5983 4 PROJEC

94 S Ŕ REFERENCE

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

<u>PLAN</u>

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<u>LINE</u>

-LREV-

STATION 12+02 TO 36+95 STATE OF NORTH CAROLINA

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY NASH

PROJECT DESCRIPTION BRIDGE NO. 91 ON NC 581 OVER TAR RIVER

INVENTORY

STATE PROJECT REFERENCE NO. STATE SHEETS 13 N.C B-5947 1

CAUTION NOTICE

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

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-FLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. 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 UBSURFACE 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 GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION WADE, NOR THE INTERPRETATIONS MADE, OR OPNION 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 ANN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONTENS ENCOUNTERED AT THE SITE 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 HAIVING 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

A. N. JONES

D. G. PINTER

INVESTIGATED BY <u>A.</u> N. JONES

DRAWN BY <u>A. N. JONES</u>

CHECKED BY <u>N. T. ROBERSON</u>

SUBMITTED BY <u>N. T. ROBERSON</u>

DATE JANUARY 2020



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

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SUIL DESCRIPTION	GRADATION	RUCK DESCRIPTION	TERMS AND DEFINITIONS
SUIL IS CUNSIDERED UNCUNSULIDATED, SEMI-CUNSOLIDATED, 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 GUOU REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.	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 DI586). SOIL CLASSIFICATION	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	<u>AQUIFER</u> - 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,	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
	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES >	A NUTHELE FROFUNTION OF CENT IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ELC.
	MINERALOGICAL COMPOSITION		ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
CLASS. (≤ 35% PASSING *200) (> 35% PASSING *200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	CRYSTALLINE 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.	GNEISS, GABBRO, SCHIST, ETC.	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	NON-CRYSTALLINE SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
SYMBOL SCOOL	SLIGHTLY COMPRESSIBLE LL < 31	ROCK INCH ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	OF SLOPE.
	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
* PASSING *10 50 MX GRANULAR SILT-	PERCENTAGE OF MATERIAL	(CP) SHELL BEDS, ETC.	DI IUTHE LENUTH UF CURE NUN HIND EXFRESSED HS H FERCENTHUE.
*40 30 MX 50 MX 51 MN SOILS SO	GRANULAR SILT - CLAY	WEATHERING	ROCKS OR CUTS MASSIVE ROCK.
*200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN	ORGANIC MATERIAL SOILS OTHER MATERIAL	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER	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 CLICHT DOCK CENERALLY ERECH ININTS STAINED SOME ININTS MAY SHOW THIN CLAY CONTINES IS OREN	HORIZONTAL.
LL – – 40 MX 41 MN	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	(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 11 MN 10 MX 10 MX 11 MN 11 MN 10 MX 11 MN 11 MN MODERATE ODEAN	HIGHLY URGANIC > 10% > 20% HIGHLY 35% AND ABOVE	OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLUCKWISE FROM NORTH.
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOILS	GRUUND 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 SILTY OR 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	FISSUE - 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 FEFERTS IN	ELIGAT - POCK EPACMENTS ON SHEARE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
		(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 UNSUITA		DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED	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	- Chilling or seed	WITH FRESH RULK.	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE
CONSISTENCY OR DENSENESS	MISCELLANEOUS, SYMBOLS	MUDERATELY ALL RUCK EXCEPT QUARTZ DISCULURED OR STAINED. IN GRANITUTD RUCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION, ROCK SHOWS SEVERE LOSS OF STRENGTH	FIELD.
RANGE OF STANDARD RANGE OF UNCONFINED		(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 COMPACINESS OR PENETRATION RESISTENCE COMPRESSIVE STRENGT		<u>IF TESTED, WOULD YIELD SPT REFUSAL</u>	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
(N-VALUE) (TUNS/FT=)		SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT	ITS LATERAL EXTENT.
GENERALLY LOOSE < 4 I LOOSE 4 TO 10	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.
GRANULAR 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
(NON-COHESIVE) DENSE 30 TO 50	THAN ROADWAY EMBANKMENT THAN ROADWAY EMBANKMENT THAN ROADWAY EMBANKMENT	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE	USUALLY INDICATES YOUR AERALIUM AND LACK OF GUUD DRAINAGE.
		SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK (V SEV.) REMAINING SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.5		VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	RESIDUAL (RES.) SOUL - SOUL 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	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		SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
HARD > 30 > 4	INSTALLATION	ALSU AN EXAMPLE.	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	RUCK HARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT
		VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES	
OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	UNDERCUT	SEVENHE THAT DEUWS OF THE DEULOUISTS FICK.	SILL - AN INTRUSIVE BUDT OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT. THAT HAS BEEN EMPLACED PARALLEL TO
	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER COBBLE GRAVEL SAND SAND SILT CLAY		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.) (CSE, SD.)	ABBREVIATIONS	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED	OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	BY MUDERALE BLUWS.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
512E IN. 12 3		MEDIUM CAN BE GROUVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE EXCAVATED IN SMALL CHIPS TO PFICES I 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 $\gamma_{\rm d}^{-}$ DRY UNIT WEIGHT	POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE GUIDE FOR FIELD MOISTURE DESCRIPTIO	CSE COARSE ORG ORGANIC	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
(HITEROERG LIMITS) DESCRIPTION	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - RIIK	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN	IVIAL LENGTH OF STRATOM AND EXPRESSED AS A PERCENTAGE.
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY	e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON		LENGTH OF ROCK SEGMENTS WITHIN A STRATUM COUAL TO OR GREATER THAN 4 INCHES DIVIDED BY
(SAT.) FROM BELOW THE GROUND WATER TABLE	F - FINE SL SILT, SILTY ST - SHELBY TUBE	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.
	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
RANGE - WET - (W) ATTAIN OPTIMUM MOISTURE	FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: N/A
" " PLL + PLASTIC LIMIT	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	
- MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	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: N/A FEET
	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	NOTES
	CME-45C CLAY BITS AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET	NOTES:
- DRY - (D) ATTAIN OPTIMUM MOISTURE	6' CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.008 FEET	DATED 02/07/2019.
ΡΙΔΟΤΙΓΙΤΥ		INDURATION	BRIDGE BORING TAKEN FROM IZRP 4 R 4 REPORT DATED HINE 2012
		FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT. PRESSURE. ETC.	DADOL DOMING TAKEN TROW TOTATA REPORT DATED JUNE 2012.
NON PLASTIC PLASTICITY INDEX (PI) DRY STRENGTH		RUBBING WITH FINGER FREES NUMEROUS GRAINS;	
SLIGHTLY PLASTIC 6-15 SLIGHT	VANE SHEAR TEST	GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY PLASTIC 16-25 MEDIUM	CASING W/ ADVANCER	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	
	VORTABLE HOIST TRICONE' STEEL TEETH X HAND AUGER	BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR		INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE;	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN. RED. YELLOW-REDWN RELIE-CRAY)		DIFFICULT TO BREAK WITH HAMMER.	
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

PROJECT REFERENCE NO.



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

ROY COOPER GOVERNOR

January 8, 2020

STATE PROJECT: 45983.1.1 (B-5947) FEDERAL PROJECT: N/A COUNTY: NASH **DESCRIPTION:** Replace Bridge No. 91 on NC 581 over Middle Creek

SUBJECT: Geotechnical Report – Inventory

The Geotechnical Engineering Unit has completed a subsurface investigation for this project and presents the following inventory.

Project Description

This project consists of replacing the existing structure on new location and realigning and widening the approaches to bridge number 91 over the Tar River. The types of work included grading, drainage, paving, and structure. The structure subsurface inventory will be completed at a later date.

Geotechnical investigations were conducted during June of 2012 and October of 2019. Eleven hand auger borings and four SPT borings were performed by the Geotechnical Engineering Unit.

The following alignment, totaling 0.47 miles, was investigated. Subsurface plans and borelogs of this alignment are included in this report.

Line	Stations
-LREV-	12+02 to 36+94

Physiography and Geology

The project is located south of the town limits of Spring Hope, and within the Eastern Slate Belt in the Piedmont Physiographic Province of North Carolina. Soils consist of residual derived from underlying felsic metavolcanic rock of the Eastern Slate Belt. The topography consists of rolling hills. The new location portion of the project consists of mostly wooded floodplain.

Mailing Address: NC DEPARTMENT OF TRANSPORTATION GEOTECHNICAL ENGINEERING UNIT 1589 MAIL SERVICE CENTER RALEIGH NC 27699-1589

Telephone: 919-707-6850 *Êax: 919-250-4237* Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location CENTURY CENTER COMPLEX ENTRANCE B-2 1020 BIRCH RIDGE DRIVE RALEIGH NC

JAMES H. TROGDON, III

SECRETARY

Soils Properties

Soils encountered during this investigation were Roadway Embankment, Alluvial, and Residual.

Roadway Embankment soils consist of tan, brown, and gray, dry to moist, soft to medium stiff, sandy silt (A-4) and silty clay(A-7-6).

Alluvial soils were encountered in the SPT borings. These soils consist of tan, brown, and gray, moist, sandy silt (A-4) and sandy and silty clay (A-6, A-7-6).

Residual soils were encountered throughout the project. These soils are characterized by orange, tan, and gray, dry to moist, soft to very stiff, sandy silt (A-4) and sandy clay (A-6).

Rock Properties

Weathered rock in the Eastern Slate Belt is derived from the underlying felsic metavolcanic schist. Weathered rock was encountered in the existing cut section at the following station:

Alignment

-LREV-

Crystalline rock for this area consists of felsic metavolcanic schist. Several crystalline rock outcrops can be found in the existing cut slope, within the riverbed, and throughout the project area.

Groundwater

Groundwater measurements in the hand auger borings were taken in October of 2019 following a heavy rainfall event. The water level observed in the centerline boring at -LREV- Sta. 33+50 is the result of rainfall runoff. Groundwater was not encountered in any of the hand auger borings performed on this project.

Station

16+25 to 19+25, LT





TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CWIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	ENGINEERING ENGINEERING NG 2014 ENGINEERING ENGINEERING HIGH AL HIGH A	project reference no <u>B-5947</u> rw sheet n	о. <u>Sheet NO.</u> 5 Ю.
	TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CWIL/SITE DESIGN - GIS/OPS - CONSTRUCTION OBSERVATION	ROADWAY DESIGN ENGINEER INCOMPLE do not use for Document not c unless all signa	HYDRAULICS ENGINEER TE PLANS R/W ACQUISITION



WB	S 4598	3.1.1			Т	I P B-59	947		COUN		IASH				GE	OLOGI	ST Jon	es, A. N.				WBS	4 598	3.1.1			ТІ	P B-59	947		COUNT
SIT	E DESCI	RIPTION	BRI	DGE N	VO. 91	1 OVER	TAR F	RIVER	ON NC	581									G	ROUN	D WTR (ft)	SITE	DESC	RIPTION	BR	IDGE	NO. 91	OVER	TAR R	IVER C	N NC 58
BO	ring no	. LRE	V_125	0	S	TATION	12+5	50		OF	FSET	30 ft R1	Г		AL	IGNME	NT -LRI	EV-	0) HR.	Dry	BOR	ING NC) . LRE	V_14	50	S	FATION	14+5	0	
CO	LAR EL	EV. 19	90.8 ft		Т	OTAL D	EPTH	2.0 ft		NO	RTHING	3 776,	117		EA	STING	2,269,5	603	24	HR.	FIAD	COL	LAR EL	.EV. 18	35.3 ft	t	т	DTAL D	EPTH	1.0 ft	
DRI	_L RIG/H/	MMER E	FF./DA	TE N	A							DRILL	METH	OD H	-land Au	ger		HA	MMER	TYPE	N/A	DRIL	l Rig/H/	AMMER E	FF./D/	ATE N	VA				
DR	LLER F	Pinter, D). G.		S	TART D	ATE	10/10/1	9	co	MP. DA	TE 10	/10/19)	SU	RFACE	WATER	DEPTH	N/A			DRIL	LER F	Pinter, D). G.		S	FART D	ATE 1	0/10/19)
ELE	/ DRIVE ELEV	DEPTH	BLC		JNT		E	BLOWS	PER FO	ОТ		SAMP	. V				SOIL AN	D ROCK D	ESCRI	PTION		ELEV	DRIVE	DEPTH	BL	ow cc	DUNT		BI	LOWS P	ER FOOT
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	Ę	50	75	100	NO.	Имс) G	ELEV	′. (ft)					DEPTH (ft)	(π)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	0
195		ł													F							190		+							
		ŧ													F									ŧ							
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/ NASH		GEOLOGIST Jones, A.	N.		
1			(GROUNE) WTR (ft)
OFFSET 20 ft LT		ALIGNMENT -LREV-		0 HR.	Dry
NORTHING 776.323		EASTING 2.269.482	2	4 HR.	FIAD
DRILL MET	HOD Har	nd Auger	HAMME	RTYPE	N/A
COMP. DATE 10/10/	19		TH N/A		
SAMP.	1-1				
75 100 NO.	/ O MOI G	SOIL AND ROC	K DESCF	RIPTION	
·					
	-	185.3 GROUND	SURFAC	E	0.0
<u> </u>		ORANGE-TAN, SOF	T TO ME	DIUM STII	FF, /
	F	SANDY SILT WIT	H TRACE	GRAVEL REFUSA	at
		Elevation 184.3 ft IN	RESIDU	AL (SAND	Y
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S	ITE D	ESCF	RIPTION	I BRI	DGE N	O. 91	OVER .	TAR R	IVER O	N NC 5	581									GF	ROUNE) WTR (f) SI	TE D	DESCRI	PTION	BRID	DGE N	NO. 91	1 OVE	R TAR RI	VER ON	NC 581					-				GROUI	ND WT	R (ft)
в	ORIN	IG NO	. LRE	V_165	0	ST	ATION	16+50	0		OFFS	SET 3	33 ft R1	Г		ALIGN	MENT	-LREV	-	0	HR.	Dr	BC	ORIN	IG NO.	LREV	_1750)	ST	TATIC	N 17+50		0	FFSET	110 ft L ⁻	Т		ALIG	NMEN	T -LRE	V-	0 HR.		Dry
С	OLL/	AR EL	EV. 17	′8.6 ft		то	TAL DE	PTH	0.5 ft		NOR	THING	5 776,	513		EASTI	NG 2,2	269,563	3	24	HR.	FIA			AR ELE	V. 152	2.7 ft		тс	OTAL	DEPTH 2	2.0 ft	N	ORTHIN	G 776,6	533		EAST	TING	2,269,43	6	24 HR.		FIAD
D	RILL F	rig/HA	MMER E	FF./DA	TE N/	<u>ا</u>							DRILL	METHO	D Han	nd Auger			HA	MMER	TYPE	N/A	DR	RILL F	rig/Han	IMER EF	F./DAT	E N/	Ά				I		DRILL	METHO	DD Ha	and Auge	r		HAN	MER TYPE	N/A	
D	RILL	ER F	Pinter, D	. G.		ST	ART DA	TE 1	0/10/19)	СОМ	IP. DA	TE 10	/10/19		SURF	ACE WA	TER DI	EPTH	N/A			DF	RILLE	ER Pi	nter, D.	G.		ST	TART	DATE 10)/10/19	С	omp. Da	TE 10/	/10/19)	SURF	FACE	VATER [DEPTH	N/A		
FI	FV I	DRIVE	DEPTH	BLC	W COU	NT		BL	LOWS PE	ER FOO	T		SAMP	. 💙 /	1-1								FLE		DRIVE	DEPTH	BLO\	W COL	JNT		BL	OWS PER	FOOT		SAMP.			-						
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50)	75	100	NO.	Имо	G	ELEV. (ft)	SOI	IL AND F	KOCK D	ESCRIP	TION	DEPTH	t) (ft	t)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75	100	NO.	Имо	DI G		5	SOIL AND	ROCK DE	SCRIPTION	N	
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		-	‡													١	SA Boring Te	NDY WI	TH TRA d BY AL	CE GRA	AVEL FFUSAI	Lat			4	.				<u>⊢</u>	•••	.						<u> </u>	$\int TAN,$	STIFF TO WITH	TRACE G	FF, SANDY RAVEL	SILT	2.0
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SITE DESCRIPTION BRIDGE NO). 91 OVER TAR RIVER ON NC	581	•	GROUND WTR (ft)	SITE DESCR	IPTION BRIDG	E NO. 91	OVER TAR RIVER ON NC 5	581		•	GROUND W	NTR (ft)
BORING NO. LREV_1850	STATION 18+50	OFFSET 30 ft LT	ALIGNMENT -LREV-	0 HR. Dry	BORING NO	. LREV_2050	ST	TATION 20+50	OFFSET '	15 ft LT	ALIGNMENT -LREV-	0 HR.	Dry
COLLAR ELEV. 161.2 ft	TOTAL DEPTH 1.0 ft	NORTHING 776,721	EASTING 2,269,532	24 HR. FIAD	COLLAR ELI	EV. 149.2 ft	тс	OTAL DEPTH 0.5 ft	NORTHING	776,914	EASTING 2,269,590	24 HR.	FIAD
DRILL RIG/HAMMER EFF/DATE N/A			and Auger HAMIN	NER TYPE NA	DRILL RIG/HA	MMER EFF./DATE	NA			DRILL METHOD	Hand Auger HA	MMER TYPE N/	A
DRILLER Pinter, D. G.	START DATE 10/10/19	COMP. DATE 10/10/19	SURFACE WATER DEPTH N	/A	DRILLER P	inter, D. G.	ST	TART DATE 10/10/19	COMP. DA	TE 10/10/19	SURFACE WATER DEPTH	N/A	
ELEV DRIVE DEPTH BLOW COUN (ft) (ft) (ft) 0.5ft 0.5ft 0	T BLOWS PER FOC	T SAMP. L O	SOIL AND ROCK DES	CRIPTION	ELEV DRIVE (ft) DRIVE	DEPTH BLOW C		BLOWS PER FOO	T 75 100	SAMP. L NO MOU	SOIL AND ROCK D	ESCRIPTION	
			ΕLEV. (π)	DEPTH (π)	(11)								
165					150								
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			161.2 GROUND SURF	ACE 0.0		‡					TAN, MEDIUM STIFF TO	D STIFF, SANDY	
						‡					Boring Terminated BY AL	IGER REFUSAL a	at
			SILT WITH TRACE (GRAVEL		‡					Elevation 148.7 ft IN RE SILT)	SIDUAL (SANDY	
			Elevation 160.2 ft IN RESI	ER REFUSAL at DUAL (SANDY		‡					-		
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s	ITE	DESCF	RIPTION	BR		NO. 91	I OVE	R TA	R RIV	/ER C	ON NC	; 581							GROUI	ND WTR (ft)	SITE	DESCF	RIPTION	N BR	IDGE	NO. 91	OVER	TAR RIVI	ER O	N NC 5
В	ORI	NG NO	. EB1	-A		S	TATIC	DN 2	2+15			C	OFFSET	37 ft R1	-			ALIGNMENT -LREV-	0 HR.	20.0	BOR	ING NO	. EB1	-В		ST	ATION	22+16		
C	OLL	AR EL	EV. 15	57.7 ft		т	OTAL	DEP	ГН 2	6.7 ft		N	IORTHIN	G 777,	061			EASTING 2,269,683	24 HR.	FIAD	COL	LAR EL	EV. 1	57.6 ft	1	т)TAL DE	:PTH 28	.3 ft	
D	RILL	RIG/HA	MMER E	FF./DA	TE TE	R6847	CME-	75 919	% 02/0)2/2012	2			DRILL	METH	OD	H.S.	. Augers	HAMMER TYPE	Automatic	DRIL	L RIG/HA	MMER E	EFF./D/	ATE TI	ER6847	CME-75	91% 02/02	/2012	
D	RILL	ER (Contract	Drille	r	S	TART	DATI	E 06	/13/12	2	C	OMP. DA	TE 06	/13/12	2		SURFACE WATER DEF	PTH N/A		DRIL	LER C	Contrac	t Drille	er	ST	ART D/	TE 06/1	3/12	
EI	EV	DRIVE ELEV	DEPTH	BLC		JNT			BLO	DWS P	PER FO	OT 7	- 400	SAMP	· V /			SOIL AND RC	OCK DESCRIPTION	I	ELEV	DRIVE	DEPTH	I BL	ow co	UNT		BLO\	VS PE	ER FOOT
Ľ	11)	(ft)	(11)	0.5ft	0.5ft	0.5ft			25	5	l I	/5	5 100	NO.	Имс) G	+	ELEV. (ft)		DEPTH (ft)	(11)	(ft)	(11)	0.5ft	0.5ft	0.5ft			50	
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ORE DOUBLE B5947_GE0_BRDG_BH.GPJ NC_DOT.GDT 1/7/20		-																PENETRATION Elevation 131.0 ft O (METAVOL	N TEST REFUSAL a	at ROCK										
ICDOT BOF			+ + +																				‡ ‡							



SITE DESCRIPTION BRIDGE NO. 91 OVER TAR RIVER ON NC 581 GROUND WTR (ft) SITE DESCRIPTION BRIDGE NO. 91 OVER TAR RIVER ON BORING NO. E82-A STATION 25450 OFFSET 38 ft RT ALIGNMENT -LREV- 0 HR. 280, 24 HR. 220 0 HR. 280, 24 HR. 220 SITE DESCRIPTION BRIDGE NO. 91 OVER TAR RIVER ON BORING NO. E82-B STATION 25451 COLLAR ELEV. 157.6 ft TOTAL DEPTH 44.1 ft NORTHING 777,385 EASTING 2.269,768 24 HR. 220 COLLAR ELEV. 157.6 ft TOTAL DEPTH 40.000/02/012 DRILL RCAMMER EFF.DATE TER8847 (OME 75 91% Q02/2012 COMP. DATE 06/13/12 SURFACE WATER DEPTH NA DILL RCHAMMER EFF-DATE TER8947 (OME 75 6 ft) TOTAL DEPTH 40.6 ft) DRILLER Contract Driller STAT DATE 06/13/12 SURFACE WATER DEPTH NA DILLEV (ft) DILLEV (ft) DILLEV (ft) BLOW COUNT (ft) BLOW SPER FOOT (ft) SOIL AND ROCK DESCRIPTION (ft) DEPTH (ft) BLOW COUNT (ft) BLOW SOUNT BLOW SPE FOOT (ft) SOIL AND ROCK DESCRIPTION (ft) DEPTH (ft) DEPTH (ft) SOIL AND ROCK DESCRIPTION (ft) DEPTH (ft) SOIL AND ROCK DESCRIPTION (ft) DEPTH (ft) SOIL AND ROCK DESCRIPTION (ft) DEPTH (ft) DIAL SCHAMMER STATING 2.44 DIAL SCHAMMER STATING 2.44 DIAL SCHAMMER STATING 2.44 DIAL S	OUNT
BORING NO. EB2-A STATION 25+50 OFFSET 38.ft RT ALIGNMENT 0.HR. 28.0 COLLAR ELEV. 157.6 ft TOTAL DEPTH 44.1 ft NORTHING 77.385 EASTING 2.289,788 24 HR. 22.0 COLLAR ELEV. 157.6 ft TOTAL DEPTH 41.1 ft OTAL DEPTH 41.1 ft </td <td>I NC 58</td>	I NC 58
COLLAR ELEV. TOTAL DEPTH 44.1 ft NORTHING 777.385 EASTING 2,269,768 24 HR. 22.0 COLLAR ELEV. 157.6 ft TOTAL DEPTH 41.6 ft DRILL RIGHAMMER EFF/DATE TERBAR CME.75 ft TOTAL DEPTH 44.1 ft DRILL METHOD HAMMER TYPE Automatic TotAL DEPTH 41.6 ft DRILLER Contract Driller START DATE 06/13/12 COMP. DATE 06/13/12 SURFACE WATER DEPTH N/A ELEV DRILL BLOWS PER FOOT SAMP V 0 501 AND ROCK DESCRIPTION DEPTH BLOWS COUNT BLOWS PER BLOWS PER 0 25 50 75 100 NO. MOI ELEV. (N) DEPTH BLOWS PER 0 25 50 75 0 25 50 75 0 25 50 156.0 ft 0 25 50 156 154.3 3.3 1 2 2 4 1 1 1 1 1 1 1 1	
DRILL Right Auther EFF/DATE TERB847 CML2 #27 91% 02/02/2012 DRILL METHOD H3 Augers HAMMER TYPE Automatic DRILL Right Automatic DRILL Right Automatic START DATE 06/13/12 COMP. DATE 06/13/12 SURFACE WATER DEPTH NA Lever (th) DEPTH (th) BLOW COUNT BLOW SPER FOOT (th) SAMP. No. No. No. SOIL AND ROCK DESCRIPTION NO. DEPTH(th) BLOW COUNT BLOW COUNT BLOW SPER FOOT (th) SOIL AND ROCK DESCRIPTION (th) DEPTH(th) BLOW COUNT BLOW COUNT BLOW SPER FOOT (th) SOIL AND ROCK DESCRIPTION (th) DEPTH(th) BLOW COUNT BLOW COUNT BLOW SPER (th) BLOW SPER (th) BLOW SPER (th) DEPTH(th) BLOW COUNT BLOW SPER (th) BLOW SPER (th) BLOW SPER (th) DEPTH(th) BLOW SPER (th) DEPTH(th) BLOW SPER (th) BLOW SPER (th) DEPTH(th) DEPTH(th) DEPTH(th) DEPTH(th) DEPTH(th) DEPTH(th) DEPTH(th) DEPTH(th)	
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124.3 33.3 33.3 33.3 33.4 124.2 33.4 1 23 77/0.2 100/0.7 100/0.7 124.2 33.4	
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+ - WEATHERED ROCK (METAVOLCANIC + + - SCHIST) +	



W	/BS	45983	3.1.1			Т	IP B-{	5947		CC	ידאטכ	Y NASH					GEOLOGIST Jones, A	A. N.		WB	S 4598	33.1.1			ТІ	P B-5947	,	COUNT
S	ITE	DESCR	IPTION	BRI	DGE I	۰. NO	1 OVE	R TAR	RIVE	R ON	NC 58	31							GROUND WTR (ft)	SIT	E DESC	RIPTION	BR	IDGE I	NO. 91	OVER TA	R RIVER	ON NC 5
в	ORII	NG NO.	LRE	V_275	0	S	ΤΑΤΙΟ	N 27-	+50			OFFSET	30 ft LT	Γ			ALIGNMENT -LREV-		0 HR. Dry	BOF	RING NO). LRE	V_29	50	SI	ATION 2	29+50	
С	OLL	AR ELE	EV. 14	41.7 ft		Т	OTAL	DEPTH	-1 5.0	ft		NORTHIN	G 777,	595			EASTING 2,269,754		24 HR. Dry	COL	LAR E	L EV. 14	14.4 ft	t	т	DTAL DEP	TH 2.5 ft	t
D	RILL	rig/hai	MMER E	FF./DA	TE N	Ά							DRILL	METH	OD	Har	nd Auger	HAMIN	VIER TYPE N/A	DRIL	L RIG/H	AMMER E	FF./D/	ATE N	/A			
D	RILL	ER P	inter, D). G.		S	TART	DATE	10/10)/19		COMP. DA	TE 10	/10/19)		SURFACE WATER DEP	PTH N	J/A	DRI	LLER	Pinter, D). G.		ST	ART DAT	E 10/10/	'19
EL	.EV	DRIVE	DEPTH	BLC	ow co	UNT			BLOW	S PER	FOOT		SAMF	P. 🗸				CK DES	SCRIPTION	ELE\		DEPTH	BL	OW CO	UNT		BLOWS	PER FOOT
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	50		75 100	NO.	м	DI G		ELEV. (ft)		DEPTH (f	t) (ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50
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1	10	-	<u>-</u>													÷	141.7 GROUN	ID SURF	-ACE 0.	0		‡						
-	40	-	ł										11	м		89	ORANGE-TAN, ME SANDY SILT W	EDIUM S' ITH TRA	TIFF TO STIFF, ACE GRAVEL			‡						
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/ NASH				GEOLOGIST Jones, A.	N.		
1						GROUN	D WTR (ft)
OFFSET 3	0 ft LT			ALIGNMENT -LREV-		0 HR.	Dry
NORTHING	777,7	88		EASTING 2,269,809		24 HR.	FIAD
	DRILL N	/IETHO	DН	and Auger	HAMME	RTYPE	NA
COMP. DAT	E 10/	10/19		SURFACE WATER DEPT	TH N/A	4	
	SAMP.	7	L				
75 100	NO.	мо	O G	SOIL AND ROC	K DESC	RIPTION	
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· · · · ·				- 144.4 GROUND	SURFA	CE	0.0
		D		TAN, STIFF TO VER		, SANDY S	SILT
				Boring Terminated B	Y AUGE	REFUSA	Lat
				Elevation 141.9 ft IN	NRESIDI ILT)	JAL (SANI	YC
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WBS 45983.1.1 TIP B-5947 COUNT				GEOLOGIST Jones, A. N.							WBS 45983.1.1						TIP B-5947 C				ידא														
SI	TE D	ESCR	IPTION	BRI		VO. 91	I OVEI	R TAR	R RIVE	ER ON	NC 58	31										GROL	UND W	FR (ft)	SITE	DESC	RIPTIO	N BR	RIDGE	NO. 9	1 OVEF	R TAR	RIVER	ON NO	2 58
BC	ORIN	g no.	LRE	V_315	0	S	ΤΑΤΙΟ	N 31	+50			OFFSE	T 1	0 ft LT			A		ENT -L	REV-		0 HR	2.	Dry	BOR	ING NO	D. LRE	V_33	50	S	TATIO	N 33+	+50		
COLLAR ELEV. 152.7 ft TOTAL DEPTH 2.2 ft N					NORTHING 777,974			E	EASTING 2,269,887 24 HR. FIAD			COL	LAR EL	.EV. 1	57.3 f	t	Т	OTAL [DEPTH	i 5.0 ft															
DR	RILL F	rig/hai	VIMER E	FF./DA	TE N	A								DRILL	METHO	DD H	-land /	Auger			HAMIN	ER TYP	YE N∕A		DRIL	l rig/h/	AMMER I	EFF./D/	ATE I	N/A					
DF	RILLI	ER Pi	inter, D). G.		S	TART	DATE	10/1	0/19		COMP.	DAT	E 10/	/10/19	_	s	URFAC	E WATI	ER DEP	TH N	/A			DRIL	LER	Pinter, I). G.		S		DATE	10/10/	19	
ELE	Ęv [DRIVE ELEV	DEPTH	BLC		JNT			BLOV	VS PEF	R FOOT			SAMP.					SOIL	AND ROO	CK DES	CRIPTIO	N		ELEV	DRIVE		I BL	.ow co	OUNT			BLOWS	PER FC	OT
(ft	:)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	50		75	100	NO.	Имо	I G	EL	EV. (ft)					DE	EPTH (ft)	(#)	(ft)	(ft)	0.5ft	t 0.5f	ft 0.5ft	0	25		50	
15	5		-														F								160		+								
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		-	-														F	Bo	ring Terr	ninated B	RAVEL A	ER REFU	JSAL at				Ŧ								
		-	-														F	E	levation	150.5 ft II S	N RESIE BILT)	DUAL (SA	ANDY				Ŧ					••			<u> </u>
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WBS 45983 1 1						тп		B 50/7			COI	INITY	~			
WBS 45983.1.1																
SITE DESCRIPTION BRIDGE NO.								91 OVER TAR RIVER ON NC 581								
BORING NO. LREV_3550							STATION 35+50									
COL			TOTAL DEPTH 0.5 ft													
DRILL	_ RIG/HAI	VIVIER E	FF./DA		A											
DRIL	LER P	inter, D	. G.			START DATE 10/10/19										
ELEV	DRIVE	DEPTH	BLC	W COL	JNT					BLOWS	PER F	ООТ				
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5	ft		0	25		50		7			
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1 GROUND WTR (ft OFFSET 28 ft LT ALIGNMENT -LREV- 0 HR, Dr, NORTHING 778,359 EASTING 2,269,996 24 HR, FIAT COMP. DATE 10/10/19 SURFACE WATER DEPTH N/A 501L AND ROCK DESCRIPTION 75 100 NO. Mol G 75 100 NO. GROUND SURFACE 0 1 0 Mol G SOIL AND ROCK DESCRIPTION 0 1 0 Mol G SOIL AND ROCK DESCRIPTION 0 1 0 Mol G GROUND SURFACE 0 1 0 Mol G SOIL AND ROCK DESCRIPTION 0 1 0 Mol G GROUND SURFACE 0 1 0 Mol G Tay, MEDIDAL (SANDY SULF, SANDY SULF, SANDY SULT) 0	NASH				GEOLOGIST Jones, A. N	Ν.		
OFFSET 28 ft LT ALIGNMENT -LREV- 0 HR. Dr. NORTHING 778,359 EASTING 2,269,996 24 HR. FIAD COMP. DATE 10/10/19 SURFACE WATER DEPTH NA 75 100 NO G SOIL AND ROCK DESCRIPTION 76 NO G SOIL AND ROCK DESCRIPTION 0 76 NO NO G SOIL AND ROCK DESCRIPTION 76 NO NO G SOIL AND ROCK DESCRIPTION 77 NO G GOUND SURFACE 0 78 100 GROUND SURFACE 0 79 NO G SOIL AND ROCK DESCRIPTION 0 70 NO G TAN, MEDIUMAL (SANDY SOIL AND ROCK DESCRIPTION 70 SILT TAN, MEDIUMAL (SANDY SILT) SILT	1				•		GROUN	D WTR (ft)
NORTHING 778,359 EASTING 2,269,996 24 HR. FIAL DRILL METHOD Hand Auger HAMMER TYPE NA COMP. DATE 10/10/19 SURFACE WATER DEPTH N/A 5 100 NO. G SOIL AND ROCK DESCRIPTION 100.0 GROUND SURFACE 0 100.0 GROUND SURFACE 0 RESIDUAL Boring Terminate V AUGER REFUSAL at Elevation 159.5 fl N RESIDUAL (SANDY SILT) 100.0 GROUND SURFACE 0 100.0	OFFSET 2	8 ft LT			ALIGNMENT -LREV-		0 HR.	Dry
DRILL METHOD Hand Auger HAMMER TYPE NA COMP. DATE 10/10/19 SURFACE WATER DEPTH N/A 75 100 NO. 0 SOIL AND ROCK DESCRIPTION 75 100 NO. 0 GROUND SURFACE 0 75 100 RESIDUAL RESIDUAL 0 RESIDUAL 75 100 Common Surface 0 RESIDUAL 0 76 100 Common Surface 0 RESIDUAL 0 77 TAN, MEDIUM SUFF TO STIFF, SANDY 0 0 RESIDUAL 0 78 TAN, MEDIUM SUFF TO STIFF, SANDY 0 0 RESIDUAL (SANDY 0 79 TAN, MEDIUM SUFF TO STIFF, SANDY 0 0 0 0 0 70 TAN, MEDIUM SUFF TO STIFF, SANDY 0 0 0 0 0 70 RESIDUAL (SANDY SULT) SULT) 0 0 0 70 RESIDUAL (SANDY 0 0 0 0 0 70 RESIDUAL (SANDY 0 0 0 0 0 70 RESIDUAL (SANDY 0 0 0 0 0 70 RESIDUAL (SANDY	NORTHING	778,3	59		EASTING 2,269,996		24 HR.	FIAD
COMP: DATE 10/10/19 SURFACE WATER DEPTH N/A		DRILL	/IETHO	DН	and Auger H	IAMME	RTYPE	N/A
5 100 SAMP, NO. MOO G 100.0 GROUND SURFACE 0 100.0 GROUND SURFACE 0 RESIDUAL SILT VITH TRACE GRAVEY Boring Terminated BY AUGER REFUSAL at Elevation 159.5 ft IN RESIDUAL (SANDY SILT) 10.0 GROUND SURFACE 0 10.0 GROUND SURF	COMP. DAT	E 10/ [.]	10/19		SURFACE WATER DEPTH	H N//	4	
75 100 NO. MOI G SOL AND ROCK DESCRIPTION 1600 GROUND SUFFACE 0 1600 RESIDUAL TAN, MEDITIFF TO CERNEY Boing Terminate PAUGER REFUSAL at Elevation 159.5 ft N1 RESIDUAL (SANDY SILT) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	SAMP.		L			·	
Idou D	75 100	NO.	мо	O G	SOIL AND ROCK	DESC	RIPTION	
Image: Construction of the second								
Constant Sector Se					160.0 GROUND S	SURFA	CF	0.0
Internated BY AUGER REFUSAL at Elevation 1995 It IN RESUMUX SILT)		-						0.0 DV [0.5
Boing Terminated BY AUGER REFUSAL at Elevation 19:5 th N RESIDUAL (SANDY SILT) SILT)					SILT WITH TR	ACE G	RAVEL	DY
SiLT)					 Boring Terminated BY Elevation 159.5 ft IN 	AUGE	R REFUSA JAL (SAN	AL at DY
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