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REFERENCE

5898 **CONTENTS** SHEET NO. 186/B 2 3-4

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DESCRIPTION TITLE SHEET LEGEND (SOIL & ROCK) SITE PLANS PROFILES BORE LOGS

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY_HAYWOOD

PROJECT DESCRIPTION US 23/US 74/US 19 (GREAT SMOKY MOUNTAIN HWY) FROM WEST OF NC 209 (BRABTREE RD.) TO EAST OF RUSS AVE. SITE DESCRIPTION **RETAINING WALL #5** FROM -Y1RT- STA. 15+25.00 TO 26+12.97

332/48030 00 m PROJEC

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3186/B-5898	1	18

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 SOLI TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1999 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

CENERAL SOL 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 UN-PLACED TEST DATA CAN BE RELIED ON ONLY TO THE DECREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOLL MOISTURE CONDITIONS. NDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOLL 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 OF 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 WARANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPHION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATION AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OF FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SIDE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES: I, 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 REDUESTED THS: 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

R. DUGGER

N. YACOBI

C. SWAFFORD

GEOTECHNOLOGY, INC

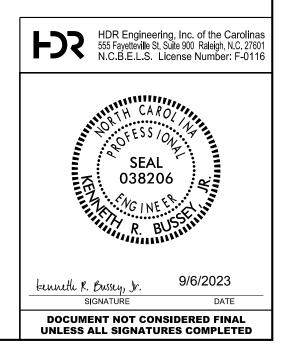
INVESTIGATED BY ______ C. SWAFFORD

DRAWN BY _____.

CHECKED BY _____K.BUSSEY

SUBMITTED BY _______

DATE _____ NOVEMBER 2021



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

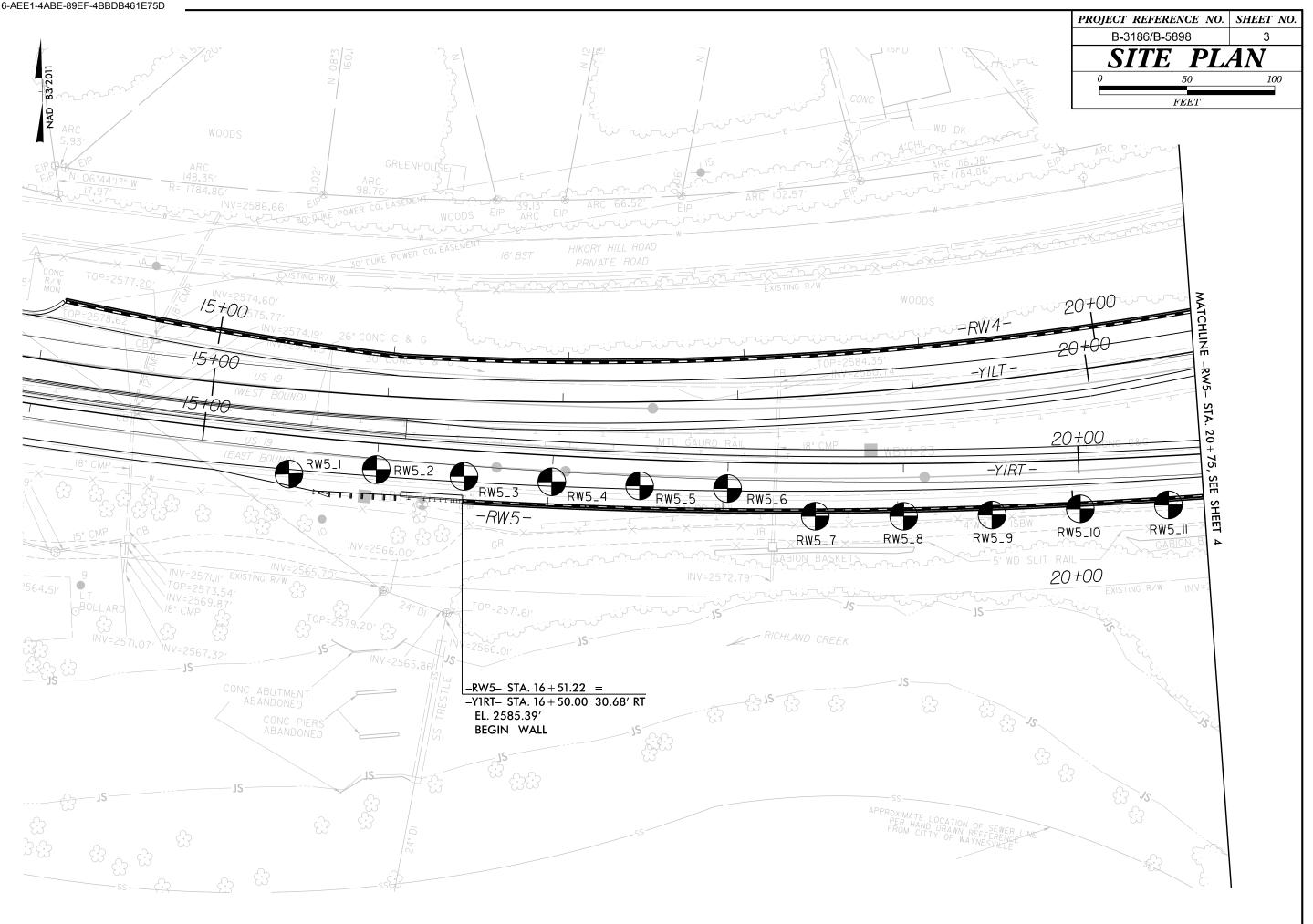
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

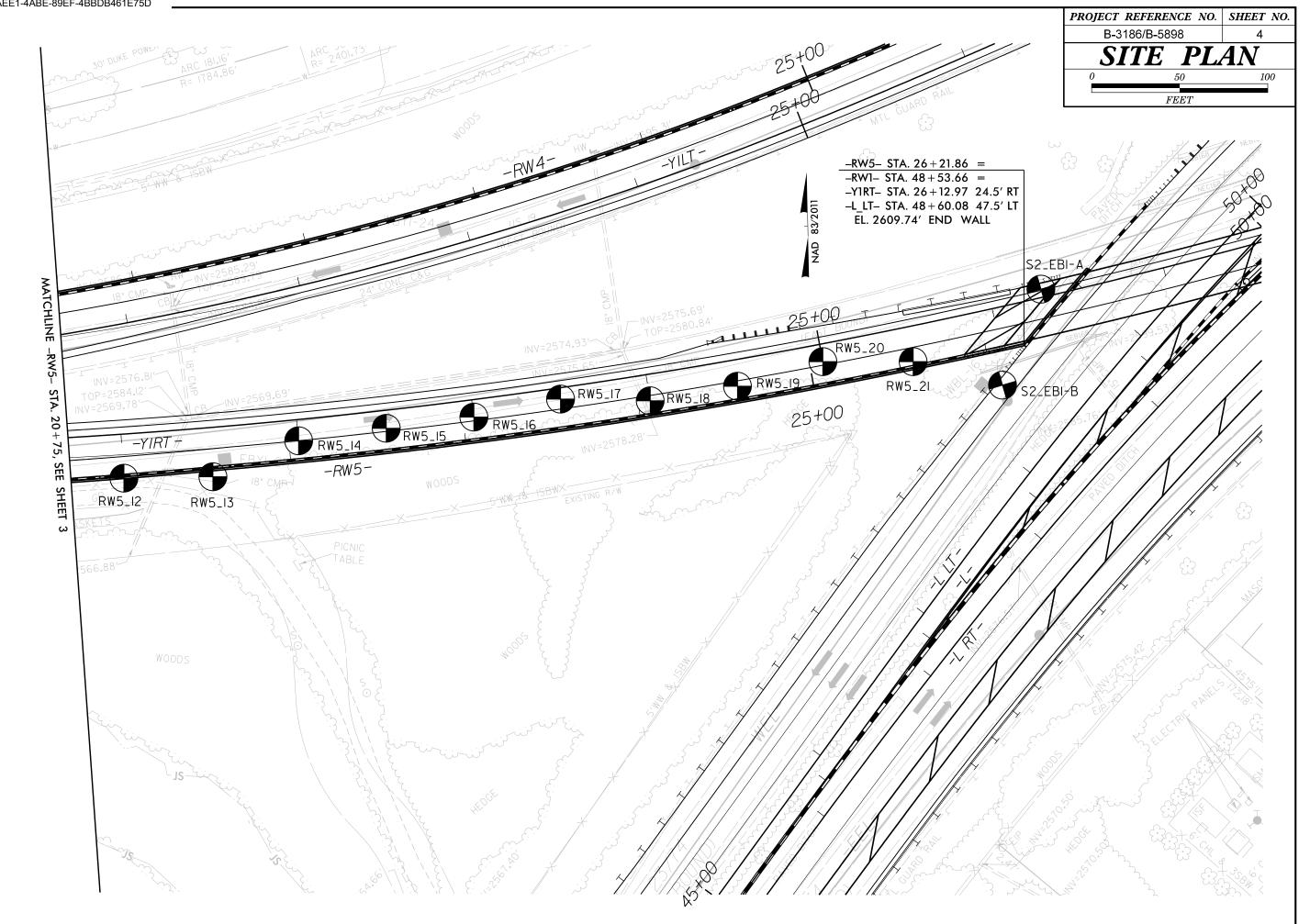
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTH DISB6). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MONISTURE, AASHTO IC LASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES. ANGULARITY OF GRAINS	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EOUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOVS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. A <u>OUIFER</u> - A WATER BEARING FORMATION OR STRATA. <u>ARENACEOUS</u> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
AS MINERALOGICAL COMPOSITION, ANOULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SULTY 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.	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	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 GENERAL GRANULAR MATERIALS CLASS. (\$352 PASSIN *280) CASS. (\$352 PASSIN *280) CASS.	MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	CRYSTALLINE	AFTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.
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.	NON-CONSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CLASS. A-1-b A-2-4 A-2-6 A-2-6 A-2-7 SYMBOL 0000 00000000000000000000000000000000	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50	ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YELD SPT REFUSAL IF TESTED. ROCK (NCR) ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
2 PASSING 50 MX	MIGHLY COMPRESSIBLE LL > 50 PERCENTAGE OF MATERIAL	SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED (CP) SHELL BEDS, ETC.	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*40 30 MX 50 MX 51 MN *200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN	ORGANIC MATERIAL GRANULAR SILT - CLAY SOILS SOILS OTHER MATERIAL	WEATHERING FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER	DIRECT THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
MATERIAL PASSING *40 LL – – 40 MX 41 MN	TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	HAMMER IF CRYSTALLINE. VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. (V SLI) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF	HORIZONTAL.
PI 6 MX NP 18 MX 18 MX 11 MN 11 MN 18 MX 18 MX 11 MN 10 MX 18 MX 11 MN 11 MN L11 MN MODERATE ORGANIC	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE GROUND WATER	(V SLI) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USUAL TYPES STONE FRAGS. I USUAL TYPES STONE FRAGS. I 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 FELOSPAR CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <u>FISSILE</u> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SANU UHAVEL ANU SANU SUILS SUILS	STATIC WATER LEVEL AFTER <u>24</u> HOURS Vex Perched Water, saturated zone, or water bearing strata	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.
Oct. Mathematic EXCELLENT TO GOOD FAIR TO POOR POOR POOR POOR UNSUITABLE P1 0F A-7-5 SUBGROUP IS ≤ LL - 30 P1 0F A-7-6 SUBGROUP IS > LL - 30 >LL - 30	- O-M- 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, FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT DUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAQLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES 'CLUNK' SOUND WHEN STRUCK,	FIELD. J <u>OINT</u> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY PRETATION RESISTENCE COMPACTNESS OR CONSISTENCY (N-VALUE) (TONS/FT ²)	U ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION WITH SOIL DESCRIPTION OF ROCK STRUCTURES	IF TESTED, WOULD YIELD SPT REFUSAL 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 GRANULAR LOOSE 4 TO 10	SOIL SYMBOL	(SEV.) REDUCED IN STRENGTH TO STRONG SOIL, IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS
ONRIGENT MEDIUM DENSE 10 TO 30 N/A MATERIAL DENSE 30 TO 50 (NON-COHESIVE) VERY DENSE > 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25 GENERALLY SOFT 2 TO 4 0.25 TO 0.5	INFERRED SOIL BOUNDARY	(V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DECREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	OF AN INTERVENING IMPERVIOUS STRATUM. 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 (COHESIVE) VERV STIFF 15 TO 30 2 TO 4	INFERRED ROCK LINE MO MONITORING WELL TEST BORING WITH CORE FIEZOMETER FIEZOMETER FIEZOMETER FIEZOMETER	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 (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD > 30 > 4 TEXTURE OR GRAIN SIZE		ALSO AN EXAMPLE. ROCK HARDNESS	RUN AND EXPRESSED AS A PERCENTAGE. <u>SAPROLITE (SAP.)</u> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT
U.S. STD. SIEVE SIZE 4 10 40 60 200 270	UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAV	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	ROCK. <u>SILL</u> - 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 BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY	SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNDERCUT UNDERCUT UNCLASSIFIED ECRAPABLE ROCK USED IN THE TOP 3 FEET OF 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.
(BLDR.) (COB.) (GR.) SANU SANU (SL.) (CL.)	ABBREVIATIONS	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.	<u>SLICKENSIDE</u> - 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
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3 3 SOIL MOISTURE - CORRELATION OF TERMS	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY 7 - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7_d - DRY UNIT WEIGHT	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 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	A 140 LB.HAMMER FALLING 30 INCHES RECUIRED 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.
SOIL MOISTURE SCALE FIELD MOISTURE (ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST <u>SAMPLE ABBREVIATIONS</u> DPT - DVNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	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.	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 (SAT.) FROM BELOW THE GROUND WATER TABLE	 e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON F - FINE SL SILT, SILTY ST - SHELBY TUBE 	VERY CAN BE CARVED WITH KNIFE, CAN BE EXCAVATED READILY WITH POINT OF PICK, PIECES I INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE, CAN BE SCRATCHED READILY BY	STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SECHENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASTIC SEMISOLID: REQUIRES DRYING TO	FOSS FOSSLIFEROUS SLI- SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS // - MOISTURE CONTENT CCR - CALIFORNIA BEARING	FINGERNAIL. FRACTURE SPACING BEDDING	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
	HL - HIGHLY V - VERY RATIO EQUIPMENT USED ON SUBJECT PROJECT	TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	ELEVATION: FEET
OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE SL _ SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: CME-45C CLAY BITS X AUTOMATIC MANUAL	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET 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 ATTAIN OPTIMUM MOISTURE	CME-55	VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THICKLY LAMINATED < 0.008 FEET	BORING ELEVATIONS OBTAINED USING b3186_br0022_r4047_Merged_1-12-21.tin
PLASTICITY	■ <u>X</u> 8" HOLLOW AUGERS B H	INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	SITE 2 BORING ELEVATIONS OBTAINED FROM TRIMBLE RI2 GNSS RECEIVER CERTIFIED WITH FCC PART 15 (CLASS B DEVICE), 24, 32; RCM; PTCRB; BT SIG
PLASTICITY INDEX (P) DRY_STRENGTH NON PLASTIC Ø-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	DEVICE), 24, 32; RCM; PTCRB; BT SIG FIAD - FILLED IMMEDIATELY AFTER DRILLING
MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH	PORTABLE HOIST TRICONE PORTABLE HOIST PORTABLE HOIST	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	X CME-75 TRICONE TRICONE 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). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	CORE BIT VANE SHEAR TEST X MUD ROTARY	EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14

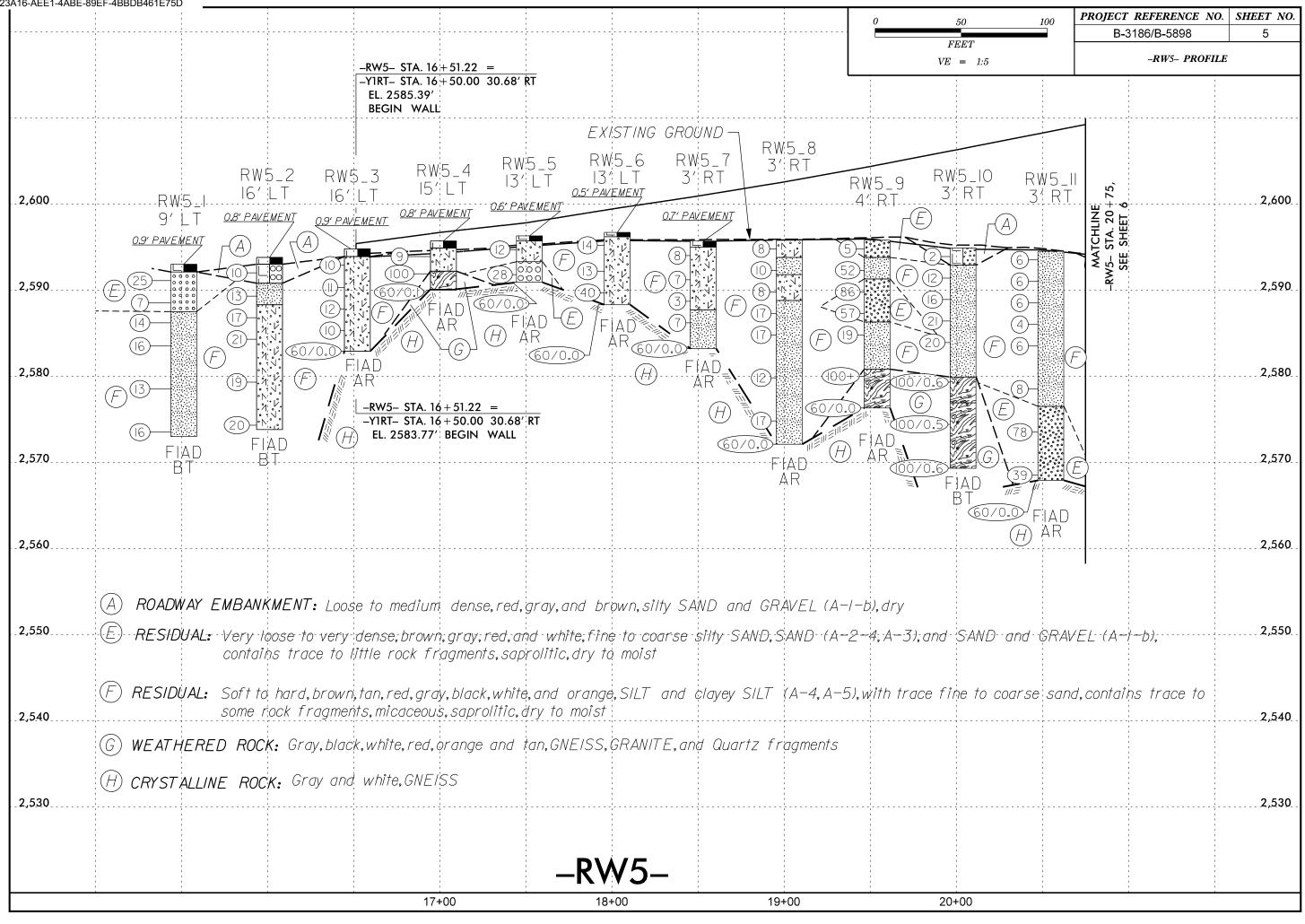
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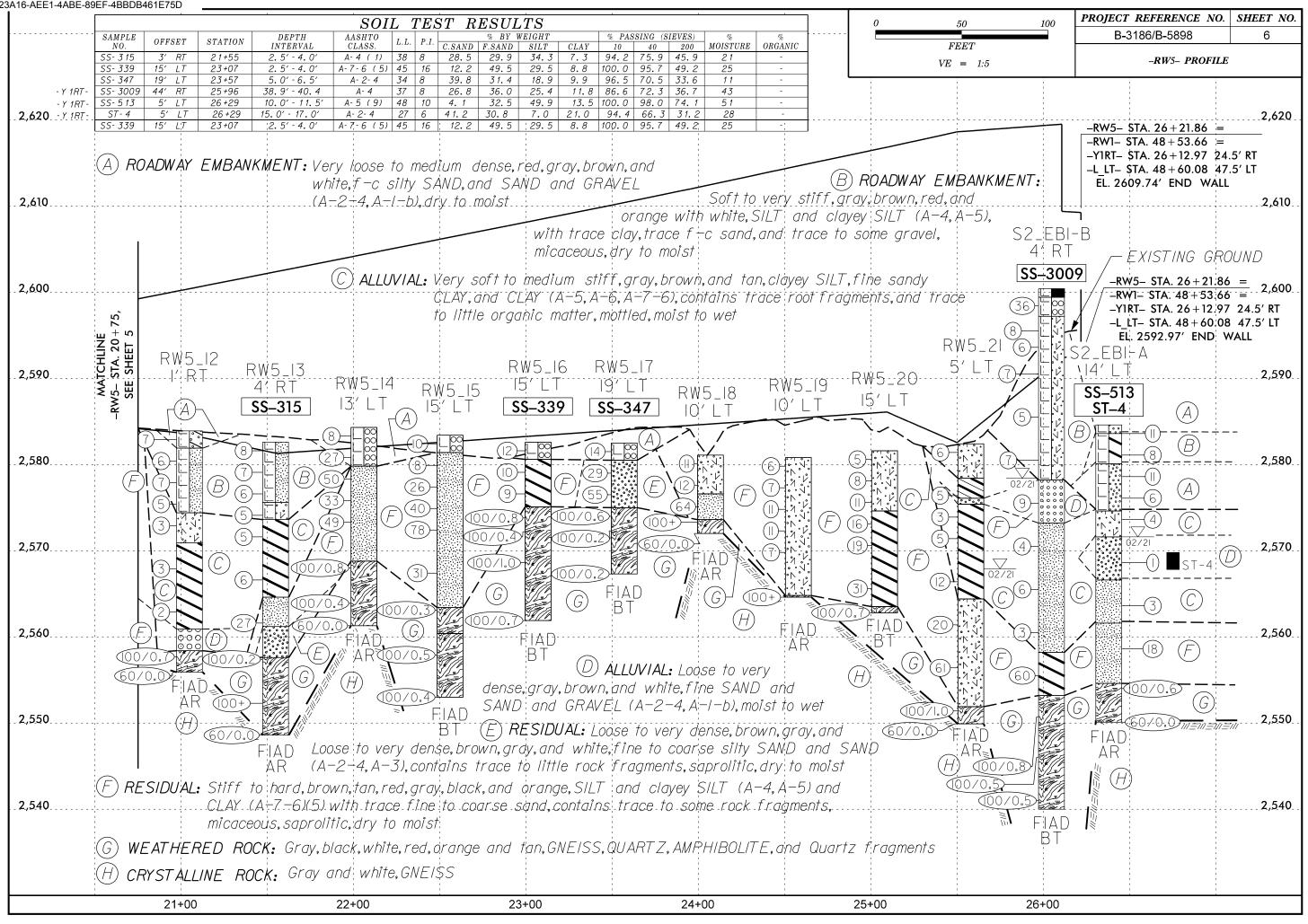
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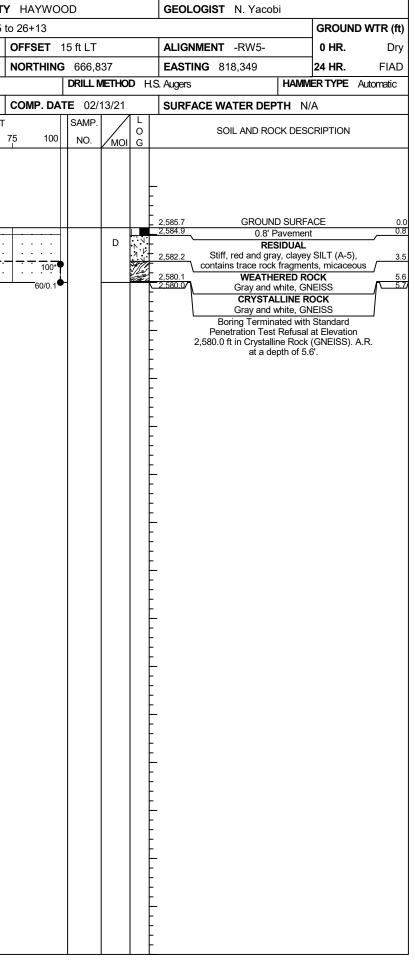


GEOTECHNICAL BORING REPORT BORE LOG

WBS 38332.1.FS1 TIP B-3186 / B-5898 COULT	NTY HAYWOOD	GEOLOGIST C. Swafford	WBS 38332.1.FS1 TIP B-3186 / B-5898 COUNTY	HAYWOOD GEOLOGIST N. Yacobi
SITE DESCRIPTION Retaining Wall No. 5 from -Y1RT- STA 15+2	25 to 26+13	GROUND WTR (ft)	SITE DESCRIPTION Retaining Wall No. 5 from -Y1RT- STA 15+25 to	o 26+13 GROUND WTR (ft)
BORING NO. RW5_1 STATION 15+52	OFFSET 9 ft LT	ALIGNMENT -RW5- 0 HR. Dry	BORING NO. RW5_2 STATION 16+54	OFFSET 16 ft LT ALIGNMENT -RW5- 0 HR. Dry
COLLAR ELEV. 2,583.0 ft TOTAL DEPTH 20.0 ft	NORTHING 666,845	EASTING 818,199 24 HR. FIAD	COLLAR ELEV. 2,583.8 ft TOTAL DEPTH 20.0 ft	NORTHING 666,847 EASTING 818,249 24 HR. FIAD
DRILL RIG/HAMMER EFF./DATE GTC CME 75 183277	DRILL METHOD	H.S. Augers HAMMER TYPE Automatic	DRILL RIG/HAMMER EFF./DATE GTC CME 75 183277	DRILL METHOD H.S. Augers HAMMER TYPE Automatic
DRILLER K. Boone START DATE 02/25/21	COMP. DATE 02/25/21	SURFACE WATER DEPTH N/A		COMP. DATE 02/13/21 SURFACE WATER DEPTH N/A
ELEV DRIVE DEPTH BLOW COUNT BLOWS PER FO		SOIL AND ROCK DESCRIPTION	ELEV (ft) DRIVE ELEV (ft) DEPTH BLOW COUNT BLOWS PER FOOT (ft) 0.5ft 0.5ft 0.5ft 0 25 50 7	
(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 7	75 100 NO. MOI G
		-	2585	
2,582,1 0,9		2,583.0 GROUND SURFACE 0.0 2,582.1 0.9' PAVEMENT 0.9	2,583.0 0.8	D 2,583.0 0.8' Pavement 0.8 D ->o ROADWAY EMBANKMENT 0.8
2580 2.579.5 3.5 8 16 9		RESIDUAL Loose to medium dense, brown, f-c SAND	2580 2,580.3 3.5	2.580.8 Loose to medium dense, red and brown, silty $r = 3.0$
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	M	- (A-3), contains trace rock fragments - 2,577.5 5.5	2,577.8 6.0 5 6 7	$ \begin{array}{c} \begin{array}{c} \hline \\ \hline $
	М	Stiff to very stiff, brown, tan, and orange, SILT (A-4), micaceous	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D Very stiff, gray, clayey SILT (A-4), micaceous j Very stiff, gray, clayey SILT (A-5), micaceous, saprolitic
			2575 2,575.3 8.5 · · · · · · · · · · · · · · · · · · ·	D A
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	· · · · · ·			
2570 2,569.5 13.5	· · · · · ·			
	М			
			2565 2,565.3 18.5	
$2,564.5 + 18.5 + 4 + 7 + 9 + \cdot \cdot$		2,563.0 20.0		M N 2,563.8 20.0
		Boring Terminated at Elevation 2,563.0 ft in SILT		Boring Terminated at Elevation 2,563.8 ft in SILT
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GEOTECHNICAL BORING REPORT BORE LOG

_																														
			2.1.FS1								Y HAYWO	OD				GEOL	OGIST N. Ya	cobi	1			3833								COUNT
					aining					15+25	to 26+13														aining					A 15+25
			. RW5			_	TATION				OFFSET						MENT -RW5	-	0 HR.	Dry		ING NO						17+0		
	OLLAR ELEV. 2,584.8 ft TOTAL DEPTH 11. RILL RIG/HAMMER EFF./DATE GTC CME 75 183277 RILLER K. Boone START DATE 02/1										NORTHING						NG 818,299		24 HR.	FIAD								EPTH	5.7 ft	
_					IE G										H.S	. Augers			NER TYPE Au	tomatic		L RIG/HA			IE G					
				1			FART DA				COMP. DA					SURF	CE WATER I	DEPTH N	/A		DRII	LER H		1				ATE (
	LEV (ft)		DEPTH (ft)	·			0			ER FOOT		SAMP	17	0			SOIL AND	ROCK DES	CRIPTION		ELEV (ft)		DEPTH (ft)							PER FOOT
-	(11)	(ft)	(11)	0.5π	0.5ft	0.5π	0	25	50)	75 100	NO.	/м	DI G		ELEV. (ft)				DEPTH (ft)	(11)	(ft)	(11)	0.5π	0.5ft	0.5π	0	25	0	0
2	585	2.583.9.														2,584.8 2,583.9		UND SURF)' PAVEME		0.0 0.9	2590		+							
		-	+	2	4	6	· •10				1 1		D		. -			RESIDUAL					Ŧ							
2	580	2,581.3	3.5	3	4	7			· · ·	· · · · ·			D	N N			Stiff, red and contains trace r	ock fragme	ey SILT (A-5), nts, micaceous,		2585	2,584.9	<u> </u>							
_		2,578.8-	6.0	E	6		· · · ·							N	÷			saprolitic			2000	2,584.9	+ 0.8	3	4	5	· •9	.		
		- 2,576.3	+ + 85	5	6	6	12		· · ·	· · · · ·			D	N								2,582.2	3.5	60/0.3			: ŀ_	· · · ·	· · · ·	· · · · ·
2	575		L 0.0	3	4	6	10_	• • • •	• •				D	N							2580	2,580.1	5.6	60/0.1			• •	•••	•••	
		2,572.9	11.9	00/0.0				· · ·	· ·	 <u></u> .	60/0.0			N 1		2,572.9				11.9			‡	00/0.1	1					
		-	t	60/0.0							60/0.0-				F		Penetration ⁻	minated witl 「est Refusa	l at Elevation				ŧ							
		-	ŧ												F		2,572.9 ft on C A.R. a	rystalline Re t a depth of	ock (GNEISS). 11.9'.			-	ŧ							
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GEOTECHNICAL BORING REPORT BORE LOG

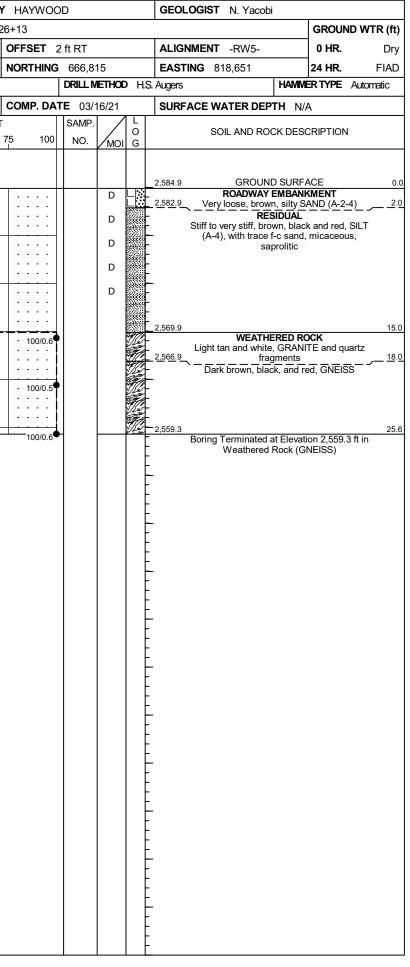
WBS 38332.1.FS1	TIP B-3186 / B-5898 COUN	ry haywood	GEOLOGIST N. Yacobi		WBS	S 38332.1.FS1		TIP	B-3186 / B-5898 COUNT	TY HAYWOO	D	GEOLOGIST N. Yacobi		
SITE DESCRIPTION Retaining Wa	all No. 5 from -Y1RT- STA 15+25 to	26+13		GROUND WTR (ft)	SITE	E DESCRIPTION	Retaining	Wall No. 5	5 from -Y1RT- STA 15+25 to	26+13			GROUND WTR (ft)
BORING NO. RW5_5	STATION 17+52	OFFSET 14 ft LT	ALIGNMENT -RW5-	0 HR. Dry	BOR	RING NO. RW5	_6	STA	TION 18+03	OFFSET	14 ft LT	ALIGNMENT -RW5-	0 HR. D	Dry
COLLAR ELEV. 2,586.3 ft	TOTAL DEPTH 5.4 ft	NORTHING 666,834	EASTING 818,399	24 HR. FIAD	COL	LAR ELEV. 2,	586.7 ft	тот	TAL DEPTH 8.4 ft	NORTHING	666,831	EASTING 818,450	24 HR. FIA	٩D
DRILL RIG/HAMMER EFF./DATE GTC3	277 CME-75 83%(09/15/2020)	DRILL METHOD H	S. Augers HAN	WIMER TYPE Automatic	DRIL	L RIG/HAMMER EF	F./DATE GT	C3277 OME	E-75 83%(09/15/2020)	1	DRILL METHOD	H.S. Augers HAN	MER TYPE Automatic	;
DRILLER K. Boone	START DATE 02/13/21	COMP. DATE 02/14/21	SURFACE WATER DEPTH	N/A	DRIL	LLER K. Boone	•	STA	RT DATE 02/14/21	COMP. DA	TE 02/14/21	SURFACE WATER DEPTH	N/A	
ELEV DRIVE DEPTH BLOW COUNT (ft) (ft) 0.5ft 0.5ft (SOIL AND ROCK D		ELEV (ft)		BLOW CC	OUNT	BLOWS PER FOC 0 25 50	DT 75 100	NO. MOI C	SOIL AND ROCK DE	SCRIPTION	
(ft) (ft) (ft) 0.5ft 0.5ft (2590 2585 - 0.6 2.585.7 0.6 - 7 5 2.582.8 3.5		75 100 NO. MOI G	SOIL AND ROCK DI ELEV. (ft) 2.586.3 GROUND SUI 2.586.3 O.6' PAVEM RESIDU 2.580.9 Nedium dense, red, gra SAND and GRAVEL (A-1 Boring Terminated v Penetration Test Refu 2,580.9 ft on Crystalline A.R. at a depth	DEPTH (ft) RFACE 0.0 IENT 0.6 AL ey SILT (A-5), with - 3.0 quartz) J ay, and white, f-c 5.4 -b), with some silt/ with Standard sal at Elevation Rock (GNEISS).	2590 2585 2580	(ff) (ff) 2,586.2 0.5 2,583.2 3.5 2,580.7 6.0 2,578.3 8.4	0.5ft 0.5ft	0.5tt 0		75 100		Soil AND ROCK DE	RFACE ENT L and gray, clayey s sand and rock ceous, saprolitic ith Standard ith Standard Rock (GNEISS).	<u>0.0</u> <u>8.4</u>

GEOTECHNICAL BORING REPORT BORE LOG

WBS 38332.1.FS1	TIP B-3186 / B-5898 COUNT	Y HAYWOOD	GEOLOGIST N. Yacobi		WB	S 38332	2.1.FS1		TIP B-3186	6 / B-5898 COUN	TY HAYWO	OD	GE	DLOGIST N. Yacobi	i	
SITE DESCRIPTION Retaining W	/all No. 5 from -Y1RT- STA 15+25 to	26+13		GROUND WTR (ft)	SIT	E DESCR	RIPTION Re	etaining Wa	all No. 5 from - ۲	Y1RT- STA 15+25 to	o 26+13				GROUND	WTR (ft)
BORING NO. RW5_7	STATION 18+53	OFFSET 2 ft RT	ALIGNMENT -RW5-	0 HR. Dry	BO	ring no.	. RW5_8		STATION	19+03	OFFSET	2 ft RT	ALI	GNMENT -RW5-	0 HR.	Dry
COLLAR ELEV. 2,585.7 ft	TOTAL DEPTH 12.5 ft	NORTHING 666,814	EASTING 818,499	24 HR. FIAD	CO	LLAR EL	EV. 2,585.	8 ft	TOTAL DEF	PTH 23.7 ft	NORTHIN	G 666,813	EAS	STING 818,550	24 HR.	FIAD
DRILL RIG/HAMMER EFF./DATE GTC	3277 CME-75 83% (09/15/2020)	DRILL METHOD H	S. Augers HAMIN	MER TYPE Automatic	DRI	LL RIG/HAN	VIMER EFF./D	ATE GTC3	277 CME-75 83%	(09/15/2020)	•	DRILL MET	HOD H.S. Auge	ſS	HAMMER TYPE AL	utomatic
DRILLER K. Boone	START DATE 02/14/21	COMP. DATE 02/14/21	SURFACE WATER DEPTH N	/Α	DRI	ILLER K	. Boone		START DAT	E 02/15/21	COMP. DA	ATE 02/15/	21 SUF	RFACE WATER DEP	TH N/A	
ELEV DRIVE DEPTH BLOW COU		T SAMP.	SOIL AND ROCK DES	CRIPTION	ELE		DEPTH B	LOW COUI	NT	BLOWS PER FOO	TC	SAMP.			CK DESCRIPTION	
(ft) (ft) (ft) 0.5ft 0.5ft	0.5ft 0 25 50	75 100 NO. MOI G		DEPTH (ft)	(ft)	(ft)	(ft) 0.5	ift 0.5ft (0.5ft 0	25 50	75 100) NO.	MOLG			
(II) (II) 0.5ft 0.5ft 0.5ft 2590 - - - - 2585 2.585.0 0.7 2 4 2586 2.579.7 6.0 2 1 2575 - - 2 1 2577 8.5 4 4 2575 - 60/0.0 - 2577 - 60/0.0 - 2575 - - - 2575 - - - 2577 - 60/0.0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <td>0.5ft 0 25 50 4 4 3 2 3 4 - - - - - - - - - - - - -</td> <td>D NO</td> <td>ELEV. (ft) 2,585.7 GROUND SURF 2,585.0 0.7' PAVEMEN RESIDUAL Soft to stiff, red and brow (A-5), with trace grave 2,577.7 Medium stiff, red and bro SILT (A-4), with few grave quartz) 2,573.2 Boring Terminated wit Penetration Test Refusa 2,573.2 ft on Crystalline R A.R. at a depth of A.R. at a depth of</td> <td>ACE 0.0 NT 0.7 n, clayey SILT el (quartz) /</td> <td>2590</td> <td>(ft) 2,585.8 2,583.3 2,580.8 2,578.3 2,578.3 2,575.8 2,575.</td> <td>(1) 0.6 - 0.0 - 7 - 5 - 5 - 7 <t< td=""><td>it 0.5it 0 5 - 4 - 3 - 7 - 8 - 5 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -</td><td></td><td></td><td></td><td>-</td><td> </td><td>RES Stiff, brown, clayey Medium stiff to stiff, Stiff, red and brown, Stiff, red, brown, micaceo Boring Termin. Penetration Test 2.562.1 ft on Cryst</td><td>D SURFACE SIDUAL SILT (A-5), micaceou brown and black, SIL A-4) wn, clayey SILT (A-5) and tan, SILT (A-4), us, saprolitic ated with Standard Refusal at Elevation alline Rock (GNEISS) depth of 23.7'.</td><td>_T</td></t<></td>	0.5ft 0 25 50 4 4 3 2 3 4 - - - - - - - - - - - - -	D NO	ELEV. (ft) 2,585.7 GROUND SURF 2,585.0 0.7' PAVEMEN RESIDUAL Soft to stiff, red and brow (A-5), with trace grave 2,577.7 Medium stiff, red and bro SILT (A-4), with few grave quartz) 2,573.2 Boring Terminated wit Penetration Test Refusa 2,573.2 ft on Crystalline R A.R. at a depth of A.R. at a depth of	ACE 0.0 NT 0.7 n, clayey SILT el (quartz) /	2590	(ft) 2,585.8 2,583.3 2,580.8 2,578.3 2,578.3 2,575.8 2,575.	(1) 0.6 - 0.0 - 7 - 5 - 5 - 7 <t< td=""><td>it 0.5it 0 5 - 4 - 3 - 7 - 8 - 5 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -</td><td></td><td></td><td></td><td>-</td><td> </td><td>RES Stiff, brown, clayey Medium stiff to stiff, Stiff, red and brown, Stiff, red, brown, micaceo Boring Termin. Penetration Test 2.562.1 ft on Cryst</td><td>D SURFACE SIDUAL SILT (A-5), micaceou brown and black, SIL A-4) wn, clayey SILT (A-5) and tan, SILT (A-4), us, saprolitic ated with Standard Refusal at Elevation alline Rock (GNEISS) depth of 23.7'.</td><td>_T</td></t<>	it 0.5it 0 5 - 4 - 3 - 7 - 8 - 5 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -				-	 	RES Stiff, brown, clayey Medium stiff to stiff, Stiff, red and brown, Stiff, red, brown, micaceo Boring Termin. Penetration Test 2.562.1 ft on Cryst	D SURFACE SIDUAL SILT (A-5), micaceou brown and black, SIL A-4) wn, clayey SILT (A-5) and tan, SILT (A-4), us, saprolitic ated with Standard Refusal at Elevation alline Rock (GNEISS) depth of 23.7'.	_T

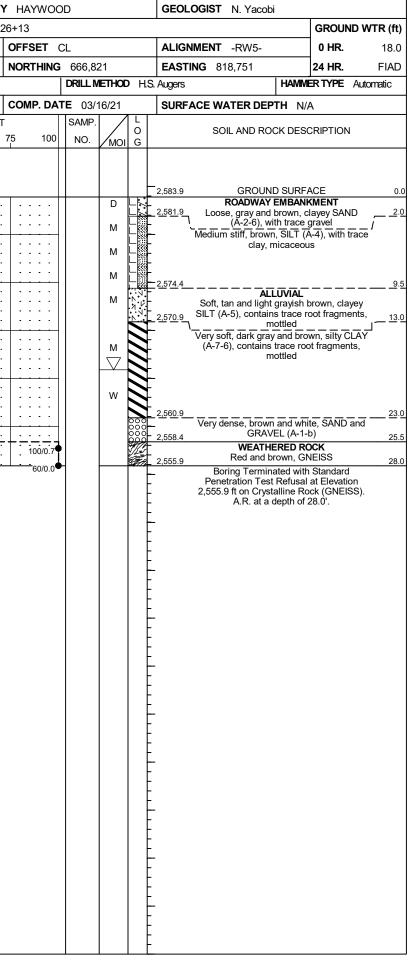
GEOTECHNICAL BORING REPORT BORE LOG

								-	SORE I																1
WBS	3833	32.1.FS1			TI	I P B-3186	6 / B-5898	COUNT	TY HAYWO	OD			GEOL	OGIST N. Yaco	bi		WBS	3 833	2.1.FS ²	1		TI	P B-3186	/ B-5898	COUNTY
SITE	DESC	RIPTION	Reta	ining V	Vall No	o. 5 from - א	1RT- STA	15+25 to	26+13							GROUND WTR (ft)	SITE	DESCR	RIPTION	Reta	aining V	Vall No	o. 5 from -Y	'1RT- STA	15+25 to 26
BOR	ing no). RW5	5_9		S	TATION '	19+54		OFFSET	3 ft RT			ALIGN	IMENT -RW5-		0 HR. Dry	BOF	Ring No	. RW	5_10		S	TATION 2	20+04	
COL	LAR EI	L EV. 2	585.8	ft	т	OTAL DEP	TH 19.51	ft	NORTHIN	G 666,8	13		EAST	NG 818,600		24 HR. FIAD	COL	LAR EL	. EV . 2	,584.9	ft	т	OTAL DEP	TH 25.6 f	t
DRILL	_ RIG/H/	AMMER E	FF./DAT	E GTC	X8255 C	ME-55 93%	(11/24/2020)			DRILL	VIETHO	DD H	S. Augers		HAMIME	ERTYPE Automatic	DRIL	l rig/ha	MMER E	FF./DAT	E GTC	8255 C	ME-55 93%((11/24/2020)	
DRIL	LER	L. Wans	rath		S	TART DAT	E 03/14/2	21	COMP. D	ATE 03/	14/21		SURF	ACE WATER DE	PTH N/A	A	DRI	LER L	Wans	arath		ST	FART DAT	E 03/16/2	1
ELEV	DRIVE	יו ים טן י	·	w co	-		BLOWS	PER FOC	T	SAMP.				SOIL AND R		RIPTION	ELEV	DRIVE	DEPT	H BLC	ow col	JNT		BLOWS	PER FOOT
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 100	NO.	Имо) G	ELEV. (ft		DECC	DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50 7
2590		\perp															2585	9 5 8 4 7	\perp						
l		‡											F					2,584.9	Ť	3	1	1	•2 · · · ·		
	2,585.	8 00											2,585.8	GROU	ND SURFA	ACE 0.0		,	+	4	5	7	•12		
2585		+	5	2	3						D		2,583.8	R Loose, brown, s	E SIDUAL iltv SAND	(A-2-4), with <u>2.0</u>	2580	2,579.9	5.0	8	8	8			
	2,583.	3 <u>† 2.5</u> 1	4	23	29			6 52			D		F7		me gravel	i		2,577.4	7.5	8	9	12			
2580	2,580.	8 5.0	33	44	42						D		2,581.3	contains so	me rock fra	agments	2575	2,574.9	I 10.0		9	12		21	
	2,578.	3 7.5]			F	Very dense, bro SAND (A-2-4	own and bla , contains	ack, f-c silty trace rock			T	11	8	12		20 · · · ·	
ł		Ţ	28	28	29						D		2 <u>,576.3</u>	fragme	ents, sapro	litic 9.5			Ŧ						
2575	2,575.	8 <u>+ 10.0</u> +	16	10	9	•	19				D		F	Very stiff, brown	SILT (A-4 sand), with trace f	2570	2,569.9	15.0	71	39/0.1		╎┝╴╴╴┣		
		Ŧ				[.							F						ŧ		00/0.1				
2570	2,570.	8 15.0	62	90	47	· · · · · · · u			· · · · · ·	4			2,570.8			15.0	2565	2,564.9	‡						
2010		‡	02	90	47					•			-	White and tan,		and quartz	2000	2,564.9	<u>+ 20.0</u> +	100/0.5	5				
	2 566	+ 3 19.5											2,566.3	fr	agments	19.5			‡						
	,000.	+	60/0.0				1	•	60/0.0	•			-	Boring Term Penetration Te		Standard	2560	2,559.9	25.0		24/0.4				
		‡											-	2,566.3 ft on Cry	stalline Ro a depth of 1	ck (GNEISS).			‡	- 69	31/0.1			_	1
		t											-	A.R. at a	a depth of 1	19.5 .			t						
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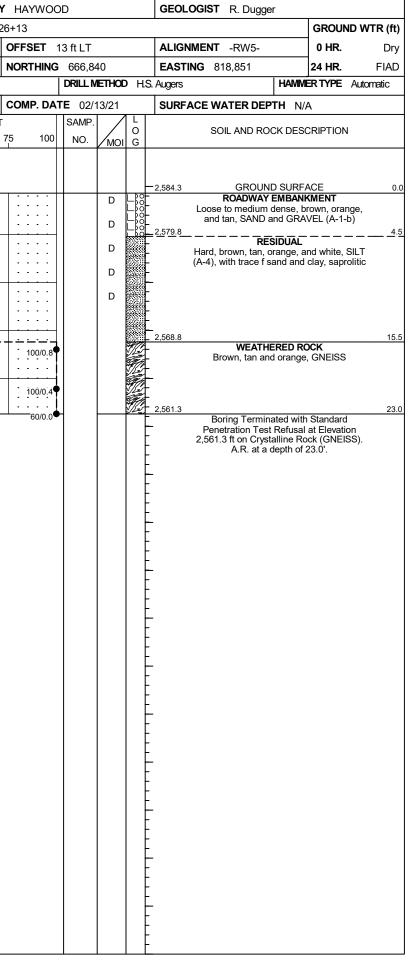
GEOTECHNICAL BORING REPORT BORE LOG

									SUR									- —									_
		2.1.FS1				IP B-3186			TY HAY	WOO	D			GEOL	OGIST N. Y	'acobi	1	_	BS 383							6 / B-5898	
				aining \		o. 5 from -Y		15+25 to										-					ing W				A 15+25 to 2
). RW5	_			TATION 2				ET 2					IMENT -RW		0 HR. D		DRING N					_	ATION		
		.EV. 2				OTAL DEP			NOR		666,8				NG 818,70		24 HR. FIA		DLLAR E							PTH 28.0	
DRILL	. RIG/HA	MMERE	FF./DAT	E GTO	C8255 (CME-55 93%(11/24/2020)				DRILL	/IETHO	D H	.S. Augers		HAMM	IER TYPE Automatic	DR	ILL RIG/H	AMME	R EFF./	DATE	GTC	8255 Cl	VE-55 93%	6(11/24/2020)
DRIL		L. Wans				TART DATI					E 03/			SURF	ACE WATER	DEPTH N/	Ά	DF	RILLER							TE 03/15/	
ELEV (ft)	DRIVE ELEV (ft)	DEPTI (ft)	H BLC 0.5ft	OW CO 0.5ft	-	0	BLOWS	PER FOC	от 75	100	SAMP. NO.	мо	0	ELEV. (ft		D ROCK DES	CRIPTION DEPTH	ELE (ft	EV DRIN ELE (ft)	VE DEF (f	PTH ft) C	BLOW).5ft 0			0	BLOWS	S PER FOOT 50
2585		5 <u>0.0</u>	4	2	4	6		· · · ·		· · ·		D				ROUND SURF. RESIDUAL	ACE	<u>.0</u> 258	2,583	<u>3.9 0</u>	.0	4	3	4	• 7 ·		
2580	2,582.0	0 <u>2.5</u> 5 5.0	5	3	3				· · ·			D		-	SILT (A-4),	with trace f-c s micaceous	sand and clay,	258	30	.4 <u>+</u> 2		3	2	4		· · · · ·	· · · · · ·
		0 7.5	3	3	3	• 6		· · · · ·		 		M		- - -					2,578	3.9 <u> 5</u> <u> </u>		6	4	3	∳7 ·	· · · · ·	
2575	2,574.5	5 <u>+</u> 10.0	2	2	2	$ \begin{array}{ } \bullet 4 \cdot \cdot \cdot \\ \hline 1 \cdot \cdot \cdot \\ \hline 2 \cdot \cdot \cdot \end{array} $	· · · ·		· · · ·					- -				257		1	0.0		3	2	4 5 <u>.</u>	· · · · ·	· · · · · ·
0570		ŧ				₽ ⁶		· · · ·	· · · · · · ·					- - -				0.55	70	ŧ		2	1	2	•3 · · · · ·	· · · · ·	· · · · · · · · · · · ·
2570	2,569.5	5 + 15.0	3	4	4		· · · · ·		· · ·	· · ·		D		- - -				_257	2,568	3.9 <u>+</u> 15 +	5.0	1	1	2	$\begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 3 \\ 0 \\ \end{array}$	· · · · ·	· · · · · · · · · · · · · · · · · · ·
2565	2 564 5	+ 5+ 20.0					 		· · · ·					2,566.5	Very dense,	gray and brow (A-2-4)	n, f silty SAND1	. <u>0</u> 256		‡ ‡						· · · · ·	· · · · · ·
0500		- - -	30	35	43				78	· · · · · · · · · · · · · · · · · · ·		D		-		(**2 *)			2,563	<u>3.9 20</u> 	0.0	1	1	1		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · ·
2560	2,559.5	5 + 25.0 9+ 26.6	10	14	25			· · · ·	· · · ·	60/0.0		D		2,557.9	Desiren T			.6	2,558	3.9 <u>+</u> 25 +	5.0	11 :	50	50/0.2	$\begin{array}{c} 1 \\ \hline 1 \\ \hline \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\$		
		‡	60/0.0	'						00/0.0 -				-	Penetration	erminated with n Test Refusal	h Standard I at Elevation ock (GNEISS). 26.6'.		2,555	5.9 28	3.0	0/0.0				· · · · ·	· · · · · · · · · ·
		* * * * * * * * * * * * * * * * * * *																		*****************							
		+												- - - -													



GEOTECHNICAL BORING REPORT BORE LOG

		SURE LUG		¬	
WBS 38332.1.FS1		TY HAYWOOD	GEOLOGIST R. Dugger	WBS 38332.1.FS1	TIP B-3186 / B-5898 COUNTY
	ng Wall No. 5 from -Y1RT- STA 15+25 to		GROUND WTR (ft)		Vall No. 5 from -Y1RT- STA 15+25 to 26-
BORING NO. RW5_13	STATION 21+55	OFFSET 3 ft RT	ALIGNMENT -RW5- 0 HR. Dry		STATION 22+06 C
COLLAR ELEV. 2,582.6 ft	TOTAL DEPTH 34.0 ft	NORTHING 666,821	EASTING 818,802 24 HR. FIAD		TOTAL DEPTH 23.0 ft
	GTC9083 CME-550X 80% (11/24/2020)	DRILL METHOD H		DRILL RIG/HAMMER EFF./DATE GTC	· , ,
DRILLER L. Wanstrath	START DATE 02/13/21	COMP. DATE 02/13/21	SURFACE WATER DEPTH N/A	DRILLER L. Wanstrath	START DATE 02/13/21 C
	COUNT BLOWS PER FOR 5ft 0.5ft 0 25 50	0T SAMP. L 0 75 100 NO. MOI G	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (f	(ft) DRIVE DEPTH BLOW COU (ft) (ft) (ft) 0.5ft 0.5ft	
2,582.6 0.0 2	4 4	· · · · · · M L	- 2,582.6 GROUND SURFACE 0. - ROADWAY EMBANKMENT		5
2580 2,580.1 2.5 4	3 4 • 7 · · · · · · · · · · · · · · · · · ·	· · · · · · SS-315 21%	Medium stiff to stiff, brown and orange, SILT (A-4), with some f-c sand and trace gravel (quartz), micaceous	2580 2,579.3 5.0 13 23	17
2575 2.575.1 7.5	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		7. 	2574 3 10.0	20
2.572.6+ 10.0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		<u>2.573.6</u> SILT (A-5), contains little rock fragments <u>9</u> . (quartz), micaceous <u>1</u> ALLUVIAL Medium stiff, brown, black, and gray, CLAY		22
2.567.6+ 15.0			(A-7-6), with trace rock fragments, contains little organic matter No recovery	2 569 3T 15 0	71/0.3
2.562.6 20.0			RESIDUAL 18: Very stiff, brown, tan, orange, and white,	0 2565 2.564.3 20.0 100/0.4	· · · · · · · · · · · · · · · · · · ·
2560	5 22 · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	2,561.2 SILT (A-4), saprolitic 21. Medium dense, brown and tan, f-c silty SAND (A-2-4), contains little rock	4 2,561.3 23.0 60/0.0	
2,557.6 25.0	· · · · · · · · · · · · · · · · · · ·		2,557.6 fragments, saprolitic 25. WEATHERED ROCK Brown and tan, GNEISS		
2,552.6 30.0 60/0.3			- 2,548.6 34.		
2,548.6-34.0 - 60/0.0 		<u> </u>	2,548.6 34. Boring Terminated by Auger Refusal at Elevation 2,548.6 ft in Crystalline Rock (GNEISS). A.R. at a depth of 34.0'.		
			NOTES Split spoons at 15.0' and 30.0' resulted in no recovery		
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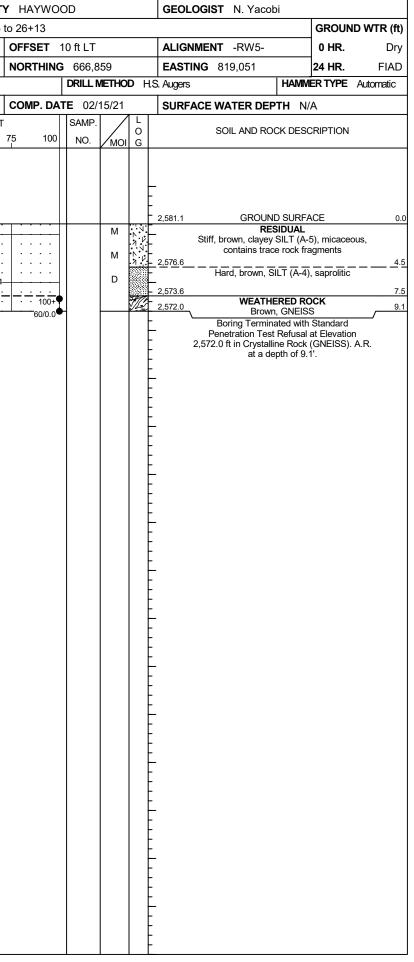
GEOTECHNICAL BORING REPORT BORE LOG

														<u>_0</u> G																					
	38332								B-5898		COUNT			OD				GEOL	ogist	R. Du	gger					3833						B-3186 /		COUN	
SITE	DESCR	RIPTION	Reta	aining	Wall	No.	5 from	n -Y1F	RT- ST	FA 15	+25 to	26+13	3									G	ROUND	WTR (ft)	SITE	DESCF	RIPTIO	N Reta	aining	Wall I	No. /	5 from -Y1	RT- STA	15+25 to	26+1
BOR	ING NO	. RW5	5_15			ST/	ATION	22-	+56			OFF	SET	15 ft LT	-			ALIGN	IMENT	-RW5	-	0) HR.	Dry	BOR	NG NO	. RW	5_16		:	STA	ATION 23	+07		OFF
	LAR EL								H 30.4			NOF	RTHING	G 666,				EASTI	NG 8	18,901		24	HR.	FIAD		LAR EL						TAL DEPT			NO
DRILL	RIG/HAI	MIMER EI	FF./DAT	ΈG	itc908	33 CIV	E-550>	K 80%	(11/24/2	2020)				DRILL	METH	OD	НS	6. Augers			HA	MMER	TYPE Au	tomatic	DRILL	. RIG/HAI	MIMER E	FF./DAT	TE G	TC9083	3 CM	E-550X 80%	»(11/24/202	0)	
DRIL	LER L	Wans	trath			ST/	ART D	ATE	02/13	3/21		CO	MP. DA	TE 02	2/13/2	1		SURFA	ACE W	ATER [DEPTH	N/A			DRIL	LER L	Wans	strath		;	STA	ART DATE	02/13/2	1	CO
ELEV	DRIVE ELEV	DEPTH	H BLC		OUN						R FOO				P. ▼	$\langle c \rangle$			SC	DIL AND	ROCK D	ESCRI	PTION		ELEV	DRIVE ELEV	DEPT	· · ·			_		BLOWS		
(ft)	(ft)	(ft)	0.5ft	0.5	ft 0.:	5ft	0	25	5	50		75	100	NO.	<u>/</u> M	01 (G	ELEV. (ft)						DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5f	t 0.5f	ft	0 2	25	50	75
																																l			
2585		+															┝	-					_		2585		+								
	2,583.4	<u>+ 0.0</u> +	4	6		4	•	ō ·		•		• •	• • •		D		<u> 28</u> -	2,583.4		ROADW	UND SU	ANKME	ENT	0.0		2,582.6	<u>+ 0.0</u>				Щ				
2580	2,580.9	2.5	2	2	-	6	: ['	• •	· · ·	:	· · ·		· · · ·				<u> </u>	2,581.4	Loose t orar	o mediu nge, SAN	m dense ID and G	, brown RAVEL	, black, an . (A-1-b)	id <u>2.0</u>	2580	2,580.1	+ 25	4	6	6		. .			
2000	2,578.4	5.0						<u>\</u>		-					D		\$\$ F	- `			RESIDU				2000		+	5	5	5		- •10 -			
	2,575.9	‡	12	12	1	4	· · ·	: . •	26	:					D				white	e, f-c silty	SAND (A-2-4),	gray and saprolitic			2,577.6	+ 5.0 +	3	4	5	-				
2575		╉	6	15	2	5				40					D		87 -	-							2575	<u>2,575.1</u>	7.5	11	48	52/0).3	· · · ·			
	2,573.4	<u>+ 10.0</u> +	29	33	4	5							в		D											2,572.6	+ 10.0	100/0.				· · · ·	· · · ·		
2570		ŧ								:		: - ^^					87 -								2570		Ŧ		4			· · · · ·			
	1 -	15.0								1							∭-	-								2,569.6	+ 13.0 T	11	37	63/0).5				
		Ŧ	8	14	1	7	· · · ·		Q 31	:	· · ·				D												Ŧ					· · · ·	· · · ·		
2565	1 -	Ŧ							- <u> </u>	-							87 -	-							2565	-	Ŧ					· · · ·]			
	2,563.4	<u>+ 20.0</u> +	100/0.	3					<u></u>	·÷+		. + -	100/0.3	♦ I			7	2,563.4			THERE			20.0		2,562.6	+ 20.0		47/0	2		· · · ·	· · · ·		
2560		ŧ								:				!				2,560.4			nd white,			23.0			+		47/0.		+			1	<u> </u>
	1 -	25.0												1			4	-	Gray ar	nd white	with brow	wn, AMF	PHIBOLIT	E		-	Ŧ								
		Ŧ	100/0.	5			· · · ·				· · · · · ·	- -	100/0.5	•			4										Ŧ								
2555	1 -	ŧ								-				¦				-								-	ŧ								
	2,553.4	30.0	100/0.4	4	_		••	•••					 100/0.4	↓				2,553.0	Boring	Termina	ted at Fle	vation	2,553.0 ft	30.4			Ŧ								
		ŧ															F		We	eathered	Rock (A	MPHIB	OLITE)				ŧ								
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ITY HAYWOOD	GEOLOGIST R. Dugger	
o 26+13		GROUND WTR (ft)
OFFSET 15 ft LT	ALIGNMENT -RW5-	0 HR. Dry
NORTHING 666,852	EASTING 818,951	24 HR. FIAD
DRILL METHOD H.S.	Augers HAMM	ER TYPE Automatic
COMP. DATE 02/13/21	SURFACE WATER DEPTH N/	A
OT SAMP.	SOIL AND ROCK DES	
75 100 NO. MOI G		
	2,582.6 GROUND SURF	ACE 0.0
	ROADWAY EMBAN 2,580.6 Medium dense, brown, blac	KMENT
SS-339 25%	SAND and GRAVEL	(<u>A-1-b)</u> /
	RESIDUAL Stiff, brown and orange, f sa (A-7-6)(5), highly micaced	indy, silty CLAY
	(A-7-6)(5), highly micaced 2,575.1 (gneiss)	ous, saprolitic7.5
100/0.8	WEATHERED RE Brown and orange, GNEIS	OCK
· · · 100/0.4	quartz fragmer	nts
100/1.0		
100/0.7	2,561.9	20.7
	Boring Terminated at Elevat Weathered Rock (G	NEISS)
F		
F		
F		
· · · · ·		

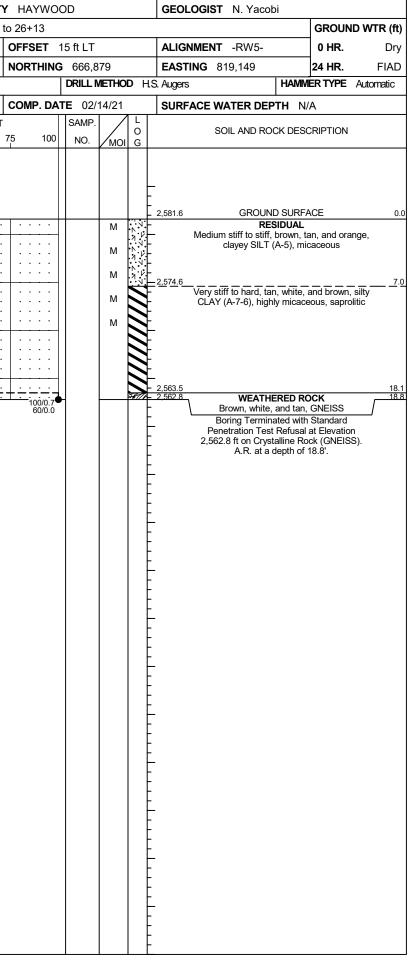
GEOTECHNICAL BORING REPORT BORE LOG

v	/BS	38332	2.1.FS1			TI	P B-318	36 / B	-5898	COUNT	TY HAYWO	DOD			0	BEOLOGIST R. Dugge	er			WBS	38332	2.1.FS1			TI	• B-318	86 / B-58	
s	ITE	DESCR		Ret	aining	Wall N	lo. 5 fron	n -Y1I	RT- ST/	A 15+25	i to 26+13							GROUND W	TR (ft)	SITE	DESCR		Ret	aining	Wall N	o. 5 fron	า -Y1RT	- STA 15+25
В	ORI	DRING NO. RW5_17 STATION 23+57 DLLAR ELEV. 2,582.5 ft TOTAL DEPTH 15 RILL RIG/HAMMER EFF./DATE GTC CME550X 9083 9083									OFFSET	19 ft LT	-		4	LIGNMENT -RW5-		0 HR.	Dry	BOR	ING NO	RW5	5_18		ST	ATION	24+07	
		RILL RIG/HAMMER EFF/DATE GTC CME550X 9083 RILLER L. Wanstrath START DATE 02/1									NORTHIN					ASTING 819,000		24 HR.	FIAD		LAR ELI					TAL DE		1 ft
D	RILL	rig/ha	MMER E	FF./DA	TE G		550X 9083	3				DRILL	METH	OD	H.S. A	ugers	HAMIN	IER TYPE Auto	omatic	DRIL	_ RIG/HA	MMER E	FF./DA	TE GI		550X 908	3	
D			. Wans				FART DA				COMP. D				5	URFACE WATER DEP	PTH N	/A		DRIL	LER K	. Boon				ART DA	TE 02/	15/21
		DRIVE ELEV	DEPTH	·								SAMP	9. ▼∕			SOIL AND RO	CK DES	CRIPTION		ELEV	DRIVE ELEV	DEPTH						WS PER FOO
_	,	(ft)		0.5ft	0.5ft	0.5ft	U	25	5		75 100	NO.) G	EL	EV. (ft)		[EPTH (ft)	(11)	(ft)		0.5ft	0.5ft	0.5ft	0	25	50
E B3186_GEO_SPT.GPJ NC_DOT.GDT 7/8/21	585 580 575	DRIVE ELEV (ft) 2,582.5 2,580.0 2,577.5 2,577.5 2,577.5 2,577.5 2,577.5 - - - - - - - - - - - - - - - - - - -	(ft) 0.0 2.5 5.0 7.5 10.0	0.5ft 4 11 27	27 64/0.1					PER FOO	75 100 	SS-34	D			EV. (ft) i82.5 GROUNI ROADWAY i80.5 Medium dense, bro and GR/ RES Medium dense to ver white, f-c silty SAND	D SURF/ EMBAN own and AVEL (A- SIDUAL ry dense 0 (A-2-4), accous ERED R(nd white, at Elevati	ACE KMENT orange, SAND 1-b) , brown, tan and with trace clay, OCK GNEISS ion 2,567.3 ft in	0.0 ,2.0 /	ELEV (ft) 2585 2580 2575	2,578.6	(ft) 0.0 2.5 5.0 7.5	0.5ft 2 4 26	0.5ft 5 27 60/0.0				50
NCDOT BORE DOUBL																					- - - - - - - - - - - - - - - - - -							



GEOTECHNICAL BORING REPORT BORE LOG

										JRE	_00															
WBS 38332.1.FS1 TIP B-3186 / B-5898 COUNT						COUNTY								WB	S 3833	32.1.FS	1			TIP B-3186 / B-5898 COUNTY						
SITE DESCRIPTION Retaining Wall No. 5 from -Y1RT- STA 15+25						o 26+13) SIT	E DESC	RIPTIO	N Ret	aining	Wall N	No. 5 from	-Y1RT- ST	A 15+25 to				
BORING NO. RW5_19 STATION 24+58				OFFSET 10 ft LT ALIGNMENT -RW5-					/5-	0 HR. D	/ BOI	BORING NO. RW5_20				STATION 25+08										
		EV. 2,				OTAL DE		6.2 ft		NORTHIN					NG 819,10		24 HR. FIA		LAR EL		·				PTH 18.8 f	it I
DRILL RIG/HAMMER EFF/DATE GTC CME 550X 9083								DRILL	METHO	OD ⊦	I.S. Augers		HAMN	NER TYPE Automatic	DRI	L RIG/H/	AMMER	eff./da	GTE G		550X 9083					
DRIL	LER I	K. Boon	e		S	TART DA	TE 02/	/15/21		COMP. D	ATE 02	/15/21		SURF	CE WATER	DEPTH N	/A	DRI	LLER		ne		ST	TART DAT	E 02/14/2	21
ELEV	DRIVE ELEV		·	ow co					R FOOT		SAMP				SOIL AN	D ROCK DES	CRIPTION	ELE	/ DRIVE ELEV		·	ow cou				PER FOOT
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50		75 100	NO.	Имо) G	ELEV. (ft)			DEPTH	ft) (ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50 7
2585		Ļ												_				2585	;	1						
	2,580.8													2,580.8	GF	OUND SURF	ACE	.0		5 <u>-0.0</u>		2	3			
2580		÷	2	3	3	-					-1	м	N N	_		RESIDUAL		2580	2 579 2	1 2.5	'	2	3	• 5 ^{••••}		
	2,578.3	2.5	1	2	5							м	N N N	-	clayey SIL ⁻	(A-5), contaii	ns trace rock			+	4	3	5			
2575	2,575.8	5.0	3	4	7								N N N	F	fragmen	ts, micaceous	, saprolitic	2575		<u>3+ 5.0</u> +	3	4	7			
	2,573.3	7.5				• • • • • • • • • • • • • • • • • • •					1	M	N N N	-					2,574.	1 7.5	4	6	10			
	2,570.8	10.0	2	5	6	1 1			· · · · ·			м	N N N	F					2,571.6	<u>5 10.0</u>	5	7	12	· · • •1 · · · · ·	,	
2570	,5/0.c	+ 10.0	1	3	4	• • • • •			· · · ·			м	N N N	-				2570	<u>)</u>	Ŧ	5			<u> </u>	19	
		Ŧ								· · · · ·			N N N	-					0.500	Ŧ						· · · · · · · · · · · · · · · · · · ·
2565	2,565.8	15.0	1	9	60/0.2								N N N N	2,564.8			1	.0 2565		<u>3+ 15.0</u> T	7	13	18		31	
		Ŧ	· ·		00,012					100+	•		- An and	2,564.6/		ATHERED R white, and tan	ОСК /			<u>5 18.1</u>	25	65/0.2				
		Ŧ												E	Boring T	erminated with	n Standard		2,002.0	Ī	60/0.0					
		Ŧ												F		n Test Refusal Weathered Re	ock (GNEISS)			Ŧ						
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GEOTECHNICAL BORING REPORT BORE LOG

			JRE LOG		
VBS 38332.1.FS1	ТІ	TIP B-3186 / B-5898 COUNTY	/ HAYWOOD	GEOLOGIST N. Yacobi	
SITE DESCRIPTION	Retaining Wall N	No. 5 from -Y1RT- STA 15+25 t	o 26+13		GROUND WTR (ft)
BORING NO. RW5	21 S	STATION 25+58	OFFSET 5 ft LT	ALIGNMENT -RW5-	0 HR. 14.5
COLLAR ELEV. 2,5	32.4 ft T	OTAL DEPTH 32.5 ft	NORTHING 666,877	EASTING 819,201	24 HR. FIAD
RILL RIG/HAMMER EF	F./DATE GTC CME	IE 550X 9083	DRILL METHOD H.S	S. Augers HAMM	ER TYPE Automatic
RILLER K. Boone	S	TART DATE 02/14/21	COMP. DATE 02/14/21	SURFACE WATER DEPTH N/	A
	BLOW COUNT 0.5ft 0.5ft 0.5ft	BLOWS PER FOOT	75 100 NO. MOI G	SOIL AND ROCK DESC ELEV. (ft)	
585					
2,582.4 0.0	3 2 4			2,582.4 GROUND SURFA	
580 -				Medium stiff, brown, clayey S trace sand, micace	
2.577.4 5.0				_2,578.4Medium stiff, gray, sandy	4
1 I	3 2 3	$\begin{array}{c c c c c c c c c c c c c c c c c c c $		2,576.1	6
575 _{2,574.9} 7.5	2 1 2			Loose, gray, fine SANI Soft to stiff, gray, CLAY (A-7-	D(A-2-4)
2.572.4 10.0		$\left \left \begin{array}{c} \P_{1}^{3} \\ \vdots \\ $		sand lenses, contains little o	organic matter
Ť	2 3 2	$\left \left \left$			
				-	
2,567.4 15.0	7 6 6				
565	7 6 6		Sat.		
- +				_2,564.4	1
2,562.4 20.0	3 5 15	$\frac{1}{2} \left[\begin{array}{c} \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \cdot \cdot \end{array} \right] \left[\begin{array}{c} \cdot \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \cdot \end{array} \right] \left[\begin{array}{c} \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \end{array} \right]$		Very stiff to hard, gray, brow red, clayey SILT (A-5),	vn, white, and
560 +			Sat. N		σαρισιιασ
2,557.4 25.0	14 18 43				
55 +				-	
2,552.4 + 30.0	18 35 65/0.5	$\overline{5}$		2,551.9 WEATHERED RC	30 30
550 2,549.9 32.5	0/0.0		• 100/1.0 60/0.0	2,549.9 Brown, tan, orange, and wh Boring Terminated with	nite, GNEISS <u>32</u>
				Penetration Test Refusal 2,549.9 ft on Crystalline Ro A.R. at a depth of 3	at Elevation ck (GNEISS).

GEOTECHNICAL BORING REPORT BORE LOG

									URE L	.00																		
WBS	38332	.1.FS1			Т	IP B-3186	6 / B-5898	COUNTY	HAYWO	OD		G	EOLOG	GIST C. Swaff	ord			WBS	38332.	1.FS1			Т	IP B-31	86 / B	3-5898	COUN	ΤY
SITE	DESCR	IPTION	US	23/ US	6 74 (G	Great Smoky	/ Mountain	Highway)								GROUND WTR (ft)	SITE	DESCRI	PTION	US 2	3/ US	574 (G	Great Smo	oky Mc	ountain H	lighway)
BOR	NG NO.	S2_E	B1-B		S	TATION 2	25+96		OFFSET	44 ft RT		A	LIGNM	ENT -Y1RT-		0 HR. 22	2.0	BORI	NG NO.	S2_E	B1-A		S	STATION	26+	29		C
COL	LAR ELE	EV. 2,	600.4	ft	Т	OTAL DEF	PTH 60.4	ft	NORTHING	6 66,8	63	E	ASTING	3 819,251		24 HR. FIA	AD	COLI	AR ELE	V. 2,	584.6 f	ť	Т	OTAL D	EPTH	34.5 ft		N
DRILL	. RIG/HAN	IMER EF	-F./DAT	E GT	C3277	CME-75 83%	(09/15/2020)	•		DRILL	/IETHO	D Mud Ro	tary		HAMME	RTYPE Automatic	;	DRILL	RIG/HAM	MER EF	F./DATE	E GTO	C9083	CME-550X	80%(1	11/24/2020))	
DRIL	LER K.	Boone	;		S	TART DAT	E 02/27/2	21	COMP. DA	TE 02/2	27/21	S	URFAC	E WATER DEF	PTH N/A	\		DRIL	LER L.	Wanst	rath		S	START D	ATE	02/25/2	1	0
ELEV	DRIVE ELEV	DEPTH	BLO	ow co	UNT		BLOWS	PER FOOT		SAMP.	▼/			SOIL AND RO		RIPTION		ELEV	DRIVE ELEV	DEPTH	BLO	W CO	UNT		F	BLOWS F	PER FOO	тс
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 100	NO.	мо		EV. (ft)			DEPTH	l (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	50	75
2605		Ļ																2585	2,584.6	- 00-								
	-	÷																	2,582.1	-	5	7	4	:•	.1 .	· · · · · · · ·		
2600	-	+											00.4		ID SURFA		0.0	2580	í Į	-	3	4	4			· · · · ·		:
2000	2,599.4	1.0	11	20	16		36				м		99.4	ROADWAY 1.0' P	avemen [®]		1.0	2000	2,579.6	- 5.0	6	5	6		ii ·	••••	· · ·	
	- 2,596.5 ⁻	3.9										L)ŏ- 2,5	<u>96.9</u>	ROADWAY Dense, browr			<u>3.5</u>		2,577.1	7.5	3	3	3			· · · ·	· · · ·	-
2595	2,594.6	5.8	6	4	4	9 8		+			M		Me	edium stiff, orang clayey SILT (A	e and bro	wn with black,		2575	2,574.6	- 10.0						· · · · ·		
	-	ŧ.	6	3	3						M			Clayey SILT (A	(- <i>J</i>), with t	ace sand			7	-	3	2	2	• 4	•••			:
2590	2,591.5	- 8.9 -	4	3	4						м							2570		-								:
	-	F				1													2,569.6	- 15.0	1	wон	1	- 1				•
	2,586.5	13.9	3	2	3															-								:
2585	_	F			3	• 5					M							2565	2,564.6	20.0	1	1	2					
		E																	ł	_	'							
2580	2,581.5	<u>18.9</u>	3	3	4	- • 7					м							2560	2.559.6	- 25 0					ר. ר.			-
	-	E									\Box		78.4		LUVIAL		22.0		2,559.6	- 25.0	4	7	11		• 18			÷
	2,576.5	23.9	4	4	5							0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Very loose to loo	se, gray, S	SAND (A-3),			+	-					: :			-
2575	-	Ł				9					W	· · · · · · · · · · · · · · · · · · ·	72 /	mi	caceous		7.0	2555	2,554.6	- 30.0	90	10/0.1			-+		+===	÷
	- 2,571.5					/:::						<u>, , , , , , , , , , , , , , , , , , , </u>	7 <u>3.4</u> So	ft to medium stiff	f, gray, sar	ndy SILT (A-4),	<u>27.0</u>		+	-		10,0.1						
2570	_2,571.5	20.9	3	3	1	4					w		CO	ntains trace wood orga	a fragmen anic odor	is, micaceous,			2,550.1	34.5								
	-	Ł					.												+	-	60/0.0							
	2,566.5	33.9		3	3						w								+	-								
2565	-	ŧ										-							4	-								
	- 2,561.5 ⁻	- 38 9				<i>†</i> :::	. .												+	-								
2560	-2,001.0		WOF	1 1	2	• 3				SS-300	43%	-							+	-								
	-	ŧ							· · · ·			2.5	58.4		SIDUAL		12.0		1	-								
2555	2,556.5	43.9	18	27	33						w	N	+ co	lard, tan and bro ontains trace rock	wn, sandy	CLAY (A-7), s. micaceous			+	-								
2000	-	÷										N		Sa	aprolitic	o,ouooouo,			+	-								
	- 2,551.5	48.9					.	· · ·				<u>2,5</u>	51.5				18.9		+	-								
2550	-	ŧ	32	68/0.3	3				100/0.8					WEATH Brown, GNE	ERED RO				4	-								
	-	ŧ																	+	-								
2545	2,546.5	53.9	86	14/0.0	ז				100/0.5										+	-								
2010	-	Ŧ																	+	-								
	- 2,541.5 ⁻	58.9	- 70	01/07															+	-								
2540		F	/9	21/0.0	, 	+			100/0.5	P		2,5	40.0 Bo	ring Terminated	at Flevatio		60.4		-	-								
	-	Ŧ										F	20	Weathered	Rock (GN	NEISS)			1	-								
	-	ŧ										F							1	-								
	-	F										F							+	-								
	-	Ŧ																	+	-			1					
	-	F										F							+	-								
	-	F										F							+	-			1					
	-	Ŧ										F							+	-			1					
		-	•		•	•					•	· · · ·								_			•	•				

HA	YWOO	D			GEO	GEOLOGIST C. Swafford										
							GROUND WTR (ft)									
OFFS	SET 5	ft LT			ALIG	NMENT	0 HR.	13.0								
NOR	THING	666,91	17		EAS	FING 819),274		24 HR.	FIAD						
		DRILL M	ETHOD	н	S. Augers	i		HAMME	RTYPE	Automatic						
сом	P. DAT	E 02/2	25/21		SURF	ACE WA	TER DEPT	TH N/A	۱							
		SAMP.		L	-1	201										
75	100	NO.	моі	0 G		SUIL	AND ROC	K DESC	RIPTION							
					2,584.6		GROUND		CE	0.0						
· · ·	• •		М		<u> 2,583.6</u>		OADWAY E	MBANK	MENT	1.0						
			М		-		ense, brow trace	n, f SAN gravel	D (A-2-4)	, with/						
			IVI		2,580.1		prown and comedium d									
			М		-	LOUSE	(A-	-2-4)	ay, 1-0 07							
			Sat.		-											
<u></u>		SS-513	51%		<u>2,574.6</u>					<u> </u>						
::	: :		∇	トレ	- 2,571.6_		gray, SILT (/			13.0						
· ·	• •					Very lo	ose, gray, f mica	silty SA	ND (A-2-4	4),						
			W 28%		-											
			2070		2,566.6		y, f sandy S		micace	<u>18.0</u>						
<u></u>			w		-	oon, gra	y, roundy c		<i>)</i> , modec							
	• •		vv		- 2,561.6					23.0						
: :					- 2,301.0			IDUAL								
			w		-	very sun (A	, brown and A-4), micace	i orange eous, sa	, r sandy ; prolitic	SILI						
					-											
<u> </u>					<u> 2,554.6 </u>					<u>30.0</u>						
1	00/0.6				-	Brow	WEATHE n, orange, a			S						
	::				2,550.1					34.5						
	60/0.0			1077A			ng Termina									
					-		ation Test I ft on Crysta									
					-	Other Sar										
					-	ST-4 (1	5.0 - 17.0)									
					-											
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