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STATE OF NORTH CAROLINA

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

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STRUCTURE SUBSURFACE INVESTIGATION

COUNTY JOHNSTON

PROJECT DESCRIPTION REPLACE BRIDGE NO. 11 OVER MILL CREEK ON SR 1201

STATE PROJECT REFERENCE NO. 8 B-4771

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 (199) 707-6805. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

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

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

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

PERSONNEL M. BAHIRADHAN S. BUCHANAN C. BUTLER

CAROLINA DRILLING

INVESTIGATED BY _M. BAHIRADHAN

DRAWN BY S. BUCHANANC. BUTLER

CHECKED BY M. BAHIRADHAN

SUBMITTED BY SCHNABEL ENG.

DATE AUGUST 2016



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

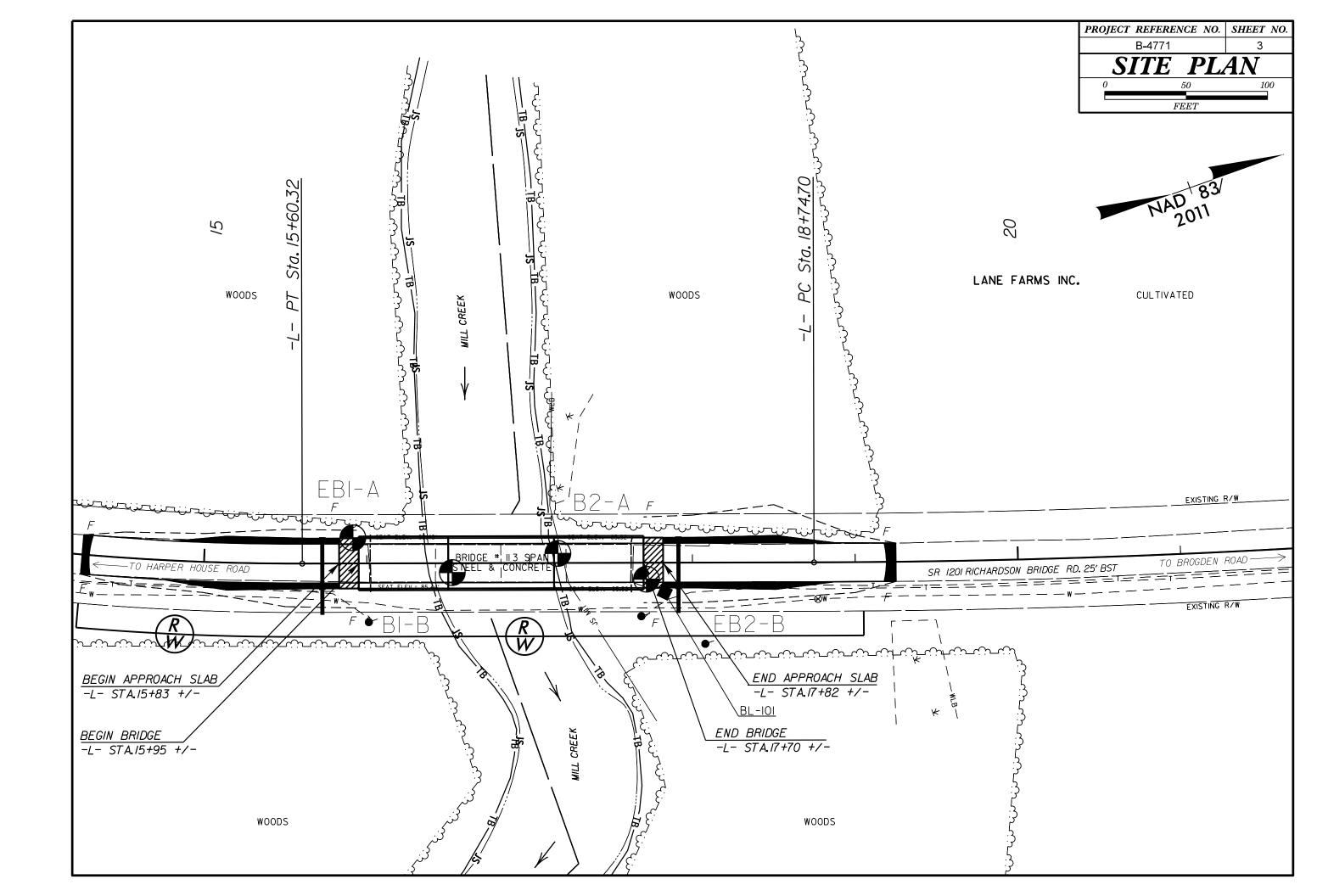
PROJECT REFERENCE NO. SHEET NO. 2

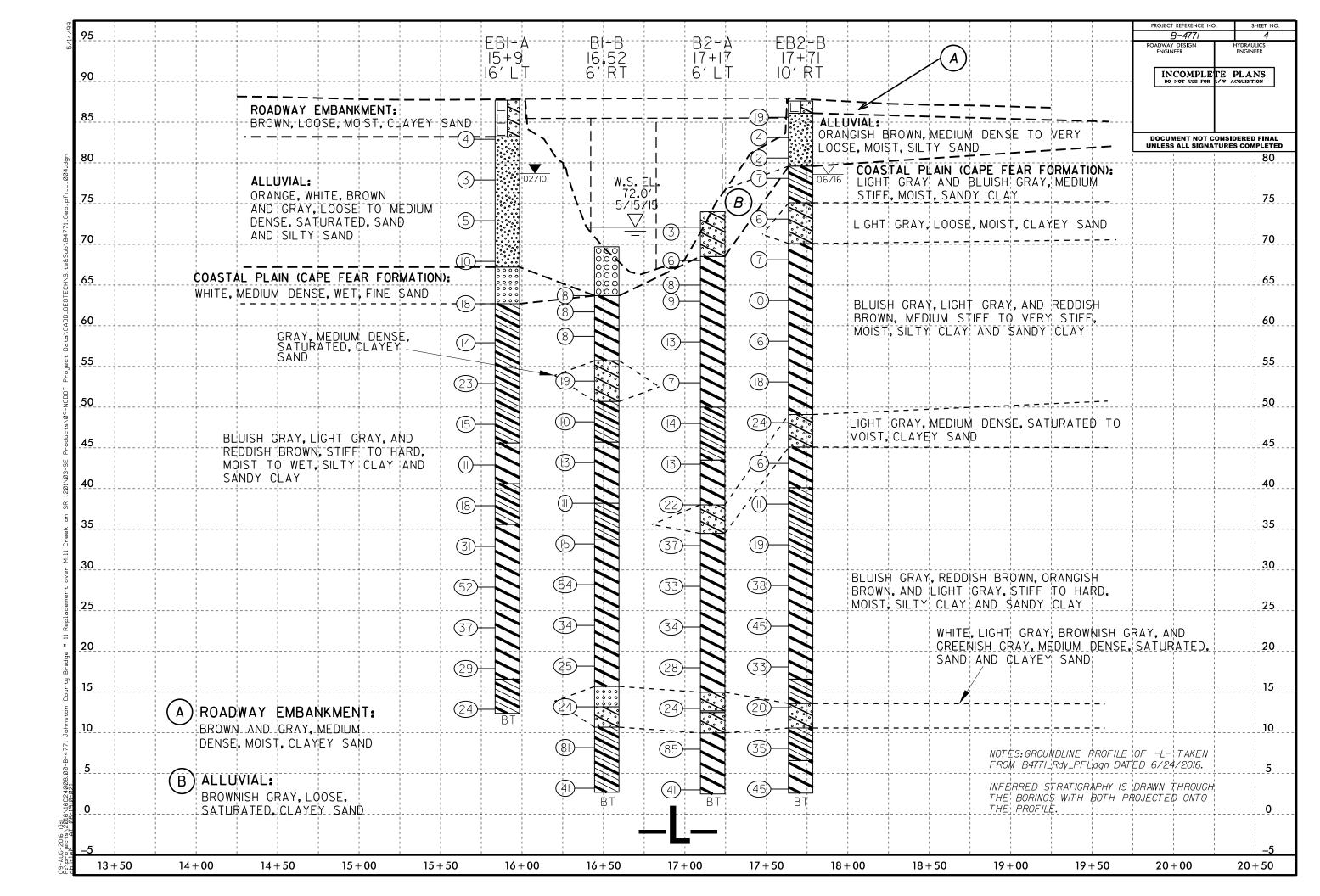
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUYIUM (ALLUY.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM DI586), SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN	AQUIFER - A WATER BEARING FORMATION OR STRATA.
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	REPRESENTED BY A ZONE OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS	MINERALOGICAL COMPOSITION	CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.
CLASS. (≤ 35% PASSING *200) (> 35% PASSING *2200) CROWNER CHARLES CHA	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAQLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-1-a A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YELLD SPT REFUSAL IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
SYMBOL 000000000000000000000000000000000000	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50	ROCK (NCR) ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	OF SLOPE.
7. PASSING	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*10 50 MX GRANULAR SIL1- MUCK, CLAY PEAT	PERCENTAGE OF MATERIAL	CP) SHELL BEDS, ETC. WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
*200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN 36 MN	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER	ROCKS OR CUTS MASSIVE ROCK.
MATERIAL	TRACE OF ORGANIC MATTER 2 - 3%, 3 - 5%, TRACE 1 - 10%, LITTLE ORGANIC MATTER 3 - 5%, 5 - 12%, LITTLE 10 - 20%	HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
PASSING *40	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	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 OF A CRYSTALLINE NATURE.	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 0 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOILS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USUAL TYPES STONE FRAGS. FINE SILTY OF CLAYEY SILTY CLAYEY MATTER	✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	(SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
OF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS	STATIC WATER LEVEL AFTER 24 HOURS	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
CEN PATING		(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	PARENT MATERIAL.
AS SUBGRADE EXCELLENT TO GOOD FAIR TO POUR POUR UNSUITABLE	O→MG→ SPRING OR SEEP	DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 :PI OF A-7-6 SUBGROUP IS > LL - 30		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 RANGE OF STANDARD RANGE OF UNCONFINED	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 CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) ROADWAY EMBANKMENT (RE) DIP & DIP DIRECTION OF ROCK STRUCTURES	IF TESTED, WOULD YIELD SPT REFUSAL	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
(N-VALUE) (TONS/FT ²) VERY LOOSE < 4	SPI CLOSE MUNICATOR	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
GRANHI AP LOOSE 4 TO 10	SOIL SYMBOL SOIL SYMBOL SOUR 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. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS
MATERIAL NEWSE 30 TO 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CONE PENETROMETER TEST	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) VERY DENSE > 50		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 GENERALLY SOFT 2 TO 4 0.25 TO 0.5	— 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. <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	INFERRED ROCK LINE MONITORING WELL TEST BORING WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
MATERIAL STIFF 8 TO 15 1 TO 2 (COHESIVE) VERY STIFF 15 TO 30 2 TO 4	A ALLUMIA COLI POLITICARY A PIEZOMETER COST NUMBER	SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
HARD > 30 → 4	INSTALLATION	ROCK HARDNESS	RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES	ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270 OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE	SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
COARSE FINE	SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - 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.
BOULDER	ABBRE VIATIONS	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	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	BY MODERATE BLOWS.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY 7 - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	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
SOIL MOISTURE - CORRELATION OF TERMS	CL CLAY MOD MODERATELY γ - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC γ_d - DRY UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE GUIDE FOR FIELD MOISTURE DESCRIPTION	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK, CAN BE EXCAVATED IN FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.	STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL
- 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 1 INCH	LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASTIC LIQUID LIMIT	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE, CAN BE SCRATCHED READILY BY FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
PLASTIC SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: POINT IOI, N 580378,1700 E 2233783,9630 STA, II+40,99
(PI) PL PLASTIC LIMIT ATTAIN OPTIMUM MOISTURE	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	(BL-101)
- MOICT - (M) COLID. AT OR NEAR ORTIMUM MOICTURE	EQUIPMENT USED ON SUBJECT PROJECT	VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: 86.59 FEET
OM OPTIMUM MOISTURE SL SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	NOTES:
- DRY - (D) REQUIRES ADDITIONAL WATER TO	X CME-45C CLAY BITS X AUTOMATIC MANUAL 6° CONTINUOUS FLIGHT AUGER CONTINUOUS FLIGHT AUGER	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	FIAD = FILLED IMMEDIATELY AFTER DRILLING
ATTAIN OPTIMUM MOISTURE	CME-555 □	THINLY LAMINATED < 0.008 FEET	-
PLASTICITY	8' HOLLOW AUGERS	INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	1
PLASTICITY INDEX (PI) DRY STRENGTH NON PLASTIC 0-5 VERY LOW	CME-550 HARD FACED FINGER BITS -N -N	DIRDING WITH FINCED EDEES NUMEDONG COAING.	
SLIGHTLY PLASTIC 6-15 SLIGHT	VANE SHEAR TEST VANE SHEAR TEST HAND TOOLS:	FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH	CASING W/ ADVANCER POST HOLE DIGGER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	
COLOR	PORTABLE HOIST X TRICONE 2.875 STEEL TEETH HAND AUGER	BREAKS EASILY WHEN HIT WITH HAMMER.	
	TRICONE TUNGCARB. SOUNDING ROD	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	CORE BIT VANE SHEAR TEST	EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;	
HOSE IENS SOUTHS EIGHT, DANK, STILLANED, ETC. HAE USED TO DESCRIBE HETEHMANCE.		SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-1





GEOTECHNICAL BORING REPORT BORE LOG

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WBS 3854			· · · · · · · · · · · · · · · · · · ·		TIP B-4771		/ JOHNST				GEOLOGIS	Czajka,	C. D.		·	
SITE DESC	RIPTIO	N BR	IDGE	NO. 1	1 ON -L- (SR 1201, R	CHARDS			OVER N	ΛILL	CREEK			GROUN	ID WTR (f	
BORING NO). EB1	-A		s	STATION 15+91		OFFSET	16 ft LT			ALIGNMEN	IT -L-		0 HR.	N/	
COLLAR ELEV. 87.7 ft					TOTAL DEPTH 75.3 f		NORTHING	580,2	09		EASTING	2,233,688		24 HR.		
DRILL RIG/HA	MMER E	FF./D/	ATE R	FO0067	7 CME-550X 86% 02/09/2	015		DRILL N	METHOD	H.S	3. Augers		HAMM	ER TYPE	Automatic	
DRILLER (Conley,	H. R.		s	START DATE 02/25/1	0	COMP. DA	TE 02/	25/10		SURFACE	WATER DE	PTH N	Ά		
ELEV DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	OW CO	1	┥╿	PER FOOT	75 100	SAMP. NO.		L O G	ELEV. (ft)	SOIL AND RO	OCK DESC	CRIPTION	DEPTH	
90	<u> </u> - -									-	87.7		ND SURFA			
85 83.9	3.8	2	2	2					M	//////	83.2	ROADWA' BROWN,	CLAYEY			
80 78.9	8.8		-	_	••••••••••••••••••••••••••••••••••••••					-		HT BROWN,	LLUVIAL ORANGE OARSE S			
75	+ 0.0 + +	2	1	2	•3 · · · · · · · · · · · · · · · · · · ·				W							
73.9	13.8	3	3	2	•5· · · · · · · · · · · · · · · · · · ·				W							
68.9	18.8	4	2	8					W		67.2		YA! P	TV.	2	
63.9	23.8	8	8	10					W		62.7	WHITE	STAL PLA E, FINE SA	ND	2	
58.9	28.8											BLUE TO GF	Ray, sani	OY CLAY		
55	‡ 	4	5	9	14				М							
53.9	33.8	8	12	11	23				м							
48.9	38.8	4	5	10	15				м		45.6				4	
43.9	43.8	5	5	6	• • • • • • • • • • • • • • • • • • • •				м		T-JU	GRAY,	SILTY CL	AY	4	
38.9	48.8	6	7	11	18	: : : :			м		40.6	GRAY,	SANDY CL	_AY	4	
33.9	53.8	10	12	19	21				м		35.6	DARK GR	AY, SILTY	CLAY	5	
28.9	58.8	11	02	20												
5 23.9	63.8	14	23	29		52			м							
20	 	12	14	23	37				м							
18.9	68.8	13	12	17	29				м		16.6	GRAY,	SANDY CL	.AY	7	
13.9	73.8	7	10	14	24				М		12.4 Bori	ng Terminate				
	t							1	l	F	(COASTAL PL	AIN (SANE	OY CLAY)		

SHEET 5

GEOTECHNICAL BORING REPORT BORE LOG

	3854														
SITE	DESCE		I RE	DI AC		IP B-4771 DGE NO. 11 OVER MIL	COUNTY				<u> </u>	GEOLOGIST Buchan	iaii, S.	GPOLIN	D WTR (
	RING NO			LAC		TATION 16+52	LONLE	OFFSET (ALIGNMENT -L-		0 HR.	N.
	LAR EL					OTAL DEPTH 67.0 ft		NORTHING		50		EASTING 2,233,729		24 HR.	N/
				TE C		IA DRILLING CME 45C 899	/ 05/24/20				ID M	ud Rotary	ER TYPE		
				NIE C			т								Automatic
	DRIVE			ow co		TART DATE 06/27/16		COMP. DA	SAMP.		11	SURFACE WATER DE	PIH 1.	Uft	
ELEV (ft)	ELEV (ft)	DEPTH (ft)	0.5ft			0 25 50		75 100	NO.	МО	0	SOIL AND RO	OCK DES	CRIPTION	
	(11)		0.0.0	10.01	1			-	1.0.	Z MO	6	ELEV. (ft)			DEPTH
70										lacksquare] _[WATER SU	RFACE (0	06/27/16)	
70_		 				.1					000		ND SURÈ <i>l</i> L LUVIA L	ACE	
		‡	!			: : : : : : : :					0000	 BROWN AND GRAGINED SAND, 			
65	64.7 -	5.0				• • • • • •					0000	FRAGMENTS AN	ID ROUNI IED GRAV	DED COAR	SE
	62.7	7.0	2	4	4					Sat.	000	. 63.7	STAL PLA		
		-	2	3	5	:•8 : : : : : :				М		BLUISH GF			
60	59.7 <i>_</i> _	10.0	2	3	5			 		м		-			
		Ĺ								'*'					
55	_	Ł				\						. 55.7 - GRĀY, CLĀYĒ	V FINE TO	MEDIUM	1
	54.2	15.5	4	6	13	19				Sat.			NED SAN		
	-	F				[[:::/:]::::[, . 50.7			1
50	49.2	20.5										LĪĠĦŦĠŔĀY, F		NED SAND	
		F	3	5	5	10				М			CLAY		
45		ļ.										45.7	ᇲᄼᇒᆍ		2
	44.2	25.5	4	5	8					М		BLUISH GF	KAY, SILT	Y CLAY	
	-	‡	,			13				IVI					
40	39.2	30.5				• • • • • • • • • • • • • • • • • • •						-			
		30.5	3	5	6	. 11				М		38.2 LIGHT GRAY, F	INE CDAII	VED CAND	3
25	-	<u> </u>				::\:::							CLAY	NED SAND	r
35	34.2	35.5	10	7	8							33.7			3
	-	_	10	'						М		BLUISH GF	RAY, SILT	Y CLAY	
30	-	40.5										-			
	29.2	40.5	12	21	33		 ● 54			М					
	-														
25	24.2	45.5		- 40		 / . 						-			
			8	12	22					М		AT 45.5FT: REI BLUI	DDISH BR ISH GRAY		
20	-	-													
	19.2	50.5	7	11	14					М	U	_			
	-	- 1				1					N	_ 15.7			5
15	14.2	- - 55.5					• • • •				0000	- 15.7_ — — WHITE, FINE	GRAINE	D SAND	
	-		6	11	13	24				Sat.	****	13.2 GREENISH GRAY,	CLAYEY I	FINE GRAIN	VED 5
10	-	-				:::: :::::						10.7 LIGHT GRAY, FI	SAND		5
	9.2	60.5	13	21	60					М		- LIGHT GKAY, FI	NE GRAII CLAY	ACD SAND,	T
		-						01		141					
5_	4.2	- - 65.5					//					-			
		-	10	15	26	41	 <u></u>			М		2.7			6
	-	-										Boring Terminate COASTAL PI FORMATION	_AIN, CAF	E FEAR	N

GEOTECHNICAL BORING REPORT BORE LOG

SHEET 6

								D	UKE	<u>-06</u>				
WBS	38543	3.1.1			_ TI	P B-4771		COUNT	Y JOHNS	TON			GEOLOGIST Buchanan, S.	
SITE	DESCR	IPTION	REF	PLACE	BRID	GE NO. 11	OVER M	ILL CREE	K ON SR	1201				GROUND WTR (ft)
BOR	ING NO.	B2-A	`		s	TATION 17	·+17		OFFSET	6 ft LT			ALIGNMENT -L-	0 HR. Caved
COL	LAR ELE	EV . 74	1.0 ft		T	OTAL DEPT	H 71.5 ft		NORTHIN	G 580.3	324		EASTING 2,233,739	24 HR. Caved
				TE CA		A DRILLING O				<u> </u>		D Mu		ER TYPE Automatic
				IE OA								D WIU		
	LER B					TART DATE			COMP. D			1	SURFACE WATER DEPTH N/	Α
ELEV	DRIVE ELEV	DEPTH		M COL				PER FOOT		SAMP.	▼/	0	SOIL AND ROCK DESC	CRIPTION
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 2	5 5	50 	75 100	NO.	MOI	G	ELEV. (ft)	DEPTH (ff
75		L										lL		
	-	<u> </u>				 			т	 	-	Į.	74.0 GROUND SURFA ALLUVIAL	ACE 0.0
	72.5	1.5	3	1	2	j					Sat.		BROWNISH GRAY, CLAY	
70	ļ	t				▼ °]		<u> </u>	MEDIUM GRAINED	SAND
	69.0	5.0	1	3	3	 					М		68.5 AT: 5.0FT TO 5.3FT: TRA	
	66.0	8.0				→ 6· · ·					l W		COASTAL PLA	IN .
65		L	WOH	3	5	8	· · · ·			11	М		BLUISH GRAY, SILT	Y CLAY
	64.0	10.0	2	4	5	. 1					М			
	_	-										1		
60	500	ļ ,,				· · · · ·				_				
	59.0	15.0	4	5	8						М			
	-	-										1		
55	54.0					1	· · · ·		 	4				
	J4.0	- 20.0	3	2	5	· ·					м			
	_	_		İ		$ \cdot\rangle$								
50	49.0					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			+	-			50.0 LIGHT GRAY, FINE GRAII	VED SANDY 24.0
1		- 20.0	5	6	8	14					М		CLAY	120 0/1101
	-	_							1::::					
45	44.0	30.0				 			 					
		- 00.0	3	5	8	· · • 13·					М	*	43.5 BLUISH GRAY, SILT	30.5 Y CLAY
]	-				:: j:							AT 31.2FT: REDDISH	BROWN
40	39.0	35.0				\ <u>\</u>			 	1				
	-	_	4	8	14		2				Sat.	N.	38.0 LIGHT GRAY, CLAYEY FIN	JE CRAINED
25	_						\						SAND	VE OIVAIVED
35	34.0	40.0					\			1.			34.5 BLUISH GRAY, SILT	ZCIAV — — 39.5
	-	_	8	17	20		• ₩37 •				М	1	BEOIST GIVAT, SIET	CLAT
30	1	-					:							
30	29.0	45.0		40	-00		. j		 	11				
	-		7	13	20		.∳33			1	М			
25		-									[
	24.0	50.0	8	15	19		1		1	1			AT CO OCT DEDDIO:	OVANA AND
	_	-	\mid $^{\circ}\mid$	10	וש		: 9 .34				M		AT 50.0FT: REDDISH BR BLUISH GRAY	
20	-	_					<i>:</i>							
	19.0	55.0	7	12	16		<i>f</i>]]				
		-		'*	۱۰	: : : :	P 28· · ·		: : : :		М			
15	-	<u> </u>					1		<u> </u>]		1	15.0	59.0
	14.0	60.0	5	6	18						Sat.	\ \ \ \ \ \ \ \ \ \ \ \ \ \	LIGHT GRAY, CLAYEY FIN	NE GRAINED
		-				: : : : •	24	: : : :			Jai.		12.5/\ WHITE, FINE GRAINE	
10	Ė	Ė					` ` ` `	<u> </u>]		*	BROWNISH GRAY AND GR	EEN, CLAYEY 64.0
	9.0	65.0	26	30	55				\. <u>.</u>		М		LIGHT GRAY, SILTY	
	1	-						: : : :	85 .		101	N T		
5		-				• • • •		/].]		过	•	
	4.0	70.0	12	17	24			/			м		2.5 BROWNISH GREEN AND	GRAY WITH
		-				1	· · •41	· · · · ·	<u> </u>	닉	- '''	+	SPECKLES OF REDDIS	H BROWN //1.5
	+ - - -	- -										-	Boring Terminated at Eleva COASTAL PLAIN, CAF FORMATION (SILTY	PE FEAR
	‡	-											Perched water at ground surfa	ace immediately
	-								· . <u></u> .	.			after drilling. Cave in dep	

GEOTECHNICAL BORING REPORT BORE LOG

											В	<u>Uk</u>	<u>CE L</u>	<u>.OG</u>							
WBS	3854	3.1.1				ΓIP	B-477	1		(COUNT	Y JO	OHNST	ON			GEOLOGI	ST Buchan	an, S.		
SITE	DESC	RIPTIO	N RE	PLAC	E BRI	DGI	E NO.	11 (OVER	MIL	L CRE	EK OI	N SR 1	201						GROU	ND WTR (f
BOR	ING NO	. EB2	-B		8	STA	TION	17+	-71			OFF	SET	10 ft R			ALIGNME	NT -L-		0 HR.	9.0 Cave
COL	LAR EL	EV. 8	7.6 ft		T	ОТ	AL DEF	PTH	85.0) ft		NOF	RTHING	5 580,	370		EASTING	2,233,772		24 HR.	FIA
DRILI	L RIG/HA	MMER E	FF./D/	ATE C	AROLI	NA D	RILLING	CIV	1E 45C	89%	05/24/2	2016		DRILL	METH	OD N	/lud Rotary		HAMN	MER TYPE	Automatic
DRIL	LER E	Bridger,	G.		s	AT	RT DAT	ſΕ	06/28	/16		CON	/IP. DA	TE 06	/28/16	3	SURFACE	WATER DE	PTH N	I/A	
ELEV	DRIVE ELEV	DEPTH	BL	ow co		11.					R F001			SAMP	. ▼/			SOIL AND RO	OCK DES	CRIPTION	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	\prod_{i})	25		50		75	100	NO.	MC) G	ELEV. (ft)				DEPTH
															1						
90		1																			
		<u> </u>				\coprod											87.6		ND SURF		
85	86.6	+ 1.0 +	9	8	11	1		·		:					м		86.1 BF	ROADWAY ROWN AND GF			то
00	84.1	3.5	4	2	2	┧├	.,/.	.		.		:			١		<u> </u>	COARSE (GRAINEI LUVIAL	SAND	
	81.6	6.0					7 4		: : :						M			RANGISH BRO COARSE GRA	IIZ ,NWC		
80_	70.4	‡	1	1	1	1	2			•		<u> :</u>			M			SUBROUNDED	AND SU	IBANGULA	
	79.1	8.5	1	3	4	1	Л • ∮ 7					:			\vdash		\		TAL PLA	ATN — — —	
7.5		‡					1:::			:		:						SHT GRAY AN			
75	74.1	13.5	3		4	 -	†	+		+		+:					75.1LI	GHT GRAY, CI	AYEY FI		<u> 1</u>
		‡	3	2	*	11	♦ 6 · ·								M		-		SAND		
70		<u> </u>			l		<u> i · · ·</u>	1									70.1			=======================================	1
	69.1	18.5	2	2	5	1	7			:		.			м		-	BLUISH GR	AY, SILT	Y CLAY	
		ł															-				
65	64.1	23.5		<u> </u>		╁┝	. [+		+		+:					<u>_</u>				
		ł	3	4	6		. 10 .			:					М		_				
60		Ł					· · .					1:					-				
	59.1	28.5	5	6	10	$\ \cdot \ $		3						İ	М		_				
		F					 .										-				
55	54.1	33.5				J├		+		-		+::					-				
	-	F	- 6	8	10			18		•		: :			М		- -				
50		-					: : : <i>[</i>										-				
	49.1	38.5	5	9	15	\prod		1							М		49.1 LIC	GHT GRAY, CL	AYEY FI	NE GRAINI	3 ED
	•	F						/				: :					- -		SAND		
45	44.1	43.5_					· · · /	+		· 	• • • •	ļ: ·					45.1	BLUISH GR	AY. SILT	YCLAY	<u>-</u> 4
		F	4	5	11		16	3				: :			М		-		,		
40		F		ł			: : <i>j</i> : :					: :					- - 40.1				4
	39.1	48.5	4	4	7	$\ \cdot \ $									М		BL	ŪISH GRAY, F	INE GRA CLAY	INED SAN	DY
	-	-			ŀ		: '\':					: :	::		'*'		-				
35	34.1	53.5				-	```` `	+		-	• • • •	↓					-				
	-		6	7	12]		19							М		-				_
30	-	-							· · · ·			: :						LUISH GRAY			
	29.1	58.5	7	16	22	-		Τ,	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			1			М		– R -	EDDISH BROV BROWN			1
	=	-						:	₹38.			: :			'''		- -				
25		- 63.5				-	· · · ·	_:	· · · · · · · · · ·	+	· · · ·						- -				
Ī		-	13	17	28			:	}	 	· · · ·				М		AT 6	3.5FT: BLUISH	H GRAY /	AND REDD	ISH
20	-	-						:	:			::					- -	ы	VO A A I A		
	_19.1	68.5	9	15	18	-		† :	/			†::			,,		-				
	1	-			'	:		1	● 33		· · · ·	: :			M		- 16.6	. 			7
15	14.4	- 73 5					· · · ·	1.		1							- LIC	GRAY, FII	VE GRAI	NED SAND	Υ
	14.1	73.5	8	10	10	:	 •	/ · 20 ·			 		: :		Sat.		13.6 -	BROWNISH GF		YEY FINF	74
10	-					:	 	1				: :	::				- - 10.6	GRAIN	NED SAN	D	
10								1						l	l	1					

GEOTECHNICAL BORING REPORT

SHEET 7

								B	ORE L	OG						
	385					P B-4771			/ JOHNST				GEOLOGIST Buchana	an, S.	T	
				PLACE			OVER MIL								4	ID WTR (ft)
). EB2-		_		TATION 17			OFFSET				ALIGNMENT -L-			9.0 Caved
		LEV. 87				OTAL DEPT			NORTHING				EASTING 2,233,772	1	24 HR.	FIAD
				TE CA			ME 45C 89%	05/24/20		DRILL			ud Rotary			Automatic
	DDI\/	Bridger,	T	W COI		TART DATE	06/28/16 BLOWS PE	D FOOT	COMP. DA	SAMP.		1 []	SURFACE WATER DEF	TH N	//A	
ELEV (ft)	ELEV (ft)	DEPTH (ft)	0.5ft		0.5ft	0 2	5 50		75 100	NO.	MOI		SOIL AND RO	CK DES	CRIPTION	DEPTH (ft)
	(14)								1		/ IVIOI	Ĭ	ELLV. (II)			DEI III(II)
10							Match I	Line		i						
	9.1	78.5	16	14	21		35 .				w		LIGHT GRAY, FII	NE GRA (continue	INED SAN	OY
		Ŧ					1 700						- 6.6 BLUISH GRAY AN			WNI 81.0
5	4.1	83.5	44	40			\.						SIL1	Y CLAY	,	vių,
		╪	11	19	26			<u></u>		-	M		- 2.6 - Boring Terminate	d at Flev	ration 2.6 ft	85.0
		 											FORMATIO	N (SILI)	YCLAY)	

SITE PHOTOGRAPHS REPLACE BRIDGE NO. 11 OVER MILL CREEK ON SR 1201







View of Bridge No. 11 looking southwest