5880 REFERENCE

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#### STATE OF NORTH CAROLINA

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

# **STRUCTURE** SUBSURFACE INVESTIGATION

COUNTY FORSYTH

PROJECT DESCRIPTION <u>I-40/US-311 AT NC-109</u> (THOMASVILLE ROAD) / CLEMMONSVILLE ROAD SPLIT DIAMOND INTERCHANGE

SITE DESCRIPTION BRIDGE NO. 340 ON -L- (I-40/US-311) OVER -Y2A- (CLEMMONSVILLE ROAD)

STATE PROJECT REFERENCE NO. 1-5880

#### **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 (1991 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 (IM-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED MATER 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 INTERRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS, AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES:

1. 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.

2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

**PERSONNEL** 

| М. | <b>FOSTER</b> |
|----|---------------|
|    |               |

TRIGON EXPLORATION

NCDOT PERSONNEL

INVESTIGATED BY \_KLEINFELDER, INC

DRAWN BY \_B. FARMER

CHECKED BY <u>D. K</u>UBINSKI

SUBMITTED BY KLEINFELDER, INC

DATE \_\_*JUNE* 2024





Joshua V. Fregosi 06/26/2024

DA6130C3FB4C4F1 DOCUMENT NOT CONSIDERED FINAL

**UNLESS ALL SIGNATURES COMPLETED** 

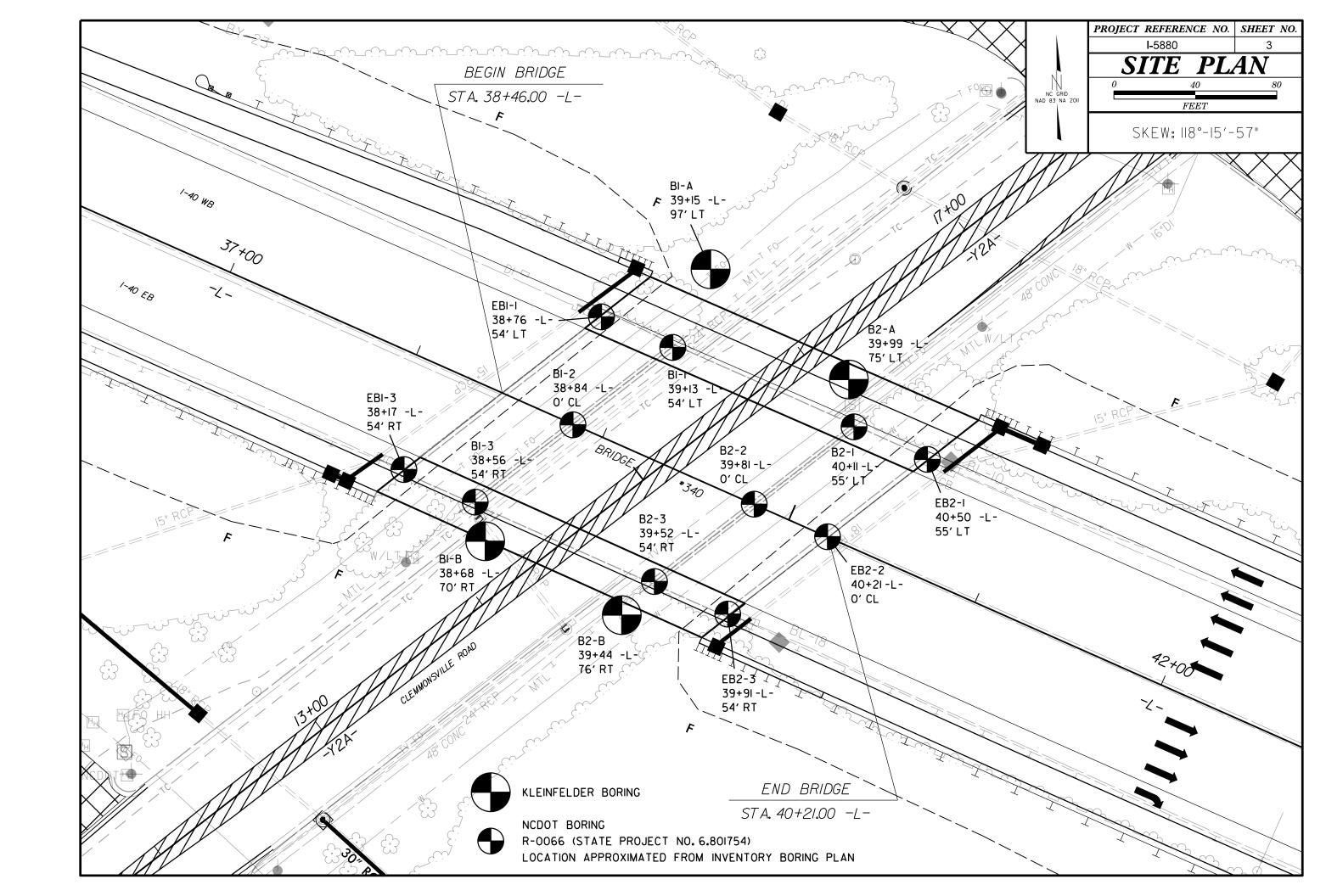
PROJECT REFERENCE NO. SHEET NO. 2

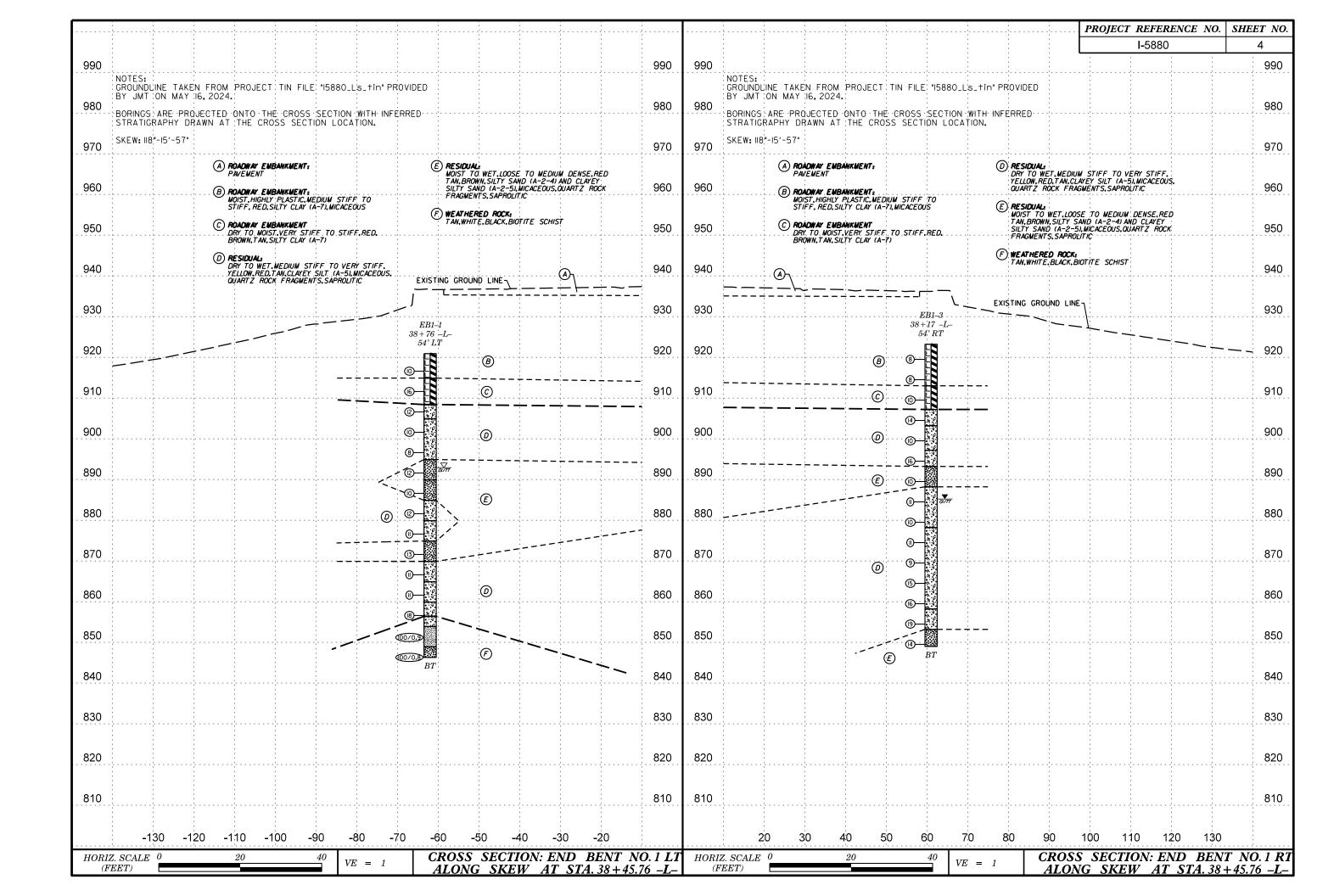
# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

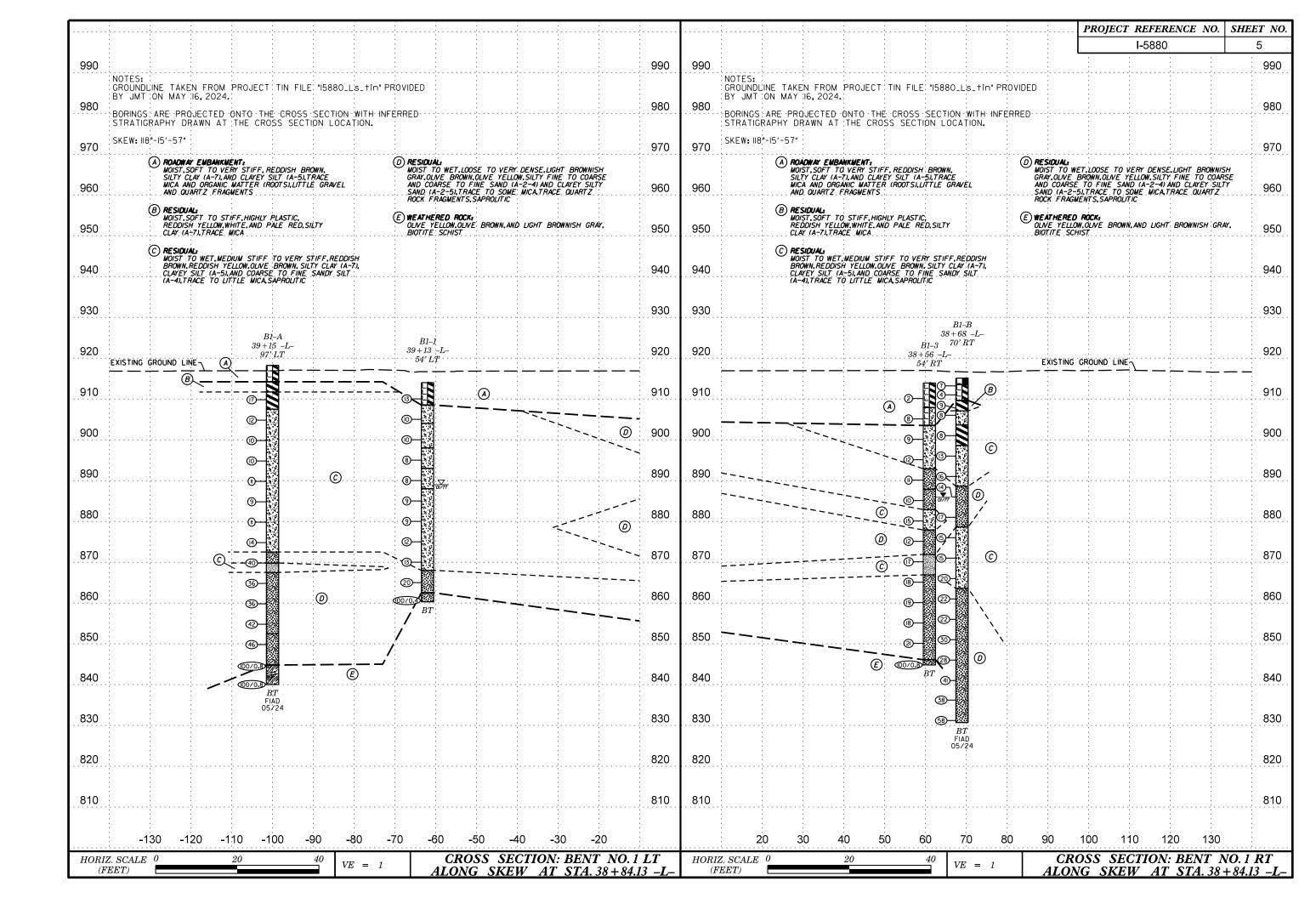
# SUBSURFACE INVESTIGATION

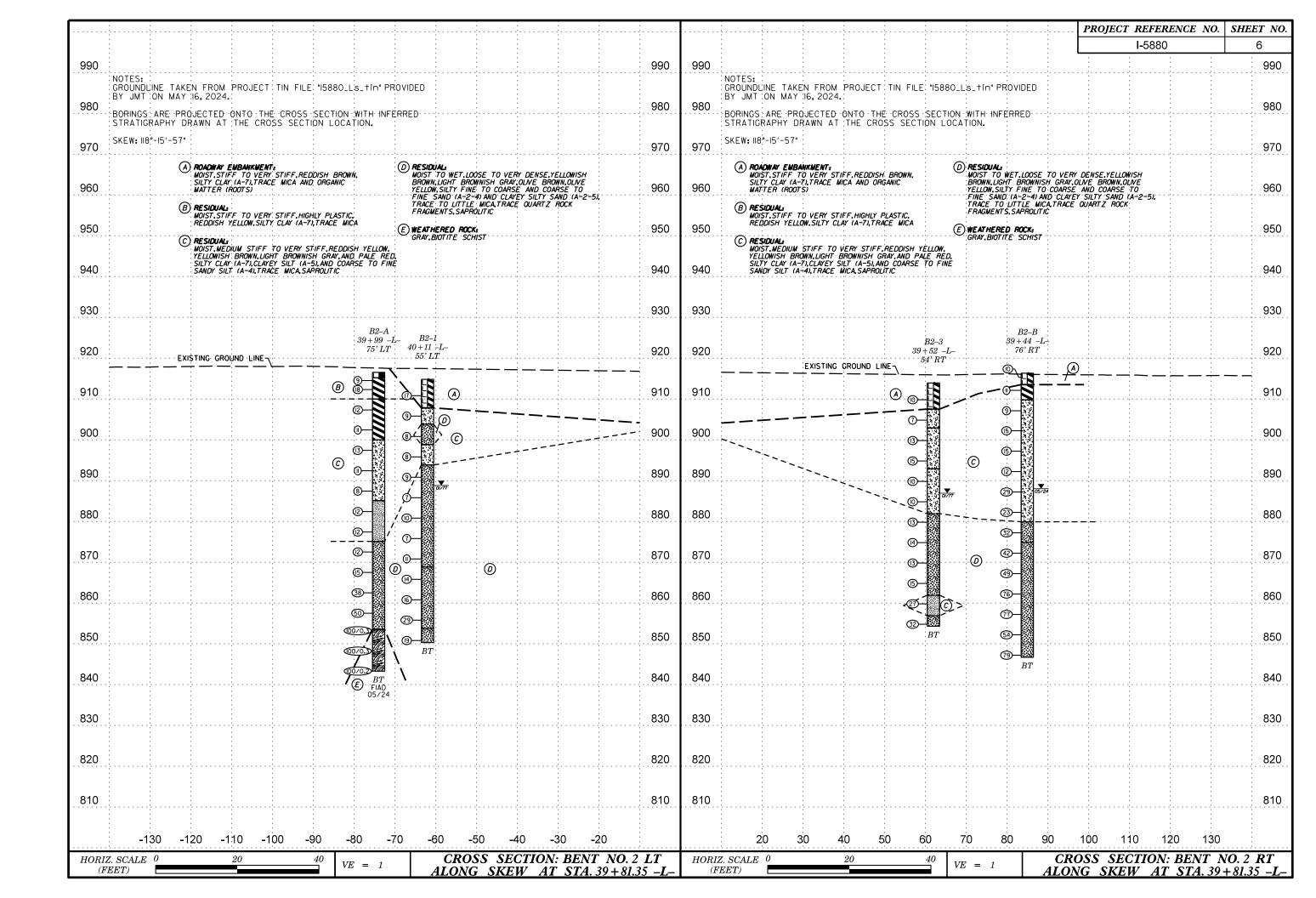
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

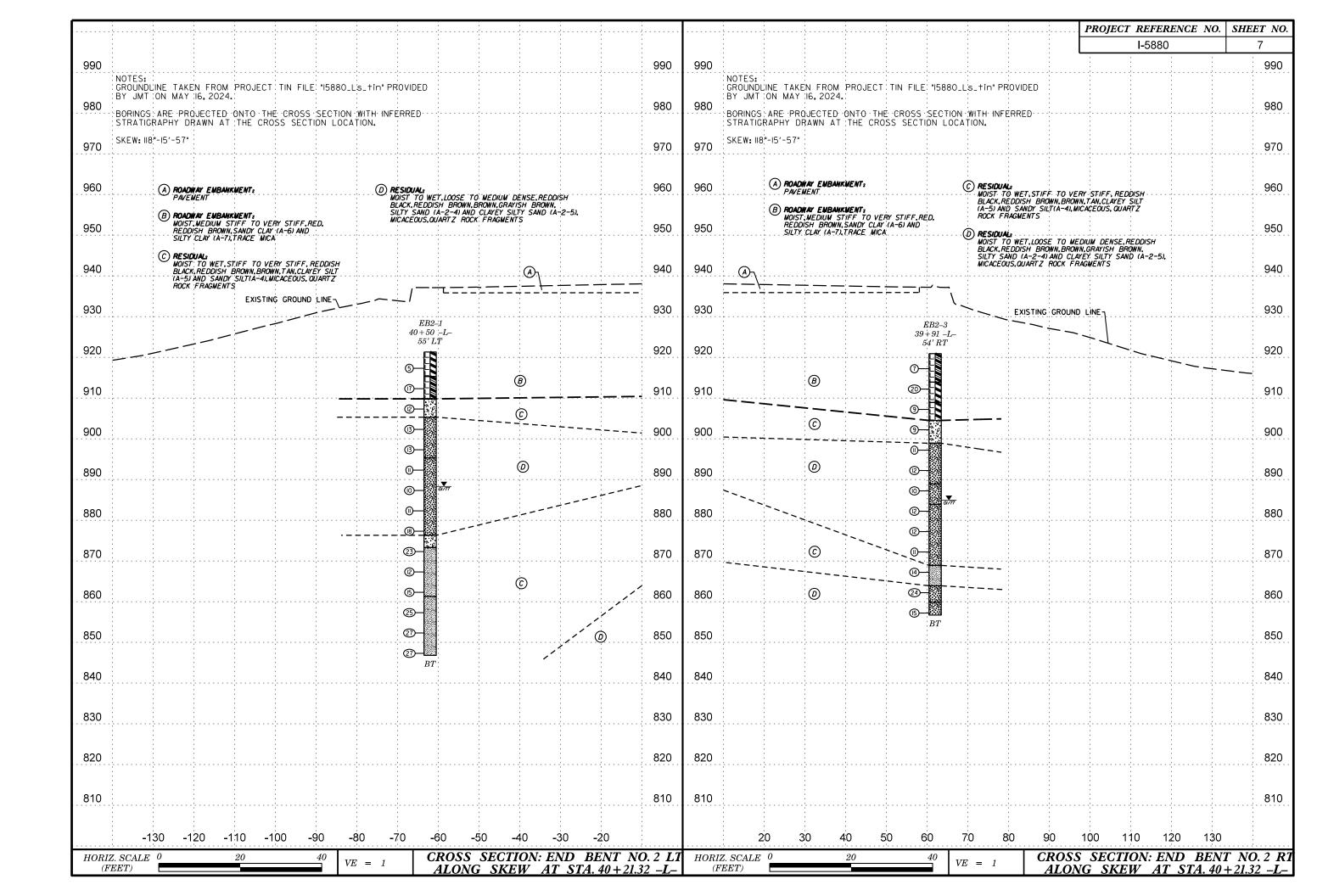
| SOIL DESCRIPTION   | GRADATION  | ROCK DESCRIPTION  | TERMS AND DEFINITIONS   |
|--|--|---|---|
| SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT  | WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. | 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.      | ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.  |
| ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM DI586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:  | GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.   | 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                | AQUIFER - A WATER BEARING FORMATION OR STRATA.  |
| CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH   | ANGULARITY OF GRAINS   | REPRESENTED BY A ZONE OF WEATHERED ROCK.  | ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.  |
| AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,<br>VERY STIFF.GRAY.SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS.HIGHLY PLASTIC.A-7-6   | THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:   | ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:  | 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.              |
| SOIL LEGEND AND AASHTO CLASSIFICATION  | ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.   | WEATHERED V// NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.  | ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT  |
| CENERAL CRANIII AR MATERIALS SILT-CLAY MATERIALS   | MINERALOGICAL COMPOSITION  | FINE TO COARSE CRAIN ICNEAUS AND METAMORPHIC ROCK THAT  | WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND   |
| CLASS. (≤ 35% PASSING *200) C> 35% PASSING *200) ORGANIC MATERIALS   | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.  ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.                                       | CRYSTALLINE ROCK (CR)  WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.  | SURFACE.  |
| GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1, -0 A-1, -1 A-2 A-2, -1 | COMPRESSIBILITY  | NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN  | CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.   |
| 00000000000000000000000000000000000000   | SLIGHTLY COMPRESSIBLE LL < 31  | ROCK (NCR)  SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.  | COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.   |
| SYMBOL 000000000000000000000000000000000000  | MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50   | COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED                                 | CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED  |
| 7. PASSING SILT- MUCK.   | PERCENTAGE OF MATERIAL   | (CP) SHELL BEDS, ETC.   | BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.  |
| *40 30 MX 50 MX 51 MN SOILS SOILS SOILS PEAT   | GRANULAR SILT - CLAY   | - WEATHERING  | DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.  |
| 20 M 25 MX 25 MX 35 MX 35 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN   | ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%  | FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.   | <u>DIP</u> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE  |
| MATERIAL PASSING *40   | LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%   | VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,  | HORIZONTAL.   |
| LL 40 MX 41 MN 50ILS WITH PI 6 MX NP 110 MX 110 MX 111 NN 111 NN 110 MX 110 MX 110 MX 111 NN 11 NN 111 N     | MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%<br>HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE   | (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF  | DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.   |
| PI 6 MX NP 18 MX 18 MX 11 MN 11 MN 18 MX 18 MX 11 MN 11 MN 1 MN MX   | GROUND WATER   | OF A CRYSTALLINE NATURE.  | FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE  |
| USUAL TYPES STONE EPACS ORGANIC  | ✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING  | SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO  (SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR             | SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.   |
| OF MAJOR GRAVEL, AND FINE SILIT UR CLATET SILIT CLATET MATTER  |  | CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.  | FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.   |
| MATERIALS SAND   | STATIC WATER LEVEL AFTER 24 HOURS  | MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN (MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY, ROCK HAS                | FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.  |
| GEN, RATING EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE   | VPW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA   | DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED  | FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.   |
| PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30   | SPRING OR SEEP   | WITH FRESH ROCK.  | FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE   |
| CONSISTENCY OR DENSENESS   | MISCELLANEOUS SYMBOLS  | MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH | FIELD.  |
| COMPACTNESS OR RANGE OF STANDARD RANGE OF UNCONFINED   | ☐ POADNAY EMPANAMENT (PE) 25/025 DIP 0 DIP DIPECTION   | (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES 'CLUNK' SOUND WHEN STRUCK,  IF TESTED, WOULD YIELD SPT REFUSAL   | JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.  |
| PRIMARY SOIL TYPE CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH (N-VALUE) (TONS/FT <sup>2</sup> )  | ROADWAY EMBANKMENT (RE)  DIP & DIP DIRECTION  WITH SOIL DESCRIPTION  OF ROCK STRUCTURES  | SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT  | LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.   |
| GENERALLY VERY LOOSE < 4   | SOIL SYMBOL  SPET DATE TEST BORING  SLOPE INDICATOR INSTALLATION   | (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED  | LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.   |
| GRANULAR LOOSE 4 TO 10 GRANULAR MEDIUM DENSE 10 TO 30 N/A  | 图  | TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.  IF TESTED. WOULD YIELD SPT N VALUES > 100 BPF  | MOTILED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS   |
| MATERIAL DENSE 30 TO 50  | ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER THAN ROADWAY EMBANKMENT AUGER BORING TEST  | VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE   | USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.  |
| VERT DENSE 2 20  |  | SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK (V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR         | PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.  |
| VERY SOFT         < 2         < 0.25           GENERALLY         SOFT         2 TO 4         0.25 TO 0.5   | ── INFERRED SOIL BOUNDARY  | VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES &lt; 100 BPF</u>  | RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.  |
| SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0   | INFERRED ROCK LINE MONITORING WELL TEST BORING WITH CORE   | COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND  | ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF   |
| MATERIAL   STIFF   8 TO 15   1 TO 2  | TTTT ALLUVIAL SOIL BOUNDARY A PIEZOMETER INSTALLATION - SPT N-VALUE  | SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.  | ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.  |
| HARD > 30 > 4  | INSTRICTUTION  | ROCK HARDNESS   | SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT   |
| TEXTURE OR GRAIN SIZE  | RECOMMENDATION SYMBOLS   | VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES   | ROCK,   |
| U.S. STD. SIEVE SIZE 4 10 40 60 200 270  | UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE   | SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.   | SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND   |
| OPENING (MM)         4.76         2.00         0.42         0.25         0.075         0.053   | SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF ACCEPTABLE DEGRADABLE ROCK EMBANKMENT OR BACKFILL   | HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.  | RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.  |
| BOULDER COBBLE GRAVEL SAND SAND SILT CLAY  |  | MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE  | SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT  |
| (CSE, SD.) (F SD.)   | ABBREVIATIONS  | HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED   | OR SLIP PLANE.  |
| GRAIN MM 305 75 2.0 0.25 0.05 0.005<br>SIZE IN. 12 3   | AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED  | BY MODERATE BLOWS.  MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.   | STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL |
|  | CL CLAY MOD MODERATELY 7 - UNIT WEIGHT   | HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE   | WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL  |
| SOIL MOISTURE - CORRELATION OF TERMS  SOIL MOISTURE SCALE FIELD MOISTURE COURS FOR FIELD MOISTURE OF SCALE OF S | CPT - CONE PENETRATION TEST NP - NON PLASTIC 7 <sub>d</sub> - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC   | POINT OF A GEOLOGIST'S PICK.  | TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.  |
| (ATTERBERG LIMITS)  OBSCRIPTION  GUIDE FOR FIELD MOISTURE DESCRIPTION  | DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST <u>SAMPLE ABBREVIATIONS</u>  | 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                    | STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.  |
| - SATURATED - USUALLY LIQUID; VERY WET, USUALLY  | DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON  | PIECES CAN BE BROKEN BY FINGER PRESSURE.  | STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY       |
| (SAT.) FROM BELOW THE GROUND WATER TABLE   | F - FINE SL SILT, SILTY ST - SHELBY TUBE   | VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY           | THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.   |
| PLASTIC  | FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL  | FINGERNAIL.   | TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.  |
| BANGE - WET - (W) SEMISOLID; REQUIRES DRYING TO  | FRAGS FRAGMENTS $w$ - MOISTURE CONTENT CBR - CALIFORNIA BEARING  | FRACTURE SPACING BEDDING  | BENCH MARK: BY-27   |
| (PI) PL PLASTIC LIMIT ATTAIN OPTIMUM MOISTURE  | HI HIGHLY V - VERY RATIO   | TERM SPACING TERM THICKNESS  VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET   | (N: 842,743.87 FT, E: 1,639,270.79 FT, STA. II+61.66 -Y2A-, 51' RT)   |
| OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE   | EQUIPMENT USED ON SUBJECT PROJECT  | ■ WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET   | ELEVATION: 916.49 FEET  |
| SL _ SHRINKAGE LIMIT   | DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:  CME-45C CLAY BITS X AUTOMATIC MANUAL   | MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET   | NOTES:  |
| - DRY - (D) REQUIRES ADDITIONAL WATER TO   | CI CONTINUOUS ELICUT AUSED   | VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET  | BRIDGE BORING ELEVATIONS WERE SURVEYED BY KLEINFELDER USING   |
| ATTAIN OPTIMUM MOISTURE  | X   CME -55   □   CORE 31263   | THINLY LAMINATED < 0.008 FEET   | CONVENTIONAL SURVEYING TECHNIQUES.  |
| PLASTICITY   | X 8' HOLLOW AUGERS -BH   | INDURATION  |   |
| PLASTICITY INDEX (PI)  ORY STRENGTH  | CME-550 HARD FACED FINGER BITS -N  | FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.  RUBBING WITH FINGER FREES NUMEROUS GRAINS:   | BORING LOCATIONS, SOIL LITHOLOGY, AND SOIL STRATIGRAPHY   |
| NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT  | VANE SHEAR TEST UNGCARBIDE INSERTS   | FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.   | INTERPRETTED FROM NCDOT R-0066 INVENTORY REPORT.  |
| MODERATELY PLASTIC 16-25 MEDIUM<br>HIGHLY PLASTIC 26 OR MORE HIGH  | CASING W/ ADVANCER POST HOLE DIGGER  | MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;  | FIAD - FILLED IMMEDIATELY AFTER DRILLING  |
|  | PORTABLE HOIST TRICONESTEEL TEETH THAND AUGER  | BREAKS EASILY WHEN HIT WITH HAMMER.   | THE THEED INVINCENTALES AND THE DIVIDENTA   |
| COLOR  | X TRICONE 2-15/6 TUNGCARB. SOUNDING ROD  | INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.  |   |
| DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).  | CORE BIT VANE SHEAR TEST   | SHARP HAMMER BLOWS REGISTRED TO RREAK SAMPLE.   |   |
| MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.   | X TRICONE 3-7/8 * TUNGCARB.  | EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.  | DATE: 8-15-14   |
|  |  |   |   |

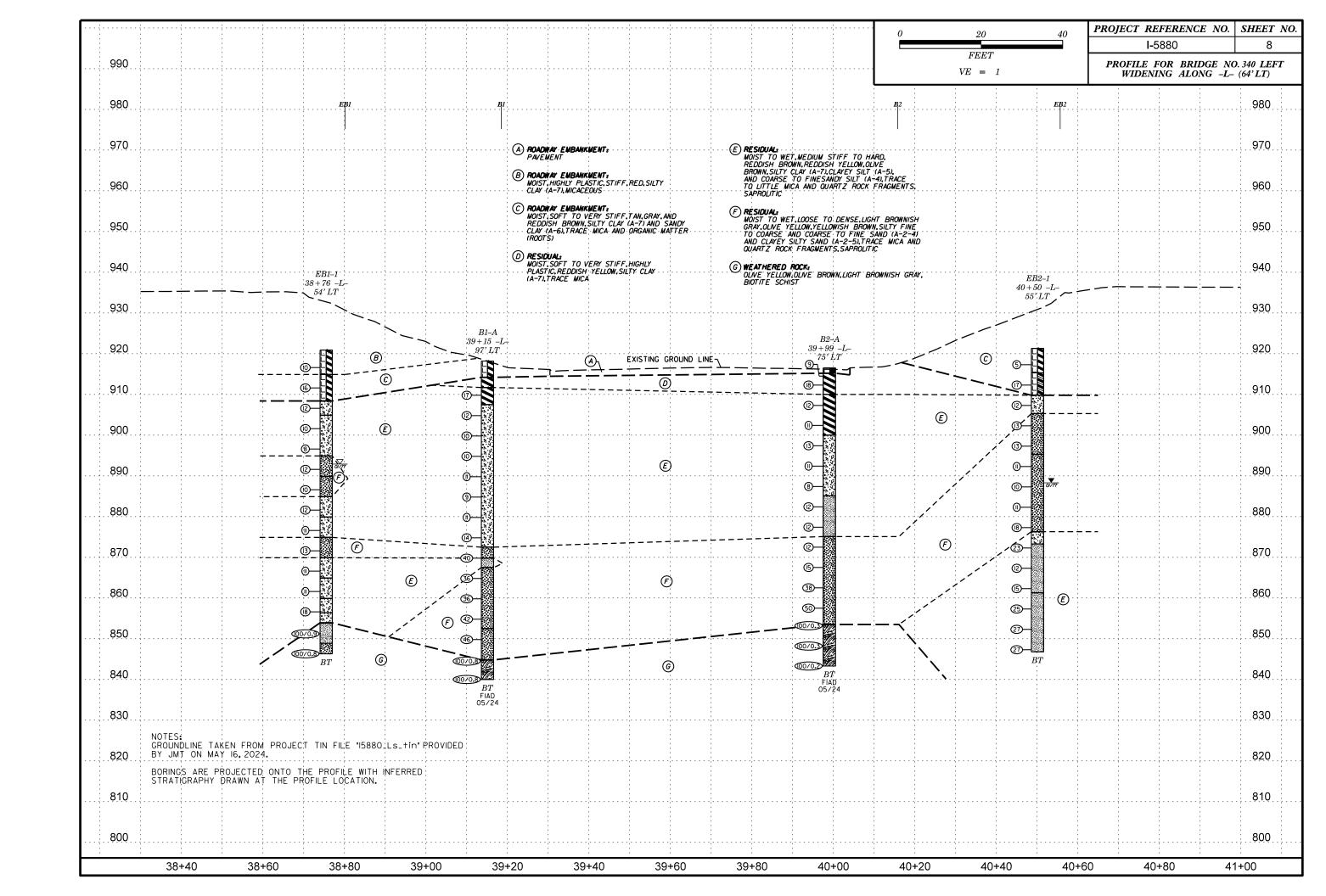


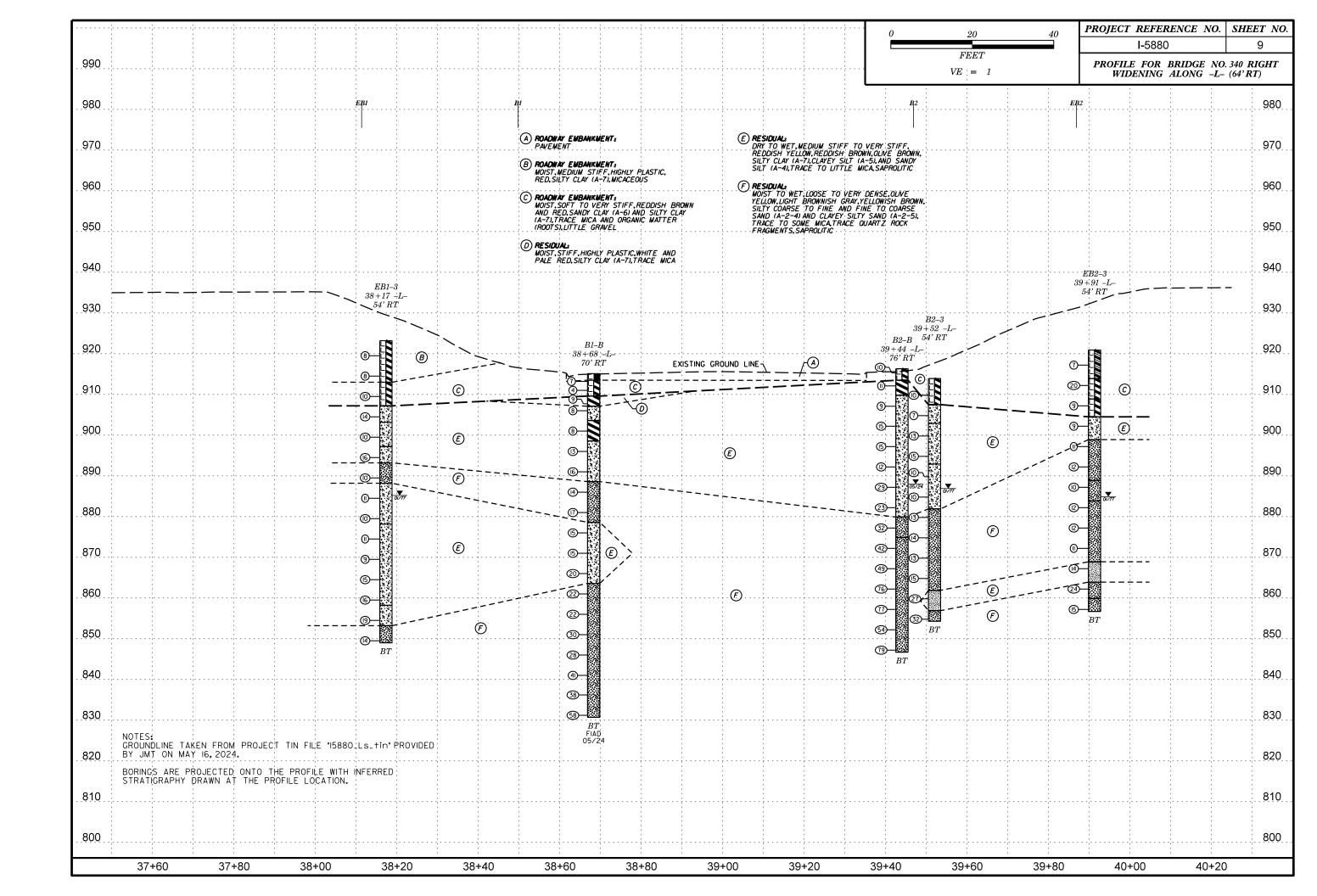






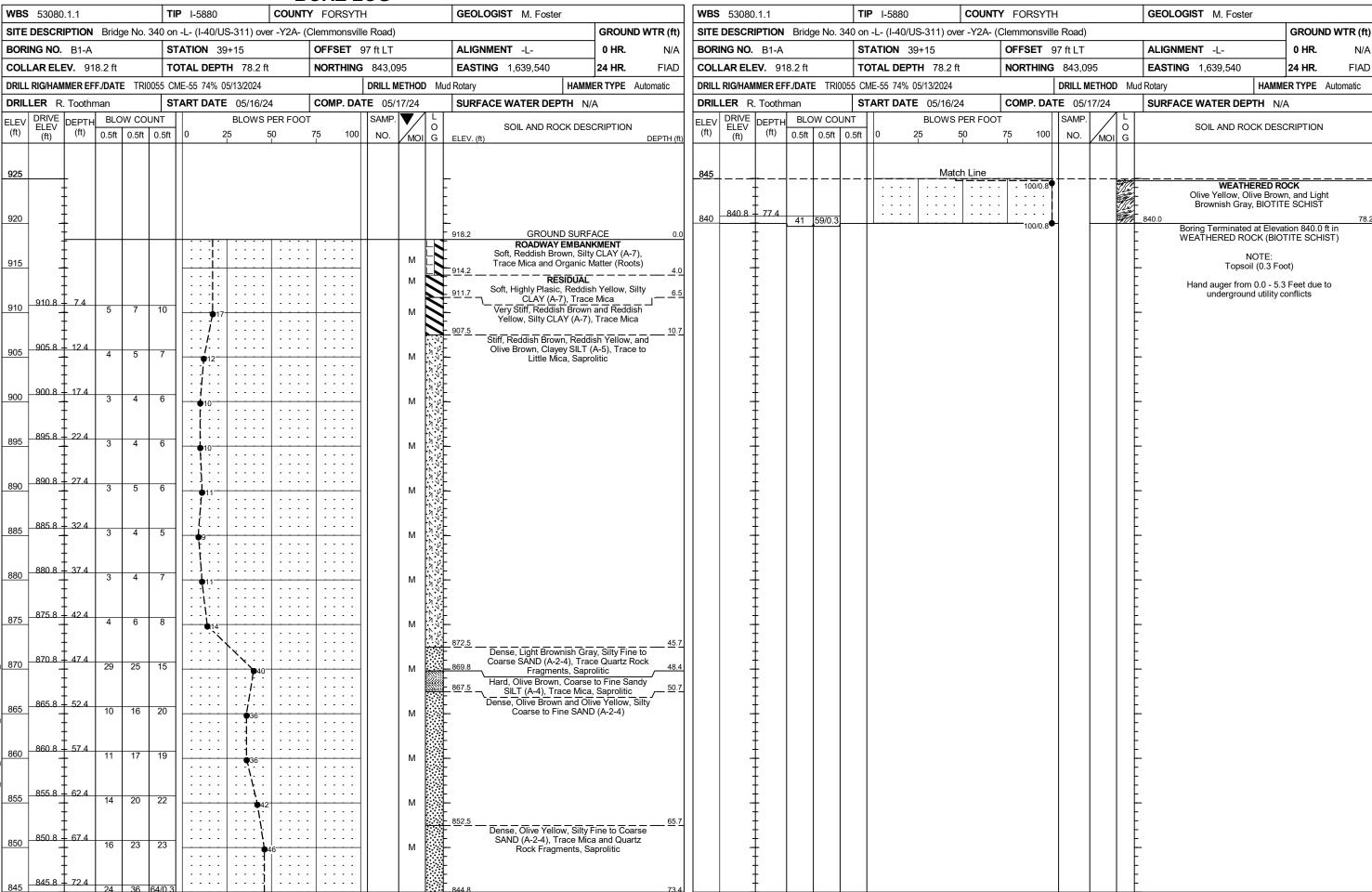


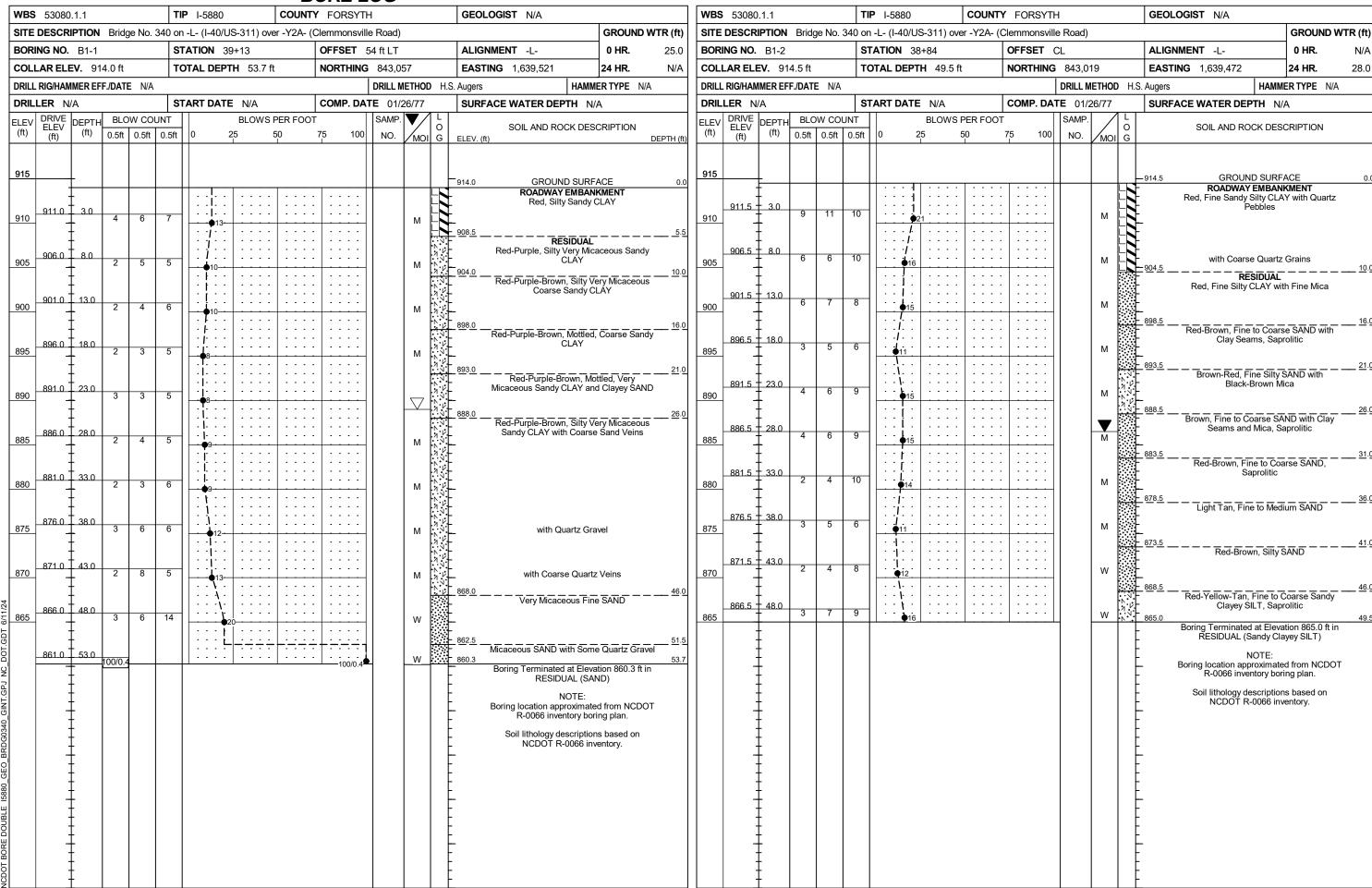




| WD0 5             | 2000             |               |         |        |        | P I-5880        |                  | 1            | UKE I        |  |       | 0501          | OCIOT NIA                                    |                          | WDO          | 50000 4 4                 |           |           | 7.0    | I <b>P</b> 1-588 |                  | 001111     | <b>5</b> / <b>5</b> 0 <b>5</b> 0 ( <b>7</b> |              |       | 050         | LOCIOT NIA                                 |                                  |      |
|-------------------|------------------|---------------|---------|--------|--------|-----------------|------------------|--------------|--------------|--|-------|---------------|--|--------------------------|--------------|---------------------------|-----------|-----------|--------|------------------|------------------|------------|---|--------------|-------|-------------|--|----------------------------------|------|
| WBS 5             |                  |               |         |        |        |                 |                  |              | f FORSY      |  |       | GEOL          | OGIST N/A                                    |                          |              | 53080.1.1                 |           |           |        |                  |                  |            | FORSYT                                      |              |       | GEO         | LOGIST N/A                                 |                                  |      |
|                   |                  |               |         | ge No. |        |                 |                  | er -Y2A- (0  | Clemmonsv    |  |       | T             |  | GROUND WTR (ft)          |              |                           |           | ridge No  |        | -                | -                | over -Y2A- | (Clemmonsvil                                |              |       | 1           |  | GROUND W                         |      |
| BORING            |                  |               |         |        |        | ATION 38        |                  |              | OFFSET       |  |       |               | NMENT -L-                                    | <b>0 HR.</b> 28.0        |              | NG NO. E                  |           |           |        |                  | 38+76            |            | OFFSET                                      |              |       |             | NMENT -L-                                  | 0 HR.                            | 28.0 |
| COLLAR            |                  |               |         |        | ТО     | TAL DEPT        | <b>TH</b> 74.6 f | t            | NORTHIN      | <del></del>                                    |       |               | 'ING 1,639,486                               | <b>24 HR.</b> N/A        |              | AR ELEV.                  |           |           |        | OTAL DI          | <b>EPTH</b> 74.6 | 6 ft       | NORTHING                                    |              |       |             | TING 1,639,486                             | 24 HR.                           | N/A  |
| DRILL RIG         |                  |               | F./DATI | E N/A  |        |                 |                  |              |              |  |       | H.S. Augers   |  | MER TYPE N/A             |              | RIG/HAMME                 | R EFF./D/ | ATE N/    |        |                  |                  |            |   |              |       | H.S. Augers |  | AMMER TYPE N/A                   |      |
| DRILLEF           |                  |               |         |        |        | ART DATE        |                  |              | COMP. D      |  |       | SURF          | ACE WATER DEPTH N                            | /A                       |              | LER N/A                   |           |           |        | TART DA          | ATE N/A          |            | COMP. DA                                    |              | 26/77 | SURF        | ACE WATER DEPTH                            | N/A                              |      |
| ELEV DF EL (ft)   | EV<br>ft)        | OEPTH<br>(ft) | 0.5ft   | 0.5ft  |        | 0 2             |                  | PER FOOT     | 75 100       | SAMP.  | MOI   | O G ELEV. (ft | SOIL AND ROCK DES                            | SCRIPTION<br>DEPTH (ft)  | ELEV<br>(ft) | DRIVE<br>ELEV<br>(ft) DEF | PTH B     | 5ft 0.5ft |        | 0                | BLOW<br>25       | S PER FOC  | 75 100                                      | SAMP.<br>NO. | MOI   | D<br>D<br>G | SOIL AND ROCK                              | DESCRIPTION                      |      |
| 930               |                  |               |         |        |        |                 |                  |              |              |  |       |               |  |                          | 850          |                           |           |           |        |                  | Ma               | atch Line  |   |              |       |             |  |                                  |      |
|                   | Ŧ                | .             |         |        |        |                 |                  |              |              |  |       | F             |  |                          |              | <del>-</del>              |           |           |        |                  | <b>I</b>         |            |   | !            |       | 848.9       | Tan, Micaceous Silt                        | V Fine to Medium                 | 72.0 |
|                   | Ŧ                |               |         |        |        |                 |                  |              |              |  |       | F             |  |                          |              | 847.6 + 73                | 3.3       | 3 53      | 50/0.3 |                  | I                | I          |   |              | М     | 846.3       | SAND, Sa                                   | prolitic                         | 74.6 |
| 925               | ‡                | .             |         |        |        |                 |                  |              |              |  |       | F             |  |                          |              | +                         |           |           |        |                  |                  |            | 100/0.8                                     |              |       | F           | Boring Terminated at I<br>RESIDUAL (S      | Elevation 846.3 ft in illy SAND) |      |
|                   | ŧ                |               |         |        |        |                 |                  |              |              |  |       | F             |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | ļ.          | NOT  |                                  |      |
| 920               | ‡                |               |         |        |        |                 |                  |              |              |  |       | 920.9         | GROUND SURF                                  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | ļ.          | Boring location approxi<br>R-0066 inventor | mated from NCDOT                 |      |
| 920               | ‡                | .             |         |        |        |                 |                  | <del> </del> | 1            | 11 1   | <br>  |               | ROADWAY EMBAN<br>Highly Plastic, Red, Fine S |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | -           |  | · .                              |      |
| _91               | 7.6              | 3.3           | 2       | 5      | 5      | -               |                  |              |              |  | м     |               |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | ţ           | Soil lithology descri<br>NCDOT R-006       | ptions based on<br>6 inventory.  |      |
| 915               | <u></u>          | .             |         |        |        | 10              |                  |              |              | <u> </u>                                       | .v. [ | 914.9         |  | 6.0                      |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ł           |  |                                  |      |
| 01                | 2.6 <del>+</del> | 03            |         |        |        | : :\; :         |                  |              |              |  | <br>  |               | Tan-Gray, Fine to Mediu<br>CLAY              | m Sandy Silty            |              | ‡                         |           |           |        |                  |                  |            |   |              |       | E           |  |                                  |      |
|                   | <sup>2.0</sup> ± | 0.0           | 5       | 8      | 8      | 16              |                  | 1::::        |              |  | М     |               |  |                          |              | ŧ                         |           |           |        |                  |                  |            |   |              |       | Ł           |  |                                  |      |
| 910               | $\pm$            | .             |         |        |        |                 |                  | <del> </del> | <del> </del> | +  |       | 908.4         |  | 40.5                     |              | $\pm$                     |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 90                | 7.6 T            | 13.3          | 4       | 6      | 6      | : : j: :        |                  |              |              |  |       | 908.4         | RESIDUAL                                     | 12.5                     |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 905               | Ŧ                |               | 4       | "      |        | <b>1</b> 2      |                  | : : : :      | : : : :      |  | М     | パド<br>904.9   | Yellow-Red, Micaceous F                      | 16.0                     |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
|                   | Ŧ                | ·             |         |        |        | 7               |                  |              |              | 11 1   |       |               | Red-Tan, Micaceous Fin                       | e Sandy SILT,            |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 90                | 2.6 +<br>+       | 18.3          | 3       | 5      | 5      | - 10            |                  |              |              |  | м     | 111           | Saprontic                                    |                          |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 900               | #                |               |         |        |        | 1 1             |                  |              |              | 41 1   |       | 11 L          |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ė.          |  |                                  |      |
| 89                | 7.6 ‡            | 23.3          |         |        |        | : į: : :        |                  |              |              |  |       | 1 V           |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | <u> </u>    |  |                                  |      |
| 205               | ‡                |               | 3       | 3      | 5      | 8               |                  |              |              |  | M     | λ.V. <u>+</u> |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ė           |  |                                  |      |
| 895               | +                |               |         |        |        | - +             |                  |              |              | 11   |       | 894.9         | with Medium to Coarse Sar                    | 26.0<br>ndy Quartz Veins |              | +                         |           |           |        |                  |                  |            |   |              |       | -           |  |                                  |      |
| 89                | 2.6              | 28.3          | 3       | 5      | 7      | :j::            |                  |              |              |  | M     |               |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ė           |  |                                  |      |
| 890               |                  | .             |         |        |        | <b>•</b> 12     |                  |              |              | ]  |       | 889.9         |  | 31.0                     |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ł           |  |                                  |      |
| 00                | 7.6              | 22.2          |         |        |        | 1:1::           |                  |              |              |  |       |               | Tan-Pink, Fine to Coarse S                   | Sandy Micaceous          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | E           |  |                                  |      |
|                   | Ť                | 55.5          | 2       | 4      | 6      | •10             |                  |              |              |  | М     |               |  |                          |              | ŧ                         |           |           |        |                  |                  |            |   |              |       | Ł           |  |                                  |      |
| 885               | $\pm$            | .             |         |        |        |                 |                  | <del> </del> | 1            | +  |       | 884.9<br>N    |  | 36.0                     |              | $\pm$                     |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 4 88              | 2.6              | 38.3          | 2       | 4      | 8      | -   -           |                  |              |              |  |       | 1 1           |  |                          |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | E           |  |                                  |      |
| 088               | Ŧ                |               | 2       |        |        | ●12             |                  | : : : :      | : : : :      |  | M     | N             |  | 41 0                     |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 10                | Ţ                | 40.0          |         |        |        |                 |                  |              |              | ]  |       |               | Black-Tan, Micaceous F<br>Sandy SILT         | ine to Coarse            |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 875               | 7.6 +<br>        | 43.3          | 1       | 4      | 7      | 11              |                  | : : : :      |              |  | м     | 1 × E         | Canay OLI                                    |                          |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 의 875<br>일        | ‡                | .             |         |        |        | 1 1             |                  |              |              | -  |       | 7 N 874.9     | Tan-Pink, Micaceous Fine                     | to Medium Silty          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| <u>87</u>         | 2.6              | 48.3          | _       | _      |        | : : : :         |                  |              |              |  |       |               | SAND   | to Modium Only           |              | ‡                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 870<br>870<br>870 | ‡                |               | 2       | 5      | 8      | 13              |                  |              |              |  | М     | 860.0         |  | 51.0                     |              | ‡                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 0 0.0             | ‡                | .             |         |        |        | - ;; -          |                  |              | 1            | <b>1</b>                                       |       | 77            |  | 31.0                     |              | ‡                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 86                | 7.6 +            | 53.3          | 2       | 4      | 7      | 1.1.            |                  |              |              |  | м     | 111           |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | ļ.          |  |                                  |      |
| BRDG0340          | #                | .             |         |        |        | - ¥"··          |                  |              | 1            | 41 1   |       | 1 V 864.9 _   |  | 56.0                     |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ė.          |  |                                  |      |
| 0                 | 2.6 +            | 58.3          |         |        |        | : 1 : :         |                  |              |              |  | ŀ     | N 1           | White-Tan, Micaceous F<br>Sandy SILT         | ine to iviedium<br>-     |              | ‡                         |           |           |        |                  |                  |            |   |              |       | ţ           |  |                                  |      |
| 860               | Ŧ                |               | 2       | 4      | 7      | <b>1</b> 11     |                  |              |              |  | М     | 7 L           |  |                          |              | ‡                         |           |           |        |                  |                  |            |   |              |       | ţ           |  |                                  |      |
| <u>щ</u> 800      | +                | .             |         |        |        | · · \ ·         |                  | <del> </del> |              | †  |       | 859.9<br>N    | Tan-White to Tan-Black, N                    | Micaceous Fine 61.0      |              | ‡                         |           |           |        |                  |                  |            |   |              |       | <u> </u>    |  |                                  |      |
| 85                | 7.6              | 63.3          | 3       | 5      | 13     | · · · · · · · · |                  |              |              |  | м     | N 856.4       | Sandy SILT                                   | -<br>                    |              | ‡                         |           |           |        |                  |                  |            |   |              |       | Ł           |  |                                  |      |
| ы<br>ш 855        | Ī                |               |         |        |        |                 | <u></u>          | +            | <del> </del> | <u> </u>                                       | ivi   | 850.4         |  | 04.5                     |              | 1                         |           |           |        |                  |                  |            |   |              |       | Ł           |  |                                  |      |
| 855<br>855        | $\int$           | 60.0          |         |        |        |                 |                  |              |              | $\parallel \parallel \parallel \parallel$      |       | 4 F 853.9     |  | 67.0                     |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | E           |  |                                  |      |
| 850 850           | 2.6 +            | 00.პ          | 12      | 28     | 50/0.4 |                 |                  |              |              | <u> </u>                                       | М     | F             |  |                          |              | Ŧ                         |           |           |        |                  |                  |            |   |              |       | F           |  |                                  |      |
| 일 850             |                  |               |         |        |        |                 |                  | 1            | - 100/0.9    | <u>'T                                     </u> |       |               |  |                          |              |                           |           | l         |        |                  |                  |            |   |              |       |             |  |                                  |      |

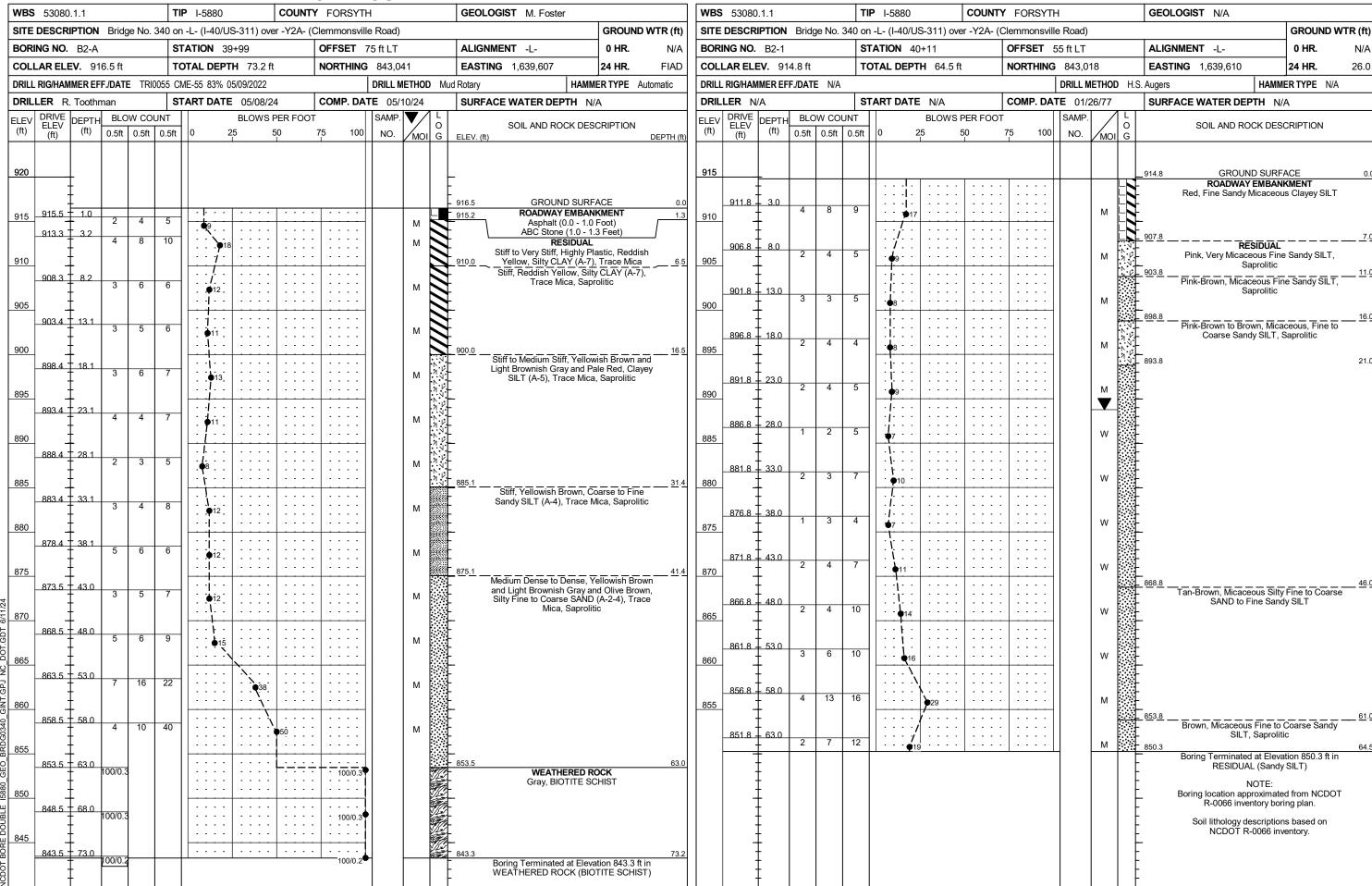
| MIDO FOOCO 4 4                 |  | TV FORDYTH                        | CECLOCIET AVA  | WDC 50000 4 4                  | TID   5000          | NTV FORMET          | CEOLOGICE N//  |
|--------------------------------|--|-----------------------------------|--|--------------------------------|---------------------|---------------------|--|
| WBS 53080.1.1                  |  | TY FORSYTH                        | GEOLOGIST N/A  | WBS 53080.1.1                  |                     | NTY FORSYTH         | GEOLOGIST N/A  |
| SITE DESCRIPTION Bridge No. 3  | 1  | <del>`</del>                      | GROUND WTR (ft)  | SITE DESCRIPTION Bridge No. 3  |                     | <del>- '</del>      | GROUND WTR (ft)  |
| BORING NO. EB1-3               | STATION 38+17                            | OFFSET 54 ft RT                   | ALIGNMENT -L- 0 HR. N/A  | BORING NO. EB1-3               | STATION 38+17       | OFFSET 54 ft RT     | ALIGNMENT -L- 0 HR. N/A                                      |
| COLLAR ELEV. 923.2 ft          | TOTAL DEPTH 74.2 ft                      | NORTHING 842,997                  | <b>EASTING</b> 1,639,389 <b>24 HR.</b> 38.0                      | COLLAR ELEV. 923.2 ft          | TOTAL DEPTH 74.2 ft | NORTHING 842,997    | <b>EASTING</b> 1,639,389 <b>24 HR.</b> 38.0                  |
| DRILL RIG/HAMMER EFF./DATE N/A |  | DRILL METHOD H.S                  |  | DRILL RIG/HAMMER EFF./DATE N/A |                     | DRILL METHOD H      |  |
| DRILLER N/A                    | START DATE N/A                           | COMP. DATE 01/26/77               | SURFACE WATER DEPTH N/A  | DRILLER N/A                    | START DATE N/A      | COMP. DATE 01/26/77 | SURFACE WATER DEPTH N/A                                      |
| ELEV DRIVE DEPTH BLOW COU      | NT BLOWS PER FOO                         | 11 17 101                         | SOIL AND ROCK DESCRIPTION  | ELEV DRIVE DEPTH BLOW COU      |                     | /   0               | SOIL AND ROCK DESCRIPTION                                    |
| (ft) (ft) (ft) 0.5ft 0.5ft     | 0.5ft 0 25 50                            | 75 100 NO. MOI G                  | ELEV. (ft) DEPTH (ft)  | (ft) (ft) (ft) 0.5ft 0.5ft     | 0.5ft 0 25 50       | 75 100 NO. MOI G    |  |
|                                |  |                                   |  |                                |                     |                     |  |
| 925                            |  |                                   | _  | 845                            | Match Line          |                     | <br>   |
|                                | <u> </u>                                 |                                   | 923.2 GROUND SURFACE 0.0 ROADWAY EMBANKMENT                      |                                |                     |                     | Boring location approximated from NCDOT                      |
| 920 920.5 + 2.7                |  |                                   | Red, Micaceous, Fine Sandy Silty CLAY                            |                                |                     |                     | R-0066 inventory boring plan.                                |
| 920 920.5 7 2.7 2 3            | 5 • • • • • • • • • • • • • • • • • • •  | M []                              | -  |                                |                     |                     | Soil lithology descriptions based on NCDOT R-0066 inventory. |
|                                |  |                                   |  |                                |                     |                     |  |
| 915 915.5 7.7                  | 5  | ·   · · · ·                       |  |                                |                     |                     | _  |
| †   2   3                      | 3  | M                                 | 913.0 10.2   |                                |                     |                     | F  |
|                                |  |                                   | Red-Brown, Micaceous, Silty Sandy CLAY<br>and Clayey Coarse SAND |                                |                     |                     | -  |
| 910 910.5 + 12.7 3 5           | 5  |                                   | and orayey odaise oning  |                                |                     |                     | <u> </u>   |
|                                | : 1, : : : : : : : : : : : : : : : : : : |                                   | 907.2  |                                |                     |                     | <del>-</del><br>-  |
| 905.5 + 17.7                   | ::\:: :::: :::                           |                                   | RESIDUAL   |                                |                     |                     | -  |
| 905 905.5 7 17.7 5 6           | 8 14                                     |                                   | Red-Brown, Micaceouse Fine Sandy Clayey SILT                     |                                |                     |                     | _  |
|                                | ::/:: :::: :::                           |                                   | 903.2 20.0 with Weathered Pegmatite Vein                         | +                              |                     |                     | -  |
| 900 900.5 7 22.7               |  | -                                 |  |                                |                     |                     |  |
| 900 + 3 4                      | 6 . •10                                  | D 1 1 1                           | -  |                                |                     |                     |  |
|                                |  |                                   | 897.2 Pod Brown Micacopus Clayey Silty Fine                      |                                |                     |                     | <del>-</del><br>-  |
| 895                            | 9  | D 1                               | Red-Brown, Micaceous Clayey Silty Fine SAND                      |                                |                     |                     | -  |
|                                | 1  |                                   | 893.2  |                                |                     |                     |  |
|                                | : :/: :   : : : :   : : :                | -                                 | Tan, Micaceous Silty Fine SAND (Weathered Pegmatitie)            | ±                              |                     |                     | -  |
| 890 890.5 + 32.7 3 4           | 6  | M                                 | -  |                                |                     |                     | _  |
|                                |  |                                   | 888.2 White-Yellow-Tan, Micaceous Silty CLAY                     |                                |                     |                     |  |
| 885.5 + 37.7                   | :{::: ::: :::                            |                                   | ,  |                                |                     |                     |  |
| 2   5                          | 6 . •11                                  | M                                 | -  |                                |                     |                     | <del>-</del><br>-  |
|                                |  |                                   |  |                                |                     |                     | <del>-</del>   |
| 880 880.5 + 42.7               | 6  |                                   | _  |                                |                     |                     | -  |
|                                | . • 10                                   | W (1.3)                           | 878.2 45.0   | ±                              |                     |                     | <u>-</u>   |
| <u> </u>                       |  |                                   | Tan, Micaceous Silty Fine SAND                                   | +                              |                     |                     | -  |
| 875 875.5 + 47.7 2 4           | 7  | w                                 | -  |                                |                     |                     | _  |
|                                |  |                                   |  |                                |                     |                     | F  |
| 870.5 + 52.7                   |  |                                   |  |                                |                     |                     | F  |
| 2 3                            | 6  |                                   | -  | ‡                              |                     |                     | F  |
|                                |  |                                   |  |                                |                     |                     | <del>-</del><br>-  |
| 865 865.5 + 57.7               | 9  \                                     |                                   | _  |                                |                     |                     | <u>-</u>   |
|                                | 1   • 15                                 | W N                               |  |                                |                     |                     | _  |
|                                |  |                                   |  |                                |                     |                     | E  |
| 860 860.5 + 62.7               | 9 16                                     |                                   | -  |                                |                     |                     | F  |
|                                |  |                                   | 858.2 65.0 White, Silty CLAY with Quartz Seam and                |                                |                     |                     | F  |
| 855.5 67.7                     | : : : '\;   : : : :   : : :              |                                   | Micaceous Pegmatite  |                                |                     |                     | F  |
| 855 400 4 8 9                  | 10                                       | w   N   N   N   N   N   N   N   N | 953.2  |                                |                     |                     | <del>-</del><br>-  |
|                                |  |                                   | Brown, Micaceous Clayey Silty Fine SAND                          |                                |                     |                     |  |
| 850 850.5 72.7                 | 9  | -                                 |  |                                |                     |                     | _  |
| 2 5                            | 9 14                                     | w :::                             | 849.0 74.2 Boring Terminated at Elevation 849.0 ft in            | 7                              |                     |                     | -  |
|                                |  | ‡                                 | RESIDUAL (Clayey Silty SAND)                                     |                                |                     |                     | F  |
|                                |  |                                   |  |                                |                     |                     | <u> </u>   |

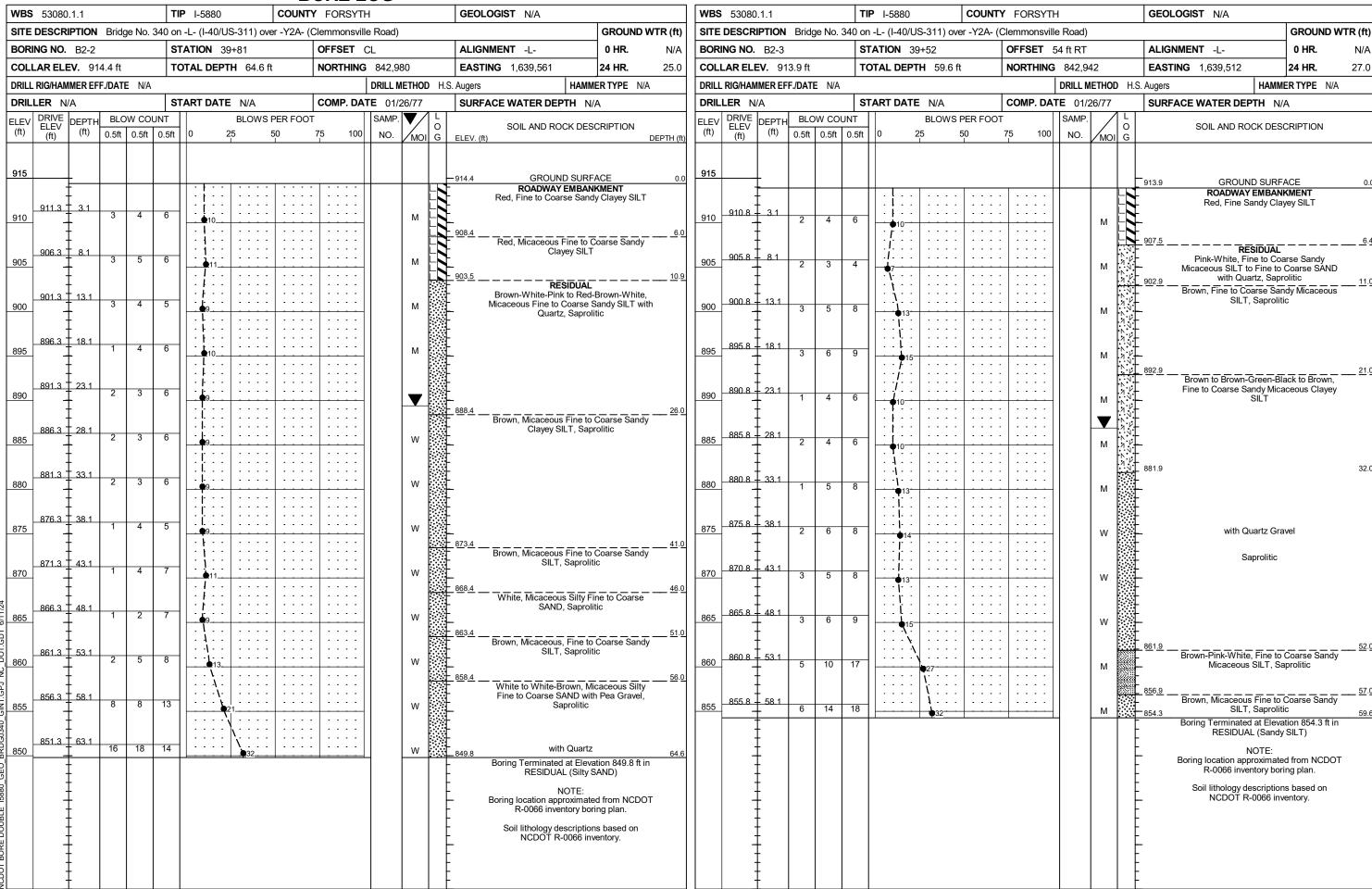




| WBS   | 53080         | .1.1           |          |        | TI     | IP   | I-58             | 80            |              |      | COL | INTY        | FC   | RSYT                | Н     |       |                   |       | GEO      | LOGIST N/A                                       |                        |              |
|-------|---------------|----------------|----------|--------|--------|--|------------------|---------------|--------------|------|-----|-------------|--|---------------------|-------|-------|-------------------|-------|----------|--|------------------------|--------------|
| SITE  | DESCR         | IPTION         | Brido    | ge No. | 340 or | n -L   | - (I-4           | 10/US         | -311)        | over | -Y2 | 4- (C       | lemn   | nonsvil             | le Ro | ad)   |                   |       |          |  | GROUND W               | VTR (ft)     |
| BORI  | NG NO.        | B1-3           |          |        | S      | TAT  | ΓΙΟN             | l 38-         | +56          |      |     |             | OFF  | SET                 | 54 ft | RT    |                   |       | ALIG     | SNMENT -L-                                       | 0 HR.                  | 33.0         |
| COLI  | AR ELE        | <b>EV</b> . 91 | 3.9 ft   |        | T      | OTA  | AL D             | EPTI          | <b>1</b> 69. | 1 ft |     |             | NOR  | THING               | 84    | 12,98 | 1                 |       | EAS      | <b>TING</b> 1,639,424                            | 24 HR.                 | 28.0         |
| DRILL | RIG/HAN       | IMER EF        | F./DAT   | E N/A  |        |  |                  |               |              |      |     |             |  |                     | DRI   | LL M  | ETHO              | ) H.S | . Augers | S HA   | MMERTYPE N/A           |              |
| DRIL  | LER N         | /A             |          |        | S      | TAF  | RT D             | ATE           | N/A          |      |     |             | CON  | IP. DA              | TE    | 01/2  | 6/77              |       | SURI     | FACE WATER DEPTH                                 | N/A                    |              |
| ELEV  | DRIVE<br>ELEV | DEPTH          | <b>-</b> | W CO   |        | $\left\  \cdot \right\ _{\alpha}$                |                  | 0/            | BLOV         |      |     |             | 7.5  | 400                 |       | MP.   | lacktriangledown/ | 0     |          | SOIL AND ROCK [                                  | DESCRIPTION            |              |
| (ft)  | (ft)          | (ft)           | 0.5ft    | 0.5ft  | 0.5ft  | 0  |                  | 25            | )            | 50   | 0   |             | 75<br>                                       | 100                 | N     | IO.   | /MOI              | G     | ELEV. (  | (ft)   | ]                      | DEPTH (f     |
|       |               |                |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
| 915   |               | -              |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   |       | 913.9    | GROUND SI  | JRFACE                 | 0.           |
|       |               |                |          |        |        |  |                  |               |              |      |     |             | -  |                     |       |       |                   |       |          | ROADWAY EMB<br>Red, Silty Micaceou               |                        |              |
| 910   | 911.1         | 2.8            | 1        | 1      | 1      | ∤ į  | 2                |               |              | -    |     |             | -  |                     |       |       | М                 |       | _        | ,  |                        |              |
|       | -             |                |          |        |        | ``   | · :              |               |              |      |     |             |  |                     |       |       |                   |       | 907.9    |  |                        | 6.0          |
|       | 906.1         | 7.8            |          |        | L .    |  | ) .<br>.\.       |               |              |      |     |             | -  |                     |       |       |                   |       |          | Red-Gray, Silty Very N                           |                        |              |
| 905   | -             | -              | 2        | 4      | 4      | ┠  |                  |               |              |      |     | <del></del> | +-   |                     |       |       | М                 |       | 903.5    |  |                        | 10.4         |
|       | -             |                |          |        |        |  | :  -             |               |              |      |     |             |  |                     |       |       |                   |       | _903.3 _ | RESIDU<br>Pink-White to Red-Bro                  |                        |              |
| 900   | 901.1         | 12.8           | 2        | 4      | 5      | łL   | . l.             |               |              |      |     |             | -  |                     |       |       | М                 | N.    | _        | Very Micaceous Coa                               | rse Sandy CLAY         |              |
|       | -             |                |          |        |        |  | . Ĭ<br>. I       |               |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
|       | 896.1         | 17.8           |          |        |        |  | : 1              |               |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
| 895   | _             |                | 3        | 5      | 7      | ╟  |                  | 12-           |              |      |     |             | +-   |                     |       |       | М                 |       | -        |  |                        |              |
|       | -             |                |          |        |        |  | : <u>i</u>       |               |              |      |     |             |  |                     |       |       |                   | 44    | 892.9    |  |                        | 21.          |
| 890   | 891.1         | 22.8           | 3        | 5      | 6      | łL   |                  |               |              | -    |     |             |  |                     |       |       | М                 | _     | _        |  |                        |              |
|       | -             |                |          |        |        |  | . I              |               |              |      |     |             |  |                     |       |       |                   |       | 887.9    |  |                        | 26.          |
|       | 886.1         | 27.8           |          |        |        |  | : į              |               |              |      |     | : :         | -  |                     |       |       | lacksquare        |       |          | Brown-Black, Silty Mica                          | iceous Fine SAND       |              |
| 885   | -             | -              | 4        | 5      | 5      | ⊩  | <del>.  </del> 1 | 0             |              |      |     |             | +-   | <del></del>         |       |       | M                 |       | -        |  |                        |              |
|       | -             | _              |          |        |        |  | 1                |               |              |      |     |             |  |                     |       |       |                   | 77    | 882.9    | Brown-Black, Mottled, S                          | ilty Very Micaceous    | <u> 31</u> . |
| 880   | 881.1         | 32.8           | 3        | 5      | 10     | łL   | i                | <br>•15       |              | -    |     |             | -  |                     |       |       | W                 |       | _        | Coarse Sand                                      | ly CLAY                |              |
|       | -             | _              |          |        |        |  |                  | [ ]           |              |      |     |             |  |                     |       |       |                   |       | 877.9    |  |                        | 36.          |
|       | 876.1         | 37.8           |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   |       |          | with Coarse Qu                                   | ıartz Veins            |              |
| 875   | _             | -              | 2        | 4      | 8      |  | <del>•</del>     | 12-           |              |      |     |             | +-   |                     |       |       | W                 |       | _        |  |                        |              |
|       | -             |                |          |        |        |  | '                | ÿ :           |              |      |     | : :         |  |                     |       |       |                   |       | 871.9    |  |                        | 42.          |
| 870   | 871.1<br>-    | 42.8           | 3        | 6      | 11     | ╁  |                  | 17-           |              |      |     |             | <u>                                     </u> |                     |       |       | W                 |       | _        |  |                        |              |
|       | -             |                |          |        |        |  |                  | .].<br>.1.    |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
|       | 866.1         | 47.8           |          |        | 10     |  | : :              | :[:           |              |      |     | : :         | -  |                     |       |       |                   |       | 866.9    |  |                        | 47.          |
| 865   | -             | _              | 3        | 8      | 10     |  |                  | - <b>ф</b> 18 |              |      |     |             | +-   |                     |       |       | W                 |       | -        |  |                        |              |
|       | -<br>         |                |          |        |        |  |                  | -  -<br>-  -  |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
| 860   |               | 52.8           | 3        | 7      | 12     | ╁  |                  | - <b> </b> 19 |              |      |     |             | <u>                                     </u> |                     |       |       | W                 |       | _        |  |                        |              |
|       | -             |                |          |        |        |  | : :              | : [ ]         |              |      |     | : :         |  |                     |       |       |                   |       |          |  |                        |              |
|       | 856.1         | 57.8           |          |        |        |  |                  | -  -          |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
| 855   | -             | -              | 4        | 7      | 11     |  |                  | <b>-†</b> 18  |              |      |     |             | +-   |                     |       |       | М                 |       | -        |  |                        |              |
|       |               | -              |          |        |        |  |                  | : ¦           |              |      |     | : :         | :  |                     |       |       |                   |       |          |  |                        |              |
| 850   | 851.1<br>-    | 62.8           | 10       | 9      | 12     | $\dagger igspace$                                |                  | - <b>\</b>    |              | -    |     |             | <u>  :</u>                                   |                     |       |       | М                 |       | _        |  |                        |              |
|       | -             | _              |          |        |        |  |                  | : []          |              |      |     |             |  |                     |       |       |                   |       |          |  |                        |              |
| 0.45  | 846.1         | 67.8           | 04       | E0.    | 40/0.0 |  |                  | : 닙           |              |      |     | · ·         | <u> </u>                                     | <br>. <del></del> . |       |       |                   |       | 846.1    | TAKELED LOW TO                                   |                        | 67.8         |
| 845   | -             | -              | 21       | 59     | 40/0.3 | <del>                                     </del> |                  |               |              |      |     |             |  | 100/0.8             | Н     |       | М                 |       | _844.8   | White-Pink, Silty Mica<br>Boring Terminated at E | levation 844.8 ft in   | 69.          |
|       | -             | -              |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   |       |          | RESIDUAL (Si                                     | Ity SAND)              |              |
|       | -             | _              |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   |       | _        | NOTE<br>Boring location approxir                 | ::<br>nated from NCD∩T | Г            |
|       | -             | -              |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   |       |          | R-0066 inventory                                 | boring plan.           |              |
|       | -             | -              |          |        |        |  |                  |               |              |      |     |             |  |                     |       |       |                   | F     |          | Soil lithology descrip<br>NCDOT R-006            | otions based on        |              |

| <b>WBS</b> 53080.1.1         |                                       | INTY FORSYTH                      | GEOLOGIST M. Foster   | <b>WBS</b> 53080.1.1 <b>TIP</b> I-5880   | COUNTY FORSYTH  | GEOLOGIST M. Foster  |
|------------------------------|---------------------------------------|-----------------------------------|---|--|---|--|
|                              |                                       |                                   |   |  |   |  |
|                              | o. 340 on -L- (I-40/US-311) over -Y2/ | <del></del>                       | GROUND WTR (f   | SITE DESCRIPTION Bridge No. 340 on -L- (I-40/US-311) over                                |   | GROUND WTR (ft)  |
| BORING NO. B1-B              | STATION 38+68                         | OFFSET 70 ft RT                   | ALIGNMENT -L- 0 HR. N/.   | BORING NO. B1-B STATION 38+68  | OFFSET 70 ft RT                                       | ALIGNMENT -L- 0 HR. N/A  |
| COLLAR ELEV. 915.1 ft        | TOTAL DEPTH 84.4 ft                   | NORTHING 842,962                  | <b>EASTING</b> 1,639,429 <b>24 HR.</b> FIAI   | COLLAR ELEV. 915.1 ft TOTAL DEPTH 84.4 ft  | NORTHING 842,962                                      | <b>EASTING</b> 1,639,429 <b>24 HR.</b> FIAD  |
| DRILL RIG/HAMMER EFF./DATE   |                                       | DRILL METHOD Mu                   | <u> </u>  | DRILL RIG/HAMMER EFF./DATE         TRI0055         CME-55         83%         05/09/2022 | DRILL METHOD N  | <u> </u>   |
| DRILLER R. Toothman          | START DATE 05/05/24                   | COMP. DATE 05/08/24               | SURFACE WATER DEPTH N/A   | DRILLER R. Toothman START DATE 05/05/24  |   | SURFACE WATER DEPTH N/A  |
| ELEV DRIVE DEPTH BLOW C      |                                       |                                   | SOIL AND ROCK DESCRIPTION   | ELEV DRIVE DEPTH BLOW COUNT BLOWS P  |   |  |
| (ft) (ft) (ft) 0.5ft 0.5     | ift 0.5ft 0 25 50                     | 75 100 NO. MOI G                  | ELEV. (ft) DEPTH  | (ft) (ft) (ft) 0.5ft 0.5ft 0.5ft 0   | 75 100 NO. MOI G                                      |  |
|                              |                                       |                                   |   |  |   |  |
| 920                          |                                       |                                   | _   | 840 Match  |   |  |
|                              |                                       |                                   |   | 837.2 77.9   |   | Yellow. Light Brownish Grav. and Yellowish   |
| 915                          |                                       |                                   | -<br>F 915.1 GROUND SURFACE (   |  | ::::  | Brown, Silty Coarse to Fine SAND (A-2-4),<br>Trace Quartz Rock Fragments, Little Mica, |
| 914.2 0.9 9 3                | 4                                     |                                   | ROADWAY EMBANKMENT  | 035  |   | Saprolitic (continued)   |
| 912.0 1 3.1                  | ["". : :   : : : :   : :              | M                                 | ASPHAIL (0.0 - 0.9 FOOL) ABC Stone (0.9 - 1.6 Feet)                                     | 832.2 82.9 14 22 36  | <pre>&lt;::: ::::                              </pre> |  |
| 910 + 4 2                    | 2 4                                   | M [ ]                             | Medium Stiff to Soft, Reddish Brown, Silty  909.6 CLAY (A-7), Trace Mica, Little Gravel | +  | . <b>♦</b> 58     M                                   | - 84.4 Boring Terminated at Elevation 830.7 ft in                                      |
| 908.7 + 6.4 2 4              | 5                                     | :: ::::     M                     | RESIDUAL  | 11   ±   |   | - RESIDUAL (Silty SAND)  |
| 907.0   8.1   2   4          | . • <sup>9</sup>                      | ·· ···     ,, <mark>한화</mark>     | Silty CLAY (A-7), Trace Mica  |  |   | -  |
| 905                          |                                       |                                   | Medium Stiff, Pale Red, Clayey SILT (A-5),  903.6 Trace Mica                            |  |   |  |
| 902.0 1 13.1                 |                                       |                                   | Medium Stiff, White and Reddish Brown,  | 1  |   | -  |
| 900 3 4                      | 4 . 8                                 | ∷   ∷ ∷ і     м 🕞                 | Silty CLAY (A-7)  |  |   | -  |
|                              |                                       |                                   | 898.6   |  |   | F  |
| 897.0 18.1 2 6               | 7                                     |                                   | Stiff to Very Stiff, Red and Olive Brown, Clayey SILT (A-5), Trace Mica, Saprolitic     |  |   | -  |
| 895                          | ′ - <del>•</del> 13                   | M [                               | -<br>-  |  |   | _  |
| ‡                            |                                       |                                   | -   |  |   |  |
| 892.0 23.1 5 8               | 8   16                                | M   []                            | _   |  |   | <u> </u>   |
| 890                          |                                       |                                   |   |  |   |  |
| 887.0 1 28.1                 |                                       |                                   | Medium Dense, Dark Reddish Brown, Silty Coarse to Fine SAND (A-2-4), Little to          |  |   | -  |
| 885 3 7                      | 7   - • • 14                          |                                   | Some Mica, Saprolitic   |  |   |  |
|                              |                                       |                                   |   |  |   | F  |
| 882.0 33.1 5 7               | 10                                    | M                                 |   |  |   | -  |
| 880                          | · · · · ·   · · · · · · · · · · ·     |                                   | _   |  |   | -  |
| 877.0 38.1                   |                                       |                                   | - 878.6 Stiff to Very Stiff, Olive Yellow, Light  |  |   |  |
| 877.0 38.1 4 6               | 9   • 15                              |                                   | Brownish Gray, and Olive Brown, Clayey     SILT (A-5), Trace to Little Mica, Saprolitic |  |   |  |
| +                            |                                       |                                   | <u> </u>  |  |   | -  |
| 872.0 43.1                   |                                       |                                   | -   |  |   |  |
| 872.0 43.1 5 7               | 8 15                                  | M   N   N   N   N   N   N   N   N | <u>-</u>  |  |   | <u>L</u>   |
|                              |                                       |                                   |   |  |   | ţ l  |
| 867.0 48.1 5 9               | 11                                    | M   N   N   N   N   N   N   N   N |   |  |   | <u> </u>   |
| 9 865   <del> </del>         |                                       |                                   |   |  |   | -  |
| 862.0 53.1                   |                                       |                                   | Medium Dense to Very Dense, Olive Yellow, Light Brownish Gray, and Yellowish            |  |   | <u> </u>   |
| 8 10                         | 12 22                                 | M                                 | <ul> <li>Brown, Silty Coarse to Fine SAND (A-2-4),</li> </ul>                           |  |   | -  |
|                              |                                       |                                   | Trace Quartz Rock Fragments, Little Mica,<br>Saprolitic                                 |  |   | F  |
| 857.0 58.1 15 17             |                                       | :: :::: <br>:::  M                |   |  |   | F  |
| 855                          | 22                                    | - ·   · · · · ·                   | _   |  |   | -  |
| 852.0 + 63.1                 |                                       |                                   |   | ‡  |   | Ę l  |
|                              | 5 15                                  | : :   : : : :     M               |   |  |   | ţ l  |
|                              |                                       |                                   | -   | ‡  |   | F  |
| 847.0 68.1                   | 1 16                                  |                                   |   |  |   | ţ l  |
| 847.0 68.1 8 12<br>845<br>08 | 2 16                                  | M                                 | <u>-</u>  |  |   | <u>L</u>   |
|                              |                                       |                                   | -   |  |   | ţ l  |
| 842.0 73.1 12 18             | 3 23                                  | M                                 |   |  |   | <u> </u>   |
| ž[840]                       |                                       |                                   |   |  |   |  |





| SITE DESCRIPTION Bridge No. 340 on -L- (I-40/US-311) over -Y2A- (Clemmonsville Road)         GROUND WTI           BORING NO. B2-B         STATION 39+44         OFFSET 76 ft RT         ALIGNMENT -L-         0 HR.           COLLAR ELEV. 916.3 ft         TOTAL DEPTH 69.6 ft         NORTHING 842,925         EASTING 1,639,496         24 HR.           DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 74% 05/13/2024         DRILL METHOD Mud Rotary         HAMMER TYPE Automa           DRILLER R. Toothman         START DATE 05/16/24         COMP. DATE 05/16/24         SURFACE WATER DEPTH N/A           ELEV DRIVE ELEV (ft) 0.5F 0.5F 0.5F 0.5F 0.5F 0.0F 0.5F 0.0F 0.0   |       |                    |                   |          |          |        |   |                   | UKE L              |                |            |  | 1   |                                  |
|--|-------|--------------------|-------------------|----------|----------|--------|---|-------------------|--------------------|----------------|------------|--|---|----------------------------------|
| BORING NO. B2-B  | WBS   | 53080.             | .1.1              |          |          | TI     | <b>IP</b> I-5880                            | COUNT             | Y FORSYTI          | 1              |            |  | GEOLOGIST M. Foster                                 |                                  |
| COLLAR ELEV. 916.3 ft   TOTAL DEPTH 69.6 ft   NORTHING 842.925   EASTING 1,639.496   24 HR.    DRILL REPAIR OF MORNING 1975   SUBMINION MANUAL PRINCIPLE AUTON M | SITE  | DESCRI             | PTION             | Bridg    | ge No. 3 | 40 or  | n -L- (I-40/US-311)                         | over -Y2A- (      | Clemmonsvill       | e Road)        |            |  |   | GROUND WTR (ft)                  |
| DRILLER   TOOL   | BORI  | NG NO.             | B2-B              |          |          | S      | <b>TATION</b> 39+44                         |                   | OFFSET             | 76 ft RT       |            |  | ALIGNMENT -L-                                       | <b>0 HR</b> . N/A                |
| DRILLER   Process   Pro    | COLL  | AR ELE             | <b>V.</b> 91      | 6.3 ft   |          | TO     | OTAL DEPTH 69                               | .6 ft             | NORTHING           | 842,92         | 25         |  | <b>EASTING</b> 1,639,496                            | <b>24 HR.</b> 28.3               |
| ELEY (II) OF (II) OF (II) OF (II) OF (III) OF (I | DRILL | RIG/HAMI           | MER EF            | F./DATI  | E TRIOC  | )55 CI | ME-55 74% 05/13/20                          | 24                | •                  | DRILL MI       | ETHO       | ) Mu                                   | Rotary HAMN   | IER TYPE Automatic               |
| Column   C   | DRIL  | LER R.             | Toothr            | nan      |          | S      | TART DATE 05/                               | 16/24             | COMP. DA           | <b>TE</b> 05/1 | 6/24       |  | SURFACE WATER DEPTH N                               | /A                               |
| 915 916.3 0.0 1 5 5 919 913.1 3.2 3 5 6 911 910 908.1 8.2 3 4 5 905 903.2 13.1 4 7 8 905 903.2 13.1 4 7 8 905 903.2 13.1 4 7 8 905 905 903.2 13.1 4 7 8 905 905 905 905 905 905 905 905 905 905  |       | ELEV               |                   |          |          | NT     | BLO   | WS PER FOOT       | Γ                  | SAMP.          | <b>V</b> / | 0                                      | SOIL AND ROCK DES                                   |                                  |
| 915 913 1 3 2 1 5 5 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  | 920   |                    | -<br>-<br>-       |          |          |        |   |                   |                    |                |            |  |   |                                  |
| 913 1 3 2 3 5 6 9 11   |       | 916.3              | 0.0               | 1        | 5        | 5      |   |                   |                    |                |            | <del>     </del>                       |   |                                  |
| ## FESIDIAL   Stiff, Redidsh Yellow, Silly CLAY (A-7), Trace Mica, Saprolitic  | 915   | . +                | -                 | '        |          | J      | 10  |                   | +                  |                | M          |  | Stiff, Reddish Brown, Silt                          | v CLAY (A-7),                    |
| 900 08.1 8.2 3 4 5 90 MM Silfy Clark (A-7), Trace Mica Suprolitic Mica, Su |       | 913.1              | 3.2               | 3        | 5        | 6      |   |                   |                    |                | М          |  |   | <u> </u>                         |
| 908. 1 8.2 3 4 5   | 910   | Į                  | -                 |          |          |        |   |                   |                    |                | •••        |  | Stiff, Reddish Yellow, Silf                         | y CLAY (A-7),                    |
| 905 905 903 2 13.1 4 7 8 915 906 888.2 18.1 4 7 8 915 915 916 916 916 916 916 916 916 916 916 916  | 0.0   | 000 1              | -<br>- 02         |          |          |        |   |                   |                    |                |            |  | Stiff to Very Stiff, Pale Red                       | and Pink and                     |
| 900  |       | 908.1              | 0.2               | 3        | 4        | 5      | 9   |                   |                    |                | М          |  | Reddish Brown, Clayey Sll<br>Mica, Saproli          | _T (A-5), Trace<br>tic           |
| 900  | 905   |                    | -                 |          |          |        | - \   |                   |                    |                |            | 131                                    |   |                                  |
| 900  |       | 903.2              | 13.1              | <u> </u> |          |        | ] ::\:: ::                                  |                   |                    |                |            | [1]:\t                                 |   |                                  |
| 895  |       | . Ŧ                | -                 | 4        | 7        | 8      | 15  |                   |                    |                | М          | 17.17                                  |   |                                  |
| 895  | 900   | , ‡                | -                 |          |          |        |   |                   |                    |                |            | 5.1                                    | -   |                                  |
| 885 885 886 887 8885 8887 8887 8886 8887 8887  |       | 898.2              | 18.1              | 1        | 7        | 8      | :: ::                                       |                   |                    |                |            |  |   |                                  |
| 885  |       | , <u>†</u>         | -                 | ~        | '        | U      | 1 • 15                                      | <br>              |                    |                | IVI        |  |   |                                  |
| 880 888 2 28.1 13 14 15  | 895   | . +                | -                 |          |          |        | <del>                                </del> |                   |                    |                |            |  | -   |                                  |
| 880  |       | 893.2              | 23.1              | 4        | 5        | 7      | : : [: : : : : : : : : : : : : : : :        |                   |                    |                | М          | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ |   |                                  |
| 885  | 900   | , ‡                | <del>-</del><br>- |          |          |        | 12.   |                   |                    |                |            | IN.                                    |   |                                  |
| 885  886   | 090   | +                  | -                 |          |          |        |   | <del>  </del>     |                    |                | _          | 141                                    | -   |                                  |
| 880 883 2 33 1 9 9 14 23   | ŀ     | 888.2 <u> </u><br> | 28.1              | 13       | 14       | 15     | 29  |                   |                    |                | _M_        | 份壯                                     |   |                                  |
| 880 883 2 33.1 9 9 14 23.    875 875 875 873 2 43.1 12 15 17 332    876 868 2 48.1 13 23 26    877 868 2 58.1 13 27 50    878 879 9 14    879 9 9 14    879 9    Dense, Olive Brown, Sitly Coarse to Fine SAND (A-2-4), Trace Mica, Saprolitic SAND (A-2-4), Trace of Little Mica, Trace Quartz Rock Fragments, Saprolitic Sapr | 885   | Į Ŧ                | -                 |          |          |        |   |                   |                    |                |            | 17.17                                  |   |                                  |
| 880 878.2 38.1 12 15 17 32.2 43.1 12 20 22 32 32.4 3.1 13 23 26 36.5 86.5 86.5 86.5 86.5 86.5 86.5 86.5 8  |       | 883 2              | -<br>- 33 1       |          |          |        |   |                   |                    |                |            | 1,1                                    | •   |                                  |
| 878.2 38.1 12 15 17  878.2 38.1 12 15 17  879.   |       |                    | -                 | 9        | 9        | 14     | 23  |                   |                    |                | М          | 1,1                                    |   |                                  |
| 878.2  | 880   | <u> </u>           | -                 |          |          |        |   |                   |                    |                |            | 1 1                                    | 879.9   | 36.4                             |
| 875  |       | 878.2              | 38.1              |          |          |        | ]]:::: \}:                                  |                   |                    |                |            |  | Dense, Olive Brown, Silty<br>SAND (A-2-4), Trace Mi | Coarse to Fine<br>ca. Saprolitic |
| 873 2 43.1 12 20 22  |       | Į                  | -                 | 12       | 15       | 17     | 32  |                   |                    |                | М          | F                                      | S. 1.12 (7.12 1.), 1.1455 1                         | ou, oupromis                     |
| 870 868 2 48.1 13 23 26  | 875   | , ‡                | -                 |          |          |        |   |                   |                    |                |            |  | 874.9   | 41.4                             |
| 870 868 2 48 1 13 23 26 865 866 868 2 53 1 15 38 38 860 858 2 58 1 13 27 50 855 853 2 63 1 15 25 29 860 858 2 58 1 13 27 50 860 858 2 58 1 13 27 50 860 858 2 58 1 13 27 50 877 M  M  Boring Terminated at Elevation 846.7 ft in RESIDUAL (Silty SAND) NOTE:   | ŀ     | 873.2              | 43.1              | 12       | 20       | 22     | :::: ::`                                    | <u> </u>          |                    |                |            |  | Brown, Silty Fine to Coarse                         | e SAND (A-2-4),                  |
| 865 863 2 48.1 13 23 26 49 M 866 863 2 53.1 15 38 38 76 M 855 853 2 63.1 15 25 29 654 M 850 848 2 68.1 29 36 43  |       | , <u>†</u>         | -                 | '-       | 20       |        |   | . <b>1</b> 42     |                    |                | IVI        |  |   |                                  |
| 865  867  868  869  869  869  869  869  869  | 870   | , +                | -                 |          |          |        | <del>   </del>                              | · \               |                    |                |            |  | •   |                                  |
| 865 863.2 53.1 15 38 38  |       | 868.2              | 48.1              | 13       | 23       | 26     | {   | \                 |                    |                | М          |  |   |                                  |
| 860 858 2 58.1 13 27 50 M M 855 853 2 63.1 15 25 29 M M 848.2 68.1 29 36 43 M M 846.7 Solve the second seco | 865   | , ‡                | -                 |          |          |        |   | 49                |                    |                |            | -                                      |   |                                  |
| 860 858.2 58.1 13 27 50 855 853.2 63.1 15 25 29 848.2 68.1 29 36 43  M M M  Boring Terminated at Elevation 846.7 ft in RESIDUAL (Sitty SAND) NOTE:   | 000   | 0000               | -                 |          |          |        |   |                   |                    |                |            |  | •   |                                  |
| 858 2 58.1   |       | 863.2              | _ 53.1            | 15       | 38       | 38     | :::: ::                                     |                   | 76                 |                | М          |  |   |                                  |
| 858 2 58 1   | 860   | . +                | =                 |          |          |        |   |                   | . [                |                |            | -                                      |   |                                  |
| 855 853 2 63.1 15 25 29  |       | 858 2              | -<br>- 58 1       |          |          |        |   |                   | 1                  |                |            | I I                                    | •   |                                  |
| 853.2 63.1 15 25 29 M M M 846.7 M M 846.7 Boring Terminated at Elevation 846.7 ft in RESIDUAL (Silty SAND) NOTE:   |       | I                  | -                 | 13       | 27       | 50     | ] :::: ::                                   |                   | 77                 |                | М          |  |   |                                  |
| 850  848.2 68.1 29 36 43  W M 846.7  Boring Terminated at Elevation 846.7 ft in RESIDUAL (Silty SAND)  NOTE:   | 855   | , ‡                | -<br>-            |          |          |        |   |                   | /                  |                |            |  |   |                                  |
| 848.2 68.1 29 36 43  |       | 853.2              | 63.1              |          |          |        | :::: ::                                     | · ·   · // ·      |                    |                |            |  |   |                                  |
| 848.2 68.1 29 36 43  |       | ļ Ŧ                | =                 | 15       | 25       | 29     |   | 654               |                    |                | М          | l∰-                                    |   |                                  |
| 29 36 43   | 850   | , ‡                | -                 |          |          |        |   |                   |                    |                |            |  | -   |                                  |
| Boring Terminated at Elevation 846.7 ft in RESIDUAL (Silty SAND) NOTE:   |       | 848.2              | 68.1              | 20       | 36       | 13     | :::: ::                                     | : :   : : : : : : | $\setminus$ $::::$ |                | .,         |  |   |                                  |
| + RESIDUAL (Silty SAND) - NOTE:  |       | <del></del>        | <u>-</u>          | 29       | 30       | 40     |   |                   | 79                 | -              | М          |  |   | 69.6<br>ation 846.7 ft in        |
| NOTE: Topsoil (0.1 Foot)   |       | , <del>1</del>     | -                 |          |          |        |   |                   |                    |                |            | F                                      |   |                                  |
| †     Topsoil (0.1 Foot)   |       | , ‡                | -                 |          |          |        |   |                   |                    |                |            |  | NOTE:   |                                  |
|  |       | , ‡                | -<br>-            |          |          |        |   |                   |                    |                |            |  | Topsoil (0.1 Fo                                     | oot)                             |



|                 |                       |               |              |        | 1     |             |                | 1       | BUI      |                                       |              |        |   |                               |   |                  |                            |                 |                       |               |          |     |             |                  |      |          |              |       |                  |                 |                                |   |              |
|-----------------|-----------------------|---------------|--------------|--------|-------|-------------|----------------|---------|----------|---------------------------------------|--------------|--------|---|-------------------------------|---|------------------|----------------------------|-----------------|-----------------------|---------------|----------|-----|-------------|------------------|------|----------|--------------|-------|------------------|-----------------|--------------------------------|---|--------------|
| WBS             |                       |               |              |        |       | P I-5880    |                |         | JNTY F   |                                       |              |        | GEOLG   | OGIST N/A                     |   |                  | →                          | <b>3S</b> 53080 |                       |               |          |     | I-5880      |                  |      | FORSYT   |              |       | Gi               | EOLOGIST        | N/A                            |   |              |
|                 |                       |               |              | ge No. |       | -L- (I-40/L |                | ver -Y2 |          |                                       |              |        |   |                               |   | GROUND WTR (     | ´                          |                 |                       |               | je No. 3 |     | L- (I-40/US |                  |      |          |              |       |                  |                 |                                |   | WTR (ft)     |
| BORIN           |                       |               |              |        |       | TATION 4    |                |         |          |                                       | 55 ft LT     |        | ALIGN   | MENT -L-                      |   | <b>0 HR</b> . N  | A BO                       | RING NO.        | EB2-1                 |               |          | STA | ATION 40    | +50              |      | OFFSET   |              |       | AL               | IGNMENT         | -L-                            | 0 HR.   | N/A          |
| COLL            | R ELE                 | <b>V.</b> 92  | 1.3 ft       |        | TO    | OTAL DEP    | <b>TH</b> 74.5 | ft      | NO       | ORTHING                               | 843,00       |        |   | <b>NG</b> 1,639,646           |   | <b>24 HR.</b> 33 | 0   CO                     | LLAR EL         | <b>EV</b> . 92        | 1.3 ft        |          | тот | TAL DEPTI   | <b>1</b> 74.5 ft |      | NORTHING |              |       |                  | ASTING 1,6      |                                | 24 HR.  | 33.0         |
| DRILL F         |                       |               | F./DATE      | E N/A  |       |             |                |         |          |                                       | DRILL M      | ETHOD  | H.S. Augers   |                               | HAMMEI                                  | R TYPE N/A       | DRI                        | ILL RIG/HAN     | MER EF                | F./DATE       | N/A      |     |             |                  |      |          | DRILL M      |       | H.S. Aug         | ers             | H/                             | AMMER TYPE N  | I/A          |
| DRILL           |                       |               |              |        |       | ART DAT     |                |         |          | MP. DA                                | TE 01/2      |        | SURFA   | CE WATER DE                   | PTH N/A                                 | ١                | DR                         | ILLER N         |                       | •             |          |     | ART DATE    |                  |      | COMP. DA |              | 26/77 | SL               | JRFACE WA       | TER DEPTH                      | N/A   |              |
| ELEV (ft)       | ORIVE<br>ELEV<br>(ft) | OEPTH<br>(ft) | BLO<br>0.5ft | 0.5ft  | 0.5ft | 0           | BLOWS          | S PER F | 75<br>75 | 100                                   | SAMP.<br>NO. | MOI (  | G ELEV. (ft)  | SOIL AND RO                   | OCK DESCI                               | CRIPTION DEPTH   | (ft) ELE                   |                 | DEPTH<br>(ft)         | BLO\<br>0.5ft | W COU    |     | 0 25        | BLOWS PI         |      | 75 100   | SAMP.<br>NO. | моі   | L<br>O<br>G      | SO              | L AND ROCK I                   | DESCRIPTION   |              |
| 930             |                       | -             |              |        |       |             |                |         |          |                                       |              |        | -   |                               |   |                  | 850                        | 848.3           | 73.0                  | 8             | 10       |     | ::::        | Match            | Line |          |              |       |                  | <u>-</u><br>Tai | n, Micaceous Si<br>(continu    | Ity Fine SAND   |              |
| 925             | +                     |               |              |        |       |             |                |         |          |                                       |              |        | E   |                               |   |                  |                            | -               | -                     | 0             | 10       | 17  |             | 27               |      |          |              | W     | 846.<br>-<br>-   |                 | Terminated at E<br>RESIDUAL (S | Elevation 846.8 ft  | 74.5<br>: in |
| 920             | 918.3                 | 3.0           |              |        |       | 1           |                |         |          |                                       |              | L      | 921.3   |                               | ND SURFAI<br>Y EMBANKI<br>ceous Silty S | MENT             | 0.0                        | -               | †<br>-<br>-<br>-<br>- |               |          |     |             |                  |      |          |              |       | -<br>-<br>-<br>- |                 |                                | E:<br>nated from NCD<br>boring plan.<br>ptions based on<br>6 inventory. |              |
| 915             | 913.3                 |               | 2            | 2      | 3     | 5           |                |         |          |                                       |              | M      | 915.3   | Red, Silty Mic                | aceous Sar                              | ndy CLAY — — -   | 5. <u>0</u>                | -               | -<br>-<br>-           |               |          |     |             |                  |      |          |              |       | -                |                 | NCDOT R-006                    | o inventory.  |              |
| 910             | <del>213.3</del> +    | O.U           | 5            | 7      | 10    | <b>)</b> i  | 7              |         | I        |                                       |              | M L    | 909.8   |                               | ESIDUAL -                               | 1                | l. <u>5</u>                | -               | ‡                     |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| 905             | 908.3                 | 13.0          | 3            | 5      | 7     |             |                |         | I        |                                       |              | M N    | N. L<br>N. L<br>905.3                               | Red-Black, Silty              | Very Micac<br>CLAY                      |                  | 5.0                        |                 |                       |               |          |     |             |                  |      |          |              |       | Ė                |                 |                                |   |              |
|                 | 903.3                 | 18.0          | 4            | 5      | 8     |             |                |         | .        |                                       |              | М      |   | Red-Black, Very               | Micaceous<br>SAND                       | Silty Clayey     |                            |                 |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| 900             | 898.3                 | 23.0          | 4            | 5      | 8     | • 13.       |                |         | I        |                                       |              | М      |   | with Coar                     | rse Quartz \                            | Veins            |                            | -               |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| 895             | 893.3                 | 28.0          | 3            | 4      | 7     |             |                |         | .        |                                       |              | М      | 895.3<br>-  | Red-Black to F<br>Micaceous C | Red-Brown,<br>Clayey Coars              | , Silty Very     | 5. <u>0</u>                | -               |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| 890             | 888.3                 | 33.0          | 3            | 4      | 6     | .           |                | -       |          |                                       |              | W      |   |                               |   |                  |                            | -<br>-<br>-     |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
|                 | 883.3                 | 38.0          | 4            | 4      | 7     |             |                |         |          |                                       |              | W      |   | with Coar                     | rse Quartz \                            | Veins            |                            | -               |                       |               |          |     |             |                  |      |          |              |       | <u> </u>         |                 |                                |   |              |
| .GDT 6/11/24    | 878.3                 | 43.0          | 4            | 7      | 11    |             |                |         |          |                                       |              | w      | ** <del>-</del><br>* <del>-</del><br>* <del>-</del> |                               |   |                  |                            | -               |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| NC_DOT.GDT      | 873.3                 | 48.0          |              |        |       | 1           |                |         |          | · · · · · · · · · · · · · · · · · · · |              | 1<br>1 | 876.3<br>873.3                                      |                               | CLAY                                    | 2                | 5. <u>0</u><br>3. <u>0</u> | -               |                       |               |          |     |             |                  |      |          |              |       | Ė.               |                 |                                |   |              |
| 870<br>870      | 868.3                 | 53.0          | 4            | 9      | 14    | /           | 23             |         |          |                                       |              | М      | -<br>-<br>-<br>-                                    | Brown, Micaceous              | s Clayey Fin                            | ne Sandy SIL I   |                            | -               | ‡<br>‡                |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| 865<br>865      | +                     |               | 2            | 4      | 8     | /<br>       |                |         |          |                                       |              | М      | -<br>-<br>-   |                               |   |                  |                            | -               |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| 860             | 863.3                 | 58.0          | 2            | 6      | 9     |             |                |         |          |                                       |              | М      | 861.3   | Tan, Micaced                  | ous Silty Fin                           |                  | 2.0                        | -               |                       |               |          |     |             |                  |      |          |              |       | E                |                 |                                |   |              |
| BORE DOUBLE     | 858.3                 | 63.0          | 7            | 10     | 15    |             | 25             |         |          |                                       |              | w      |   |                               |   |                  |                            |                 |                       |               |          |     |             |                  |      |          |              |       | -                |                 |                                |   |              |
| NCDOT BO<br>850 | 853.3                 | 68.0          | 8            | 10     | 17    |             | <br>• 27       |         |          |                                       |              | w      | -<br>-<br>-<br>-                                    |                               |   |                  |                            |                 | <u> </u>              |               |          |     |             |                  |      |          |              |       | <u> </u>         |                 |                                |   |              |

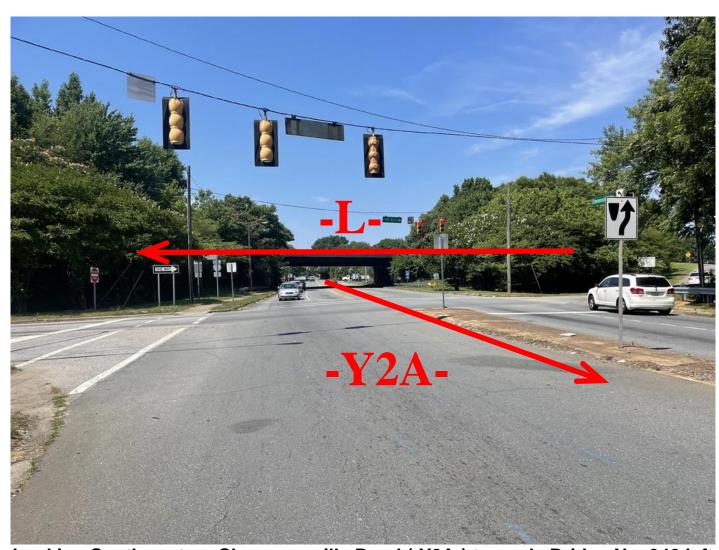
| WRS          | 5308  | 0 1 1                  |          |          | TIE  | P I-5880    |  |               | Y FORSY              |                   |   | GEOL OC            | SIST N/A   |                               | WRS           | <b>5</b> 53080.1 | 1           |             | TID          | I-5880    | COLIN          | ITY FOF     | PEVTL   |        |           | GEOLOGIST N/A                                    |                    |
|--------------|-------|------------------------|----------|----------|------|-------------|--|---------------|----------------------|-------------------|---|--------------------|--|-------------------------------|---------------|------------------|-------------|-------------|--------------|-----------|----------------|-------------|---------|--------|-----------|--|--------------------|
| -            |       |                        | I Bride  | go No    |      |             |  |               | (Clemmonsvi          |                   |   | GLOLOC             | JOI WA   | GROUND WTR (ft)               | ┥ ├──         |                  |             | Bridge No.  |              |           | 11) over -Y2A- |             |         | Poad\  |           | GEOLOGIOT N/A                                    | GROUND WTR (ft)    |
|              |       | . EB2-                 |          | ge No.   |      | ATION 4     |  | CI - IZA- I   | OFFSET               |                   |   | ALIGNM             | ENT  | 0 HR. N/A                     | l             | RING NO.         |             | bridge 140. |              | TION 40+2 |                | <del></del> | ET CL   | (oau)  |           | ALIGNMENT -L-                                    | 0 HR. N/A          |
|              |       |                        |          |          |      |             |  | <b>C</b> 1    | _                    |                   |   |                    |  | -                             | l —           |                  |             | 7.4         |              |           |                |             |         | 040.00 | 4         | EASTING 1,639,597                                | <b>–</b>           |
|              |       | <b>EV</b> . 92         |          |          |      | TAL DEF     | <b>PTH</b> 74.41                                 | π             | NORTHIN              | <b>G</b> 842,964  |   |                    |  | <b>24 HR.</b> 34.0            | <b>-</b>      | LAR ELEV         |             |             |              | AL DEPTH  | 74.4 π         | NORI        | HING 8  |        |           | <u> </u>   | <b>24 HR.</b> 34.0 |
| -            |       | MMER EF                | FF./DAII | E N/A    |      |             |  |               | T                    | DRILL METH        |   | <del></del>        |  | ER TYPE N/A                   | ┥ ├──         | L RIG/HAMM       |             | DAIE N/A    |              |           |                | T           |         |        | ETHOD H.S | <del>                                     </del> | MERTYPE N/A        |
| -            | LER I |                        | T =: =   |          |      | ART DAT     |  |               |                      | ATE 01/26/7       |   | SURFAC             | E WATER DEPTH N/                                   | A                             | <b>∤ ├</b> ── | LER N/A          |             |             |              | RT DATE N |                |             | P. DATE |        | 6/77<br>  | SURFACE WATER DEPTH N                            | /A                 |
| ELEV<br>(ft) | ELEV  | DEPTH<br>(ft)          | -I BLC   | OW CO    |      | 0           |  | PER FOO<br>50 | 7 <sub>.</sub> 5 100 | SAMP.             | 0   |                    | SOIL AND ROCK DES                                  |                               | ELEV (ft)     | ELEV             | EPTH (ft) ( | BLOW CO     |              |           | OWS PER FO     | 75          | 1       | SAMP.  |           | SOIL AND ROCK DES                                | SCRIPTION          |
| (,           | (ft)  | (,                     | 0.511    | 0.511    | บ.อน |             |  | 30            | 75 100               | NO. M             | OI G  | ELEV. (ft)         |  | DEPTH (ft)                    | )   (,        | (ft)             | (,,)        | 0.511       | 0.511 0      | 25        | 30             | 75          | 100     | NO.    | MOI G     |  |                    |
|              |       |                        |          |          |      |             |  |               |                      |                   |   |                    |  |                               |               |                  |             |             |              |           |                |             |         |        |           |  |                    |
| 925          |       | +                      |          |          |      |             |  |               |                      |                   |   | _                  |  |                               | 845_          | <del> +</del>    | - — —       | +           | <del>-</del> |           | Match Line     |             |         |        |           |  |                    |
|              |       | Ŧ                      |          |          |      |             |  |               |                      |                   |   | -<br>-<br>_ 921.7  | GROUND SURFA                                       | ACE 0.0                       |               | ‡                |             |             |              |           |                |             |         |        |           | NOTE:  | ed from NCDOT      |
| 920          |       | ‡                      | 1        |          |      |             |  |               |                      |                   |   |                    | ROADWAY EMBANI                                     | KMENT                         | 1             | ‡                |             |             |              |           |                |             |         |        |           | Boring location approximate R-0066 inventory bo  | ring plan.         |
| 320          | 918.8 | 2.9                    | 1        | <u> </u> | 10   | -           |  |               |                      | 1                 |   | - I                | Red-Brown, Mottled, Micae<br>SAND with Gra         | ceous Clayey<br>vel           |               | ‡                |             |             |              |           |                |             |         |        |           | Soil lithology descriptio                        | ns based on        |
|              |       | ‡                      | 2        | 4        | 10   | 14          |  |               |                      | M                 |   | -<br>- 916.7       |  | 5.0                           | 1             | ‡                |             |             |              |           |                |             |         |        |           | NCDOT R-0066 in                                  | ventory.           |
| 915          | 1     | ‡                      |          |          |      | · · · ,     |  |               |                      | <u> </u>          |   | - i                | Red, Silty Very Micaceous                          | Sandy CLAY                    |               | ‡                |             |             |              |           |                |             |         |        |           | <del>-</del>                                     |                    |
|              | 913.8 | 7.9                    | 4        | 9        | 11   | /           | 20   |               |                      |                   |   | -<br>-             |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           |  |                    |
| 0.10         |       | ‡                      |          |          |      | : : :/      | [ ] : : : : :                                    |               |                      |                   |   | -<br>-<br>- 910.5  |  | 11.2                          |               | ‡                |             |             |              |           |                |             |         |        |           |  |                    |
| 910          | 908.8 | 12.9                   |          |          |      | · · /       | <del>                                     </del> |               |                      |                   | 7.7   | _                  | RESIDUAL Red-Black, Silty Very Mica                |                               | 11            | ‡                |             |             |              |           |                |             |         |        |           | <del>-</del><br>•                                |                    |
|              |       | ‡                      | 4        | 5        | 7 7  | 12          | :   : : : :                                      |               |                      | M                 | 1,5   | -<br>-             | CLAY   | occous carray                 |               | ‡                |             |             |              |           |                |             |         |        |           |  |                    |
| 905          |       | <u> </u>               |          |          |      |             |  | <u> </u>      |                      | ]                 | 1, 1  | -<br>              |  |                               |               | ±                |             |             |              |           |                |             |         |        |           |  |                    |
|              | 903.8 | 17.9                   | 3        | 5        | 6    |             | .  |               |                      |                   | 7 7   | -                  |  |                               |               | 1 ±              |             |             |              |           |                |             |         |        |           |  |                    |
|              |       | Ŧ                      |          |          |      | 111         | .  |               |                      |                   | 7 7   | -<br>-<br>- 900.7  |  | 21.0                          |               | <del> </del>     |             |             |              |           |                |             |         |        | F         | •  |                    |
| 900          | 000.0 | 22.9                   |          |          |      | - 1 -       | <del></del>                                      | +             |                      |                   |   | _                  | Red-Black, Silty Very Mica                         | ceous Clayey                  | 1             |                  |             |             |              |           |                |             |         |        |           | ·<br><del>-</del>                                |                    |
|              | 090.0 | <del>+ 22.9</del>      | 4        | 6        | 6    | 12          | .  |               |                      | M                 |   | -                  | Very Coarse SAND with C                            | Quartz Gravei                 |               |                  |             |             |              |           |                |             |         |        |           | •  |                    |
| 895          |       | ‡                      |          |          |      | : ; : :     | .  |               |                      |                   |   | <del>-</del><br>-  |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| - 000        | 893.8 | 27.9                   | 1        |          | _    |             |  |               |                      | 1                 |   | -                  |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | <del>-</del><br>·                                |                    |
|              |       | ‡                      | 2        | 4        |      | 9           | .  |               |                      | M                 |   | -                  |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| 890          |       | ‡                      |          |          |      | - 1 -       |  |               | · · · · ·            | <u> </u>          | 77  | - <u>890.7</u>     | Red-Brown-Black to Brow                            | vn, Silty Very 31.0           | 4             | ‡                |             |             |              |           |                |             |         |        |           | <del>-</del>                                     |                    |
|              | 8.888 | 32.9                   | 3        | 5        | 7    | 12:         | .  |               |                      |                   | 7 7 7   | -                  | Micaceous Coarse Sai                               | ndy CLAY                      |               |                  |             |             |              |           |                |             |         |        |           | •  |                    |
| 205          |       | ‡                      |          |          |      |             | .  |               |                      |                   | 12.7  | -                  |  |                               |               |                  |             |             |              |           |                |             |         |        |           | •<br>•   |                    |
| 885          | 883.8 | 37.9                   |          |          |      |             |  |               |                      |                   | 7 1   | -                  |  |                               |               |                  |             |             |              |           |                |             |         |        |           | <u>-</u>   |                    |
|              |       | 1                      | 2        | 5        | 6    | <b>♦</b> 11 | .  |               |                      | w                 |   | <u>-</u>           |  |                               |               | 1 ‡              |             |             |              |           |                |             |         |        |           |  |                    |
| 880          |       | Ŧ                      |          |          |      |             |  |               |                      |                   | 7.1   | _                  |  |                               |               | 1 ±              |             |             |              |           |                |             |         |        |           |  |                    |
|              | 878.8 | 42.9                   | 2        | 5        | 7    | .   .       | .  |               |                      | ]    <sub>w</sub> | , ,   | -                  |  |                               |               | <u> </u>         |             |             |              |           |                |             |         |        |           |  |                    |
| 1/24         |       | £                      | -        |          |      | 12          | .  |               |                      | "                 | \<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\<br>\ | <u>-</u>           |  |                               |               | <del> </del>     |             |             |              |           |                |             |         |        | F         | •  |                    |
| 875          | 873.8 | ‡<br>47.9              |          |          |      |             | +  |               | +                    |                   | 1   | -<br>-             |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | <del>-</del>                                     |                    |
| 105.         | 0/3.0 | T 7'.9                 | 3        | 4        | 6    | - 10        | .  |               |                      | w                 |   | -                  | with Coarse Quartz Gra                             | avel Veins                    |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| 870          |       | Ŧ                      |          |          |      | : 1 : :     |  |               |                      |                   | 1 2   | - <u>870.7</u>     | Cilty Vor Minne                                    | 51.0                          | 4             | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| 2            | 868.8 | 52.9                   | 3        | 6        |      |             |  |               |                      | 1                 |   | – Bro              | own, Silty Very Micaceous<br>SAND                  | Clayey Coarse                 |               | ‡                |             |             |              |           |                |             |         |        |           |  |                    |
| GPJ          |       | ‡                      |          |          |      | 114         |  |               |                      | w                 |   | -<br>-             |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| 865          |       | ‡                      |          |          |      |             |  |               |                      | 4                 |   | -<br>              |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | •<br><del>-</del>                                |                    |
| G0340<br>    | 863.8 | 57.9                   | 3        | 7        | 11   |             | 18   |               |                      | w                 |   | -<br>-             |  |                               |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
|              |       | ‡                      |          |          |      |             | : [ : : : :                                      |               |                      |                   |   | -<br>- 860.7       | <b></b>  | <u> </u>                      | ]             | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| 860          | 858.8 | +<br>62.9              |          |          |      |             | <del>                                     </del> |               |                      |                   |   | <del></del> -      | Gray-Brown, Silty Micace<br>Medium SANI            | eous Fine to                  |               | ‡                |             |             |              |           |                |             |         |        |           | <u>-</u>   |                    |
| GEO          |       | ‡                      | 3        | 5        | 10   | 1: • 15     | 5  |               |                      | w                 |   | -<br>-             | 2.0 2. 11 12                                       |                               |               | ‡                |             |             |              |           |                |             |         |        |           |  |                    |
| 855          |       | <u> </u>               |          |          |      | \           |  |               |                      | ]                 |   | <u>- 855.7</u> — G | ray-Brown, Silty Very Mica                         | 66.0                          | 4             | ±                |             |             |              |           |                |             |         |        |           | _  |                    |
| JBLE II      | 853.8 | <del>T</del> 67.9      | 4        | 10       | 14   |             | \ <u> </u>                                       |               |                      | ]    <sub>w</sub> |   | -                  | Coarse SANE  | )                             |               | Ŧ                |             |             |              |           |                |             |         |        | F         |  |                    |
| 顏            |       | Ŧ                      |          |          | ``   |             | 24   |               |                      | "                 |   | -<br>- 850.7       |  | 71.0                          |               |                  |             |             |              |           |                |             |         |        | F         |  |                    |
| 850          | 848.8 | †<br>  <sub>72.9</sub> |          |          |      |             |  |               |                      |                   |   | - Bi               | rown-Black, Silty Very Mic                         | aceous Clayey                 | 11            | ‡                |             |             |              |           |                |             |         |        |           | :<br><del>-</del>                                |                    |
| 되<br>목       | 048.8 | 1 12.9                 | 5        | 11       | 15   |             | 26   |               |                      | ∐ w               |   | 847.3              | Fine to Medium S                                   | 74.4                          |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| S            |       | ‡                      |          |          |      |             |  |               |                      |                   |   | В                  | oring Terminated at Eleva<br>RESIDUAL (Silty Claye | ution 847.3 ft in<br>ey SAND) |               | ‡                |             |             |              |           |                |             |         |        |           | •  |                    |
| - ——         | 1     |                        |          | 1        | 1    |             |  |               |                      | 1 1               |   |                    | or (only oray)                                     | , /                           |               | 1                |             |             | 1 1          |           |                |             |         |        |           |  |                    |

|              |                 |         |          | _     |   | UKE LU   |                                       |               | 1   |                                   |
|--------------|-----------------|---------|----------|-------|---|--|---------------------------------------|---------------|---|-----------------------------------|
| WBS          | 53080.1.1       |         |          | TI    | IP 1-5880 COUNT                         | / FORSYTH  |                                       |               | GEOLOGIST N/A   |                                   |
| SITE         | DESCRIPTION     | l Brid  | ge No. 3 | 40 or | n -L- (I-40/US-311) over -Y2A- (        | Clemmonsville Ro                                 | oad)                                  |               |   | GROUND WTR (ft)                   |
| BORI         | NG NO. EB2-     | 3       |          | S     | <b>TATION</b> 39+91                     | OFFSET 54 ft                                     | RT                                    |               | ALIGNMENT -L-   | <b>0 HR.</b> N/A                  |
| COLL         | AR ELEV. 9      | 20.9 ft |          | TO    | OTAL DEPTH 64.2 ft                      | NORTHING 84                                      | 42,926                                |               | <b>EASTING</b> 1,639,548                                      | <b>24 HR.</b> 36.0                |
| DRILL        | RIG/HAMMER E    | FF./DAT | E N/A    |       |   | DR   | ILL METHOD                            | H.S.          | Augers HAMM   | ER TYPE N/A                       |
| DRILI        | ER N/A          |         |          | S     | TART DATE N/A                           | COMP. DATE                                       |                                       |               | SURFACE WATER DEPTH N/A                                       |                                   |
| ELEV<br>(ft) | DRIVE ELEV (ft) | 1       | 0.5ft    |       | BLOWS PER FOOT 0 25 50                  | SA   | AMP. MOI                              | L<br>O<br>G   | SOIL AND ROCK DESC  |                                   |
| 925          | <u>_</u>        |         |          |       |   |  |                                       | -             | . CDOUND SUDE   | 105                               |
| 920          | <u>+</u>        | 1       |          |       |   |  |                                       |               | 920.9 GROUND SURFA ROADWAY EMBANI                             |                                   |
| 915          | 918.2 2.7       | 2       | 4        | 3     |   |  |                                       |               | Red, Fine Sandy   |                                   |
| }            | 913.2 7.7       | 3       | 8        | 12    | <del> </del>   ::`\;: :::: ::::         |  |                                       | 1             | 913.9 Red, Fine Sandy Micaceo                                 | us SILT with                      |
| 910          | 908.2 12.7      |         |          | 12    |   |  | M   L   L   L   L   L   L   L   L   L |               | Quartz Sand  908.9  | Silby SAND 12.0                   |
| 905          | ‡<br>‡          | 2       | 4        | 5     | • |  | M L<br>L                              |               | 904.5   | <u>16.4</u>                       |
| +            | 903.2 T 17.7    | 2       | 4        | 5     | -                                       |  | M                                     | \}<br>        | <b>RESIDUAL</b><br>Red-Brown, Micaceous Sil                   | ty SAND with                      |
| 900          | Ŧ               |         |          |       |   |  |                                       |               | Quartz  |                                   |
|              | 898.2 22.7      |         |          |       |   |  |                                       | <u> </u>      | 898.9 Red-Brown, Micaceous                                    | 22.0                              |
| Ī            | +               | 3       | 4        | 7     | 1 . 1 . 1                               |  | М                                     | +             | Red-blowil, Micaceous   | Sality SIL1                       |
| 895          | ‡               |         |          |       |   | <u> </u>   |                                       | <u> </u>      |   |                                   |
| -            | 893.2 ‡ 27.7    | 3       | 5        | 7     |   |  | М                                     |               |   |                                   |
| 890          | ‡               |         |          | •     | 12                                      |  | l IVI                                 | +             | with Quartz Sa  | na                                |
| 890          | +               |         |          |       | -                                       | <del>   </del>                                   |                                       |               | 888.9   | 32.0                              |
| İ            | 888.2           | 5       | 5        | 5     | -<br>                                   |  | М                                     |               | Brown-Pink, Micaceous Sil                                     | ty Fine SAND                      |
| 885          | 1               |         |          |       |   |  |                                       |               |   |                                   |
|              | 883.2 37.7      |         |          |       | :   : :   : : : :   : : : :             |  |                                       |               | Red-Brown to Brown to [                                       | 37.0<br>Dark Brown,               |
|              | ł               | 3       | 5        | 7     | 12                                      |  | M                                     |               | Micaceous Fine San  | dy SILT                           |
| 088          | Ŧ               |         |          |       |   | <del>                                     </del> |                                       | ::. <u> </u>  | •   |                                   |
| -            | 878.2 T 42.7    | 2       | 5        | 7     | -                                       |  | <sub>M</sub>                          | F             |   |                                   |
| 875          | Ŧ               |         |          |       |   |  |                                       |               |   |                                   |
|              | 873.2 T 47.7    |         |          |       |   |  |                                       |               | •   |                                   |
|              | Ŧ               | 2       | 4        | 7     | ]   . • 11 .                            |  | w                                     | #             |   |                                   |
| 870          | ‡               |         |          |       |   |  |                                       | <b>:::</b>  - | -<br>868.9  | 52.0                              |
| -            | 868.2 ‡ 52.7    | 2       | 6        | 8     |   |  | l w                                   | Ŧ             | Tan-Brown, Micaceous  | Silty SAND — — 52.5               |
| 865          | ‡               | -       |          | -     | 14                                      |  | **                                    |               |   |                                   |
| 000          | 863.2 57.7      |         |          |       |   | 1  |                                       |               | . <u>863.9</u>  | 57.0                              |
|              | 003.2   37.7    | 3       | 9        | 15    | 24                                      |  | l w                                   |               | Tan-Brown, Micaceo  | us SIL I                          |
| 860          | ‡               |         |          |       | /                                       |  |                                       | <u> </u>      | 859.9   | 61.0                              |
|              | 858.2 62.7      | 1       |          | 0     |   |  |                                       |               | Dark Brown, Micaceous   | Sandy SILT                        |
| -            | +               | 3       | 6        | 9     | 1 •15                                   |  | W                                     | <u>**</u>     | Boring Terminated at Eleva<br>RESIDUAL (Sandy                 | 64.2<br>tion 856.7 ft in<br>SILT) |
|              | ‡               |         |          |       |   |  |                                       | <u> </u>      | NOTE:<br>Boring location approximate<br>R-0066 inventory bori |                                   |
|              | ‡               |         |          |       |   |  |                                       | Ė             | Soil lithology description<br>NCDOT R-0066 inv                |                                   |

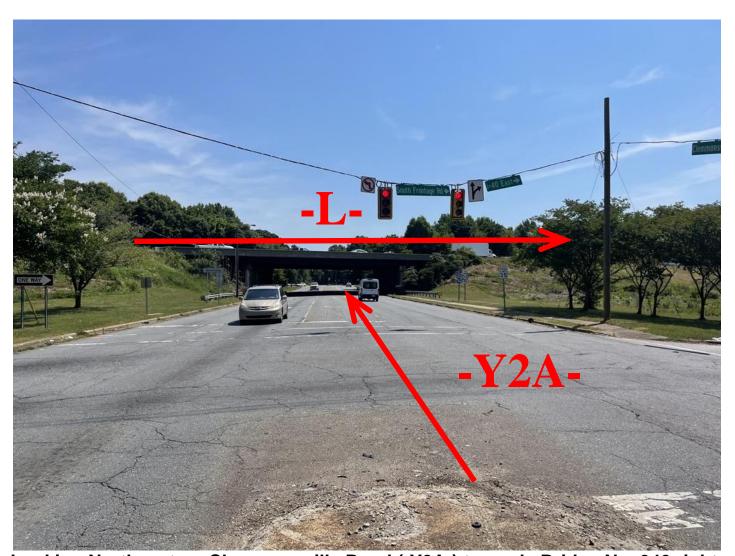
# SITE PHOTOGRAPH

I-5880 (53080.1.1)

# Bridge No. 340 on -L- (I-40/US-311) over -Y2A- (Clemmonsville Road)



Looking Southwest on Clemmonsville Road (-Y2A-) towards Bridge No. 340 left widening on I-40 (-L-)



Looking Northeast on Clemmonsville Road (-Y2A-) towards Bridge No. 340 right widening on I-40 (-L-)