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		ET 3 FOR PLAN OF INVESTIGAT		LAYOUT	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS
	CONTENTS	5			GEOTECHNICAL ENGINEERING UNIT
	<u>LINE</u> -L-	<u>STATION</u> 16+66.17 - 21+56.06	<u>PLAN</u> 4	<u>PROFILE</u> N/A	
\mathbf{N}	- Y I-	10+33.64 - 21+13.80	4	NZA	ROADWAY SUBSURFACE INVESTIGATION
Y-480	CROSS SEC	TIONS			COUNTY_GUILFORD
	LINE	<u>STATION</u>	<u>SHEETS</u>		PROJECT DESCRIPTION MARKET STREET FROM PINE
E:	-L- -YI-	20+50.00 10+00.00 - 17+50.00	5 6-9		STREET TO LOWDERMILK STREET
REFERENC	APPENDICES	S			INVENTORY
ER	APPENDIX A	<u>TITLE</u> LABORATORY RESULTS	<u>SHEETS</u> IO-II		
EFI					
Z					
S					
40325					
4					
PROJECT:					
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RO					
A					

TOTAL SHEETS STATE STATE PROJECT REFERENCE NO. SHEET NO. 12 N.C. Y-4807B 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 1919) TOT-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAIL

GENERAL SOL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BORENUCE. THE LABORATORY SAMPLE DATA AND THE IN SITU (INFI-LACE) TEST DATA CAN BE RELIED ON ONLY TO THE DECREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOLI MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOLI MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

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C. DRISCOLL
B. NELSON
INVESTIGATED BY <u>C. DRISCOLL</u>
DRAWN BY <u><i>T. WELLS</i></u>
CHECKED BY <u>X. BARRETT</u>
SUBMITTED BY
DATE _JULY 2019
Prepared in the Office of:
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Bright People. Right Solutions. 7343 BEST FRENOLY AVE.
GREENSBORD, NC 2740 NC FRW LICENSE NO. F-132
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

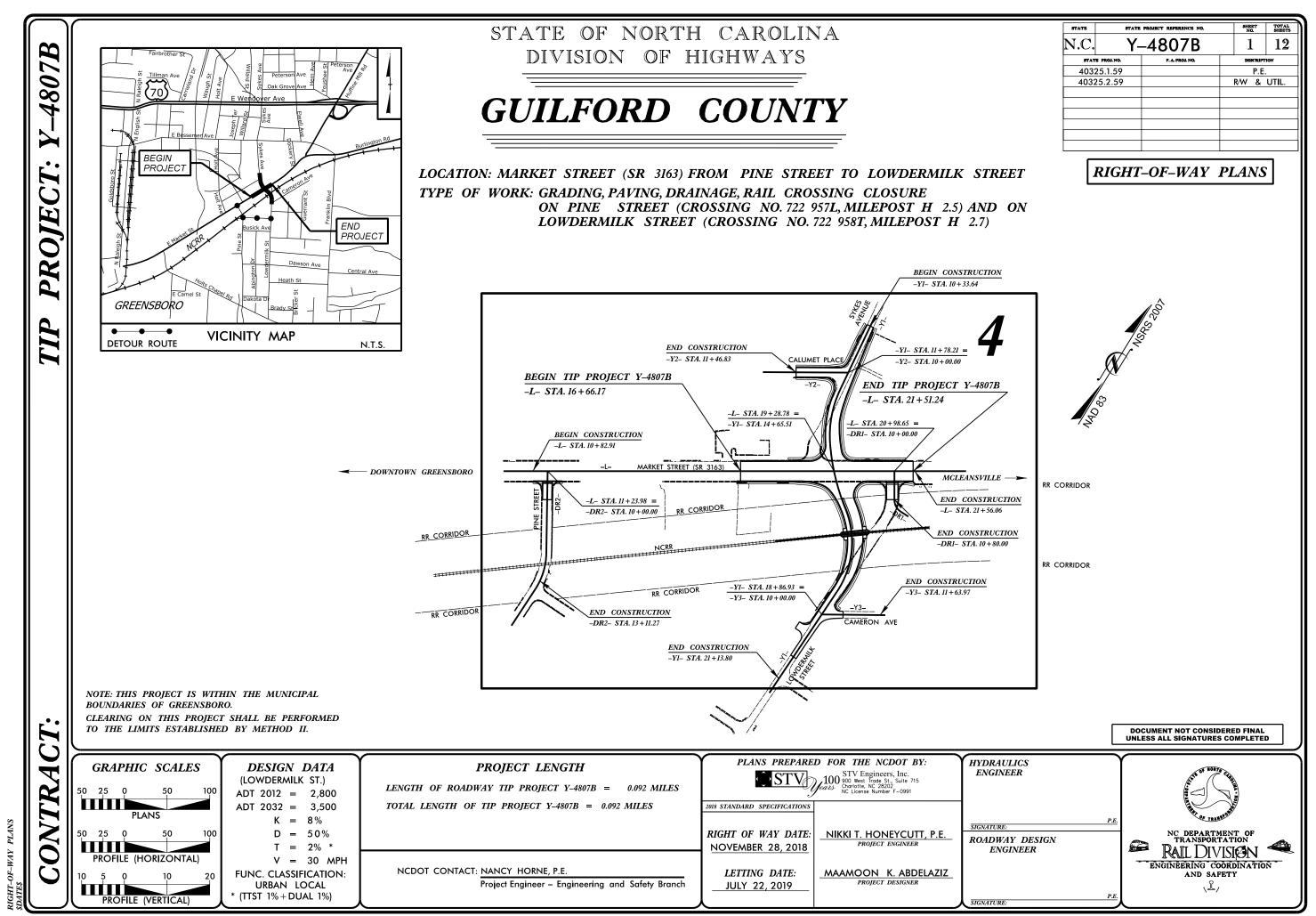
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

			SOIL	DESC	RIPTI	DN				1		GRA	DATION			T	ROCK DESCRIPTION						
BE PENET ACCORDIN IS BA	RATED WITH NG TO THE ASED ON TH	H A CONTINL STANDARD F HE AASHTO !	DATED, SEMI-CO OUS FLIGHT P ENETRATION T SYSTEM, BASIC	DNSOLIDA OWER AU EST (AA DESCRIF	TED, OR GER AND SHTO T PTIONS (WEATHER YIELD 206, AST GENERALL	ESS THAN M D1586), S Y INCLUDE	100 BLOWS P DIL CLASSIFI THE FOLLOW	ER FOOT CATION ING:	WELL GRADED - INDICAT UNIFORMLY GRADED - IN GAP-GRADED - INDICATES	NDICATES	OOD REPRESENT S THAT SOIL PA XTURE OF UNIFC	TATION OF PARTIC ARTICLES ARE ALI DRM PARTICLE SIZ	L APPROXIMA ZES OF TWO	ATELY THE SAME SIZE.	ROCK LINE IN SPT REFUSAL BLOWS IN NO	NDICATE IS PE N-COAS	ES THE LEV ENETRATION ISTAL PLAIN	PLAIN MATE VEL AT WH I BY A SPL IN MATERI	ERIAL THAT W HICH NON-COAS LIT SPOON SA IAL, THE TRAI	OULD YIELD SPT REFUSAL IF TEST STAL PLAIN MATERIAL WOULD YIELD MPLER EQUAL TO OR LESS THAN Ø. NSITION BETWEEN SOIL AND ROCK		
AS	MINERALO	GICAL COMPO	DISTURE, AASH DSITION, ANGUL	ARITY, S	FRUCTUR	E, PLAST	CITY, ETC.	FOR EXAMPLE								REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:							
V			Y.MOIST WITH II							ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.											N MATERIAL THAT WOULD YIELD SP OT IF TESTED.		
GENERAL	-	GRANULAR MA1				MATERIALS		organic mater		MINERALOGICAL COMPOSITION								7.5	RAIN IGNEOUS AND METAMORPHIC R				
CLASS.		≤ 35% PASSIN				5ING •200	_			MINERAL NAM ARE USED IN		ROCK (CR)	ROCK (CR)										
GROUP CLASS. A	A-1 A-1-a A-1-b	A-3 A-2-4	A-2 A-2-5 A-2-6 A-		A-5	A-6 A		A-4, A-5 A-6, A-7					ESSIBILITY				ION-CRYSTALLINE						
SYMBOL				8	17.1			<u> </u>				MPRESSIBLE COMPRESSIBLE		LL < 31 LL = 31 ·	- 50	RUCK (NCR) ROCK TYPE INCLUDES PHYLL					ES PHYLLITE, SLATE, SANDSTONE, ET DIMENTS CEMENTED INTO ROCK, BUT		
% PASSING	000000000000000000000000000000000000000				<u></u>			SILT-		HIGHL	Y COMP	PRESSIBLE		LL > 50	30	SEDIMENTARY (CP)			SPT F		K TYPE INCLUDES LIMESTONE, SAND		
	0 MX 0 MX 50 MX	51 MN					GRANULA SOILS	R CLAY	MUCK. PEAT		P		E OF MATER	IAL					JONEEL		IERING		
•200 IS	5 MX 25 MX	10 MX 35 MX	35 MX 35 MX 35	i мх 36 м	N 36 MN	36 MN 36	MN	SOILS		ORGANIC MATERIAL			SILT - CLAY	<u>OTHEF</u> TRACE	R MATERIAL	FRESH				GHT.FEW JOINT	S MAY SHOW SLIGHT STAINING. ROCK		
MATERIAL PASSING #40										TRACE OF ORGANIC MA LITTLE ORGANIC MATT		2 - 3% 3 - 5%	3 - 5% 5 - 12%	LITTLE	1 - 10% 10 - 20%	VERY SLIGHT		ER IF CRYST		INTS STAINED.	SOME JOINTS MAY SHOW THIN CLAY (
LL PI	- 6 MX		41 MN 40 MX 41 10 MX 11 MN 11				MN L	ILS WITH TTLE OR	HIGHL Y	MODERATELY ORGANIC HIGHLY ORGANIC		5 - 10% > 10%	12 - 20% > 20%	SOME HIGHLY	20 - 35% 35% AND ABOVE	(V SLI.)	CRYST		BROKEN SPE	ECIMEN FACE S	SHINE BRIGHTLY. ROCK RINGS UNDER H		
GROUP INDEX	0	0 0	4 MX			16 MX NO	M	DDERATE DUNTS OF	ORGANIC			GROUN	ND WATER			SLIGHT					AND DISCOLORATION EXTENDS INTO RO		
	TONE FRAGS.	FINE S	LTY OR CLAYEY	s	ILTY	CLAYEY		NRGANIC MATTER	30123	∇	WATE	R LEVEL IN BO	RE HOLE IMMEDIA	TELY AFTER	RILLING	(SLI.)					IN GRANITOID ROCKS SOME OCCASION YSTALLINE ROCKS RING UNDER HAMME		
OF MAJOR C MATERIALS	SRAVEL, AND SAND		avel and sand		OILS	SOILS				▼	STATI	IC WATER LEVE	LAFTER <u>24</u> H	HOURS		MODERATE	SIGNIF	FICANT PORT	TIONS OF F	ROCK SHOW DIS	COLORATION AND WEATHERING EFFECT		
GEN. RATING		EXCELLENT TO	GOOD		FAIR TO	POOR	FAIR T	POOR	UNSUITABLE	<u></u>	PERCH	HED WATER, SAT	TURATED ZONE, OR	WATER BEA	RING STRATA	(MOD.)					ULL AND DISCOLORED, SOME SHOW CLA HOWS SIGNIFICANT LOSS OF STRENGT		
AS SUBGRADE			JBGROUP IS ≤ LI	- 301 - Pi	OF 4-7-6	SURGROU		2		- O-M-	SPRIN	NG OR SEEP						FRESH ROCK.					
										1	N	MISCELLAN	EOUS SYMBO	JLS		SEVERE	AND D	ISCOLORED 4	AND A MAD	JORITY SHOW K	R STAINED. IN GRANITOID ROCKS, ALL XAOLINIZATION. ROCK SHOWS SEVERE L		
PRIMARY SU			CTNESS OR			STANDAR RESISTE		NGE OF UN				T (BE) 25/025	DIP & DIP DIR	ECTION		(MOD. SEV.)				ATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND <u>YIELD SPT REFUSAL</u>			
		CONS	ISTENCY	1	(N-VA			(TONS/F		WITH SOIL DES			OF ROCK STRU	CTURES		SEVERE (SEV.)	ALL R	OCK EXCEPT	T QUARTZ (DISCOLORED OR	STAINED. ROCK FABRIC CLEAR AND B		
GENERAL			(LOOSE OOSE		< 4 T(SOIL SYMBOL							TO SO	N GRANITOID ROCKS ALL FELDSPARS TRONG ROCK USUALLY REMAIN.					
GRANULA MATERIAL	L	MEDIU	IM DENSE ENSE		10 TI 30 T			N/A		ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT CHAUGER BORING CONE PENETROMETER TEST							IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF ALL ROCK EXCEPT OUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEI						
(NON-COH	ESIVE)		C DENSE		> !						\bigcirc	SEVERE	BUT M	ASS IS EFFE	FECTIVELY	REDUCED TO S	OIL STATUS, WITH ONLY FRAGMENTS C						
GENERAL	LY		Y SOFT SOFT		к 2 Т			< 0.25 0.25 TO		- INFERRED SOIL	(V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROU VESTIGES OF ORIGINAL ROCK FABRIC REMAIN.												
SILT-CLA MATERIAL	ΥΥ	MEDI	JM STIFF		4 T 8 T	38		0.5 TO 1 TO 2	1.0		ELL 🕂 🕀	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNI SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR											
(COHESIV		VER	Y STIFF		15 T	30		2 TO										AN EXAMPLE.		5. GUHRTZ MHT	BE FRESENT HS DIKES ON STRINGEN		
					> : RAIN			> 4			R	ECOMMEND	ATION SYMB	OLS						ROCK H	ARDNESS		
U.S. STD. SIE	VF SIZE		4 10				200 276	1							SIFIED EXCAVATION -	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPEC SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.							
OPENING (MM			4.76 2.0	0 0.	42 @	.25 Ø	075 0.05					CLASSIFIED EXC BUITABLE WASTE CLASSIFIED EXC		USED I	ABLE, BUT NOT TO BE N THE TOP 3 FEET OF	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD							
BOULDER			GRAVEL	COA SA			INE AND	SILT	CLAY			CLASSIFIED EXC CEPTABLE DEGRA	ADABLE ROCK	EMBANK	MENT OR BACKFILL	TO DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROU				NUCES OR GROOVES TO 0 25 INCHES O			
(BLDR.)		COB.)	(GR.)	(CSE			SD.)	(SL.)	(CL.)				EVIATIONS			HARD	EXCAV	ATED BY HA	ARD BLOW		ST'S PICK. HAND SPECIMENS CAN BE D		
GRAIN MM SIZE IN.	305 12	75 3	2.0	0	6	.25	0.0	5 0.0 0	5	AR - AUGER REFUSAL BT - BORING TERMINATED	J	MED ME MICA M	EDIUM MICACEOUS		- VANE SHEAR TEST - WEATHERED	MEDIUM		DERATE BLO BE GROOVED (D 0.05 INCHES	DEEP BY FIRM PRESSURE OF KNIFE		
	S	OIL MO	STURE -	CORR	ELAT	ION C	F TERM	S		CL CLAY CPT - CONE PENETRATION	N TEST		ODERATELY N PLASTIC		UNIT WEIGHT DRY UNIT WEIGHT	HARD		DF A GEOLO			EICES 1 INCH MAXIMUM SIZE BY HARD		
	MOISTURE	SCALE	FIELD	MOISTUR	F			OISTURE DE	SCRIPTION	CSE COARSE		ORG OF	RGANIC	-	MPLE ABBREVIATIONS	SOFT	CAN B	E GROVED OF	OR GOUGED	READILY BY K	NIFE OR PICK. CAN BE EXCAVATED IN		
	ERBERG LI	MITS		RIPTION						DMT - DILATOMETER TEST DPT - DYNAMIC PENETRAT		ST SAP SA	RESSUREMETER TE APROLITIC	S - E						NCHES IN SIZE FINGER PRESS	BY MODERATE BLOWS OF A PICK POIN URE.		
			- SATU (SA)					RY WET,USL ROUND WATE		e - VOID RATIO F - FINE		SD SAN SL SIL			SPLIT SPOON SHELBY TUBE	VERY					AVATED READILY WITH POINT OF PICK.		
PLASTIC		LIMIT								 FOSS FOSSILIFEROUS FRAC FRACTURED, FRACT 	TURES	SLI SL TCR - TR	.IGHTLY RICONE REFUSAL		ROCK RECOMPACTED TRIAXIAL	SOFT	FINGER		KNESS LAN	N BE BRUKEN B	Y FINGER PRESSURE. CAN BE SCRATC		
RANGE <			- WET	- (W)			DPTIMUM M	S DRYING TO DISTURE	J	FRAGS FRAGMENTS	TONES	w - MOIS	STURE CONTENT		- CALIFORNIA BEARING		RAC	TURE SP			BEDDING		
										HI HIGHLY			ON SUBJECT		RATIO	VERY WIDE	-	MOF	SPACIN		VERY THICKLY BEDDED		
OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE SL SHRINKAGE LIMIT								OPTIMUM MO	DISTURE	DRILL UNITS:		NCING TOOLS:	0.1 0000201	HAMMER		WIDE MODERATEI	וא רוו		3 TO 10 1 TO 3 F		THICKLY BEDDED THINLY BEDDED 0.		
SL _		AGE LIMII				REGUIER		WATER T	n	CME-45C		CLAY BITS		L AU	TOMATIC MANUAL	CLOSE VERY CLOS		6	0.16 TO 1 SS THAN 0	FOOT	VERY THINLY BEDDED 0.0 THICKLY LAMINATED 0.0		
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE									0	CME-55		6" CONTINUOUS F	FLIGHT AUGER	CORE SIZ	ZE:		20	LE3:	5 THHIN D	0.16 FEE1	THINLY LAMINATED		
PLASTICITY												8 HOLLOW AUGE		□-в _	н						ATION		
PLASTICITY_INDEX_(PI) DRY_STRENGTH NON_PLASTIC Ø-5 VERY_LOW										CME-550		HARD FACED FIN		□-N _				IUCKS, INDUF			ING OF MATERIAL BY CEMENTING, HE FINGER FREES NUMEROUS GRAINS:		
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH								SLIGHT	Y	VANE SHEAR TEST		TUNGCARBIDE		HAND TO	OLS:	FRIABL	E				BY HAMMER DISINTEGRATES SAMPLE.		
													STEEL TEETH		ST HOLE DIGGER	MODER	ATELY	INDURATED			SEPARATED FROM SAMPLE WITH S WHEN HIT WITH HAMMER.		
				COLO	R								TUNGCARB.								FFICULT TO SEPARATE WITH STEEL		
DESCRIPTI	IONS MAY		LOR OR COLO			(TAN. F	ED. YELLOW	-BROWN, BUI	E-GRAY).	1⊔		CORE BIT			JNDING ROD NE SHEAR TEST	INDURA	IEU		D	IFFICULT TO I	BREAK WITH HAMMER.		
		IT, DARK, STRE													EXTREM	MELY I	INDURATED			BLOWS REQUIRED TO BREAK SAMPL 5 ACROSS GRAINS.			





	TERMS AND DEFINITIONS
TED. AN INFERRED D SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
.1 FOOT PER 60	AQUIFER - A WATER BEARING FORMATION OR STRATA.
IS OFTEN	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
T N VALUES >	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.
OCK THAT	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
NCLUDES GRANITE,	SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
TAL PLAIN IF TESTED. TC.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
T MAY NOT YIELD DSTONE, 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.
RINGS UNDER	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
	$\underline{\text{DIP}}$ - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
COATINGS IF OPEN. HAMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
OCK UP TO AL FELDSPAR	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
ER BLOWS. TS. IN	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
AY. ROCK HAS 'H AS COMPARED	PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
FELDSPARS DULL LOSS OF STRENGTH	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
EVIDENT BUT ARE KAOLINIZED	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
HRE KHULINIZED	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 USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
ARE DISCERNIBLE OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
T ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.
VALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
' IN SMALL AND RS. SAPROLITE IS	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
NS REQUIRES	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
BLOWS REQUIRED	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
DEEP CAN BE DETACHED	<u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
OR PICK POINT. D BLOWS OF THE	STANDARD PENETRATION TEST (PENETRATION RESISTANCE)(SPT) - NUMBER OF BLOWS (N OR BPF)OF A 140 LB.HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
N FRAGMENTS NT. SMALL, THIN	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
. 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 THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
CHED READILY BY	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
	BENCH MARK: N/A
THICKNESS 4 FEET	
1.5 - 4 FEET	ELEVATION: N/A FEET
0.16 - 1.5 FEET 03 - 0.16 FEET	NOTES:
03 - 0.03 FEET 008 - 0.03 FEET < 0.008 FEET	BORING ELEVATIONS OBTAINED FROM PROJECT TIN FILE Y4807_LS_TIN_180627, RECEIVED ON NOVEMBER 14, 2018
EAT, PRESSURE, ETC.	
TEEL PROBE:	
PROBE;	
.E;	
	DATE: 8-15-14





August 21, 2019

STATE PROJECT:	40325.1.59 (Y-4807B)
COUNTY:	Guilford
DESCRIPTION:	Market Street from Pine Street to Lowdermilk Street

SUBJECT: **GEOTECHNICAL REPORT - INVENTORY**

PROJECT DESCRIPTION

This project consists of a reconstruction of East Market Street (-L-) and the realignment of Lowdermilk Street and Sykes Avenue (-Y1-).

The geotechnical investigation was conducted in July 2019. Hand Augers were performed to obtain representative soil samples for visual classification in the field. Selected samples were submitted for laboratory analysis by Geotechnics, Inc.

The following alignments, totaling 0.30 miles, were investigated. Plan sheets and cross sections of these alignments are included in this report.

LINE	STATIONS
-L-	16+66 to 21+51
-Y1-	10+34 to 21+14

PHYSIOGRAPHY AND GEOLOGY

The project is located in the Piedmont Physiographic Province. The project corridor is comprised primarily of residential and commercial properties. The general topography along the project is generally flat to gently sloping.

Geologically, the project is located within the Carolina Slate Belt. Soils are derived from the underlying metamorphic bedrock primarily consisting of metamorphic granitic rock.

Surface water is drained from the corridor by curb and gutter.

SOIL PROPERTIES

Soils encountered during this investigation are separated into two categories based on origin. They consist of artificial fill and residual soils.

Artificial fill soils are present adjacent to the existing roadways on the project. The artificial fill encountered generally consist of moist, medium dense, silty coarse to fine sands (A-2-4). The artificial fill encountered extended to a maximum depth of 3 feet.

Residual soils are derived from the weathering of underlying granitic rock. The residual soils encountered consist of moist, stiff, sandy clays (A-6) and moist, stiff, highly plastic, sandy, silty clays (A-7). The plasticity index of the residual clays tested ranged from 13 to 33.

GROUNDWATER

Groundwater was not encountered to the depths investigated for this project.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) Artificial Fill: Artificial fill is present within the commercial properties along the existing roadways at the following locations:

LINE	STATIONS	OFFSETS
-L-	16+66 to 21+51	LT, RT
-Y1-	10+34 to 21+14	LT, Rt

2) Highly Plastic Clays: Highly plastic clays (PI > 25) were encountered on the project at the following locations:

LINE	STATIONS
-Y1-	23+75 to 25+7

A discussion of these highly plastic clay soils is located in the section titled "Soil Properties."

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Xavier C. Barrett, PE Principal Professional

TRW/XCB

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SHEET 3A 40325.1.59 (Y-4807B)

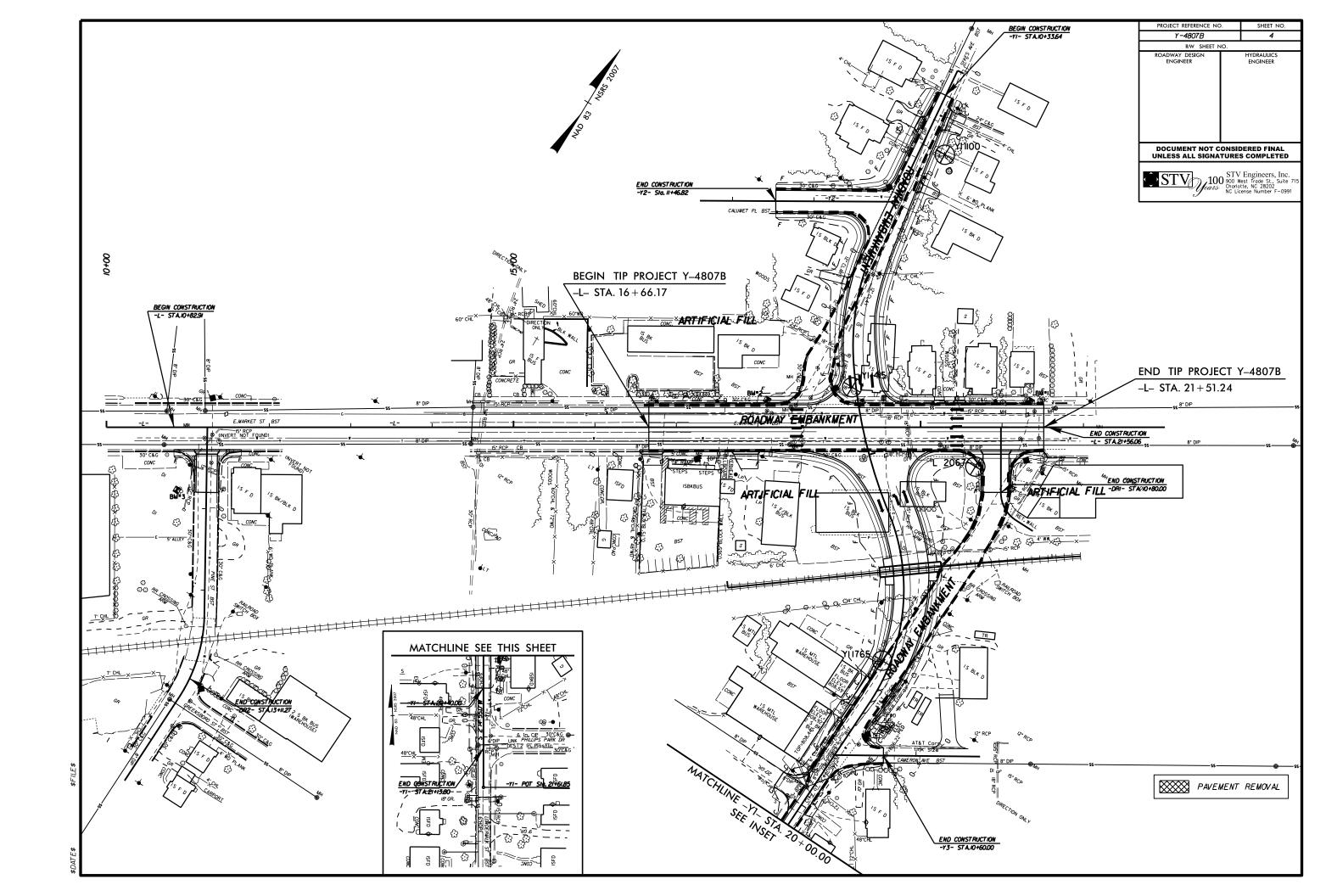
OFFSETS

75

LT, RT

Thomas R. Wells, PE Senior Professional

August 21, 2019 www.kleinfelder.com

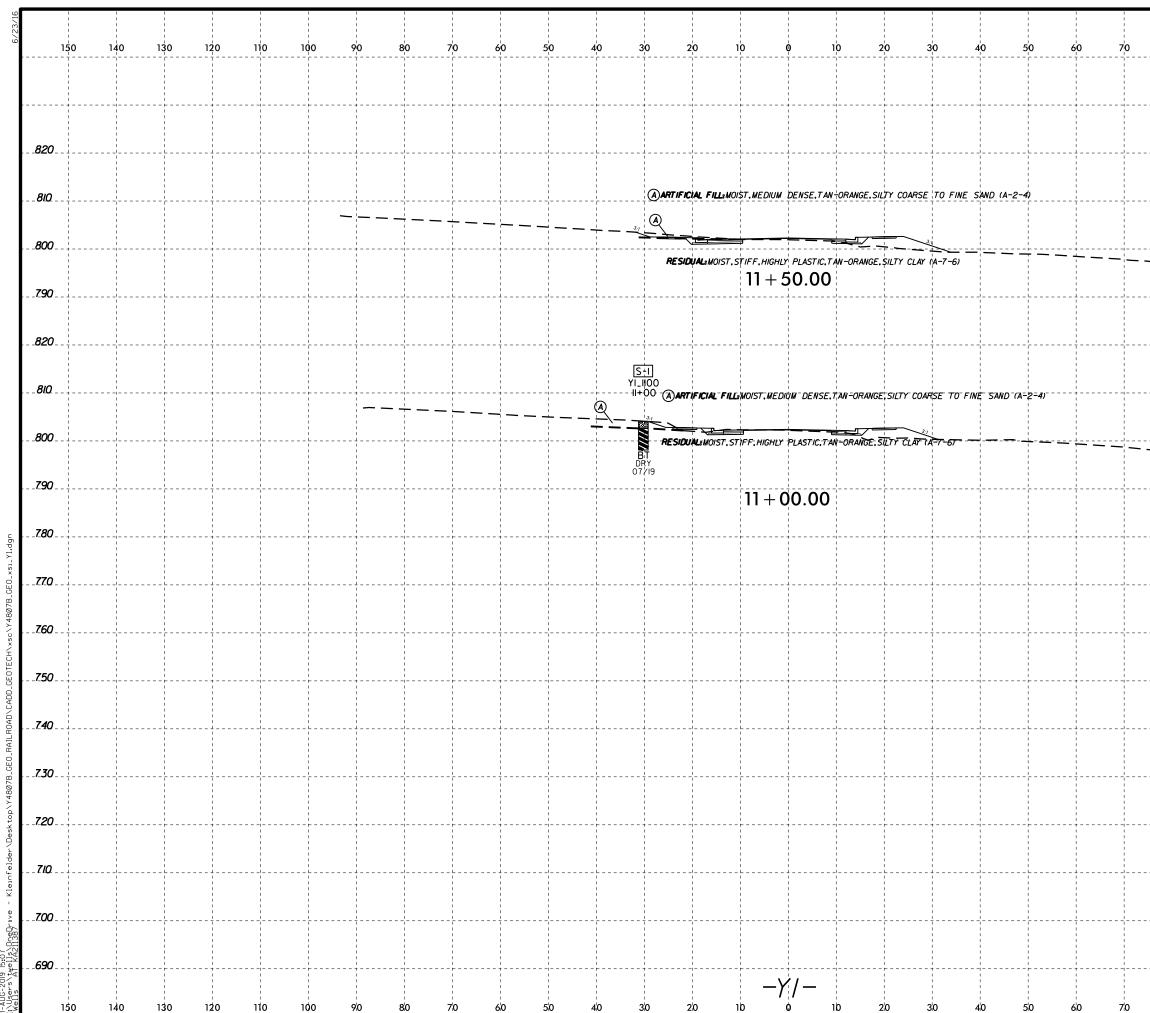


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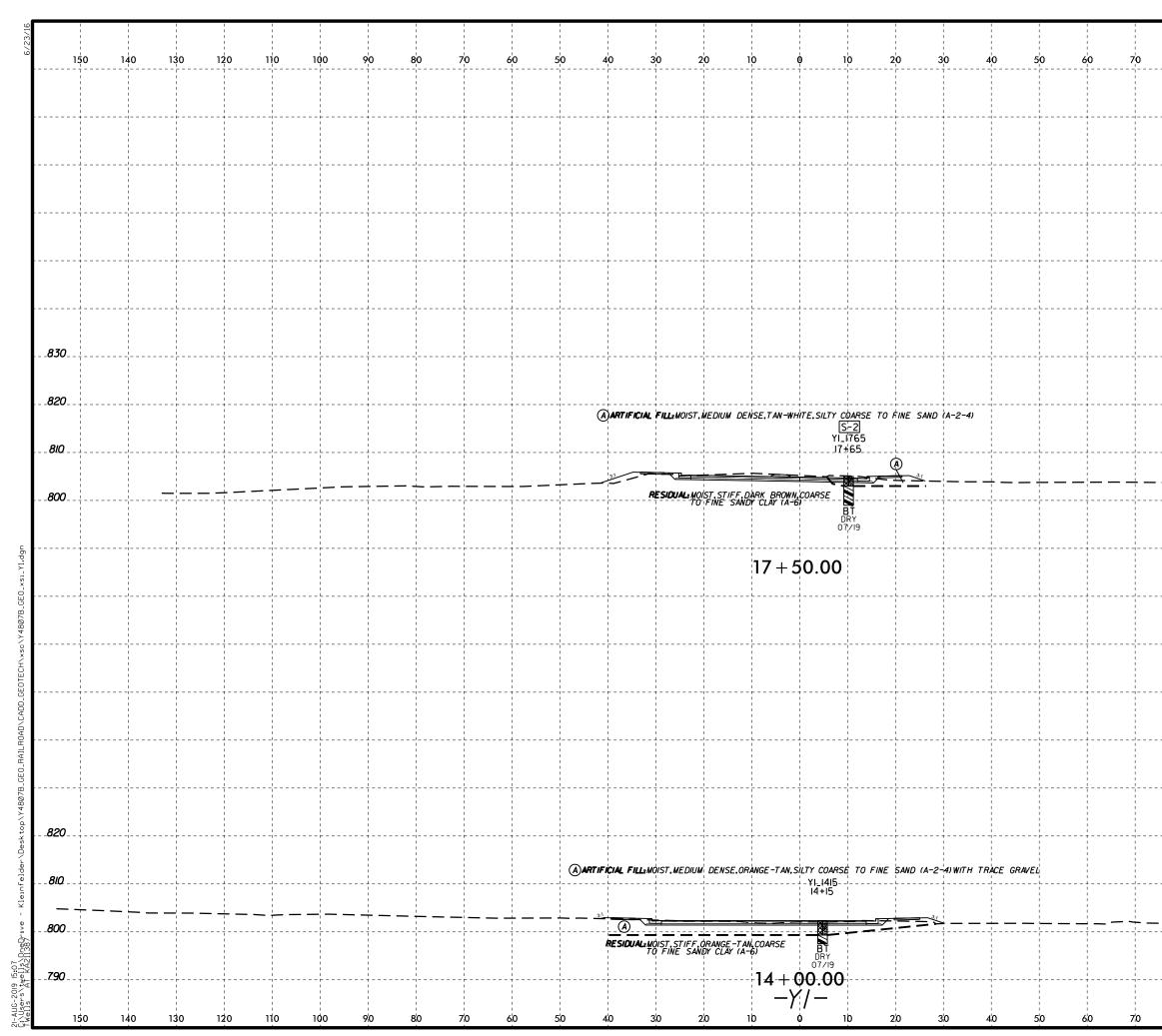
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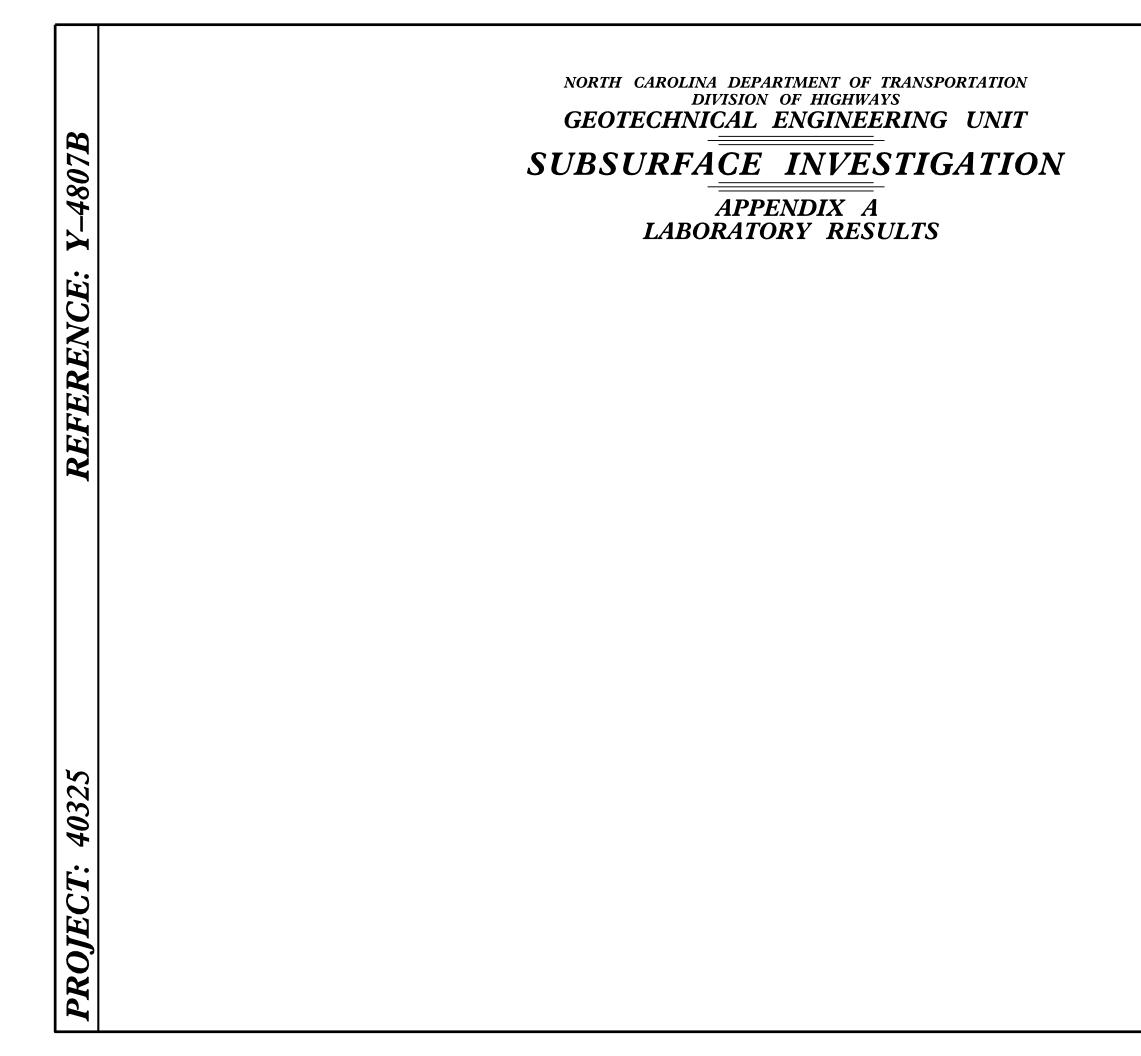
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LABORATORY SUMMARY SHEET FOR SOIL SAMPLES

PROJECT NO.: 40325.1.59 (Y-4807B) COUNTY: GUILFORD MARKET STREET FROM PINE STREET TO LOWDERMILK STREET

										s		Gradation Results						
Sample No.	Boring Number	Alignment	Station	Offset	Sample Depth (ft.)	Natural Moisture Content (%)	AASHTO Class.	L.L.	P.L.	P.I.	Retained #4 Sieve	Pass #10 Sieve	Pass #40 Sieve	Pass #200 Sieve	Coarse Sand (%)	Fine Sand (%)	Silt (%)	Clay (%)
S-1	Y1_1100	-Y1-	11+00	30' LT	1.5-6.0	33.8	A-7-6	50	17	33	0.0	99.5	89.7	64.9	16.6	21.5	17.5	44.4
S-2	Y1_1765	-Y1-	17+65	10' RT	2.0-6.0	20.1	A-6	28	15	13	1.5	94.1	76.6	50.0	27.4	24.8	22.6	25.2
														}				}

SHEET 11