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REFERENCE

**DESCRIPTION** TITLE SHEET LEGEND SITE PLAN PROFILE CROSS SECTIONS BORE LOGS, CORE REPORTS & CORE PHOTOGRAPHS SITE PHOTOGRAPHS

#### STATE OF NORTH CAROLINA

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

# **STRUCTURE** SUBSURFACE INVESTIGATION

COUNTY MONTGOMERY

PROJECT DESCRIPTION REPLACE BRIDGE NO. 53 ON NC 73 OVER DROWNING CREEK

STATE N.C

SHEETS 12

#### **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 RALEICH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENCINEERING UNIT AT (1991) 707-8050. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOCS, ROCK CORES AND SOLI 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 UNPELACED TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST WETHOD. THE OBSERVED WATER LEVELS OR SOLL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOLL MOISTURE CONDITIONS MAY YARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTTEE THE SUFFICIENCY OF ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPHIONO OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONSTRUCTIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS 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 OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDENSION OF FOR AN THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES

- 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 WAVES 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

T. WELLS

R. TOOTHMAN

W. ALLEN

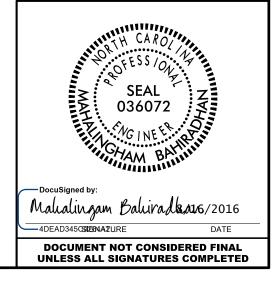
M. BAHIRADHAN

INVESTIGATED BY \_\_\_\_\_A. PRUITT

DRAWN BY \_\_\_\_\_. WELLS /C. BUTLER

SUBMITTED BY \_\_SCHNABEL

DATE <u>MAY</u> 2016



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

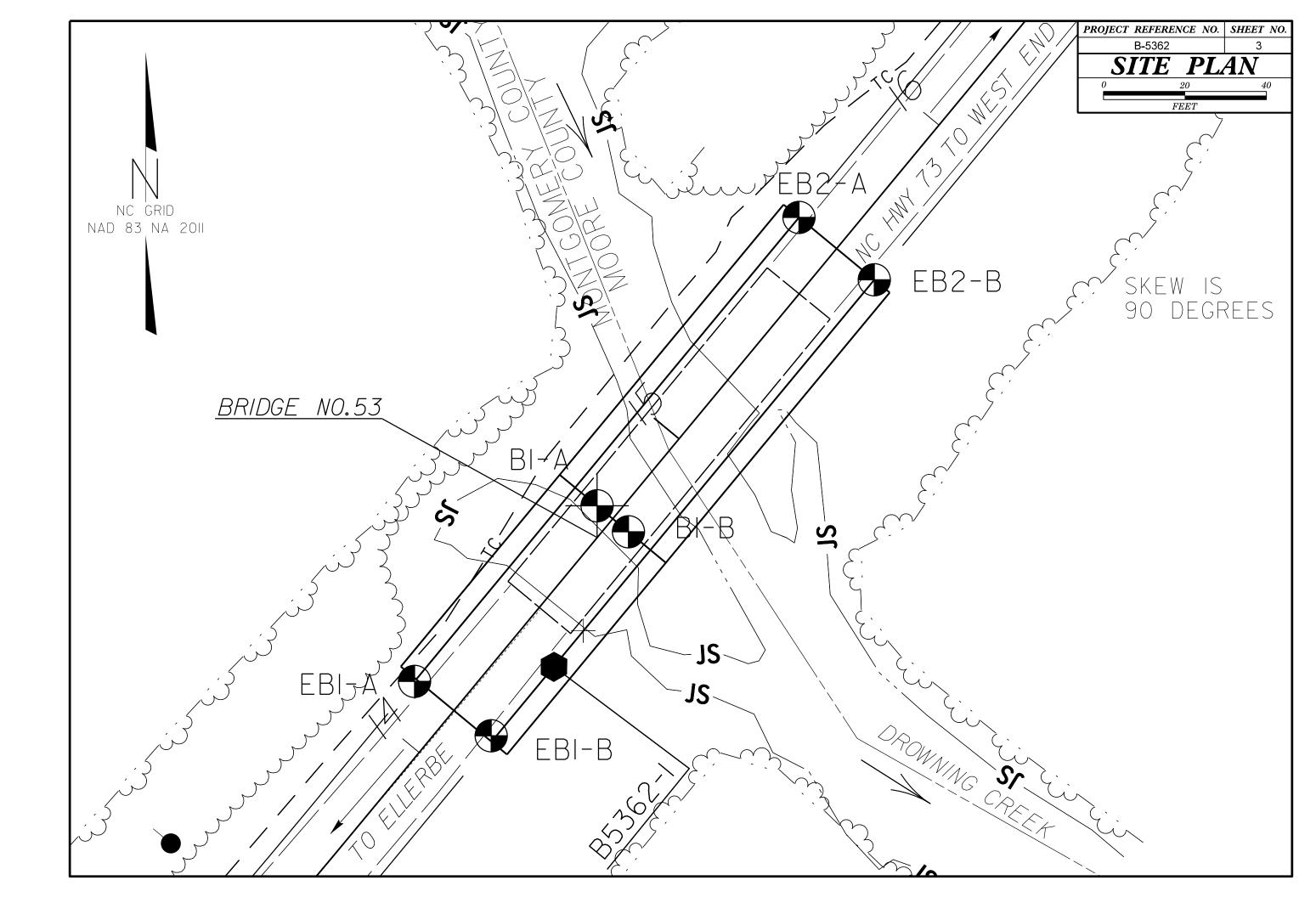
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

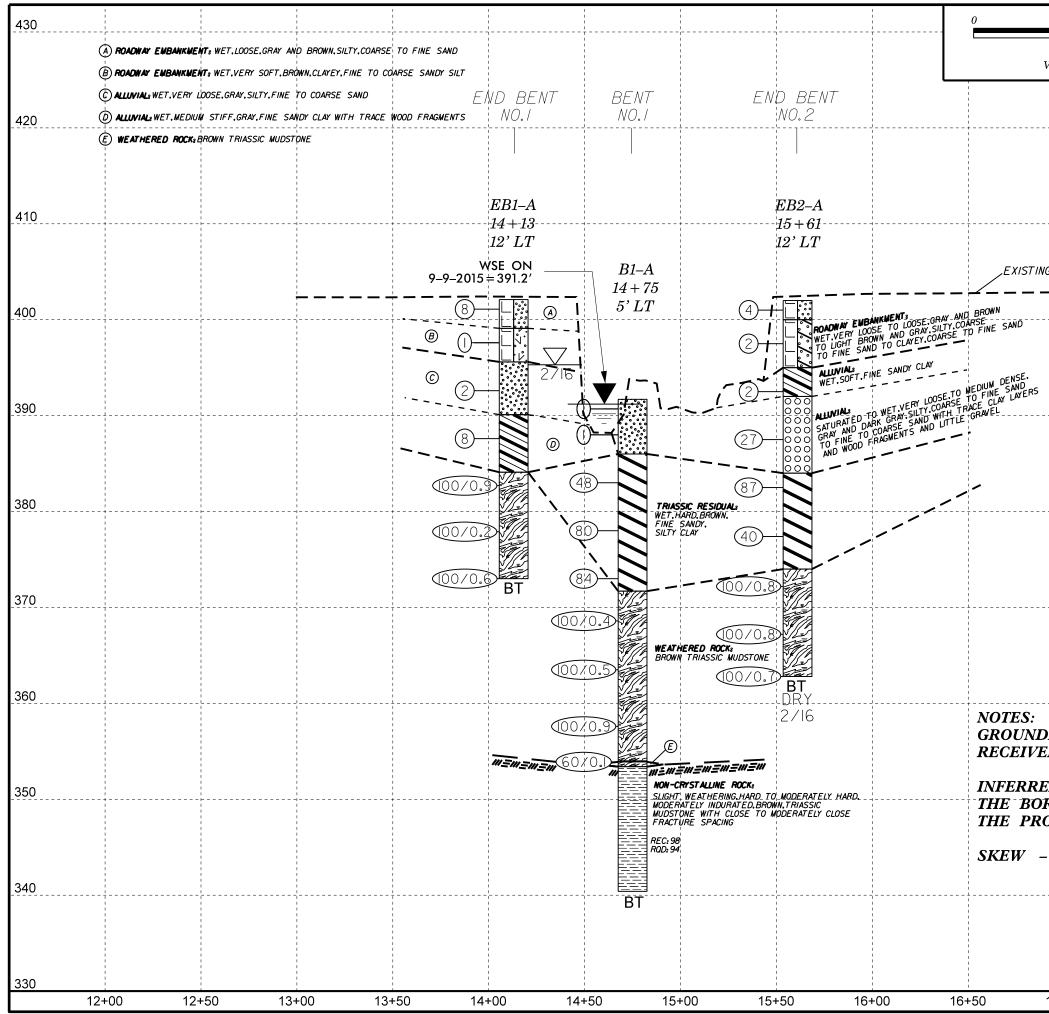
	CRADATION		
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT 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.	ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN	AQUIFER - A WATER BEARING FORMATION OR STRATA.
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	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 > ROCK (WR)	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT
CENERAL CRANILLAR MATERIALS SLIT-CLAY MATERIALS	MINERALOGICAL COMPOSITION	THE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE LEVEL HI
CLASS. (≤ 35% PASSING *200) (> 35% PASSING *200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	PROF (P) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE.	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.	EINE TO COARSE CRAIN METAMORPHUS AND NON COASTAL PLAIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CLASS. A-1-a 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	POCK (NCP) SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
SYMBOL SCOORDON STATES	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	OF SLOPE.
2. 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 SILT- CLAY MUCK,	PERCENTAGE OF MATERIAL		DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
*40 30 MX 50 MX 51 MN PEAT	GRANULAR SILT CLAY	WEATHERING	ROCKS OR CUTS MASSIVE ROCK.
	ORGANIC MATERIAL 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 – – 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 501LS WITH	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
PI 6 MX NP 10 MX 10 MX 11 MN 10 MX 10 MX 11 MN MODERATE HIGHLY		OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOLIS	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 SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
USUAL TYPES STONE FRAGS. FINE STITY OR CLAYEY STITY 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.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
OF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS	▼ STATIC WATER LEVEL AFTER <u>24</u> HOURS	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
GEN, RATING	$\nabla$ PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY, ROCK HAS	PARENT MATERIAL.
AS SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE		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	- OM- Spring or Seep		FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH	FIELD.
		(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 DANGE OF SHADAHD HANGE OF ONCONTINED CONSISTENCY (N-VALUE) COMPRESSIVE STRENGTH (N-VALUE) (TONS/FT <sup>2</sup> )	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION WITH SOIL DESCRIPTION OF ROCK STRUCTURES	<u>IF TESTED, WOULD YIELD SPT REFUSAL</u>	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
		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 CONVERT	SOIL SYMBOL	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.
MATERIAL MEDIUM DENSE 10 TO 30 N/A		IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) DENSE 30 TO 50 VERY DENSE > 50		VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
	INFERRED SOIL BOUNDARY	SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK (V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.
VERY SOFT         < 2         < 0.25           GENERALLY         SOFT         2 TO 4         0.25 TO 0.5	$\downarrow$	VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	TIST 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		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	ALLUVIAL SOIL BOUNDARY A PIEZUMETER - SPT N-VALUE		RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	ROCK HARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270	UNCLASSIFIED EXCAVATION - TA UNCLASSIFIED EXCAVATION -	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	I INDERCOT I I UNSUITABLE WASTE INT TO BE	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO
DOW DED CODDUE CRAVEL COARSE FINE CLUT CLAY	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER COBBLE GRAVEL SAND SAND SILT CLAY (BLDR.) (COB.) (GR.) (SL.) (CL.)		MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
(CSE, SD.) (F SD.) (SE.)	ABBREVIATIONS	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.	OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE)(SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL
	CLCLAY MODMODERATELY $\gamma$ -UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL
SOIL MOISTURE - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC $\gamma_{ m d}$ - DRY UNIT WEIGHT	POINT OF A GEOLOGIST'S PICK.	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 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.	
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY (SAT,) FROM BELOW THE GROUND WATER TABLE	e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH	<u>STRATA ROCK QUALITY DESIGNATION (SROD)</u> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY
	F - FINE SL SILT, SILTY ST - SHELBY TUBE FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY	THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASTIC SEMISOLIDE REQUIRES DRVING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
RANGE < - WEI - (W)	FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING HI HIGHLY V - VERY RATIO	FRACTURE SPACING BEDDING	BENCH MARK: B5362-I - STA 14+37, 12' RT (523,825' N, 1,806,186' E)
		TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	
OM _ OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: 401.9 FEET
SLSHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	NOTES:
BEQUIDES ADDITIONAL WATER TO	CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
- DRY - (D) ATTAIN OPTIMUM MOISTURE	X CME-55 6' CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.008 FEET	
PLASTICITY	X         8* HOLLOW AUGERS	INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH	CME-550 HARD FACED FINGER BITS X -N 0	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
NON PLASTIC 0-5 VERY LOW		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS;	
SLIGHTLY PLASTIC 6-15 SLIGHT	AND TOOLS:	GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY         PLASTIC         16-25         MEDIUM           HIGHLY         PLASTIC         26 OR MORE         HIGH		MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	
COLOR	PORTABLE HOIST	BREAKS EASILY WHEN HIT WITH HAMMER.	
	TRICONE <u>2-15/16</u> 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).	X CORE BIT VANE SHEAR TEST		
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14
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### PROJECT REFERENCE NO.



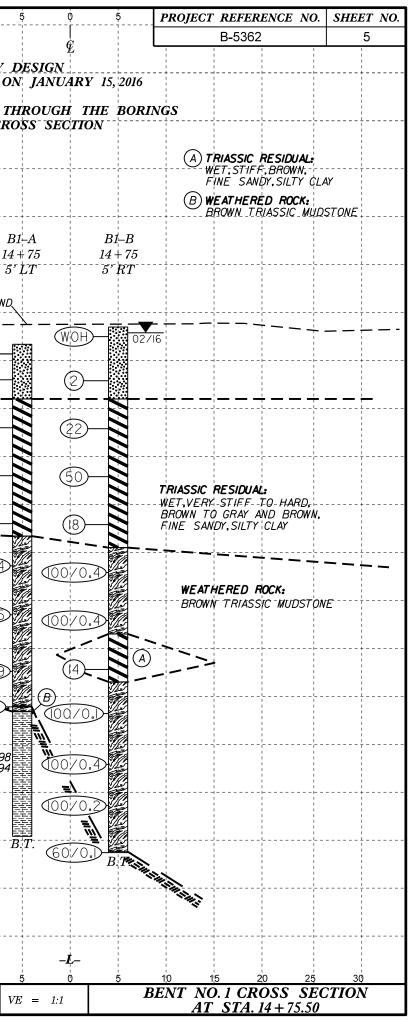
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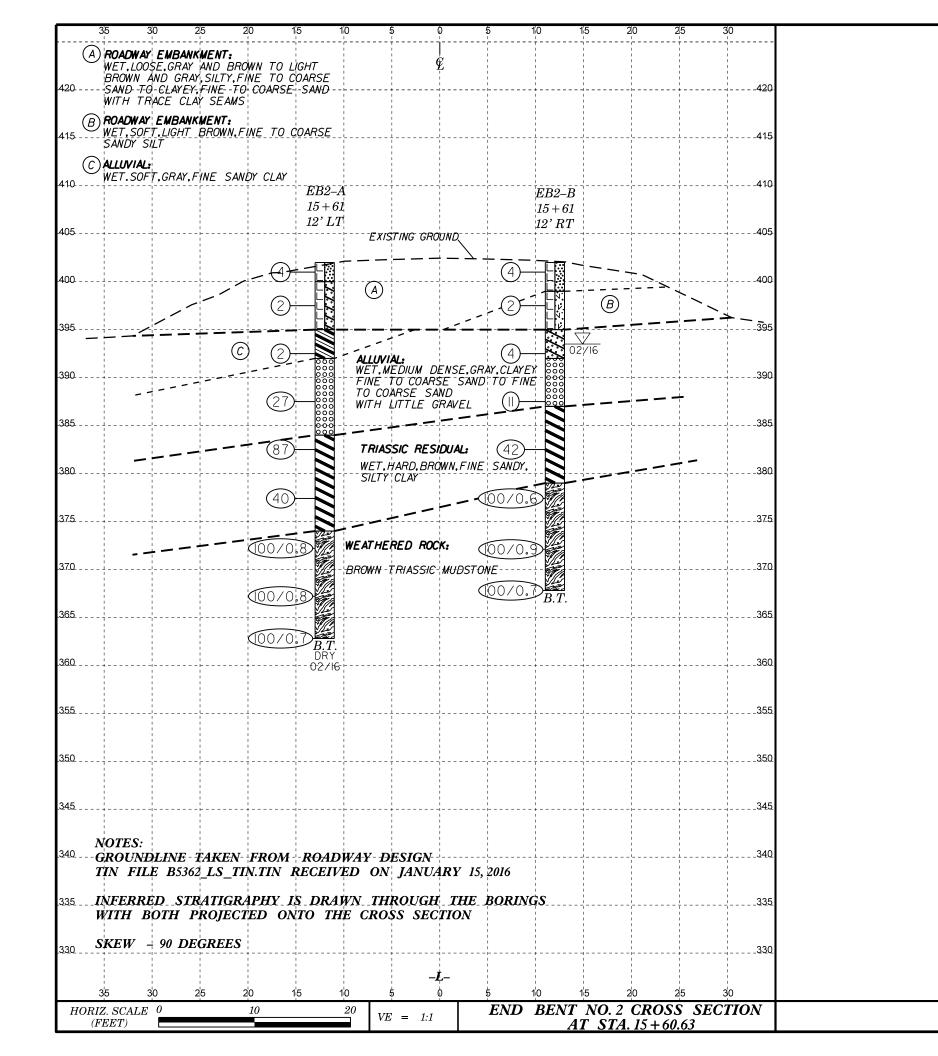




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EBI-A EBI-B I 4+13 I 4+14 I 17 RT I RT I RT I 12' LT I 11' RT I 405 405 405 405 405 405 405 405 405 405	75				00/0		         			0/0.7					.375				(	80
$EBI-A EBI-B \\ 14+13 \\ 12' LT I' I' RT \\ 410 \\ 400 \\ $	30				00/0	9				(52) w <u>e</u>		FINE SANDY, SIL	TY CLAY		.380				(	40 
$EBI-A EBI-B \\ 14 + 13 \\ 12' LT 1' RT 405 405$ $EXISTING GROUND 400 400$ $B (A) (GROUND (A) (GROUND) 405 405$ $EXISTING GROUND 400 400$ $C (A) (GROUND (A) (GROUND) 400 400$ $C (A) (GROUND (A) (GROUND (A) (GROUND) 400 400$ $C (A) (GROUND (A) (GROUND) 400 400$ $C (A) (GROUND (A) (GROUND (A) (GROUND) 400 400 400$ $C (A) (GROUND (A) (GROUND (A) (GROUND) 400 400$ $C (A) (GROUND (A) (GROUND (A) (GROUND) 400 400 400$ $C (A) (GROUND (A) (GROUN$	35						ITTLE C WOOD FF	RAVEL AN	ID TRACI			TRIASSIC RESIL	— — — WAL: W.	<b></b> 	.385	<i>TR</i>	ACE TO	SOME WO	DOD FRAGMENTS	
EB1-A = EB1-B = 410 = 410 = 410 = 410 = 410 = 410 = 410 = 400 =	90						AND WIT	H TRACE	CLAY SE	EAMS		∑ 2/I6 		390	-390	SIL LAY	TY,COARS	SE TO F	NE SAND WITH SAND AND	
$EB1-A EB1-B \\ 14 + 13 \\ 12' LT \\ 12' LT \\ EXISTING GROUND \\ 400 \\ 400 \\ C = - C \\ C $	95						LUVIAL:					_ <del>_</del>		<b>-</b>	-395				Existing	GROUNL
$EB1-A EB1-B \\ 14+13 \\ 12' LT \\ 12' LT$	00			/~=						9		·	×		-400					1.
EB1-A EB1-B SKEW + 90 DEGREES $410 410 410 410 410$	)5	           	   	   		         	EXIST	ING⁻GROUN	b	           	           				-405			   		
	10					<i>14</i> +13		· <del>1</del>			14+14		·	410	-410		90 DE	GREES		
BWET.VERY SOFT TO SOFT, BROWN AND LIGHT BROWN, CLAYEY, FINE TO COARSE SANDY SILT UNTH BOTH PROJECTED ONTO T	15 - 4	BROWN	Y SOFT LAYEY,F11	10 SOF1 VE-TO-C	,BROWN DARSE⁻-S			· <u>+</u> + + + + + + + + + + + + + + +						415	-415	WITH B	OTH⁻-P	PROJECI	ED-ONTO-TI	





PROJECT REFERENCE NO.	SHEET NO.
B-5362	6

													.06																
WBS	46077	7.1.1			Т	TIP B	8-5362			COUNT	Y MO	NTG	OMER	/		Ģ	EOLOGIST	Pruitt, A.		WB	<b>5</b> 46077	7.1.1			Т	IP B-5362	2	COUNT	Υ
SITE	DESCR	RIPTION	Re	place					r Dro	wning C									GROUND WTR (ft)	SITE	DESCR	IPTIO	N Rep	blace E			73 over Dr	owning C	_
BOR	ING NO	. EB1	-A		s	STATIO	<b>ON</b> 1	4+13			OFFS	ET	12 ft LT	•		A	LIGNMENT	-L-	0 HR. 6.8	BOF	RING NO	. EB1	-В		S	TATION	14+14		OF
COL	LAR EL	<b>EV.</b> 40	02.1 ft		Т	OTAL	DEP	<b>TH</b> 29	9.1 ft		NOR	THING	<b>5</b> 523,	822		E	ASTING 1,8	306,151	24 HR. FIAD	COL	LAR EL	<b>EV</b> . 4	02.1 ft		Т	OTAL DEF	<b>TH</b> 34.1 f	t	NC
DRIL	RIG/HA	MMER E	FF./DA	TE 1	RI9435	CME-	55 84%	6 02/20	/2015				DRILL	METHO	OD	H.S. A	igers	HAMN	IER TYPE Automatic	DRIL	L RIG/HA	MMER E	EFF./DA	TE T	RI9435	CME-55 84	% 02/20/201	5	
DRIL	LER T	oothma	an, R.	E.	S	TART		E 02/	12/16	6	сом	P. DA	TE 02	/12/16	6	s	URFACE WA	TER DEPTH N	/A	DRI	LLER T	oothma	an, R.	E.	S	TART DAT	E 02/12/1	6	CC
ELEV	DRIVE	DEPTH	BL	ow co	DUNT			BLO	WS P	ER FOOT	-		SAMP	. 🔨/			80	IL AND ROCK DES	CRIPTION	ELEV	, DRIVE	DEPTH	H BLO	ow co	UNT		BLOWS	PER FOOT	. <u></u> г
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	2	25	50	0	75	100	NO.	мс	DI G	) B EL	SU EV. (ft)	IL AND ROCK DES	DEPTH (f	(ff)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75
405		Ļ																		405		Ļ							
	402.1	0.0	2	4	4				••••					w		40		GROUND SURF			402.1	0.0	2	4	5				
400	· -	‡	-	.	1		8	· ·	•••		· · · ·	•••				- - 39	Gray and	Brown, Silty, Coars		400		‡	-	·		· • • • • • •	· · · ·		· _ ·
	398.6	- 3.5	WOH	1 1	WOF	ΠĽ.	· · · · · ·		::			· · · ·		w			Brown, O	Clayey, Fine to Coa	rse Sandy SILT	1	398.6	+ 3.5 +	1	1	2				•
		t				<b>T</b> '.	· · ·		· ·		.	· ·		$ \nabla$		× 39	.6		6.			t							·   ·
395	393.6	- 8.5				<del>  -</del>	· · ·	+			+							ALLUVIAL ty, Fine to Coarse S		395	393.6	- 8.5					<u> </u>	<u> </u>	<u> </u>
		0.5	WOH	1 1	1	<b>4</b> 2			•••		.			w			Oray, On	Clay Seams			393.0	0.5	WOH	2	3	↓ <b>●</b> 5 <sup>*</sup> · · ·			
390		Ŧ														E 39	.1		12.0	390		Ŧ							•
	388.6	13.5		-		$\left  \left  \right\rangle \right $											Gray, F	Fine Sandy, Sllty CL Wood Fragmer			388.6	13.5	WOH						
		ŧ	'	5	3		8					•••		W				i i cou i lugilio.				ŧ		4	4				•
385		‡					· · · 	· ·	•••		· · · ·	•••				38	1		18.0	385		‡					· <b>\ .</b>		·
	383.6	+ 18.5 +	12	50	50/0.4	4   .'	· · ·		<del></del>						1	<u>}</u>		WEATHERED R	OCK		383.6	+ 18.5 +	12	20	32			• · · ·	·   ·
380	· ·	‡				:	· · · · · ·		· · ·	• • • •		00/0.9			Í.		DI		DSTONE	380		‡						Ĩ <u>-</u>	·   ·
300	378.6	+ 23.5						+							Ĩ						378.6	- 23.5							
		1 20.0	28	100/0	.2		· · ·	· ·				00/0.2			I.	Å						1 20.0	65	35/0.2	2			· · ·	
375		Ł				·										Ł				375		Ł							•
	373.6	28.5	60	40/0.	1											37:	.0		29.7		373.6	28.5	100/0.3	3					-
		-	$\mathbf{P}_{\mathbf{n}}$	40/0.	<u>'</u>						1	00/0.6	1			F	Boring	Terminated at Eleva EATHERED ROCK:	ation 373.0 ft in TRIASSIC	]		Ŧ	100/0.	1					
ł	-	Ŧ														F		MUDSTONE		370		Ŧ						+ • • •	
		ŧ														F					368.6	- 33.5	80	20/0.1		· · · ·		· · ·	·
	· ·	ŧ														Ę						ŧ							
	-	ŧ														F					-	ŧ							
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NT	Y MC	DNTGC	MERY			GEOLC	<b>GIST</b> Pruitt, A	A	<u>.                                    </u>	
g Ci	reek								GROUN	D WTR (ft)
	OFFS	<b>SET</b> 1	1 ft RT			ALIGN	MENT -L-		0 HR.	9.8
		THING		08		EASTIN			24 HR.	FIAD
							J 1,000,170			
			DRILL N		U H.S	S. Augers			ER TYPE	Automatic
		P. DAT	E 02/	12/16		SURFA	CE WATER DE	EPTH N/	A	
ют			SAMP.	/	L		SOIL AND R	OCK DESC	RIPTION	
	75	100	NO.	моі	G					
						-				
						402.1		ND SURFA		0.0
		••		W	ĿF		ROADWA Gray to Brown, S	Y EMBAN		ND 7
	1.					399.1	Light Brown, Clay	-		3.0
· ·		· ·		w			LIGHT DIOWH, Oldy	SILT	Juaise 38	ilay
	· ·	• •				395.1				7.0
					-		Gray, Silty, F			
•••		· ·		$\vdash \lor$	L		Gray, Only, F			
• •	· ·	• •				390.1				<u> 12.0</u>
					N	_	Gray, Fine Sand	dy, Silty CL Gravel	AY with Litt	le
· ·		· ·		w	N			514101		
• •	· ·	• •				385.6				<u> </u>
							Brown, Fine		Ity CLAY	
•••				W	N	381.1				21.0
	+				À	-				21.0
•••		· · ]					Brown TRIA	ASSIC MUE	STONE	
•••	. !	100/0.7			i an					
	· ·	· ·				-				
•••										
		100/0.3¶			Ø					
• •	···				1A	-				
						368.0				34.1
	1	100/0.6			F		Boring Terminate WEATHERE	ed at Elevat	ion 368.0 f	t in
						-		UDSTONE		
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					F	-				
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									ORE L					
WBS	46077.	1.1			T	IP B-5362		COUNT	Y MONTG	OMERY			GEOLOGIST Wells, T. R.	
SITE	DESCRI	PTION	Rep	lace	Bridge	53 on NC 73	over Dro	wning C	reek					GROUND WTR (ft)
BORI	NG NO.	B1-A			S	TATION 14	+75		OFFSET	5 ft LT			ALIGNMENT -L-	0 HR. N/A
COLL	AR ELE	<b>V.</b> 39	91.7 ft		T	OTAL DEPTH	H 51.3 ft		NORTHIN	523,8	65		EASTING 1,806,196	24 HR. N/A
ORILL	<b>RIG/HAM</b>	MER E	FF./DA	TE T	RI9435	CME-55 84%	02/20/2015			DRILL N	IETHO	D M	ud Rotary/NQ Core HAMM	ER TYPE Automatic
DRILI	LER To	othma	n, R.	Ε.	S	TART DATE	02/10/1	6	COMP. DA	TE 02/	11/16		SURFACE WATER DEPTH 1.2	2ft
ELEV (ft)		DEPTH (ft)	BLC	0.5ft	UNT	0 25	BLOWS F			SAMP. NO.		L O G	SOIL AND ROCK DESC	
395	391.7	0.0	1	1	WOH							-	WATER SURFACE (0 391.7 GROUND SURFA	
390	389.0	2.7		woн							Sat.		Gray and Dark Gray, Silty, C SAND with Trace Layers of C Wood Fragmen	lean Sand and
385	384.0	7.7	10	22	26		<u></u>					11	386.0 TRIASSIC RESID Brown, Fine Sandy, Si	
380	+				20	* * * * * * * * * * * * * *	· · · · ·	48			W		-	
375	379.0	12.7	14	34	46	****			80		w	IIIII		
370	369.0	22.7	9 100/0.4	16	68				100/0.4		w		- 371.7 - WEATHERED RC - Brown TRIASSIC MUE	
365	364.0	27.7	100/0.8			••••			100/0.5					
160 155	359.0	32.7	9	11	88/0.4	· · · · ·		••••	99/0.94					
150	354.0	37.7	60/0.1			* * * * * * * * * * * * * * * * *							354.0 353.9 353.4 Brown TRIASSIC MUL WEATHERED RC Brown TRIASSIC MUL DOWN OF TRIASSIC MUL	DSTONE 38. DSTONE
945	+												NON-CRYSTALLINE Brown TRIASSIC MUD	
							<u></u>						340.4 Boring Terminated at Eleval NON-CRYSTALLINE ROC MUDSTONE	

									С	_
WBS					TIP	B-536			OUNT	_
	DESCR		_	lace Brid	<u> </u>			Drowr	ning C	re T
	NG NO.						14+75			╞
	AR ELI		1.7 ft				<b>PTH</b> 51			
	RIG/HA						4% 02/20/2	_		т
DRIL		oothma	n, R. I	=.		RT DA		0/16	_	ł
-	E SIZE RUN	NQ		DRILL		AL RU	<u> </u>	<u> </u>	ATA	╞
ELEV (ft)	ELEV (ft)	DEPTH (ft)	RUN (ft)	RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP, NO.	REC. (ft) %	RQD (ft) %	
53.9	353.9	37.8	3.5	0:15/0.5	(2.9)	(2.8)		(0.0)	(0.0)	12
	250.4	44.2		0:15/0.5 6:40/1.0 4:30/1.0	83%	80%		0% (12.8)	0%	and and a
50	350.4 -	- 41.3	5.0	5:05/1.0	(4.9)	(4.4)		98%	94%	10 10 10
				7:03/1.0	98%	88%				Tapatra .
45	345.4	46.3		4:27/1.0 5:07/1.0	15.5	15.53				11111111
		E	5.0	7:10/1.0	(5.0) 100%	(5.0) 100%				1111111
	040.4	E		5:39/1.0 3:00/1.0						TATA DATE
	340.4 -	- 51.3		4:48/1.0						F
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#### GEOTECHNICAL BORING REPORT CORE LOG

- 440

YN	NON	ITG	OMERY		GEOLOGIS	T Wells, T	R.		
reek								GROUN	DWTR (ft)
OF	FSE	т (	5 ft LT		ALIGNMEN	T -L-		0 HR.	N/A
NC	RTH	IING	523,865		EASTING	1,806,196		24 HR.	N/A
			DRILL METHOD	Mu	d Rotary/NQ Co	re	HAMM	ER TYPE	Automatic
СС	MP.	DA	TE 02/11/16		SURFACE \	WATER DEF	TH 1.3	2ft	
LO					ESCRIPTION A		<u></u>		
Ğ	EL	.EV. (1	ft)						DEPTH (ft)
51677/					Begin Corin	g @ 37.8 ft			
	35	3.9 3.4	Very Severe Wea	ther	ing, Very Soft, I	RED ROCK Friable, Brown	TRIASSI	C MUDST	
	-		Slight Weatherin	g, H	ard to Moderate	ALLINE ROCH	rately Ind	urated, Br	own
	-		TRIASSIC MUD					cture Spac	sing
	-		1 Fr	7 F actu	ractures at 0 De re Spacing at 4	egrees to 5 De 0 Degrees to 5	grees 60 Dearee	s	
	-					0	Ū		
	F								
	- 34	0.4	Boring Termina	ted	at Elevation 340	).4 ft in NON-C	RYSTAL	LINE ROO	51.3 K:
	-		-		TRIASSIC	MUDSTONE			
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## CORE PHOTOGRAPH REPLACE BRIDGE 53 ON NC 73 OVER DROWNING CREEK

B1-A BOXES 1 & 2: 37.8 - 51.3 FEET



APPROXIMATE SCALE IN FEET

SHEET NO. 9 46077.1.1 (B-5362) MONTGOMERY COUNTY

								B	ORE L	OG							
<b>WBS</b> 46	077.1.	.1			T	IP B-5362		COUNT	Y MONTGO	OMERY			GEOLOGI	ST Wells,	T. R.		
SITE DES	CRIP	TION	Rep	place E	Bridge	53 on NC	73 over Dro	owning Ci								GROUI	ND WTR (fi
BORING I	NO. E	B1-B			S	TATION 1	4+75		OFFSET	5 ft RT			ALIGNME	NT -L-		0 HR.	N/A
COLLAR	ELEV.	. 39	3.5 ft		<u>т</u>	OTAL DEP	<b>TH</b> 54.8 f	t	NORTHING	523,8	58		EASTING	1,806,204		24 HR.	0.0
DRILL RIG/	/HAMM	ER EI	FF./DA	TE TH	RI9435	CME-55 849	6 02/20/2015	5		DRILL M	IETHOD	Muo	d Rotary		HAM	MER TYPE	Automatic
DRILLER		thma	n, R.	E.	S	TART DAT	E 02/09/1	6	COMP. DA		10/16		SURFACE	WATER DE	EPTH N	I/A	
ELEV (ft) ELE (ft)	EV  UL	EPTH (ft)	BLC 0.5ft	OW CO		0		PER FOOT 50	75 100	SAMP. NO.	<b>▼</b> /	L O G	ELEV. (ft)	SOIL AND R	OCK DES	CRIPTION	DEPTH (
<b>395</b>	3.5 - (	0.0										-	393.5	GROU	IND SURF	ACE	C
390	+		WOH	WOH	WOH	•0 <sup>-</sup> · · · ·		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				Вг	rown, Silty, Co	LLUVIAL barse to Fi Vood Frag	ne SAND v	<i>i</i> ith
388	<u>3.9                                     </u>	4.6	2	1	1				· · · · · · · · · · · · · · · · · · ·		w						
385383	- 	9.6	7	9	13			· · · ·	· · · · ·				<u>386.0</u> Brov	TRIAS			<u>7</u> Silty
380			7	9	13				· · · · · · · · · · · · · · · · · · ·						CLAY		
	3.9 1 1	4.6	18	22	28			• · · · ·			w						
375373	3.9 <del> </del> 1	9.6	4	5	13	· · · · ·		· · · · ·	· · · · ·								
370			-	5	10		8 · · · · · · · · · ·	· · · · ·	· · · · ·		W		370.5	WEAT	HERED R	OCK	23
368	3.8 <u>-</u> 2 - -	24.7	30	100/0.4	1		· · · · ·	· · · · ·	100/0.4					Brown TRIA			
<u>365</u> 363	+ 3.8 + 2	29.7	25	100/0.4	ī			· · · · ·									
360	ļ								100/0.4				361.5	TRIAS Brown, Fine	SIC RESI		32
358	<u>3.8 + 3</u> + +	34.7	25	9	5	1 • 14 • • 14		· · · · ·	· · · · ·		w		356.5		-	-	37
355353	3.8 <u>-</u> 3 -	39.7	27	100/0.1	I		· · · · · · · · · · · · · · · · · · ·		  - 100/0.1					Brown TRIA	HERED R Assic Mu		
350348		4.7		100/0													
345			24	100/0.4	•			· · · · ·	100/0.4								
343	3.8 <u>-</u> 4 - -	9.7	100/0.2	2				· · · · ·	100/0.2								
<u>340</u> <u>338</u>	<u>-</u> 3.8 <u>- 5</u>	54.7	60/0.1						60/0.1	-			338.8 338.7_/	NON-CRY	STALLIN	E ROCK	54 54
														Boring Term etration Test I NON-CRYST	Refusal at	h Standard Elevation 3 OCK: TRIA	
	+																

														7																					
WBS	46077	7.1.1			Т	TIP B	8-5362			COUN	ITY I	NONT	GOMEF	RY			GEOLO	OGIST	Pruitt,	Α.				WBS	4607	7.1.1			Т	<b>IP</b> B	-5362		C	OUNT	ſN
SITE	DESCR	RIPTION	Re	place I	Bridge	e 53 o	n NC 7	73 ove	er Dro	wning	-										GR		TR (ft)	SITE	DESCR	RIPTIO	N Rep	blace I	Bridge	53 or	1 NC 7	73 over [	Drowr	ning Cr	eek
BOR	ING NO	. EB2-	-A		S	STATI	<b>ON</b> 1	5+61			OF	FSET	12 ft L	.T			ALIGN	MENT	• -L-		0 H	HR.	Dry	BOR	ING NO	. EB2	2-B		s	TATIO	<b>ON</b> 1	5+61			OF
COL	LAR EL	<b>EV.</b> 40	02.0 ft		T	ΟΤΑΙ	DEP	TH 3	39.2 ft		NC	ORTHIN	<b>IG</b> 523	3,936			EASTIN	<b>NG</b> 1	,806,24	6	24 H	HR.	FIAD	COL	LAR EL	<b>EV</b> . 4	02.0 ft		Т	OTAL	. DEPT	<b>TH</b> 34.2	2 ft		NO
DRIL	L RIG/HA	MMER E	FF./DA	TE T	RI9435	CME-	55 84%	6 02/2	0/2015				DRIL	L METH	IOD	H.S	6. Augers			HAN	MER T	YPE Auto	omatic	DRILI	L RIG/HA	MMER E	EFF./DA	TE T	RI9435	CME-	55 84%	6 02/20/20	015		
DRIL	LER T	oothma	an, R.	E.	S	TAR		E 02	2/16/10	6	CC	MP. D	ATE (	2/16/1	6		SURFA	CE W	ATER D	EPTH	N/A			DRIL	LER T	oothm	an, R.	E.	S	TART	DATE	E 02/16	6/16		со
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	·⊢	OW CC 0.5ft		0	:	BL( 25		PER FOO	OT 75	10	SAN NC	- 1 '/		L O G	ELEV. (ft)	S	OIL AND	ROCK DE	SCRIPT		)EPTH (ft)	ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	·——	OW CO	0UNT	0		BLOW 25	S PEF 50	r foot	75 
405		Ŧ														-								405		ļ									
400	402.0	<u> </u>	2	1	3	• •		 					_	w			402.0		ROADW	UND SUR AY EMBA Silty, Fine race Clay	e to Coa	arse SAND	0.0	400	402.0	Ŧ	2	2	2	<b>•</b> 4		· · ·		· · · · ·	<u> </u>
395	398.5	- 3.5 - - -	WOH	WOH	2	 ↓ ↓	· · · ·		•••	· · · ·	.   .	· · · ·		W		<u></u>	395.0	Ligh	nt Brown a C	ind Gray, oarse SAI	Clayey, I ND	Fine to		395	398.5	- 3.5 - - -	WOH	1	1		· · · ·	· · · · · · · · · · · · · · · · · · ·	·   ·	· · · · ·	
390	393.5	- 8.5 - -	WOH	WOH	2	- - - - - - - - - - - - - - - - - - -	· · · · · · · · · · · ·	  	•••	· · · · · · · · · · ·	-   -	· · · ·		w	////00		. <u>392.0</u>	Gray, Fi	Gray, I	ALLUVIA Fine Sand	ly CLAY	, ittle Gravel	<u> </u>	390	393.5	<u>+ 8.5</u> - -	1	1	3	.    <b>\</b>    <b>\</b> 1	· · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · ·	· · · · ·	.   .   .
	388.5	+ - 13.5 -	11	17	10		· · · ·	•27_		· · · · ·				w	1000000										388.5	+ - 13.5 -	5	6	5				.   .	· · · · ·	· ·
385	383.5	- - 18.5 -	14	29	58	1   ·	· · · ·				· • •			w			384.0	— — - E	TRIAS	SSIC RES			<u>18.0</u>	385	383.5	+ - - 18.5 -	10	17	25	1   •	· · · · · · · · · · · · · · · · · · ·		42 .	· · · · ·	· ·
380	378.5	- 23.5	14	22	18	<del>  .</del>	· · · ·			· · · ·	· ·	· · · ·	-								-			380	378.5	- - - 23.5	27	56	44/0.1		· · · ·	· · · · · · · · · · · · · · · · · · ·		· · · · ·	. 
375	373.5	- 28.5					· · · ·	· · ·	<b>♥</b> 40	· · · ·	· · ·	· · · ·					374.0		WEA	THERED	BUCK		28.0	375	373.5	- - - 28.5					· · · ·	· · · · · · ·	· ·	· · · · ·	: 
370		+	17	56	44/0.3	.	· · · · · · ·	· · ·			· ·	100/0.8	3●					E	Brown TR			DNE		370	-	+	26	42	58/0.4		· · · ·		· · ·	· · · · ·	
365	368.5	- 33.5 	8	32	68/0.3		· · · · · · · ·				-   - -   -	100/0.8	3●												368.5	- 33.5 - - -	34	66/0.2	2		<u></u>	<u> </u>	<u> </u>	<u></u>	<u> </u>
	363.5	38.5	- 33	67/0.2			 	 			 	100/0.7	,↓				362.8	Boring W	g Termina VEATHER	ED ROCH	K: TRIAS	62.8 ft in SSIC	39.2			+									
																	· · ·		Ī	NUDSTON	νΕ														

1T	Y MONTGO	MERY			GEOLOGIST Pruitt, A			
С	reek						GROUN	D WTR (ft)
	OFFSET 1	2 ft RT			ALIGNMENT -L-		0 HR.	8.5
	NORTHING	523,9	20		EASTING 1,806,264		24 HR.	FIAD
		DRILL N	IETHO	D H.S	S. Augers	HAMM	ER TYPE	Automatic
	COMP. DAT	<b>E</b> 02/ <sup>2</sup>	16/16		SURFACE WATER DEF	PTH N/	A	
ОТ		SAMP.	/	L				
	75 100	NO.	моі	0 G	SUIL AND RU	UR DESC	RIPTION	
		SAMP.		0	SOIL AND RO A02.0 GROUN ROADWAY Gray and Brown, Sil 399.0 Light Brown, Fine 395.0	CK DESC D SURFA EMBANY ty, Fine to to Coarse LUVIAL ine to Coarse SAND w C RESIDI Sandy, Sil ERED RC SSIC MUD	CE CMENT 0 Coarse S arse SANC with Little G JAL ty CLAY	3.0 7.0 10.0 ravel 15.0 23.0

## SITE PHOTOGRAPHS REPLACE BRIDGE NO. 53 ON NC 73 OVER DROWNING CREEK



View looking upstation along NC 73



View of Drowning Creek from northeast of End Bent No. 2

SHEET NO. 12 46077.1.1 (B-5362) MONTOGOMERY COUNTY