

REFERENCE: P-5707

PROJECT: 44643

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WAKE

PROJECT DESCRIPTION ROGERS ROAD (SR 2052)
GRADE SEPARATION OVER CSX RAILROAD
(CROSSING NO. 633 905 Y) AT MILE POST S 142.53

SITE DESCRIPTION BRIDGE ON ROGERS ROAD
OVER CSX RAILROAD BETWEEN US 1A AND
SR 5144

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5707	1	13

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) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

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-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS 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 GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO 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 CONDITIONS ENCOUNTERED AT 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 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
<u>J. MIZE</u>
<u>W. DUGGINS</u>

INVESTIGATED BY RK&K, LLP

DRAWN BY P. CARY

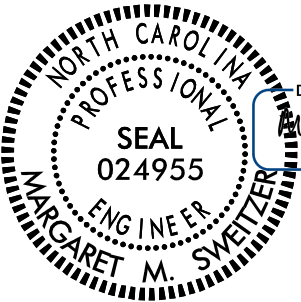
CHECKED BY M. SWEITZER

SUBMITTED BY RK&K, LLP

DATE FEBRUARY 2019

Prepared in the Office of:

RK&K RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112



DocuSigned by:
Margaret M. Sweitzer 2/8/2019

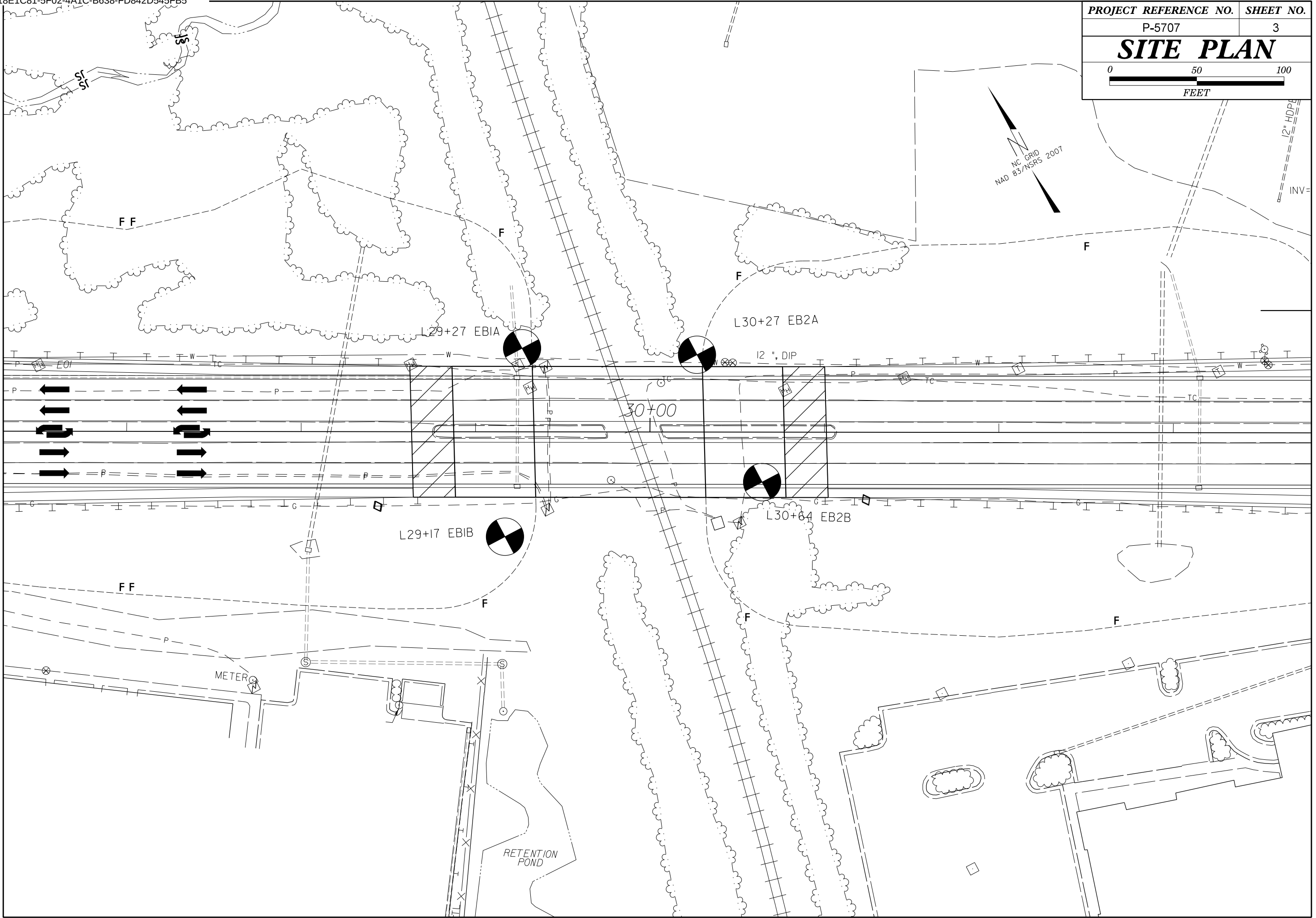
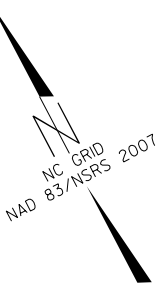
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION														GRADATION														ROCK DESCRIPTION														TERMS AND DEFINITIONS																																																																																																																																																																																																																																																																																																																																																																																													
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>														WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.														HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:														ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. 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. 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 SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. 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. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROQ) - 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. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. 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. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN 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. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROQ) - 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. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																																																																																																																																																																																																																																																																																																																																																																													
SOIL LEGEND AND AASHTO CLASSIFICATION														ANGULARITY OF GRAINS														WEATHERED ROCK (WR)														NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.																																																																																																																																																																																																																																																																																																																																																																																													
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)						SILT-CLAY MATERIALS (> 35% PASSING #200)						ORGANIC MATERIALS						CRYSTALLINE ROCK (CR)		FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.																																																																																																																																																																																																																																																																																																																																																																																																																	
GROUP CLASS.		A-1	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7	NON-CRYSTALLINE ROCK (NCR)		FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.																																																																																																																																																																																																																																																																																																																																																																																																																			
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% PASSING #10 #40 #200		50 MX 30 MX 15 MX	50 MX 25 MX	50 MX 10 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN					GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT																																																																																																																																																																																																																																																																																																																																																																																																																			
MATERIAL PASSING #40 LL PI		— 6 MX	— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN									SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER																																																																																																																																																																																																																																																																																																																																																																																																																			
GROUP INDEX		0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX											HIGHLY ORGANIC SOILS																																																																																																																																																																																																																																																																																																																																																																																																																			
USUAL TYPES OF MAJOR MATERIALS		STONE FRAGS, GRAVEL, AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS				CLAYEY SOILS																																																																																																																																																																																																																																																																																																																																																																																																																											
GEN. RATING AS SUBGRADE		EXCELLENT TO GOOD						FAIR TO POOR						FAIR TO POOR	POOR	UNSUITABLE																																																																																																																																																																																																																																																																																																																																																																																																																							
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30																																																																																																																																																																																																																																																																																																																																																																																																																																							
CONSISTENCY OR DENSENESS														MISCELLANEOUS SYMBOLS														ROCK HARDNESS																																																																																																																																																																																																																																																																																																																																																																																																											
PRIMARY SOIL TYPE		COMPACTNESS OR CONSISTENCY		RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)				RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)						ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION														DIP & DIP DIRECTION OF ROCK STRUCTURES														SLOPE INDICATOR INSTALLATION																																																																																																																																																																																																																																																																																																																																																																																													
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		< 4 4 TO 10 10 TO 30 30 TO 50 > 50				N/A																																																																																																																																																																																																																																																																																																																																																																																																																															
GENERALLY SILT-CLAY MATERIAL (COHESIVE)		VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30				< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																																																																																																																																																																																																																																																																																																																																																																																																																															
TEXTURE OR GRAIN SIZE														RECOMMENDATION SYMBOLS														ROCK HARDNESS																																																																																																																																																																																																																																																																																																																																																																																																											
U.S. STD. SIEVE SIZE OPENING (MM)		4 4.76		10 2.00		40 0.42		60 0.25		200 0.075		270 0.053																																																																																																																																																																																																																																																																																																																																																																																																																											
BOULDER (BLDR.)		COBBLE (COB.)		GRAVEL (GR.)		COARSE SAND (CSE. SD.)		FINE SAND (F SD.)		SILT (SL.)		CLAY (CL.)																																																																																																																																																																																																																																																																																																																																																																																																																											
GRAIN SIZE MM IN.		305 12		75 3		2.0 0.25		0.05 0.005																																																																																																																																																																																																																																																																																																																																																																																																																															
SOIL MOISTURE - CORRELATION OF TERMS														ABBREVIATIONS														ROCK HARDNESS																																																																																																																																																																																																																																																																																																																																																																																																											
SOIL MOISTURE SCALE (ATTERBERG LIMITS)				FIELD MOISTURE DESCRIPTION				GUIDE FOR FIELD MOISTURE DESCRIPTION						AR - AUGER REFUSAL BL - BORING TERMINATED CT - CLAY CPT - CONE PENETRATION TEST CSE. - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HL. - HIGHLY														MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY														VST - VANE SHEAR TEST WEA. - WEATHERED Z - UNIT WEIGHT Z _d - DRY UNIT WEIGHT																																																																																																																																																																																																																																																																																																																																																																																													
														SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO																																																																																																																																																																																																																																																																																																																																																																																																																									
LL PLASTIC RANGE (PI) PL		LIQUID LIMIT		- SATURATED - (SAT.)				USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE																																																																																																																																																																																																																																																																																																																																																																																																																															
		PLASTIC LIMIT		- WET - (W)				SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																																																																																																																																																																																																																																																																																															
OM SL		OPTIMUM MOISTURE SHRINKAGE LIMIT		- MOIST - (M)				SOLID; AT OR NEAR OPTIMUM MOISTURE																																																																																																																																																																																																																																																																																																																																																																																																																															
				- DRY - (D)				REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																																																																																																																																																																																																																																																																																															
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		PLASTICITY INDEX (PI)				DRY STRENGTH				DRILL UNITS:						ADVANCING TOOLS:						HAMMER TYPE:						CORE SIZE:						HAND TOOLS:																																																																																																																																																																																																																																																																																																																																																																																																					
										☐ CME-45C						☐ CLAY BITS						☒ AUTOMATIC ☐ MANUAL						☐ -B ☐ -H						☐ POST HOLE DIGGER																																																																																																																																																																																																																																																																																																																																																																																																					
										☐ CME-55						☐ 6" CONTINUOUS FLIGHT AUGER						☐ TRICONE _____ *STEEL TEETH						☒ -N Q _____						☐ HAND AUGER																																																																																																																																																																																																																																																																																																																																																																																																					
										☐ CME-550						☐ 8" HOLLOW AUGERS						☐ TRICONE _____ *TUNG.-CARB.						☐ SOUNDING ROD						☐ VANE SHEAR TEST																																																																																																																																																																																																																																																																																																																																																																																																					
										☐ VANE SHEAR TEST						☐ HARD FACED FINGER BITS						☒ CASING ☐ W/ ADVANCER						☐ CORE BIT						☐ YANE SHEAR TEST																																																																																																																																																																																																																																																																																																																																																																																																					
										☐ PORTABLE HOIST						☐ TUNG.-CARBIDE INSERTS						☐ CORE BIT						☐ YANE SHEAR TEST						☐ YANE SHEAR TEST																																																																																																																																																																																																																																																																																																																																																																																																					
										☒ Acker Renegade						☒ 3-1/4" HSA																																																																																																																																																																																																																																																																																																																																																																																																																							

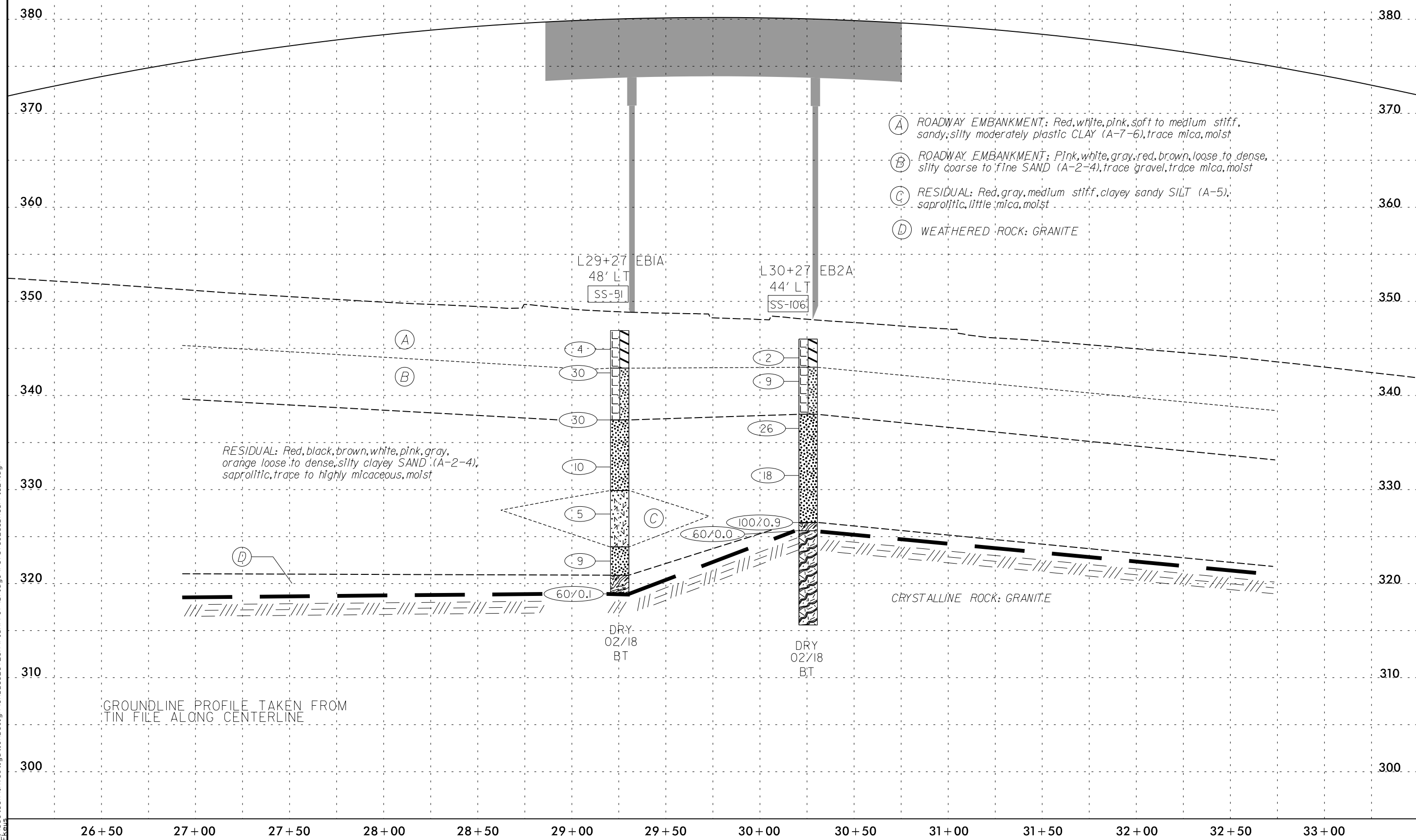
PROJECT REFERENCE NO.	SHEET NO.
P-5707	3
SITE PLAN	
0 50 100 FEET	



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

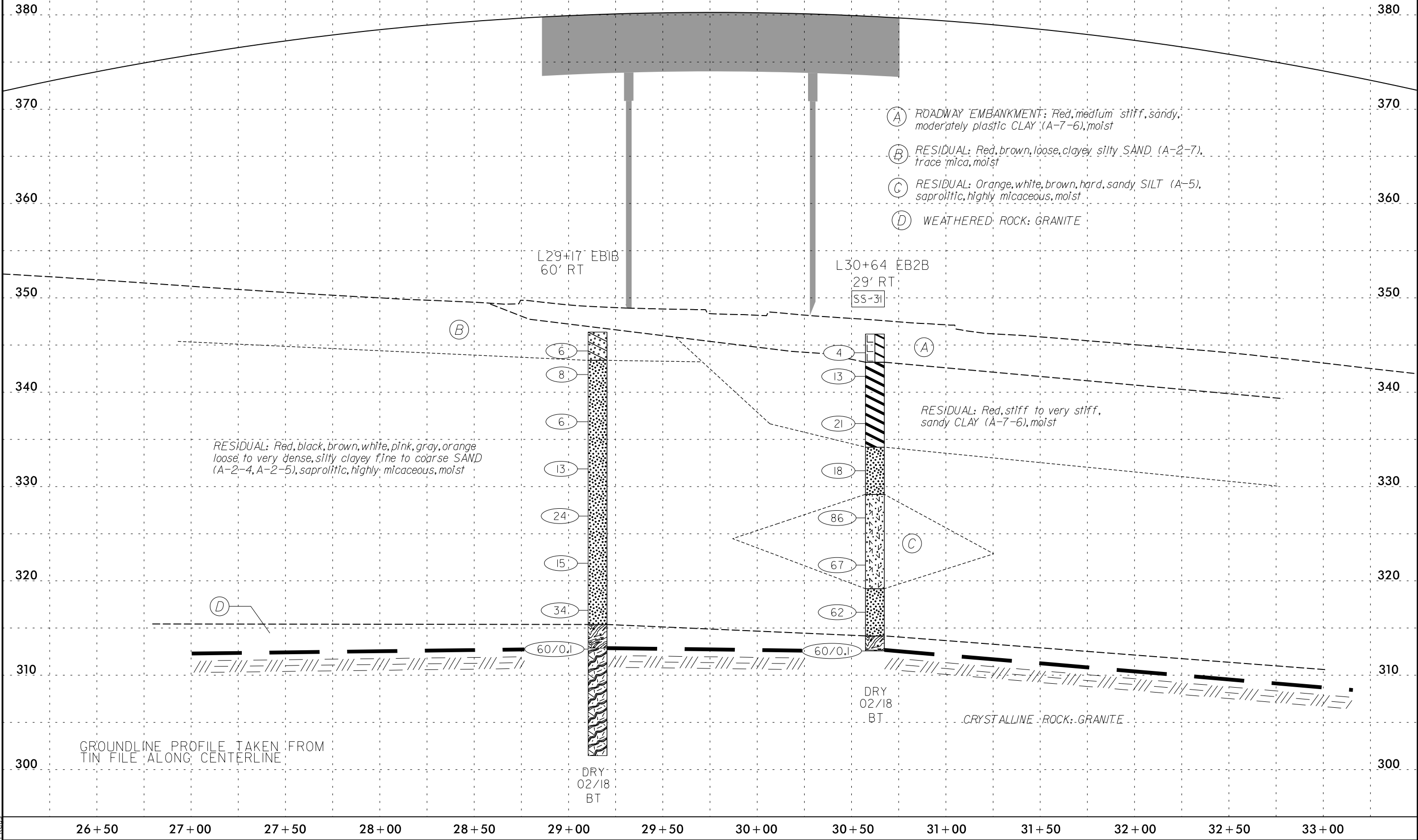
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING SIEVES			% Moisture	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-51	29+27	48 LT	1 - 2.5	A-7-6 (7)	48	25	32.3	21.8	12.3	33.6	93	72	46	22.2	--
SS-106	30+27	44 LT	1 - 2.5	A-7-6 (4)	43	19	38.6	22.1	12.4	26.9	96	68	41	20.9	--



INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT				% PASSING SIEVES			% Moisture	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-31	30+64	29 RT	1 - 2.5	A-7-6 (6)	46	25	39.3	20.7	9.9	30.1	95	67	42	20	--



6/23/16

SOIL TEST RESULTS															
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING SIEVES			% Moisture	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-51	29+27	48 LT	1 - 2.5	A-7-6 (7)	48	25	32.3	21.8	12.3	33.6	93	72	46	22.2	--

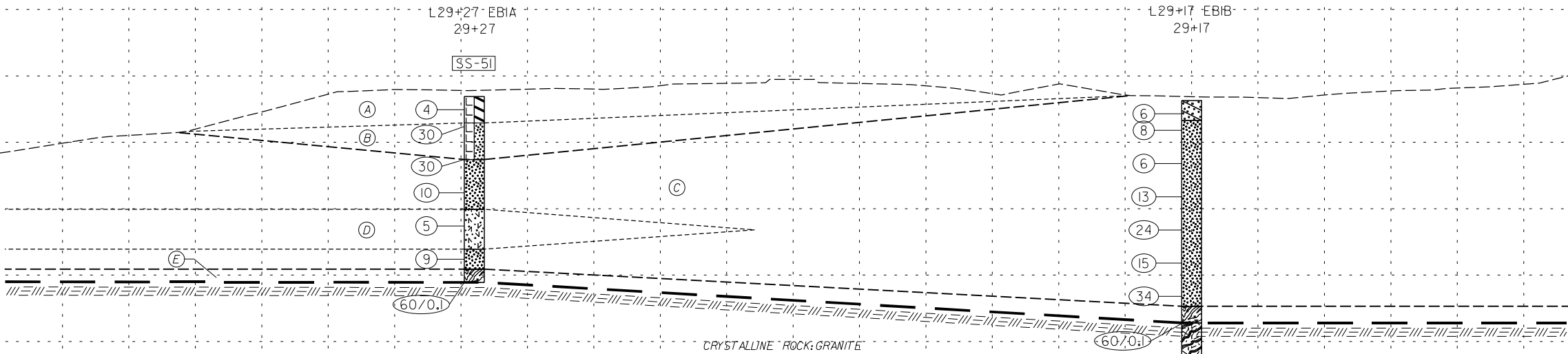
- (A) ROADWAY EMBANKMENT: Red, medium stiff, sandy moderately plastic CLAY (A-7-6), moist

(B) ROADWAY EMBANKMENT: Pink to white to gray, dense, silty SAND. (A-2-4), trace gravel, trace mica, moist

(C) RESIDUAL: Red to brown to black to pink, loose to dense, silty and clayey fine to coarse SAND (A-2-4, A-2-7), trace to little mica, saprolitic, moist, with lenses of highly micaceous sandy SILT

(D) RESIDUAL: Red, gray, medium stiff, clayey sandy SILT (A-5), saprolitic, little mica, moist

(E) WEATHERED ROCK: GRANITE



GROUND LINE DRAWN FROM PROVIDED
TIN FILE ALONG LINE OF BENT.

CROSS SECTION FOR END BENT 1 (STA. 28 + 87.50)

6/23/16

SOIL TEST RESULTS															
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING SIEVES			% Moisture	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-51	29+27	48 LT	1 - 2.5	A-7-6 (7)	48	25	32.3	21.8	12.3	33.6	93	72	46	22.2	--

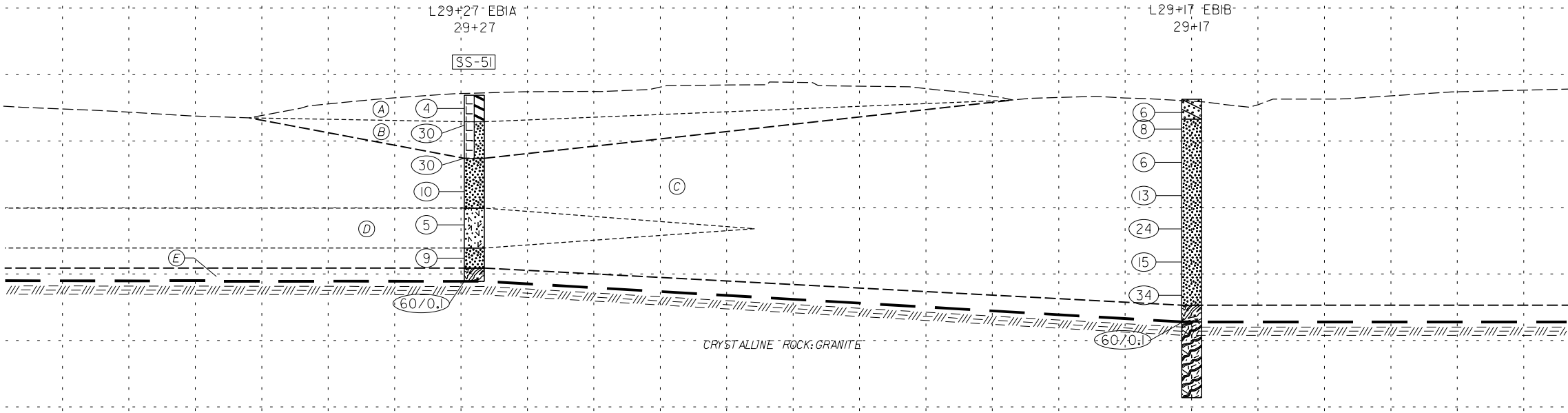
- (A) ROADWAY EMBANKMENT: Red, medium stiff, sandy moderately plastic CLAY (A-7-6), moist

(B) ROADWAY EMBANKMENT: Pink to white to gray, dense, silty SAND. (A-2-4), trace gravel, trace mica, moist

(C) RESIDUAL: Red to brown to black to pink, loose to dense, silty and clayey fine to coarse SAND (A-2-4, A-2-7), trace to little mica, saprolitic, moist, with lenses of highly micaceous sandy SILT

(D) RESIDUAL: Red, gray, medium stiff, clayey sandy SILT (A-5), saprolitic, little mica, moist

(E) WEATHERED ROCK: GRANITE



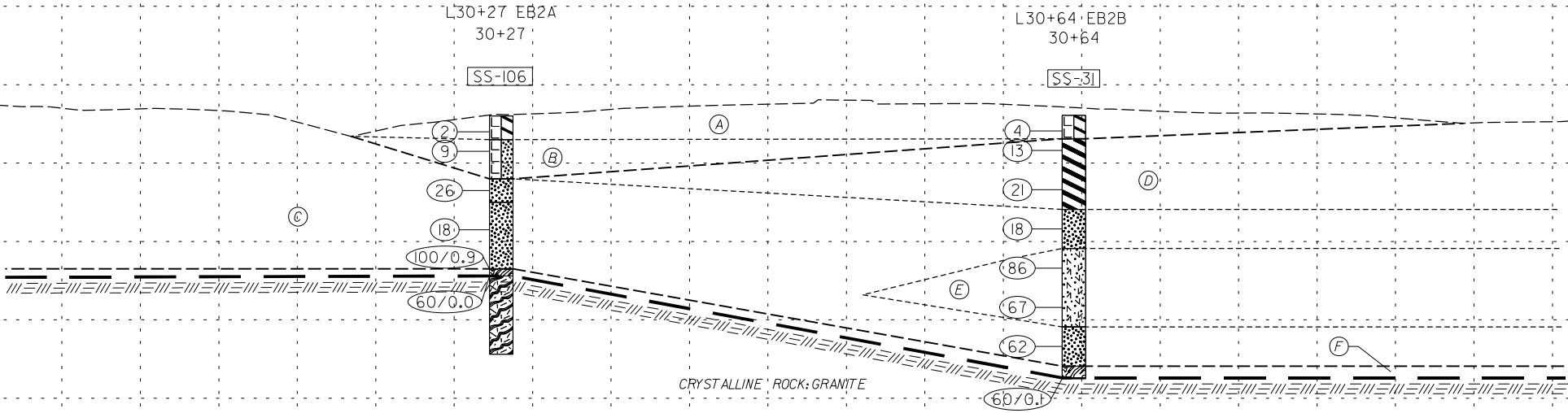
GROUND LINE DRAWN FROM PROVIDED
TIN FILE ALONG LINE OF BENT.

CROSS SECTION FOR INTERIOR BENT 1 (STA. 29+33.50)

6/23/16

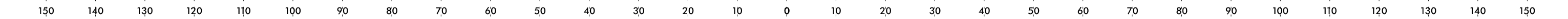
SOIL TEST RESULTS															
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING SIEVES			% Moisture	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-31	30+64	29 RT	1 - 2.5	A-7-6 (6)	46	25	39.3	20.7	9.9	30.1	95	67	42	20	—
SS-106	30+27	44 LT	1 - 2.5	A-7-6 (4)	43	19	38.6	22.1	12.4	26.9	96	68	41	20.9	—

- (A) ROADWAY EMBANKMENT: Red to white to pink, soft to medium stiff, sandy silty moderately plastic CLAY, (A-7-6), trace mica, moist
- (B) ROADWAY EMBANKMENT: Red to white to brown, loose, silty coarse SAND (A-2-4), trace mica, moist
- (C) RESIDUAL: Pink, white, gray, brown to orange, black, medium dense to very dense, silty clayey fine to coarse SAND (A-2-4, A-2-5), highly micaceous, saprolitic, moist
- (D) RESIDUAL: Red, stiff to very stiff, sandy CLAY (A-7-6), moist
- (E) RESIDUAL: Orange to white, to brown, hard, sandy SILT (A-5), saprolitic, highly micaceous, moist
- (F) WEATHERED ROCK: GRANITE



GROUND LINE DRAWN FROM PROVIDED TIN FILE ALONG LINE OF BENT.

CROSS SECTION FOR INTERIOR BENT 2 (STA. 30+31.00)



400

400

- 390 (B) ROADWAY EMBANKMENT: Red to white to brown, loose, silty coarse SAND (A-2-4), trace mica, moist 390

WBS 44643.1.1		TIP P-5707		COUNTY WAKE		GEOLOGIST J Mize								
SITE DESCRIPTION Bridge on Rogers Road over CSX Railroad							GROUND WTR (ft)							
BORING NO. L29+27 EB1A		STATION 29+27		OFFSET 48 ft LT		ALIGNMENT -L-		0 HR. Dry						
COLLAR ELEV. 346.9 ft		TOTAL DEPTH 28.1 ft		NORTHING 801,472		EASTING 2,141,744		24 HR. Dry						
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 86% 03/21/2016				DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER W Duggins			START DATE 02/01/18		COMP. DATE 02/01/18		SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft) DEPTH (ft)
350														
345	345.9	1.0	2	2	2					SS-51	22%		346.9 GROUND SURFACE 0.0	
340	343.4	3.5	1	16	14					M			342.9 Pink, white, gray, dense, silty gravelly SAND (A-2-4), trace mica 4.0	
	338.4	8.5	15	21	9								M	337.4 RESIDUAL 9.5
335	333.4	13.5	2	5	5					M			Black-brown to white-pink-black, medium dense to dense, silty SAND (A-2-4), trace mica, saprolitic	
	328.4	18.5	2	2	3								M	329.9 Red, gray, medium stiff, clayey sandy SILT (A-5), saprolitic, little mica 17.0
325	323.4	23.5	1	3	6					M			White, pink, brown, loose, silty SAND (A-2-4), little mica 23.0	
	318.4	28.5	60/0.1			60/0.1								
320													318.9 GRANITE 28.0	
													CRYSTALLINE ROCK GRANITE	
													Boring Terminated with Standard Penetration Test Refusal at Elevation 318.8 ft on Crystalline Rock (GRANITE)	

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J Mize					
SITE DESCRIPTION Bridge on Rogers Road over CSX Railroad										GROUND WTR (ft)				
BORING NO. L29+17 EB1B			STATION 29+17			OFFSET 60 ft RT			ALIGNMENT -L-		0 HR. N/A			
COLLAR ELEV. 346.3 ft			TOTAL DEPTH 44.9 ft			NORTHING 801,381			EASTING 2,141,685		24 HR. Caved			
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 86% 03/21/2016						DRILL METHOD Mud Rotary			HAMMER TYPE Automatic					
DRILLER W Duggins			START DATE 02/06/18			COMP. DATE 02/06/18			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
350														
345	345.3	1.0												346.3 GROUND SURFACE 0.0
340	342.8	3.5	2	3	3									343.3 RESIDUAL Red, brown, loose, clayey silty SAND (A-2-7), trace mica 3.0
			4	3	5									
335	337.8	8.5	3	3	3									White, black, pink, loose to dense, silty fine to coarse SAND (A-2-4), with lenses of highly micaceous sandy SILT
330	332.8	13.5	4	8	5									315.3 WEATHERED ROCK GRANITE 31.0
325	327.8	18.5	12	15	9									312.8 CRYSTALLINE ROCK GRANITE 33.5
320	322.8	23.5	8	8	7									301.4 Boring Terminated with Standard Penetration Test Refusal at Elevation 301.4 ft in Crystalline Rock (GRANITE) 44.9
315	317.8	28.5	12	14	20									
310	312.8	33.5	60/0.1											
305														

NCDOT BORE DOUBLE P5707_GEO_RDY.GPJ NC_DOT.GDT 2/8/19

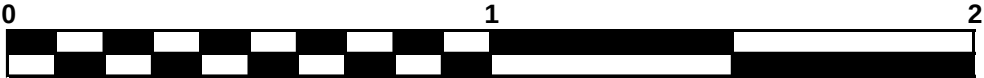
GEOTECHNICAL BORING REPORT
CORE LOG

WBS 44643.1.1					TIP P-5707			COUNTY WAKE			GEOLOGIST J Mize		
SITE DESCRIPTION Bridge on Rogers Road over CSX Railroad											GROUND WTR (ft)		
BORING NO. L29+17 EB1B				STATION 29+17				OFFSET 60 ft RT			ALIGNMENT -L-		0 HR. N/A
COLLAR ELEV. 346.3 ft				TOTAL DEPTH 44.9 ft				NORTHING 801,381			EASTING 2,141,685		24 HR. Caved
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 86% 03/21/2016								DRILL METHOD Mud Rotary			HAMMER TYPE Automatic		
DRILLER W Duggins				START DATE 02/06/18				COMP. DATE 02/06/18			SURFACE WATER DEPTH N/A		
CORE SIZE N/A				TOTAL RUN 11.0 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % ROD (ft) %		SAMP. NO.	STRATA REC. (ft) % ROD (ft) %		LOG	DESCRIPTION AND REMARKS		
											ELEV. (ft)	DEPTH (ft)	
312.4											Begin Coring @ 33.9 ft		
310	312.4	33.9	1.0	1:57	(1.0)	(0.3)					CRYSTALLINE ROCK Very slight weathering, very hard, very close to moderately close fractures, GRANITE, with layers of very soft, very severely weathered, highly micaceous rock (continued)		
	311.4	32.9	5.0	1:13	100%	33%							
				1:23	(5.0)	(4.5)							
				1:38	100%	90%							
	306.4	39.9		1:01									
				1:38									
305			5.0	1:52	(4.6)	(4.2)							
				1:21	92%	84%							
				1:26									
	301.4	44.9		0:45							301.4	44.9	
				1:03							Boring Terminated with Standard Penetration Test Refusal at Elevation 301.4 ft in Crystalline Rock (GRANITE)		

NCDOT CORE DOUBLE P5707_GEO_RDY.GPJ NC_DOT.GDT 2/8/19

CORE PHOTOGRAPHS

L 29+17 EB1B
BOXES 1 AND 2 OF 2: 33.9' TO 44.9'



WBS		44643.1.1		TIP		P-5707		COUNTY		WAKE		GEOLOGIST		J Mize																					
SITE DESCRIPTION													Bridge on Rogers Road over CSX Railroad			GROUND WTR (ft)																			
BORING NO.				L30+27 EB2A				STATION				30+27		OFFSET		44 ft LT		ALIGNMENT		-L-		0 HR.		Dry											
COLLAR ELEV.				346.0 ft				TOTAL DEPTH				30.4 ft		NORTHING				801,422		EASTING		2,141,831		24 HR.		Caved									
DRILL RIG/HAMMER EFF./DATE									TER92-0 ACKER RENEGADE 86% 03/21/2016									DRILL METHOD				Mud Rotary				HAMMER TYPE				Automatic					
DRILLER						W Duggins						START DATE				02/06/18				COMP. DATE				02/06/18				SURFACE WATER DEPTH						N/A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION																					
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft) DEPTH (ft)																					
350																																			
345	345.0	1.0	1	0	2									GROUND SURFACE 0.0																					
340	342.5	3.5	2	4	5						SS-106	21%	M	ROADWAY EMBANKMENT Red, white, pink, soft, sandy silty moderately plastic CLAY (A-7-6), trace mica 3.0																					
														Red, white, brown, loose, silty coarse SAND (A-2-4), trace mica																					
335	337.5	8.5	5	11	15								M	RESIDUAL White, gray, medium dense, silty clayey SAND (A-2-5), highly micaceous, saprolitic 8.0																					
	332.5	13.5	6	9	9								M	Orange, white, brown, medium dense, silty SAND (A-2-4), saprolitic 11.0																					
330	327.5	18.5	6	12	88/0.4																														
	325.6	20.4	60/0.0												WEATHERED ROCK 19.5 GRANITE 20.4																				
325														CRYSTALLINE ROCK GRANITE																					
320														315.6 30.4																					
													Boring Terminated with Standard Penetration Test Refusal at Elevation 315.6 ft in Crystalline Rock (GRANITE)																						

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J Mize					
SITE DESCRIPTION Bridge on Rogers Road over CSX Railroad										GROUND WTR (ft)				
BORING NO. L30+64 EB2B			STATION 30+64			OFFSET 29 ft RT			ALIGNMENT -L-		0 HR. Dry			
COLLAR ELEV. 346.1 ft			TOTAL DEPTH 33.6 ft			NORTHING 801,340			EASTING 2,141,830		24 HR. Dry			
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 86% 03/21/2016						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER W Duggins			START DATE 01/31/18			COMP. DATE 01/31/18			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
350														
345	345.1	1.0	1	2	2									346.1 GROUND SURFACE 0.0
340	342.6	3.5	3	6	7						SS-31	20%		ROADWAY EMBANKMENT Red, medium stiff, sandy moderate plasticity CLAY (A-7-6) 3.0
												M		RESIDUAL Red, stiff to very stiff, sandy CLAY (A-7-6)
335	337.6	8.5	3	9	12							M		
	332.6	13.5	4	9	9							M		334.1 12.0 Pink, white, gray, medium dense, silty fine to coarse SAND (A-2-5), highly micaceous, saprolitic
330	327.6	18.5	25	33	53							M		329.1 17.0 Orange, white, brown, hard, sandy SILT (A-5), saprolitic, highly micaceous
	322.6	23.5	16	26	41							M		
320	317.6	28.5	16	36	26							M		319.1 27.0 White, gray, black, orange, very dense, silty fine to coarse SAND (A-2-5), saprolitic, highly micaceous
	312.6	33.5	60/0.1									M		314.1 32.0 312.6 33.5 312.5 WEATHERED ROCK GRANITE 33.5 CRYSTALLINE ROCK GRANITE 33.6 Boring Terminated with Standard Penetration Test Refusal at Elevation 312.5 ft in Crystalline Rock (GRANITE)

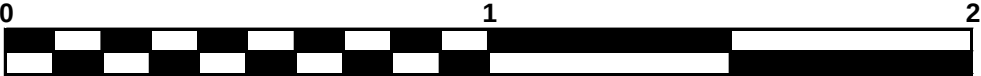
GEOTECHNICAL BORING REPORT
CORE LOG

WBS 44643.1.1				TIP P-5707		COUNTY WAKE		GEOLOGIST J Mize			
SITE DESCRIPTION Bridge on Rogers Road over CSX Railroad										GROUND WTR (ft)	
BORING NO. L30+27 EB2A				STATION 30+27		OFFSET 44 ft LT		ALIGNMENT -L-		0 HR. Dry	
COLLAR ELEV. 346.0 ft				TOTAL DEPTH 30.4 ft		NORTHING 801,422		EASTING 2,141,831		24 HR. Caved	
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 86% 03/21/2016						DRILL METHOD Mud Rotary			HAMMER TYPE Automatic		
DRILLER W Duggins				START DATE 02/06/18		COMP. DATE 02/06/18		SURFACE WATER DEPTH N/A			
CORE SIZE N/A				TOTAL RUN 10.0 ft							
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % RQD (ft) %		SAMP. NO.	STRATA REC. (ft) % RQD (ft) %		LOG ELEV. (ft)	DESCRIPTION AND REMARKS DEPTH (ft)
325.6	325.6	20.4	5.0	N=60/0.0 1:16 1:29 1:41 1:31 1:31	(5.0) 100%	(4.5) 90%					
320	320.6	25.4	5.0	1:58 2:28 2:03 0:36 1:01	(3.5) 70%	(3.4) 68%					325.6 Begin Coring @ 20.4 ft CRYSTALLINE ROCK Very slight weathering, very hard, close to wide fractures, GRANITE 20.4
	315.6	30.4								315.6 Boring Terminated with Standard Penetration Test Refusal at Elevation 315.6 ft in Crystalline Rock (GRANITE) 30.4	

NCDOT CORE DOUBLE P5707_GEO_RDY.GPJ NC_DOT.GDT 2/8/19

CORE PHOTOGRAPHS

L 30+27 EB2A
BOXES 1 AND 2 OF 2: 20.4' TO 30.4'



STRUCTURE SUBSURFACE INVESTIGATION

COUNTY	<u>WAKE</u>
PROJECT DESCRIPTION	<u>ROGERS ROAD (SR 2052)</u> <u>GRADE SEPARATION OVER CSX RAILROAD</u> <u>(CROSSING NO. 633 905 Y) AT MILE POST S 142.53</u>
SITE DESCRIPTION	<u>WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)</u> <u>WALL NO. 2: -DRI- STA 11+30 (RIGHT) TO</u> <u>-L- STA 42+90 (LEFT)</u> <u>WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)</u> <u>WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)</u> <u>WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)</u>

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3-4	SITE PLAN
5-8	WALL PROFILES
9-14	WALL NO. 3 CROSS SECTIONS
15-46	BORING LOGS
47	SOIL TEST RESULTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5707	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) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

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NOTES:

1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.

2. BY HAVING 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

<i>J. MIZE</i>
<i>M. SCHUBERT</i>
<i>M. SHIPMAN</i>
<i>M. LISI</i>
<i>C. BRYAN</i>
<i>P. CARY</i>
<i>TERRACON PERSONNEL</i>

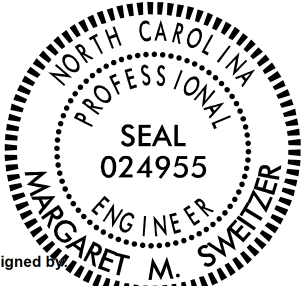
INVESTIGATED BY **RK&K, LLP**
 DRAWN BY **P. FALLON**
 CHECKED BY **M. SWEITZER**
 SUBMITTED BY **RK&K, LLP**
 DATE **FEBRUARY 2025**

RK&K

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Raleigh, North Carolina 27615-3960
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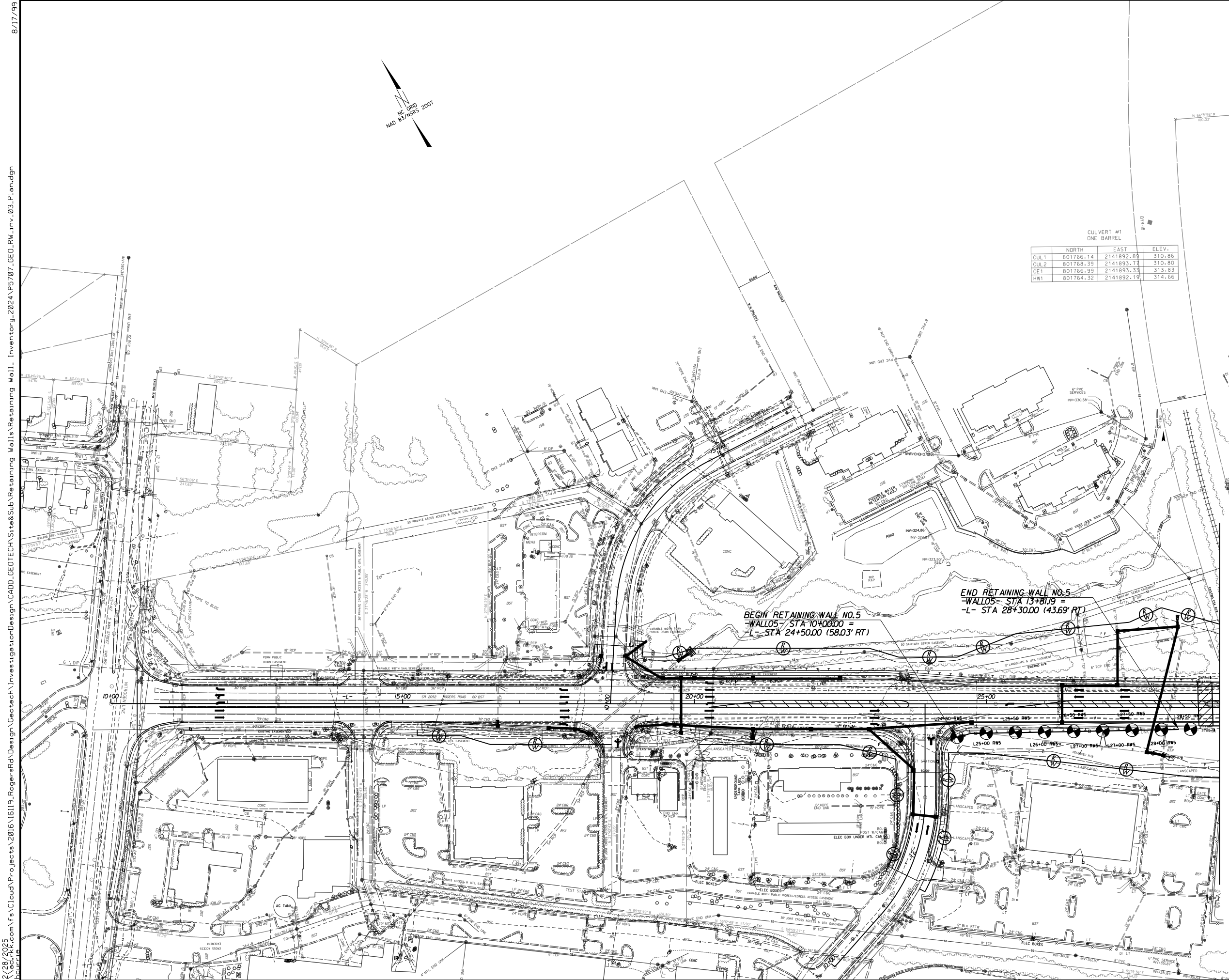
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Margaret M. Sweitzer
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SIGNATURE DATE

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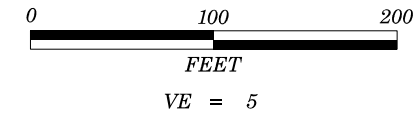


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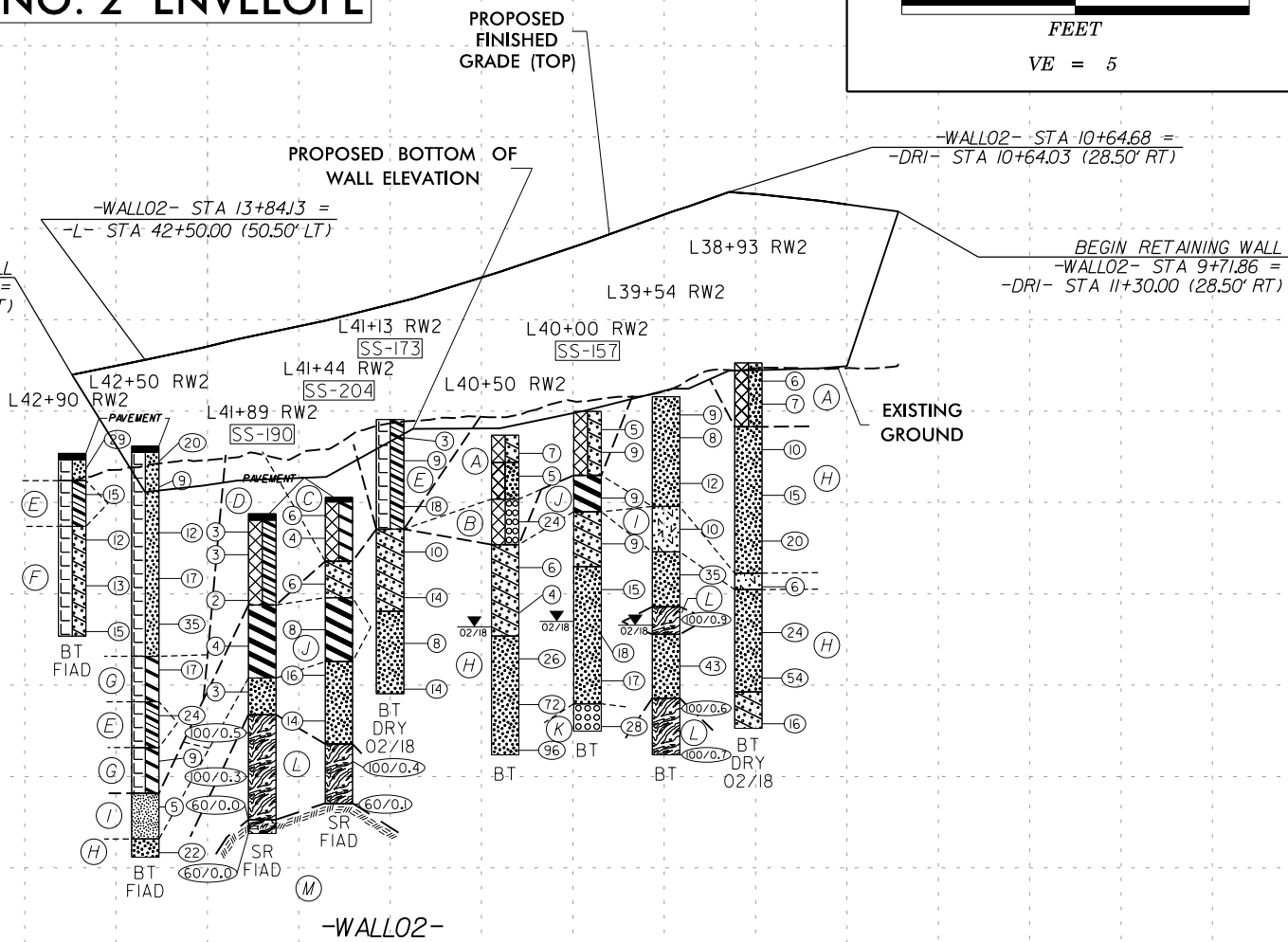
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RETAINING WALL NO. 2 ENVELOPE

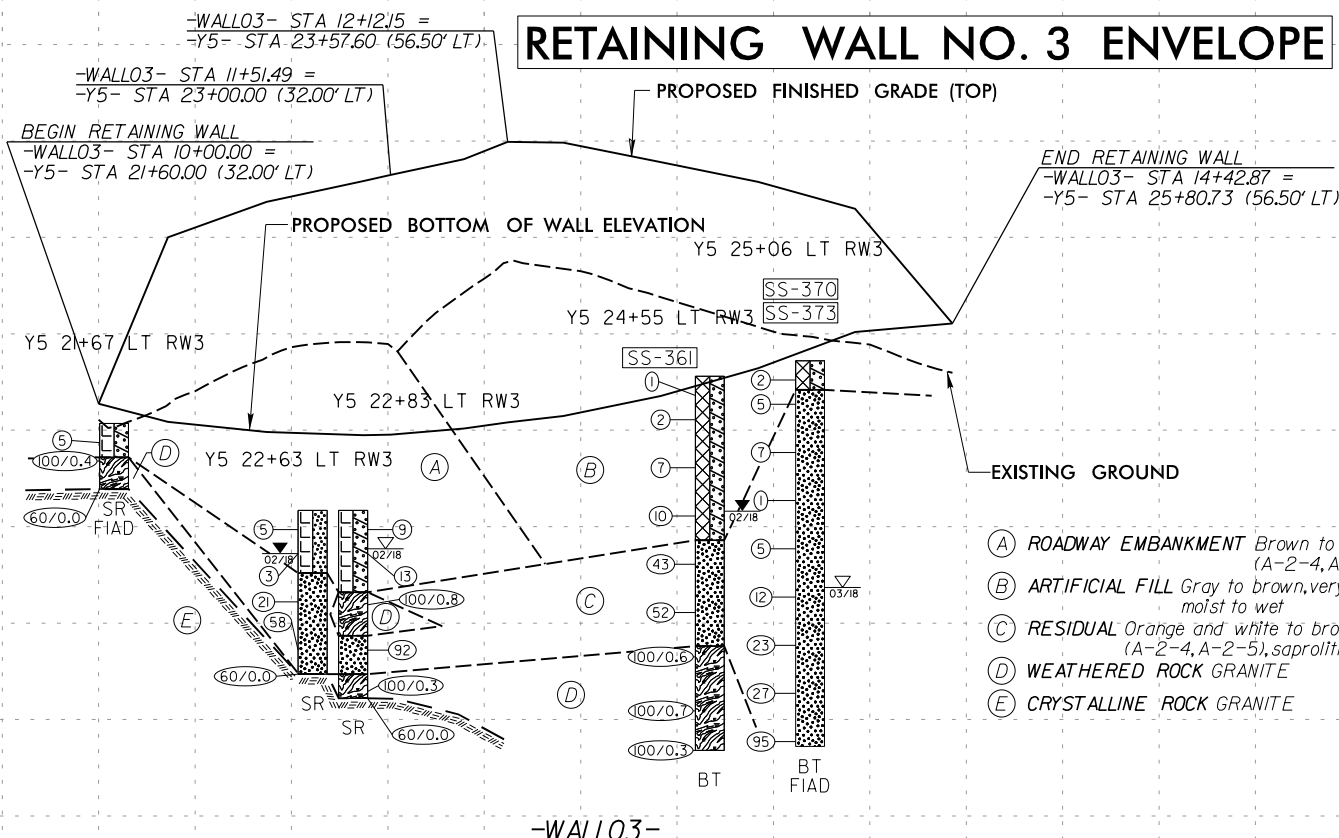


PROJECT REFERENCE NO.	SHEET NO.
P-5707	6
RETAINING WALLS NO. 2 AND NO. 3	

- (A) ARTIFICIAL FILL Red to pink to brown to black, loose, silty to clayey SAND (A-2-4, A-2-5, A-2-6, A-2-7), moist
- (B) ARTIFICIAL FILL Orange to pink, medium dense, clayey, sandy GRAVEL (A-1-b), moist
- (C) ARTIFICIAL FILL Gray-brown to red, medium stiff, sandy silty highly plastic CLAY (A-7-6), moist
- (D) ARTIFICIAL FILL Brown, soft to stiff, sandy CLAY (A-6), moist
- (E) ROADWAY EMBANKMENT Red to orange to brown, soft to very stiff, fine to coarse sandy moderately plastic CLAY (A-6), trace mica to highly micaceous, trace roots, moist
- (F) ROADWAY EMBANKMENT Brown to orange to green, loose to dense, silty to clayey fine to coarse SAND (A-2-4), trace to some gravel, trace mica, trace of organic matter, dry to moist
- (G) ROADWAY EMBANKMENT Green to orange-brown, stiff to very stiff, silty CLAY (A-7-5), little gravel, trace roots, moist
- (H) RESIDUAL White to pink and gray to tan, very loose to very dense, silty to clayey SAND (A-2-4, A-2-6, A-2-7), saprolitic, trace mica to highly micaceous, moist to wet
- (I) RESIDUAL Brown, medium stiff to stiff, sandy to clayey SILT (A-4, A-5), some mica to highly micaceous, trace rock fragments, trace rootlets, moist
- (J) RESIDUAL Red to orange to gray, medium stiff to stiff, coarse sandy silty highly plastic CLAY (A-7-6), trace mica, some sand, moist to wet
- (K) RESIDUAL White to orange to pink, medium dense, sandy GRAVEL (A-1-b), saprolitic, highly micaceous, moist
- (L) WEATHERED ROCK GRANITE
- (M) CRYSTALLINE ROCK GRANITE



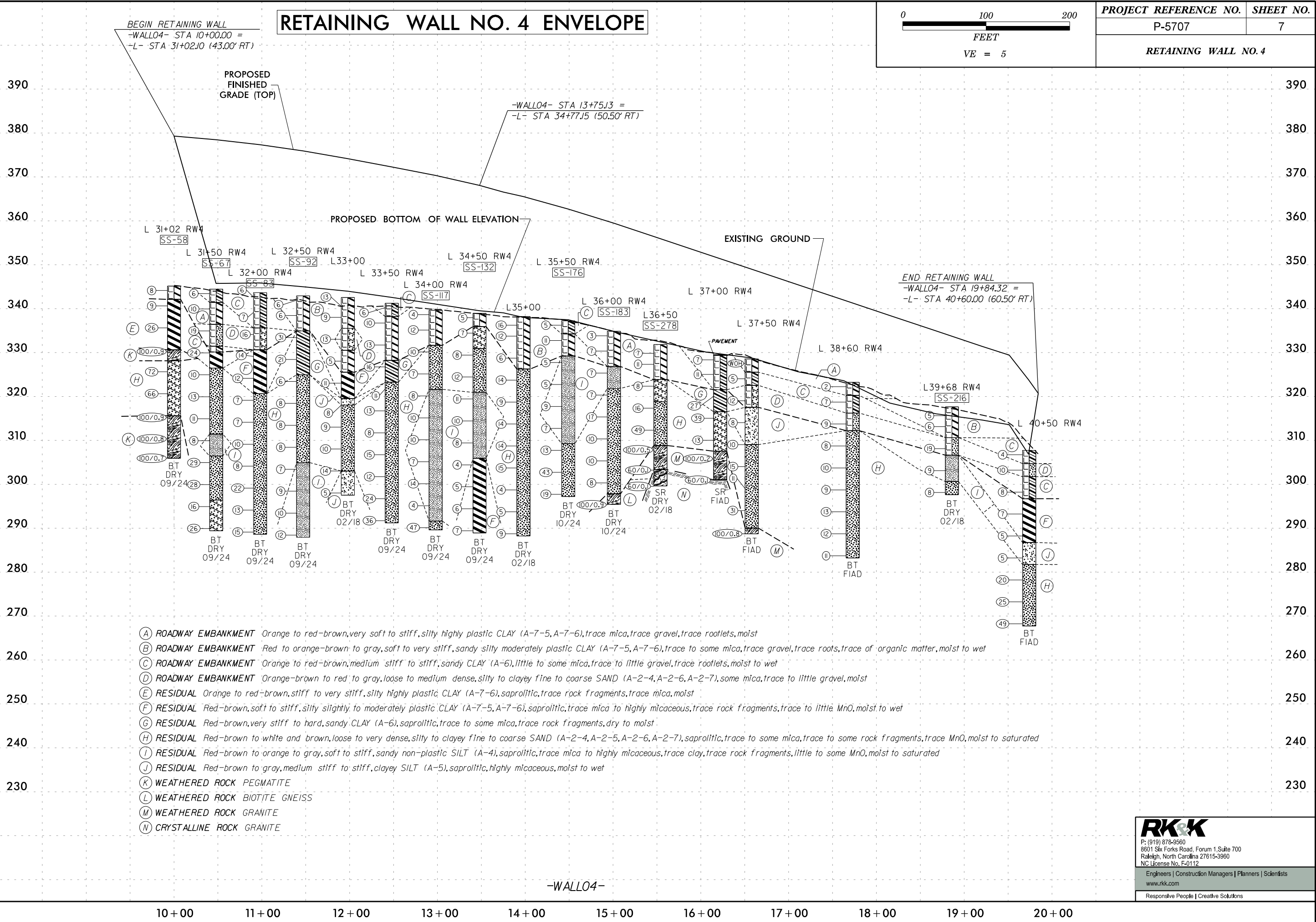
RETAINING WALL NO. 3 ENVELOPE



- (A) ROADWAY EMBANKMENT Brown to gray, very loose to loose, silty to clayey SAND (A-2-4, A-2-6), trace mica, lenses of gravel, moist
- (B) ARTIFICIAL FILL Gray to brown, very loose to medium dense, clayey SAND (A-2-6), moist to wet
- (C) RESIDUAL Orange and white to brown and gray, very loose to very dense, silty SAND (A-2-4, A-2-5), saprolitic, trace mica, trace rock fragments, moist to saturated
- (D) WEATHERED ROCK GRANITE
- (E) CRYSTALLINE ROCK GRANITE

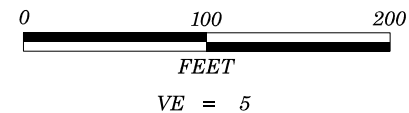
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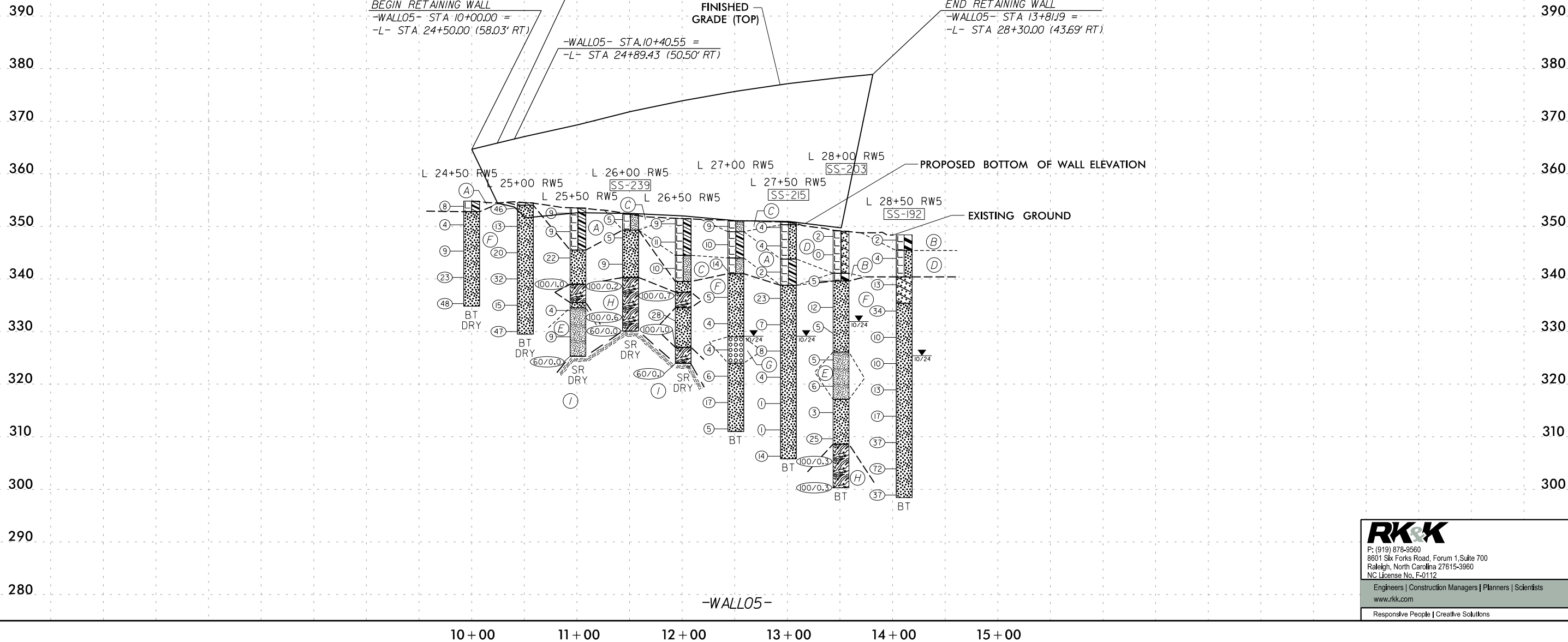
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RETAINING WALL NO. 5 ENVELOPE



PROJECT REFERENCE NO.	SHEET NO.
P-5707	8
RETAINING WALL NO. 5	

- (A) ROADWAY EMBANKMENT Red to brown, soft to stiff, sandy moderately plastic CLAY (A-6), trace to little mica, trace gravel, trace to little roots, moist
(B) ROADWAY EMBANKMENT Red-brown to light brown, soft to medium stiff, silty CLAY (A-7-5, A-7-6), trace rootlets, trace mica, trace to little gravel, moist to wet
(C) ROADWAY EMBANKMENT Red, soft to stiff, sandy non-plastic SILT (A-4), little mica, trace to little roots, moist
(D) ROADWAY EMBANKMENT Red to brown and white, very loose to loose, silty to clayey fine to coarse SAND (A-2-4, A-2-6), trace to little gravel, trace rootlets, moist to wet
(E) RESIDUAL Red to orange-brown, soft to stiff, sandy SILT (A-4), saprolitic, lenses of sand, little to some mica, trace rock fragments, moist to saturated
(F) RESIDUAL Red-brown to gray and white, very loose to very dense, silty to clayey SAND (A-2-4, A-2-7), saprolitic, trace to some mica, trace to some rock fragments, moist to saturated
(G) RESIDUAL Brown and white, loose, coarse SAND (A-1-b), trace mica, wet
(H) WEATHERED ROCK BIOTITE GNEISS
(I) CRYSTALLINE ROCK BIOTITE GNEISS



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90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210

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SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING SIEVES			% Moisture	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-341	44+23	27 RT	13.5 - 15	A-2-6 (0)	35	12	43.3	32.7	12.8	11.2	87	65	25	14.5	-

- (A)

ROADWAY EMBANKMENT Brown-tan-orange to gray, loose to dense, silty, gravelly to silty to slightly plastic clayey fine to coarse SAND (A-1-b, A-2-4, A-2-5, A-2-6), trace mica
- (B)

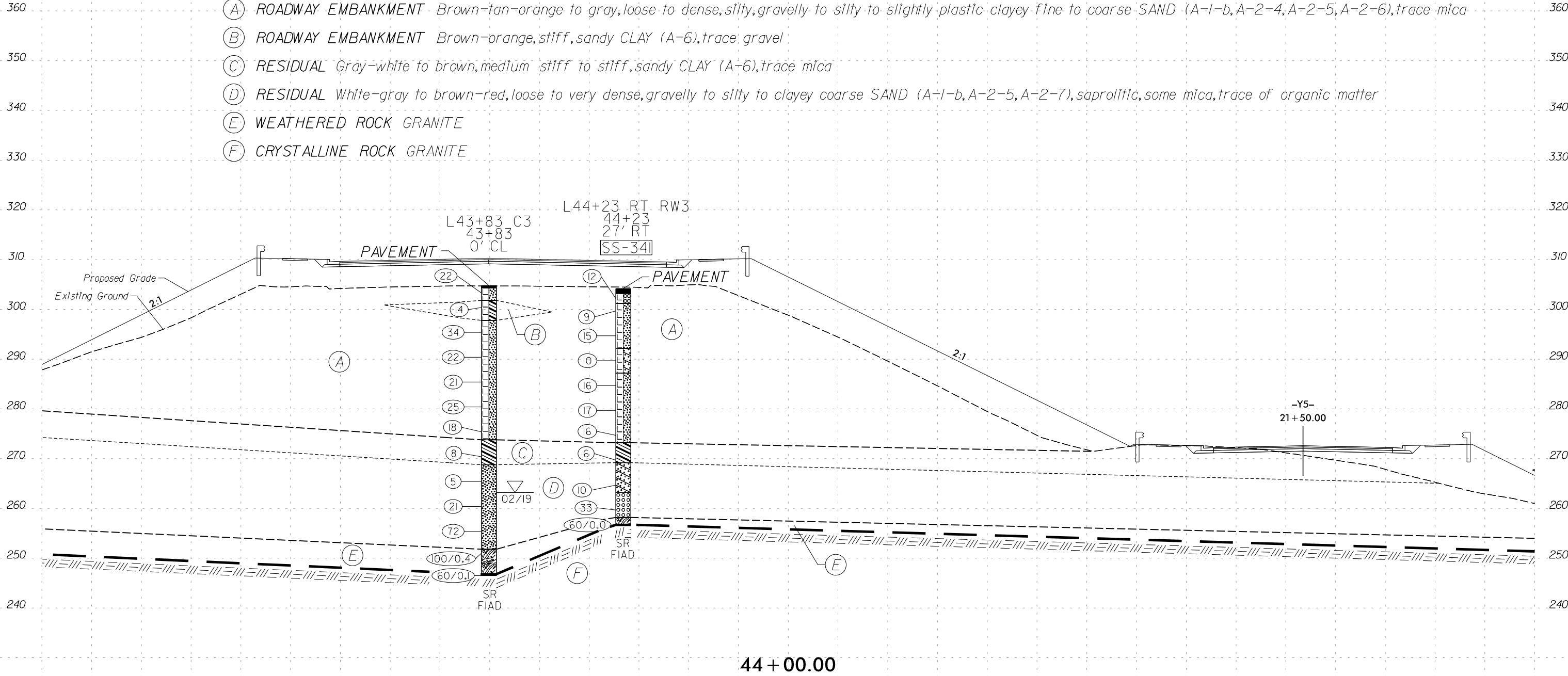
ROADWAY EMBANKMENT Brown-orange, stiff, sandy CLAY (A-6), trace gravel
- (C)

RESIDUAL Gray-white to brown, medium stiff to stiff, sandy CLAY (A-6), trace mica
- (D)

RESIDUAL White-gray to brown-red, loose to very dense, gravelly to silty to clayey coarse SAND (A-1-b, A-2-5, A-2-7), saprolitic, some mica, trace of organic matter
- (E)

WEATHERED ROCK GRANITE
- (F)

CRYSTALLINE ROCK GRANITE

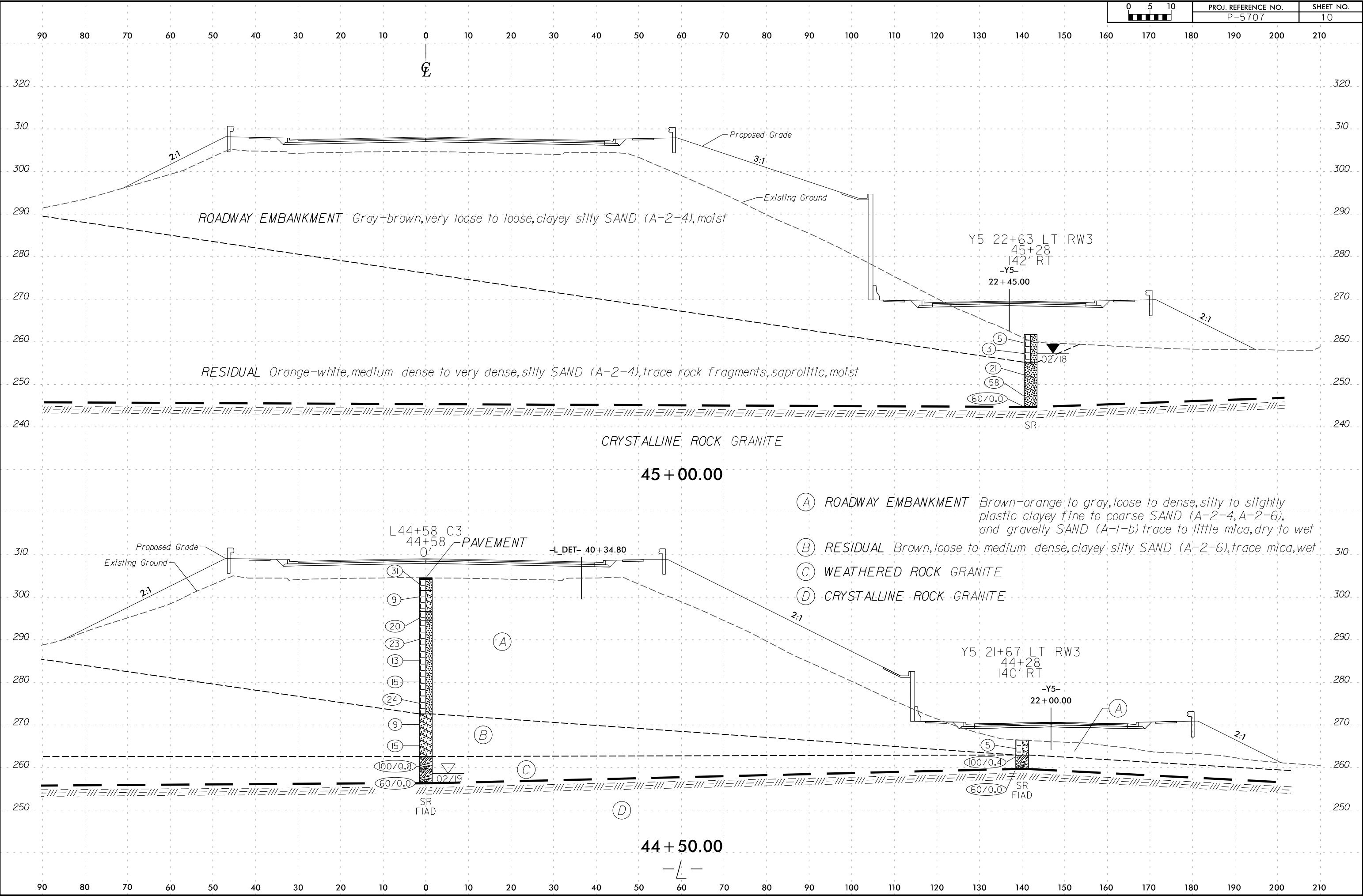


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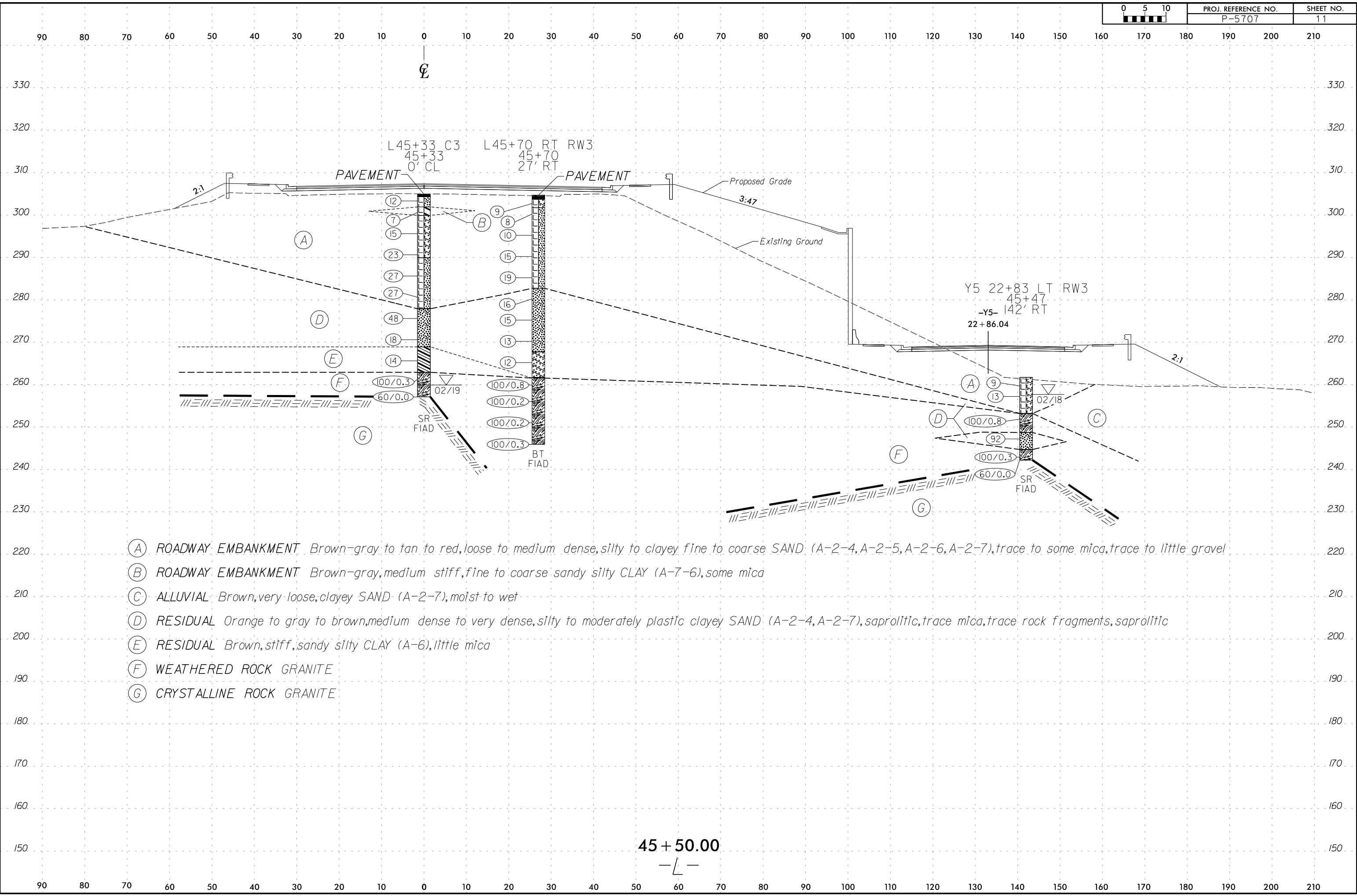
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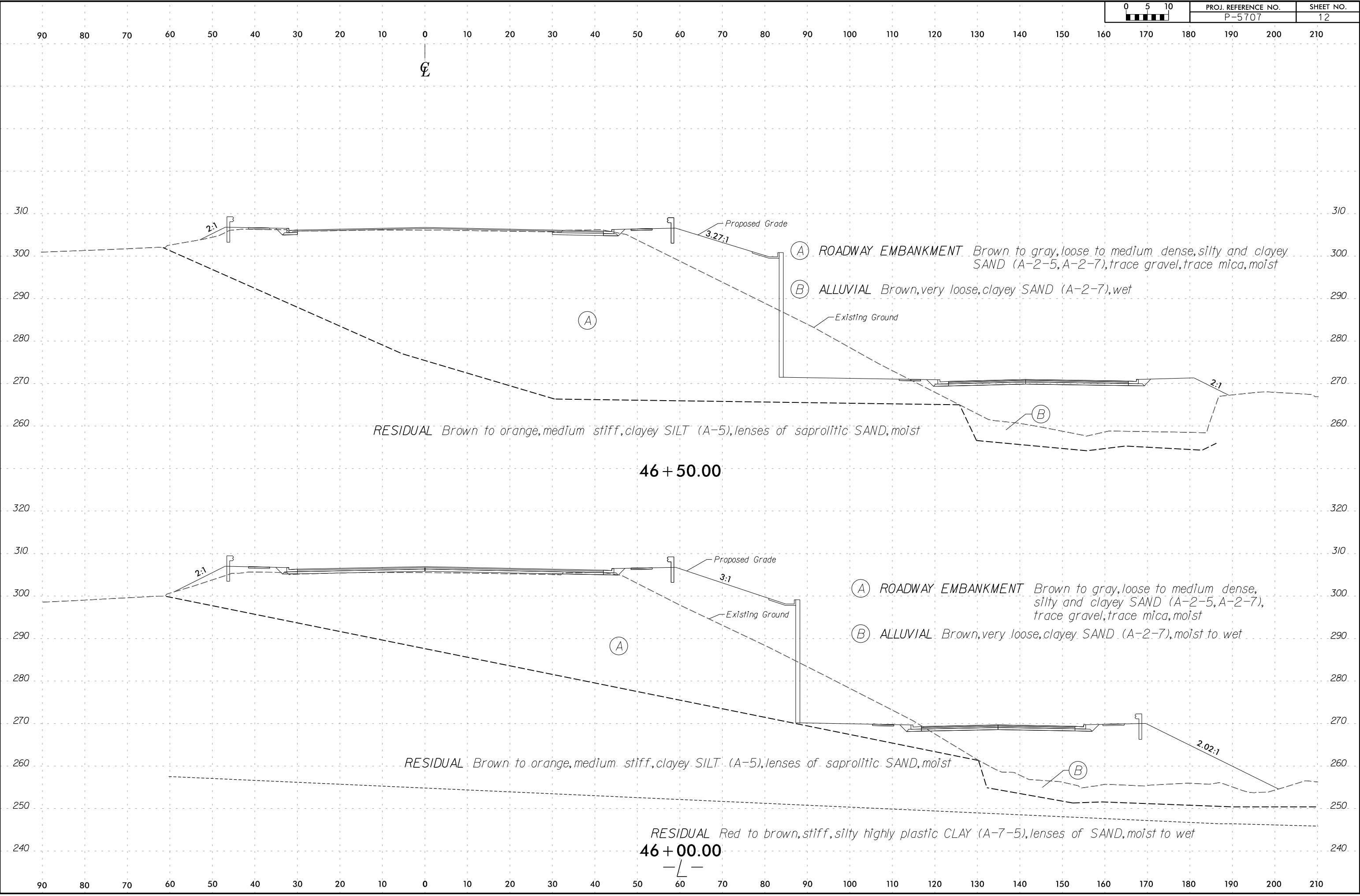
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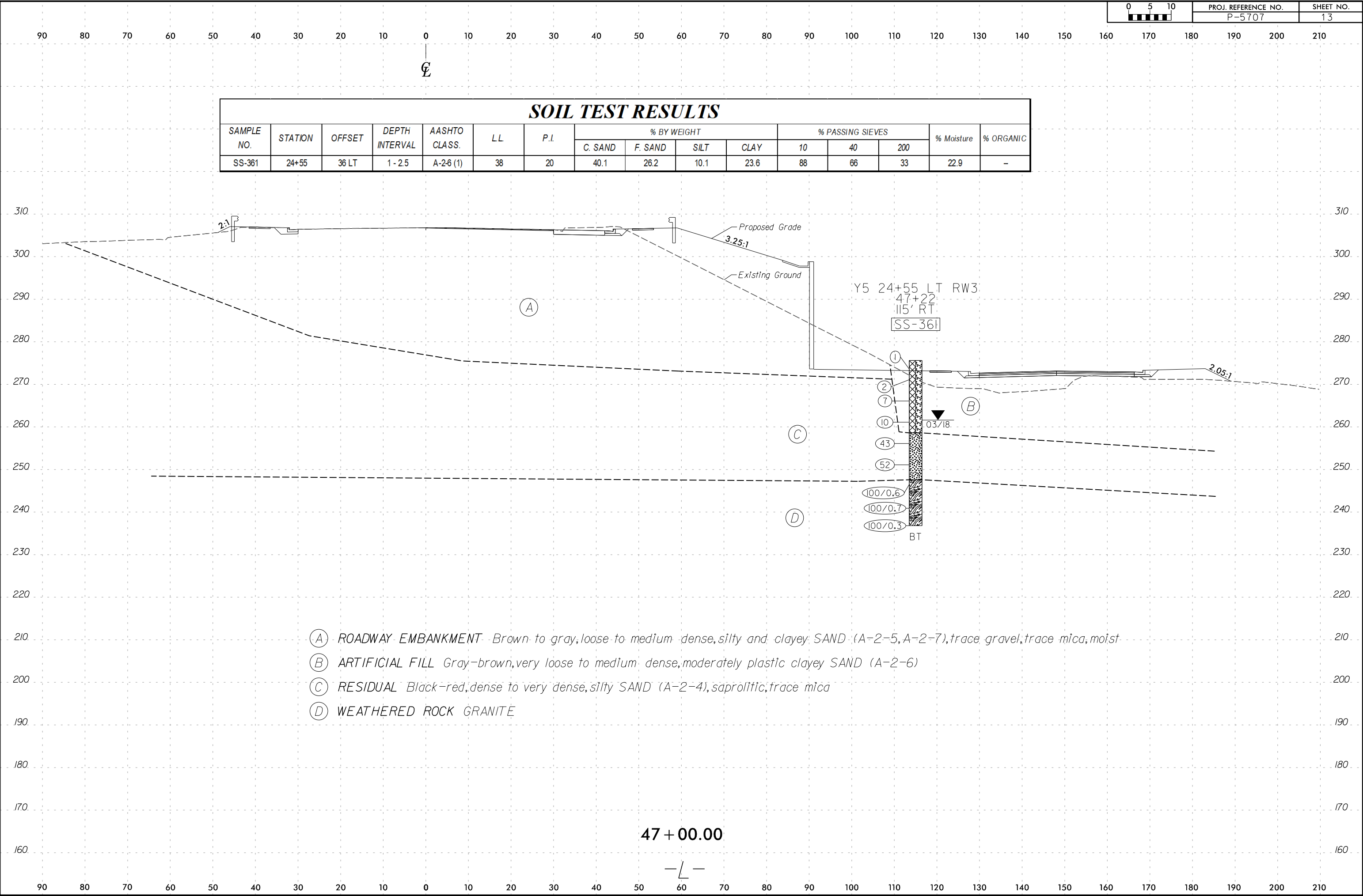
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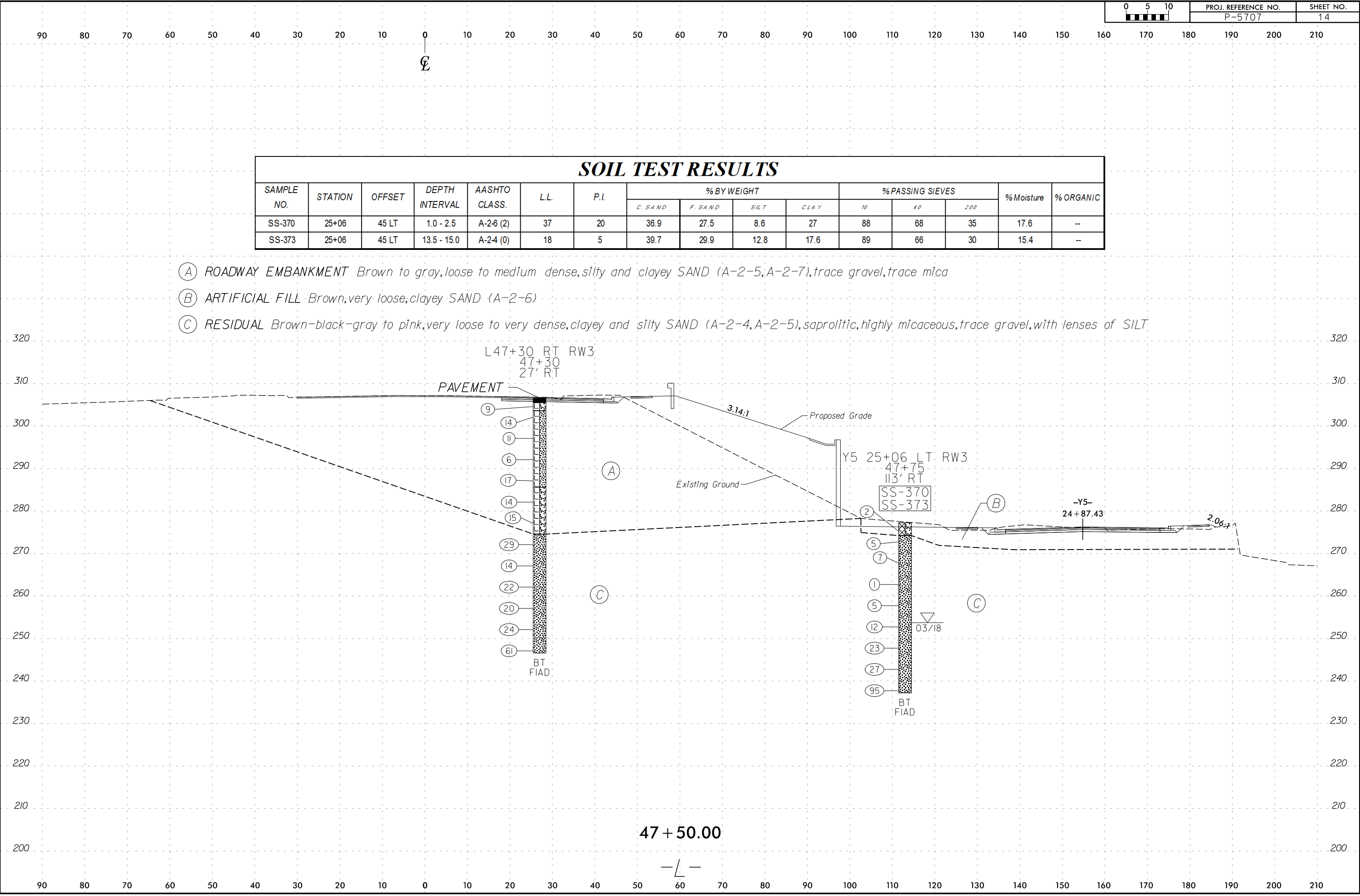
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NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)											GROUND WTR (ft)			
BORING NO. L31+50 RW1			STATION 31+50			OFFSET 44 ft LT			ALIGNMENT -L-		0 HR.	Dry		
COLLAR ELEV. 345.4 ft			TOTAL DEPTH 55.0 ft			NORTHING 801,364			EASTING 2,141,940		24 HR.	Dry		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 09/18/24			COMP. DATE 09/18/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
350														
345	345.4	0.0	1	1	2									GROUND SURFACE 0.0
340	341.9	3.5	1	1	1						SS-10	18%		ROADWAY EMBANKMENT Brown, very loose, clayey fine to coarse SAND (A-2-6), trace mica
														Brown, very soft, silty highly plastic CLAY (A-7-6), trace mica, trace of organic matter
335	336.9	8.5	8	6	6									
330	331.9	13.5	7	9	11									RESIDUAL Red, very stiff, silty sandy CLAY (A-6), saprolitic, trace mica
325	326.9	18.5	7	10	14									328.4 Red to black, loose to dense, silty fine SAND (A-2-4), saprolitic, little mica 17.0
320	321.9	23.5	4	4	5						SS-14			
315	316.9	28.5	5	6	5									
310	311.9	33.5	4	4	5									
305	306.9	38.5	4	11	23									
300	301.9	43.5	26	46	54/0.3					100/0.8				WEATHERED ROCK BIOTITE GNEISS
295	296.9	48.5	4	9	16						Sat.			RESIDUAL White, medium dense to dense, silty fine to coarse SAND (A-2-5), saprolitic, little mica
	291.9	53.5	11	14	18						Sat.			
														Boring Terminated at Elevation 290.4 ft in Residual: silty SAND (A-2-5)

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

[illegible]

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST C. Bryan					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)												GROUND WTR (ft)		
BORING NO. L33+70 RW1			STATION 33+70			OFFSET 44 ft LT			ALIGNMENT -L-			0 HR.	Dry	
COLLAR ELEV. 341.1 ft			TOTAL DEPTH 54.6 ft			NORTHING 801,261			EASTING 2,142,134			24 HR.	Dry	
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 09/19/24			COMP. DATE 09/19/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
345														
340	341.1	0.0	1	2	2	4						W		341.1 GROUND SURFACE 0.0
335	337.6	3.5	1	4	5	9					SS-46	31%		338.1 ROADWAY EMBANKMENT 3.0
														Brown, very loose, clayey fine to coarse SAND (A-2-6)
330	332.6	8.5	6	10	11	21						M		Brown, stiff to very stiff, silty moderately plastic CLAY (A-7-6), trace mica
	327.6	13.5	5	8	11	19						M		
325	322.6	18.5	6	7	9	16						M		324.1 RESIDUAL 17.0
	317.6	23.5	5	6	7	13						M		Red-brown, very stiff, fine to coarse sandy CLAY (A-6), saprolitic
310	312.6	28.5	3	6	7	13						M		319.1 Brown to white, medium dense, silty fine to coarse SAND (A-2-5), saprolitic, trace mica 22.0
	307.6	33.5	5	9	15	24						M		
300	302.6	38.5	5	6	7	13						M		
	297.6	43.5	8	13	8	21						W		
290	292.6	48.5	6	7	9	16						W		
	287.6	53.5	10	63	37/0.1	1								288.1 WEATHERED ROCK 53.0
										100/0.6				286.5 GRANITE 54.6
														Boring Terminated at Elevation 286.5 ft in Weathered Rock: GRANITE

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

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NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize				
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)									GROUND WTR (ft)				
BORING NO. L35+72 RW1			STATION 35+72			OFFSET 61 ft LT			ALIGNMENT -L-			0 HR. Dry	
COLLAR ELEV. 329.8 ft			TOTAL DEPTH 35.0 ft			NORTHING 801,184			EASTING 2,142,319			24 HR. Dry	
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER W. Duggins			START DATE 02/07/18			COMP. DATE 02/07/18			SURFACE WATER DEPTH N/A				
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100	MOI		
330													
	328.8	1.0	3	7	6								329.8 GROUND SURFACE 0.0
325	326.3	3.5	4	6	5								325.8 4.0
320	321.3	8.5	2	2	4								322.8 7.0
315	316.3	13.5	3	8	9								316.8 13.0
310	311.3	18.5	1	2	3								312.8 17.0
305	306.3	23.5	9	8	13								308.8 21.0
300	301.3	28.5	2	3	4								303.8 26.0
295	296.3	33.5	4	11	15								298.8 31.0
													294.8 35.0
													Boring Terminated at Elevation 294.8 ft in Residual: silty SAND (A-2-4)

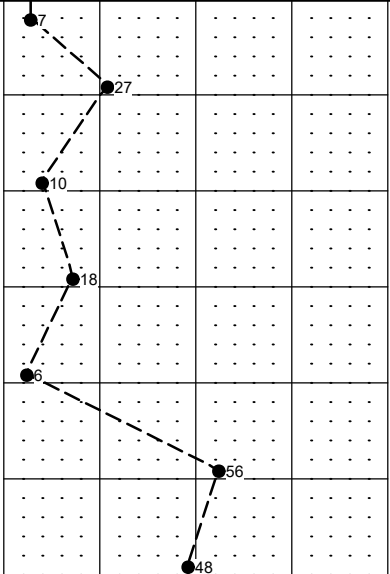
NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1				TIP P-5707				COUNTY WAKE				GEOLOGIST J. Mize								
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)												GROUND WTR (ft)								
BORING NO. L36+53 RW1				STATION 36+53				OFFSET 72 ft LT				ALIGNMENT -L-				0 HR. Dry				
COLLAR ELEV. 329.3 ft				TOTAL DEPTH 24.1 ft				NORTHING 801,164				EASTING 2,142,393				24 HR. Dry				
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic								
DRILLER W. Duggins				START DATE 02/07/18				COMP. DATE 02/07/18				SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION						
			0.5ft	0.5ft	0.5ft	0	25	50	75	100										
330																				
325	328.3	1.0	3	4	4							M		329.3	GROUND SURFACE	0.0				
	325.8	3.5	2	5	8							SS-134		24%	RESIDUAL Red, stiff, silty highly plastic CLAY (A-7-6), trace mica, saprolitic					
320	320.8	8.5	1	3	97/0.3									319.8	WEATHERED ROCK GRANITE	9.5				
315	315.8	13.5	16	84/0.4																
310	310.8	18.5	26	15	15							M		312.3	RESIDUAL Pink, white, black, dense, silty SAND (A-2-4), saprolitic	17.0				
	305.8	23.5	42	58/0.1													306.3 305.2	WEATHERED ROCK GRANITE	23.0 24.1	
																	Boring Terminated at Elevation 305.2 ft in Weathered Rock: GRANITE			

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT.GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)									GROUND WTR (ft)					
BORING NO. L37+50 RW1			STATION 37+50			OFFSET 75 ft LT			ALIGNMENT -L-			0 HR. Dry		
COLLAR ELEV. 326.7 ft			TOTAL DEPTH 18.5 ft			NORTHING 801,124			EASTING 2,142,476			24 HR. Dry		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 10/01/24			COMP. DATE 10/01/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
330														
	326.7	0.0	2	3	4	7	.	.	.	.	SS-162	28%		326.7 GROUND SURFACE 0.0
325	323.2	3.5	3	5	4	9	.	.	.	.		M		323.7 ROADWAY EMBANKMENT Red-brown, medium stiff, sandy non-plastic SILT (A-4), little mica, trace rootlets -3.0
320	318.2	8.5	4	6	5	11	.	.	.	.		D		318.7 Red-brown, stiff, sandy CLAY (A-6), trace mica, trace rock fragments -8.0
315	313.2	13.5					.	.	.	.				313.7 RESIDUAL Brown and white, medium dense, silty fine to coarse SAND (A-2-4), saprolitic, trace rock fragments, trace mica -13.0
310	308.2	18.5	100/0.4				.	.	.	100/0.4				308.2 WEATHERED ROCK GRANITE -18.5
			60/0.0							60/0.0				Boring Terminated with Standard Penetration Test Refusal at Elevation 308.2 ft on Crystalline Rock: GRANITE

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 1: -L- STA 30+46 TO 38+00 (LEFT)										GROUND WTR (ft)					
BORING NO. L38+00 RW1			STATION 38+77			OFFSET 84 ft LT			ALIGNMENT -L-			0 HR. Dry			
COLLAR ELEV. 314.9 ft			TOTAL DEPTH 30.0 ft			NORTHING 801,121			EASTING 2,142,597			24 HR. Dry			
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER S. Harig			START DATE 10/01/24			COMP. DATE 10/01/24			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
315														314.9	0.0
310	314.9	0.0	3	3	4						M		ARTIFICIAL FILL Red-brown, medium stiff, silty CLAY (A-7-6), trace rootlets	311.9	3.0
	311.4	3.5	3	9	18						M			RESIDUAL Pink, brown, and white, medium dense, silty fine to coarse SAND (A-2-4), saprolitic, trace rock fragments, trace mica	
305	306.4	8.5	3	5	5						M				
300	301.4	13.5	2	5	13						M				
295	296.4	18.5	2	2	4						M			296.9	18.0
290	291.4	23.5	15	30	26						M			291.9	23.0
285	286.4	28.5	8	11	37						M				
														Boring Terminated at Elevation 284.9 ft in Residual: silty SAND (A-2-4)	

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 2: -DR1- STA 11+00 (RIGHT) TO -L- STA 42+90 (LEFT)										GROUND WTR (ft)					
BORING NO. L38+93 RW2			STATION 38+93			OFFSET 71 ft LT			ALIGNMENT -L-		0 HR. Dry				
COLLAR ELEV. 315.3 ft			TOTAL DEPTH 40.0 ft			NORTHING 801,106			EASTING 2,142,609		24 HR. Dry				
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER W. Duggins			START DATE 02/07/18			COMP. DATE 02/07/18			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
320															
315															
310	314.3	1.0	3	3	3	6						M			315.3 GROUND SURFACE 0.0
	311.8	3.5	2	3	4	7						M			
305	306.8	8.5	4	4	6	10						M			308.3 7.0
	301.8	13.5	3	5	10	15						M			RESIDUAL Pink, white, black, medium dense, silty coarse SAND (A-2-4), saprolitic
300	296.8	18.5	5	10	10	20						M			
	291.8	23.5	1	2	4	6						M			292.3 23.0
285	286.8	28.5	8	10	14	24						M			290.5 24.8
	281.8	33.5	19	27	27	54						Sat.			Brown, white, pink, medium dense to very dense, silty SAND (A-2-4), trace mica, saprolitic
280	276.8	38.5	2	5	11	16						Sat.			279.3 36.0
															275.3 40.0
															Boring Terminated at Elevation 275.3 ft in Residual: clayey SAND (A-2-7)

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

NC DOT BORE DOUBLE P5707 GEO_RDY_UPDATED.GPJ NC_DOT_GDT 11/18/24

WBS 44643.1.1			TIP P-2707			COUNTY WAKE			GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 2: -DR1- STA 11+00 (RIGHT) TO -L- STA 42+90 (LEFT)										GROUND WTR (ft)				
BORING NO. L40+00 RW2			STATION 40+00			OFFSET 64 ft LT			ALIGNMENT -L-		0 HR. Dry			
COLLAR ELEV. 310.0 ft			TOTAL DEPTH 35.0 ft			NORTHING 801,089			EASTING 2,142,708		24 HR. 23.0			
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER W. Duggins			START DATE 02/08/18			COMP. DATE 02/08/18			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
310														310.0 GROUND SURFACE 0.0
	309.0	1.0												ARTIFICIAL FILL Brown, black, loose, clayey coarse SAND (A-2-6)
	306.5	3.5	2	2	3						SS-157	17%		
305			6	5	4							M		
	301.5	8.5												303.0 RESIDUAL 7.0
300			2	4	5							M		Red, orange, stiff, coarse sandy silty highly plastic CLAY (A-7-6), trace mica
	296.5	13.5												299.0 Tan, orange, loose, clayey SAND (A-2-6), highly micaceous 11.0
295			3	3	6							M		
	291.5	18.5												293.0 White, pink, black, medium dense, silty coarse SAND (A-2-4), saprolitic 17.0
290			5	7	8							M		
	286.5	23.5												
285			7	8	10							M		
	281.5	28.5												
280			5	8	9							W		
	276.5	33.5												278.0 White, orange, pink, medium dense, sandy GRAVEL (A-1-b), saprolitic, highly micaceous 32.0
275			7	14	14							M		275.0 Boring Terminated at Elevation 275.0 ft in Residual: sandy GRAVEL (A-1-b) 35.0

NCNDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT_GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 2: -DR1- STA 11+00 (RIGHT) TO -L- STA 42+90 (LEFT)									GROUND WTR (ft)					
BORING NO. L41+13 RW2			STATION 41+13			OFFSET 53 ft LT			ALIGNMENT -L-			0 HR. Dry		
COLLAR ELEV. 309.1 ft			TOTAL DEPTH 30.0 ft			NORTHING 801,077			EASTING 2,142,815			24 HR. Dry		
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER W. Duggins			START DATE 02/08/18			COMP. DATE 02/08/18			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
310														
	308.1	1.0	1	1	2									309.1 GROUND SURFACE 0.0
305	305.6	3.5	2	3	6						SS-173	19%		ROADWAY EMBANKMENT Red to brown, soft to stiff, fine to coarse sandy moderately plastic CLAY (A-6), highly micaceous
300	300.6	8.5	30	10	8							M		
295	295.6	13.5	3	4	6							M		297.1 RESIDUAL 12.0 Brown, medium dense, clayey coarse SAND (A-2-6)
290	290.6	18.5	4	6	8							M		
285	285.6	23.5	4	4	4							M		288.1 Brown to white-pink-black, loose to medium dense, silty fine SAND (A-2-4), saprolitic, highly micaceous 21.0
280	280.6	28.5	4	5	9							M		
												W	279.1 Boring Terminated at Elevation 279.1 ft in Residual: silty SAND (A-2-4) 30.0	

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1				TIP P-5707				COUNTY WAKE				GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 2: -DR1- STA 11+00 (RIGHT) TO -L- STA 42+90 (LEFT)												GROUND WTR (ft)					
BORING NO. L41+85 RW2				STATION 41+85				OFFSET 141 ft LT				ALIGNMENT -L-				0 HR. Dry	
COLLAR ELEV. 299.6 ft				TOTAL DEPTH 30.1 ft				NORTHING 801,171				EASTING 2,142,875				24 HR. Dry	
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER W. Duggins				START DATE 02/08/18				COMP. DATE 02/08/18				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
300																	
	298.6	1.0													GROUND SURFACE 0.2' Asphalt, 0.25' stone		
	296.1	3.5													ARTIFICIAL FILL Dark brown, medium stiff, fine sandy CLAY (A-6), trace mica		
295															Red, medium stiff, sandy clayey SILT (A-5), trace mica		
	291.1	8.5													Brown, loose, clayey SAND (A-2-7), trace gravel		
290																	
	286.1	13.5													RESIDUAL Red to gray, medium stiff to stiff, silty highly plastic CLAY (A-7-6), trace mica, trace quartz rock fragments		
285											SS-183	23%					
	281.1	18.5															
280																	
	276.1	23.5															
275															WEATHERED ROCK GRANITE		
	271.1	28.5															
270	269.5	30.1															
															CRYSTALLINE ROCK GRANITE Boring Terminated with Standard Penetration Test Refusal at Elevation 269.5 ft on Crystalline Rock: GRANITE		

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 2: -DR1- STA 11+00 (RIGHT) TO -L- STA 42+90 (LEFT)										GROUND WTR (ft)					
BORING NO. L41+98 RW2			STATION 41+98			OFFSET 76 ft LT			ALIGNMENT -L-		0 HR. Dry				
COLLAR ELEV. 298.8 ft			TOTAL DEPTH 38.7 ft			NORTHING 801,107			EASTING 2,142,895		24 HR. FIAD				
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER W. Duggins			START DATE 02/09/18			COMP. DATE 02/09/18			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
300															
	298.8	0.0													298.8 GROUND SURFACE 0.0
			1	2	2							M			ARTIFICIAL FILL Red-brown to gray, soft to stiff, sandy silty highly plastic CLAY (A-7-6)
295	295.3	3.5	WOH	1	2						SS-195	23%			
290	290.3	8.5											M		
			2	7	2										
285	285.3	13.5											M		285.8 13.0
			1	3	3										Gray, loose, silty coarse SAND (A-2-4), trace gravel
280	280.3	18.5											M		
			2	1	3										
275	275.3	23.5											M		276.8 22.0
			7	11	18										RESIDUAL Gray, white, pink, medium dense, silty SAND (A-2-4), saprolitic
270	270.3	28.5													270.8 28.0
			100/0.5												WEATHERED ROCK GRANITE
265	265.3	33.5											M		266.8 32.0
			3	8	15										RESIDUAL Black, brown, very stiff, fine sandy clayey SILT (A-5), highly micaceous
	260.3	38.5													261.8 37.0
			100/0.2												WEATHERED ROCK GRANITE
															260.1 38.7
															Boring Terminated at Elevation 260.1 ft in Weathered Rock: GRANITE

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WBS 44643.1.1				TIP P-5707				COUNTY WAKE				GEOLOGIST M. Shipman					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 2: -DR1- STA 11+00 (RIGHT) TO -L- STA 42+90 (LEFT)												GROUND WTR (ft)					
BORING NO. L42+90 RW2				STATION 42+90				OFFSET 30 ft LT				ALIGNMENT -L-				0 HR. Dry	
COLLAR ELEV. 305.4 ft				TOTAL DEPTH 20.0 ft				NORTHING 801,071				EASTING 2,142,991				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER S. Harig				START DATE 09/30/24				COMP. DATE 09/30/24				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
310																	
305	304.7	0.7	14	11	18												
300	301.9	3.5	3	6	9												
	296.9	8.5	8	6	6												
295	291.9	13.5	8	8	5												
290	286.9	18.5	7	6	9												
														Boring Terminated at Elevation 285.4 ft in Roadway Embankment: clayey SAND (A-2-6)			

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44643.1.1				TIP P-5707				COUNTY WAKE				GEOLOGIST Cary, P.					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)												GROUND WTR (ft)					
BORING NO. L43+83 C3				STATION 43+83				OFFSET CL				ALIGNMENT -L-				0 HR. 41.6	
COLLAR ELEV. 304.8 ft				TOTAL DEPTH 58.3 ft				NORTHING 801,050				EASTING 2,143,076				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TER346 DIEDRICH D-50 91% 02/24/2018								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER Francis, N.				START DATE 02/14/19				COMP. DATE 02/14/19				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)			
305													304.8	GROUND SURFACE 0.0			
	304.3	0.5										M	304.3	0.5' Asphalt 0.5			
														ROADWAY EMBANKMENT			
	301.4	3.4										M	301.8	Brown, medium dense, silty clayey coarse SAND (A-2-5), little gravel 3.0			
300														Brown-orange, stiff, sandy CLAY (A-6), trace gravel			
													297.8	7.0			
	296.4	8.4										M		Brown-orange to gray, medium dense to dense, silty to clayey fine to coarse SAND (A-2-4, A-2-5), trace mica, some gravel			
295																	
	291.4	13.4										M					
290																	
	286.4	18.4										M					
285																	
	281.4	23.4										M					
280																	
	276.4	28.4										M					
275																	
	271.4	33.4										M					
270																	
	266.4	38.4										M					
265																	
	261.4	43.4										M					
260																	
	256.4	48.4										M					
255																	
	251.4	53.4										M					
250																	
	246.6	58.2										M					

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)										GROUND WTR (ft)				
BORING NO. L44+23 RT RW3			STATION 44+23			OFFSET 27 ft RT			ALIGNMENT -L-		0 HR. Dry			
COLLAR ELEV. 304.2 ft			TOTAL DEPTH 47.5 ft			NORTHING 801,028			EASTING 2,143,129		24 HR. FIAD			
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER W. Duggins			START DATE 02/27/18			COMP. DATE 02/27/18			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
305														
	303.2	1.0												304.2 GROUND SURFACE 0.0
														303.2 0.5' Asphalt, 0.5' Stone 1.0
300	300.7	3.5												301.2 ROADWAY EMBANKMENT 3.0
														Gray, tan, medium dense, gravelly SAND (A-1-b)
														Brown, black, loose to medium dense, silty SAND (A-2-4), trace gravel
295	295.7	8.5												
290	290.7	13.5												292.2 Brown, red, black, medium dense, slightly plastic silty clayey SAND (A-2-6) 12.0
285	285.7	18.5												287.2 White, brown, black, medium dense, silty SAND (A-2-4) 17.0
280	280.7	23.5												
275	275.7	28.5												
270	270.7	33.5												273.2 RESIDUAL 31.0
														Gray, white, medium stiff, sandy CLAY (A-6)
														269.2 Gray, medium dense, clayey SAND (A-2-7) 35.0
265	265.7	38.5												
260	260.7	43.5												263.2 41.0
														Gray, white, dense, coarse SAND (A-1-b), some gravel, saprolitic

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC DOT.GDT 11/18/24

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1				TIP P-5707				COUNTY WAKE				GEOLOGIST Cary, P.					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)												GROUND WTR (ft)					
BORING NO. L45+33 C3				STATION 45+33				OFFSET CL				ALIGNMENT -L-				0 HR. 45.0	
COLLAR ELEV. 304.9 ft				TOTAL DEPTH 47.8 ft				NORTHING 801,066				EASTING 2,143,236				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TER346 DIEDRICH D-50 91% 02/24/2018								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER Francis, N.				START DATE 02/13/19				COMP. DATE 02/13/19				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
305																304.9 GROUND SURFACE 0.0	
																304.3 0.6' Asphalt 0.6	
	301.6	3.3			6	6								D		301.9 ROADWAY EMBANKMENT 3.0	
300														W		Brown, medium dense, silty fine to coarse SAND (A-2-4), little gravel	
																299.9 5.0	
																Brown-gray, medium stiff, fine to coarse sandy silty CLAY (A-7-6), some mica	
295	296.6	8.3												W		Brown-gray, medium dense, clayey silty fine to coarse SAND (A-2-7), some mica, trace gravel	
290	291.6	13.3												W		289.9 15.0	
																Gray-brown, medium dense, silty fine to coarse SAND (A-2-4), little gravel	
285	286.6	18.3												M			
280	281.6	23.3												M			
275	276.6	28.3												M		277.9 27.0	
																RESIDUAL	
																Gray-brown, medium dense to dense, silty fine to coarse SAND (A-2-4), trace rock fragments	
270	271.6	33.3												M			
265	266.6	38.3												M		268.9 36.0	
																Brown, stiff, sandy silty CLAY (A-6), little mica	
260	261.6	43.3												M		262.9 42.0	
																WEATHERED ROCK	
																GRANITE	
	257.1	47.8														257.1 47.8	
																Boring Terminated by Auger Refusal at Elevation 257.1 ft on Crystalline Rock: GRANITE	

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)												GROUND WTR (ft)		
BORING NO. L47+30 RT RW3			STATION 47+30			OFFSET 27 ft RT			ALIGNMENT -L-			0 HR. Dry		
COLLAR ELEV. 306.6 ft			TOTAL DEPTH 60.0 ft			NORTHING 801,059			EASTING 2,143,435			24 HR. FIAD		
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER W. Duggins			START DATE 02/28/18			COMP. DATE 02/28/18			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
310														
305	305.6	1.0	11	5	4	9								306.6 GROUND SURFACE 0.0
300	303.1	3.5	4	8	6	14								305.5 0.5' Asphalt, 0.6' Stone 1.1
	298.1	8.5	1	6	5	11								303.6 ROADWAY EMBANKMENT 3.0
295														Brown, loose, clayey SAND (A-2-7)
290	293.1	13.5	3	2	4	6								Brown to gray, loose to medium dense, silty SAND (A-2-5), trace gravel, trace mica
	288.1	18.5	4	7	10	17								
285														285.6 Brown, medium dense, clayey SAND (A-2-7) 21.0
280	283.1	23.5	3	5	9	14								
	278.1	28.5	5	5	10	15								
275														
270	273.1	33.5	10	11	18	29								274.6 RESIDUAL 32.0
	268.1	38.5	6	6	8	14								Tan-gray to pink-white, medium dense, clayey silty SAND (A-2-4), trace gravel, saprolitic, with lenses of SILT
265														
260	263.1	43.5	13	11	11	22								
	258.1	48.5	7	9	11	20								259.6 Brown, black, medium dense, silty fine SAND (A-2-5), highly micaceous, saprolitic 47.0
255														
250	253.1	53.5	10	10	14	24								
	248.1	58.5	13	30	31	61								250.6 Brown, orange, very dense, silty coarse SAND (A-2-4), saprolitic, trace gravel 56.0
														246.6 Boring Terminated at Elevation 246.6 ft in Residual: silty SAND (A-2-4) 60.0

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize				
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)										GROUND WTR (ft)			
BORING NO. Y5 22+63 LT RW3			STATION 22+63			OFFSET 8 ft RT			ALIGNMENT -Y5-		0 HR. 5.0		
COLLAR ELEV. 261.7 ft			TOTAL DEPTH 17.0 ft			NORTHING 800,924			EASTING 2,143,245		24 HR. 4.5		
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers				HAMMER TYPE Automatic			
DRILLER W. Duggins			START DATE 02/20/18			COMP. DATE 02/20/18			SURFACE WATER DEPTH N/A				
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			
265													
260	260.7	1.0	3	3	2								261.7 GROUND SURFACE 0.0
	258.2	3.5	1	1	2						M		ROADWAY EMBANKMENT Gray, brown, very loose to loose, clayey silty SAND (A-2-4)
255	253.2	8.5	7	9	12						M		255.2 RESIDUAL 6.5 Orange, white, medium dense to very dense, silty SAND (A-2-4), trace rock fragments, saprolitic
250	248.2	13.5	35	21	37						M		
245	244.7	17.0	60/0.0			60/0.0							244.7 17.0 Boring Terminated with Standard Penetration Test Refusal at Elevation 244.7 ft on Crystalline Rock: GRANITE

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)									GROUND WTR (ft)						
BORING NO. Y5 22+83 LT RW3			STATION 22+82			OFFSET 9 ft RT			ALIGNMENT -Y5-						
COLLAR ELEV. 261.7 ft			TOTAL DEPTH 19.5 ft			NORTHING 800,926			EASTING 2,143,264						
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER W. Duggins			START DATE 02/20/18			COMP. DATE 02/20/18			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
265															
260	260.7	1.0	5	4	5							M		261.7	GROUND SURFACE 0.0
	258.2	3.5	4	5	8							M			ROADWAY EMBANKMENT Gray, loose, silty clayey SAND (A-2-6), trace mica, with lenses of gravel
255															
	253.2	8.5	25	53	47/0.3									253.2	WEATHERED ROCK 8.5 GRANITE
250															
	248.2	13.5	27	47	45							M		248.7	RESIDUAL 13.0 Orange, very dense, silty SAND (A-2-4), trace rock fragments, saprolitic
245														244.7	WEATHERED ROCK 17.0 GRANITE
	243.2	18.5	100/0.3											242.2	Boring Terminated with Standard Penetration Test Refusal at Elevation 242.2 ft on Crystalline Rock: GRANITE
	242.2	19.5	60/0.0												

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1						TIP P-5707				COUNTY WAKE				GEOLOGIST J. Mize			
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 3: -Y5- STA 21+60 TO 25+81 (LEFT)														GROUND WTR (ft)			
BORING NO. Y5 25+06 LT RW3				STATION 25+06				OFFSET 45 ft LT				ALIGNMENT -Y5-				0 HR. 23.5	
COLLAR ELEV. 277.2 ft				TOTAL DEPTH 40.0 ft				NORTHING 800,978				EASTING 2,143,488				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018										DRILL METHOD H.S. Augers				HAMMER TYPE Automatic			
DRILLER W. Duggins						START DATE 03/02/18				COMP. DATE 03/02/18				SURFACE WATER DEPTH N/A			
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
280																	
275	276.2	1.0	1	1	1						SS-370	18%		277.2	GROUND SURFACE 0.0		
	273.7	3.5	1	2	3									274.2	ARTIFICIAL FILL Brown, very loose, clayey SAND (A-2-6) 3.0		
270			1	2	3							M		RESIDUAL Brown, loose, silty slightly plastic clayey silty SAND (A-2-5)			
265	268.7	8.5	1	4	3							M		266.2	11.0		
	263.7	13.5	1	0	1									266.2	Gray, very loose to loose, silty SAND (A-2-4)		
260			1	0	1						SS-373	15%					
255	258.7	18.5	1	2	3							W					
	253.7	23.5	3	5	7											255.2	22.0
250			3	5	7							M		Gray, white, medium dense to very dense, silty SAND (A-2-4), saprolitic			
245	248.7	28.5	7	10	13							M					
	243.7	33.5	5	8	19											243.7	
240			5	8	19							M					
	238.7	38.5	24	37	58							Sat.		237.2	40.0		
															Boring Terminated at Elevation 237.2 ft in Residual: silty SAND (A-2-4)		

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1		TIP P-5707		COUNTY WAKE		GEOLOGIST M. Shipman								
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)							GROUND WTR (ft)							
BORING NO. L31+50 RW4		STATION 31+50		OFFSET 35 ft RT		ALIGNMENT -L-		0 HR. Dry						
COLLAR ELEV. 344.4 ft		TOTAL DEPTH 55.0 ft		NORTHING 801,294		EASTING 2,141,903		24 HR. Dry						
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023				DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER S. Harig			START DATE 09/25/24		COMP. DATE 09/25/24		SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
345														
	344.4	0.0	3	3	3									GROUND SURFACE 0.0
340	340.9	3.5	2	5	5						SS-67	20%		ROADWAY EMBANKMENT Orange-brown, medium stiff, sandy CLAY (A-6), trace gravel, trace rootlets 3.0
														Red-brown, stiff, silty highly plastic CLAY (A-7-6), trace gravel, trace rootlets
335	335.9	8.5	7	10	9									336.4 8.0
														Dark-brown, medium dense, silty fine to coarse SAND (A-2-4), little gravel
330	330.9	13.5	3	9	15									331.4 13.0
														330.1 14.3
														Brown, medium stiff to stiff, sandy CLAY (A-6), trace rootlets
325	325.9	18.5	4	5	5									RESIDUAL Red-brown, very stiff, silty CLAY (A-7-6), saprolitic, trace mica 18.0
														White and brown, medium dense, silty fine to coarse SAND (A-2-4), saprolitic, some mica, trace rock fragments
320	320.9	23.5	5	6	7									
315	315.9	28.5	5	5	6									
310	310.9	33.5	3	3	5									311.4 33.0
														Red-brown, medium stiff, sandy SILT (A-4), saprolitic, some mica
305	305.9	38.5	8	12	17									306.4 38.0
														White and brown, medium dense, silty SAND (A-2-4), saprolitic, trace rock fragments, trace mica
300	300.9	43.5	3	12	16									
295	295.9	48.5	5	8	8									296.4 48.0
														White to red-brown, medium dense, clayey fine to coarse SAND (A-2-6), saprolitic, trace to some rock fragments, little to some mica
290	290.9	53.5	3	15	11									289.4 55.0
														Boring Terminated at Elevation 289.4 ft in Residual: clayey SAND (A-2-6)

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Schubert				
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)											GROUND WTR (ft)		
BORING NO. L32+50 RW4			STATION 32+50			OFFSET 35 ft RT			ALIGNMENT -L-			0 HR.	Dry
COLLAR ELEV. 342.9 ft			TOTAL DEPTH 55.0 ft			NORTHING 801,248			EASTING 2,141,991			24 HR.	Dry
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER S. Harig			START DATE 09/26/24			COMP. DATE 09/26/24			SURFACE WATER DEPTH N/A				
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			
345													
	342.9	0.0	2	3	3								GROUND SURFACE 0.0
340	339.4	3.5	1	2	4								ROADWAY EMBANKMENT Red-brown, medium stiff, sandy silty moderately plastic CLAY (A-7-6), saprolitic, trace to some mica
335	334.4	8.5	5	6	25								
330	329.4	13.5	5	10	11								RESIDUAL Red-brown, very stiff to hard, sandy CLAY (A-6), saprolitic, trace to some mica, trace rock frags
325	324.4	18.5	2	3	3								
320	319.4	23.5	2	3	5								
315	314.4	28.5	2	3	5								
310	309.4	33.5	3	3	5								
305	304.4	38.5	3	3	4								
300	299.4	43.5	4	3	6								
295	294.4	48.5	4	5	5								
290	289.4	53.5	2	5	7								
													Boring Terminated at Elevation 287.9 ft in Residual: sandy SILT (A-4)

NCDOT BORE DOUBLE P5707 GEO RDY UPDATED.GPJ NC DOT GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Schubert					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)											GROUND WTR (ft)			
BORING NO. L33+50 RW4			STATION 33+50			OFFSET 35 ft RT			ALIGNMENT -L-			0 HR.	Dry	
COLLAR ELEV. 341.2 ft			TOTAL DEPTH 50.0 ft			NORTHING 801,201			EASTING 2,142,080			24 HR.	Dry	
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 09/26/24			COMP. DATE 09/26/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
345														
340	341.2	0.0	1	2	4	6								GROUND SURFACE 0.0
335	337.7	3.5	2	3	7	10								ROADWAY EMBANKMENT Red-brown, medium stiff, sandy CLAY (A-6), saprolitic, trace roots 3.0
	332.7	8.5	7	5	8	13								Red-gray, stiff, sandy silty CLAY (A-7-5), saprolitic, trace mica, trace of organic matter
330														
325	327.7	13.5	13	8	8	16								RESIDUAL 13.0 Red-tan, very stiff, sandy CLAY (A-6), saprolitic, little mica, trace rock fragments
	322.7	18.5	6	6	5	11								323.2 18.0 Pink to gray to tan, loose to dense, silty SAND (A-2-4), saprolitic, trace to some mica, trace to some rock fragments, trace clay
320														
315	317.7	23.5	5	6	7	13								
	312.7	28.5	2	3	5	8								
310														
305	307.7	33.5	6	7	8	15								
	302.7	38.5	5	5	7	12								
300														
295	297.7	43.5	20	13	11	24								
	292.7	48.5	33	26	10	36								291.2 50.0 Boring Terminated at Elevation 291.2 ft in Residual: silty SAND (A-2-4)

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Schubert									
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)												GROUND WTR (ft)						
BORING NO. L34+50 RW4			STATION 34+50			OFFSET 49 ft RT			ALIGNMENT -L-			0 HR.	Dry					
COLLAR ELEV. 338.9 ft			TOTAL DEPTH 50.0 ft			NORTHING 801,142			EASTING 2,142,162			24 HR.	Dry					
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic									
DRILLER S. Harig			START DATE 09/27/24			COMP. DATE 09/27/24			SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
340																		
	338.9	0.0		WOH	2	3									338.9	GROUND SURFACE	0.0	
335	335.4	3.5			4	3	4							M		335.9	ROADWAY EMBANKMENT Red-brown, medium stiff, silty CLAY (A-7-5), trace roots	3.0
330	330.4	8.5			3	4	4							M		330.9	RESIDUAL Red-tan, loose, clayey SAND (A-2-6), saprolitic	8.0
325	325.4	13.5			6	6	6							M				
320	320.4	18.5			5	5	6							M		320.9	Tan, loose to medium dense, silty SAND (A-2-4), saprolitic, trace to little mica	18.0
315	315.4	23.5			3	4	6							M				
310	310.4	28.5			3	3	5							M				
305	305.4	33.5			1	2	2							M		305.9	Red to orange, medium stiff to stiff, sandy SILT (A-4), saprolitic, little mica	33.0
300	300.4	38.5			1	2	3						SS-132	33%			Red to orange to black, soft to medium stiff, sandy silty moderately plastic CLAY (A-7-5), saprolitic, little to some mica, trace to little MnO	
295	295.4	43.5			1	2	4							W				
290	290.4	48.5			2	2	5							W				
														W		288.9	Boring Terminated at Elevation 288.9 ft in Residual: sandy silty CLAY (A-7-5)	50.0

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)									GROUND WTR (ft)					
BORING NO. L35+50 RW4			STATION 35+50			OFFSET 49 ft RT			ALIGNMENT -L-			0 HR. Dry		
COLLAR ELEV. 337.2 ft			TOTAL DEPTH 40.0 ft			NORTHING 801,095			EASTING 2,142,251			24 HR. Dry		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 10/02/24			COMP. DATE 10/02/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
340														
335	337.2	0.0	2	2	3							M		GROUND SURFACE 0.0
	333.7	3.5	3	4	7							M		334.2
330														
325	328.7	8.5	2	2	3							M	329.2	8.0
	323.7	13.5	2	2	3						SS-176	24%		
320														
315	318.7	18.5	2	4	5							M		
	313.7	23.5	4	3	4							M		
310														
305	308.7	28.5	5	5	8							M	309.2	28.0
	303.7	33.5	19	20	23							M		
300														
	298.7	38.5	8	10	9							M	297.2	40.0
														Boring Terminated at Elevation 297.2 ft in Residual: silty SAND (A-2-4)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)												GROUND WTR (ft)			
BORING NO. L36+00 RW4			STATION 36+00			OFFSET 49 ft RT			ALIGNMENT -L-			0 HR.	Dry		
COLLAR ELEV. 334.8 ft			TOTAL DEPTH 39.4 ft			NORTHING 801,073			EASTING 2,142,298			24 HR.	Dry		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER S. Harig			START DATE 10/02/24			COMP. DATE 10/02/24			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
335														334.8	0.0
330	334.8	0.0	1	1	2										

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST J. Mize						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)										GROUND WTR (ft)					
BORING NO. L36+50			STATION 36+50			OFFSET 72 ft RT			ALIGNMENT -L-		0 HR. Dry				
COLLAR ELEV. 331.8 ft			TOTAL DEPTH 32.2 ft			NORTHING 801,031			EASTING 2,142,338		24 HR. Dry				
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER W. Duggins			START DATE 02/22/18			COMP. DATE 02/22/18			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
335															
330	330.8	1.0	2	3	4										331.8 GROUND SURFACE 0.0
	328.3	3.5	2	4	7										ROADWAY EMBANKMENT Red, medium stiff to stiff, silty highly plastic CLAY (A-7-6), trace gravel, trace mica
325	323.3	8.5	2	4	4										323.8 8.0
	318.3	13.5	6	8	8										RESIDUAL Red, loose, clayey SAND (A-2-6), lenses of coarse SAND
320	313.3	18.5	11	15	34										318.8 13.0
	308.3	23.5	100	0.5											White, pink, medium dense to dense, silty coarse SAND (A-2-4)
315	303.3	28.5	60	0.1											308.8 23.0
	299.6	32.2	60	0.1											WEATHERED ROCK GRANITE
310															303.3 28.5
															CRYSTALLINE ROCK GRANITE
305															299.6 32.2
															Boring Terminated with Standard Penetration Test Refusal at Elevation 299.6 ft in Crystalline Rock: GRANITE
300															

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman							
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)												GROUND WTR (ft)				
BORING NO. L37+00 RW4			STATION 37+15			OFFSET 61 ft RT			ALIGNMENT -L-			0 HR.	Dry			
COLLAR ELEV. 329.5 ft			TOTAL DEPTH 28.6 ft			NORTHING 801,018			EASTING 2,142,406			24 HR.	FIAD			
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER S. Harig			START DATE 09/30/24			COMP. DATE 09/30/24			SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
330																
	329.3	0.2													GROUND SURFACE	0.0
			9	3	4										ROADWAY EMBANKMENT ASPHALT	0.2
325	326.0	3.5													Orange-brown, medium stiff to stiff, sandy CLAY (A-6), trace gravel, trace of organics	3.5
			1	4	7											
320	321.0	8.5													RESIDUAL	8.0
			10	13	14										Red-brown, very stiff, sandy CLAY (A-6), saprolitic, little rock fragments	
315	316.0	13.5														
			7	15	24										Red-brown and pink, medium dense to dense, clayey fine to coarse SAND (A-2-7), saprolitic, little rock fragments	13.0
310	311.0	18.5														
			3	5	8											
305	306.0	23.5													WEATHERED ROCK GRANITE	22.0
			100/0.2													
	301.0	28.5														
			60/0.1												CRYSTALLINE ROCK GRANITE	28.5
															Boring Terminated with Standard Penetration Test Refusal at Elevation 300.9 ft in Crystalline Rock: GRANITE	28.6

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST P. Cary					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)										GROUND WTR (ft)				
BORING NO. L37+50 RW4			STATION 37+50			OFFSET 60 ft RT			ALIGNMENT -L-		0 HR. Dry			
COLLAR ELEV. 328.6 ft			TOTAL DEPTH 39.8 ft			NORTHING 801,008			EASTING 2,142,442		24 HR. FIAD			
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER W. Duggins			START DATE 03/05/19			COMP. DATE 03/05/19			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
330														
	328.6	0.0												328.6 GROUND SURFACE 0.0
			WOH	WOH	WOH									ROADWAY EMBANKMENT
														Red, very soft, silty CLAY (A-7-6)
325	325.1	3.5	1	3	2									325.6 Red, medium stiff, sandy CLAY (A-6) 3.0
														322.6 Red, medium dense, clayey SAND (A-2-6) 6.0
320	320.1	8.5	3	6	6									317.6 RESIDUAL 11.0
														Red, stiff, fine sandy clayey SILT (A-5), some mica
315	315.1	13.5	3	4	4									
310	310.1	18.5	2	3	7									309.1 Tan, medium dense to dense, silty fine to coarse SAND (A-2-5), trace to some mica, trace rock fragments 19.5
305	305.1	23.5	5	7	8									
300	300.1	28.5	4	5	6									
295	295.1	33.5	14	11	20									
290	290.1	38.5	30	100/0.8										290.1 WEATHERED ROCK GRANITE 38.5
														288.8 Boring Terminated at Elevation 288.8 ft in Weathered Rock: GRANITE 39.8

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

NCNDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT_GDT 11/18/24

WBS 44643.1.1				TIP P-5707				COUNTY WAKE				GEOLOGIST J. Mize					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 4: -L- STA 31+02 TO 40+60 (RIGHT)																GROUND WTR (ft)	
BORING NO. L39+68 RW4				STATION 39+68				OFFSET 45 ft RT				ALIGNMENT -L-				0 HR. Dry	
COLLAR ELEV. 317.6 ft				TOTAL DEPTH 20.0 ft				NORTHING 800,982				EASTING 2,142,669				24 HR. Dry	
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 95% 02/24/2018								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER W. Duggins				START DATE 02/19/18				COMP. DATE 02/19/18				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
320																	
315	316.6	1.0	WOH			3	2					SS-216	24%		GROUND SURFACE 0.0		
	314.1	3.5	2			3	3								ROADWAY EMBANKMENT Brown, orange, medium stiff, sandy silty moderately plastic CLAY (A-7-6), trace wood		
310	309.1	8.5	5			12	7					M			310.6 Brown, medium dense, silty SAND (A-2-4), trace gravel 7.0		
	304.1	13.5	2			4	5								306.6 RESIDUAL 11.0		
300	299.1	18.5	4			3	5					M			Red, stiff, sandy SILT (A-4), highly micaceous 300.6 17.0		
															Pink, white, tan, loose, silty SAND (A-2-4), trace mica, saprolitic 297.6 20.0		
Boring Terminated at Elevation 297.6 ft in Residual: silty SAND (A-2-4)																	

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Lisi					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)										GROUND WTR (ft)				
BORING NO. L24+50 RW5			STATION 24+50			OFFSET 57 ft RT			ALIGNMENT -L-		0 HR. Dry			
COLLAR ELEV. 354.8 ft			TOTAL DEPTH 20.0 ft			NORTHING 801,602			EASTING 2,141,274		24 HR. N/A			
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 10/04/24			COMP. DATE 10/04/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
355	354.8	0.0	4	4	4									354.8 GROUND SURFACE 0.0
	351.3	3.5	2	2	2							M		352.8 ROADWAY EMBANKMENT Red-brown, medium stiff, sandy CLAY (A-6), trace rock frags, little roots 2.0
350												M		RESIDUAL Gray and orange-brown, loose to dense, silty SAND (A-2-4), little mica, some rock fragments
	346.3	8.5	10	6	3							M		
345														
	341.3	13.5	8	10	13							M		
340														
	336.3	18.5	24	18	30							M		334.8 Boring Terminated at Elevation 334.8 ft in Residual: silty SAND (A-2-4) 20.0
335														

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT_GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)											GROUND WTR (ft)			
BORING NO. L25+50 RW5			STATION 25+50			OFFSET 49 ft RT			ALIGNMENT -L-			0 HR.	Dry	
COLLAR ELEV. 353.5 ft			TOTAL DEPTH 28.2 ft			NORTHING 801,562			EASTING 2,141,366			24 HR.	N/A	
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 10/04/24			COMP. DATE 10/04/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
355														
	353.5	0.0	2	2	7									353.5 GROUND SURFACE 0.0
350	350.0	3.5	3	5	4									ROADWAY EMBANKMENT Red-brown and white, stiff, sandy CLAY (A-6), saprolitic, trace rock fragments
345	345.0	8.5	7	10	12									345.5 RESIDUAL 8.0 Red-brown to brown, medium dense, silty fine to coarse SAND (A-2-4), saprolitic, little mica, trace rock fragments
340	340.0	13.5	4	7	93/0.5									339.0 WEATHERED ROCK 14.5 BIOTITE GNEISS
335	335.0	18.5	8	1	3									335.5 RESIDUAL 18.0 334.5 Orange-brown, medium dense to dense, silty fine to coarse SAND (A-2-4), saprolitic, trace mica, trace rock fragments
330	330.0	23.5	3	2	7									Brown, soft to stiff, sandy SILT (A-4), saprolitic, some mica
	325.3	28.2	60/0.0			60/0.0								325.3 Boring Terminated with Standard Penetration Test Refusal at Elevation 325.3 ft on Crystalline Rock: BIOTITE GNEISS 28.2

NC DOT BORE DOUBLE P5707 GEO_RDY_UPDATED.GPJ NC_DOT_GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Lisi					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)									GROUND WTR (ft)					
BORING NO. L26+50 RW5			STATION 26+50			OFFSET 47 ft RT			ALIGNMENT -L-			0 HR. Dry		
COLLAR ELEV. 351.5 ft			TOTAL DEPTH 27.6 ft			NORTHING 801,517			EASTING 2,141,455			24 HR. Dry		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 10/03/24			COMP. DATE 10/03/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
355														
	351.5	0.0	1	4	5	9								351.5 GROUND SURFACE 0.0
350														ROADWAY EMBANKMENT Red, stiff, sandy CLAY (A-6), trace to little mica, trace roots
	348.0	3.5	4	5	6	11								
345														
	343.0	8.5	3	4	6	10								344.5 Red, stiff, sandy SILT (A-4), little mica 7.0
340														
	338.0	13.5	6	60	40/0.2									339.5 RESIDUAL 12.0
335										100/0.7				337.5 Brown and gray, loose, silty SAND (A-2-4), little mica, trace rock fragments 14.0
	333.0	18.5	25	17	11									334.5 WEATHERED ROCK BIOTITE GNEISS RESIDUAL 17.0
330														Gray to orange-brown, silty SAND (A-2-4), little mica, trace rock fragments
	328.0	23.5	21	11	89/0.5									
325										100/1.0				327.0 WEATHERED ROCK BIOTITE GNEISS 24.5
	324.0	27.5	60/0.1							60/0.1				324.0 WEATHERED ROCK BIOTITE GNEISS 27.5
														323.9 CRYSTALLINE ROCK BIOTITE GNEISS 27.6
														Boring Terminated with Standard Penetration Test Refusal at Elevation 323.9 ft in Crystalline Rock: BIOTITE GNEISS

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT_GDT 11/18/24

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Lisi					
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)											GROUND WTR (ft)			
BORING NO. L27+50 RW5			STATION 27+50			OFFSET 45 ft RT			ALIGNMENT -L-			0 HR. Dry		
COLLAR ELEV. 350.8 ft			TOTAL DEPTH 45.0 ft			NORTHING 801,472			EASTING 2,141,544			24 HR. 21.7		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER S. Harig			START DATE 10/03/24			COMP. DATE 10/03/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
355														
350	350.8	0.0	1	2	2									GROUND SURFACE 0.0
	347.3	3.5	2	2	2									ROADWAY EMBANKMENT 0.5
345														Red, soft, sandy SILT (A-4)
	342.3	8.5	1	1	1									Brown and white, loose, silty SAND (A-2-4)
340											SS-215	16%		Red, soft, fine to coarse sandy moderately plastic CLAY (A-6), trace roots
	337.3	13.5	20	14	9									
335														RESIDUAL 12.0
	332.3	18.5	4	4	3									Red-brown, gray, and white, very loose to medium dense, silty SAND (A-2-4), little mica, trace quartz fragments
330														
	327.3	23.5	3	3	5									
325														
	322.3	28.5	1	1	3									
320														
	317.3	33.5	1	0	1									
315														
	312.3	38.5	1	0	1									
310														
	307.3	43.5	4	5	9									
														Boring Terminated at Elevation 305.8 ft in Residual: silty SAND (A-2-4)

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)														GROUND WTR (ft)	
BORING NO. L28+00 RW5			STATION 28+00			OFFSET 44 ft RT			ALIGNMENT -L-			0 HR. 15.0			
COLLAR ELEV. 349.1 ft			TOTAL DEPTH 48.8 ft			NORTHING 801,450			EASTING 2,141,589			24 HR. 17.2			
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023							DRILL METHOD H.S. Augers				HAMMER TYPE Automatic				
DRILLER S. Harig				START DATE 10/03/24			COMP. DATE 10/03/24			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
350															
	349.1	0.0	1	1	1									349.1	0.0
345	345.6	3.5	1	0	0						SS-203	M		GROUND SURFACE	
														ROADWAY EMBANKMENT	
														Brown to red-brown, very loose, clayey fine to coarse SAND (A-2-6), trace to little gravel, trace rootlets	
340	340.6	8.5	WOH	1	4							M		341.1	8.0
														339.6	9.5
														Light brown, medium stiff, silty CLAY (A-7-6), little gravel	
335	335.6	13.5	2	5	7							M		RESIDUAL	
														Brown and red, loose to medium dense, silty SAND (A-2-4), saprolitic, trace rock fragments, little mica	
330	330.6	18.5	5	2	3							M			
325	325.6	23.5	1	2	3							W		326.1	23.0
														Orange-brown, medium stiff, sandy SILT (A-4), saprolitic, little mica, trace rock fragments	
320	320.6	28.5	1	2	4							Sat.			
														317.1	32.0
315	315.6	33.5	1	1	2							Sat.		Brown, very loose to medium dense, silty fine to coarse SAND (A-2-4), saprolitic, some mica, trace rock fragments	
310	310.6	38.5	5	13	12							Sat.		308.6	40.5
														WEATHERED ROCK	
305	305.6	43.5	100/0.3											BIOTITE GNEISS	
	300.6	48.5	100/0.3											300.3	48.8
														Boring Terminated at Elevation 300.3 ft in Weathered Rock: BIOTITE GNEISS	

WBS 44643.1.1			TIP P-5707			COUNTY WAKE			GEOLOGIST M. Shipman						
SITE DESCRIPTION ROGERS ROAD RETAINING WALL NO. 5: -L- STA 24+50 TO 28+30 (RIGHT)												GROUND WTR (ft)			
BORING NO. L28+50 RW5			STATION 28+50			OFFSET 43 ft RT			ALIGNMENT -L-			0 HR.	28.9		
COLLAR ELEV. 348.4 ft			TOTAL DEPTH 50.0 ft			NORTHING 801,427			EASTING 2,141,634			24 HR.	23.0		
DRILL RIG/HAMMER EFF./DATE TER2101 Geoprobe 3230DT 91% 01/20/2023						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER S. Harig			START DATE 10/02/24			COMP. DATE 10/02/24			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
350															
	348.4	0.0	3	1	1							M		348.4	GROUND SURFACE 0.0
345	344.9	3.5	WOH			2	2				SS-192	W		345.4	ROADWAY EMBANKMENT 3.0 Red-brown, soft, silty CLAY (A-7-5), trace rootlets, trace mica, trace gravel
340	339.9	8.5	5	6	7							M		340.4	RESIDUAL 8.0 Gray to brown, loose, silty fine to coarse SAND (A-2-4), trace rootlets, trace gravel
335	334.9	13.5	9	12	22							M		335.4	Red-brown, medium dense, clayey fine to coarse SAND (A-2-7), trace rock fragments
330	329.9	18.5	5	4	6							M			
325	324.9	23.5	5	4	6							M			
320	319.9	28.5	6	6	7										
315	314.9	33.5	4	6	11							Sat.			
310	309.9	38.5	10	12	25							Sat.			
305	304.9	43.5	22	43	29							Sat.			
300	299.9	48.5	8	11	26							Sat.			
														298.4	50.0
														Boring Terminated at Elevation 298.4 ft in Residual: silty SAND (A-2-4)	

NCDOT BORE DOUBLE P5707_GEO_RDY_UPDATED.GPJ NC_DOT.GDT 11/18/24

LABORATORY TESTING SUMMARY

TIP: P-5707COUNTY: WAKE

SOIL TEST RESULTS																		
SAMPLE NO.	BORING NO.	ALIGNMENT	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVE			% MOISTURE	NORTHING	EASTING
									C. SAND	F. SAND	SILT	CLAY	10	40	200			
SS-2	L 31+00 RW1	-L-	31+00	43 LT	3.5 - 5.0	A-7-6 (10)	54	30	30	17	10.3	42.8	85	68	47	33.7	801387	2141895
SS-10	L 31+50 RW1	-L-	31+50	44 LT	3.5 - 5.0	A-7-6 (9)	54	31	33.2	17.6	11.9	37.3	86	65	45	17.7	801364	2141940
SS-14	L 31+50 RW1	-L-	31+50	44 LT	23.5 - 25.0	A-2-4 (0)	NP	NP	27.7	45.1	14.6	12.6	98	90	30	17.6	801364	2141940
SS-22	L 32+00 RW1	-L-	32+00	44 LT	3.5 - 5.0	A-7-6 (9)	55	31	35	13.8	11.5	39.7	82	60	44	23.7	801341	2141984
SS-36	L 33+20 RW1	-L-	33+20	44 LT	13.5 - 15.0	A-2-6 (0)	33	11	42.9	29.9	11.7	15.5	72	53	23	21.8	801285	2142090
SS-37	L 33+20 RW1	-L-	33+20	44 LT	18.5 - 20.0	A-7-6 (16)	64	36	28.2	17.6	8.3	45.9	93	75	53	18.3	801285	2142090
SS-46	L 33+70 RW1	-L-	33+70	44 LT	3.5 - 5.0	A-7-6 (4)	42	22	32.6	22	13.5	31.9	79	61	39	31.1	801261	2142134
SS-58	L 31+02 RW4	-L-	31+02	35 RT	3.5 - 5.0	A-7-6 (4)	46	26	32.6	22.4	14.7	30.3	79	62	38	17.3	801317	2141861
SS-67	L 31+50 RW4	-L-	31+50	35 RT	3.5 - 5.0	A-7-6 (6)	47	26	29.2	23.6	15.5	31.7	86	70	43	19.6	801294	2141903
SS-78	L 32+70	-L-	32+70	85 LT	3.5 - 5	A-6 (2)	34	16	35.1	23.8	9.5	31.6	88	68	39.0	21.2	801261	2142134
SS-83	L 32+00 RW4	-L-	32+00	35 RT	18.5 - 20.0	A-7-5 (8)	47	15	10.3	35.4	24	30.3	99	97	60	31.2	801271	2141947
SS-92	L 32+50 RW4	-L-	32+50	35 RT	3.5 - 5.0	A-7-6 (7)	47	25	29.9	25	17.7	27.4	92	75	45	21.1	801248	2141991
SS-97	L 35+36 RW1	-L-	35+36	67 LT	3.5 - 5	A-7-5 (1)	45	11	28.9	35.2	12.5	23.4	94	79	40.0	21.9	801205	2142291
SS-117	L 34+00 RW4	-L-	34+00	50 RT	13.5 - 15.0	A-2-4 (0)	NP	NP	41.3	30.4	17.1	11.2	99	74	33	16.0	801164	2142117
SS-132	L 34+50 RW4	-L-	34+50	49 RT	33.5 - 35.0	A-7-5 (7)	46	16	11.9	40.3	33	14.8	100	95	56	48.0	801142	2142162
SS-134	L 36+53 RW1	-L-	36+53	72 LT	3.5 - 5	A-7-6 (9)	51	27	31.4	23.9	13.5	31.2	100	79	49.0	24.1	801164	2142393
SS-147	L 42+50 RW2	-L-	42+50	30 LT	3.5 - 5.0	A-2-4 (0)	34	6	40.4	24.5	14	21.1	89	64	34	16.2	801067	2142951
SS-157	L 40+00 RW2	-L-	40+00	64 LT	1 - 2.5	A-2-6 (0)	30	13	42.4	22.4	11.6	23.6	88	62	34.0	16.9	801089	2142708
SS-162	L 37+50 RW1	-L-	37+50	75 LT	0.0 - 1.5	A-4 (0)	NP	NP	23.6	38.3	15.5	22.6	89	81	38	28.3	801124	2142476
SS-173	L 41+13 RW2	-L-	41+13	53 LT	1 - 2.5	A-6 (3)	40	19	40.4	23.9	12.8	22.9	95	69	38.0	19	801077	2142815
SS-176	L 35+50 RW4	-L-	35+50	49 RT	13.5 - 15.0	A-4 (0)	NP	NP	29.3	39.9	21	9.8	100	92	37.0	24.2	801095	2142251
SS-183	L 36+00 RW4	-L-	36+00	49 RT	3.5 - 5.0	A-7-5 (9)	57	26	35	15.8	18.6	30.6	91	65	48	26.8	801073	2142298
SS-183	L 41+85 RW2	-DR1-	14+16	71 LT	13.5 - 15	A-7-6 (8)	50	27	36.5	22.1	12.6	28.8	99	74	45.0	22.7	801171	2142875
SS-190	L 41+89 RW2	-DR1-	13+96	89 LT	13.5 - 15	A-7-6 (10)	53	29	33	21.3	11.1	34.6	97	75	48.0	24.3	801149	2142882
SS-192	L 28+50 RW5	-L-	28+50	43 RT	3.5 - 5.0	A-2-4 (0)	37	6	36.8	29.7	16.6	16.9	76	60	28	23.2	801427	2141634
SS-195	L 41+98 RW2	-DR1-	13+49	120 LT	3.5 - 5	A-7-6 (6)	44	26	37	22.4	12	28.6	95	71	42.0	23.1	801107	2142895
SS-203	L 28+00 RW5	-L-	28+00	44 RT	3.5 - 5.0	A-2-6 (0)	39	12	35.9	28.1	14.1	21.9	87	69	34	31.3	801450	2141589
SS-204	L 41+44 RW2	-L-	41+44	84 LT	3.5 - 5	A-7-6 (5)	49	25	37.6	24.8	10.9	26.7	94	69	40.0	22.1	801110	2142842
SS-215	L 27+50 RW5	-L-	27+50	45 RT	8.5 - 10.0	A-6 (3)	32	16	35.7	22.8	13.4	28.1	97	75	42	16.0	801472	2141544
SS-216	L 39+68 RW4	-L-	39+68	45 RT	1 - 2.5	A-7-6 (4)	42	20	35.3	21.8	15.1	27.8	92	70	43.0	24.1	800982	2142669
SS-239	L 26+00 RW5	-L-	26+00	48 RT	0.0 - 1.5	A-4 (0)	NP	NP	23.3	40.7	16.2	19.8	97	88	39	28.2	801540	2141410
SS-278	L 36+50	-L-	36+50	72 RT	3.5 - 5	A-7-6 (18)	63	38	28.3	17.8	9.6	44.3	96	80	55.0	24.1	801031	2142338
SS-341	L 44+23 RT RW3	-L-	44+23	27 RT	13.5 - 15	A-2-6 (0)	35	12	43.3	32.7	12.8	11.2	87	65	25.0	14.5	801027.7	2143129.2
SS-361	Y5 24+55 LT RW3	-Y5-	24+55	36 LT	1 - 2.5	A-2-6 (1)	38	20	40.1	26.2	10.1	23.6	88	66	33.0	22.9	800970.6	2143435.7
SS-370	Y5 25+06 LT RW3	-Y5-	25+06	45 LT	1 - 2.5	A-2-6 (2)	37	20	36.9	27.5	8.6	27	88	68	35.0	17.6	800978.2	2143488
SS-373	Y5 25+06 LT RW3	-Y5-	25+06	45 LT	13.5 - 15	A-2-4 (0)	18	5	39.7	29.9	12.8	17.6	89	66	30.0	15.4	800978.2	2143488