  |       |  |              |  | 69.30                                |                        |  |  |                                                                     |  |          |  |
| 48.26                                          | 93.62                  |        |  |       |  |              |  | 70.92                                |                        |  |  |                                                                     |  |          |  |
| 49.56                                          | 94.15                  |        |  |       |  |              |  | 72.43                                |                        |  |  |                                                                     |  |          |  |
| 50.83                                          | 94.60                  |        |  |       |  |              |  | 73.89                                |                        |  |  |                                                                     |  |          |  |
| 52.31                                          | 95.12                  |        |  |       |  |              |  | 75.58                                |                        |  |  |                                                                     |  |          |  |
| 53.42                                          | 95.52                  |        |  |       |  |              |  | 76.75                                |                        |  |  |                                                                     |  |          |  |
| 54.48                                          | 95.88                  |        |  |       |  |              |  | 78.04                                |                        |  |  |                                                                     |  |          |  |
| 55.64                                          | 96.46                  |        |  |       |  |              |  | 79.48                                |                        |  |  |                                                                     |  |          |  |
| 57.17                                          | 96.89                  |        |  |       |  |              |  | 80.72                                |                        |  |  |                                                                     |  |          |  |
| 58.24                                          | 97.41                  |        |  |       |  |              |  | 81.65                                |                        |  |  |                                                                     |  |          |  |
| 59.17                                          | 97.78                  |        |  |       |  |              |  | 82.80                                |                        |  |  |                                                                     |  |          |  |
| 60.14                                          | 98.51                  |        |  |       |  |              |  | 83.93                                |                        |  |  |                                                                     |  |          |  |
| 60.99                                          | 99.05                  |        |  |       |  |              |  | 84.66                                |                        |  |  |                                                                     |  |          |  |
| 62.06                                          | 99.44                  |        |  |       |  |              |  | 85.56                                |                        |  |  |                                                                     |  |          |  |
| 62.90                                          | 99.88                  |        |  |       |  |              |  | 88.22                                |                        |  |  |                                                                     |  |          |  |
| 63.92                                          | 100.47                 |        |  |       |  |              |  | 89.15                                |                        |  |  |                                                                     |  |          |  |
| 64.90                                          | 100.81                 |        |  |       |  |              |  | 89.85                                |                        |  |  |                                                                     |  |          |  |
| 65.76                                          | 101.31                 |        |  |       |  |              |  | 90.91                                |                        |  |  |                                                                     |  |          |  |
| 66.66                                          | 101.75                 |        |  |       |  |              |  | 91.76                                |                        |  |  |                                                                     |  |          |  |
| 67.55                                          | 102.26                 |        |  |       |  |              |  | 92.50                                |                        |  |  |                                                                     |  |          |  |
| 68.45                                          | 102.70                 |        |  |       |  |              |  | 93.25                                |                        |  |  |                                                                     |  |          |  |
| 69.17                                          | 103.26                 |        |  |       |  |              |  | 94.02                                |                        |  |  |                                                                     |  |          |  |
| 69.76                                          | 103.63                 |        |  |       |  |              |  | 94.71                                |                        |  |  |                                                                     |  |          |  |
| 70.63                                          | 104.08                 |        |  |       |  |              |  | 95.45                                |                        |  |  |                                                                     |  |          |  |
| 71.39                                          | 104.57                 |        |  |       |  |              |  | 96.15                                |                        |  |  |                                                                     |  |          |  |
| 72.34                                          | 105.18                 |        |  |       |  |              |  | 96.85                                |                        |  |  |                                                                     |  |          |  |
| 72.77                                          | 105.64                 |        |  |       |  |              |  | 97.52                                |                        |  |  |                                                                     |  |          |  |
| 73.46                                          | 106.21                 |        |  |       |  |              |  | 98.37                                |                        |  |  |                                                                     |  |          |  |
| 74.21                                          | 106.74                 |        |  |       |  |              |  | 99.11                                |                        |  |  |                                                                     |  |          |  |
| 74.97                                          | 107.29                 |        |  |       |  |              |  | 99.67                                |                        |  |  |                                                                     |  |          |  |
| 75.58                                          | 107.75                 |        |  |       |  |              |  | 100.24                               |                        |  |  |                                                                     |  |          |  |
| 76.04                                          | 108.29                 |        |  |       |  |              |  | 101.02                               |                        |  |  |                                                                     |  |          |  |
| 76.61                                          | 108.63                 |        |  |       |  |              |  | 101.54                               |                        |  |  |                                                                     |  |          |  |
| 77.26                                          | 109.10                 |        |  |       |  |              |  | 102.45                               |                        |  |  |                                                                     |  |          |  |
| 77.77                                          | 109.43                 |        |  |       |  |              |  | 102.88                               |                        |  |  |                                                                     |  |          |  |
| 78.23                                          | 109.90                 |        |  |       |  |              |  | 103.71                               |                        |  |  |                                                                     |  |          |  |
| 78.74                                          | 110.31                 |        |  |       |  |              |  | 104.51                               |                        |  |  |                                                                     |  |          |  |
| 79.30                                          | 110.79                 |        |  |       |  |              |  | 104.89                               |                        |  |  |                                                                     |  |          |  |
| 79.97                                          | 111.35                 |        |  |       |  |              |  | 105.48                               |                        |  |  |                                                                     |  |          |  |



CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

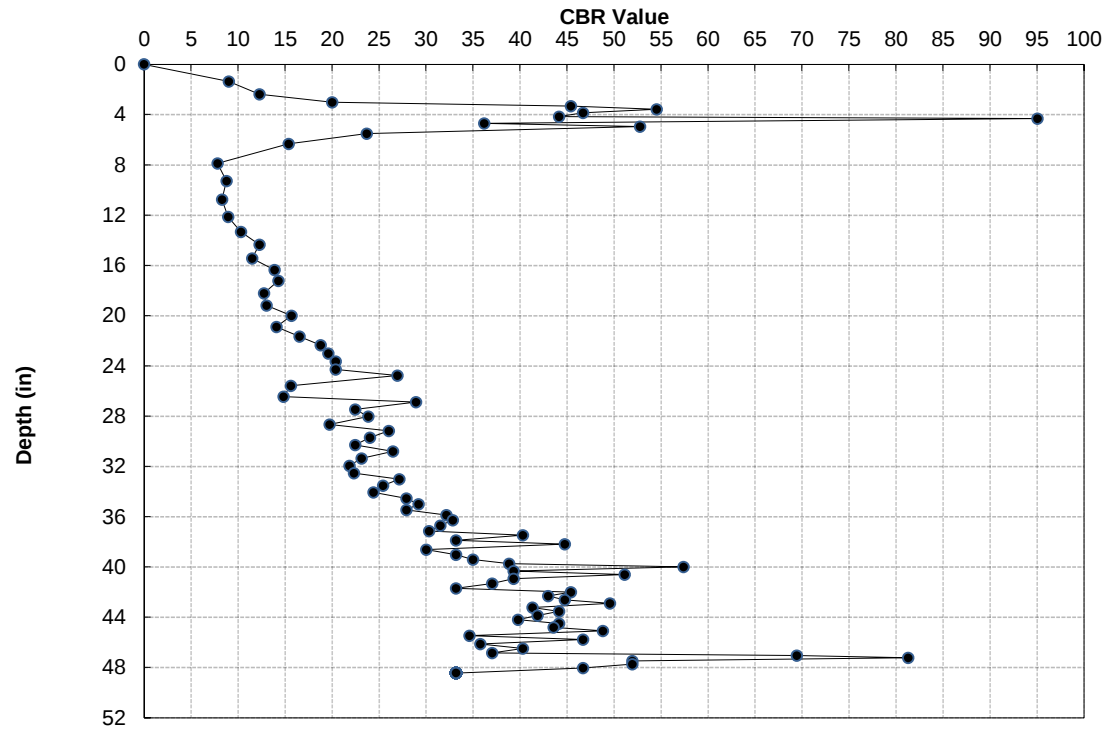
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-3 -L- Sta. 12+18

LT LN 0.3 LT FW  
Datum = SG (A-7-5)  
DCP  
8.0 Cut  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 48.4 |
| # of Values | 89          |
| Avg CBR     | 31.9        |
| Wghtd Avg.  | 24.0        |
| Max CBR     | 95.0        |
| Min CBR     | 7.8         |

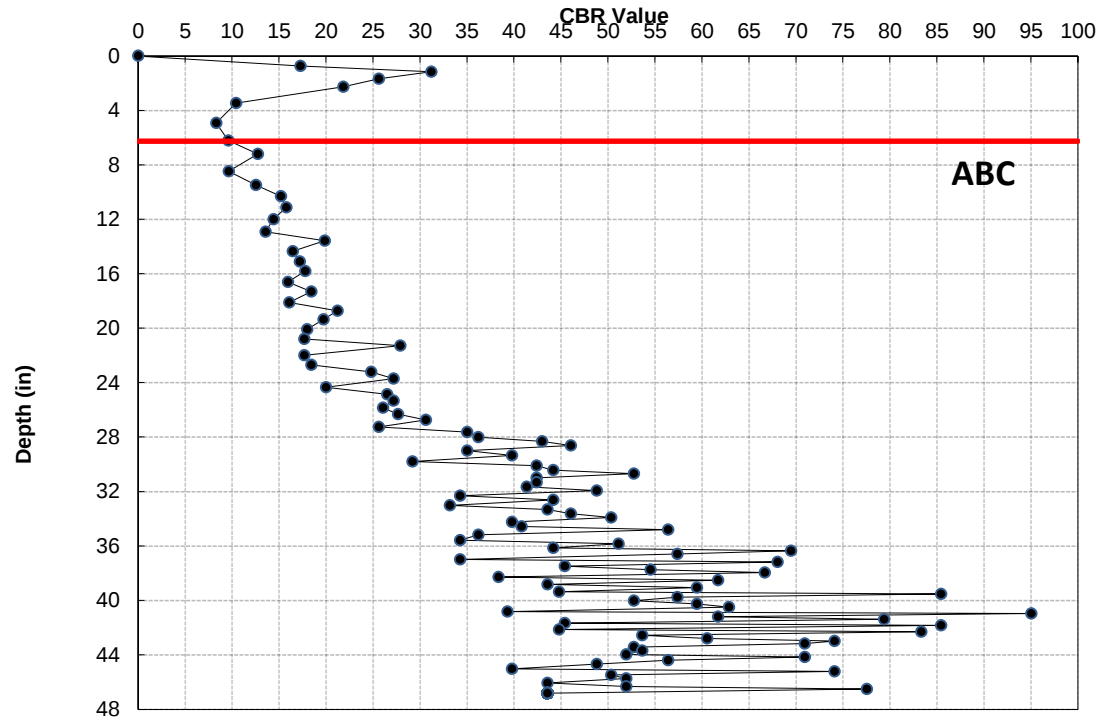


C-2 -L- Sta. 12+18

RT LN (I) 2.6 LT FW  
Datum = ABC  
DCP  
5.0 Cut  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 46.8 |
| # of Values | 107         |
| Avg CBR     | 40.9        |
| Wghtd Avg.  | 30.3        |
| Max CBR     | 95.0        |
| Min CBR     | 8.3         |



1

CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 15

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

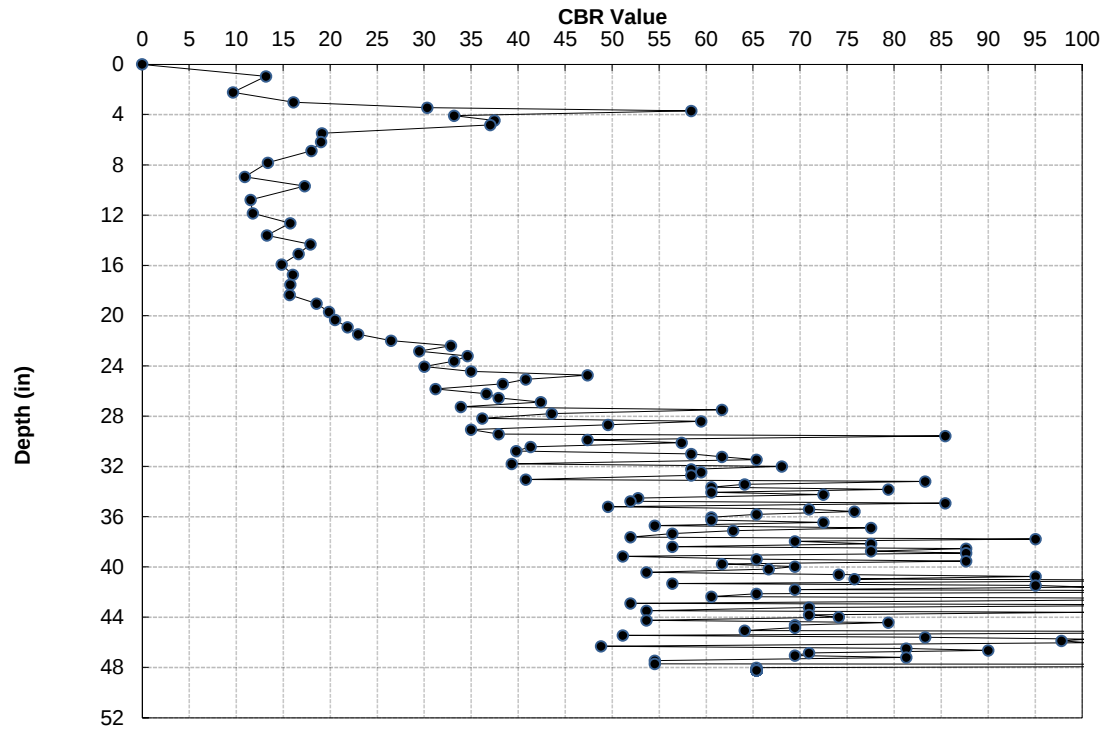
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-1 -L- Sta. 12+18

RT LN (O) 0.2 LT FW  
Datum = SG (A-7-6)  
DCP  
5.0 Cut  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 48.2 |
| # of Values | 142         |
| Avg CBR     | 56.7        |
| Wghtd Avg.  | 39.7        |
| Max CBR     | 100+        |
| Min CBR     | 9.6         |



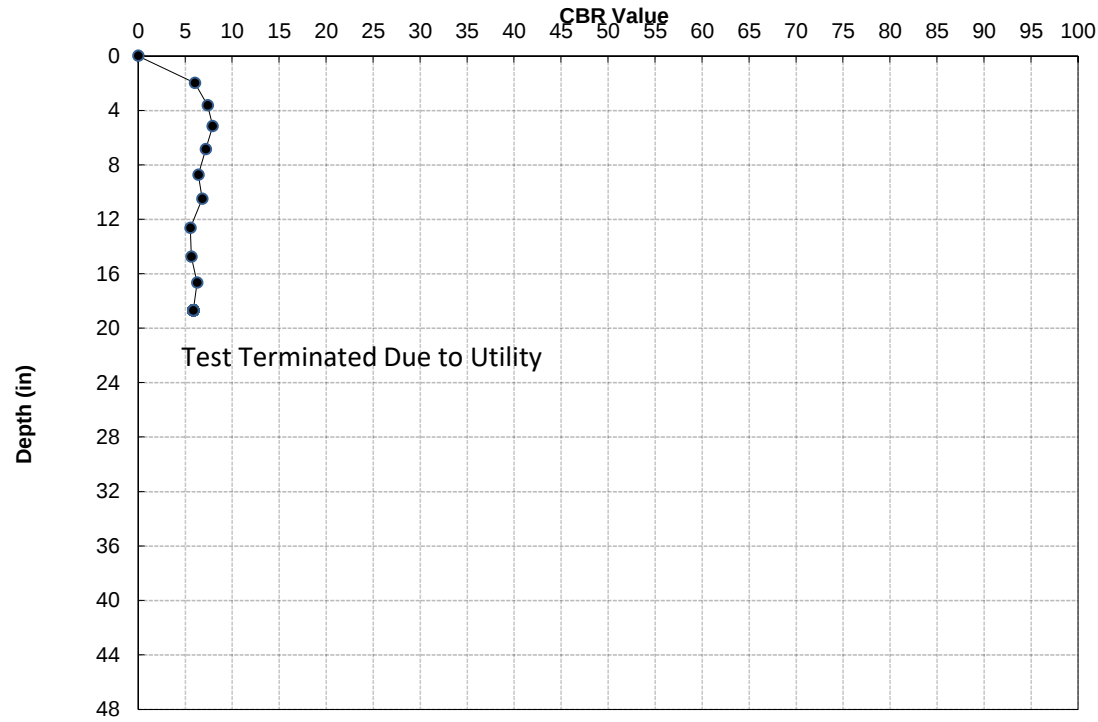
3

C-4 -L- Sta. 22+10

LT LN 1.2 LT FW  
Datum = SG (A-7-5)  
DCP  
At Grade  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 18.7 |
| # of Values | 10          |
| Avg CBR     | 6.5         |
| Wghtd Avg.  | 6.4         |
| Max CBR     | 7.9         |
| Min CBR     | 5.6         |



4



CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

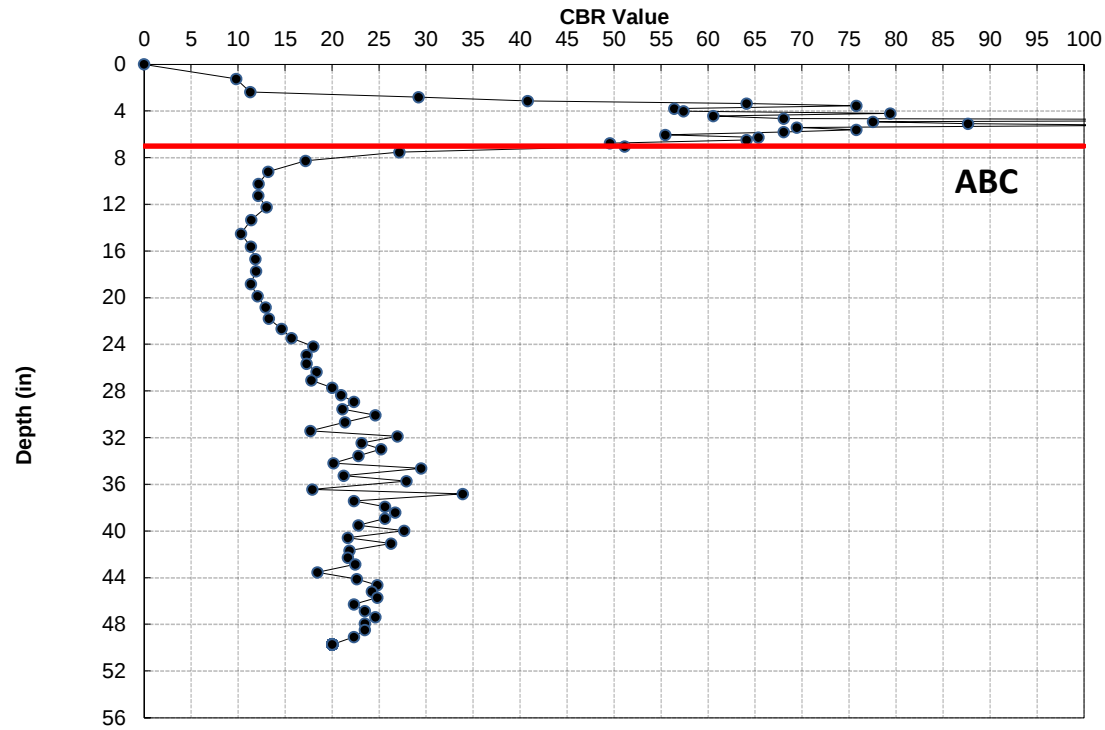
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-5 -L-Sta. 22+10

LTL 6.0 RT FY  
Datum = ABC  
DCP  
At Grade  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 49.7 |
| # of Values | 85          |
| Avg CBR     | 32.0        |
| Wghtd Avg.  | 22.2        |
| Max CBR     | 100+        |
| Min CBR     | 9.8         |



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CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 16

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

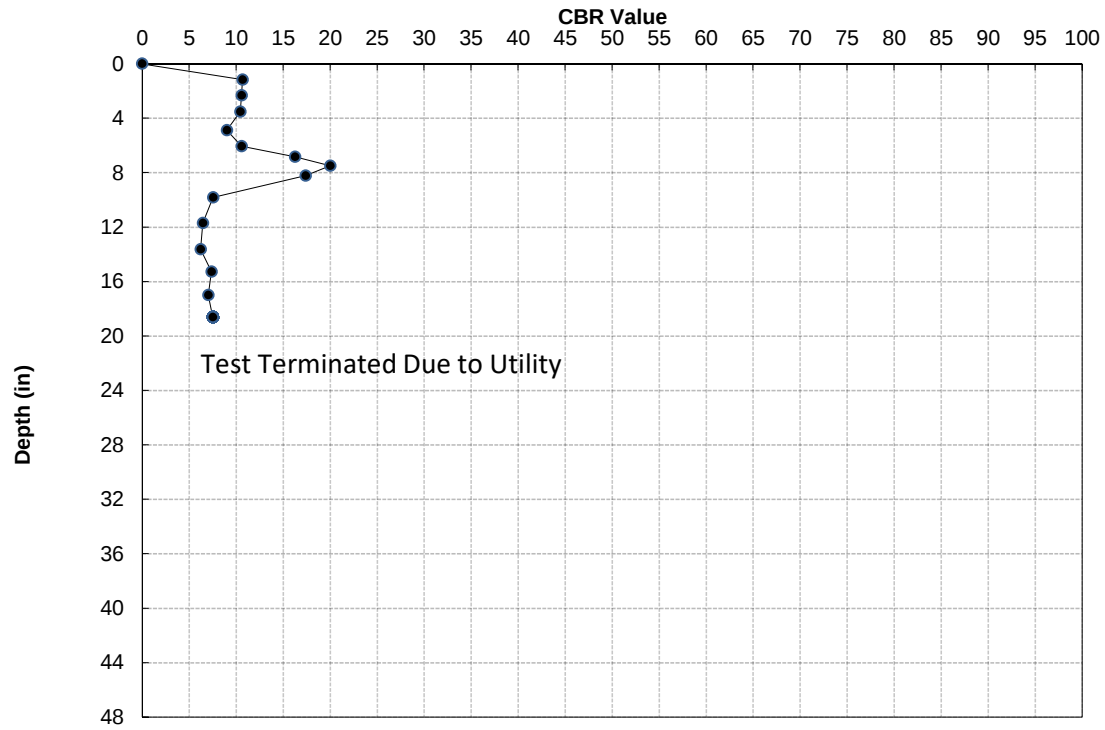
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-7 -L- Sta. 28+50

LT LN 0.5 LT FW  
Datum = SG (A-7-5)  
DCP  
5.0 Cut  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 18.6 |
| # of Values | 14          |
| Avg CBR     | 10.5        |
| Wghtd Avg.  | 9.3         |
| Max CBR     | 20.0        |
| Min CBR     | 6.2         |



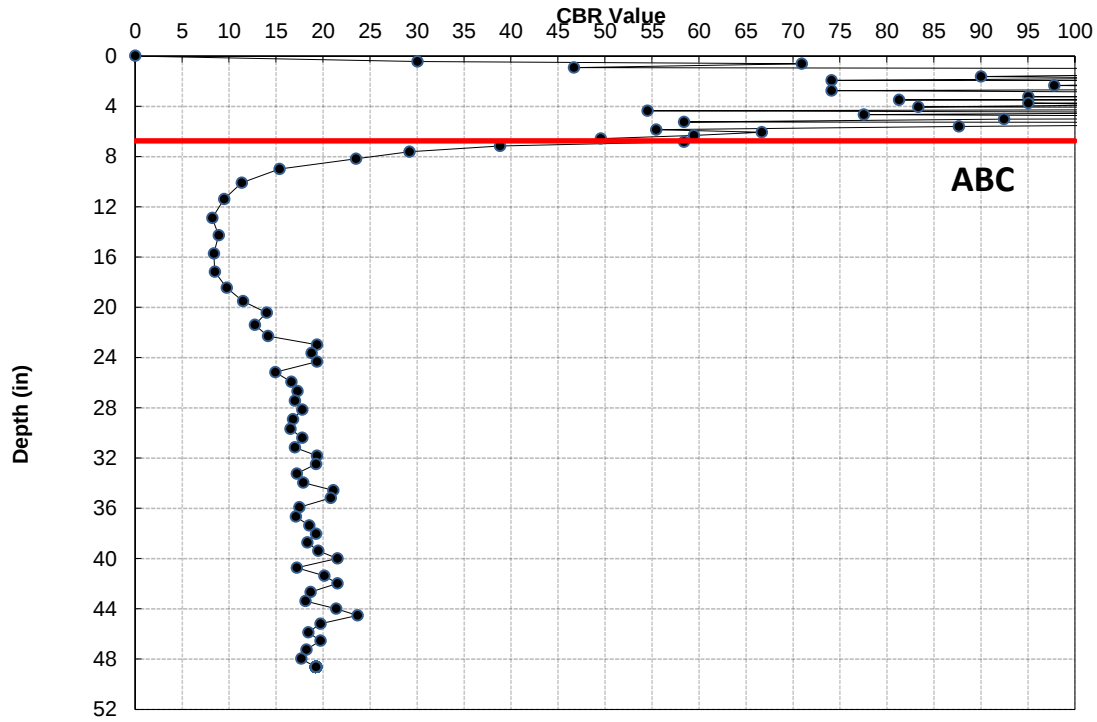
7

C-6 -L-Sta. 22+10

RT LN 1.2 LT FW  
Datum = ABC  
DCP  
At Grade  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 48.6 |
| # of Values | 97          |
| Avg CBR     | 60.9        |
| Wghtd Avg.  | 26.2        |
| Max CBR     | 100+        |
| Min CBR     | 8.2         |



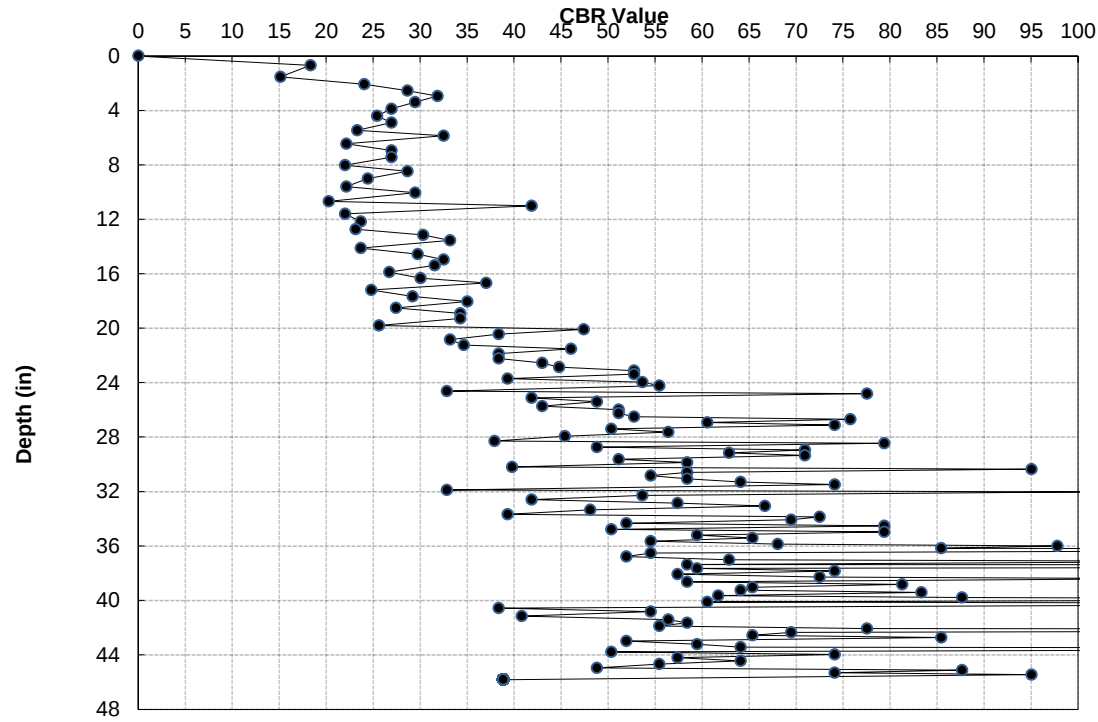
6

C-8 -L- Sta. 28+50

RT LN 1.0 LT FW  
Datum = SG (A-7-5)  
DCP  
5.0 Cut  
4/3-4/4/2024

|             |            |
|-------------|------------|
| 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 45.8 |
| # of Values | 150         |
| Avg CBR     | 56.5        |
| Wghtd Avg.  | 44.4        |
| Max CBR     | 100+        |
| Min CBR     | 15.1        |



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CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

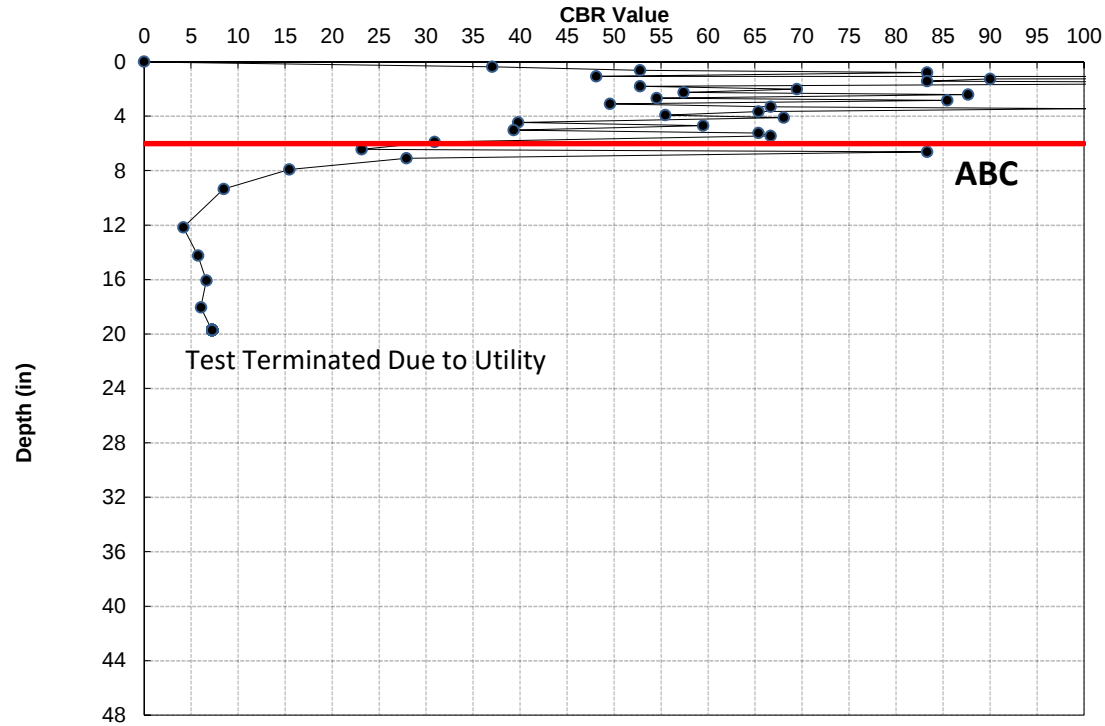
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-9 -L- Sta. 33+40

LT PS 2.3 RT FW  
Datum = ABC  
DCP  
5.0 Fill  
4/3, 4/4/2024

|                        |         |
|------------------------|---------|
| Interval<br>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<br>0.0 to 19.7 |      |
| # of Values             | 36   |
| Avg CBR                 | 61.8 |
| Wghtd Avg.              | 23.8 |
| Max CBR                 | 100+ |
| Min CBR                 | 4.2  |



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CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 17

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

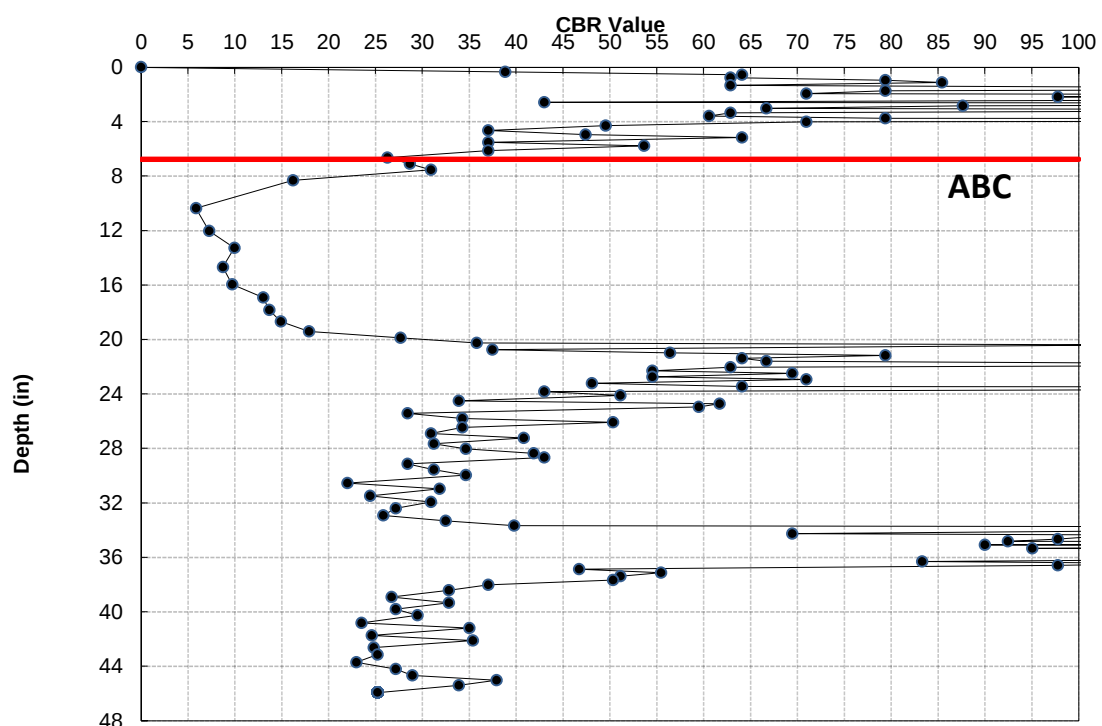
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-11 -L- Sta. 33+40

LTL(LT) 4.0 RT FY  
Datum = ABC  
DCP  
5.0 Fill  
4/3-4/4/2024

|                        |         |
|------------------------|---------|
| Interval<br>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<br>0.0 to 45.9 |      |
| # of Values             | 133  |
| Avg CBR                 | 69.6 |
| Wghtd Avg.              | 39.0 |
| Max CBR                 | 100+ |
| Min CBR                 | 5.9  |



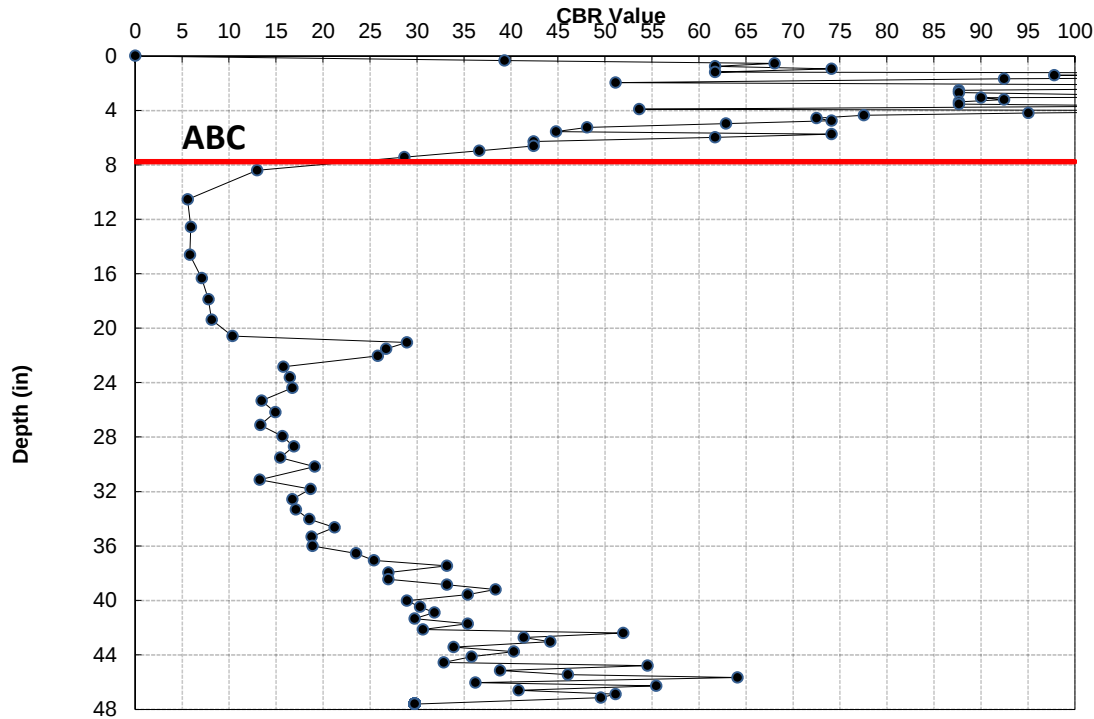
11

C-10 -L- Sta. 33+40

LT LN 2.0 LT FW  
Datum = ABC  
DCP  
5.0 Fill  
4/3-4/4/2024

|                        |         |
|------------------------|---------|
| Interval<br>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<br>0.0 to 47.6 |      |
| # of Values             | 97   |
| Avg CBR                 | 47.8 |
| Wghtd Avg.              | 26.8 |
| Max CBR                 | 100+ |
| Min CBR                 | 5.6  |



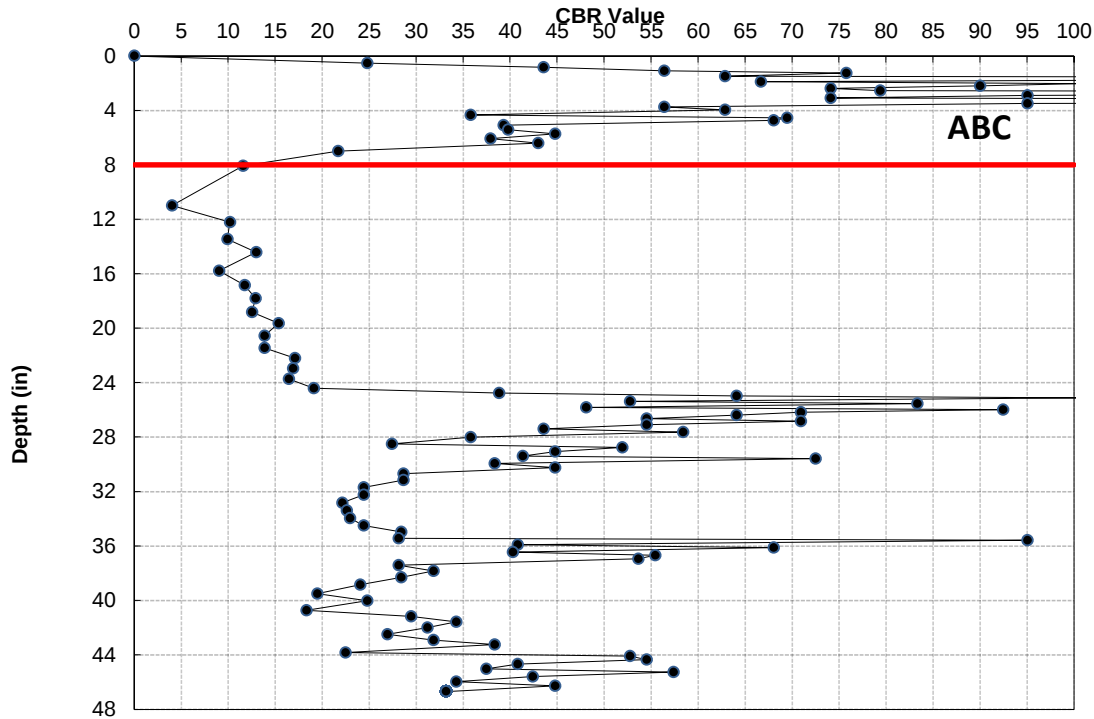
10

C-12 -L- Sta. 33+40

LTL(RT) 6.8 RT FY  
Datum = ABC  
DCP  
5.0 Fill  
4/3-4/4/2024

|                        |         |
|------------------------|---------|
| Interval<br>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<br>0.0 to 46.7 |      |
| # of Values             | 108  |
| Avg CBR                 | 50.7 |
| Wghtd Avg.              | 30.7 |
| Max CBR                 | 100+ |
| Min CBR                 | 4.0  |



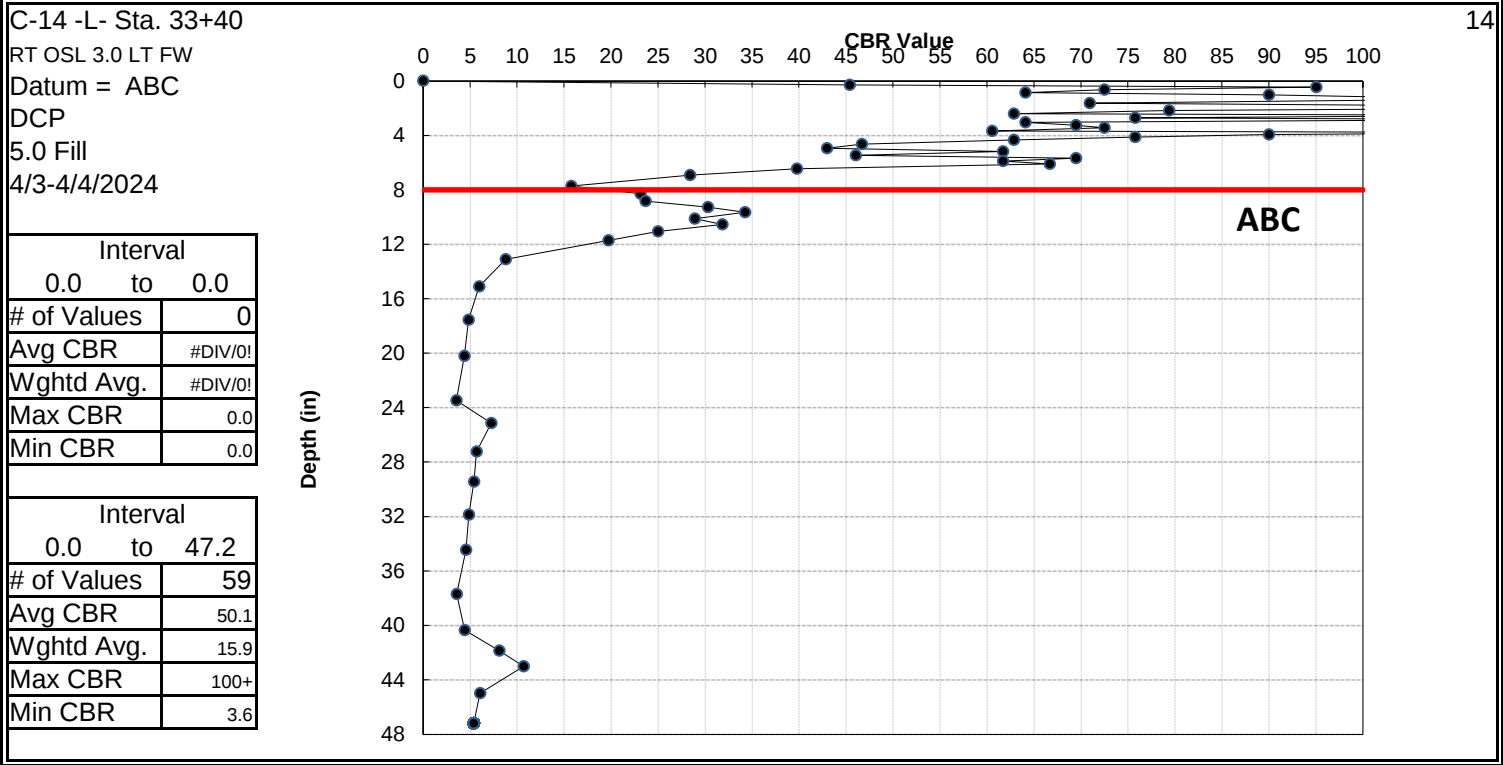
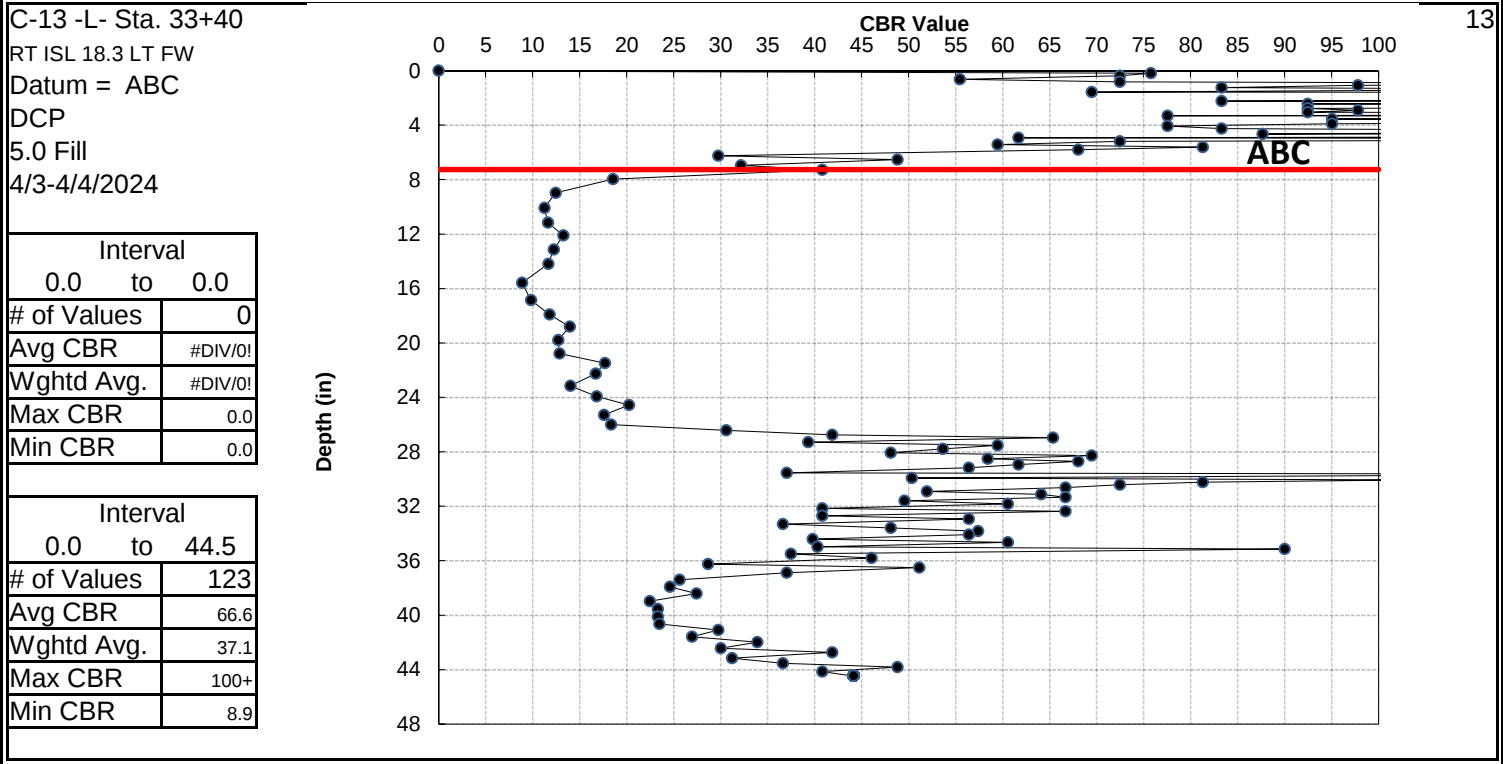
12



CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

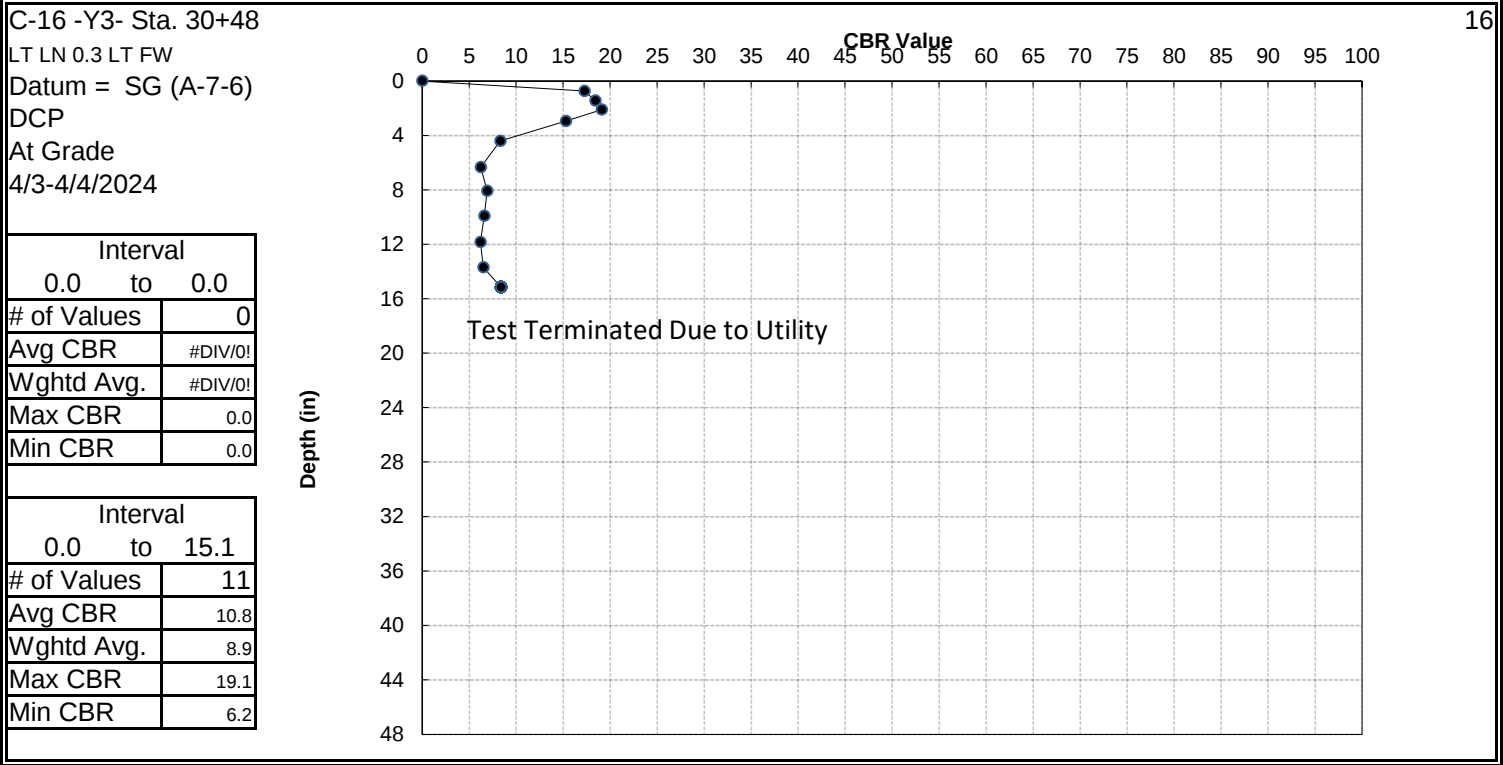
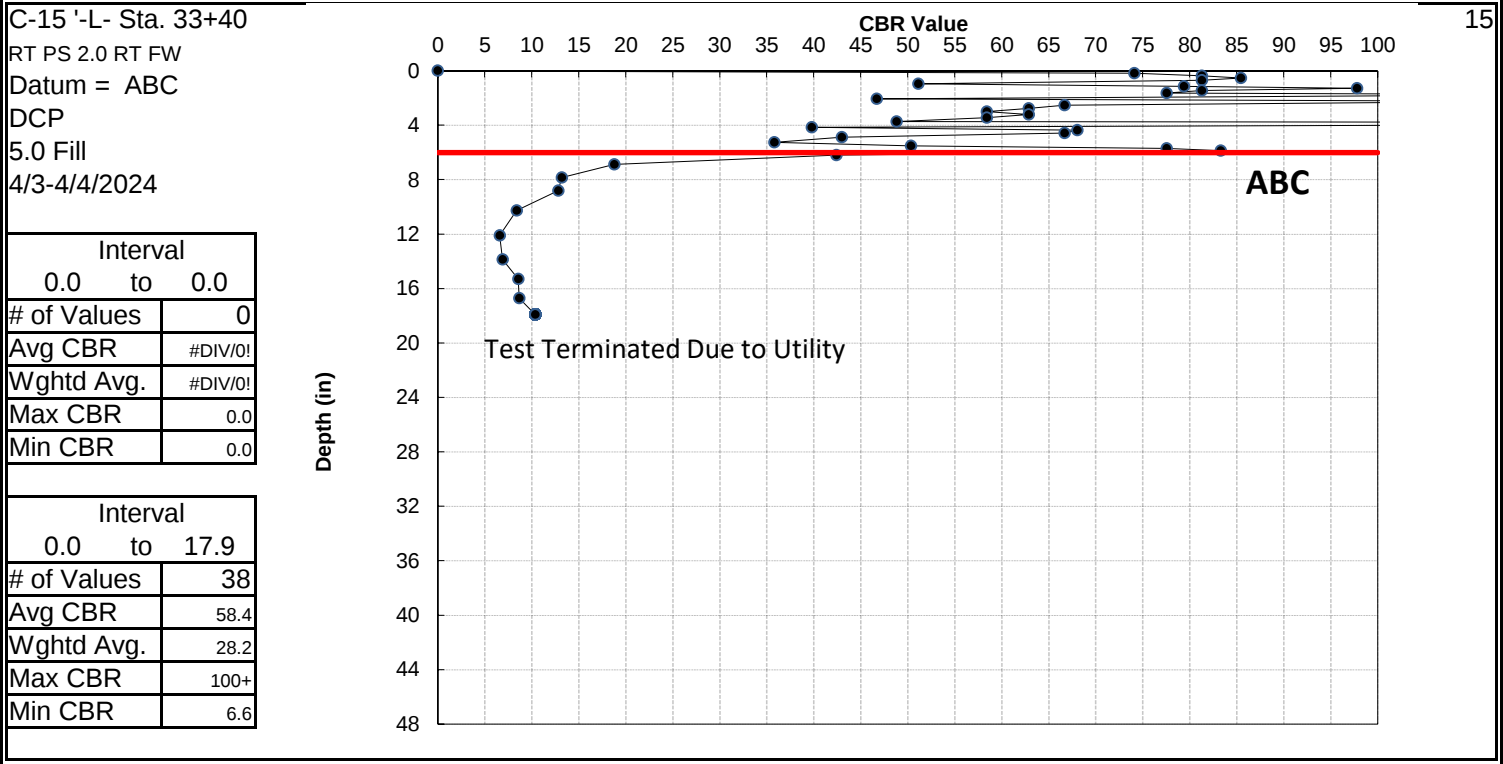


CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 18

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |





CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

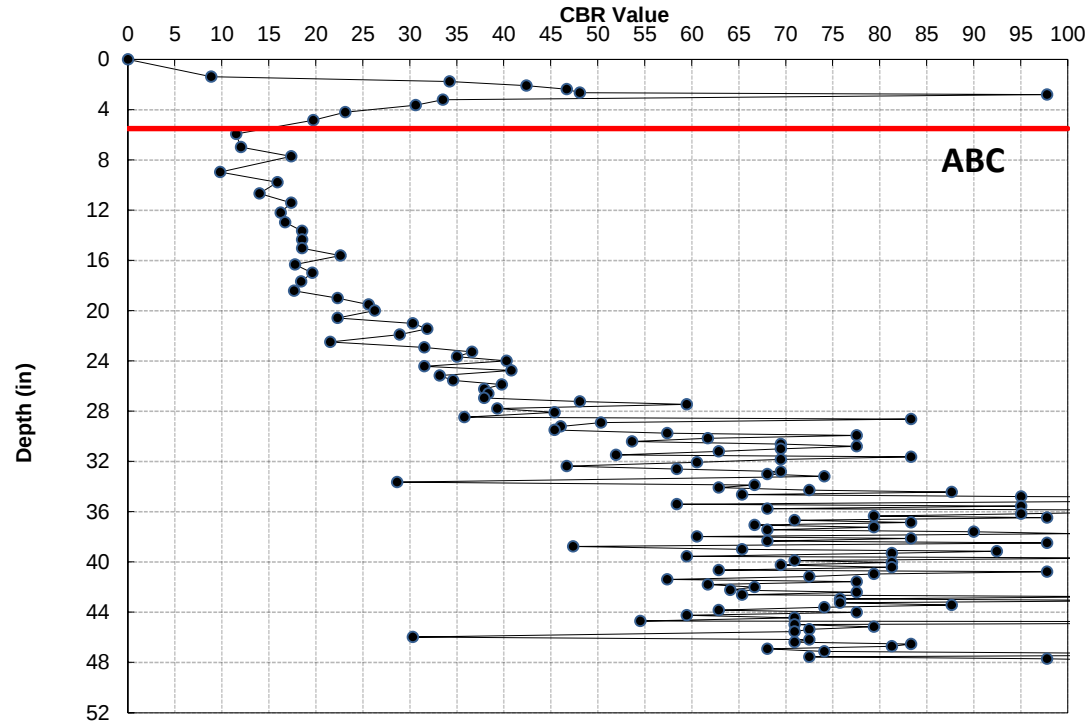
|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

C-18 -Y3- Sta. 30+48

RT LN 2.2 LT FW  
Datum = ABC  
DCP  
At Grade  
4/3-4/4/2024

|             |         |
|-------------|---------|
| 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 48.1 |
| # of Values | 153     |
| Avg CBR     | 61.1    |
| Wghtd Avg.  | 43.1    |
| Max CBR     | 100+    |
| Min CBR     | 8.9     |



17

CONE PENETROMETER RESULTS  
NCDOT, GEOTECHNICAL ENGINEERING UNIT

Sheet 19

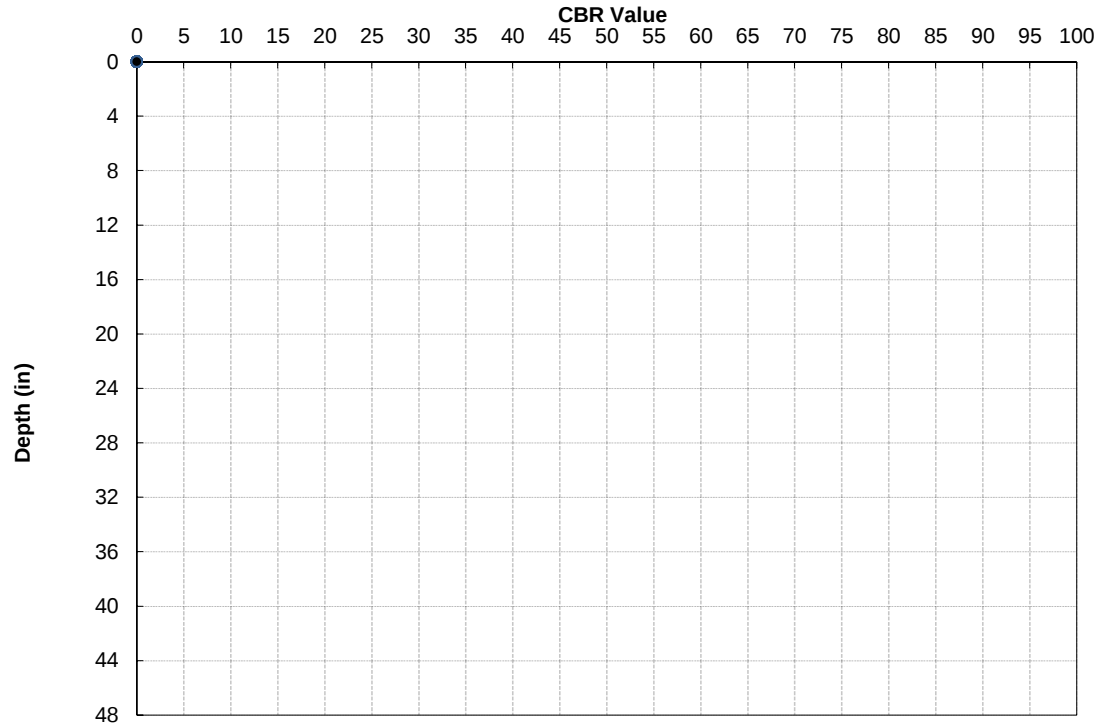
|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| PROJECT NO. | 40543.1.3                                                           |
| PROJECT ID  | U-4913A                                                             |
| ROUTE       | Idlewild Road (SR 3174) from David Trace Drive to I-485 Inner Ramps |
| COUNTY      | Mecklenburg                                                         |

|            |                         |
|------------|-------------------------|
| GEOLOGIST  | T. Wenner               |
| FIELD CREW | CG2 Exploration         |
| FILE       | DCP Graphs C-1- to C-18 |

Datum = 0  
0  
0  
0  
01/00/00

|             |         |
|-------------|---------|
| 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     |



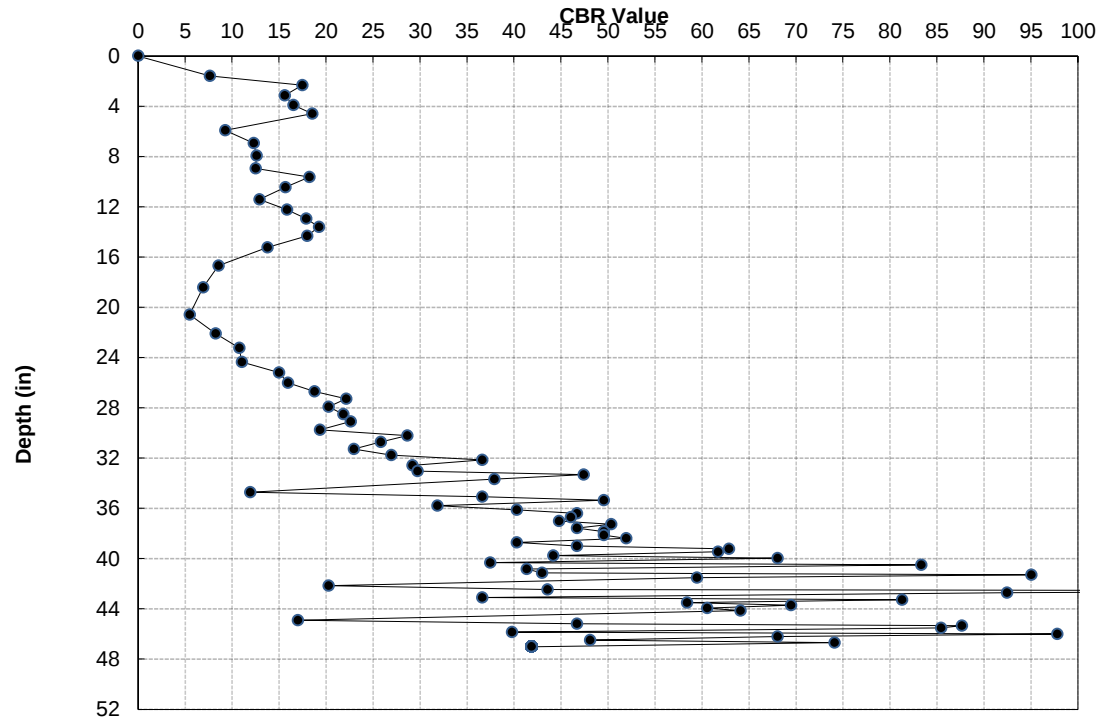
19

C-17 -Y3- Sta. 30+48

RT PS 0.3 RT FW  
Datum = SG (A-7-6)  
DCP  
At Grade  
4/3-4/4/2024

|             |         |
|-------------|---------|
| 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 47.0 |
| # of Values | 85      |
| Avg CBR     | 38.3    |
| Wghtd Avg.  | 23.6    |
| Max CBR     | 100+    |
| Min CBR     | 5.5     |

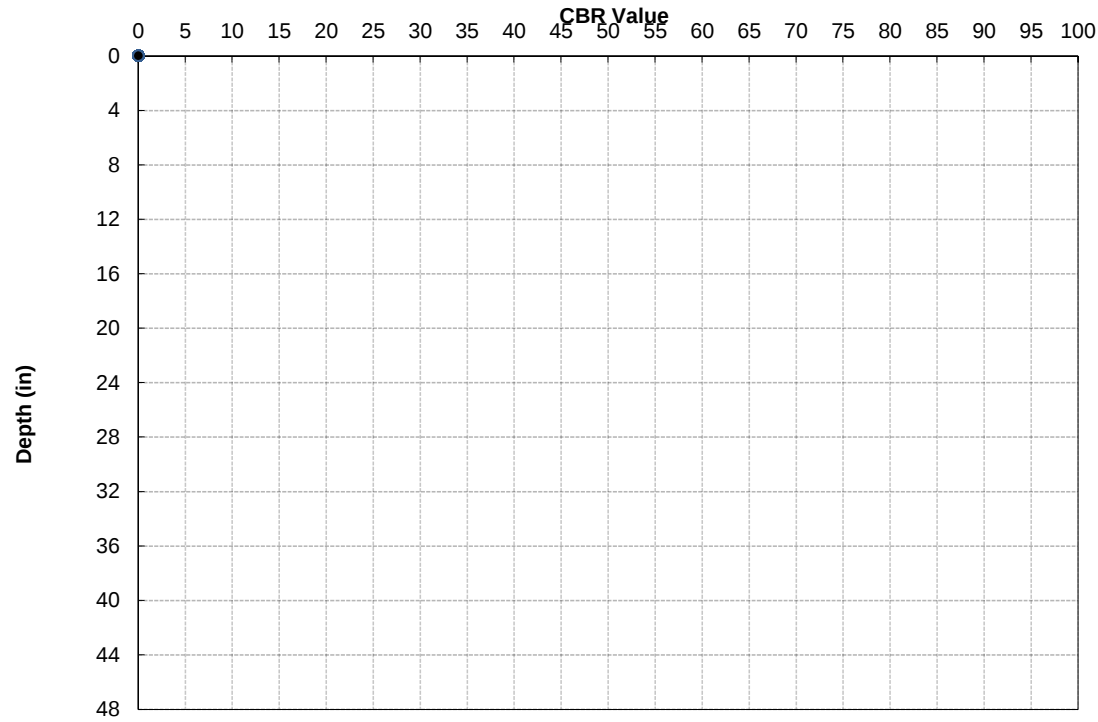


18

Datum = 0  
0  
0  
0  
01/00/00

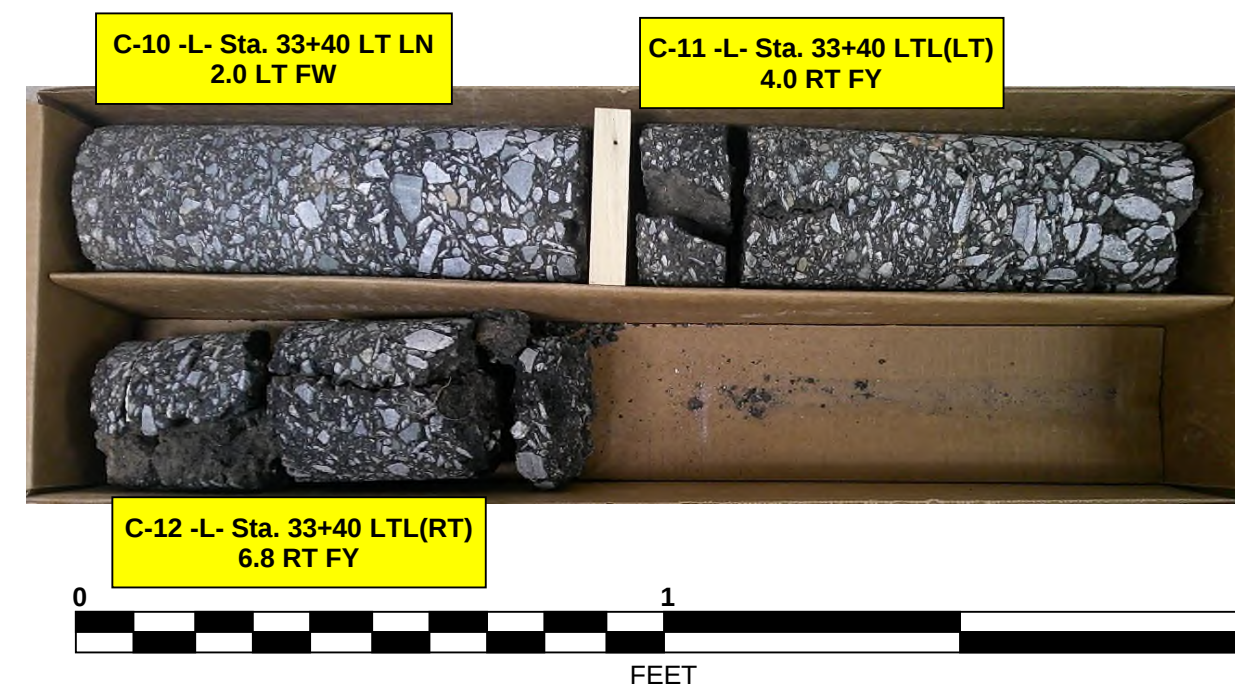
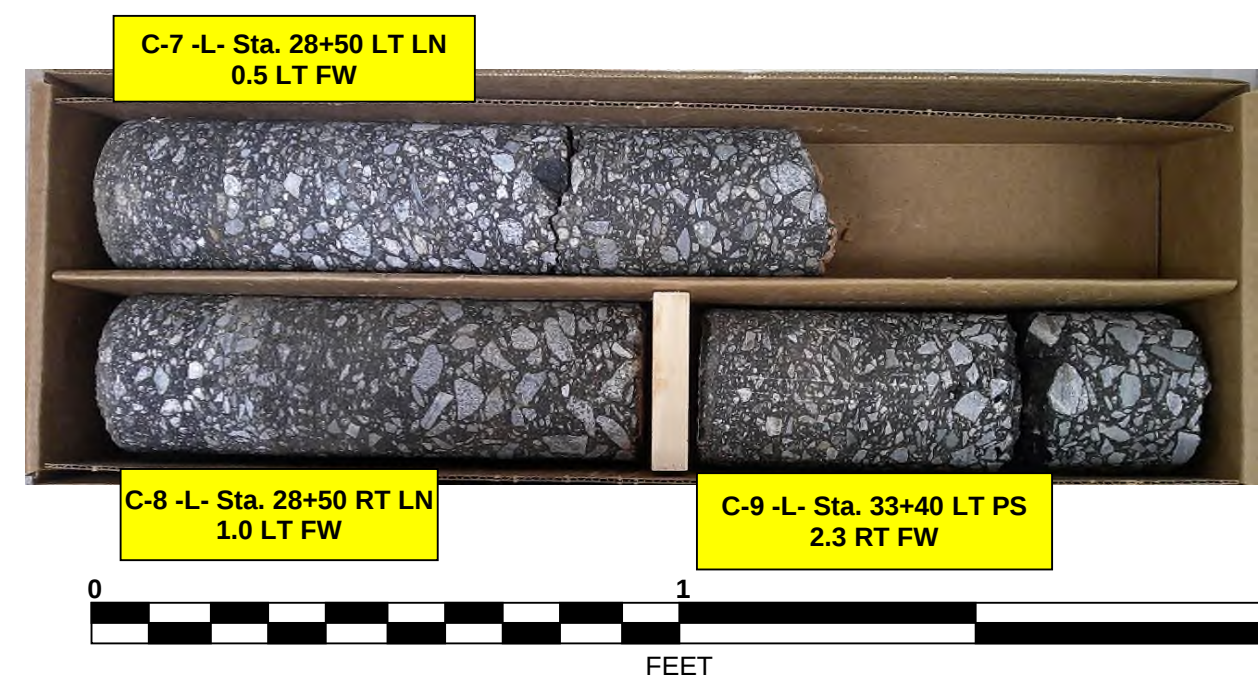
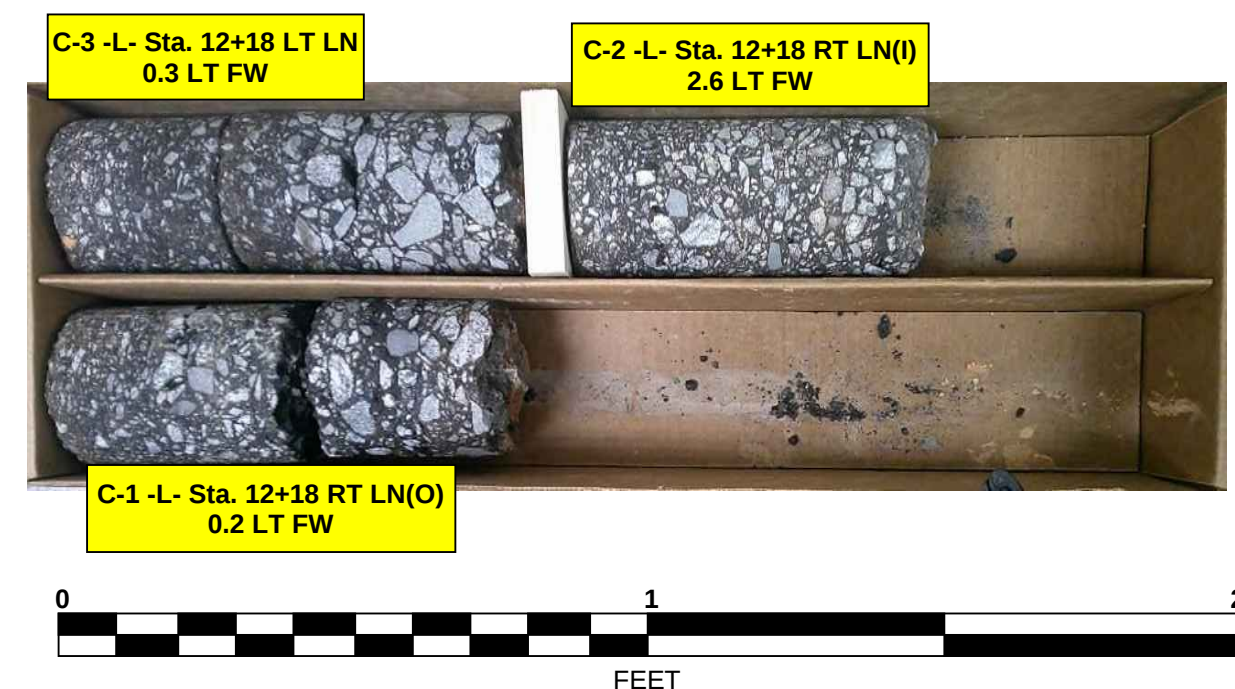
|             |         |
|-------------|---------|
| Interval    |         |
| 0.0         | to 0.0  |
| # of Values | 0       |
| Avg CBR     | #DIV/0! |
| Wghtd Avg.  | #DIV/0! |
| Max CBR     | 0.0     |
| Min CBR     | 0.0     |

|             |         |
|-------------|---------|
| 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     |

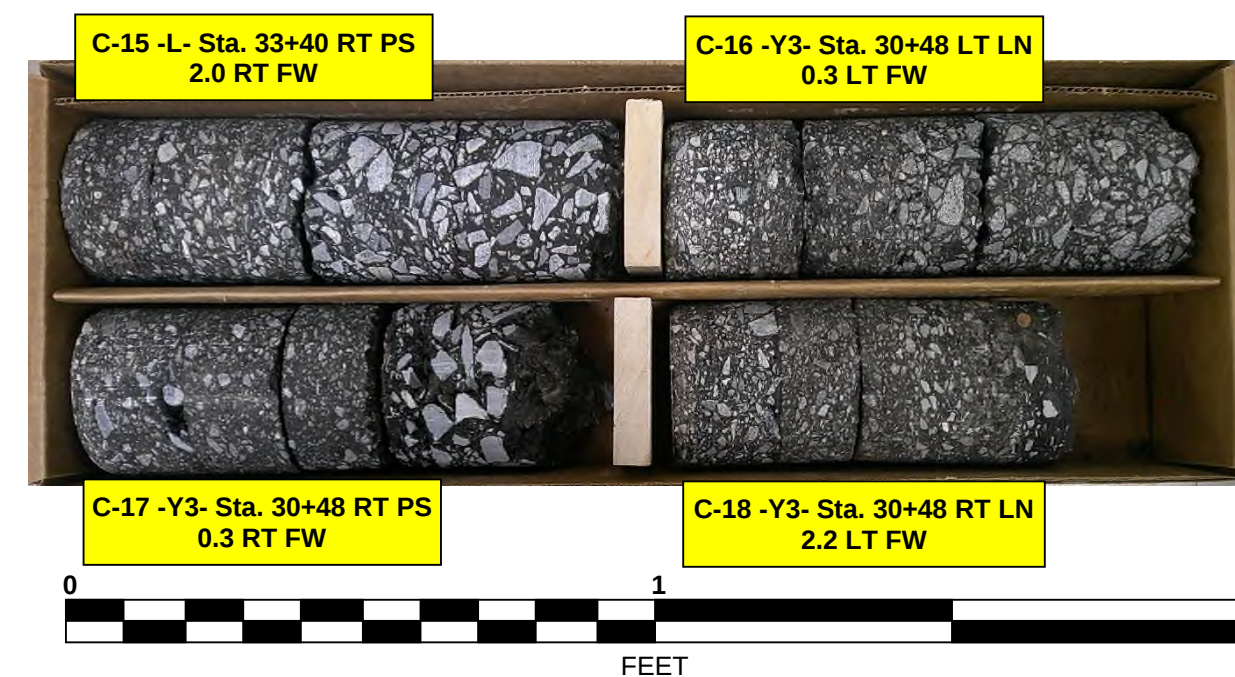
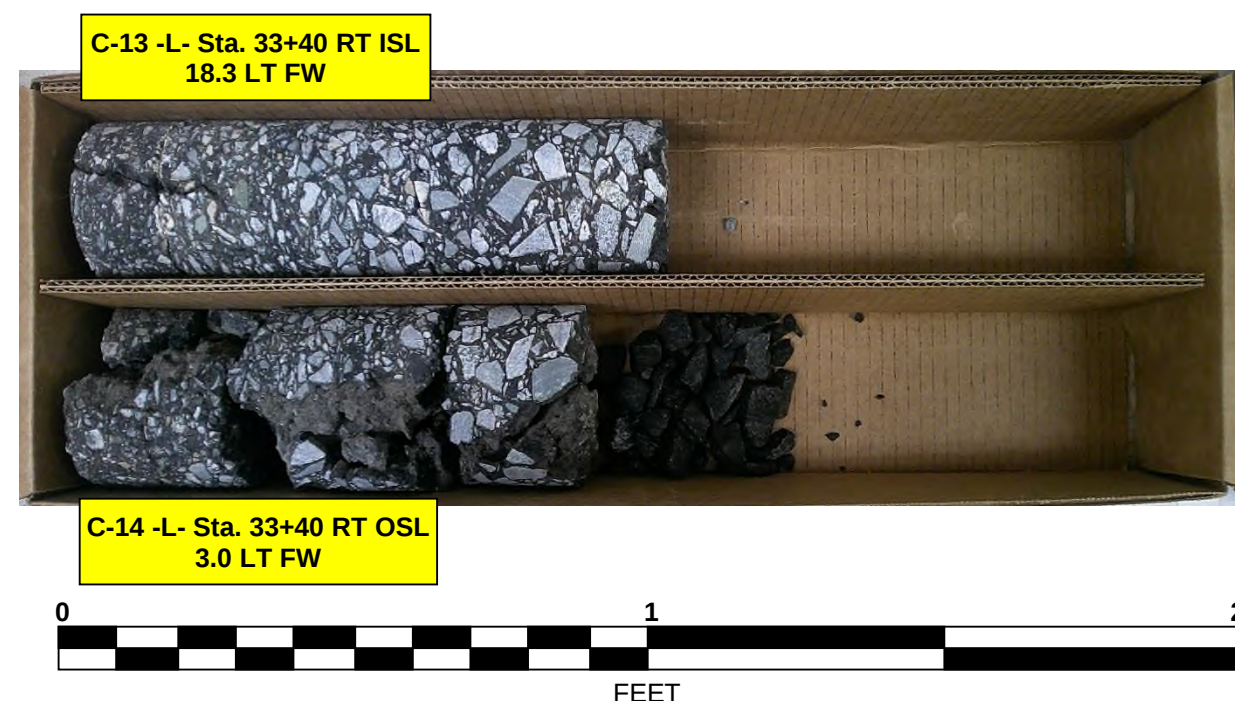


20

**U-4913A: Proposing to widen Idlewild Road (SR 3174) from Davis Trace Drive to I-485 Inner Ramps and realign Stallings Road (SR 3174) from its current terminus at Idlewild Road (SR 3174) to Davis Trace Drive**  
**Pavement Core Photographs**



**U-4913A: Proposing to widen Idlewild Road (SR 3174) from Davis Trace Drive to I-485 Inner Ramps and realign Stallings Road (SR 3174) from its current terminus at Idlewild Road (SR 3174) to Davis Trace Drive**  
**Pavement Core Photographs**



| ALIGNMENT | STATION                                  | ABC<br>(in) | LAYER THICKNESS<br>(in) | LAYER | LIFT(S) | REMARKS                                                                                                                                                                                                                          |
|-----------|------------------------------------------|-------------|-------------------------|-------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -L-       | C-3 Sta. 12+18 LT LN<br>0.3 LT FW        | -           | 5.00                    | S     | 4       | Delamination between lifts 3/4, Low Severity Oxidation, Low to Moderate Severity Stripping with numerous very small voids, FEA                                                                                                   |
|           | 9.75" Asphalt                            |             | 4.75                    | B     | 1       | Mechanical break in lift, Low Severity Oxidation and Moderate Severity Stripping with numerous very small to medium voids, FEA                                                                                                   |
| -L-       | C-2 Sta. 12+18 RT LN (I)<br>2.6 LT FW    | 6.25        | 1.25                    | S     | 1       | Low Severity Oxidation and Stripping, with numerous very small voids, FEA                                                                                                                                                        |
|           | 7.75" Asphalt                            |             | 6.50                    | I     | 2       | Low to Moderate Severity Oxidation and Stripping, with numerous very small to small voids, FEA                                                                                                                                   |
| -L-       | C-1 Sta. 12+18 RT LN<br>(O)<br>0.2 LT FW | -           | 2.25                    | S     | 2       | Low Severity Oxidation and Stripping, with numerous very small voids, FEA                                                                                                                                                        |
|           | 9.25" Asphalt                            |             | 3.00                    | I     | 1       | Low to Moderate Severity Oxidation and Stripping, with numerous very small to small voids, FEA                                                                                                                                   |
|           |                                          |             | 4.00                    | B     | 1       | Delamination/Mechanical break between I/B, Moderate to High Severity Oxidation and Stripping, with numerous small to medium voids, FEA                                                                                           |
| -L-       | C-4 Sta. 22+10 LT LN<br>1.2 LT FW        | -           | 3.00                    | S     | 2       | Low Severity Oxidation, FEA                                                                                                                                                                                                      |
|           | 19.00" Asphalt                           |             | 16.00                   | B     | 4       | Low to High Severity Oxidation and Stripping, with numerous very small to large voids, Mechanical break between lifts 2/3 and 3/4, FEA                                                                                           |
| -L-       | C-5 Sta. 22+10 LTL<br>6.0 RT FY          | 7.00        | 7.00                    | S     | 4+      | Low to High Severity Oxidation, Low to Moderate Severity Stripping with numerous very small to small voids, FEA, delamination between lifts 2/3 and 4/+, start of delamination between lifts 3/4                                 |
|           | 7.00" Asphalt                            |             |                         |       |         |                                                                                                                                                                                                                                  |
| -L-       | C-6 Sta. 22+10 RT LN<br>1.2 LT FW        | 6.75        | 2.50                    | S     | 2       | 9.25" Top-down crack through core, Low Severity Oxidation and Stripping, with few very small voids, FEA                                                                                                                          |
|           | 9.25" Asphalt                            |             | 2.75                    | I     | 1       | Low to Moderate Severity Oxidation and Stripping, with numerous very small voids, FEA                                                                                                                                            |
|           |                                          |             | 4.00                    | B     | 1       | Low to Moderate Severity Oxidation and Stripping, with numerous very small to small voids, FEA                                                                                                                                   |
| -L-       | C-7 Sta. 28+50 LT LN<br>0.5 LT FW        | -           | 2.50                    | S     | 2       | Low Severity Oxidation and Stripping, with some very small voids, FEA                                                                                                                                                            |
|           | 15.00" Asphalt                           |             | 12.50                   | I     | 4       | Mechanical break between lifts 2/3, Low Severity Oxidation and Stripping, with some very small voids, FEA                                                                                                                        |
| -L-       | C-8 Sta. 28+50 RT LN<br>1.0 LT FW        | -           | 3.25                    | S     | 2       | Low Severity Oxidation, FEA                                                                                                                                                                                                      |
|           | 11.00" Asphalt                           |             | 2.50                    | I     | 1       | Moderate Severity Oxidation, Low to Moderate Severity Stripping, with numerous very small voids, FEA                                                                                                                             |
|           |                                          |             | 5.25                    | B     | 1       | Low to Moderate Severity Oxidation, Low Severity Stripping, with numerous very small voids                                                                                                                                       |
| -L-       | C-9 Sta. 33+40 LT PS<br>2.3 RT FW        | 6.00 (+/-)  | 1.75                    | S     | 2       | Low Severity Oxidation and Stripping, with few very small voids, FEA                                                                                                                                                             |
|           | 10.25" Asphalt                           |             | 3.25                    | I     | 1       | SAA, few very small to small voids                                                                                                                                                                                               |
|           |                                          |             | 5.25                    | B     | 1       | Moderate to High Severity Oxidation and Stripping, with numerous very small to medium voids, FEA, mechanical break in lift                                                                                                       |
| -L-       | C-10 Sta. 33+40 LT LN<br>2.0 LT FW       | 7.75        | 1.25                    | S     | 1       | Low Severity Oxidation and Stripping, with some very small voids, FEA                                                                                                                                                            |
|           | 10.25" Asphalt                           |             | 5.00                    | I     | 2       | Low Severity Oxidation, Low to Moderate Severity Stripping, with some very small to medium voids, FEA                                                                                                                            |
|           |                                          |             | 4.00                    | B     | 1       | Low to Moderate Severity Oxidation, Low Severity Stripping with numerous very small voids, FEA                                                                                                                                   |
| -L-       | C-11 Sta. 33+40 LTL(LT)<br>4.0 RT FY     | 6.75        | 2.00                    | S     | 2       | 2" Top-down crack in core, Delamination between S/I, Moderate to High Severity Oxidation and Stripping, with numerous very small to large voids, FEA                                                                             |
|           | 11.25" Asphalt                           |             | 4.00                    | I     | 2       | 2-3" Top-down crack in lifts 1 and 2, High Severity Oxidation and Stripping with numerous small to medium voids, FEA                                                                                                             |
|           |                                          |             | 5.25                    | B     | 1       | SAA, small to large voids                                                                                                                                                                                                        |
| -L-       | C-12 Sta. 33+40 LTL(RT)<br>6.8 RT FY     | 8.00        | 1.00                    | S     | 1       | Top-down crack in lift, Low Severity Oxidation, FEA, delamination between S/I                                                                                                                                                    |
|           | 11.00" Asphalt                           |             | 10.00                   | I     | 4       | Delamination/mechanical break between lifts 1/2, mechanical break between lifts 3/4, lift 4 rubble, Top-down crack in lifts 1-3, Moderate to High Severity Oxidation and Stripping, with numerous very small to large voids, FEA |

| ALIGNMENT | STATION                              | ABC<br>(in) | LAYER THICKNESS<br>(in) | LAYER | LIFT(S) | REMARKS                                                                                                                                                                        |
|-----------|--------------------------------------|-------------|-------------------------|-------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -L-       | C-13 Sta. 33+40 RT ISL<br>18.3 LT FW | 7.25        | 2.00                    | S     | 2       | Top-down crack in lift, delamination between S/I, Low Severity Oxidation and Stripping, with numerous very small voids, FEA                                                    |
|           | 12.75" Asphalt                       |             | 5.50                    | I     | 2       | Moderate Severity Oxidation and Stripping, with numerous very small to medium voids, 1.5" top-down crack in lift 1, FEA                                                        |
|           |                                      |             | 5.25                    | B     | 1       | Low to Moderate Severity Oxidation and Stripping, with numerous very small to small voids, FEA                                                                                 |
| -L-       | C-14 Sta. 33+40 RT OSL<br>3.0 LT FW  | 8.00        | 1.75                    | S     | 1       | Moderate Severity Oxidation and Stripping, with numerous very small to small voids, mechanical break in lift/1.75" top-down crack in lift, FEA                                 |
|           | 11.00" Asphalt                       |             | 2.50                    | I     | 1       | Moderate Severity Oxidation, Moderate to High Severity Stripping, with numerous small voids, FEA, mechanical break in lift                                                     |
|           |                                      |             | 6.75                    | B     | 2       | Low to Moderate Severity Oxidation, Moderate Severity Stripping, with numerous very small to medium voids, crack through core, delamination/mechanical break between lifts 1/2 |
| -L-       | C-15 Sta. 33+40 RT PS<br>2.0 RT FW   | 6.00 (+/-)  | 2.00                    | S     | 2       | Start of delamination S/I, Moderate to High Severity Oxidation, Moderate Severity Stripping, with numerous very small to small voids, FEA                                      |
|           | 11.50" Asphalt                       |             | 3.00                    | I     | 1       | Low Severity Oxidation and Low to Moderate Severity Stripping, with some very small to small voids, FEA                                                                        |
|           |                                      |             | 6.50                    | B     | 2       | Delamination/mechanical break between I/B and lifts 1/2, SAA                                                                                                                   |
| -Y3-      | C-16 Sta. 30+48 LT LN<br>0.3 LT FW   | -           | 5.00                    | S     | 4       | Delamination between lifts 3/4, Low to Moderate Severity Oxidation and Stripping, with numerous very small to small voids, FEA                                                 |
|           | 11.25" Asphalt                       |             | 6.25                    | I     | 2       | Mechanical break between lifts 1/2, Low Severity Oxidation, Low to Moderate Severity Stripping, with numerous very small to small voids, FEA                                   |
| -Y3-      | C-17 Sta. 30+48 RT PS<br>0.3 RT FW   | -           | 6.25                    | S     | 4       | Delamination between lifts 3/4 and S/B, Low Severity Oxidation, Low to Moderate Severity Stripping, with numerous very small to small voids, FEA                               |
|           | 11.00" Asphalt                       |             | 4.75                    | B     | 1       | High Severity Oxidation and Stripping, with numerous small to large voids, FEA                                                                                                 |
| -Y3-      | C-18 Sta. 30+48 RT LN<br>2.2 LT FW   | 5.50        | 8.75                    | S     | 7       | Moderate to High Severity Oxidation and Stripping, with numerous very small to medium voids, delamination between lifts 3/4, start of delamination between lifts 2/3           |
|           | 8.75" Asphalt                        |             |                         |       |         |                                                                                                                                                                                |

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

|               |                                                                                                 |               |           |           |             |              |                        |
|---------------|-------------------------------------------------------------------------------------------------|---------------|-----------|-----------|-------------|--------------|------------------------|
| Project       | Widen Idlewild Road From Davis Trace Drive to the I-485 Inner Ramps and Re-align Stallings Road | T.I.P. No.    | U-4913A   | County    | Mecklenburg | F&ME Job No. | C8806.001 - Task 00023 |
| Date Received | 4/1/2024                                                                                        | Date Reported | 4/29/2024 | Tested By | F&ME        | CERT No.:    | 130-0212               |

| SOIL TEST RESULTS |           |         |           |              |                      |              |      |      |             |         |       |       |                    |       |       |          |         |
|-------------------|-----------|---------|-----------|--------------|----------------------|--------------|------|------|-------------|---------|-------|-------|--------------------|-------|-------|----------|---------|
| SAMPLE NO.        | ALIGNMENT | 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-3               | -L-       | 12+18   | LT LN     | 0.3 LT FW    | 0.8 - 5.0            | A-7-5(43)    | 72   | 37   | 2.5%        | 2.7%    | 21.7% | 73.1% | 99.9%              | 98.5% | 95.2% | 39.8%    | ND      |
| S-2               | -L-       | 12+18   | RT LN (I) | 2.6 LT FW    | 1.2 - 5.0            | A-7-6(27)    | 60   | 34   | 14.4%       | 6.8%    | 23.9% | 54.9% | 95.8%              | 87.0% | 76.4% | 30.8%    | ND      |
| S-5               | -L-       | 22+10   | LTL       | 6.0 RT FY    | 1.2 - 5.0            | A-7-5(37)    | 70   | 38   | 7.2%        | 8.9%    | 21.2% | 62.7% | 99.7%              | 97.1% | 84.8% | 28.1%    | ND      |
| S-6               | -L-       | 22+10   | RT LN     | 1.2 LT FW    | 1.3 - 5.0            | A-7-5(18)    | 51   | 20   | 10.5%       | 6.2%    | 36.2% | 47.1% | 93.7%              | 85.6% | 79.6% | 26.8%    | ND      |
| S-8               | -L-       | 28+50   | RT LN     | 1.0 LT FW    | 0.9 - 5.0            | A-7-5(44)    | 74   | 42   | 9.4%        | 9.6%    | 18.4% | 62.6% | 100.0%             | 97.0% | 82.3% | 24.7%    | ND      |
| S-10              | -L-       | 33+40   | LT LN     | 2.0 LT FW    | 1.5 - 5.0            | A-7-5(11)    | 45   | 15   | 14.4%       | 7.2%    | 35.7% | 42.7% | 91.1%              | 80.8% | 73.1% | 30.0%    | ND      |
| S-11              | -L-       | 33+40   | LTL(LT)   | 4.0 RT FY    | 1.5 - 5.0            | A-6(7)       | 40   | 16   | 21.1%       | 11.0%   | 30.9% | 37.0% | 79.2%              | 66.4% | 55.6% | 17.5%    | ND      |
| S-12              | -L-       | 33+40   | LTL(RT)   | 6.8 RT FY    | 1.6 - 5.0            | A-7-6(10)    | 47   | 19   | 16.7%       | 12.0%   | 32.7% | 38.6% | 82.9%              | 73.2% | 61.6% | 32.1%    | ND      |
| S-14              | -L-       | 33+40   | RT OSL    | 3.0 LT FW    | 1.6 - 5.0            | A-6(4)       | 33   | 13   | 23.2%       | 12.4%   | 27.9% | 36.5% | 79.5%              | 66.4% | 53.2% | 22.9%    | ND      |
| S-18              | -Y3-      | 30+48   | RT LN     | 2.2 LT FW    | 1.2 - 5.0            | A-7-6(20)    | 48   | 29   | 16.1%       | 10.8%   | 26.2% | 46.9% | 97.6%              | 88.4% | 73.5% | 14.7%    | ND      |
| Bulk-1            | -L-       | 18+00   | -         | 10.0 RT      | 0.0 - 3.0            | A-7-6(19)    | 46   | 24   | 12.4%       | 12.6%   | 25.3% | 49.7% | 99.2%              | 92.8% | 77.6% | 22.3%    | ND      |
| Bulk-2            | -L-       | 31+00   | -         | 25.0 RT      | 0.0 - 5.0            | A-7-6(31)    | 63   | 37   | 10.1%       | 6.3%    | 27.9% | 55.7% | 91.9%              | 85.4% | 78.4% | 24.7%    | ND      |
| Bulk-3            | -Y3-      | 21+00   | -         | CL           | 0.0 - 10.0           | A-7-5(31)    | 64   | 34   | 10.4%       | 8.0%    | 24.5% | 57.1% | 98.5%              | 92.4% | 82.1% | 26.7%    | ND      |
| Bulk-4            | -Y3-      | 28+00   | -         | 30.0 RT      | 0.0 - 5.0            | A-7-6(14)    | 43   | 19   | 14.3%       | 11.5%   | 28.8% | 45.4% | 97.7%              | 90.5% | 74.4% | 22.8%    | ND      |

|                                                                                       |                 |
|---------------------------------------------------------------------------------------|-----------------|
|  | 130-04-0212     |
|                                                                                       | NCDOT Cert. No. |
|                                                                                       | 04/29/24        |
| Authorized Signature                                                                  | Date            |

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

REV 03/2024

SPECIFIC GRAVITY OF SOILS  
(ASTM D854 / AASHTO T100)

|                      |                                                                                              |                |                        |
|----------------------|----------------------------------------------------------------------------------------------|----------------|------------------------|
| Project Name:        | Widen Idlewild Road From Davis Trace Drive to the I-485 Inner Ramps and Realign Stallings Rd | Project No.:   | C8806.001 - Task 00019 |
| FME Lab ID           | 24-1140                                                                                      | Depth (ft.):   | 0.0 - 3.0              |
| Description of Soil: | A-7-6(19)                                                                                    | Date Received: | 4/10/2024              |
| Method:              | A                      X                      B                                              |                |                        |
| Tested By:           | Alex Abernethy                                                                               | Date Tested:   | 5/9/2024               |

|                                                                  |           |  |  |  |
|------------------------------------------------------------------|-----------|--|--|--|
| Boring No.                                                       | Bulk-1    |  |  |  |
| Sample Depth (ft.)                                               | 0.0 - 3.0 |  |  |  |
| Volume of Flask at 20° C                                         | 500 mL    |  |  |  |
| Method of Air Removal                                            | Boiling   |  |  |  |
| Mass Flask + Water + Soil (Wb)                                   | 767.48    |  |  |  |
| Test Temperature ° C (Tx)                                        | 23.0      |  |  |  |
| Mass Flask + Water (Wa)                                          | 704.83    |  |  |  |
| Container No.                                                    | A         |  |  |  |
| Mass of Container + Oven Dry Soil                                | 306.93    |  |  |  |
| Mass of Container                                                | 206.93    |  |  |  |
| Mass of Oven Dry Soil (Wo)                                       | 100.00    |  |  |  |
| Specific Gravity @ Test Temperature<br>Wo/[Wo+(Wa-Wb)]           | 2.677     |  |  |  |
| Specific Gravity (SG)<br>K x Specific Gravity @ Test Temperature | 2.676     |  |  |  |

Remarks:

Alex M. Abernethy

Authorized Signature

130-04-0212

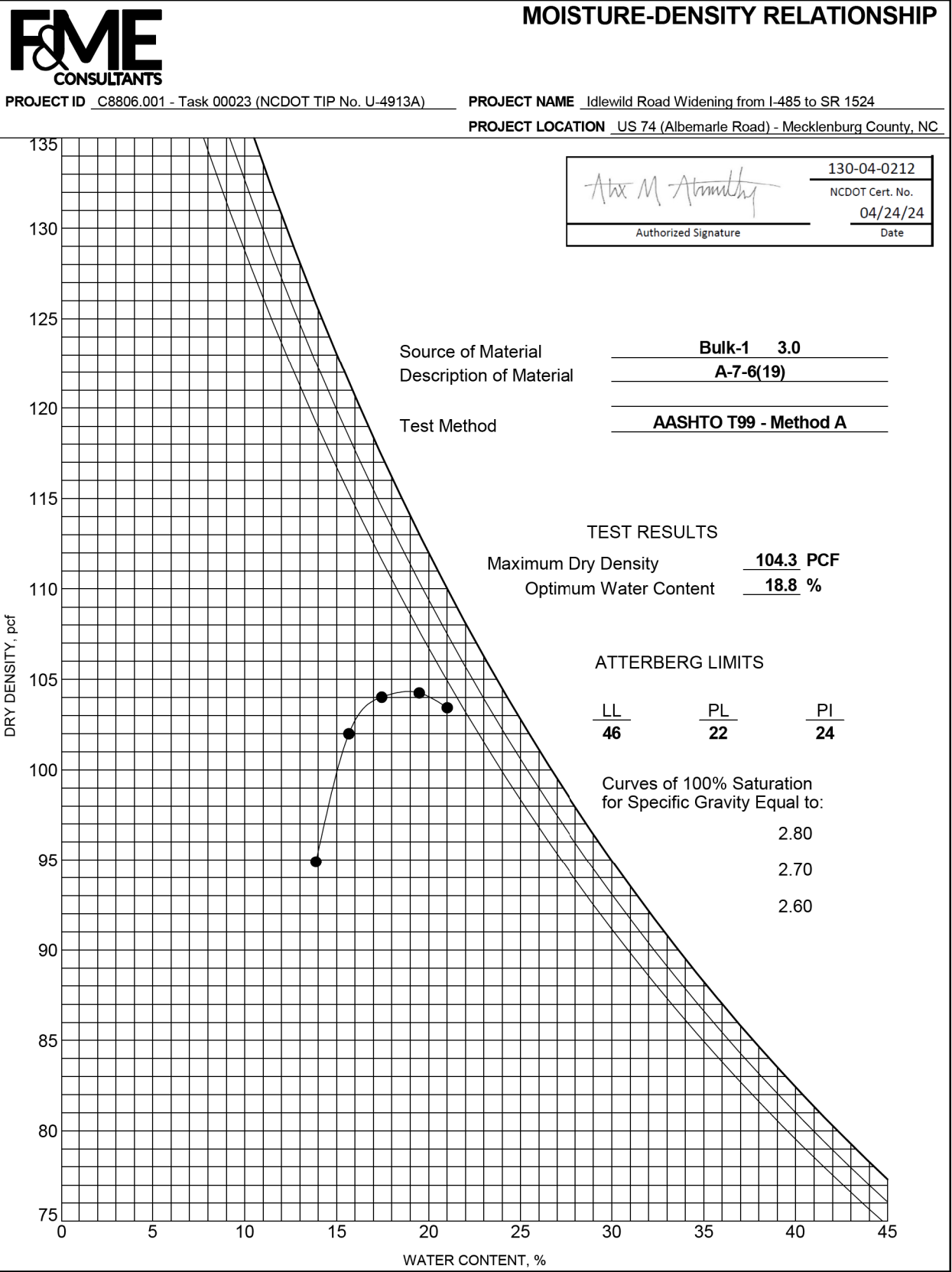
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5/9/2024

Date



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REV 01/2023

CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

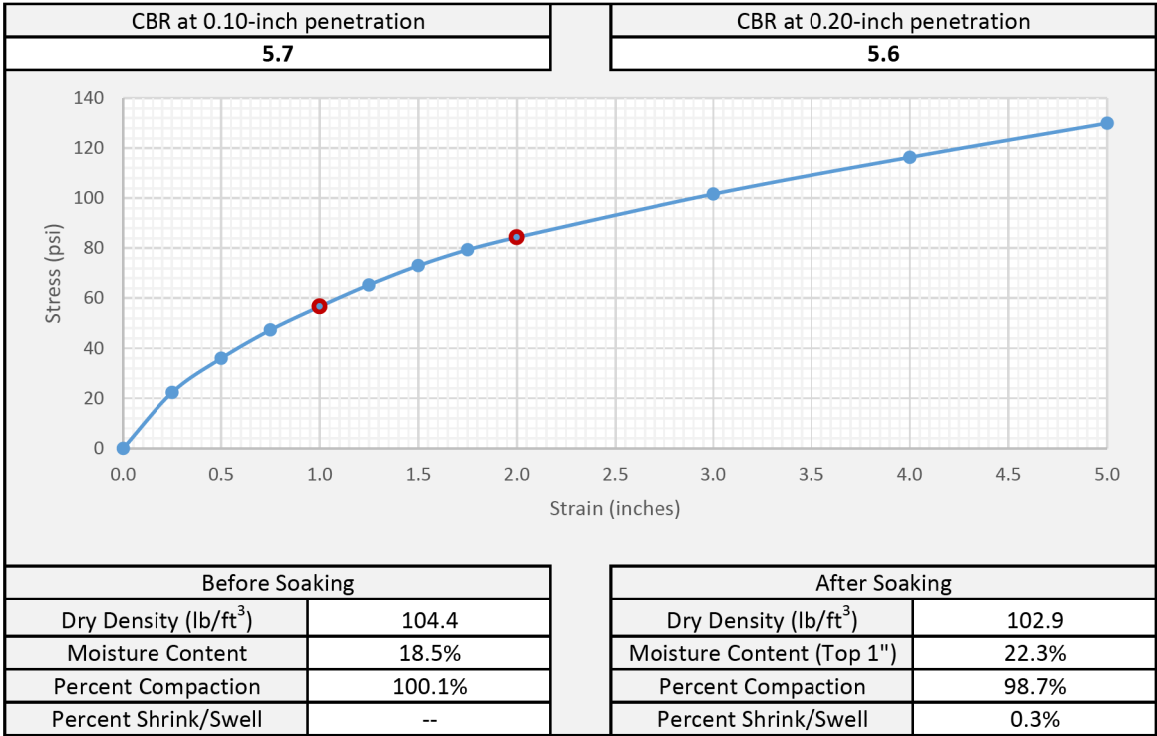
SAMPLE INFORMATION

|                  |                                                                |                |           |                 |           |
|------------------|----------------------------------------------------------------|----------------|-----------|-----------------|-----------|
| Project Name     | Idlewild Road Widening from I-485 to SR 1524 (Steven Mills Rd) |                |           | NC DOT STIP No. | U-4913A   |
| Sample Location  | Bulk-1 (Specimen A)                                            |                |           | FME Lab ID      | 24-1144   |
| Soil Description | A-7-6 (19)                                                     |                |           | Depth/Elev.     | 0.0 - 3.0 |
| Date Sampled     | --                                                             | Sampled By:    | CG2       | Date Received   | 4/10/2024 |
| Date Test Began  | 4/19/2024                                                      | Date Completed | 4/23/2024 | Tested By       | AA/JJ     |

MOLDING CHARACTERISTICS

|                          |                       |                              |      |
|--------------------------|-----------------------|------------------------------|------|
| Method                   | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft³) | 104.3                 | Optimum Moisture Content (%) | 18.8 |
| Soak Time (hr)           | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

SAMPLE INFORMATION

|                  |                                                               |                |           |                |           |
|------------------|---------------------------------------------------------------|----------------|-----------|----------------|-----------|
| Project Name     | Idlewild Road Widening from I-485 to SR 1524 (Steven Mill Rd) |                |           | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-1 (Specimen B)                                           |                |           | FME Lab ID     | 24-1144   |
| Soil Description | A-7-6 (19)                                                    |                |           | Depth/Elev.    | 0.0 - 3.0 |
| Date Sampled     | --                                                            | Sampled By:    | CG2       | Date Received  | 4/10/2024 |
| Date Test Began  | 4/19/2024                                                     | Date Completed | 4/23/2024 | Tested By      | AA/JJ     |

MOLDING CHARACTERISTICS

|                          |                       |                              |      |
|--------------------------|-----------------------|------------------------------|------|
| Method                   | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft³) | 104.3                 | Optimum Moisture Content (%) | 18.8 |
| Soak Time (hr)           | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS

|                              |                              |
|------------------------------|------------------------------|
| CBR at 0.10-inch penetration | CBR at 0.20-inch penetration |
| 8.3                          | 8.4                          |

The graph plots Stress (psi) on the y-axis (0 to 250) against Strain (inches) on the x-axis (0.0 to 5.0). A blue curve represents the test data, with a red dot at approximately (1.0, 83) indicating the CBR at 0.10-inch penetration. The CBR at 0.20-inch penetration is 8.4.

|                      |       |                           |       |
|----------------------|-------|---------------------------|-------|
| Before Soaking       |       | After Soaking             |       |
| Dry Density (lb/ft³) | 103.9 | Dry Density (lb/ft³)      | 104.0 |
| Moisture Content     | 19.6% | Moisture Content (Top 1") | 20.9% |
| Percent Compaction   | 99.7% | Percent Compaction        | 99.7% |
| Percent Shrink/Swell | --    | Percent Shrink/Swell      | 0.3%  |

ADDITIONAL COMMENTS

Target %Compaction = 100%

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130-04-0212

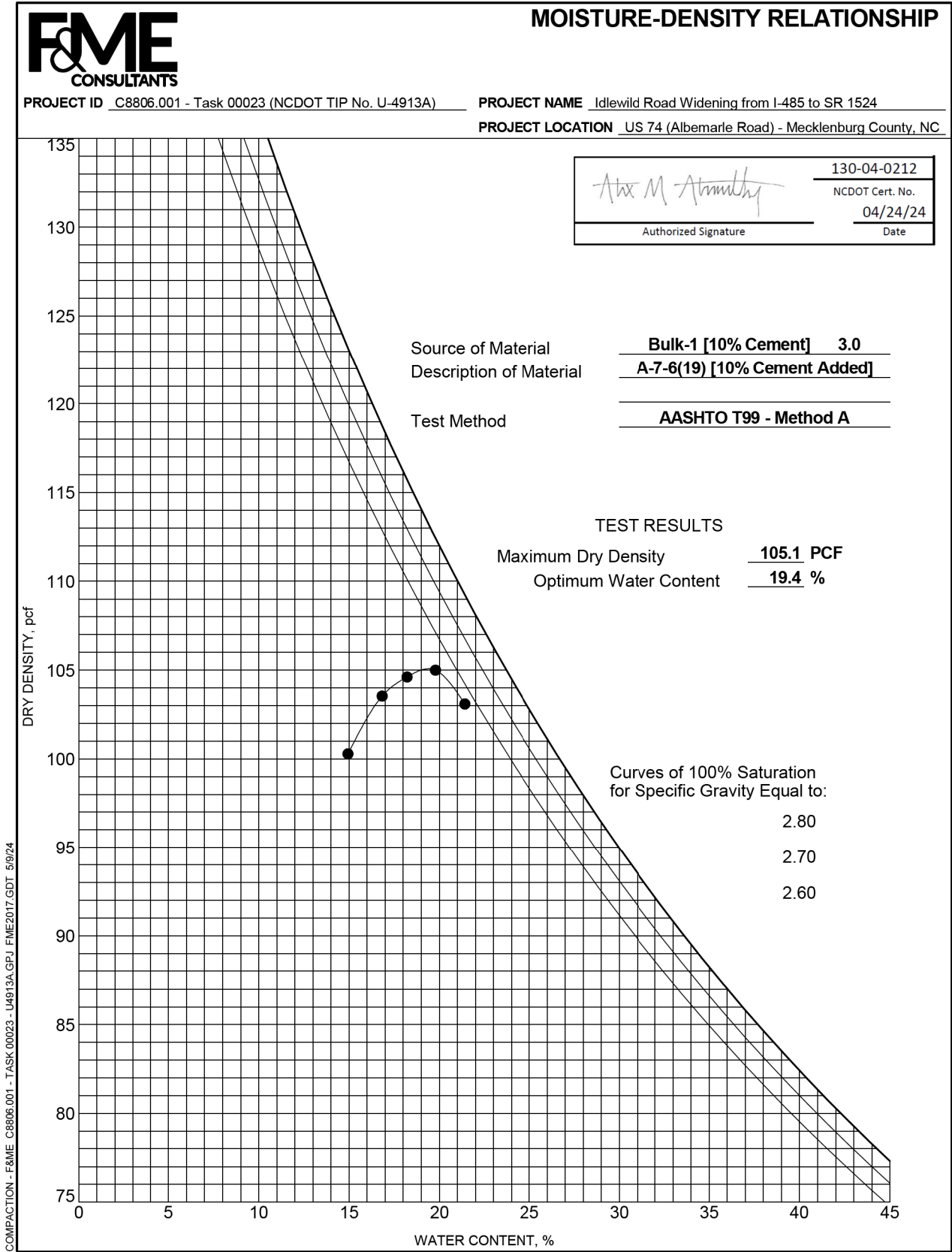
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REV 03/2024

SPECIFIC GRAVITY OF SOILS  
(ASTM D854 / AASHTO T100)

|                      |                                                                                              |                |                        |
|----------------------|----------------------------------------------------------------------------------------------|----------------|------------------------|
| Project Name:        | Widen Idlewild Road From Davis Trace Drive to the I-485 Inner Ramps and Realign Stallings Rd | Project No.:   | C8806.001 - Task 00019 |
| FME Lab ID           | 24-1141                                                                                      | Depth (ft.):   | 0.0 - 5.0              |
| Description of Soil: | A-7-6(31)                                                                                    | Date Received: | 4/10/2024              |
| Method:              | A                      X                      B                                              |                |                        |
| Tested By:           | Alex Abernethy                                                                               | Date Tested:   | 5/9/2024               |

|                                                                  |           |  |  |  |
|------------------------------------------------------------------|-----------|--|--|--|
| Boring No.                                                       | Bulk-2    |  |  |  |
| 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)                                   | 761.84    |  |  |  |
| Test Temperature ° C (Tx)                                        | 23.0      |  |  |  |
| Mass Flask + Water (Wa)                                          | 699.59    |  |  |  |
| Container No.                                                    | B         |  |  |  |
| Mass of Container + Oven Dry Soil                                | 297.16    |  |  |  |
| Mass of Container                                                | 197.16    |  |  |  |
| Mass of Oven Dry Soil (Wo)                                       | 100.00    |  |  |  |
| Specific Gravity @ Test Temperature<br>Wo/[Wo+(Wa-Wb)]           | 2.649     |  |  |  |
| Specific Gravity (SG)<br>K x Specific Gravity @ Test Temperature | 2.647     |  |  |  |

Remarks:

Alex M. Abernethy

Authorized Signature

130-04-0212

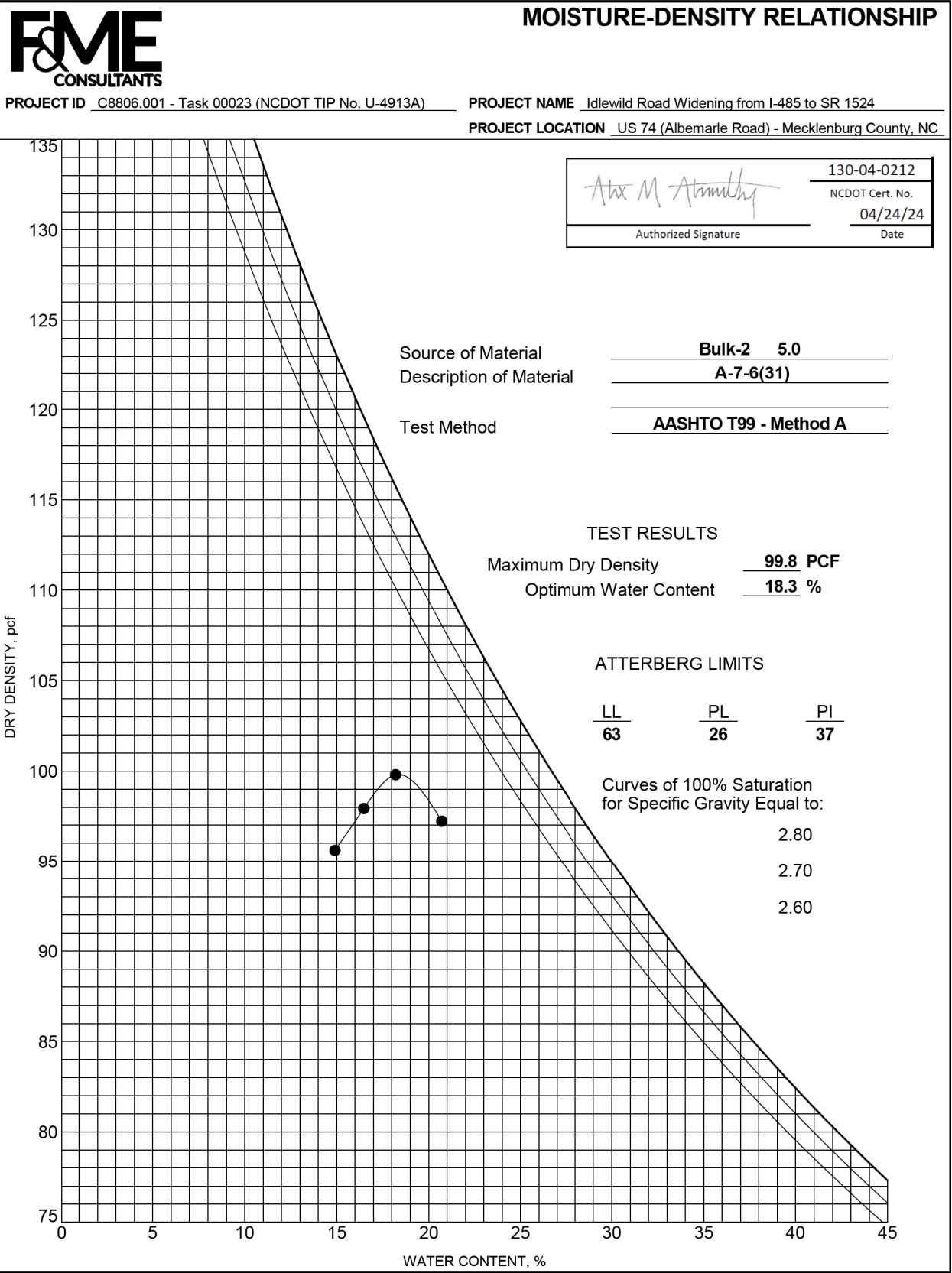
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CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

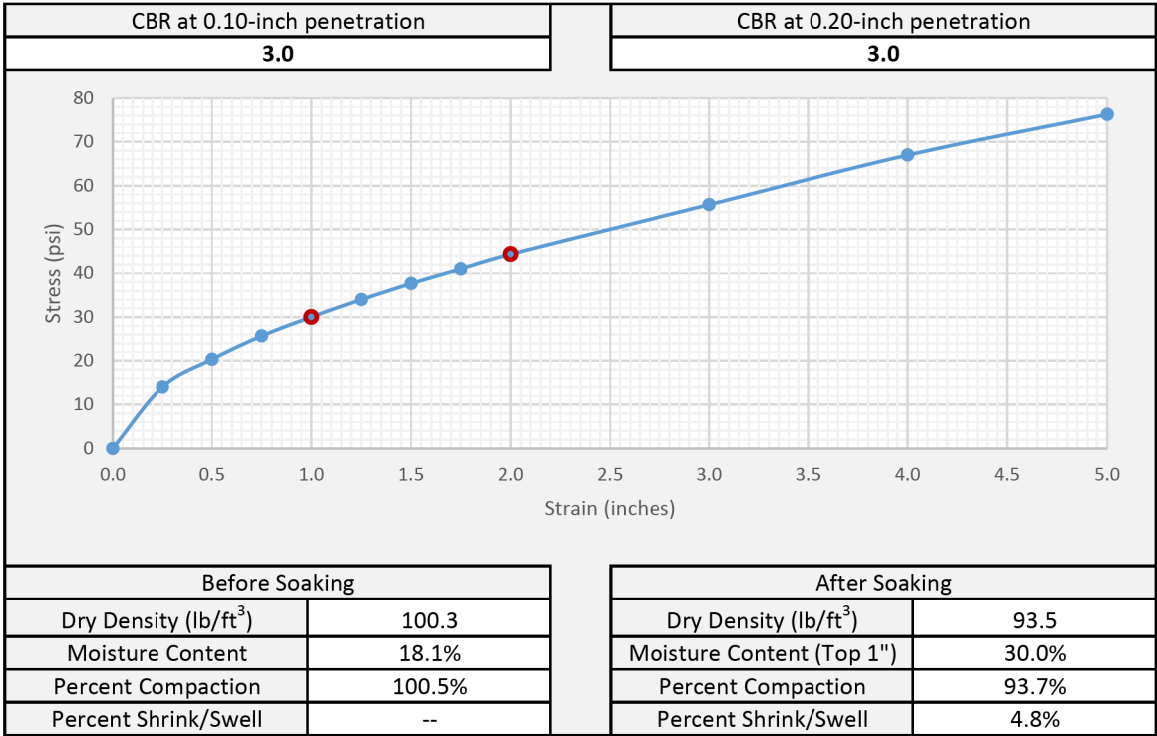
SAMPLE INFORMATION

|                  |                                                                |                |           |                |           |
|------------------|----------------------------------------------------------------|----------------|-----------|----------------|-----------|
| Project Name     | Idlewild Road Widening from I-485 to SR 1524 (Stevens Mill Rd) |                |           | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-2 (Specimen A)                                            |                |           | FME Lab ID     | 24-1145   |
| Soil Description | A-7-6 (31)                                                     |                |           | Depth/Elev.    | 0.0 - 5.0 |
| Date Sampled     | --                                                             | Sampled By:    | CG2       | Date Received  | 4/10/2024 |
| Date Test Began  | 4/19/2024                                                      | Date Completed | 4/23/2024 | Tested By      | AA/DH     |

MOLDING CHARACTERISTICS

|                          |                       |                              |      |
|--------------------------|-----------------------|------------------------------|------|
| Method                   | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft³) | 99.8                  | Optimum Moisture Content (%) | 18.3 |
| Soak Time (hr)           | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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Alex M. Armulsky

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CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

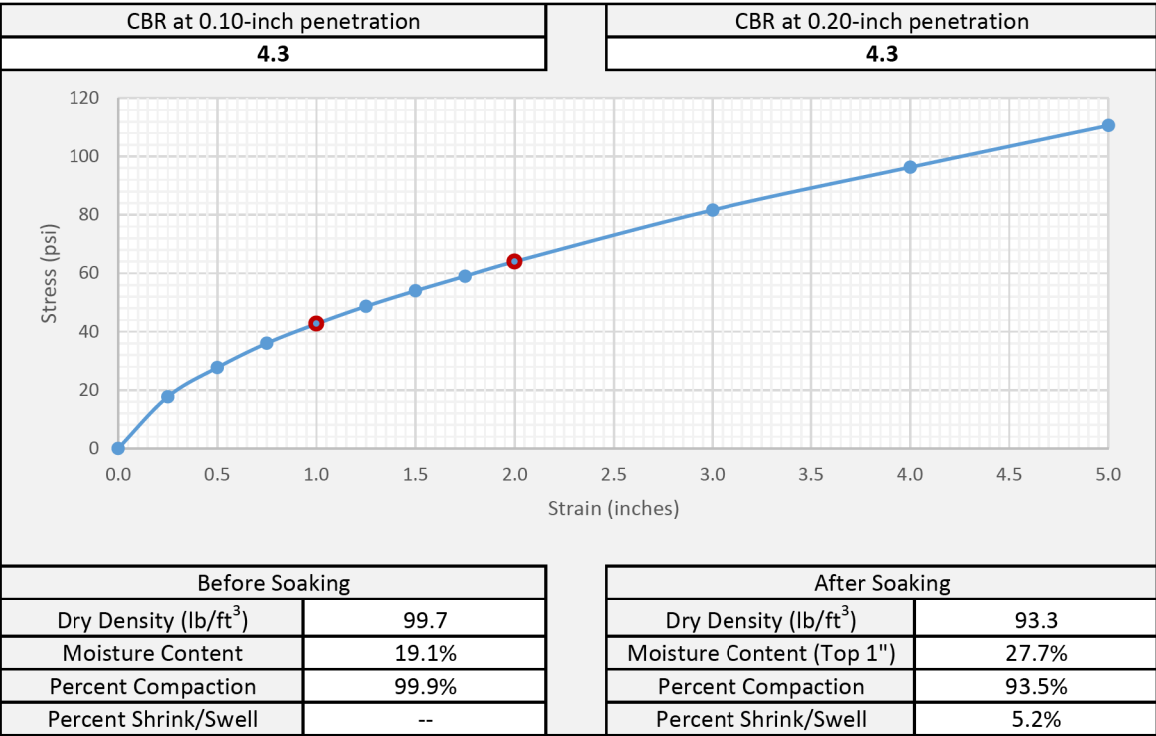
SAMPLE INFORMATION

|                  |                                                                |                |           |                |           |
|------------------|----------------------------------------------------------------|----------------|-----------|----------------|-----------|
| Project Name     | Idlewild Road Widening from I-485 to SR 1524 (Stevens Mill Rd) |                |           | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-2 (Specimen B)                                            |                |           | FME Lab ID     | 24-1145   |
| Soil Description | A-7-6 (31)                                                     |                |           | Depth/Elev.    | 0.0 - 5.0 |
| Date Sampled     | --                                                             | Sampled By:    | CG2       | Date Received  | 4/10/2024 |
| Date Test Began  | 4/19/2024                                                      | Date Completed | 4/23/2024 | Tested By      | AA/DH     |

MOLDING CHARACTERISTICS

|                          |                       |                              |      |
|--------------------------|-----------------------|------------------------------|------|
| Method                   | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft³) | 99.8                  | Optimum Moisture Content (%) | 18.3 |
| Soak Time (hr)           | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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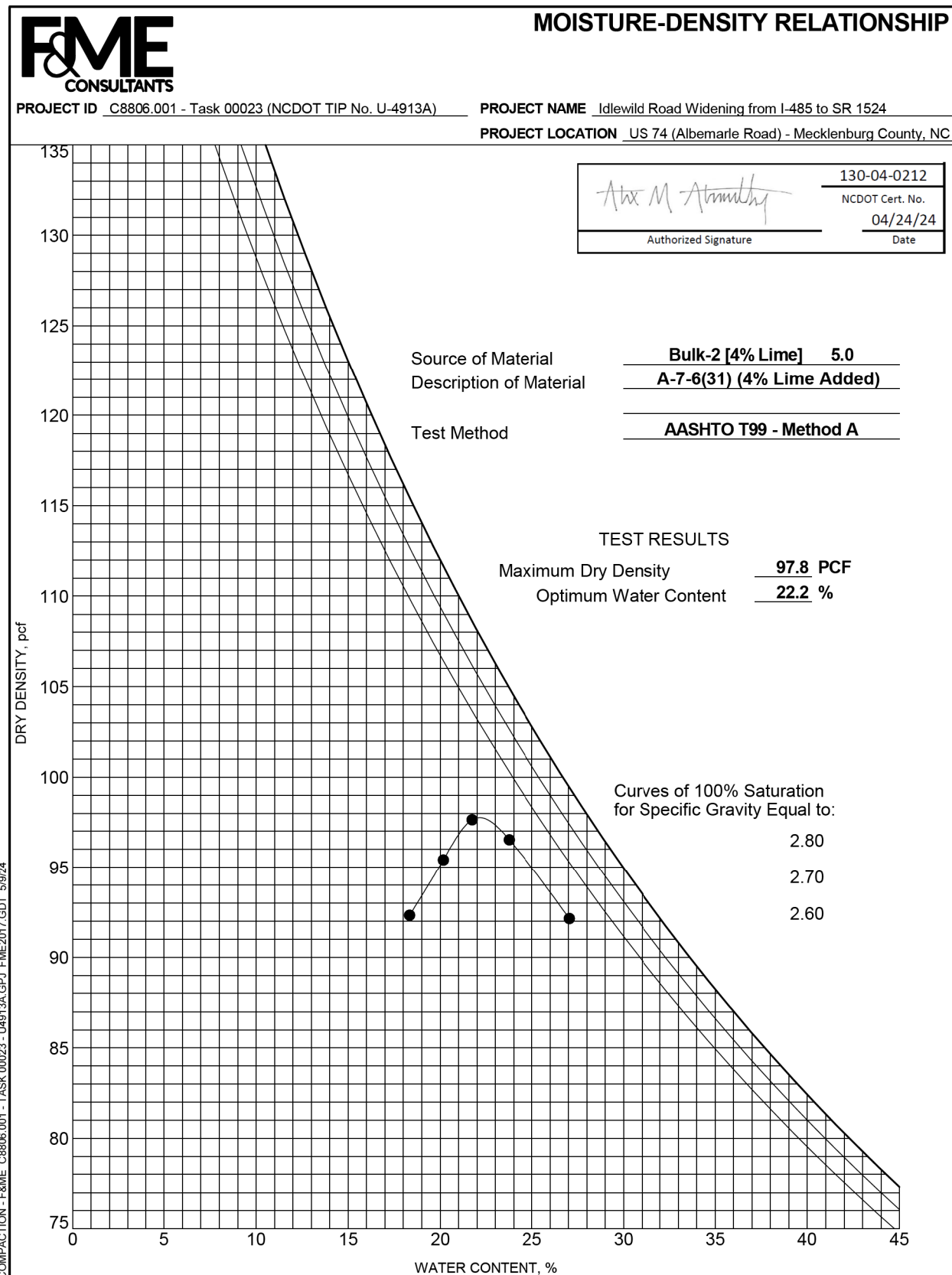
## COMPRESSIVE STRENGTH OF MOLDED SOIL-CEMENT CYLINDERS ASTM D-1633

|                  |                       |             |          |               |              |
|------------------|-----------------------|-------------|----------|---------------|--------------|
| Project Name     | Idewild Road Widening |             |          | NCDOT STIP #  | U-4913A      |
| Sample Location  | Bulk-2                |             |          | FME Lab ID    | 24-1145      |
| Soil Description | A-7-6(31)             |             |          | Depth/Elev.   | 0.0 - 5.0    |
| Station          | --                    |             |          | Offset        | --           |
| Date Sampled     | --                    | Sampled By: | CG2      | Date Received | 04/10/24     |
| Date Molded      | 04/29/24              | Date Tested | 05/06/24 | Tested By     | A. Abernethy |

|                                       |                       |                              |      |
|---------------------------------------|-----------------------|------------------------------|------|
| Method                                | AASHTO T99 - Method A | % Lime Added to Proctor      | 4%   |
| Max Dry Density (lb/ft <sup>3</sup> ) | 97.8                  | Optimum Moisture Content (%) | 22.2 |

| % Lime | Age (Days) | Moisture Content | Height (in.) | Diameter (in.) | Area (in. <sup>2</sup> ) | Maximum Load (lbf) | Compressive Strength (psi) | Average Compressive Strength (psi) |
|--------|------------|------------------|--------------|----------------|--------------------------|--------------------|----------------------------|------------------------------------|
| 3%     | 7          | 23.2%            | 4.91         | 4.00           | 12.57                    | 891                | 70                         | 75                                 |
| 3%     | 7          | 23.0%            | 5.07         | 3.99           | 12.50                    | 961                | 75                         |                                    |
| 5%     | 7          | 23.2%            | 5.02         | 3.99           | 12.50                    | 1,332              | 105                        | 110                                |
| 5%     | 7          | 23.1%            | 4.98         | 3.99           | 12.50                    | 1,363              | 110                        |                                    |

|                                                                                                                                                                       |  |                                                                                                               |                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
|  <b>F&amp;ME Consultants, Inc.</b><br>211 Business Park Blvd, Columbia, SC 29203 |  | <br>Authorized Signature | 130-04-0212<br>NCDOT Certification No.<br>05/09/24<br>Date |
|                                                                                                                                                                       |  |                                                                                                               |                                                            |



REV 03/2024

SPECIFIC GRAVITY OF SOILS  
(ASTM D854 / AASHTO T100)

|                      |                                                                                              |                |                        |
|----------------------|----------------------------------------------------------------------------------------------|----------------|------------------------|
| Project Name:        | Widen Idlewild Road From Davis Trace Drive to the I-485 Inner Ramps and Realign Stallings Rd | Project No.:   | C8806.001 - Task 00019 |
| FME Lab ID           | 24-1142                                                                                      | Depth (ft.):   | 0.0 - 10.0             |
| Description of Soil: | A-7-5(31)                                                                                    | Date Received: | 4/10/2024              |
| Method:              | A                      X                      B                                              |                |                        |
| Tested By:           | Alex Abernethy                                                                               | Date Tested:   | 5/9/2024               |

|                                                                  |           |  |  |  |
|------------------------------------------------------------------|-----------|--|--|--|
| Boring No.                                                       | Bulk-3    |  |  |  |
| 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)                                   | 755.4     |  |  |  |
| Test Temperature ° C (Tx)                                        | 23.0      |  |  |  |
| Mass Flask + Water (Wa)                                          | 692.74    |  |  |  |
| Container No.                                                    | D         |  |  |  |
| Mass of Container + Oven Dry Soil                                | 294.85    |  |  |  |
| Mass of Container                                                | 194.85    |  |  |  |
| Mass of Oven Dry Soil (Wo)                                       | 100.00    |  |  |  |
| Specific Gravity @ Test Temperature<br>Wo/[Wo+(Wa-Wb)]           | 2.678     |  |  |  |
| Specific Gravity (SG)<br>K x Specific Gravity @ Test Temperature | 2.676     |  |  |  |

Remarks:

Alex M. Abernethy

Authorized Signature

130-04-0212

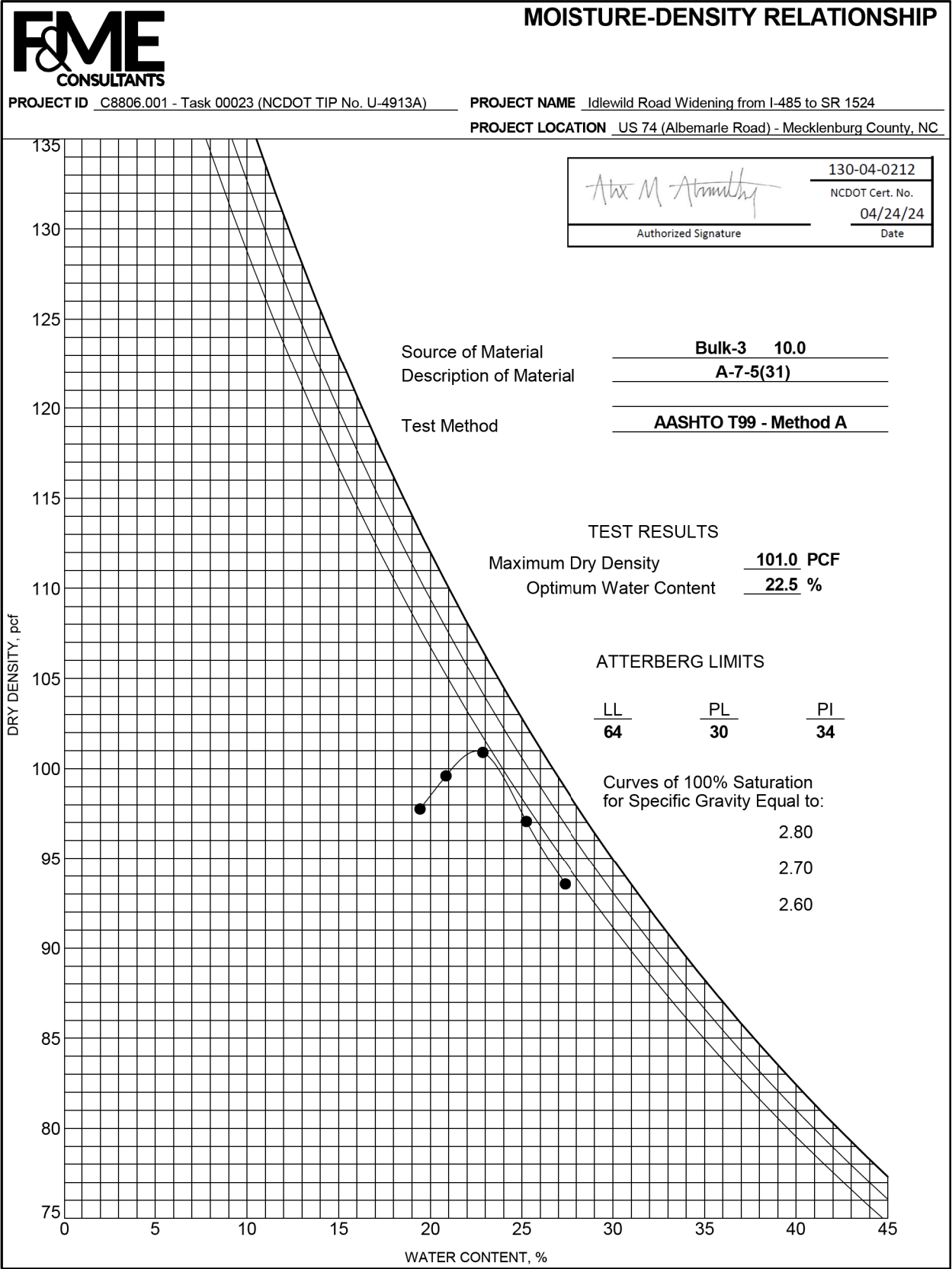
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CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

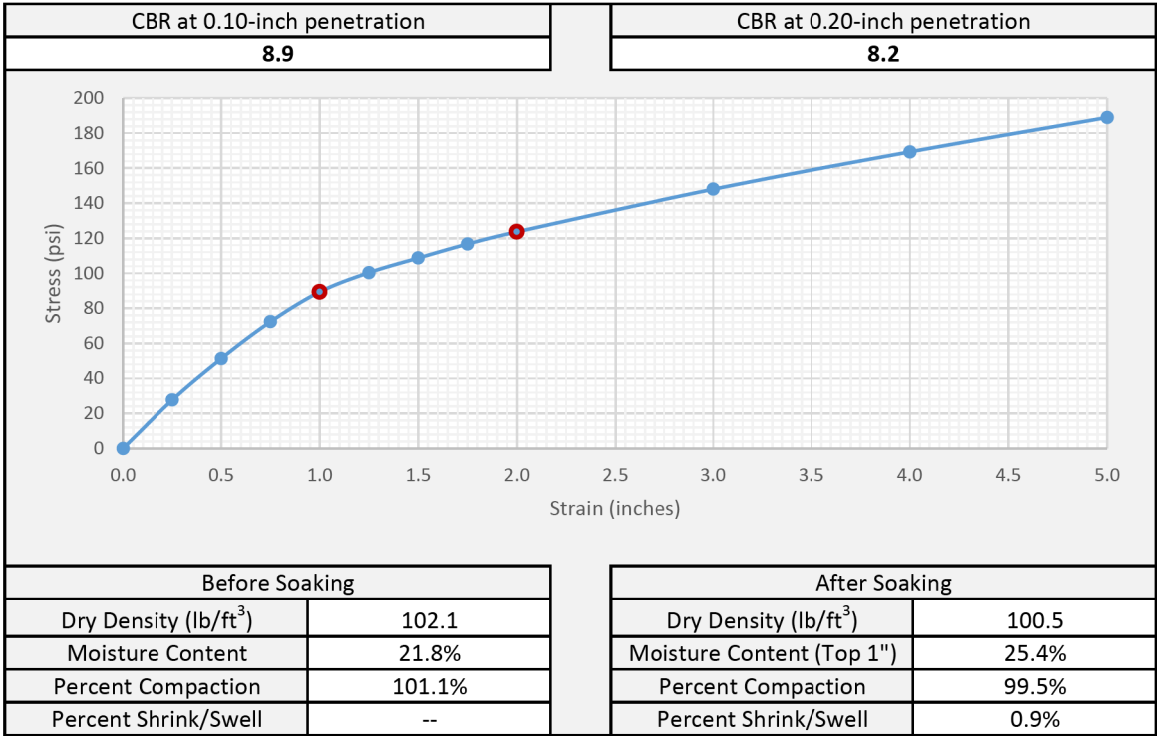
SAMPLE INFORMATION

|                  |                                                               |                |           |                |           |
|------------------|---------------------------------------------------------------|----------------|-----------|----------------|-----------|
| Project Name     | Idlewild Road Widening for I-485 to SR 1524 (Stevens Mill Rd) |                |           | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-3 (Specimen A)                                           |                |           | FME Lab ID     | 24-1146   |
| Soil Description | A-7-5 (31)                                                    |                |           | Depth/Elev.    | 0.0 - 10  |
| Date Sampled     | --                                                            | Sampled By:    | CG2       | Date Received  | 4/10/2024 |
| Date Test Began  | 4/26/2024                                                     | Date Completed | 4/30/2024 | Tested By      | AA/DH     |

MOLDING CHARACTERISTICS

|                                       |                       |                              |      |
|---------------------------------------|-----------------------|------------------------------|------|
| Method                                | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft <sup>3</sup> ) | 101.0                 | Optimum Moisture Content (%) | 22.5 |
| Soak Time (hr)                        | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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AASHTO T193

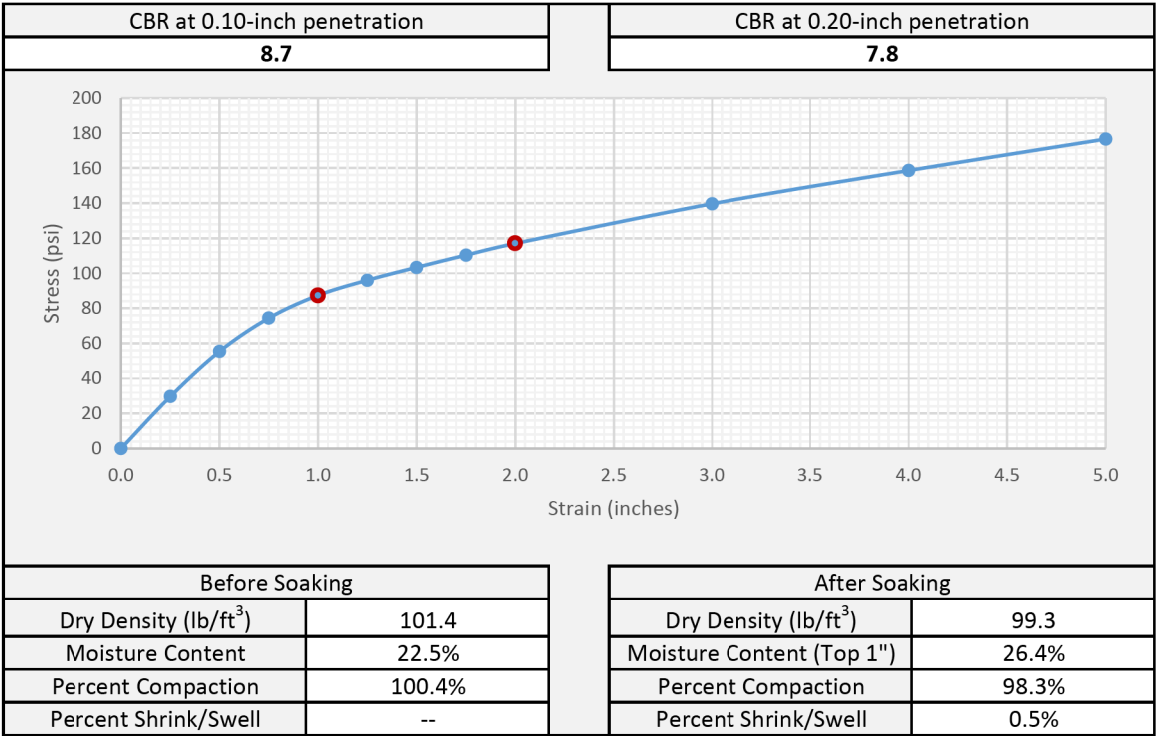
SAMPLE INFORMATION

|                  |                                                               |                |          |                |           |
|------------------|---------------------------------------------------------------|----------------|----------|----------------|-----------|
| Project Name     | Idlewild Road Widening for I-485 to SR 1524 (Stevens Mill Rd) |                |          | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-3 (Specimen B)                                           |                |          | FME Lab ID     | 24-1146   |
| Soil Description | A-7-5 (31)                                                    |                |          | Depth/Elev.    | 0.0 - 10  |
| Date Sampled     | --                                                            | Sampled By:    | CG2      | Date Received  | 4/10/2024 |
| Date Test Began  | 5/3/2024                                                      | Date Completed | 5/7/2024 | Tested By      | AA/JJ     |

MOLDING CHARACTERISTICS

|                                       |                       |                              |      |
|---------------------------------------|-----------------------|------------------------------|------|
| Method                                | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft <sup>3</sup> ) | 101.0                 | Optimum Moisture Content (%) | 22.5 |
| Soak Time (hr)                        | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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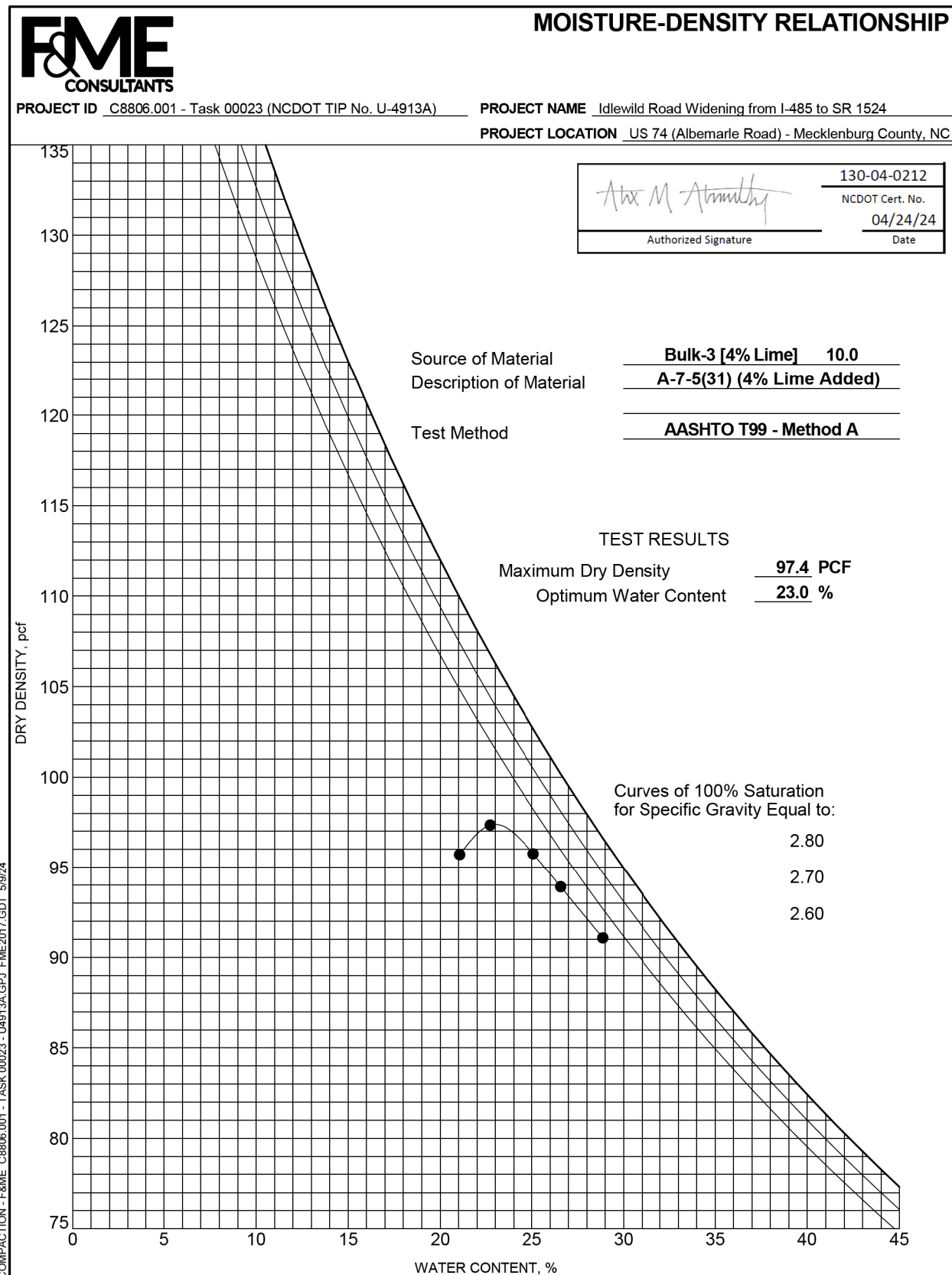
## COMPRESSIVE STRENGTH OF MOLDED SOIL-CEMENT CYLINDERS ASTM D-1633

|                  |                       |             |          |               |              |
|------------------|-----------------------|-------------|----------|---------------|--------------|
| Project Name     | Idewild Road Widening |             |          | NCDOT STIP #  | U-4913A      |
| Sample Location  | Bulk-3                |             |          | FME Lab ID    | 24-1146      |
| Soil Description | A-7-5(31)             |             |          | Depth/Elev.   | 0.0 - 10.0   |
| Station          | --                    |             |          | Offset        | --           |
| Date Sampled     | --                    | Sampled By: | CG2      | Date Received | 04/10/24     |
| Date Molded      | 04/29/24              | Date Tested | 05/06/24 | Tested By     | A. Abernethy |

|                                       |                       |                              |      |
|---------------------------------------|-----------------------|------------------------------|------|
| Method                                | AASHTO T99 - Method A | % Lime Added to Proctor      | 4%   |
| Max Dry Density (lb/ft <sup>3</sup> ) | 97.4                  | Optimum Moisture Content (%) | 23.0 |

| % Lime | Age (Days) | Moisture Content | Height (in.) | Diameter (in.) | Area (in. <sup>2</sup> ) | Maximum Load (lbf) | Compressive Strength (psi) | Average Compressive Strength (psi) |
|--------|------------|------------------|--------------|----------------|--------------------------|--------------------|----------------------------|------------------------------------|
| 3%     | 7          | 24.1%            | 4.95         | 3.98           | 12.44                    | 710                | 55                         | 55                                 |
| 3%     | 7          | 24.0%            | 4.95         | 3.99           | 12.50                    | 682                | 55                         |                                    |
| 5%     | 7          | 23.2%            | 4.98         | 3.99           | 12.50                    | 1,211              | 95                         | 95                                 |
| 5%     | 7          | 23.8%            | 4.99         | 3.99           | 12.50                    | 1,207              | 95                         |                                    |

| ADDITIONAL COMMENTS                                                                                                                                                   |                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                       |                                                                                                                                                                                                                                                  |
|  <b>F&amp;ME Consultants, Inc.</b><br>211 Business Park Blvd, Columbia, SC 29203 | <div><div></div><div>Authorized Signature</div></div> <div><div>130-04-0212</div><div>NCDOT Certification No.</div><div>05/09/24</div><div>Date</div></div> |



REV 03/2024

SPECIFIC GRAVITY OF SOILS  
(ASTM D854 / AASHTO T100)

|                      |                                                                                              |                |                        |
|----------------------|----------------------------------------------------------------------------------------------|----------------|------------------------|
| Project Name:        | Widen Idlewild Road From Davis Trace Drive to the I-485 Inner Ramps and Realign Stallings Rd | Project No.:   | C8806.001 - Task 00019 |
| FME Lab ID           | 24-1143                                                                                      | Depth (ft.):   | 0.0 - 5.0              |
| Description of Soil: | A-7-6(14)                                                                                    | Date Received: | 4/10/2024              |
| Method:              | A                      X                      B                                              |                |                        |
| Tested By:           | Alex Abernethy                                                                               | Date Tested:   | 5/9/2024               |

|                                                                  |           |  |  |  |
|------------------------------------------------------------------|-----------|--|--|--|
| Boring No.                                                       | Bulk-4    |  |  |  |
| 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)                                   | 749.79    |  |  |  |
| Test Temperature ° C (Tx)                                        | 23.0      |  |  |  |
| Mass Flask + Water (Wa)                                          | 686.7     |  |  |  |
| Container No.                                                    | D         |  |  |  |
| Mass of Container + Oven Dry Soil                                | 289.52    |  |  |  |
| Mass of Container                                                | 188.85    |  |  |  |
| Mass of Oven Dry Soil (Wo)                                       | 100.67    |  |  |  |
| Specific Gravity @ Test Temperature<br>Wo/[Wo+(Wa-Wb)]           | 2.679     |  |  |  |
| Specific Gravity (SG)<br>K x Specific Gravity @ Test Temperature | 2.677     |  |  |  |

Remarks:

Alex M Abernethy

Authorized Signature

130-04-0212

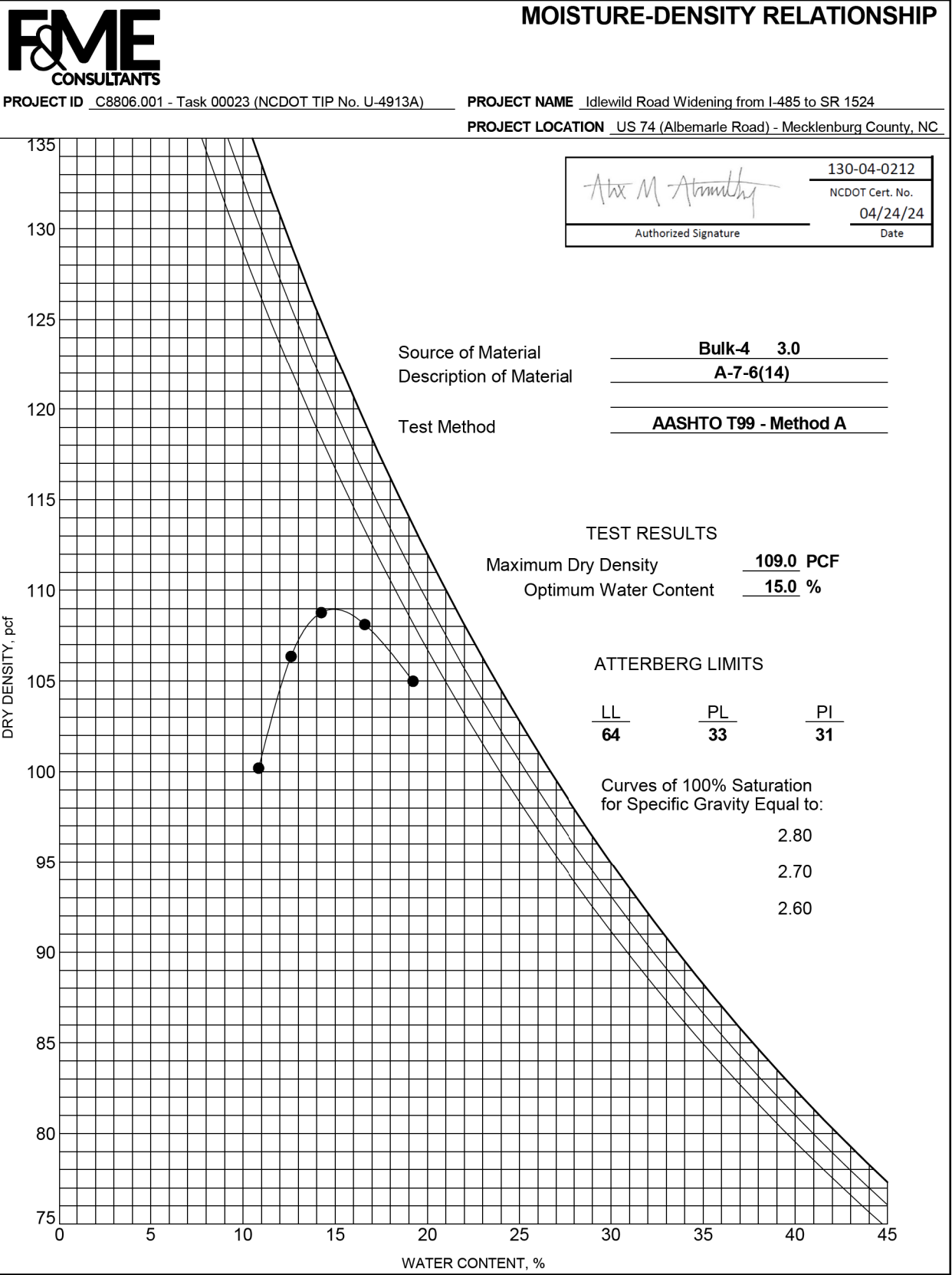
NCDOT Cert. No

5/9/2024

Date



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REV 01/2023

CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

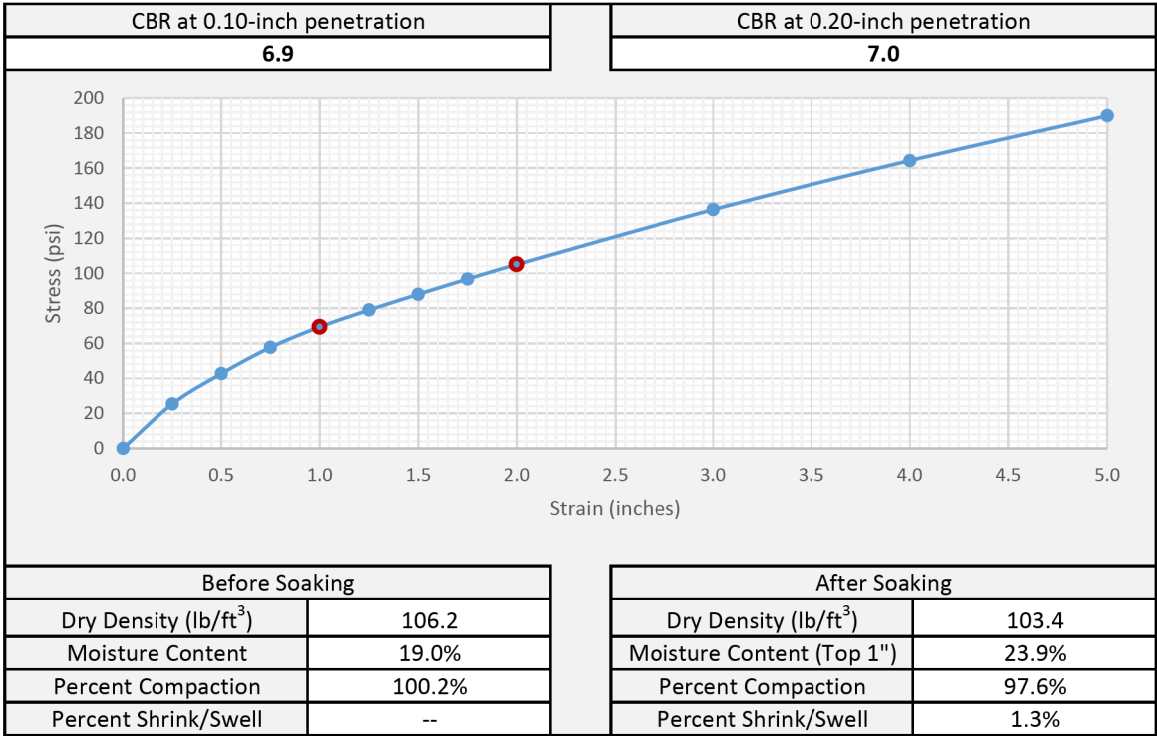
SAMPLE INFORMATION

|                  |                                                               |                |           |                |           |
|------------------|---------------------------------------------------------------|----------------|-----------|----------------|-----------|
| Project Name     | Idlewild Road Widening for I-485 to SR 1524 (Steven Mills Rd) |                |           | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-4 (Specimen A)                                           |                |           | FME Lab ID     | 24-1147   |
| Soil Description | A-7-6 (14)                                                    |                |           | Depth/Elev.    | 0.0 - 3.0 |
| Date Sampled     | --                                                            | Sampled By:    | CG2       | Date Received  | 4/10/2024 |
| Date Test Began  | 4/26/2024                                                     | Date Completed | 4/30/2024 | Tested By      | AA/TE     |

MOLDING CHARACTERISTICS

|                          |                       |                              |      |
|--------------------------|-----------------------|------------------------------|------|
| Method                   | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft³) | 106.0                 | Optimum Moisture Content (%) | 18.8 |
| Soak Time (hr)           | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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CALIFORNIA BEARING RATIO (CBR)  
AASHTO T193

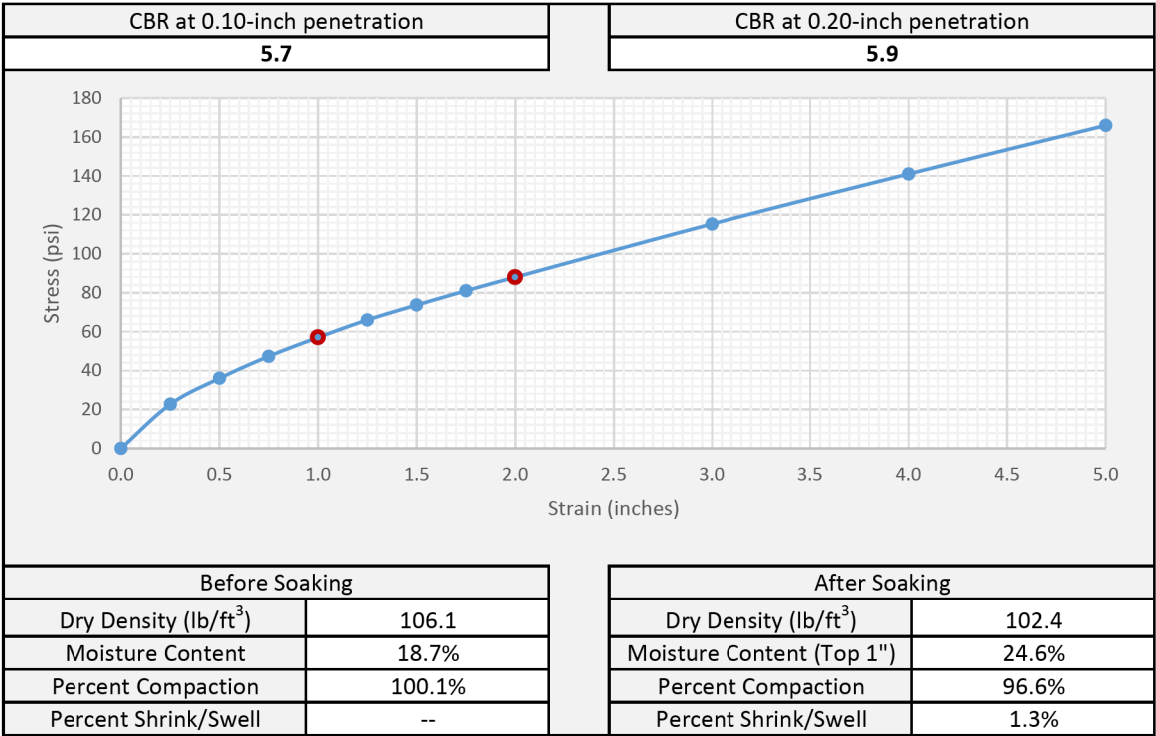
SAMPLE INFORMATION

|                  |                                                               |                |           |                |           |
|------------------|---------------------------------------------------------------|----------------|-----------|----------------|-----------|
| Project Name     | Idlewild Road Widening for I-485 to SR 1524 (Steven Mills Rd) |                |           | NCDOT STIP No. | U-4913A   |
| Sample Location  | Bulk-4 (Specimen B)                                           |                |           | FME Lab ID     | 24-1147   |
| Soil Description | A-7-6 (14)                                                    |                |           | Depth/Elev.    | 0.0 - 3.0 |
| Date Sampled     | --                                                            | Sampled By:    | CG2       | Date Received  | 4/10/2024 |
| Date Test Began  | 4/26/2024                                                     | Date Completed | 4/30/2024 | Tested By      | AA/TE     |

MOLDING CHARACTERISTICS

|                          |                       |                              |      |
|--------------------------|-----------------------|------------------------------|------|
| Method                   | AASHTO T99 - Method A | % Retained on 3/4" Sieve     | 0%   |
| Max Dry Density (lb/ft³) | 106.0                 | Optimum Moisture Content (%) | 18.8 |
| Soak Time (hr)           | 96                    | Surcharge Weight (lb)        | 10.0 |

TESTING RESULTS



ADDITIONAL COMMENTS

Target %Compaction = 100%

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

|                  |                       |             |          |               |              |
|------------------|-----------------------|-------------|----------|---------------|--------------|
| Project Name     | Idewild Road Widening |             |          | NCDOT STIP #  | U-4913A      |
| Sample Location  | Bulk-4                |             |          | FME Lab ID    | 24-1147      |
| Soil Description | A-7-6(14)             |             |          | Depth/Elev.   | 0.0 - 3.0    |
| Station          | --                    |             |          | Offset        | --           |
| Date Sampled     | --                    | Sampled By: | CG2      | Date Received | 04/10/24     |
| Date Molded      | 04/29/24              | Date Tested | 05/06/24 | Tested By     | A. Abernethy |

|                                       |                       |                              |      |
|---------------------------------------|-----------------------|------------------------------|------|
| Method                                | AASHTO T99 - Method A | % Lime Added to Proctor      | 4%   |
| Max Dry Density (lb/ft <sup>3</sup> ) | 101.1                 | Optimum Moisture Content (%) | 20.7 |

| % Lime | Age (Days) | Moisture Content | Height (in.) | Diameter (in.) | Area (in. <sup>2</sup> ) | Maximum Load (lbf) | Compressive Strength (psi) | Average Compressive Strength (psi) |
|--------|------------|------------------|--------------|----------------|--------------------------|--------------------|----------------------------|------------------------------------|
| 3%     | 7          | 21.4%            | 4.98         | 3.99           | 12.50                    | 684                | 55                         | 60                                 |
| 3%     | 7          | 21.8%            | 4.94         | 3.99           | 12.50                    | 752                | 60                         |                                    |
| 5%     | 7          | 21.3%            | 4.96         | 3.99           | 12.50                    | 937                | 75                         | 80                                 |
| 5%     | 7          | 21.6%            | 4.97         | 3.99           | 12.50                    | 983                | 80                         |                                    |

|                                                                                                                                                                       |  |                                                                                       |                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|----------------------------------------|
|  <b>F&amp;ME Consultants, Inc.</b><br>211 Business Park Blvd, Columbia, SC 29203 |  |  | 130-04-0212<br>NCDOT Certification No. |
|                                                                                                                                                                       |  | Authorized Signature                                                                  | 05/09/24<br>Date                       |

