CONTENTS SHEET NO. S Ö REFERENCE S 4

DESCRIPTION

LEGEND (SOIL & ROCK)

ROCK TEST RESULTS

SITE PHOTOGRAPHS

SUPPLEMENTAL LEGEND (GSI)

BORE LOGS, CORE REPORTS & CORE PHOTOGRAPHS

TITLE SHEET

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4-16 17

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY	DAVIDSON	
PROJEC ⁻	T DESCRIPTION	N <u>REPLACE BRIDGE NO. 58</u>
	C 109 OVER	
SITE DE	SCRIPTIONL-	- STA. 20+64

STATE PROJECT REFERENCE NO. 19 B-5777

CAUTION NOTICE

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

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 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.

A. SUTTLE, P.G. C. OSBORNE

INVESTIGATED BY ECS SOUTHEAST, LLC DRAWN BY <u>A</u>. SUTTLE, P.G.

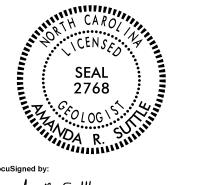
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06/18/2024

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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 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	AGUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
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:	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 WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
GENERAL GRANULAR 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 ROCK (CR) FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE,	SURFACE.
CROUP 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.	UNCLOS, GABBRO, SCHIST, ETC.	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) TIME TO CURRISE ORAIN METAMORPHIC AND NUN-CUASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YELLD 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 0000d0000d Symbol Symbo	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 SOLUTION SILT-	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.
*10 50 MX	GRANULAR SILT - CLAY	WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
IM de IM de IM de IM de IM de IX CE IX CE IX CE IX M CE IX M DI IX M CE IX M C	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	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 48 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	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
CROIR INDEX A A MY O MY 12 MY 16 MY NO MY AMOUNTS OF ORGANIC	GROUND WATER	OF A CRYSTALLINE NATURE. 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 FRACS ORGANIC SUILS	✓ 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 GRAVEL AND SAND GRAVEL AND SAND SOILS 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.
MATERIALS SANU CEN PATINC EAIR TO	─────────────────────────────────────	(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.
AS SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE	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.
P1 OF A-7-5 SUBGROUP IS ≤ LL - 30 : P1 OF A-7-6 SUBGROUP IS > LL - 30		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (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 COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	IF TESTED, WOULD YIELD SPT REFUSAL	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
(TUNS/FI=)	WITH SOIL DESCRIPTION → OF ROCK STRUCTURES	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.
GENERALLY VERY LOOSE < 4 CONTROL CONT	SOIL SYMBOL SOIL SYMBOL SLOPE INDICATOR INSTALLATION	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
GRANULAR MEDIUM DENSE 10 TO 30 N/A MATERIAL DENSE 30 TO 50	ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) VERY DENSE > 50	THAN ROADWAY EMBANKMENT TEST	SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25	— INFERRED SOIL BOUNDARY — CORE BORING SOUNDING ROD	(V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i>	OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.5 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	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
MATERIAL STIFF 8 TO 15 1 TO 2	WITH CORE	SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
	PIEZOMETER SOTI POLINIDADY		
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD > 30 > 4	PIEZOMETER SPT N-VALUE	ALSO AN EXAMPLE.	RUN AND EXPRESSED AS A PERCENTAGE.
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VERY STIFF 15 TO 30	RECOMMENDATION SYMBOLS NSTALLATION	ALSO AN EXAMPLE. ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	RUN AND EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
VERY STIFF 15 TO 30	RECOMMENDATION SYMBOLS UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE SHALLOW SHALLOW SET OF TABLE, BUT NOT TO BE UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF	ALSO AN EXAMPLE. ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED	RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
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VERY STIFF 15 TO 30 2 TO 4 2 T	RECOMMENDATION SYMBOLS UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNDERCUT UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK UNDERCUT	ALSO AN EXAMPLE. ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE	RUN AND EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
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VERY STIFF 15 TO 30 2 TO 4 3 d 3 d 4 d d 4 d d 4 d d 4 d d 4 d d 4 d d 4	RECOMMENDATION SYMBOLS UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK ABBREVIATIONS AR - AUGER REFUSAL BT - BORING TERMINATED MICA MICACEOUS HED MEDOLIM BT - BORING TERMINATED MICA MICACEOUS CL CLAY MOD MODERATELY CPT - CONE PENETRATION TEST CSE COARSE DMT - DILATOMETER TEST MMD - MODERATELY CSE COARSE ORG ORGANIC DMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS	ALSO AN EXAMPLE. ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN	RUN AND EXPRESSED AS A PERCENTAGE. SAPPOLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 U.B. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STANTAL CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATAM AND EXPRESSED AS A PERCENTAGE.
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VERY STIFF 15 TO 30	RECOMMENDATION SYMBOLS UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - UNDERCUT UNCLASSIFIED EXCAVATION - UNSED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL ABBREVIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST WEA WEATHERED CL CLAY MOD MODERATELY 7. UNIT WEIGHT CSE COARSE ORG ORGANIC OMD NODERATELY 7. UNIT WEIGHT CSE COARSE ORG ORGANIC OMD PRESSUREMETER TEST OPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK SILT, SILTY ST - SHELBY TUBE FOSS FOSSILIFEROUS SLI SLIT, SILTY RS - BOCK	ALSO AN EXAMPLE. ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD MODERATELY HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED REDULY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED REDULY WITH POINT OF PICK. PIECES I INCH OR MODER IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING BEDDING	RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF FORCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
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VERY STIFF 15 TO 30 2 TO 4 3 4 4 4	RECOMMENDATION SYMBOLS UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL ABBREVIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY CPT - CONE PENETRATION TEST NP - NON PLASTIC CSE COARSE ORGANIC DMT - DILATIONETER TEST PMT - PRESSUREMETER TEST DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC E - VOID RATIO F - FINE SL SILT, SILTY FOSS FOSSILIFEROUS SLI SLIGHTLY RS - SHELBY TUBE FOSS FOSSILIFEROUS SLI SLIGHTLY FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL FRAGS FRAGMENTS W - MOISTURE CONTENT CRE - 45C CME - 45C CME - 55 UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILD ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILD SEED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL VST - VANE SHEAR TEST WEA WEATHERED Y - UNIT WEIGHT Y - UNIT WEIGHT ST - SHELBY INTON SS - SPLIT SPOON SS - SPLIT SPOON SS - SPLIT SPOON SS - SPLIT SPOON FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL FRAGS FRAGMENTS W - MOISTURE CONTENT CRE - CALIFORNIA BEARING HILL UNITS: ADVANCING TOOLS: HAMMER TYPE: X AUTOMATIC MANUAL CME - 55	ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. FRACTURE SPACING VERY WIDE MODERATELY CLOSE 1 TO 3 FEET VERY THICKLY BEDDED 1.5 - 4 FEET WIDE MODERATELY CLOSE 1 TO 3 FEET THICKLY BEDDED 0.16 - 1.5 FEET VERY THICKLY BEDDED 0.16 - 1.5 FEET THICKLY BEDDED 0.40 - 2.03 FEET THICKLY LAMINATED C.0008 FEET	RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: BM-I (NT37693 EI673323) STA. 23+07, 121' RT ELEVATION: 779.6 FEET NOTES: ROADWAY DESIGN FILES, .DTM FILE PROVIDED BY NCDOT.
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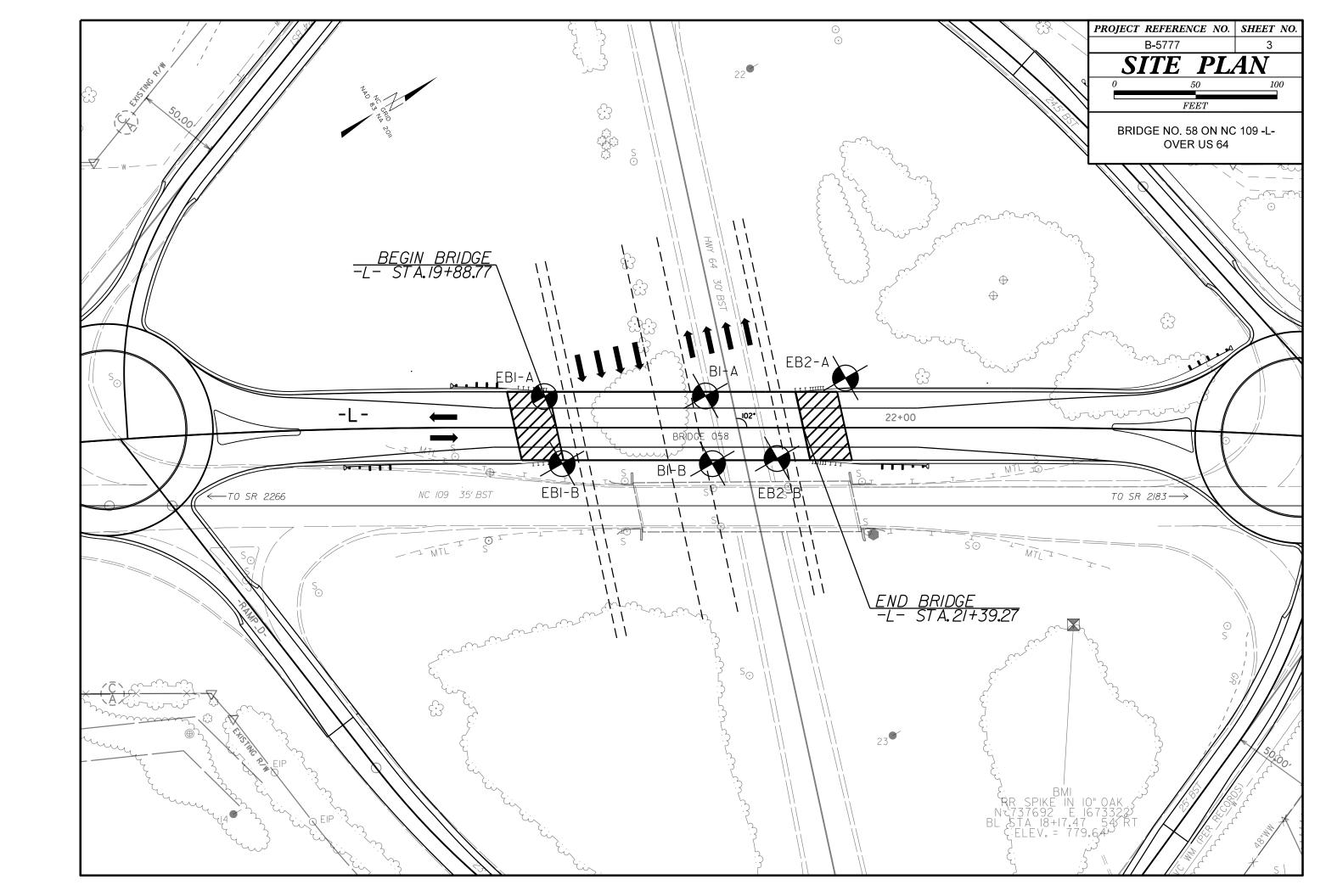
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

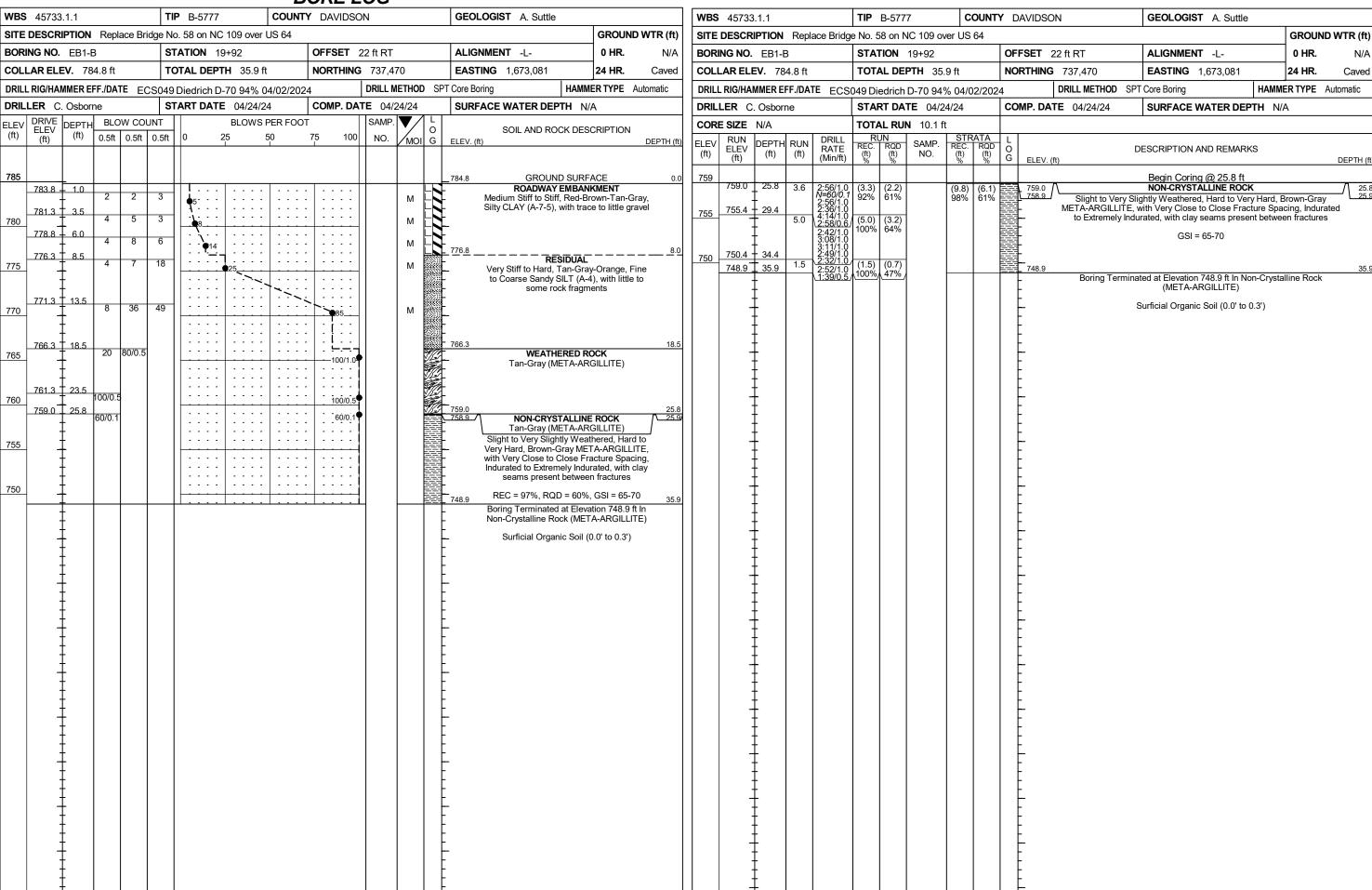
SUPPLEMENTAL LEGEND, GEOLOGICAL STRENGTH INDEX (GSI) TABLES

FROM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AASHTO LRFD Figure 10.4.6.4-2 — Determination of GSI for Tectonically Deformed Heterogeneous Rock Masses (Marinos and Hoek, 2000) AASHTO LRFD Figure 10.4.6.4-1 — Determination of GSI for Jointed Rock Mass (Marinos and Hoek, 2000) GEOLOGICAL STRENGTH INDEX (GSI) FOR GSI FOR HETEROGENEOUS ROCK MASSES SUCH JOINTED ROCKS (Hoek and Marinos, 2000) AS FLYSCH (Marinos, P and Hoek E., 2000) From a description of the lithology, structure and VERY POOR - Very smooth, slicken-sided or highly weathered surfaces with soft clay coatings or fillings From the lithology, structure and surface athered surf or fillings smooth, occasionally surfaces with compaci fillings with angular and conditions of the discontinuities, estimate the average value of GSI. Do not try to surface conditions (particularly of the bedding planes), choose a box in the chart. Locate the ed fill be too precise. Quoting a range from 33 to 37 is more realistic than stating that GSI = 35. Note that the table does not planes) 0 weather position in the box that corresponds to the condition weathered of the discontinuities and estimate the average value of GSI from the contours. Do not attempt to be too apply to structurally controlled failures. Where weak planar structural planes are present in an unfavorable orientation weathered, precise. Quoting a range from 33 to 37 is more realistic than giving GSI = 35. Note that the highly wea coatings ragments bedding slightly SURFACE CONDITIONS (DISCONTINUITIES Predominantly beddir Hoek-Brown criterion does not apply to structurally with respect to the excavation face, CONDITIONS these will dominate the rock mass controlled failures. Where unfavourably oriented behaviour. The shear strength of surfaces continuous weak planar discontinuities are present, POOR censided, hig soft clay o in rocks that are prone to deterioration slightly es Rough, s these will dominate the behaviour of the rock mass. POOR Slickensided, h with compact or angular fra as a result of changes in moisture content will be reduced if water is POOR - Very s slickensided coatings or f fragments GOOD -thered The strength of some rock masses is reduced by the GOOD rough, presence of groundwater and this can be allowed for present. When working with rocks in the by a slight shift to the right in the columns for fair, fair to very poor categories, a shift to the right may be made for wet conditions. SURFACE th, r FAIR - Weather GOOD Rough, s surface poor and very poor conditions. Water pressure does VERY I VERY Very VERY Slick With Water pressure is dealt with by effective not change the value of GSI and it is dealt with by FAIR Smoo alter stress analysis. using effective stress analysis. S I G STRUCTURE DECREASING SURFACE QUALITY COMPOSITION AND STRUCTURE INTACT OR MASSIVE - intact A. Thick bedded, very blocky sandstone 90 rock specimens or massive in 7Ó N/A N/A The effect of pelitic coatings on the bedding situ rock with few widely spaced planes is minimized by the confinement of PIECES discontinuities the rock mass. In shallow tunnels or slopes these bedding planes may cause structurally 80 controlled instability. 60 BLOCKY - well interlocked un-70[′] disturbed rock mass consisting of cubical blocks formed by three intersecting discontinuity sets 50 n. Syltstone F. Weak B. Sand C. Sand-60 or silty shale siltstone stone with stone and thin inter siltstone with sandor clayey С shale with layers of ın sımılar stone layers VERY BLOCKY - interlocked. OCKING sands tone siltstone 40 partially disturbed mass with 50 multi-faceted angular blocks formed by 4 or more joint sets INTERL C. D. E. and G - may be more or F. Tectonically deformed, BLOCKY/DISTURBED/SEAMY -30 less folded than illustrated but intensively folded/faulted, folded with angular blocks this does not change the strength. sheared clayey shale or siltstone formed by many intersecting Tectonic deformation, faulting and with broken and deformed CREASING loss of continuity moves these discontinuity sets. Persistence sandstone layers forming an 30 categories to F and H. of bedding planes or schistosity almost chaotic structure 20 DISINTEGRATED - poorly interlocked, heavily broken rock mass $\bar{\mathbb{H}}$ 20 l. Tectonically deformed silty with mixture of angular and or clayey shale with or clayey shale forming a 10 rounded rock pieces or without a few very chaotic structure with pockets thin sandstone layers of clay. Thin layers of sandstone are transformed nto small rock pieces. 10 LAMINATED/SHEARED - Lack of blockiness due to close spacing N/A N/A → Means deformation after tectoric disturbance of weak schistosity or shear planes DATE: 8-19-1



								B	ORE L	OG							
WBS	45733	3.1.1			TI	I P B-5777		COUNTY	/ DAVIDSC	N			GEOLOGIS	T A. Suttle			
SITE	DESCR	IPTION	Rep	lace B	ridge N	o. 58 on NC	109 over L	JS 64								GROUN	ID WTR (ft
BORI	NG NO.	EB1-	A		S ⁻	TATION 19-	⊦ 81		OFFSET	19 ft LT			ALIGNMEN	T -L-		0 HR.	36.3
COLL	AR ELI	EV . 78	31.9 ft		T	OTAL DEPTH	d 38.7 ft		NORTHING	737,4	81		EASTING	1,673,040		24 HR.	Caveo
DRILL	RIG/HA	MMER E	FF./DA	TE E	CS049	Diedrich D-7	70 94% 0	4/02/2024	4	DRILL N	IETHOL) H.S	. Augers		HAMME	RTYPE	Automatic
DRILI	LER C	. Osbor	ne		S ⁻	TART DATE	04/24/24	4	COMP. DA	TE 04/	24/24		SURFACE	WATER DEF	PTH N/A	١	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	OW CO		0 25		PER FOOT	75 100	SAMP. NO.	MOI	L O G	ELEV. (ft)	SOIL AND RO	OCK DESC	RIPTION	l DEPTH (1
785	-												-				
	780.9	1.0											781.9	GROUN	ID SURFA EMBANK		0
780	_	+	4	4	4	8			+		М		- т	Medium S an-Red-Oran	tiff to Very	/ Stiff,	Y
	778.4	3.5	3	4	6	10		: : : :			М			(A-7-5/A-7-6)), with trac	e gravel	
775	775.9	6.0	9	8	9			: : : :			M						
	773.4	8.5				1/1			 - - · · ·		l IVI		773.9		SIDUAL		8
		Ŧ	18	40	43				83		М		Hai	rd, Tan-Gray, (A-4), with so	Fine to Co	oarse Sai	ndy
770	_	‡							1				- JIL1		seams	agments	, ciay
-	768.4	13.5	19	20	19	: : : :	39	 			М						
765	-	‡															
700	763.4	18.5					· · · ·						- 763.4				18
		1	18	82/0.3	3		: : :	T T T T T	100/0.8	•				WEATH Tan-Gray (M	IERED RO		
760	-	‡					· · · ·						_	ran Olay (ii		, , , , , , , , , , , , , , , , , , ,	
-	758.4	23.5	25	39	61/0.2												
	-	ł	23	33	01/0.2	::::			100/0.7	'							
755	_	+							 				- 753.9				28
	753.4	28.5	17	45	39	::::		: : : :	84		М			RE rd, Tan-Gray,	SIDUAL Fine to Co	arse Sa	
750	-	Ŧ						: : : :				F		T (A-4), with			
	748.4	33.5	<u> </u>	L					<u> </u>			F	- 747.9				34
		Ŧ	11	51	49/0.4				100/0.9	,			7 11.0		ERED RO		
745	_	‡									\vdash		=	Gray-Tan (M	IE I A-ARC	JILLII E)	
	743.3	38.6	60/0.1	1	+				60/0.1	\dashv		97/2	743.3 743.2	NON-CRYS	TALLINE	ROCK	38 /_38
		‡		1									<u> </u>	Gray (ME Boring Termir	TA-ARGIL	LITE)	
	-	‡												tration Test R	efusal at E	Elevation	
		‡												ft In Non-C (META	-ARGILLI		
	-	‡											_	Surficial Orga	nic Soil (0	.0' to 0.3')
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SHEET 4

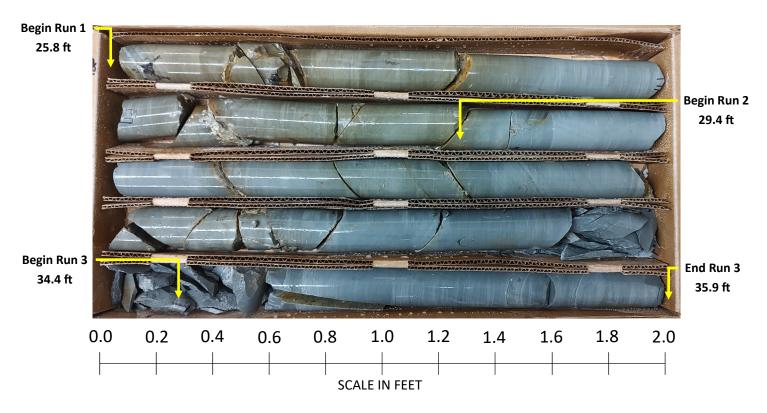




WBS - 45733.1.1 TIP No. B-5777

Rock Core Photographs: Boring - EB1-B

Station: 19+92 Offset: 22' RT



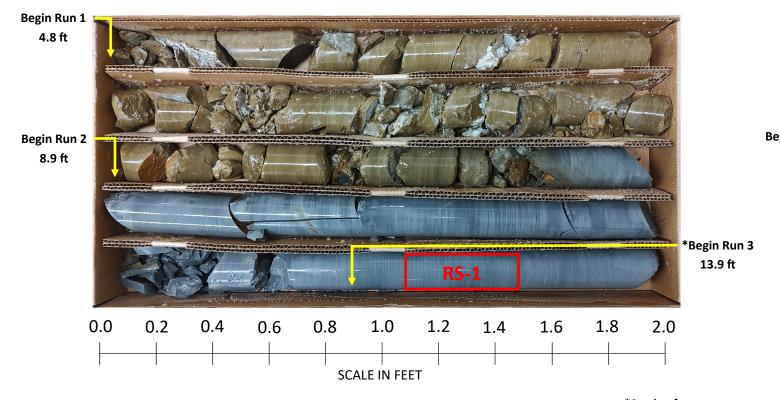
		BURE LUG	1										
WBS 45733.1.1	TIP B-5777 COUN	ITY DAVIDSON	GEOLOGIST A. Suttle		-	S 45733.1.1		TIP B-57			Y DAVIDSON	GEOLOGIST A. Suttle	
SITE DESCRIPTION Replace Brid	<u> </u>	<u> </u>		GROUND WTR (ft)	-	E DESCRIPTION	•	`		US 64	1		JND WTR (ft)
BORING NO. B1-A	STATION 20+80	OFFSET 19 ft LT	ALIGNMENT -L-	0 HR . N/A	BOR	RING NO. B1-A	1	STATION	20+80		OFFSET 19 ft LT	ALIGNMENT -L- 0 HF	. N/A
COLLAR ELEV. 767.5 ft	TOTAL DEPTH 21.0 ft	NORTHING 737,567	EASTING 1,673,089	24 HR. FIAD		LAR ELEV. 7			EPTH 21.0 f		NORTHING 737,567	EASTING 1,673,089 24 HF	. FIAD
DRILL RIG/HAMMER EFF./DATE EC	S049 Diedrich D-70 94% 04/02/2	024 DRILL METHOD SP	T Core Boring HAMM	ER TYPE Automatic	DRIL	L RIG/HAMMER E	FF./DATE ECS	S049 Diedric	h D-70 94% (04/02/202	24 DRILL METHOD S	PT Core Boring HAMMER TYP	Automatic
DRILLER C. Osborne	START DATE 05/01/24	COMP. DATE 05/01/24	SURFACE WATER DEPTH N/	A	DRIL	LLER C. Osbo	rne	START D	ATE 05/01/2	24	COMP. DATE 05/01/24	SURFACE WATER DEPTH N/A	
ELEV DRIVE DEPTH BLOW COU		10 7 10 1	SOIL AND ROCK DES	CRIPTION	COR	RE SIZE N/A		TOTAL RU	JN 16.2 ft				
(ft) (ft) (ft) 0.5ft 0.5ft	0.5ft 0 25 50	75 100 NO. MOI G	ELEV. (ft)	DEPTH (ft)	ELEV	RUN DEPTH	RUN DRILL RATE	RUN REC. RQD (ft) (ft) %	SAMP. R	STRATA EC. RQD (ft) (ft) % %	L	DESCRIPTION AND REMARKS	
					(ft)	(ft) (ft)	(ft) RATE (Min/ft)	(ft) (ft) % %	NO.	(ft) (ft) % %	G ELEV. (ft)		DEPTH (ft)
770			_		762.7	762.7	4 4 4 0 4 / 4) (4.4) (0.4)		- 1) (0.4)		Begin Coring @ 4.8 ft	
			- - 767.5 GROUND SURF		760	102.7 + 4.8	4.1 4:24/1.0 4:17/1.0	0 (4.1) (0.4)	9:	5.4) (0.4) 5% 7%	META-ARGILLITE	Slightly Weathered, Medium Hard to Hard, Brov , with Very Close to Close Fracture Spacing, Ex	rn 4.8 tremely
766.5 + 1.0 20 57 4	3/0.3		- WEATHERED R Gray (META-ARGI		700	758.6 + 8.9	3:52/1.0 4:26/1.0	וו ו			Indurate	d, with clay seams present between fractures	
764.0 3.5		100/0.8				‡	5.0 \ <u>0:52/0.1</u> 5:32/1.0	1 (4.7) (1.9) 94% 38%		0.5) (7.5)	757.0	GSI = 20-25	10.5
762.8 4.7 14 86/0.5 60/0.1			762.8 762.7_/\NON-CRYSTALLINE	4.7 E ROCK \(\sum_4.8\)	755		5.0 \(\text{0.52/0.1} \) 5.0 \(\text{0.52/0.1} \) 5.32/1.0 \(\text{6.42/1.0} \) 5.32/1.0 \(\text{5.27/1.0} \) 5.42/1.0		10	0.5) (7.5) 00% 71%	Close to Mode	nthered, Very Hard, Gray META-ARGILLITE, wit rately Close Fracture Spacing, Extremely Indura	ted
760			 Gray (META-ARGI Moderate to Slightly Weath 			753.6 + 13.9	5:42/1.0	(5.0) (3.8)	RS-1			GSI = 60-65	
±			Hard to Hard, Brown MET.	A-ARGILLITE,	750		2:12/1.0	0 100% 76%				RS-1: 14.1' - 14.5'	
		· · · · · · · 	with Very Close to Close Fr Extremely Indurated, with	clay seams	750	748.6 + 18.9	1:56/1.0				Unconfined	Unit Weight = 172.6 pcf I Compressive Strength = 10,770 psi / 1,551 kst	
755			present between fra	1 1		746.5 + 21.0	2.1 1:43/1.0	(2.1) (1.8) 100% 86%			746.5		21.0
		·· ···· RS-1	REC = 95%, RQD = 7%, Very Slightly Weathered, V			1 10.0 21.0	1.0771.0	2 100 % 00 %	1		Boring Termi	nated at Elevation 746.5 ft In Non-Crystalline Ro (META-ARGILLITE)	ck
750			META-ARGILLITE, with \ Moderately Close Fractu	/ery Close to		1 1						,	
		1 11 1 1 1 1	Extremely Indura	ated		1 1					-	Surficial Organic Soil (0.0' to 0.1')	
			- 746.5 REC = 100%, RQD = 71%			1 +					NOTE: Unable to r	ecover portion of rock core from Run 2 due to frock, section recovered during Run 3.	actured
‡			Boring Terminated at Eleva Non-Crystalline Rock (MET	Ation 746.5 ft In A-ARGILLITE)		1 1							
			Surficial Organic Soil (0.0' to 0.1')		 							
			NOTE: Unable to recover	portion of rock		l Ŧ					F		
‡			core from Run 2 due to fr section recovered duri	actured rock,		 					F		
			-	ng rtair o.		1 +					 -		
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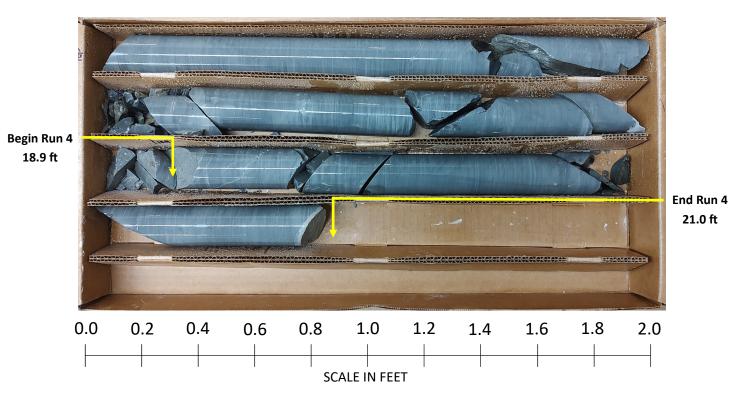


WBS - 45733.1.1 TIP No. B-5777

Rock Core Photographs: Boring - B1-A

Station: 20+80 Offset: 19' LT





*See log for note

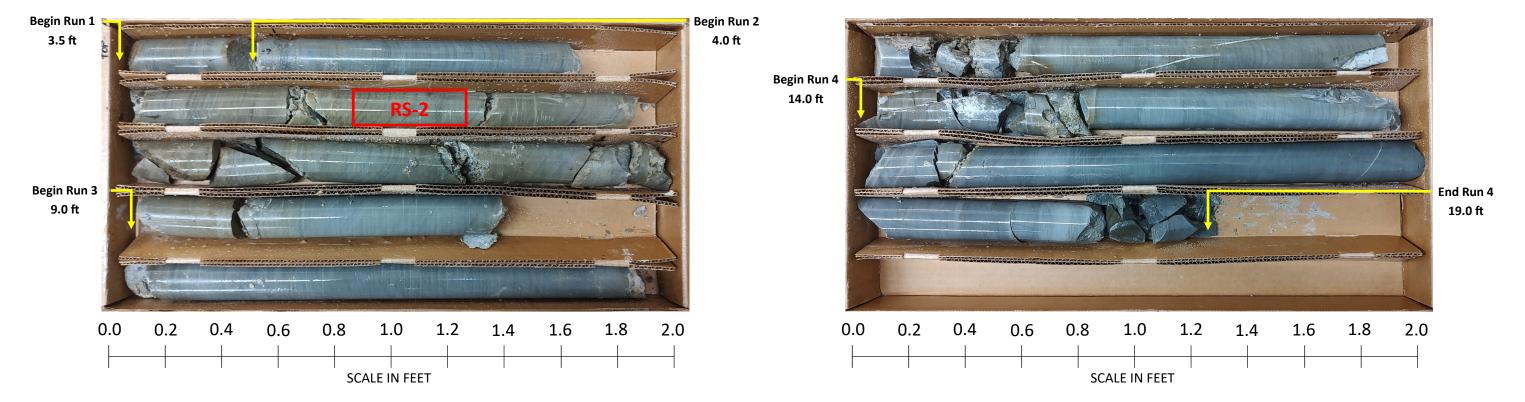
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WB	3 4573	3.1.1			TIP I	3-5777		CC	OUNTY	DAVIDS	ON			GEOL	OGIST A	A. Suttle	;				WBS	3 45733	3.1.1			TIP	B-577	7	C	OUNT	/ DAVID	SON		GEOLO	GIST A. Su	ttle	
SITI	DESC	RIPTION	Repla	ce Bridg	e No. 58	3 on NC	109 ove	er US 6	64									GROU	ND WTR	(ft)	SITE	DESCR	IPTION	Repl	ace Brid	dge No.	58 on N	NC 109 d	over US	64						GRO	UND WTR (ft)
BOF	RING NO	. B1-B			STAT	ON 20)+84			OFFSET	22 ft R	Т		ALIGN	MENT -	L-		0 HR.		N/A	BOR	RING NO.	B1-B			STA	ATION	20+84			OFFSET	22 1	ft RT	ALIGNI	MENT -L-	0 HI	R. N/A
COL	LAR EL	EV . 76	8.1 ft		TOTA	L DEPT	H 19.0) ft		NORTHIN	G 737,	550		EAST	NG 1,67	3,127		24 HR.	Ca	ved	COL	LAR EL	EV . 76	8.1 ft		тот	TAL DE	PTH 19	9.0 ft		NORTHI	NG 7	737,550	EASTIN	IG 1,673,12	7 24 H I	R. Caved
DRI	L RIG/HA	MMER E	FF./DAT	E ECS	049 Die	drich D	-70 94%	6 04/0						T Core Bo	ing		HAMM	ER TYPE	Automat	ic	DRIL	L RIG/HA	MMER E	FF./DA	TE EC	S049 D	iedrich	D-70 94	4% 04/	02/2024	1	DI	RILL METHOD	SPT Core Borin	g	HAMMER TYP	E Automatic
	LER (<u> </u>	T DATE	04/30			COMP. D			4	SURF	ACE WAT	ER DEF	PTH N/	A				LER C		ne				TE 04/			COMP.	DATE	04/30/24	SURFA	CE WATER I	DEPTH N/A	
ELE\ (ft)	DRIVE ELEV	DEPTH (ft)	BLO\	0.5ft 0.			BLOW 25	'S PER 50		<u>7</u> 5 10		•. ▼/	0			AND RO	OCK DES	CRIPTION				RE SIZE				ТОТ	AL RU	N 15.5		DATA							
(10)	(ft)	(1.5)	0.511	0.511 0.	.511 0		23 	JU		5 10	0 NO.	/MC	OI G	ELEV. (ft					DEP ⁻	ΓΗ (ft)	ELEV (ft)	LLLV	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC.	RUN . RQD (ft) %	SAMP. NO.	REC.	RATA RQD (ft) %	O			DESCRIPTION	ON AND REM	ARKS	
																						(ft)	(,	(,	(Min/ft)	:) %	%	110.	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	%	G _{ELE}	V. (ft)					DEPTH (ft)
770		+											1	-			ID OLIDE	405			764.6	764.6	1 3.5	0.5	3:35/0.	5 (0.5)	(0.4)		(15.5) (11.6) 5 75%	- 764 .	.6	Slight to V	erv Sliahtly W	Coring @ 3.5 eathered, Hard	to Very Hard, Grav	3.5
	767.1	1.0	100/0.0										7/3	768.1		WEATH	ID SURF	OCK		0.0		704.1	1 4.0 ·	5.0	3:35/0.3 3:39/1. 2:42/1. 2:52/1. 2:36/1.	0 100%	6 80% (3.7)	RS-2	1	75%		S				derately Close Frac s present between f	
765	764.7	3.4	100/0.2							100/0.2	1			_764.7		`	ra-argii	,		3.4	760	759 1	9.0		2:36/1.0 2:25/1.0	0 100%	74%	K5-2	1					(SSI = 65-70		
		‡	60/0.1							60/0.	'T			764.6/\	Tan	-Gray (M	STALLINE META-AR	GILLITE)	- 1	3.5/			†	5.0	3:17/1.0 3:24/1.0	0 (5.0) 0 100%	(4.0)							RS	S-2: 6.2' - 6.6'		
760		‡									RS-2	2		•	Slight to \ Very Hard Very Clos	/ery Slighd. Grav N	htly Weat	hered, Ha	ard to with		755		Ŧ		3:33/1.0 3:37/1.0	0							Unconfir	Unit W ed Compress	eight = 169.3 إ ive Strength =	ocf 4,590 psi / 661 ksf	
700	1 .	‡									1			<u> </u>	Very Clos	se to Mod Extreme	derately (elv Indura	Close Fractited, with	cture clav			754.1	14.0	5.0	3:28/1.0 3:24/1.0 3:37/1.0	οl	(3.5)										
		‡			- -									•				n fracture					Ŧ		3:39/1.0	0	6 70%										
755		‡			- 1 ⊢-				· · ·		-{			_	REC = 1	00%, RQ	QD = 75%	, GSI = 6	5-70		750	749.1	19.0		3:41/1.0 3:33/1.0	0					749.	.1					19.0
		Ŧ			- -			. .						•									‡								-		Boring Term	Inated at Eleva (ME)	ration 749.1 ft in FA-ARGILLITE	Non-Crystalline Ro	OCK
750] .	‡			111						<u> </u>									40.0		_	‡								L.			Surficial Or	ganic Soil (0.0'	to 0.1')	
		‡									+			749.1	Boring Te	erminated	d at Eleva	tion 749.	1 ft In	19.0			‡														
		‡													Non-Cryst								‡														
		‡												-	Surtic	iai Orgai	nic Soii (i	0.0' to 0.1	')			-	Ŧ								F						
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WBS - 45733.1.1 TIP No. B-5777

Rock Core Photographs: Boring - B1-B

Station: 20+84 Offset: 22' RT



14/20										JKE I				1050						1					1											
	45733				_	P B-577				DAVIDS	SON			GEO	LOGIST	A. Sutt	le	T		!	S 4573					B-577				Y D	AVIDSON	N	GEOLOGIST A. Suttle			
-				ace Br		o. 58 on N		over US										GROUND		l				lace Bridg					S 64						OUND WTR	
BOR	NG NO	EB2-	A		S ⁻	TATION	21+66			OFFSET	30 ft	LT		ALIG	NMENT	Γ -L-		0 HR.	Dry	BO	RING NO	. EB2-	Α		STA	TION	21+66			OFF	SET 30) ft LT	ALIGNMENT -L-	01	IR. [Dry
COL	AR EL	EV . 77	75.2 ft		T	OTAL DEF	PTH 19	9.8 ft		NORTHIN	IG 73	7,647		EAST	TING 1	1,673,122		24 HR.	Dry	CO	LAR EL	. EV . 7	75.2 ft		TOT	AL DE	PTH 1	19.8 ft		NOI	RTHING	737,647	EASTING 1,673,122	24 I	IR. [Dry
DRIL	RIG/HA	MMER E	FF./DA	TE E	CS049	Diedrich	D-70 94	4% 04/0	2/2024		DRIL	L METH	OD N	N Casing v	w/ Advano	cer	HAM	IMER TYPE A	utomatic	DRII	L RIG/HA	MMER E	FF./DA	TE ECS	049 Di	iedrich	D-70 9	4% 04	/02/202	4	1	DRILL METHOD N	W Casing w/ Advancer	HAMMER TY	PE Automation	ic
DRIL	LER (. Osbor	ne		S	TART DAT	Γ E 04/	18/24		COMP. D	ATE	04/22/24	4	SURF	FACE W	VATER D	EPTH I	V/A		DRI	LLER (C. Osbo	rne		STA	RT DA	TE 04	/18/24		COI	MP. DATI	E 04/22/24	SURFACE WATER DE	PTH N/A		
ELEV	DRIVE ELEV	DEPTH	BLO	w co	UNT		BLO	WS PER	RFOOT		SAI	MP.	\ L	,	9/		OCK DE	SCRIPTION		co	RE SIZE	N/A			тот	AL RU	N 5.0	ft					-			
(ft)	(ft)	(ft)		0.5ft	0.5ft	0	25	50	7	'5 10	0 N	o. / _M	OI G	ELEV. (1		OIL AND F	OCK DE	SCRIPTION	DEPTH (ft	ELE'	/ RUN ELEV	DEPTI	RUN	DRILL RATE	R	RUN	SAMF	S	RATA	L						
																				(ft)	(ft)	(ft)	(ft)	(Min/ft)	(ft)	RUN RQD (ft) %	NO.	(ft)	C. RQD	O G	ELEV. (ft)	1	DESCRIPTION AND REMAR	IKS	DEPT	TH (ft)
780																				7600	4												Begin Coring @ 14.8 ft			
		‡												_						780	760.4	14.8	5.0	1:24/1.0 2:32/1.0	(2.7)	(0.0)		(2.7 54%	(0.0) (0.0)		760.4	Mandanata ta Olimbi	NON-CRYSTALLINE ROC	K FA ADOULITE	:41- \ /	14.8
		‡												<u> </u>								+		1 3:14/1.0)	0%		347	0 0%			Close to Close Fra	ly Weathered, Hard, Gray ME∃ acture Spacing, Extremely Indi	urated, with clay	with very s seams	
775	7740	<u> </u>				—					4		-	775.2			JND SUF	RFACE INKMENT	0.0		755.4	19.8		3:52/1.0 4:28/1.0)						755.4		present between fracture	s		19.8
	774.2	1.0	3	3	3	6	-					М			_	M	edium St	iff,				Ŧ									- \	Poring Tormi	GSI = 20-25 nated at Elevation 755.4 ft In N	lon Crystallina	Pook	
	771.7	3.5	4	2	3		.				1 1	l M		_	Orang (A	ge-Tan-Re 4-7-5), with	d-Brown- ı trace to	Gray, Silty CLA some gravel	ΑY			‡									•	Bornig remin	(META-ARGILLITE)	ion-orystalline	NOCK	
770	769.2	T 6.0		_		6 5					+	l IVI		_	,			· ·				‡									-		Surficial Organic Soil (0.0' to	0.3')		
		Į	4	7	28			35				М		767.2					8.0			<u> </u>								1 -		NOTE 1: Casing	Advancer used from 14.1' to 14	1.8' due to auge	r refusal.	
765	766.7	+ 8.5 +	12	49	51/0.3		.		7.7.			М	F	F	Hard		OCKY FI	LL* to Coarse Sand		1		<u> </u>										Unable to confi	rm spoon refusal due to mate	rials cored into	casing.	
100	-	‡								100/0.8				-				ravel, trace cla				\pm									-	NOTE 2: Boring t	erminated prematurely at a de	pth of 19.8' due	to water	
	761.7	† <u>13.5</u>					.							- - 761.7					13.5			Ŧ									•	circulation issu Unabl	e which caused core barrel to e to obtain Run 2 core sample	tuse with inner from barrel.	parrel.	
760		Ī	43	57/0.1			-			100/0.6	6		VIII	760.4	٦		FTA-AR	ROCK GILLITE)	14.8			Ŧ								1 1	•					
		†					.									NON-CR	YSTALLI	NE ROCK				‡									-					
		Ŧ					.	.			il –			F	MET	TA-ARGILI	_ITE. with	hered, Hard, G n Very Close to				‡														
	-	‡						-			4			755.4	_ Clo	ose Fractu	re Spacii	ng, Extremely	19.8			Ţ								1 -	_					
		‡												-		betv	een frac	eams present tures				<u>+</u>														
		‡												-				%, GSI = 20-25				Ŧ								1						
	-	‡												_	Boring Non-C	g Terminat Crystalline	ted at Ele Rock (Mi	vation 755.4 ft ETA-ARGILLIT	In E)			Ŧ								1 -	_					
		<u> </u>												E	Sı	urficial Ord	anic Soil	(0.0' to 0.3')	•			Ŧ								1 1	•					
		†												-		·		,	1.41			‡														
	-	Ŧ												F	to 14	4.8' due to	auger ref	er used from 14 fusal. Unable to)			‡								1	-					
		‡												-	conf		refusal d d into ca	lue to materials sing.	5			İ								1 -						
	_	‡												_	NOTE	2. Boring	terminate	ed prematurely	at			+														
		‡												_	a de	pth of 19.8	due to	water circulatio	n			Ŧ									-					
		ŧ												_		barrel. Un	able to ol	barrel to fuse w btain Run 2 coi				‡									•					
	-	Ŧ												F		samp	ole from b	parrel.				‡									-					
		Ŧ												F								‡								1						
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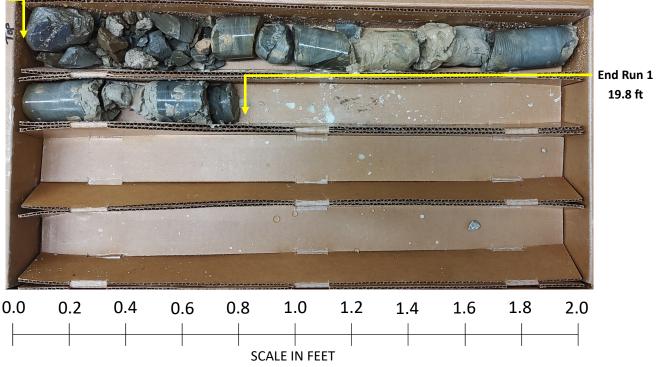


WBS - 45733.1.1 TIP No. B-5777

Rock Core Photographs: Boring - EB2-A

Station: 21+66 Offset: 30' LT

Begin Run 1 14.8 ft



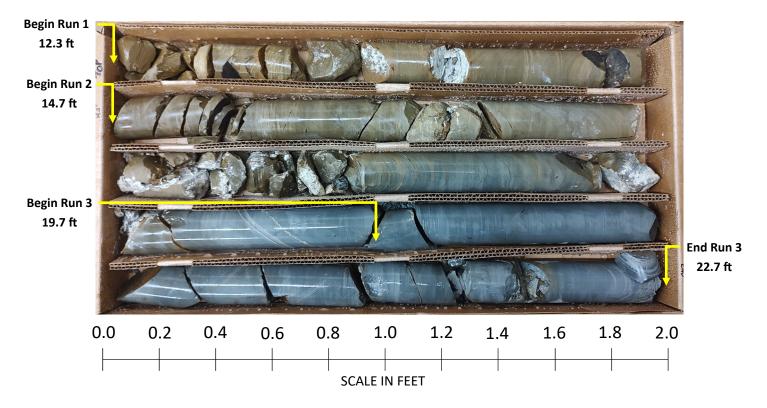
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	4573					B -577				NTY	DAVIDS	ON			GEC	OLOGIS	ST A.S	uttle	1_			 	3 4573						B-577			COUN	TY D	AVIDS	NC			GEOLO	GIST A. S	uttle			
-				ace Bri	-	58 on N			JS 64						_					ROUND V		l					e Bridg	_			9 over l	JS 64	_								_	ND WTF	
		. EB2-	. ,		-	ATION					FFSET						NT -L-			HR.	N/A	l	RING NO			<u> </u>		+	NOITA				_	FSET					ENT -L-		0 HR.		N/A
		. EV . 7				TAL DEF					ORTHIN						1,673,1			HR.	N/A	ł	LAR E								22.7 ft			RTHING					G 1,673,12	22	24 HR.		N/A
				TE EC		Diedrich							L METHO							TYPE Aut	omatic	1 -				DATE	ECS	049 D	Diedrich	n D-70	94% 0	4/02/20	_			L METHOD	NW Ca	asing w/ A	dvancer	HAN	MER TYPE	Automa	tic
		C. Osbo				ART DAT					OMP. DA				SUR	RFACE	WATER	DEPTH	N/A			ł	LER					STA	ART DA	TE	04/23/24	1	co	MP. DA	TE (04/23/24		SURFAC	E WATER	DEPTH	N/A		
ELEV (ft)	ELEV	DEPTI	0.5ft	W COL	JNT			OWS F		OOT 75	100		MP.	0			SOIL AN	D ROCK [DESCRI			COF	RE SIZE					1	TAL RU			TDATA	1										
(11)	(ft)	(11)	0.511	0.511	0.511	0	25		50	73	100	No). /M) G	ELEV.	(ft)					DEPTH (ft	ELE\ (ft)	, RUN ELE\	DEP (ft	TH RU	7/ I	DRILL RATE	REC.	RUN RQD (ft)	SAN	MP. RE	TRATA C. RQD t) (ft) %	ᆔ히				DES	SCRIPTIO	ON AND REM	MARKS			
																						<u> ` `</u>	(ft)	(10)	-) (((Min/ft)	1 %	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	''`	J. (9)	% %'	G	ELEV.	(ft)							DEP	PTH (ft)
775		┿											_	+	774.7		GR	ROUND SI	URFACE	E	0.0	762.4	762.4	12.	.3 2	.4 N	I=60/0.0	(2.0)) (0.5)		(10	.0) (4.2) ===	762.4				Begin Co	oring @ 12.	3 ft ROCK			12.3
		Ŧ					- -					<u> </u>			_							760	760.0	14.	.7	0 4):45/0.4 44/1.0	83%) (0.5) 21%) (2.5)		96	(4.2) % 40%		_	M	oderate to V	erv Slic	ahtly Wea	thered, Hard ose to Close	to Very Ha	rd, Brown-G	Gray emely	.2.0
770		Ŧ							: :						_									‡	5.	.0 \ <u>5</u>	5:23/1.0 5:23/1.0	J (5.0) 100%) (2.5) % 50%					_	IVIL	Indura	ated, wi	ith clay se	ams present	between fr	actures	Ciriory	
		Ŧ					1]			-		Αυ	ıger Probe	e to 12.3	'		755	755 (‡ 40	_	5 4	5:23/1.0 5:17/1.0 5:08/1.0 5:26/1.0 5:18/1.0											G	SI = 55-60				
		Ŧ							: :						_							755	755.0	+ 19.		.0 5	5:18/1.0 5:23/1.0	(3.0)) (1.2)	1				-									
765		Ŧ										{			_								752.0	22.	.7	5	5:29/1.0 5:15/1.0	100%) (1.2) % 40%					752.0		Davis a Tan		-1 -4 Flave	H 750 0 ft	la Nasa Cas	-4-III DI	1-	22.7
	762.4	12.3	100/0.0				. .				60/0.0				- 762 <u>.4</u>						12.3			‡										<u>-</u>		Boring Ter	minated	d at Eleva (MET	tion 752.0 ft A-ARGILLIT	in Non-Cry ≣)	stalline Roci	K	
760		Ŧ	60/0.0												_	Mod	erate to V	CRYSTAL /ery Slight	LINE RO	DCK hered, Har ray	d			‡										- -		NOTE 1: B	Boring of	ffset from	original EB2 ed core barre	-A location	due to wate	er	
		Ŧ					1					11			-	M	IETA-ARG	GILLITE, w	vith Very	Close to				‡										_									
		Ŧ					. .					!			_	(Indurated,	cture Spa , with clay	/ seams	present				‡										_	NC	OTE 2: Top o	of rock e		higher than բ spoon refusa		ation, confir	med	
755		Ŧ										<u> </u>			_			etween fra						‡										- -									
		Ŧ													752.0	RE	EC = 96%	, RQD = 4	40%, GS	SI = 55-60	22.7			‡										- -									
		Ŧ													-	Bori Non	ng Termir ı-Crystallir	nated at E ne Rock (Elevatior META-A	n 752.0 ft Ir ARGILLITE)			‡										- - -									
		<u> </u>													- - -	lo	cation due	e to water	r circulat rel to fus	ginal EB2-Ation issue se with inne				‡										- - -									
		İ													_	NO1	ΓΕ 2: Top	of rock el	levation	higher than	n			‡										- - -									
		+													-	pre	vious ioca	refusa	al.	with spoon				‡										- - -									
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WBS - 45733.1.1 TIP No. B-5777

Rock Core Photographs: Boring - EB2-A (2)

Station: 21+70 Offset: 33' LT



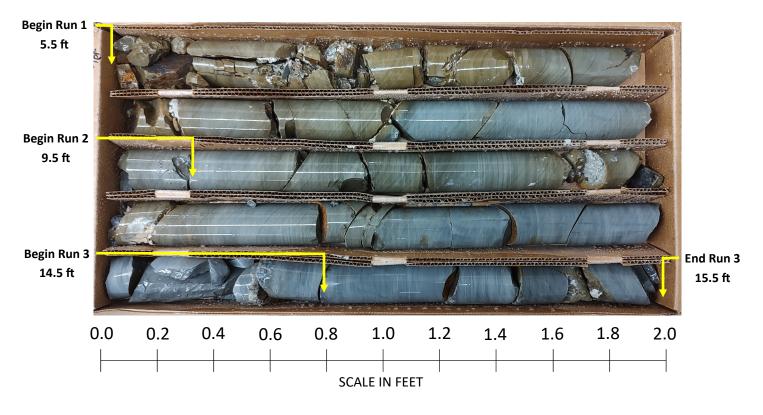
		UKE LUG	T							_			
WBS 45733.1.1		DAVIDSON	GEOLOGIST A. Suttle		WBS 45733	.1.1		TIP B-5	777	COUNT	Y DAVIDSON	GEOLOGIST A. Suttle	
SITE DESCRIPTION Replace Bri	-			GROUND WTR (ft)	SITE DESCR	PTION Re	place Brid	ge No. 58 o	n NC 109 over	r US 64			GROUND WTR (ft)
BORING NO. EB2-B	STATION 21+24	OFFSET 19 ft RT	ALIGNMENT -L-	0 HR. N/A	BORING NO.	EB2-B		STATION	N 21+24		OFFSET 19 ft RT	ALIGNMENT -L-	0 HR . N/A
COLLAR ELEV. 768.7 ft	TOTAL DEPTH 15.5 ft	NORTHING 737,586	EASTING 1,673,144	24 HR. FIAD	COLLAR ELE	V. 768.7	ft	TOTAL I	DEPTH 15.5	ft	NORTHING 737,586	EASTING 1,673,144	24 HR . FIAD
DRILL RIG/HAMMER EFF./DATE EC	S049 Diedrich D-70 94% 04/02/2024	4 DRILL METHOD SPT	Core Boring HAMMI	ER TYPE Automatic	DRILL RIG/HAI	IMER EFF./D	ATE ECS	3049 Diedri	ch D-70 94%	04/02/202	24 DRILL METHOD	SPT Core Boring HAMN	ER TYPE Automatic
DRILLER C. Osborne		COMP. DATE 05/01/24	SURFACE WATER DEPTH N/	Α	DRILLER C				DATE 05/01/		COMP. DATE 05/01/24	SURFACE WATER DEPTH N	'A
ELEV DRIVE DEPTH BLOW COU	NT BLOWS PER FOOT	SAMP.		PIDTION	CORE SIZE			TOTAL F	RUN 10.0 ft				
(ft) ELEV (ft) 0.5ft 0.5ft	0.5ft 0 25 50	75 100 NO. MOI G	SOIL AND ROCK DESC	CRIPTION DEPTH (ft)			N DRILL RATE	RUN	SAMP. F	STRATA	L		
			, ,	, ,	(ft) ELEV	DEPTH RU (ft) (ft) RATE (Min/ft)	RUN REC. RC (ft) (ft	NO.	STRATA REC. RQD (ft) (ft)	O G ELEV. (ft)	DESCRIPTION AND REMARKS	DEPTH (ft)
770					763.2		,	70 70	<u>' </u>	70 70	LLLV. (II)	Begin Coring @ 5.5 ft	DEI III (II)
			768.7 GROUND SURFA		763.2	5.5 4.0	3:24/1.0	0 (4.0) (0. 0 100% 15	6) (1	10.0) (2.9) 00% 29%	763.2 Moderate to \	ery Slightly Weathered, Hard to Very Hard	l, Brown-Gray 5.5
767.7 + 1.0 86 24/0.1		100/0.6	WEATHERED RO Tan-Gray (META-ARO	OCK GILLITE)	760		3:17/1.0)	% 1	00% 29%	META-ARGILLI Indura	TE, with Very Close to Close Fracture Spa ated, with clay seams present between frac	cing, Extremely ctures
765 765.2 3.5			WEATHERED RO Tan-Gray (META-ARO	,	759.2	9.5	2:48/1.0 2:17/1.0) (5.0) (1.º	9)			GSI = 40-45	
763.3 5.4 20 80/0.2		- 100/0.7	763.3	5.4 ROCK \(\sigma 5.5\)		-	2:12/1.0	(5.0) (1.0) (1.0) (1.0) (1.0)	%			33. 13.13	
60/0.1		' ' ' ' '	NON-CRYSTALLINE Gray (META-ARGIL		755 754.2	- - 14.5	2:22/1.0 2:42/1.0 2:36/1.0						
760 🕇			Moderate to Very Slightly Work to Very Hard, Brown	eathered, Hard	753.2	15.5 1.0	2:23/1.0	0 0 100% 100% 100%	4)		753.2	minated at Elevation 753.2 ft In Non-Crysta	15.5
			META-ARGILLITE, with V	ery Close to		-		(100%)(40	70/		Boiling Fei	(META-ARGILLITE)	alline Rock
			Close Fracture Spacing, Indurated, with clay sear between fractur	Extremely ns present	-	-					1 -	Surficial Organic Soil (0.0' to 0.3')	
755			750.0	45.5	-	-					-		
1 1		 	REC = 100%, RQD = 19% Boring Terminated at Eleva		=	-					F		
			Non-Crystalline Rock (MET	A-ARGILLITE)	-	-					F		
		F	Surficial Organic Soil (0	0.0' to 0.3')		-							
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WBS - 45733.1.1 TIP No. B-5777 Rock

Core Photographs: Boring - EB2-B

Station: 21+24 Offset: 19' RT



I	PROJECT REFERENCE NO.	SHEET NO.
ſ	B-5777	17

					RO	CK TEST RE	SULTS	_	
SAMPLE NO.	BORING	STATION -L-	OFFSET	DEPTH INTERVAL	RUN REC (%)	RUN RQD (%)	Rock Type	Unit Weight LB/FT ³	Unconfined Compressive Strength (PSI/KSF)
RS-1	B1-A	20+80	19' LT	14.1-14.5	100	76	Meta-Argillite	172.6	10,770 psi / 1,551 ksf
RS-2	B1-B	20+84	22' RT	6.2-6.6	100	74	Meta-Argillite	169.3	4,590 psi / 661 ksf
RS = NQ2 Rock	Core Barrel Samp	ole (ASTM D-211	L3)						

SITE PHOTOGRAPHS



PHOTO 1: VIEW FROM -L- REALIGNMENT OF PROPOSED BRIDGE APPROACH AT END BENT 1, LOOKING UPSTATION.



PHOTO 3: VIEW LOOKING NORTHWEST ALONG US 64 FROM EXISTING BRIDGE DECK.



PHOTO 2: VIEW FROM -L- REALIGNMENT OF PROPOSED BRIDGE APPROACH AT END BENT 2, LOOKING DOWNSTATION.

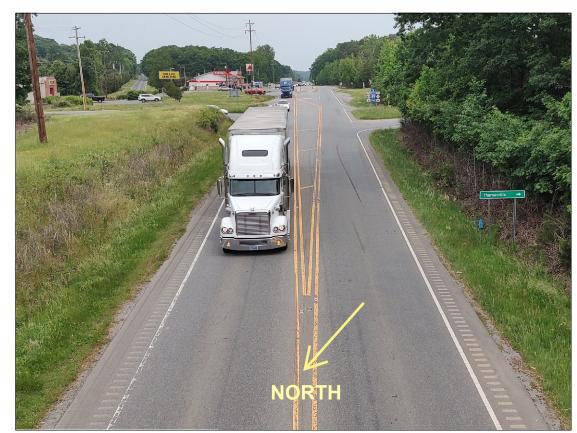


PHOTO 4: VIEW LOOKING SOUTHEAST ALONG US 64 FROM EXISTING BRIDGE DECK.