496 Ä REFERENCE

40158

STATE OF NORTH CAROLINA

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

CONTENTS

SHEET NO. **DESCRIPTION** TITLE SHEET LEGEND SITE PLAN PROFILE ALONG -L-CROSS SECTION(S) BORE LOGS, CORE LOGS, AND CORE PHOTOS 9 - 16 SITE PHOTOGRAPHS

STRUCTURE SUBSURFACE INVESTIGATION

| COUNTY. | HOF | KE | | | | | | |
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CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1999 707-680. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC 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 WARRAYT OR CUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE TO MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISTY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

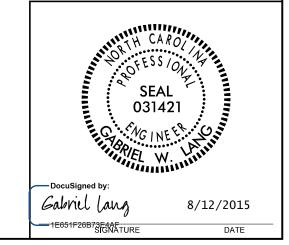
- TES:
 THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR CUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED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

PERSONNEL S. CROCKETT G. LANG B. FOWLER M. WIGGINS

M. WITMORE

INVESTIGATED BY _M. WITMORE DRAWN BY _S. CROCKETT CHECKED BY __G. LANG SUBMITTED BY AECOM

DATE **JUNE, 2015**



PROJECT REFERENCE NO. SHEET NO.

B-4967

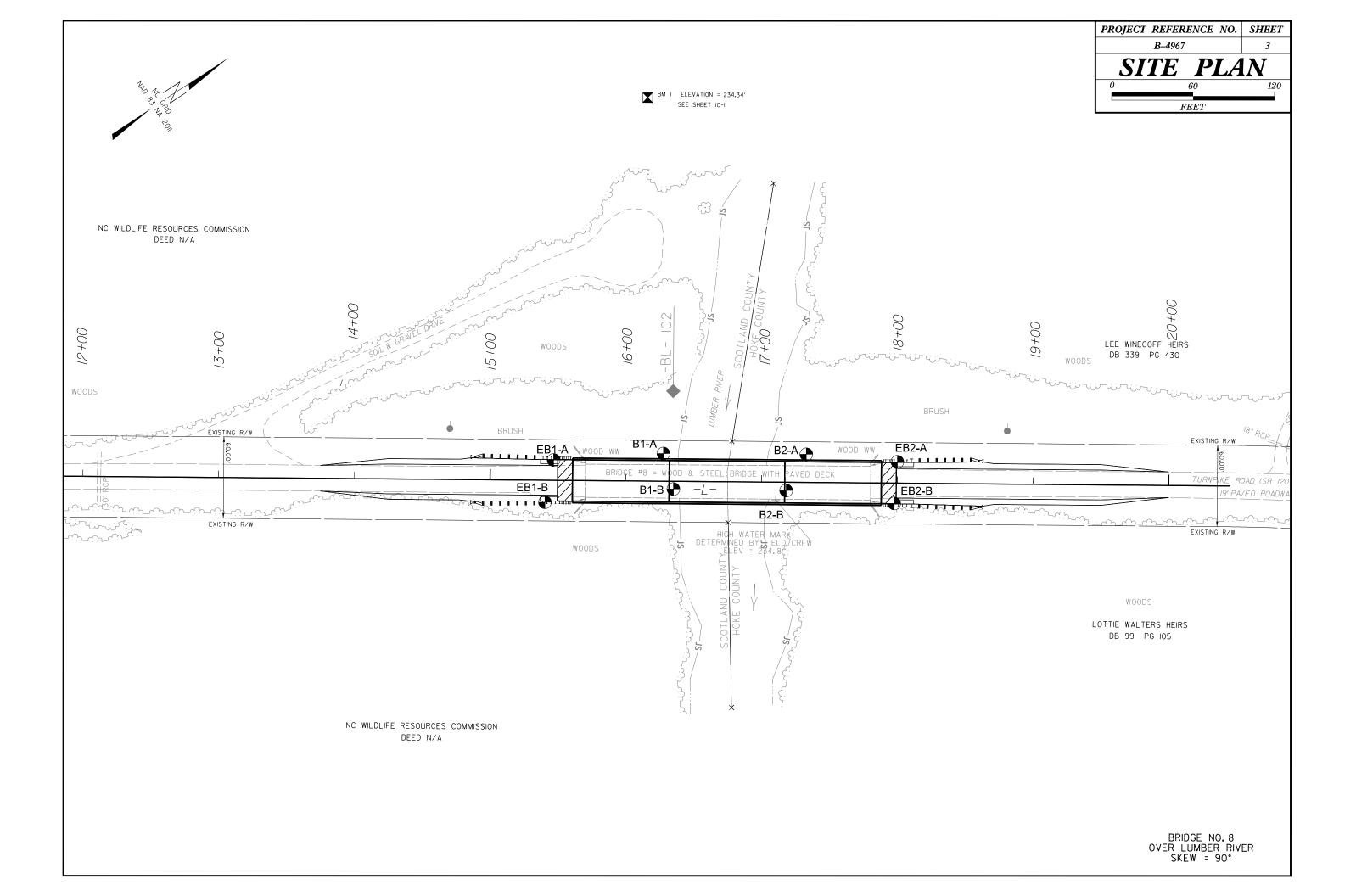
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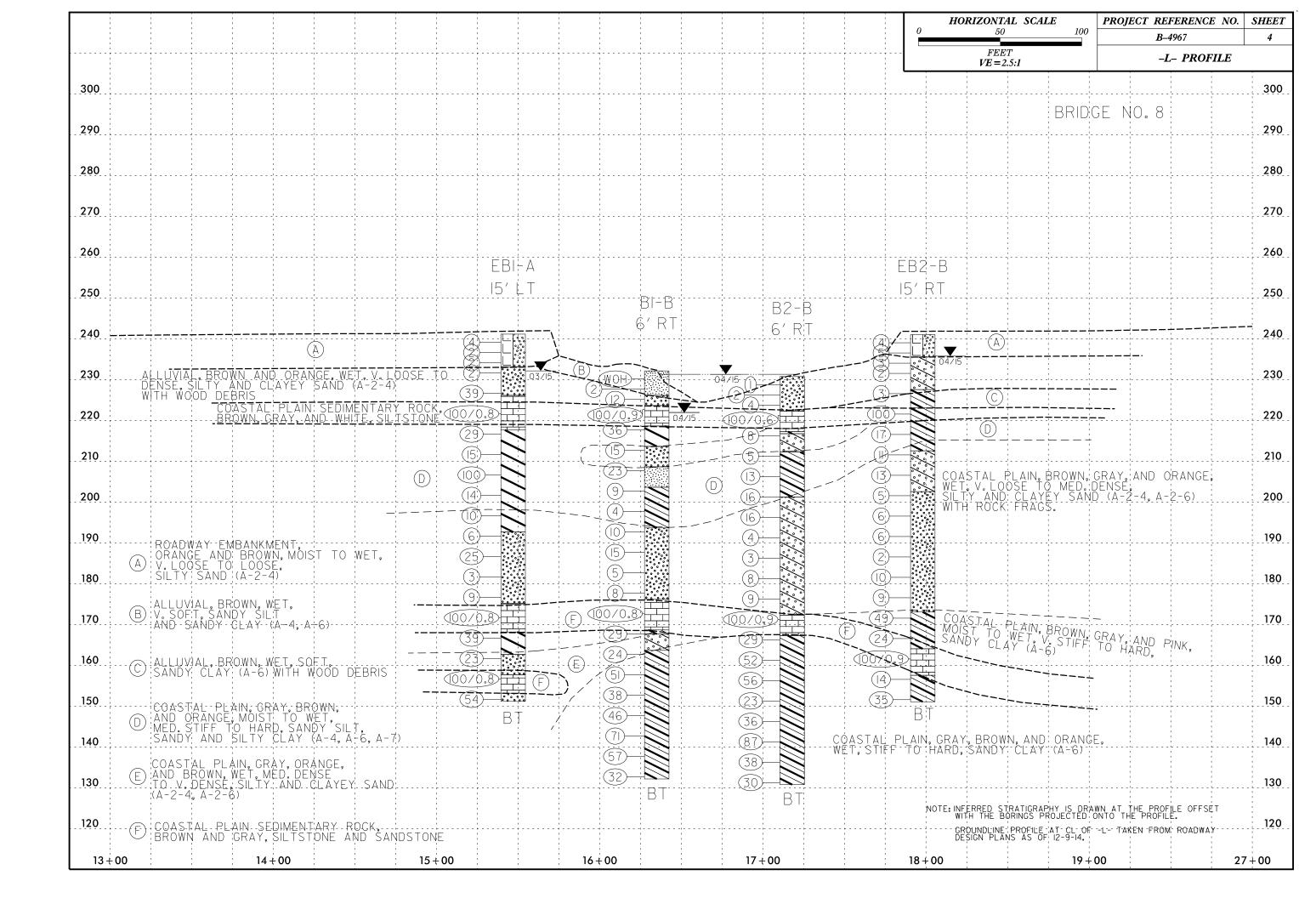
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

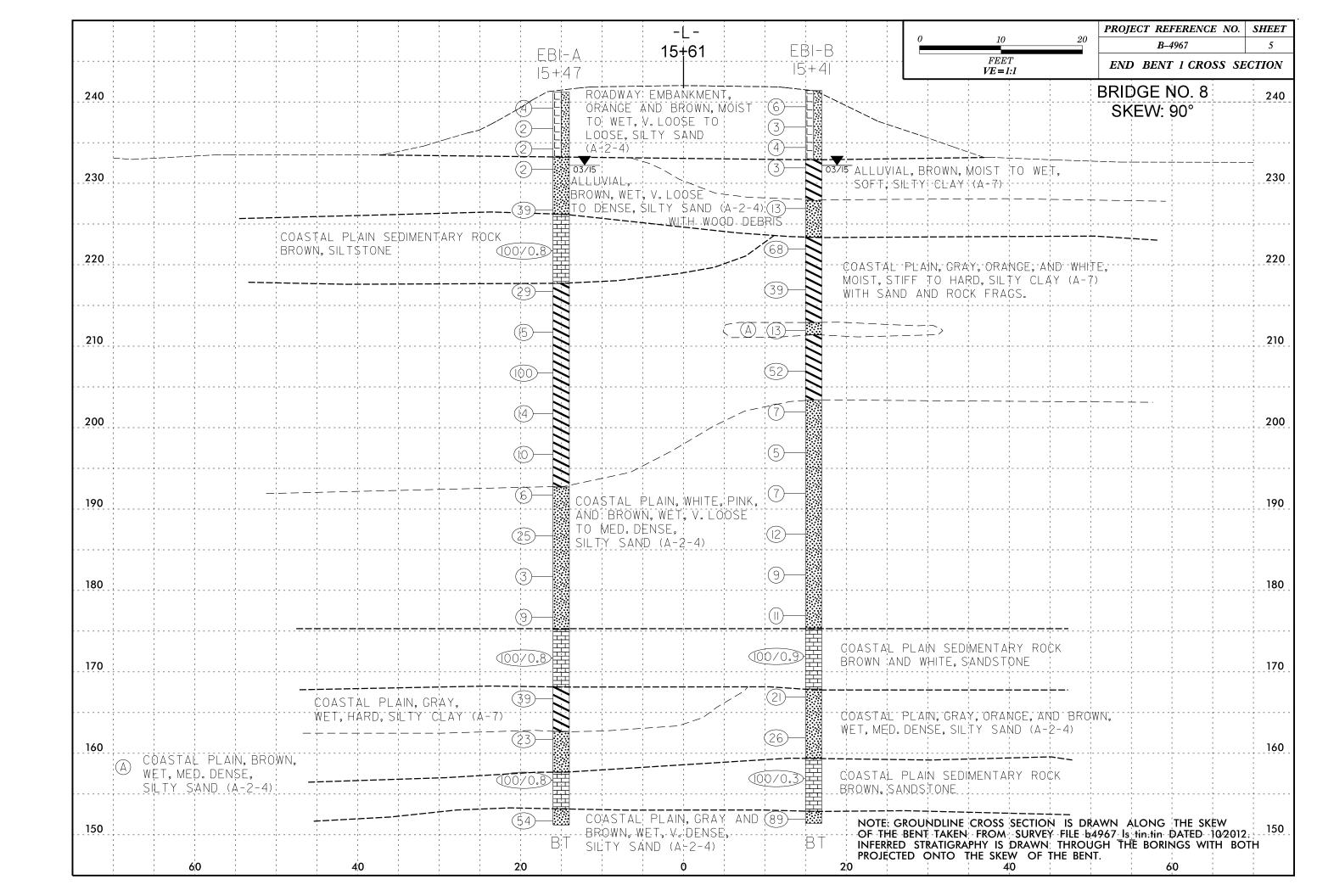
SUBSURFACE INVESTIGATION

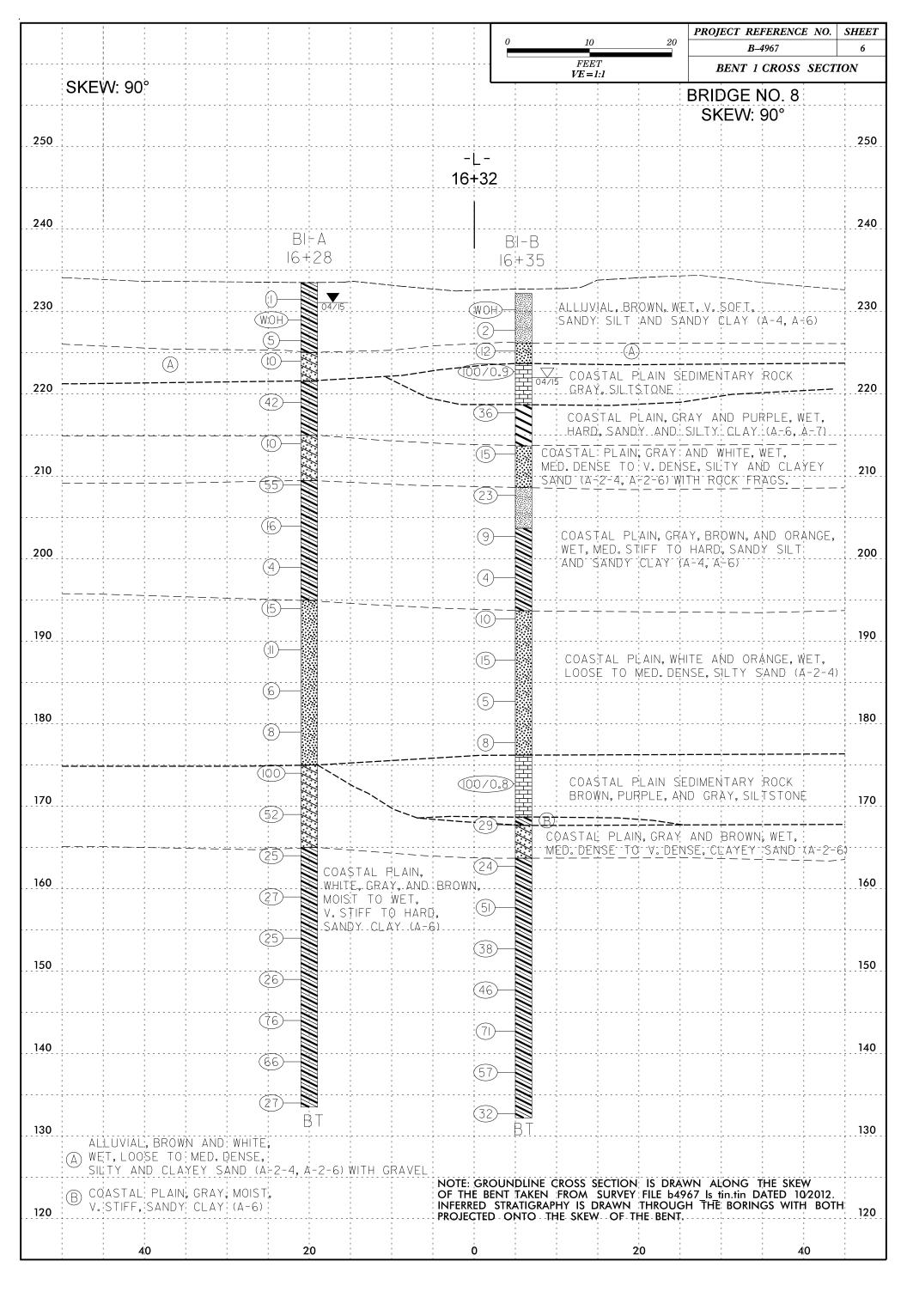
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

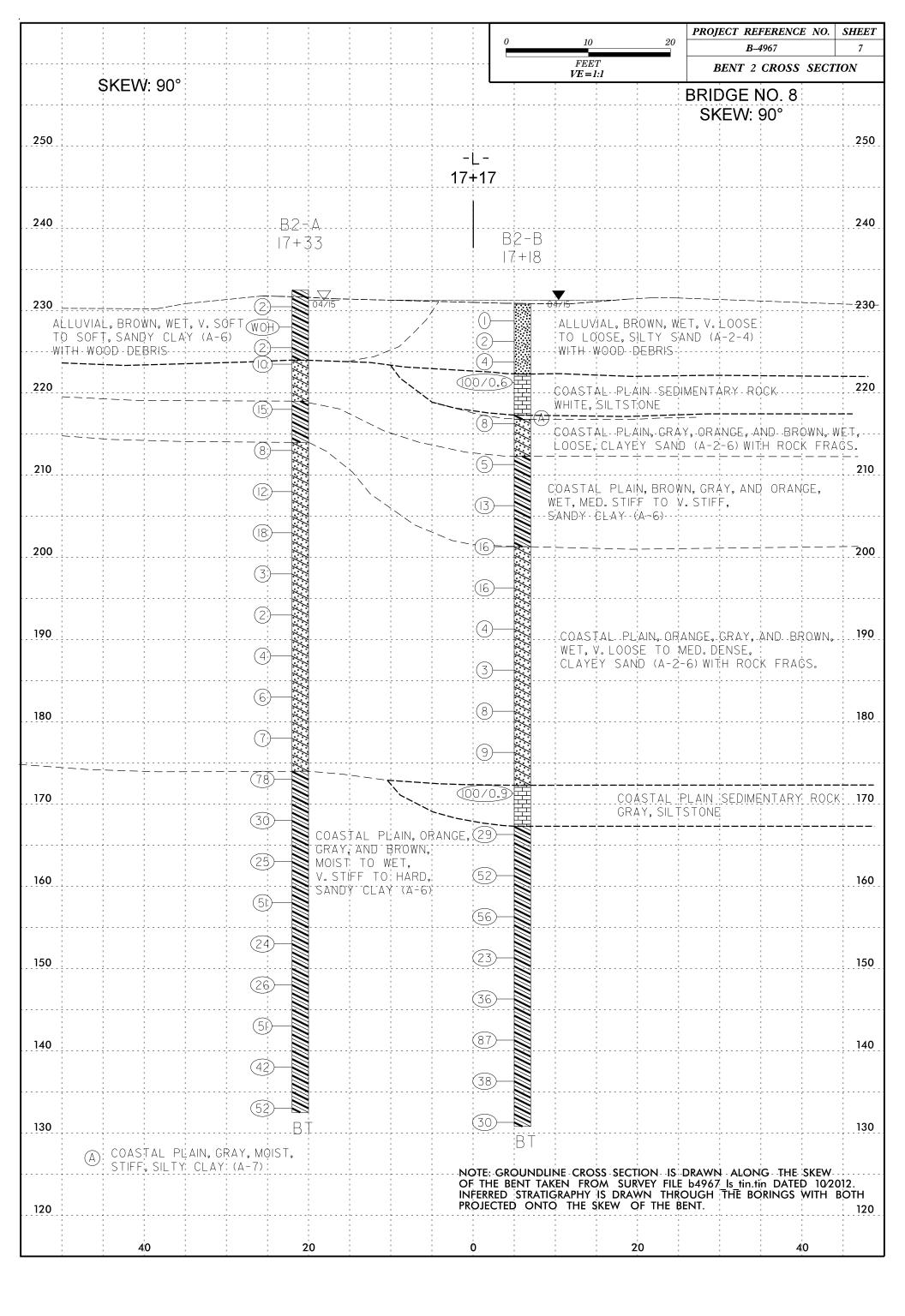
| SOIL DESCRIPTION | GRADATION | ROCK DESCRIPTION | TERMS AND DEFINITIONS |
|--|---|---|---|
| SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT | WELL GRADED - INDICATES 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 D1586). 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 AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, | ANGULARITY OF GRAINS | REPRESENTED BY A ZONE OF WEATHERED ROCK, ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: | ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING |
| 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: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED. | WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > | A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. |
| SOIL LEGEND AND AASHTO CLASSIFICATION | MINERALOGICAL COMPOSITION | ROCK (WR) 100 BLOWS PER FOOT IF TESTED. | ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT |
| GENERAL CRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS CLASS. (≤35% PASSING *200) (>35% PASSING *200) ORGANIC MATERIALS | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. | CRYSTALLINE CRYSTALLINE WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, | WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. |
| GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 | ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE. | ROCK (CR) GNEISS, GABBRO, SCHIST, ETC. GNEISS, GABBRO, SCHIST, ETC. FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN | CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. |
| CLASS. A-1-0 A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-7-5 A-3 A-6, A-7 | COMPRESSIBILITY | NON-CRYSTALLINE ROCK (NCR) SEDIMENTARY ROCK THAT WOULD VEILD 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 | SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 | COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD | CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED |
| 7. PASSING GRANULAR SILT- MUCK, | HIGHLY COMPRESSIBLE LL > 50 PERCENTAGE OF MATERIAL | SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC. | BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. |
| *40 30 MX 50 MX 51 MN SOILS SOILS PEAT | GRANULAR STUT - CLAY | WEATHERING | DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. |
| 15 M 25 M 01 X 25 M 01 X 35 M 02 X M 03 M | 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. | DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE |
| MATERIAL PASSING *40 SOILS WITH | 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 46 MX 41 MN 46 MX 41 MN 47 MX 41 MN 47 MX 41 MN LITTLE OR HIGHLY | MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE | (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. | DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. |
| COOLD INDEX A A A A A WY B MY 12 MY IS MY NO MY AMOUNTS OF ORGANIC | GROUND WATER | SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO | FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE |
| USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER | ✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING | (SLI.) I 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 SAND GRAVEL AND SAND SOILS SOILS | ▼ STATIC WATER LEVEL AFTER 24 HOURS | CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN | FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM |
| CEN RATING FAIR TO | | (MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS | PARENT MATERIAL. |
| AS SUBGRADE POUR | SPRING OR SEEP | DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. | 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 CONSISTENCY OR DENSENESS | | 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 | FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. |
| PANCE OF STANDARD PANCE OF LINCONFINED | MISCELLANEOUS SYMBOLS | (MOD.SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. | JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. |
| PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY PENETRATION RESISTENCE (TONS/FTZ) | ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION WITH SOIL DESCRIPTION OF ROCK STRUCTURES | IF TESTED, WOULD YIELD SPT REFUSAL | LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO |
| VERY LOOSE (4 | - | SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED | ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. |
| GENERALLY LOOSE 4 TO 10 GRANULAR MEDIUM DENSE 10 TO 30 N/A | SOIL SYMBOL SOIL SYMBOL SOIL SYMBOL SLOPE INDICATOR INSTALLATION | TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF | MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS |
| (MALEMIAL 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. |
| AFRA DENZE > 20 | — — inferred soil boundary — core boring ■ sounding rod | 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 | MW TEST PODING | VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 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 MATERIAL STIFF 8 TO 15 1 TO 2 | MONITORING WELL WITH CORE | COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS | ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF |
| (COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD > 30 > 4 | TTTTT ALLUVIAL SOIL BOUNDARY A PIEZOMETER INSTALLATION - SPT N-VALUE | 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. |
| TEXTURE OR GRAIN SIZE | RECOMMENDATION SYMBOLS | ROCK HARDNESS | SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. |
| U.S. STD. SIEVE SIZE 4 10 40 60 200 270 | UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE ACCEPTABLE, BUT NOT TO BE | VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES 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 USED IN THE TOP 3 FEET OF | HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED | RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO |
| BOULDER COBBLE GRAVEL SAND SAND SILT CLAY | SHALLOW UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK EMBANKMENT OR BACKFILL | TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE | THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT |
| (BLDR.) (COB.) (GR.) (CSE. SD.) (F SD.) (SL.) (CL.) | 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 0.005 0.005 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 |
| SOIL MOISTURE - CORRELATION OF TERMS | CL CLAY MOD MODERATELY γ - 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 |
| SOU MOISTURE SCALE FIELD MOISTURE | CPT - CONE PENETRATION TEST NP - NON PLASTIC $\gamma_{ m d}$ - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC | POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS | TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY |
| (ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION | DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DPT - DYNAMIC PENETRATION TEST SAP, - SAPROLITIC S - BULK | FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN | TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. |
| - SATURATED - USUALLY LIQUID; VERY WET, USUALLY | e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON | PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH | STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY |
| (SAT.) FROM BELOW THE GROUND WATER TABLE | F - FINE SL SILT, SILTY ST - SHELBY TUBE FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK | 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 SEMISOLID; REQUIRES DRYING TO | FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL | FINGERNAIL. | TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. |
| (PI) PLASTIC LIMIT ATTAIN OPTIMUM MOISTURE | FRAGS FRAGMENTS w - MOISTURE CONTENT CBR - CALIFORNIA BEARING HI HIGHLY V - VERY RATIO | FRACTURE SPACING BEDDING TERM SPACING TERM THICKNESS | BENCH MARK: BM-I, RR SPIKE IN BASE OF 18" OAK, BL STATION 10+25 N: 445761 E: 1886536 |
| - MOIST - (M) COLID. AT OR NEAR ORTIMIN MOISTURE | EQUIPMENT USED ON SUBJECT PROJECT | VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET | ELEVATION: 234.34 FEET |
| OM OPTIMUM MOISTURE | DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: | MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED Ø.16 - 1.5 FEET | NOTES: |
| REQUIRES ADDITIONAL WATER TO | X CME-45C CLAY BITS X AUTOMATIC MANUAL | CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET | 10.20 |
| - DRT - (U) ATTAIN OPTIMUM MOISTURE | CME-55 CORE SIZE: | THINLY LAMINATED < 0.008 FEET | WOH = WEIGHT OF HAMMER |
| PLASTICITY | 8* HOLLOW AUGERS | INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. | HEIOTH OF THAMMEN |
| PLASTICITY INDEX (PI) DRY STRENGTH | CME-550 HARD FACED FINGER BITS -N Q | DURRING WITH FINGED EREES NUMEROUS CRAINS. | |
| | | FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. | |
| NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT | VANE SHEAR TEST CASING W/ ADVANCER HAND TOOLS: | | |
| NON PLASTIC 0-5 VERY LOW | CASING W/ ADVANCER POST HOLE DIGGER | MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; RREAKS FASTLY WHEN HIT WITH HAMMER. | |
| NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM | CASING W/ ADVANCER POST HOLE DIGGER TRICONE STEEL TEETH HAND AUGER X TRICONE 4 1/2 TING -CARB. | BREAKS EASILY WHEN HIT WITH HAMMER. | |
| NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH COLOR | CASING W/ ADVANCER PORTABLE HOIST TRICONE STEEL TEETH HAND AUGER X TRICONE 4 ½ TUNG-CARB. SOUNDING ROD | | |
| NON PLASTIC Ø-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH | CASING W/ ADVANCER POST HOLE DIGGER TRICONE STEEL TEETH HAND AUGER X TRICONE 4 1/2 TING -CARB. | BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE: | DATE: 8-15-14 |

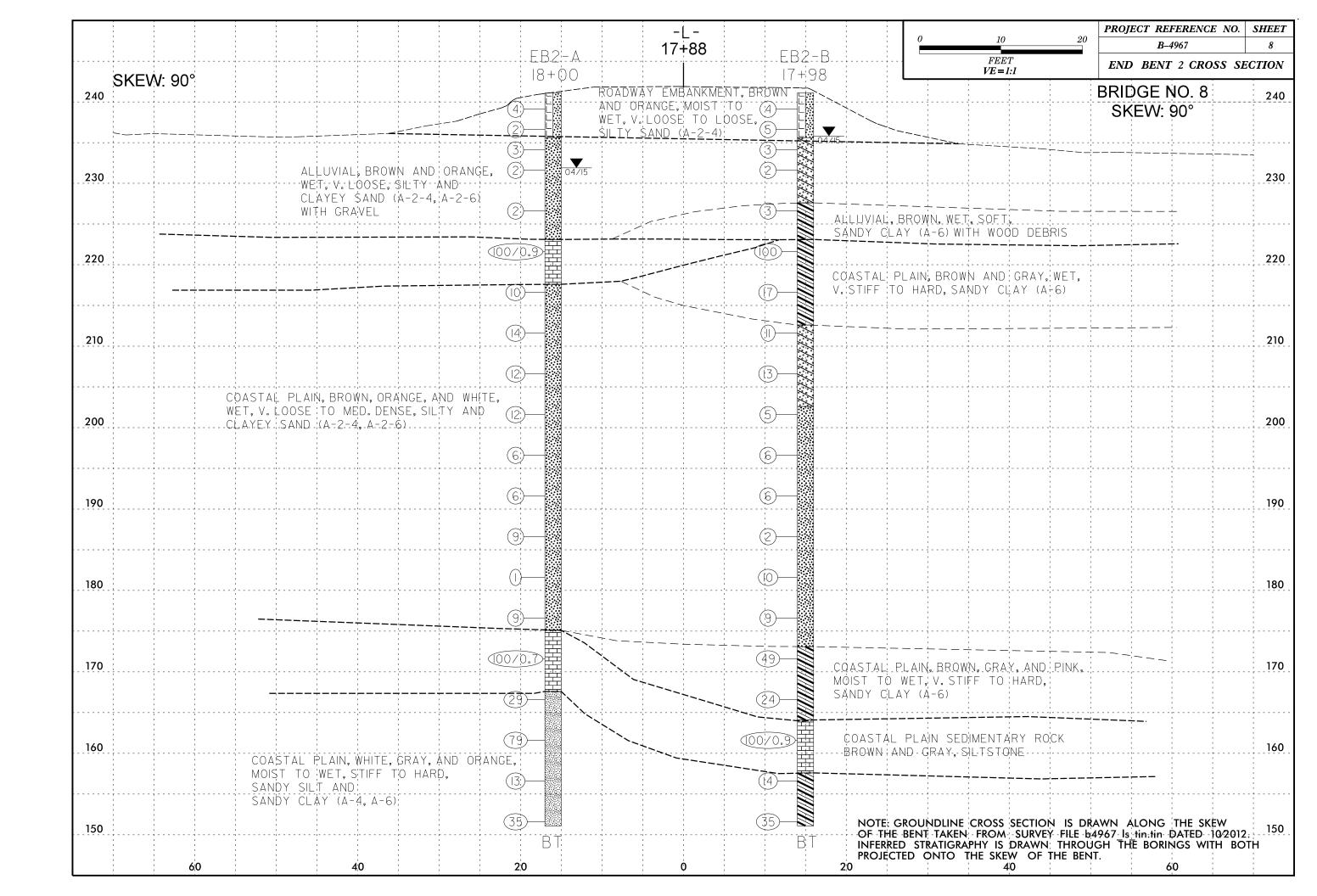


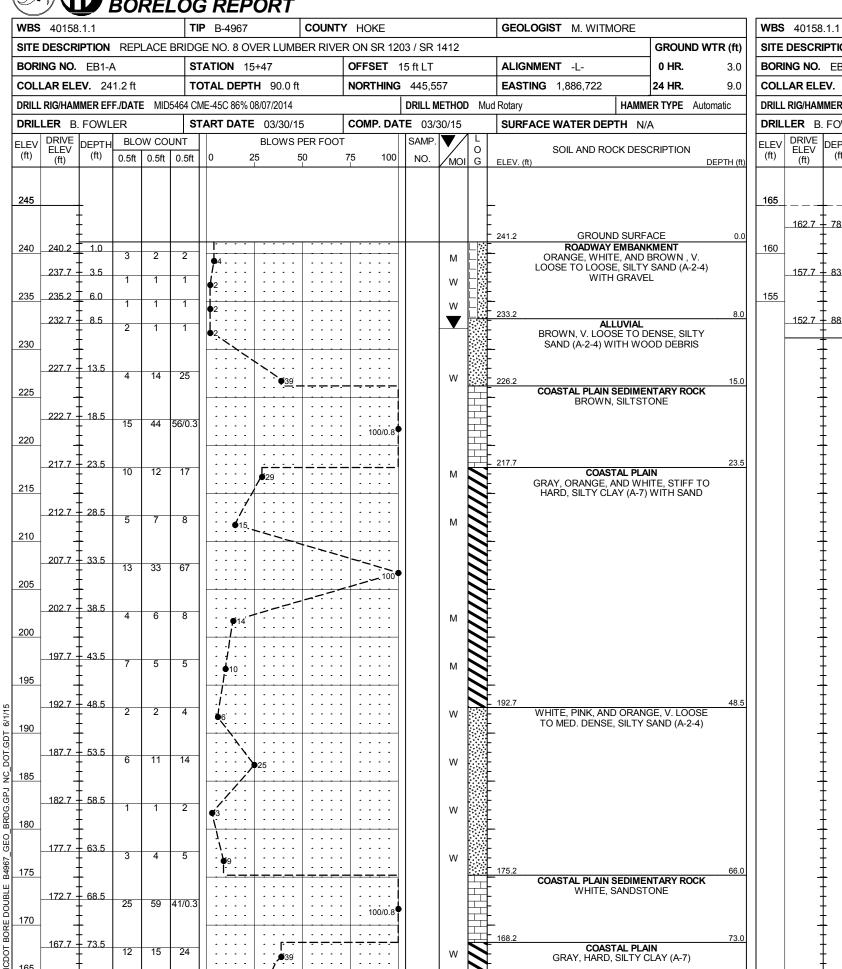


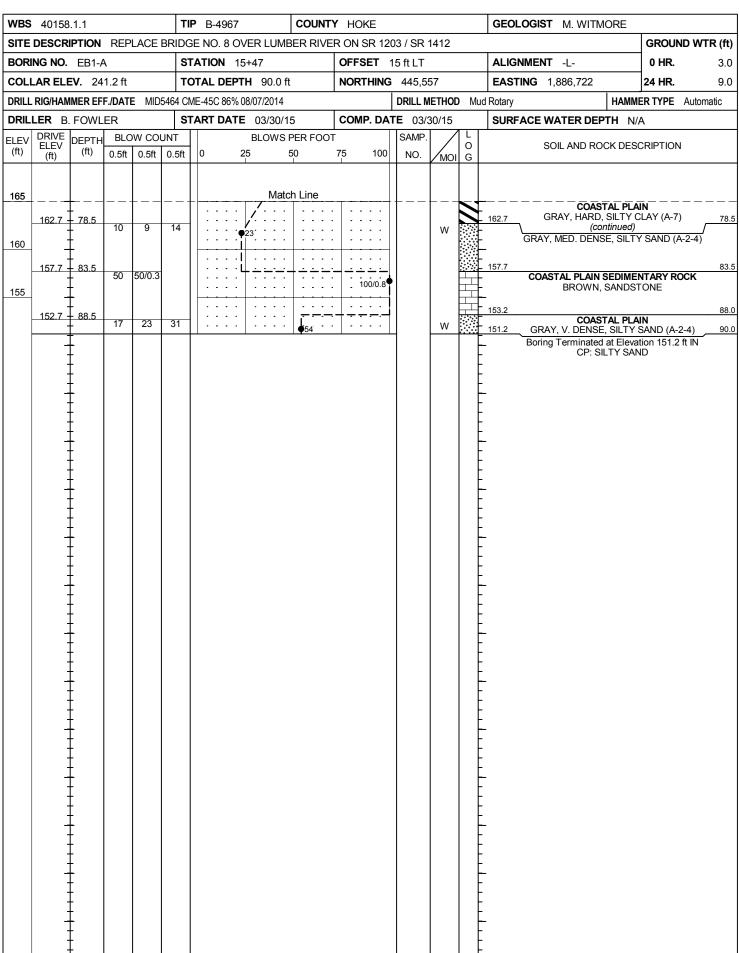




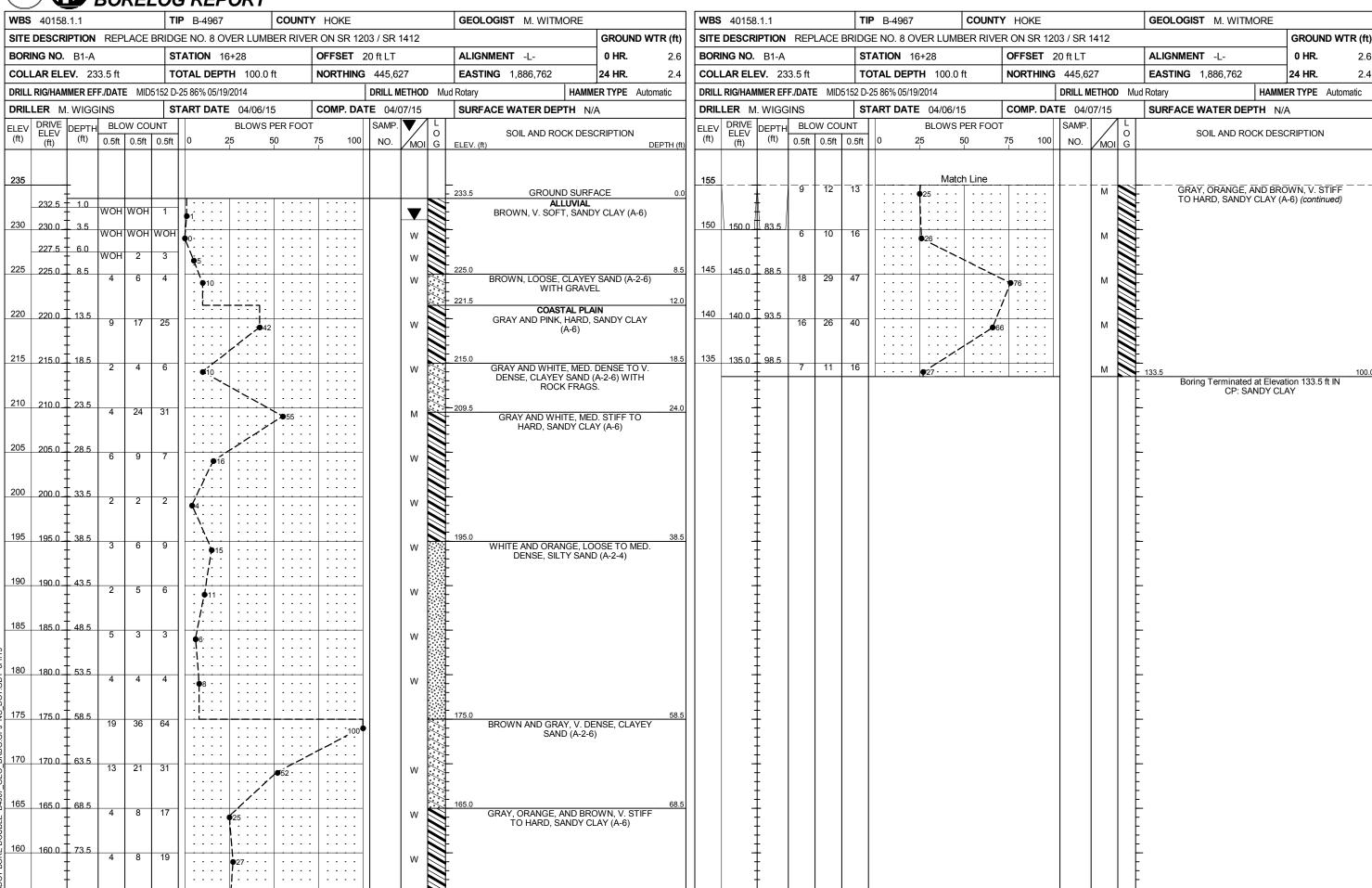


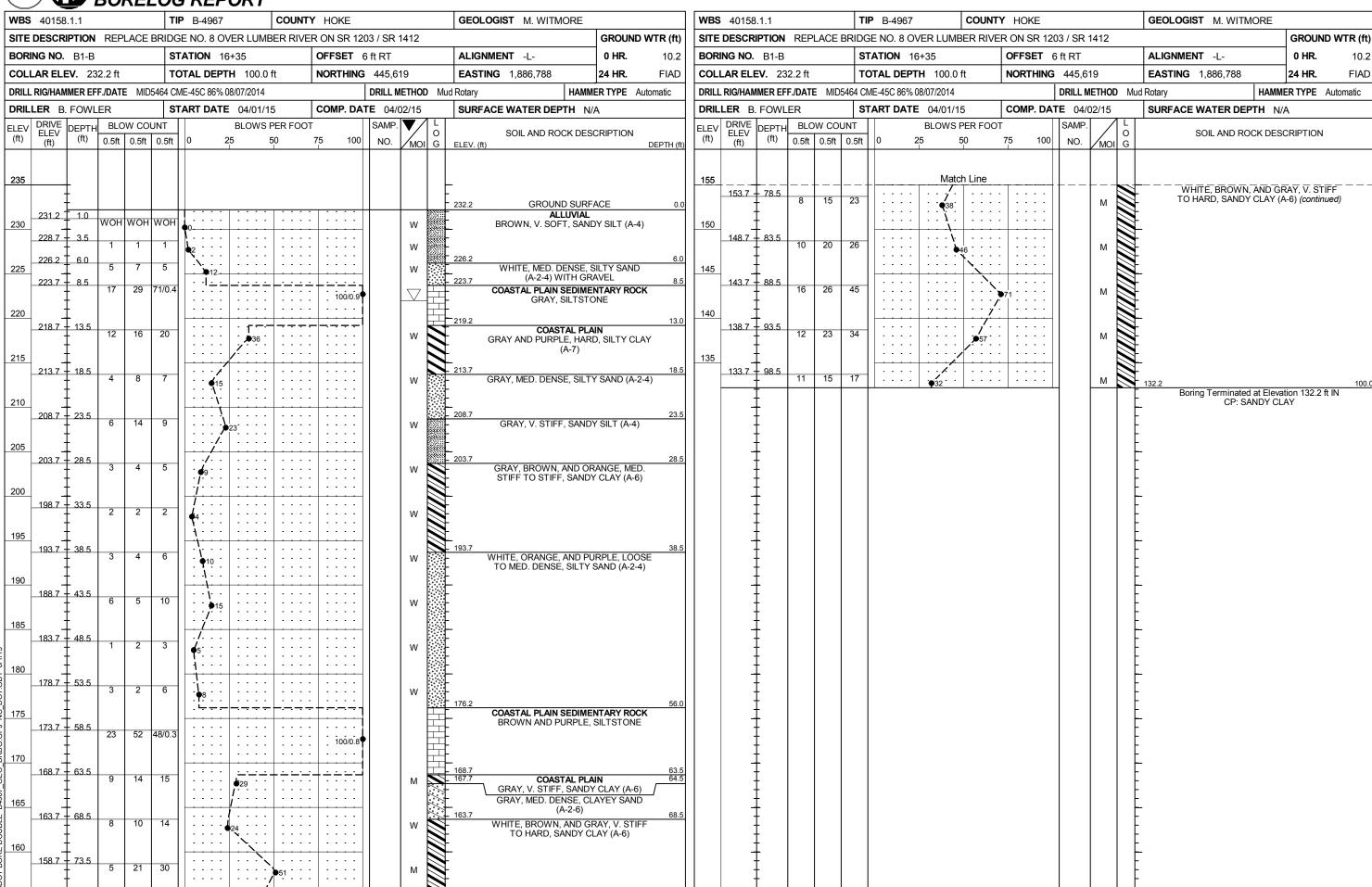




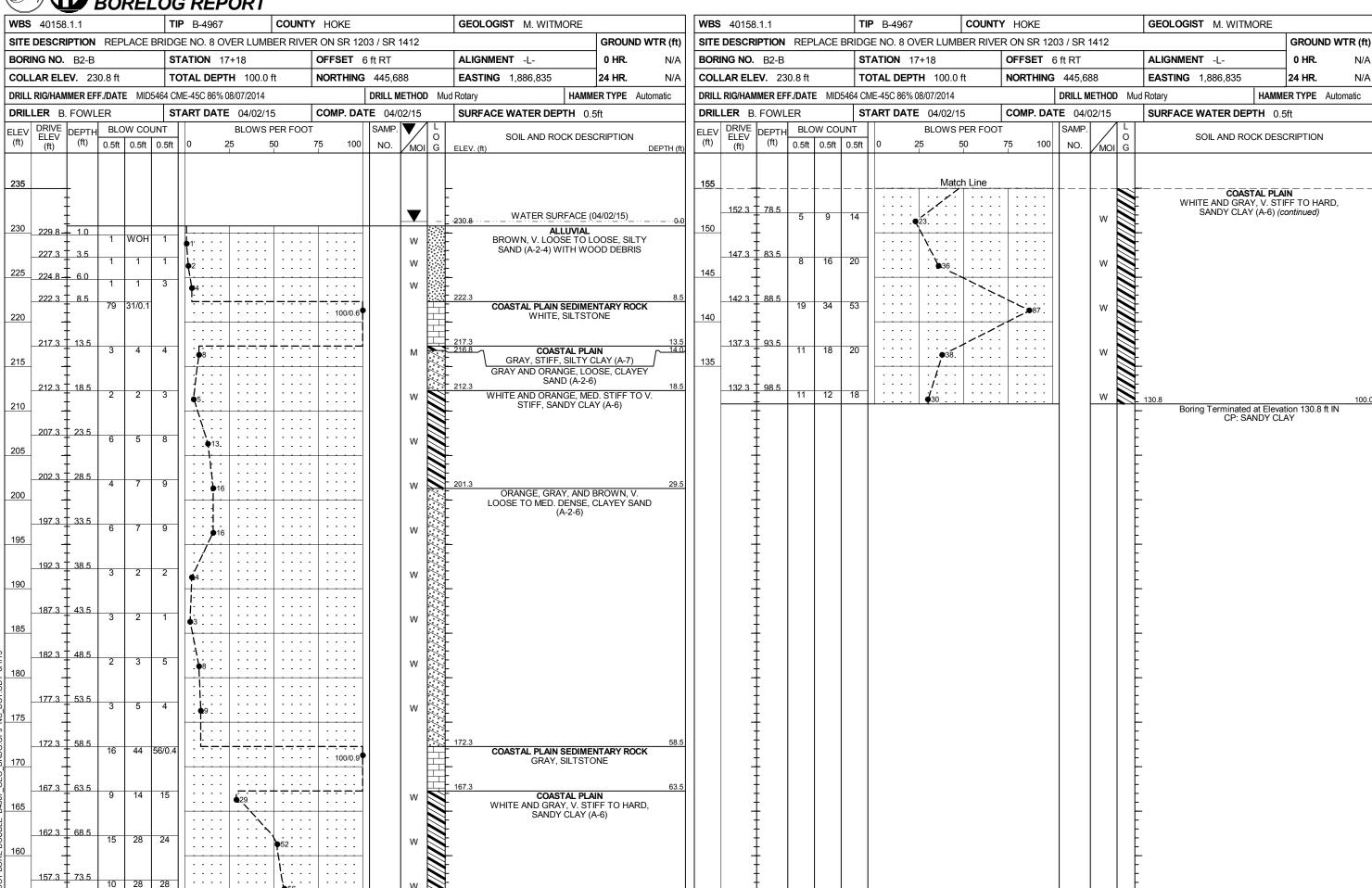


| | | | 'NL | - | | REPORT | | | | | | - | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|--|----------|---------------------------|---------|--------------|---|----------------------------------|---------------|----------------|--------|------------|-----------------------|------------------------------|------------------------------|------------------|-------------------|----------------|---------------------|-------------------------------|---------|------------------|--------|----------|---------------|--------------------------|---------------------------|--------------|--------|---------------------|----------------------------------|-------------|-----------|------|
| WBS 40158 | | | | | | B-4967 | COUNTY HOKE GEOLOGIST M. WITMORE | | | | | | | 1 | | l | S 40158 | | | | | B-4967 | | | Y HOKE | | | | GEOLOGIST M. WITI | | | | |
| | | | PLACE | | | | IBER RIV | | | | | | GROUND | | ´ | | | ACE B | BRIDGE NO. 8 OVER LUMBER RIVI | | | | | | | <u> </u> | 1 | | GROUND V | | | | |
| BORING NO. EB1-B STATION 15+41 | | | OFFSET 16 ft RT ALIGNMENT | | | | | 0 HR. 3 | | | l | ring no. | | | | - | ATION 15- | | | OFFSET | | | | ALIGNMENT -L- | | 0 HR. | 3.5 | | | | | | |
| COLLAR ELE | COLLAR ELEV. 241.4 ft TOTAL DEPTH 90.0 ft | | | NORT | | 445,53 | | | TING 1,886,745 | | 24 HR. | R. 9.2 | | COLLAR ELEV. 241.4 ft | | | | TOTAL DEPTH 90.0 ft | | | NORTHING 445,535 | | | | EASTING 1,886,745 | | 24 HR. | 9.2 | | | | | |
| DRILL RIG/HAM | DRILL RIG/HAMMER EFF./DATE MID5464 CME-45C 86% 08/07/2014 | | | _ | | | | Mud Rotary | | HAMN | MER TYPE A | utomatic | | | | | MID54 | | E-45C 86% 08 | | | | | | | ud Rotary HAMMER TYPE Aut | | omatic | | | | | |
| DRILLER B. | | | | | | RT DATE 03/31/ | | | | E 03/3 | | SURI | FACE WATER D | EPTH N | I/A | | l | LLER B. | | | | | ART DATE | | | COMP. DATE 03/31/1 | | | SURFACE WATER DEPTI | | | H N/A | |
| ELEV DRIVE ELEV (ft) | DEPTI (ft) | - BL | OW CO | TAUC | _ | | S PER FOO | | | SAMP. | '/ | 0 | SOIL AND I | ROCK DES | SCRIPTION | | ELE\ (ft) | DRIVE ELEV | DEPTH (ft) | BLOW | COU | INT | | | PER FOOT | | SAMF | 1 / | / 占 | SOIL AND RO | OCK DESC | RIPTION | |
| (III) (ft) | (11) | 0.5ft | 0.5ft | t 0.5 | ft 0 | 25 | 50 | 75 | 100 | NO. | /MOI | G ELEV. (| (ft) | | | DEPTH (ft) | (11) | (ft) | (11) | 0.5ft 0 |).5ft (| 0.5ft | 0 25 | · · | 50 | 75 1 | 00 NO. | MC | OI G | | | | |
| 245 | - - - | | | | | | | | | | | - - - 241.4 | GRO | JND SURF | FACE | 0.0 | 165 | 162.9 | 78.5 | 10 | 12 | 14 | | Matc | h Line | | . | | | COA: ORANGE, PINK DENSE, SILTY S | | WN, MED. | |
| 240 240.4 | 1.0 | 2 | 3 | 3 | 7 | 1 | | | | | м | | | AY EMBAN | NKMENT | | 160 | | - | | | | | | | | | | | _ ──159.4 | | | 82. |
| 237.9 | - - 3.5 | <u> </u> | <u> </u> | | | 9 6 | | | : : | | IVI | | LOOSE, SIL | | | | | 157.9 | 83.5 | | | | | TT | : | | - | | | COASTAL PLAIN | SEDIMEN | TARY ROCK | |
| 235 235.4 | - 60 | 1 | 1 | 2 | | 3 | . | | | | М | | | GRAVEL | | | 455 | - | [| 100/0.3 | | | | | | 100/0 | .3 | | 田 | - - | , 0/11/2011 | JIVE | |
| | [| 1 | 2 | 2 | ∃ { | 4 | | | | | w | | | | | | 155 | | - | | | | | | <u> </u> | | | | 井 | _ - | | | |
| 232.9 - | - 8.5 - | 2 | 1 | 2 | ر ⊢ | | | | | | | 232.9 | | ALLUVIAL | | 8.5 | | 152.9 | 88.5 | 32 4 | 40 | 49 | | | | · · <u>-</u> | . | w | | _ 152.9 - 151.4 COA \$ | STAL PLAII | 1 | 90.0 |
| 230 | | | | | | § | | | | | | | BROWN, SC | FT, SILTY | CLAY (A-7) | | | _ | | | | | | | l | Ψο: | | | 10000 | BROWN, V. DEN Boring Terminate | | |) / |
| 227.9 | 13.5 | | | | | :\ :: ::: | . | | | | | 227.9 | | | | 13.5 | | | | | | | | | | | | | | - CP: S | SILTY SANI |) | |
| - | | 5 | 5 | 8 | | - • • 13 | | | | | w | | BROWN, MEI | ALLUVIAL D. DENSE. | |) | | | | | | | | | | | | | | _ | | | |
| 225 | | | | | - - | : : : : : : : : | | | | | | 223.4 | | (A-2-4) | | 18.0 | | - | - | | | | | | | | | | | _ | | | |
| 222.9 - | _ 18.5 | 8 | 25 | 43 | + | | - + |] | | | М | 223.4 | CO. | ASTAL PLA | AIN | | | | | | | | | | | | | | | _ | | | |
| 220 | _ | | | | | | | | | | "" | | GRAY, WHITE, CLAY (A-7) W | | | | | - | _ | | | | | | | | | | | _ | | | |
| 217.9 | 23.5 | | | | | | | - | | | | | | | | | | - | - | | | | | | | | | | | - | | | |
| - | - | 12 | 16 | 23 | | | 9 | | | | М | | | | | | | - | | | | | | | | | | | | _ | | | |
| 215 | | | | | - | / | | | | | | | | | | | | _ | - | | | | | | | | | | | - | | | |
| 212.9 | 28.5 | 8 | 7 | 6 | 41 | | . | | | | l w | 212.9 | WHITE, MED | DENSE | SII TV SAND | 28.5 | | - | | | | | | | | | | | | - | | | |
| 210 | | | ' | | | 13. | . | | :: | | ** | 211.4 | ٠ | (A-2-4) | | / 30.0 | | | - | | | | | | | | | | | = = | | | |
| 207.9 | - 22 5 | | | | | | | | | | | | WHTIE AND | PURPLE, P CLAY (A-7) | HARD, SILTY) | | | - | - | | | | | | | | | | | - | | | |
| 207.9 - | - 33.5 | 24 | 21 | 31 | | | •52··· | | | | М | | | | | | | - | - | | | | | | | | | | | - | | | |
| 205 | _ | | | | - | | | | | | | | | | | | | _ | - | | | | | | | | | | | _ | | | |
| 202.9 | 38.5 | 3 | 3 | 1 | 41 | | - | | : : | | | 203.4 | WHITE, PINK, A | ND BROV | VN, LOOSE | <u>38.0</u> ГО | | - | | | | | | | | | | | | - | | | |
| 200 | _ | | | ' | | 1 7 | - | | | | W | | MED. DENS | E, SILTY S | SAND (A-2-4) | | | - | - | | | | | | | | | | | <u> </u> | | | |
| 197.9 | - 42 5 | | | | | 1 | | | | | | | | | | | | - | - | | | | | | | | | | | - | | | |
| 197.9 - | - 43.5 - | 3 | 2 | 3 | 1 | •5· · · · · · · | | | :: | | w | | | | | | | - | - | | | | | | | | | | | - | | | |
| 195 | - | | | | - | 1 | | | | | | | | | | | | _ | | | | | | | | | | | | - | | | |
| 192.9 | - - 48.5 | 2 | 3 | 4 | 41 | 1 | | | | | l | | | | | | | - | | | | | | | | | | | | - | | | |
| 100 | - | - | " | - | | • 7 | | | | | W | | | | | | | - | | | | | | | | | | | | - - | | | |
| 190 | - | | | | | : 1 : : : : : | | | | | | | | | | | | - | - | | | | | | | | | | | - - | | | |
| 187.9 - | - 53.5 - | 5 | 8 | 4 | $\exists $ | · 1 · · · · · · · · · · · · · · · · · · | . | - | :: | | w | | | | | | | - | | | | | | | | | | | | - | | | |
| 190 | - | | | | | - | | - | | | | | | | | | | - | | | | | | | | | | | | - | | | |
| 182.9 | - - 58.5 | 1 | | ļ_ | 41 | : [: : : : | | | | | | | | | | | | | | | | | | | | | | | | - - | | | |
| 180 | _ | 4 | 4 | 5 | | 9 | . | | :: | | W | | | | | | | | | | | | | | | | | | | - | | | |
| 180 | _ | | | | ╁ | : : : : : : : | | | | | | | | | | | | _ | | | | | | | | | | | | - | | | |
| 177.9 - | - 63.5 - | 4 | 5 | 6 | + | | : : : : | | : : | | l w | | | | | | | | | | | | | | | | | | | - - | | | |
| 175 | Ŀ | | | | | · 1 · · · · · · · | | <u>-+</u> | = | | | 175.4 | COASTAL PLA | IN SEDIME | NTARY POO | 66.0 | | - | | | | | | | | | | | | - | | | |
| 172.9 | - - 68.5 | | | | _ | | . | | ::[] | | | | WHITE AND | BROWN, S | SANDSTONE | | | | | | | | | | | | | | | - - | | | |
| _ | _ | 19 | 39 | 61/0 | .4 | | - | . 10 | 0/0.9 | | | | | | | | | | <u> </u> | | | | | | | | | | | - | | | |
| 170 | - | | | | - | | | | | | | | | | | | | - | <u> </u> | | | | | | | | | | | _ | | | |
| 167.9 - | - 73.5 - | 8 | 9 | 12 | + | · · · · / - · · · | + | - | | | l w | 167.9 | , | | | 73.5 | | | <u> </u> | | | | | | | | | | | - | | | |
| <u>ا ا</u> | L | 1 | 1 | | | | . | - | | | '' | | | | | | | - | - | | | | | | | | | 1 | | - | | | |





| WBS 40158.1.1 TIP B-4967 COUNTY HOKE | | | | | | | GEOLOGIST M. WITMORE | | WE | BS 40158.1.1 | | TI | TIP B-4967 COUNTY HOKE | | | | | | GEOLOGIST M. WITMORE | | | | | | | | |
|--|--|-------------------|--------------|-----------------|--|------------------|-----------------------|--------------------------|------------------|---------------------|--|--|---|---|----------|-------------------------|--------------------------|----------|----------------------|--------------------------|---------------|------------------|-------------|----------------|--------------------------------|--|------|
| SITE DESCRIPTION REPLACE BRIDGE NO. 8 OVER LUMBER RIVER ON SR 1203 / SR 1412 | | | | | | | SIT | TE DESCRIPTION | I REPLAC | CE BRIDG | RIDGE NO. 8 OVER LUMBER RIVER ON SR 1203 / SR 1412 | | | | | 2 | | GROUND W | OUND WTR (ft) | | | | | | | | |
| BOR | BORING NO. B2-A STATION 17+33 COLLAR ELEV. 232.5 ft TOTAL DEPTH 100.0 ft | | | OFFSET 21 ft LT | | | | ALIGNMENT -L- | 0 HR. 1.2 | ВО | BORING NO. B2-A | | S | STATION 17+33 | | OFFSET 21 ft LT | | | | ALIGNMENT -L- | 0 HR. | 1.2 | | | | | |
| COL | | | | NORTHING | 3 445,7 | 15 | | EASTING 1,886,820 | 24 HR. FIAD | co | COLLAR ELEV. 232.5 ft | | | TOTAL DEPTH 100.0 ft | | NORTHING 445,715 | | | | EASTING 1,886,820 | 24 HR. | FIAD | | | | | |
| DRILL | DRILL RIG/HAMMER EFF./DATE MID5152 D-25 86% 05/19/2014 | | | | | DRILL N | /ETHO | D Mud | Rotary HAMI | MER TYPE Automatic | DRI | ILL RIG/HAMMER EI | FF./DATE N | | | | DRILL METHOD MI | | | | d Rotary | HAMMER TYPE Auto | matic | | | | |
| | | | | | | | SURFACE WATER DEPTH N | I/A | | DRILLER M. WIGGINS | | | START DATE 04/07/15 | | COMP. DA | | | 5 | SURFACE WATER DEP | TH N/A | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLO 0.5ft | W CO 0.5ft | COUNT BLOWS PER FOOT 0.5ft 0.5ft 0 25 50 7 | | 75 100 | SAMP. L O NO. MOI G | | | SOIL AND ROCK DES | SCRIPTION DEPTH (fi | | ELEV Cft) DRIVE ELEV (ft) DEPTH BLOW CO | | | BLOWS PER FOO 0 25 50 | | OT 75 100 | SAMP NO. | 1/ | OI G | SOIL AND RO | CK DESCRIPTION | | | |
| 235 | | | | | | | | | | | | | | | 155 | 5 | | | | Match Line | | | | | | | |
| | 231.5 | . 10 | | | | 1 | | | 1 | | _ | L F | 232.5 GROUND SURI | | 0 | 154.0 78.5 | 8 1 | 1 13 | | 4 | | | М | | GRAY, ORANGE, A TO HARD, SANDY | ND BROWN, V. STIFF CLAY (A-6) (continued) | |
| 230 | | . | WOH | WOH | 2 | 2 | | | | | | | BROWN, V. SOFT TO S CLAY (A-6) WITH WO | SOFT, SANDY | 150 | | | | | | · . · · · · | | | | <u> </u> | | |
| | 229.0 | . | WOH | WOH | WOH | 0 | | | | | w | | 52 · · (· · •) · · · · · · · | .00 0000 | | 149.0 83.5 | 7 1 | 1 15 | : : : : | 26 | | | М | | • | | |
| 225 | 226.5 | 6.0 | WOH | 1 | 1 | 2 | | | | | w | | | | 14 | 5 + | | | | `\` | | | | | • | | |
| | 224.0 | 8.5 | 3 | 5 | 5 | | | | | | l w | - | 224.0 COASTAL PL | AIN 8.5 | | 144.0 88.5 | 15 22 | 2 29 | | | | 1 | | | - · | | |
| |] | | | | | 1. 7.0 | | | | | '' | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | BROWN, LOOSE, CLAYE WITH ROCK FF | Y SAND (A-2-6) | | .] | | | | | | | | | · • | | |
| 220 | 219.0 | 13.5 | 4 | 5 | 10 | | | | | - | l | * * * | 219.0 | 13.5 | 5 140 | 139.0 + 93.5 | 12 20 | 0 22 | | · · · / · · · | | - | ١ | | <u> </u> | | |
| | | . | 4 | 5 | 10 | . | | | | | W | | BROWN AND GRAY, S CLAY (A-6 | | | ‡ | | 0 22 | | 42 | | | M | | • | | |
| 215 | 214.0 | 18.5 | | | | | | · · · · | | _ | | | . 214.0 | 18.5 | 13 | 5 134.0 98.5 | | | | | | - | | | - | | |
| | 214.0 | | 3 | 3 | 5 | . ∳8 · · | | | | | W | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | GRAY, BROWN, AND LOOSE TO MED. DENSE, | | 11 | 104.0 = 30.0 | 17 25 | 5 27 | | | | Ц | М | | · 132.5 | at Flauntian 122 F ft IN | 100. |
| 210 |] | _ | | | | 1 | | | | | | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | (A-2-6) WITH ROCK | | | 1 1 | | | | | | | | | - Bonng Terminated - CP: SA | at Elevation 132.5 ft IN NDY CLAY | |
| | 209.0 | 23.5 | 5 | 6 | 6 | . 1 | | | | | l w | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | | | | Ţ | | | | | | | | | _ • • | | |
| 005 | | . | | | | / | | | | | | //// | | | | | | | | | | | | | • • | | |
| 205 | 204.0 | 28.5 | 7 | 8 | 10 | · · · / · | | | | | l | | | | | ‡ | | | | | | | | | <u>-</u> | | |
| | | . | , | 0 | 10 | 18 | 3 | | | | W | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | | | | ‡ | | | | | | | | | • | | |
| 200 | 199.0 | 33.5 | | | | -,/ | | | | _ | | | | | | ‡ | | | | | | | | | · - | | |
| | 199.0 | . 55.5 | 2 | 2 | 1 | 4 3 · · · | | | | | W | | | | | † | | | | | | | | | • | | |
| 195 |] | . | | | | | | | | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | Ī | | | | | | | | | • | | |
| | 194.0 | 38.5 | WOH | WOH | 2 | 2 | | | | | l w | | | | | l Ţ | | | | | | | | | - • | | |
| | | . | | | | T | | | | | | //// | | | | 1 1 | | | | | | | | | • • | | |
| 190 | 189.0 | - 43.5 | _ | _ | | | | | | | | //// | | | | | | | | | | | | | - · | | |
| | | . | 3 | 3 | 1 | 4 | | | | | W | //// | | | | ‡ | | | | | | | | | | | |
| 185 | 4040 | · - 40 5 | | | | 1 | | | | | | | | | | ‡ | | | | | | | | | - | | |
| | 184.0 | . 48.5 | 2 | 3 | 3 | ♦ 6· · · | | | | | w | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | | | | ‡ | | | | | | | | | • | | |
| 180 | | . | | | | j:::: | | | | | | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | | | | † | | | | | | | | | • | | |
| | 179.0 | 53.5 | 2 | 3 | 4 | 1 | | | | | l w | | | | | ‡ | | | | | | | | | - · | | |
| | 1 | | | | | • | | | | | " | ****** | | | | | | | | | | | | | • | | |
| 175 | 174.0 | - . 58.5 | | | | | | · | | 1 | | ·/·· | 174.0 | 58. | 5 | | | | | | | | | | - - | | |
| | | | 19 | 34 | 44 | | | | 78 | | М | | GRAY, ORANGE, AND BR TO HARD, SANDY (| ROWN, V. STIFF CLAY (A-6) | | | | | | | | | | | | | |
| 170 |] | <u> </u> | | | | | | . / · · · | | | | | | . , | | | | | | | | | | | - | | |
| | 169.0 | 63.5 | 3 | 12 | 18 | | ●30 · · | | | | М | | | | | ‡ | | | | | | | | | • • | | |
| 165 | | . | | | | | | | | | | | | | | ‡ | | | | | | | | | • • | | |
| 165 | 164.0 | - 68.5 | 13 | 12 | 12 | | / | | | 1 | | | | | | ‡ | | | | | | | | | - · | | |
| | | · | 13 | 12 | 13 | | 25 | | | | W | | | | | ‡ | | | | | | | | | • | | |
| 160 | 159.0 | - _{73 F} | | | | | - \ | · · · · | | 1 | | | | | | ‡ | | | | | | | | | - | | |
| | 109.0 | . 13.5 | 17 | 23 | 28 | | | · · · · · 51 · · · | | | М | | | | | ‡ | | | | | | | | | • | | |
| ال | | . | | | | | /. | | | | | | | | | | | | | | | | | | | | |



9.2

GROUND WTR (ft)

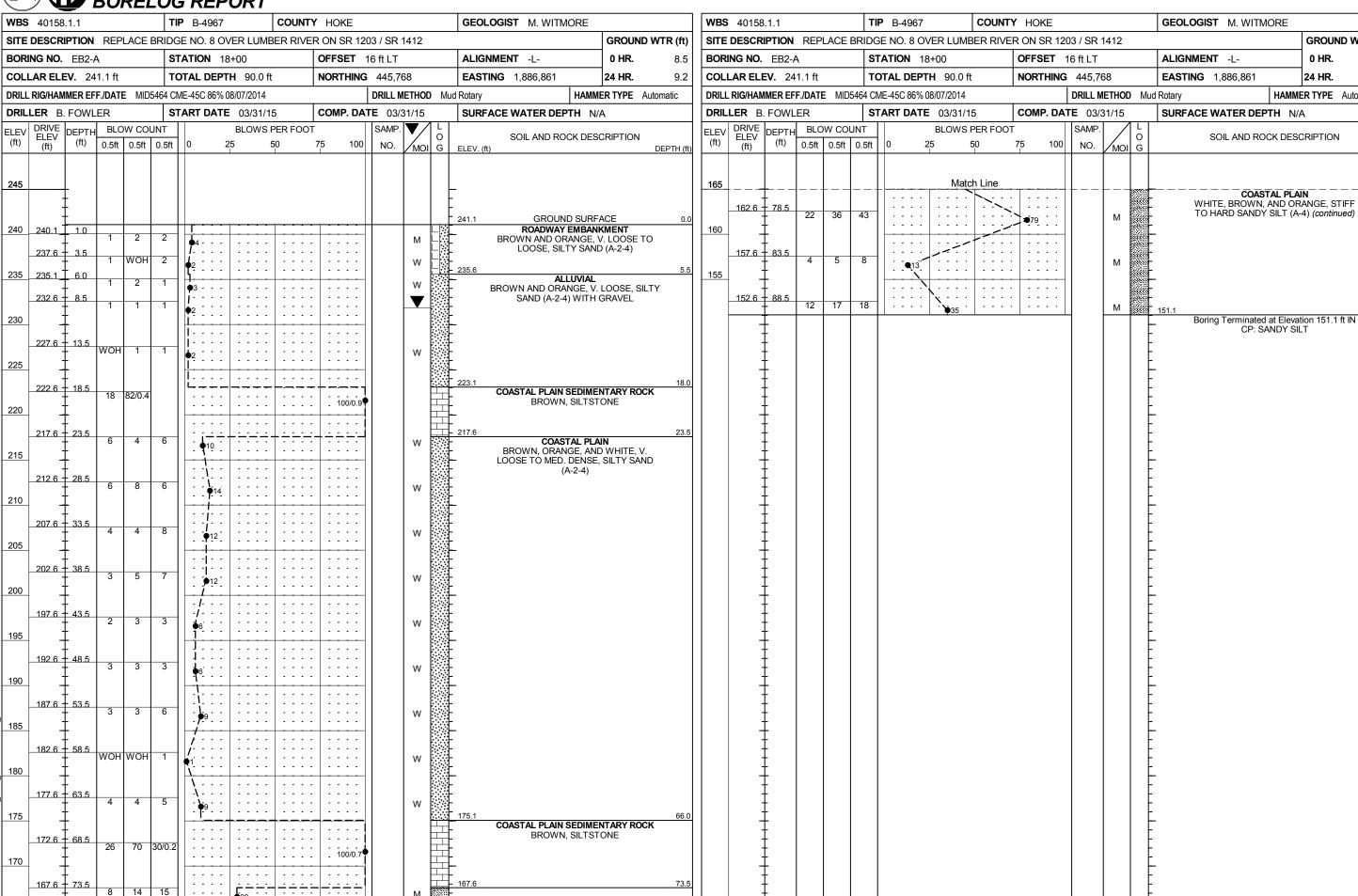
0 HR.

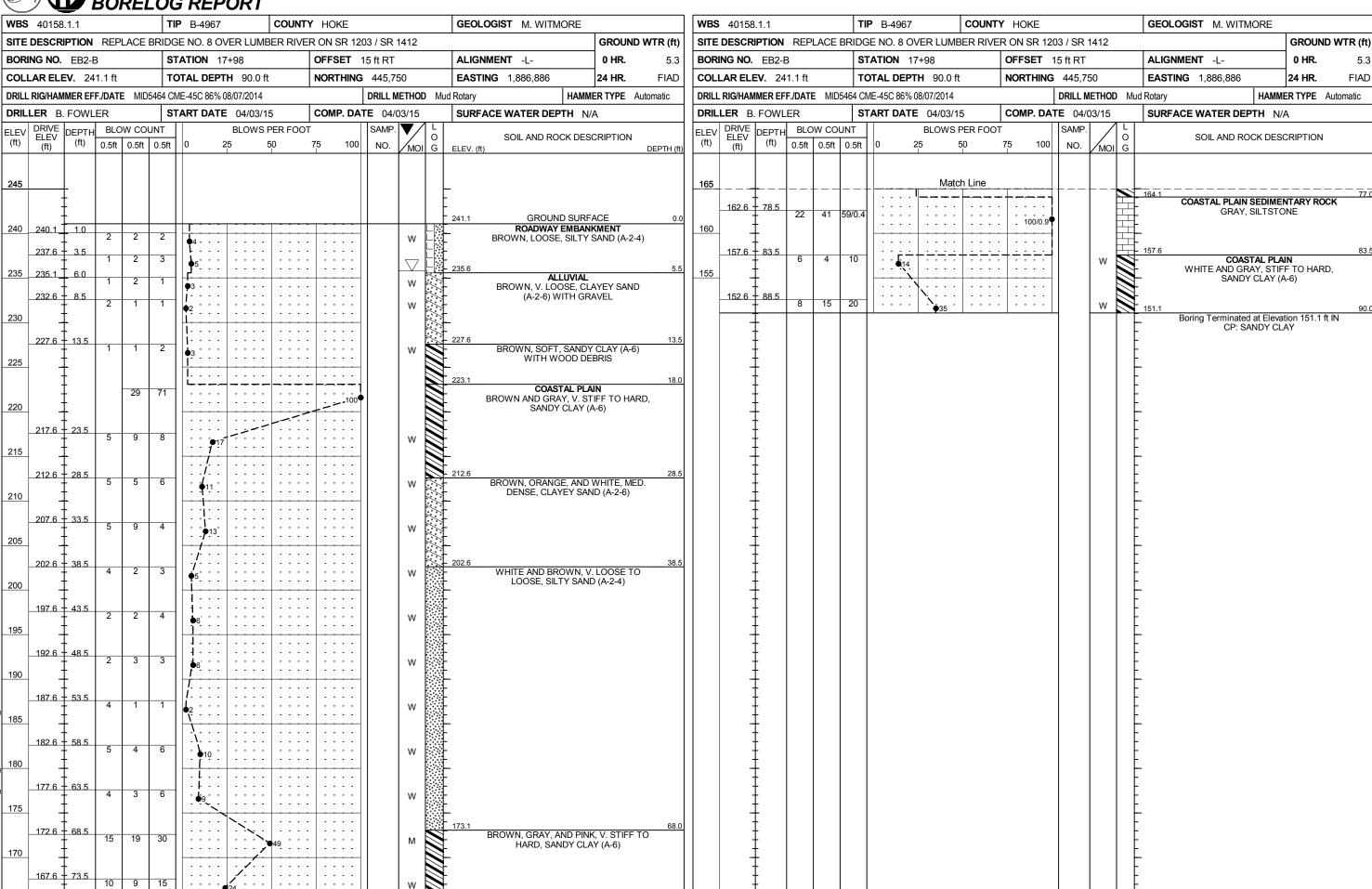
24 HR.

COASTAL PLAIN

CP: SANDY SILT

HAMMER TYPE Automatic











-L-, LOOKING UPSTATION FROM STA. 15+00.

SITE PHOTOGRAPHS

BRIDGE NO. 8 OVER LUMBER RIVER ON SR 1203 / SR 1412 WBS NO.: 40158, TIP NO.: B-4967



AECOM – North Carolina 1600 Perimeter Park Drive, Suite 400 Morrisville, NC 27560 Tel: 919-461-1100 Fax: 919-46-1415