

REFERENCE: R-2707D

PROJECT: 34497

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY CLEVELAND
 PROJECT DESCRIPTION US 74, SHELBY BYPASS FROM
EAST OF NC 150 TO EXISTING US 74 WEST OF
SR 2238 (LONG BRANCH RD.)

SITE DESCRIPTION RETAINING WALL RW1 FROM
-Y4- STA. 16 + 00.00, 20.67' LT TO -Y4- STA. 18 + 54.23,
79.06' LT

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN AND PROFILE
4-5	BORE LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707D	1	5

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 CONTRACTOR 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

TRIGON

GOODNIGHT, D.J.

INVESTIGATED BY GOODNIGHT, D.J.

DRAWN BY CROCKETT, S.C.

CHECKED BY HUNSBERGER, W.S.

SUBMITTED BY FALCON ENG.

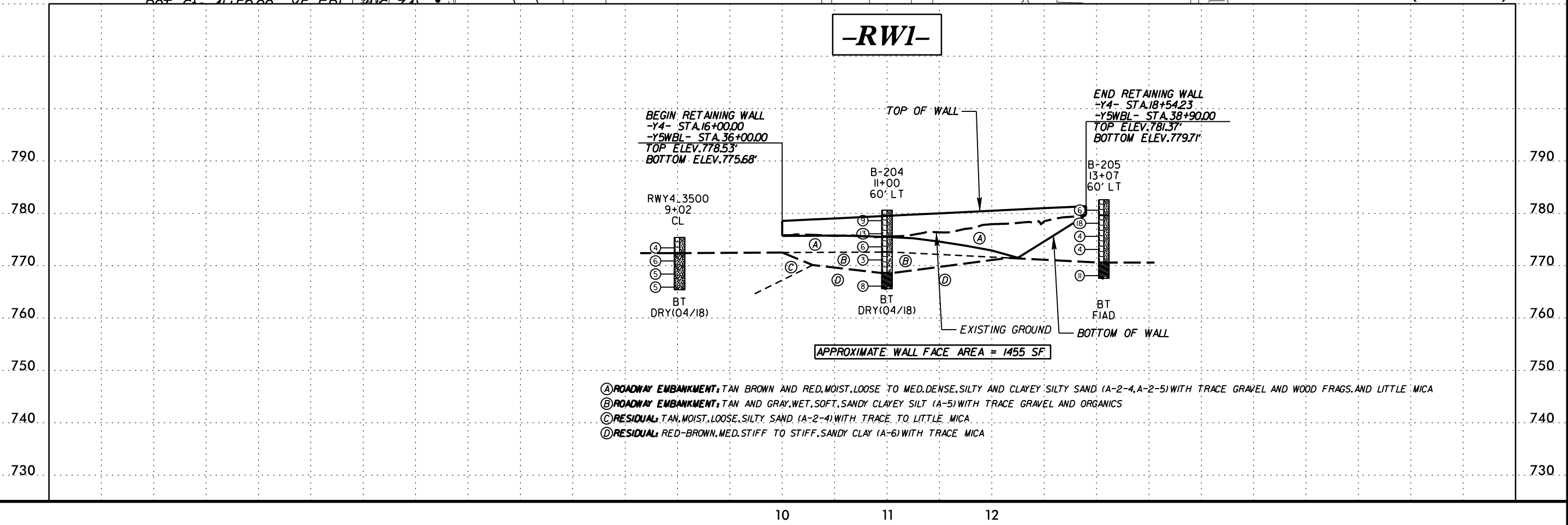
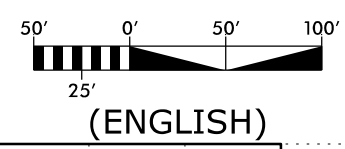
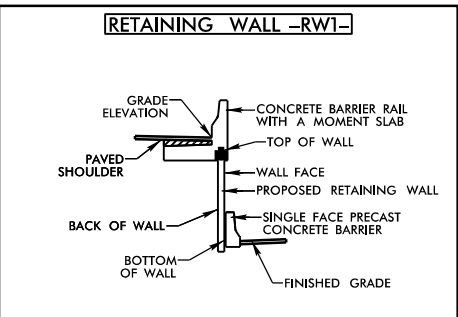
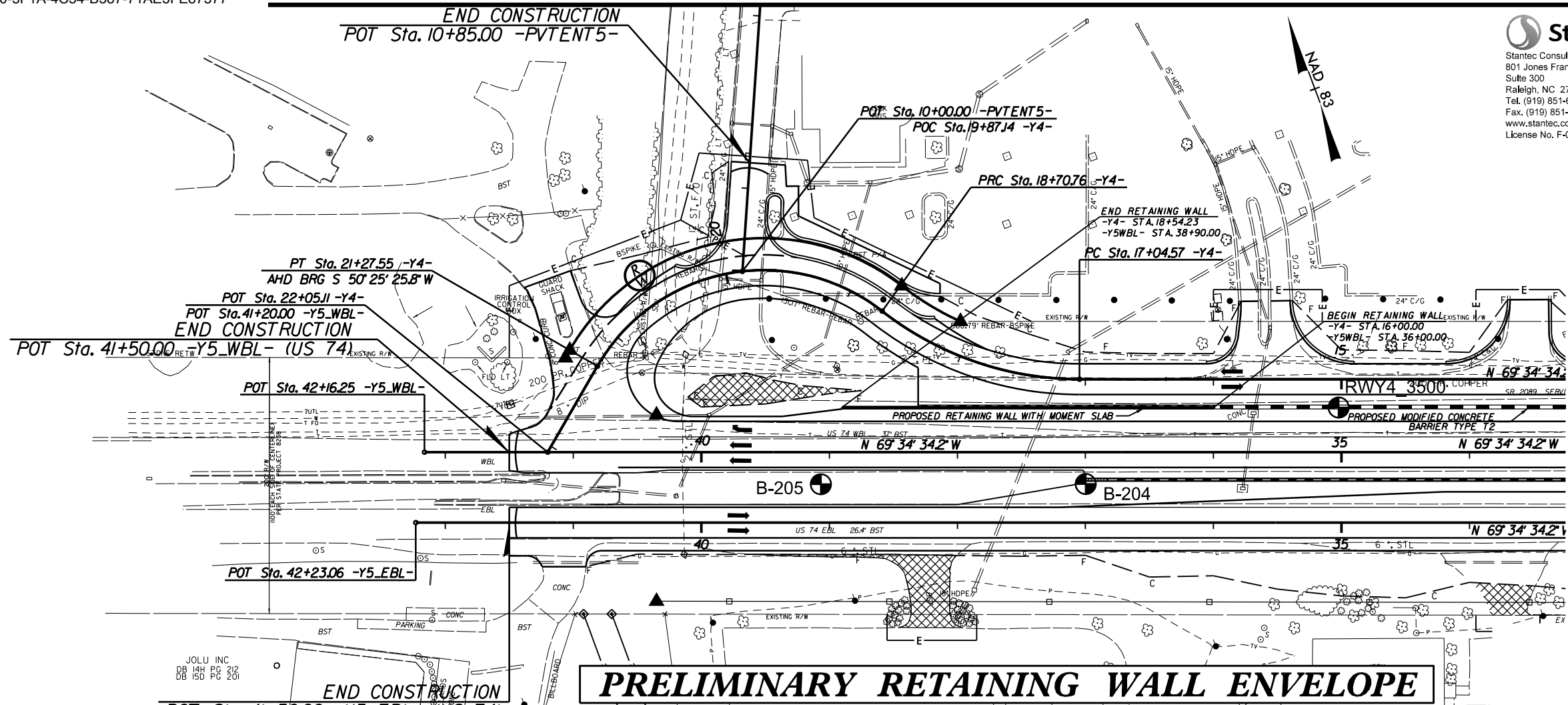
DATE JANUARY 2023



DocuSigned by:
Stephen Crockett 1/20/2023
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 SIGNATURE DATE

Stantec
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 Suite 300
 Raleigh, NC 27606
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 Fax. (919) 851-7024
 www.stantec.com
 License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS
 20-1AN-2023 10/21
 11-11-10-053.00 DELAYED Stantec
 82707D&E Shelby Bypass\Bypass\2707_NCDDOT_Electronic.File_Tree\Geotech\InvestigationDesign\2707_GEO_RDMY\CADD_GEO\TECH\Site&Sub\RETAINING WALL\2707D_RDY_PSH_02B-4.dgn
 8/17/99

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION RETAINING WALL RW1 FROM -Y4- STA. 16+00.00, 20.67' LT TO -Y4- STA. 17+88.97, 38.10' LT							GROUND WTR (ft)									
BORING NO. RYW4_3500		STATION 15+02		OFFSET 22 ft LT		ALIGNMENT -Y4-										
COLLAR ELEV. 775.4 ft		TOTAL DEPTH 10.0 ft		NORTHING 559,619		EASTING 1,263,723										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 97% 02/24/2017				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Estep, J. E.		START DATE 08/06/19		COMP. DATE 08/06/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
780																
775	774.4	1.0	2	2	2								M	775.4 0.3' TOPSOIL	0.0	
	771.9	3.5	2	3	3								M	ROADWAY EMBANKMENT TAN-BROWN, CLAYEY SILTY SAND (A-2-5)	3.0	
770	769.4	6.0	3	3	2								M	RESIDUAL TAN, SILTY SAND (A-2-4) WITH TRACE TO LITTLE MICA		
	766.9	8.5	3	2	3								M			
															Boring Terminated at Elevation 765.4 ft IN RESIDUAL: SILTY SAND	10.0

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION RETAINING WALL RW1 FROM -Y4- STA. 16+00.00, 20.67' LT TO -Y4- STA. 17+88.97, 38.10' LT							GROUND WTR (ft)									
BORING NO. B-204		STATION 17+00		OFFSET 82 ft LT		ALIGNMENT -Y4-										
COLLAR ELEV. 780.6 ft		TOTAL DEPTH 15.0 ft		NORTHING 559,632		EASTING 1,263,517										
DRILL RIG/HAMMER EFF./DATE HPC2473 CME-550 85% 01/10/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Cain, J.		START DATE 04/05/18		COMP. DATE 04/05/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
785																
780	779.6	1.0	4	4	5								M	780.6 0.3' TOPSOIL	0.0	
	777.1	3.5	11	7	6								M	ROADWAY EMBANKMENT TAN, SILTY SAND (A-2-4) WITH LITTLE MICA AND TRACE GRAVEL		
775	774.6	6.0	2	2	4								M			
	772.1	8.5	2	1	2								M	772.6 TAN AND GRAY, SANDY CLAYEY SILT (A-5) WITH TRACE GRAVEL AND ORGANICS	8.0	
770													W	768.6	12.0	
	767.1	13.5	1	3	5								M	RESIDUAL RED-BROWN, SANDY CLAY (A-6) WITH TRACE MICA	15.0	
															Boring Terminated at Elevation 765.6 ft IN RESIDUAL: SANDY CLAY	

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/13/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION RETAINING WALL RW1 FROM -Y4- STA. 16+00.00, 20.67' LT TO -Y4- STA. 17+88.97, 38.10' LT							GROUND WTR (ft)										
BORING NO. B-205		STATION 18+41		OFFSET 139 ft LT		ALIGNMENT -Y4-											
COLLAR ELEV. 782.6 ft		TOTAL DEPTH 15.0 ft		NORTHING 559,704		EASTING 1,263,323											
DRILL RIG/HAMMER EFF./DATE HPC2473 CME-550 85% 01/10/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Cain, J.		START DATE 04/05/18		COMP. DATE 04/05/18		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)		
785															782.6	0.0	0.4' TOPSOIL
780	781.6	1.0	2	3	3									M	779.6	3.0	ROADWAY EMBANKMENT TAN BROWN, SILTY CLAYEY SAND (A-2-5) WITH TRACE GRAVEL
	779.1	3.5	10	12	6									M			TAN-BROWN AND RED-BROWN, SILTY SAND (A-2-4) WITH TRACE WOOD FRAGMENTS AND GRAVEL, AND LITTLE MICA
775	776.6	6.0	2	2	2									M			
	774.1	8.5	2	2	2									M			
770	769.1	13.5	3	5	6									M	770.6	12.0	RESIDUAL
															767.6	15.0	RED-BROWN, SANDY CLAY (A-6)
																	Boring Terminated at Elevation 767.6 ft IN RESIDUAL: SANDY CLAY

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/13/23

REFERENCE: R-2707D

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY CLEVELAND
 PROJECT DESCRIPTION US 74, SHELBY BYPASS FROM
EAST OF NC 150 TO EXISTING US 74 WEST OF
SR 2238 (LONG BRANCH RD.)
 SITE DESCRIPTION NOISE WALL 3a FROM -NW3a-
STA. 10 + 00.00 (-L- STA. 692 + 50.00, 116.68' LT) TO
-NW3a- STA. 56 + 95.00 (-L- STA. 739 + 81.06, 60.5' LT)

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3-6	SITE PLAN AND PROFILE
7-19	BORE LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707D	1	19

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PERSONNEL

TRIGON

GOODNIGHT, D.J.

INVESTIGATED BY GOODNIGHT, D.J.

DRAWN BY CROCKETT, S.C.

CHECKED BY HUNSBERGER, W.S.

SUBMITTED BY FALCON ENG.

DATE JANUARY 2023



DocuSigned by:
Stephen Crockett 1/6/2023
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 SIGNATURE DATE

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

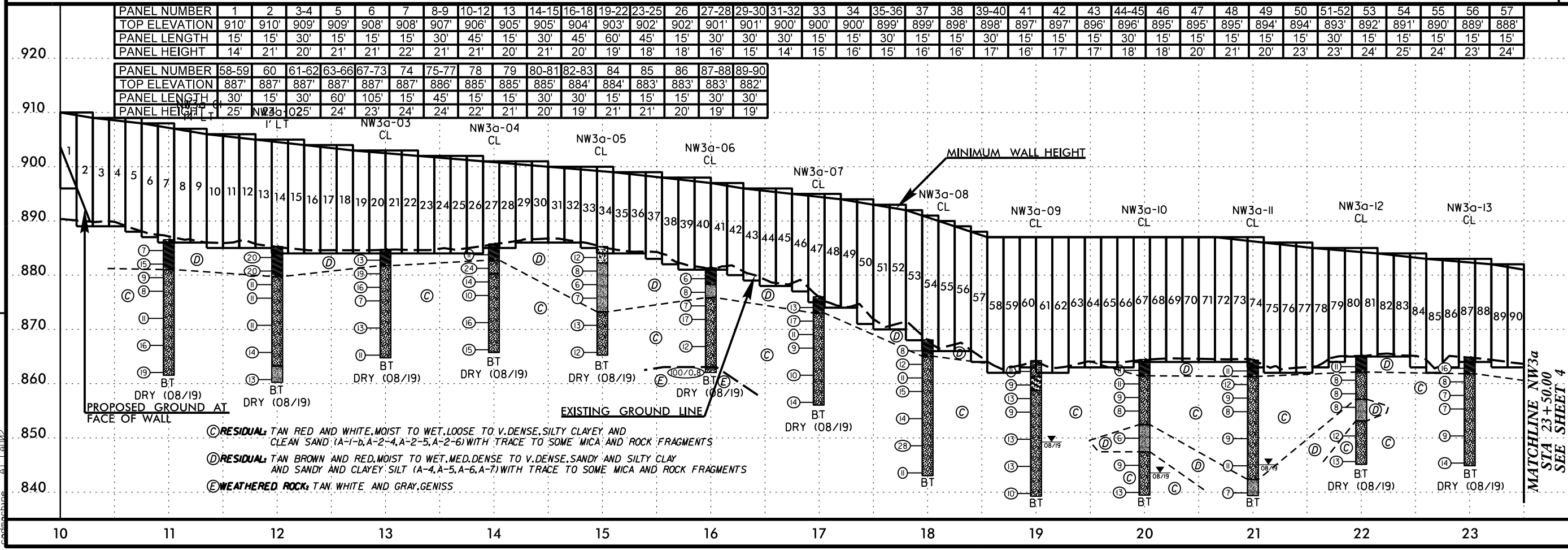
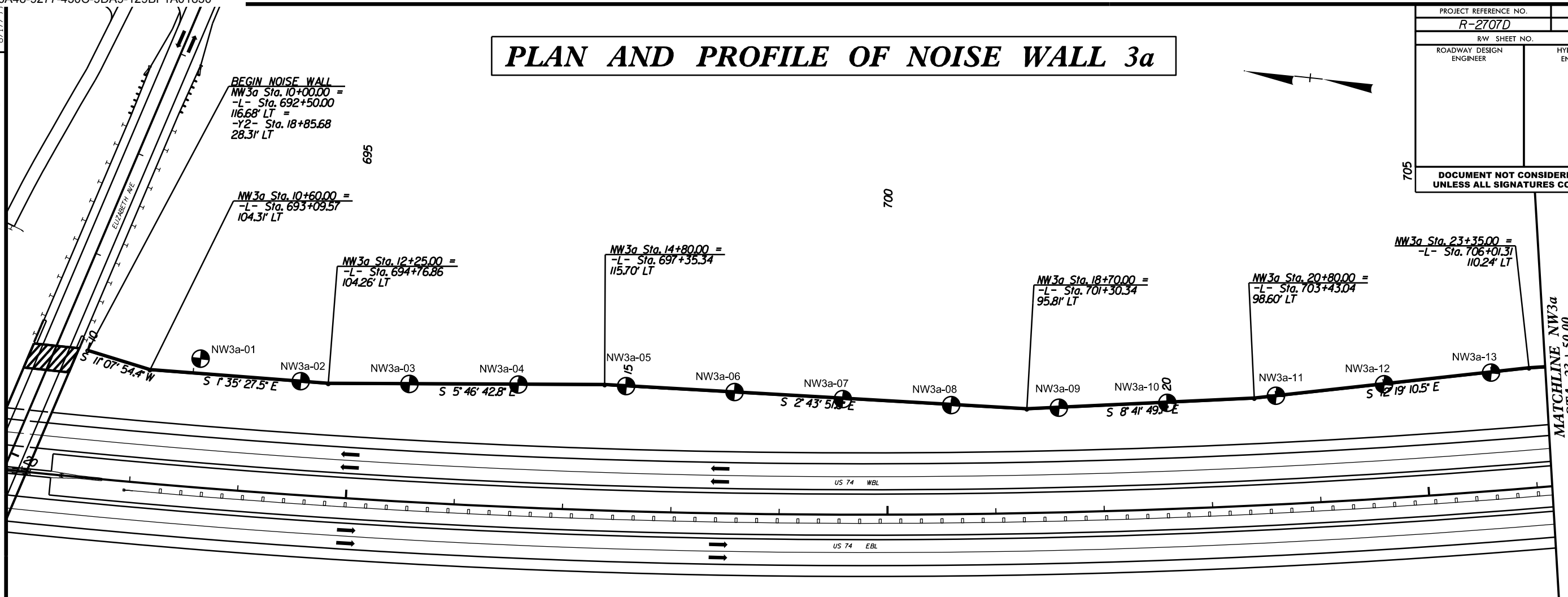
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																												
<p>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></p>										<p>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.</p>										<p>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 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:</p>										<p>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 DISLOGGED 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 (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. 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. SLICKENISE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. 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 (SROD) - 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.</p>																																																												
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.																																																												
<p>GENERAL CLASS.</p> <table border="1"> <tr> <th colspan="5">GRANULAR MATERIALS (<= 35% PASSING #200)</th> <th colspan="5">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="5">ORGANIC MATERIALS</th> </tr> <tr> <th>GROUP CLASS.</th> <th>A-1</th> <th>A-3</th> <th>A-2</th> <th>A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th colspan="5"></th> </tr> <tr> <th>SYMBOL</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="5"></td> </tr> </table>										GRANULAR MATERIALS (<= 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)					ORGANIC MATERIALS					GROUP CLASS.	A-1	A-3	A-2	A-2	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7						SYMBOL																		<p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>										<p>CRYSTALLINE ROCK (CR)</p> <p>FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</p>										<p>NON-CRYSTALLINE ROCK (NCR)</p> <p>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.</p>									
GRANULAR MATERIALS (<= 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)					ORGANIC MATERIALS																																																																																
GROUP CLASS.	A-1	A-3	A-2	A-2	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7																																																																														
SYMBOL																																																																																										
MINERALOGICAL COMPOSITION										COMPRESSION										WEATHERING										CRUSTALLINE ROCK (CR)																																																												
<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p>SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50</p>										<p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (IV SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</i> VERY SEVERE (IV SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i> COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>										<p>WEATHERED ROCK (WR)</p> <p>FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.</p>																																																												
PERCENTAGE OF MATERIAL										GROUND WATER										MISCELLANEOUS SYMBOLS										RECOMMENDATION SYMBOLS																																																												
<table border="1"> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT - CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>> 10%</td> <td>> 20%</td> <td>HIGHLY</td> </tr> </table>										ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	HIGHLY ORGANIC	> 10%	> 20%	HIGHLY	<p>WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP</p>										<p>ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY</p>										<p>UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</p>																																								
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SOIL MOISTURE - CORRELATION OF TERMS										EQUIPMENT USED ON SUBJECT PROJECT										INDURATION										BENCH MARK: ELEVATIONS OBTAINED FROM TIN FILE R2707_LS_TNL_180309 DATED MARCH, 2018																																																												
<table border="1"> <tr> <th>SOIL MOISTURE SCALE (ATTERBERG LIMITS)</th> <th>FIELD MOISTURE DESCRIPTION</th> <th>GUIDE FOR FIELD MOISTURE DESCRIPTION</th> </tr> <tr> <td>LL - LIQUID LIMIT</td> <td>- SATURATED - (SAT.)</td> <td>USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</td> </tr> <tr> <td>PLASTIC RANGE (PI)</td> <td>- WET - (W)</td> <td>SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> </tr> <tr> <td>OM - OPTIMUM MOISTURE SHRINKAGE LIMIT</td> <td>- MOIST - (M)</td> <td>SOLID; AT OR NEAR OPTIMUM MOISTURE</td> </tr> <tr> <td>SL - SHRINKAGE LIMIT</td> <td>- DRY - (D)</td> <td>REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> </tr> </table>										SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION	LL - LIQUID LIMIT	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE	PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE	OM - OPTIMUM MOISTURE SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE	SL - SHRINKAGE LIMIT	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	<p>DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input type="checkbox"/> CME-550X <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST <input checked="" type="checkbox"/> MOBILE B-57</p>										<p>FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p>ELEVATION: FEET</p>																																													
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PLASTICITY										CORE SIZE										HAND TOOLS										NOTES:																																																												
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NON PLASTIC	SLIGHTLY PLASTIC	MODERATELY PLASTIC	HIGHLY PLASTIC	PLASTICITY INDEX (PI)	DRY STRENGTH																																																																																					
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COLOR										HAMMER TYPE										INDURATION										NOTES:																																																												
<p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-BROWN). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>										<p><input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL</p>										<p>FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p>DATE: 8-15-14</p>																																																												

PLAN AND PROFILE OF NOISE WALL 3a

PROJECT REFERENCE NO. R-2707D	SHEET NO. 3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



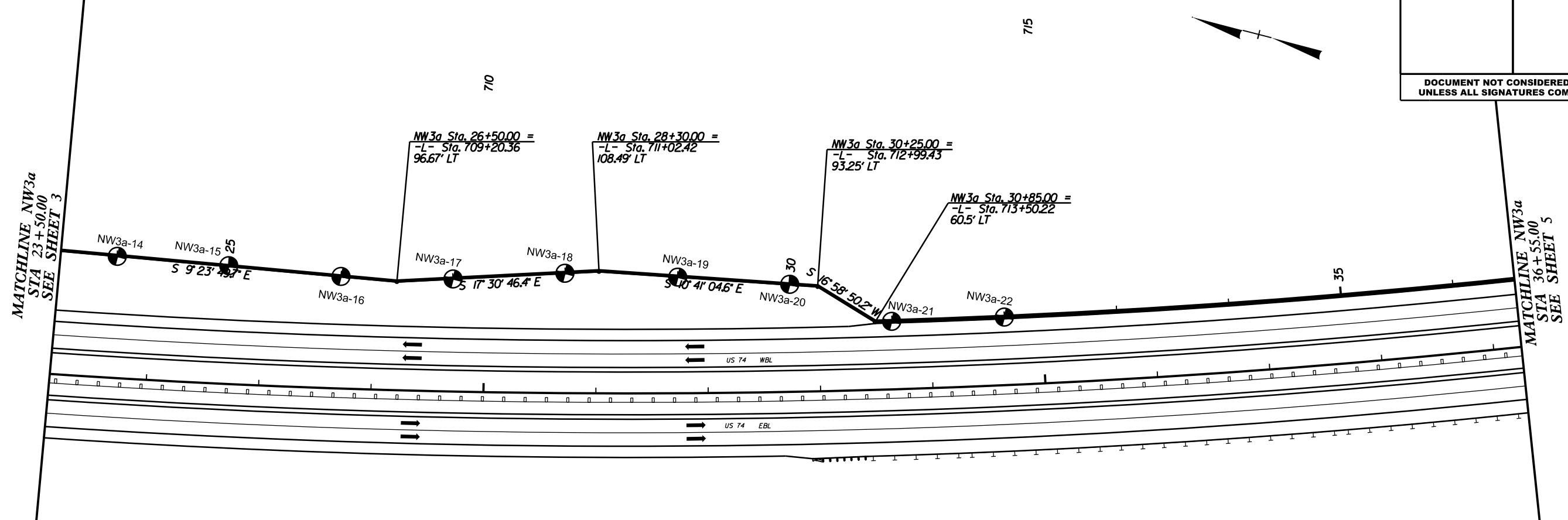
REVISIONS

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MATCHLINE NW3a STA 23+50.00 SEE SHEET 4

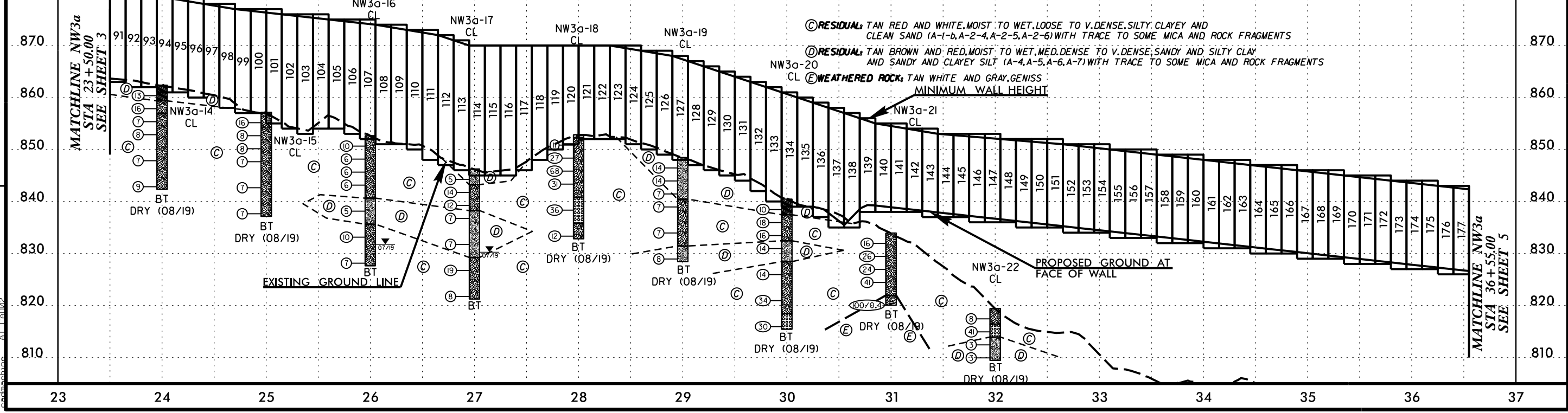
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R-2707D	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PLAN AND PROFILE OF NOISE WALL 3a



PANEL NUMBER	91	92	93	94	95	96	97	98	99-100	101	102	103	104	105	106	107	108-109	110	111	112	113	114-116	117	118	119	120	121-123	124	125	126	127	128	129	130	131	132	133
TOP ELEVATION	881'	881'	880'	880'	879'	879'	878'	878'	877'	877'	876'	876'	876'	875'	875'	875'	874'	873'	873'	872'	871'	870'	870'	870'	870'	870'	870'	869'	869'	868'	867'	866'	865'	864'	863'	862'	
PANEL LENGTH	15'	15'	15'	15'	15'	15'	15'	30'	15'	15'	15'	15'	15'	15'	15'	30'	15'	15'	15'	15'	45'	15'	15'	15'	15'	45'	15'	15'	15'	15'	15'	15'	15'	15'	15'	15'	15'
PANEL HEIGHT	18'	19'	18'	19'	18'	19'	18'	20'	20'	22'	22'	23'	22'	21'	22'	23'	23'	23'	25'	25'	25'	25'	24'	22'	20'	19'	18'	19'	19'	20'	20'	20'	20'	20'	20'	21'	22'

PANEL NUMBER	134	135	136	137	138	139	140-141	142	143	144-145	146-147	148	149-151	152-154	155-157	158-160	161-163	164-166	167-169	170-172	173-175	176-178
TOP ELEVATION	861'	860'	859'	858'	857'	856'	855'	854'	854'	853'	853'	852'	852'	851'	850'	849'	848'	847'	846'	845'	844'	843'
PANEL LENGTH	15'	15'	15'	15'	15'	15'	30'	15'	15'	30'	15'	15'	45'	45'	45'	45'	45'	45'	45'	45'	45'	45'
PANEL HEIGHT	22'	21'	22'	23'	22'	18'	17'	16'	17'	16'	17'	16'	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'

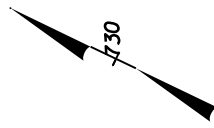


REVISIONS

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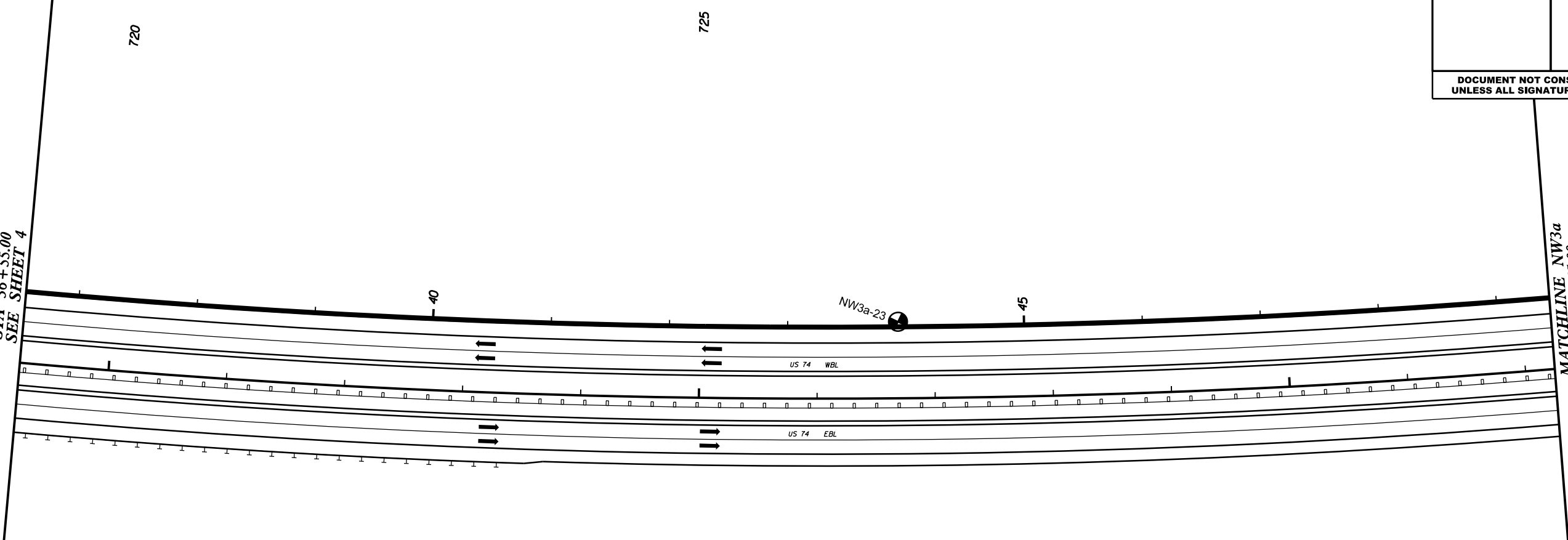
PLAN AND PROFILE OF NOISE WALL 3a

PROJECT REFERENCE NO. R-2707D	SHEET NO. 5
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



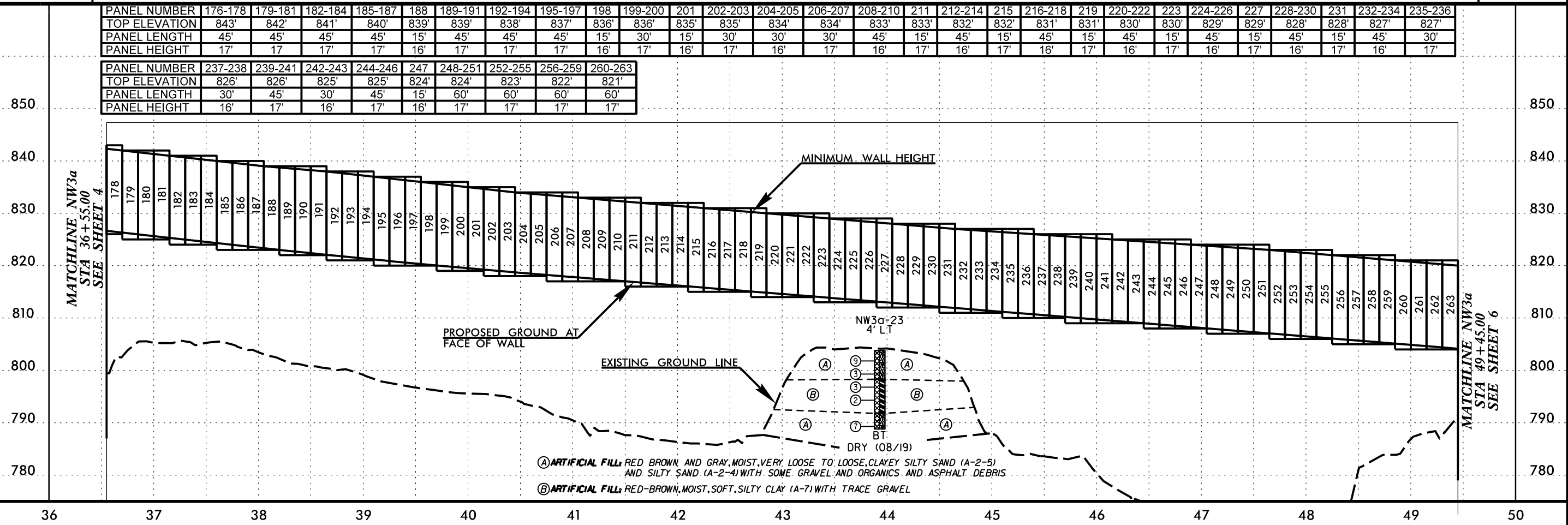
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STA 36+55.00
SEE SHEET 4

MATCHLINE NW3a
STA 49+45.00
SEE SHEET 6



PANEL NUMBER	176-178	179-181	182-184	185-187	188	189-191	192-194	195-197	198	199-200	201	202-203	204-205	206-207	208-210	211	212-214	215	216-218	219	220-222	223	224-226	227	228-230	231	232-234	235-236
TOP ELEVATION	843'	842'	841'	840'	839'	839'	838'	837'	836'	836'	835'	835'	834'	834'	833'	833'	832'	832'	831'	831'	830'	830'	829'	829'	828'	828'	827'	827'
PANEL LENGTH	45'	45'	45'	45'	15'	45'	45'	45'	15'	30'	15'	30'	30'	30'	45'	15'	45'	15'	45'	15'	45'	15'	45'	15'	45'	15'	45'	30'
PANEL HEIGHT	17'	17'	17'	17'	16'	17'	17'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'

PANEL NUMBER	237-238	239-241	242-243	244-246	247	248-251	252-255	256-259	260-263
TOP ELEVATION	826'	826'	825'	825'	824'	824'	823'	822'	821'
PANEL LENGTH	30'	45'	30'	45'	15'	60'	60'	60'	60'
PANEL HEIGHT	16'	17'	16'	17'	16'	17'	17'	17'	17'



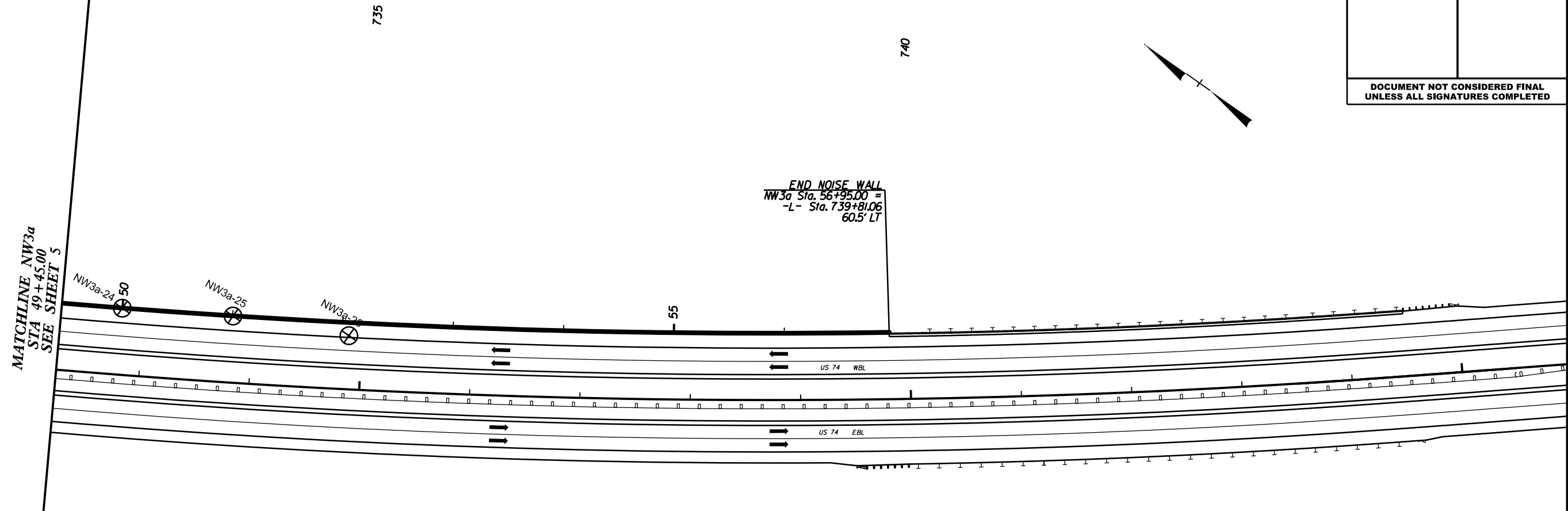
- Ⓐ ARTIFICIAL FILL: RED BROWN AND GRAY, MOIST, VERY LOOSE TO LOOSE, CLAYEY SILTY SAND (A-2-5) AND SILTY SAND (A-2-4) WITH SOME GRAVEL AND ORGANICS AND ASPHALT DEBRIS
- Ⓑ ARTIFICIAL FILL: RED-BROWN, MOIST, SOFT, SILTY CLAY (A-7) WITH TRACE GRAVEL

REVISIONS

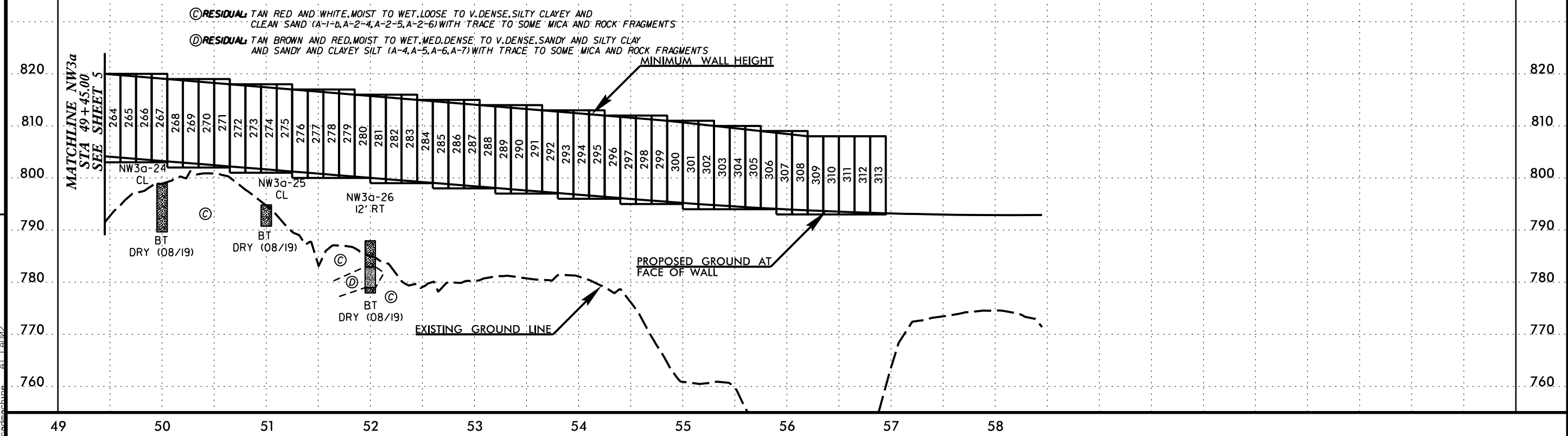
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 8/17/19

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PLAN AND PROFILE OF NOISE WALL 3a



PANEL NUMBER	264-267	268-271	272-275	276-279	280	281-283	284	285-287	288	289-291	292	293-295	296	297-299	300	301-302	303-305	306	307-308	309-313
TOP ELEVATION	820'	819'	818'	817'	816'	816'	815'	815'	814'	814'	813'	813'	812'	812'	811'	811'	810'	809'	809'	808'
PANEL LENGTH	60'	60'	60'	60'	15'	45'	15'	45'	15'	45'	15'	45'	15'	45'	15'	30'	45'	15'	30'	75'
PANEL HEIGHT	17'	17'	17'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	17'	16'	15'	16'	15'



REVISIONS

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 AT CAD003

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-01		STATION 11+06		OFFSET 14 ft LT		ALIGNMENT -NW3a-										
COLLAR ELEV. 886.5 ft		TOTAL DEPTH 25.0 ft		NORTHING 570,919		EASTING 1,259,307										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 08/05/19		COMP. DATE 08/05/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
890																
885	885.5	1.0	3	3	4								M	0.3' TOPSOIL	0.0	
	883.0	3.5	5	6	9								M	RESIDUAL TAN-RED, MED. STIFF TO V. STIFF, F. SANDY CLAY (A-6)		
880	880.5	6.0	3	4	5								M	TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4)	5.5	
	878.0	8.5	3	3	5								M			
875													M			
	873.0	13.5	4	5	6								M			
870													M			
	868.0	18.5	5	7	9								M			
865													M			
	863.0	23.5	6	9	10								M			
													M	Boring Terminated at Elevation 861.5 ft IN RESIDUAL: SILTY SAND	25.0	

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-02		STATION 12+00		OFFSET 1 ft LT		ALIGNMENT -NW3a-										
COLLAR ELEV. 885.2 ft		TOTAL DEPTH 25.0 ft		NORTHING 570,825		EASTING 1,259,296										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 08/05/19		COMP. DATE 08/05/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
890																
885	884.2	1.0	4	8	12								M	0.3' TOPSOIL	0.0	
	881.7	3.5	8	10	10								M	RESIDUAL TAN-RED, V. STIFF, SANDY CLAY (A-6)		
880	879.2	6.0	4	5	6								M	RED-TAN AND TAN, MED. DENSE, SILTY SAND (A-2-4) WITH LITTLE MICA	5.5	
	876.7	8.5	5	5	6								M			
875													M			
	871.7	13.5	4	5	6								M			
870													M			
	866.7	18.5	7	8	6								M			
865													M			
	861.7	23.5	5	5	8								M	TAN, STIFF, SANDY SILT (A-4) WITH LITTLE FINE MICA	22.0	
													M	Boring Terminated at Elevation 860.2 ft IN RESIDUAL: SANDY SILT	25.0	

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-03		STATION 13+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 884.7 ft		TOTAL DEPTH 20.0 ft		NORTHING 570,725		EASTING 1,259,304										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Estep, J. E.		START DATE 08/05/19		COMP. DATE 08/05/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
885														884.7	0.0	0.3' TOPSOIL
	883.7	1.0	4	5	8											RESIDUAL TAN-RED, STIFF, SANDY CLAY (A-6)
	881.2	3.5	5	8	11											RED-TAN AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4)
880																
	878.7	6.0	6	8	8											
	876.2	8.5	4	4	3											
875																
	871.2	13.5	4	6	7											
870																
	866.2	18.5	5	6	5											
865																
																Boring Terminated at Elevation 864.7 ft IN RESIDUAL: SILTY SAND

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-04		STATION 14+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 885.7 ft		TOTAL DEPTH 20.0 ft		NORTHING 570,625		EASTING 1,259,314										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Estep, J. E.		START DATE 08/05/19		COMP. DATE 08/05/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
890																
	885.7	0.0														0.3' TOPSOIL
	882.7	3.0														RESIDUAL TAN-RED, STIFF, SANDY CLAY (A-6)
885																
	884.7	1.0	3	4	7											RED-TAN, MED. DENSE, SILTY SAND (A-2-5)
	882.2	3.5	12	11	13											TAN AND WHITE, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) WITH LITTLE QUARTZ FRAGMENTS
880																
	879.7	6.0	10	6	8											
	877.2	8.5	5	5	5											
875																
	872.2	13.5	7	6	10											
870																
	867.2	18.5	5	7	8											
865																
																Boring Terminated at Elevation 865.7 ft IN RESIDUAL: SILTY SAND

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.									
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)								
BORING NO. NW3a-05		STATION 15+00		OFFSET CL		ALIGNMENT -NW3a-									
COLLAR ELEV. 885.2 ft		TOTAL DEPTH 20.0 ft		NORTHING 570,526		EASTING 1,259,323									
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 08/02/19		COMP. DATE 08/02/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
890															
885	884.2	1.0	5	5	7									885.2	0.0
	881.7	3.5	4	3	5									882.2	3.0
880	879.2	6.0	3	2	4										
	876.7	8.5	3	3	4										
875															
	871.7	13.5	4	5	8									873.2	12.0
870															
	866.7	18.5	4	6	6									865.2	20.0
Boring Terminated at Elevation 865.2 ft IN RESIDUAL: SILTY SAND															

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.									
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)								
BORING NO. NW3a-06		STATION 16+00		OFFSET CL		ALIGNMENT -NW3a-									
COLLAR ELEV. 881.3 ft		TOTAL DEPTH 19.3 ft		NORTHING 570,426		EASTING 1,259,328									
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 08/02/19		COMP. DATE 08/02/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
885															
880	880.3	1.0	2	2	4									881.3	0.0
	877.8	3.5	3	3	5									878.3	3.0
875	875.3	6.0	2	3	4									875.8	5.5
	872.8	8.5	2	5	12										
870															
	867.8	13.5	4	7	5										
865															
	862.8	18.5	50	50/0.3										863.0	18.3
														862.0	19.3
Boring Terminated at Elevation 862.0 ft IN WEATHERED ROCK: GNEISS															

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1			TIP R-2707D			COUNTY CLEVELAND			GEOLOGIST Goodnight, D. J.						
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT								GROUND WTR (ft)							
BORING NO. NW3a-07			STATION 17+00			OFFSET CL			ALIGNMENT -NW3a-			0 HR. Dry			
COLLAR ELEV. 876.0 ft			TOTAL DEPTH 20.0 ft			NORTHING 570,326			EASTING 1,259,332			24 HR. Dry			
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER Estep, J. E.			START DATE 08/02/19			COMP. DATE 08/02/19			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					
880															
															876.0 GROUND SURFACE 0.0
875	875.0	1.0	5	5	8							M	RESIDUAL	RED-BROWN, STIFF, SANDY CLAY (A-6)	
	872.5	3.5	5	7	10							M		RED-TAN AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) WITH TRACE TO LITTLE MICA	
870	870.0	6.0	3	5	6							M			
	867.5	8.5	4	4	5							M			
865												M			
	862.5	13.5	4	5	5							M			
860												M			
	857.5	18.5	3	5	9							M			
															856.0 Boring Terminated at Elevation 856.0 ft IN RESIDUAL: SILTY SAND 20.0

WBS 34497.1.1			TIP R-2707D			COUNTY CLEVELAND			GEOLOGIST Goodnight, D. J.						
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT								GROUND WTR (ft)							
BORING NO. NW3a-08			STATION 18+00			OFFSET CL			ALIGNMENT -NW3a-			0 HR. 19.0			
COLLAR ELEV. 868.0 ft			TOTAL DEPTH 25.0 ft			NORTHING 570,226			EASTING 1,259,337			24 HR. 16.5			
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER Estep, J. E.			START DATE 08/02/19			COMP. DATE 08/02/19			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					
870															
	867.0	1.0	3	3	5							M			868.0 GROUND SURFACE 0.0
865	864.5	3.5	4	5	7							M	RESIDUAL	RED-TAN, MED. STIFF TO STIFF, SANDY CLAY (A-6)	
	862.0	6.0	4	5	6							M		TAN, MED. DENSE, SILTY SAND (A-2-4)	
860	859.5	8.5	5	7	8							M			
												M			
855	854.5	13.5	6	7	7							M			
												M			
850	849.5	18.5	6	14	14							M			
												M			
845	844.5	23.5	3	5	6							M			
															843.0 Boring Terminated at Elevation 843.0 ft IN RESIDUAL: SILTY SAND 25.0

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-09		STATION 19+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 864.2 ft		TOTAL DEPTH 25.0 ft		NORTHING 570,127		EASTING 1,259,345										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Estep, J. E.		START DATE 08/02/19		COMP. DATE 08/02/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
865														864.2	0.0	GROUND SURFACE
	863.2	1.0	5	6	5								M			RESIDUAL
	860.7	3.5	4	4	5								M			TAN, MED. DENSE, SILTY SAND (A-2-4)
860																TAN, LOOSE, CLAYEY SAND (A-2-6)
	858.2	6.0	4	5	8								M			TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4)
855													M			
	855.7	8.5	3	5	4								M			
	850.7	13.5	4	5	8											
850																
	845.7	18.5	4	5	8								M			
845																
	840.7	23.5	3	4	6								M			
840																
															Boring Terminated at Elevation 839.2 ft IN RESIDUAL: SILTY SAND	

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-10		STATION 20+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 864.4 ft		TOTAL DEPTH 25.0 ft		NORTHING 570,028		EASTING 1,259,360										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
865														864.4	0.0	GROUND SURFACE
	863.4	1.0	3	5	6								M			RESIDUAL
	860.9	3.5	4	5	6								M			TAN-RED, STIFF, SANDY CLAY (A-6)
860																TAN, LOOSE TO MED. STIFF, SILTY SAND (A-2-4)
	858.4	6.0	3	4	5								M			
855													M			
	855.9	8.5	2	4	4								M			
	850.9	13.5	2	2	4								W			TAN, MED. STIFF, F. SANDY SILT (A-4) HIGHLY MICACEOUS
850																
	845.9	18.5	2	4	5								M			TAN, LOOSE TO MED. STIFF, SILTY SAND (A-2-4)
845																
	840.9	23.5	3	5	8								M			
840																
															Boring Terminated at Elevation 839.4 ft IN RESIDUAL: SILTY SAND	

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.	
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)
BORING NO. NW3a-11		STATION 21+00		OFFSET CL		ALIGNMENT -NW3a-	
COLLAR ELEV. 864.3 ft		TOTAL DEPTH 25.0 ft		NORTHING 569,929		EASTING 1,259,377	
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers			HAMMER TYPE Automatic		
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		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	ELEV. (ft)	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
865															864.3	0.0	GROUND SURFACE	
	863.3	1.0	4	4	7									M			RESIDUAL RED-BROWN, STIFF, SANDY CLAY (A-6)	
860	860.8	3.5	5	5	7									M			RED-TAN AND TAN, LOOSE TO MED. DENSE, SILTY SAND (A-2-4)	
	858.3	6.0	2	4	5									M				
855	855.8	8.5	3	3	5									M				
	850.8	13.5	4	4	5									M				
850	850.8	13.5	4	4	5									M				
	845.8	18.5	4	5	6													
845	845.8	18.5	4	5	6													
	840.8	23.5	2	3	4									W			TAN, MED. STIFF, F. SANDY SILT (A-4) HIGHLY MICACEOUS	
840	840.8	23.5	2	3	4													
																		Boring Terminated at Elevation 839.3 ft IN RESIDUAL: SANDY SILT

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.	
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)
BORING NO. NW3a-12		STATION 22+00		OFFSET CL		ALIGNMENT -NW3a-	
COLLAR ELEV. 865.1 ft		TOTAL DEPTH 20.0 ft		NORTHING 569,831		EASTING 1,259,398	
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers			HAMMER TYPE Automatic		
DRILLER Estep, J. E.		START DATE 08/01/19		COMP. DATE 08/01/19		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	ELEV. (ft)	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
870															865.1	0.0	GROUND SURFACE	
	864.1	1.0	4	5	6									M			RESIDUAL TAN-RED, STIFF, SANDY CLAY (A-6)	
865	861.6	3.5	3	3	5									M			RED-TAN AND TAN, LOOSE, SILTY SAND (A-2-4)	
	859.1	6.0	3	3	5									M				
860	856.6	8.5	3	3	5									M			TAN, MED. STIFF, F. SANDY SILT (A-4)	
	851.3	13.8	4	5	7									M			TAN, MED. DENSE, SILTY SAND (A-2-4)	
855	851.3	13.8	4	5	7									M				
	846.6	18.5	4	6	7									M				
850	846.6	18.5	4	6	7									M				
																		Boring Terminated at Elevation 845.1 ft IN RESIDUAL: SILTY SAND

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-13		STATION 23+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 864.8 ft		TOTAL DEPTH 20.0 ft		NORTHING 569,734		EASTING 1,259,419										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER Estep, J. E.		START DATE 08/01/19		COMP. DATE 08/01/19		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	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
865															864.8	0.0
	863.8	1.0	4	8	8											
860	861.3	3.5	3	4	4										861.8	3.0
	858.8	6.0	2	3	4											
855	856.3	8.5	3	3	4											
	851.3	13.5	3	3	6											
845	846.3	18.5	5	6	8										844.8	20.0
Boring Terminated at Elevation 844.8 ft IN RESIDUAL: SILTY SAND																

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-14		STATION 24+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 862.3 ft		TOTAL DEPTH 20.0 ft		NORTHING 569,635		EASTING 1,259,437										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER Estep, J. E.		START DATE 08/01/19		COMP. DATE 08/01/19		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	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
865															862.3	0.0
	861.3	1.0	3	5	8											
860	858.8	3.5	4	7	9										859.3	3.0
	856.3	6.0	3	3	4										856.8	5.5
855	853.8	8.5	3	3	5											
	848.8	13.5	3	3	4											
845	843.8	18.5	3	4	5										842.3	20.0
Boring Terminated at Elevation 842.3 ft IN RESIDUAL: SILTY SAND																

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.									
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)								
BORING NO. NW3a-15		STATION 25+00		OFFSET CL		ALIGNMENT -NW3a-									
COLLAR ELEV. 857.1 ft		TOTAL DEPTH 20.0 ft		NORTHING 569,537		EASTING 1,259,454									
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 08/01/19		COMP. DATE 08/01/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
860															
	856.1	1.0													857.1
855	853.6	3.5	5	6	10										854.1
	851.1	6.0	4	4	4										
850	848.6	8.5	3	3	5										
	843.6	13.5	3	3	4										
840	838.6	18.5	3	3	4										
															837.1
Boring Terminated at Elevation 837.1 ft IN RESIDUAL: SILTY SAND															

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.									
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)								
BORING NO. NW3a-16		STATION 26+00		OFFSET CL		ALIGNMENT -NW3a-									
COLLAR ELEV. 852.6 ft		TOTAL DEPTH 25.0 ft		NORTHING 569,438		EASTING 1,259,470									
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
855															
	851.6	1.0	4	5	5										852.6
850	849.1	3.5	3	3	3										
	846.6	6.0	3	3	3										
845	844.1	8.5	3	2	4										
	839.1	13.5	3	2	3										
840	834.1	18.5	3	5	5										
835	829.1	23.5	2	2	5										
830															
Boring Terminated at Elevation 827.6 ft IN RESIDUAL: SILTY SAND															

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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.									
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)								
BORING NO. NW3a-17		STATION 27+00		OFFSET CL		ALIGNMENT -NW3a-									
COLLAR ELEV. 846.2 ft		TOTAL DEPTH 25.0 ft		NORTHING 569,341		EASTING 1,259,493									
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
850															
845	845.2	1.0	2	2	3								M	0.5' TOPSOIL	0.0
	842.7	3.5	3	7	7								M	RESIDUAL TAN-BROWN, MED. STIFF, SANDY SILT (A-4)	3.0
840	840.2	6.0	6	6	6								M	TAN-WHITE, MED. DENSE, SILTY SAND (A-2-4)	
	837.7	8.5	3	3	4								M	TAN AND WHITE, MED. STIFF, SANDY SILT (A-4) WITH FINE MICA	8.0
835	832.7	13.5	2	3	4								M		
830	827.7	18.5	4	10	9								M	TAN-WHITE, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) WITH LITTLE MICA	17.0
825	822.7	23.5	4	3	5								M		
													W	Boring Terminated at Elevation 821.2 ft IN RESIDUAL: SILTY SAND	25.0

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.									
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)								
BORING NO. NW3a-18		STATION 28+00		OFFSET CL		ALIGNMENT -NW3a-									
COLLAR ELEV. 852.8 ft		TOTAL DEPTH 20.0 ft		NORTHING 569,246		EASTING 1,259,523									
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
855															
	851.8	1.0	5	6	5								M	GROUND SURFACE	0.0
850	849.3	3.5	8	15	12								M	0.5' TOPSOIL	0.0
	846.8	6.0	12	21	47								M	RESIDUAL TAN BROWN, MED. DENSE TO V. DENSE, SILTY SAND (A-2-4) WITH ROCK FRAGMENTS	
845	844.3	8.5	8	13	18								M		
840	839.3	13.5	10	17	19								M	TAN, DENSE, SILTY SAND (A-1-b) WITH ROCK FRAGMENTS	12.0
835	834.3	18.5	5	6	6								M	TAN-BROWN, MED. DENSE, SILTY SAND (A-2-4)	17.0
													M	Boring Terminated at Elevation 832.8 ft IN RESIDUAL: SILTY SAND	20.0

NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-19		STATION 29+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 848.4 ft		TOTAL DEPTH 20.0 ft		NORTHING 569,148		EASTING 1,259,545										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
850														848.4	GROUND SURFACE	0.0
	847.4	1.0	5	6	8								M		RESIDUAL	
845	844.9	3.5	5	6	8								M		RED-BROWN, MED. STIFF TO STIFF, SANDY SILT (A-4) WITH LITTLE MICA	
	842.4	6.0	3	2	5								M			
840	839.9	8.5	4	4	3								M	840.4	TAN, LOOSE, SILTY SAND (A-2-4) WITH MICA AND ROCK FRAGMENTS	8.0
													M			
835	834.9	13.5	3	3	4								M			
													M	831.4	TAN-BROWN, MED. STIFF TO STIFF, SANDY SILT (A-4)	17.0
830	829.9	18.5	4	4	4								M	828.4	Boring Terminated at Elevation 828.4 ft IN RESIDUAL: SANDY SILT	20.0

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.										
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)									
BORING NO. NW3a-20		STATION 30+00		OFFSET CL		ALIGNMENT -NW3a-										
COLLAR ELEV. 840.4 ft		TOTAL DEPTH 25.0 ft		NORTHING 569,050		EASTING 1,259,564										
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
845														840.4	GROUND SURFACE	0.0
													M		RESIDUAL	
840	839.4	1.0	3	3	7								M	837.4	RED-BROWN, STIFF, SANDY CLAY (A-6) WITH TRACE QUARTZ FRAGMENTS	3.0
	836.9	3.5	6	9	9								M		TAN, MED. DENSE, SILTY SAND (A-2-5) WITH TRACE QUARTZ FRAGMENTS	
835	834.4	6.0	7	8	8								M	832.4	RED-TAN, STIFF, FINE SANDY SILT (A-4)	8.0
	831.9	8.5	4	6	8								M	828.4	TAN-BROWN, MED. DENSE TO DENSE, SILTY SAND (A-2-4)	12.0
830	826.9	13.5	4	5	9								M			
													M	821.9	TAN AND BROWN, MED. DENSE TO DENSE, SILTY SAND (A-1-b) WITH ROCK FRAGMENTS	22.0
825	821.9	18.5	7	13	21								M	818.4	Boring Terminated at Elevation 815.4 ft IN RESIDUAL: SILTY SAND	25.0
													M			
820	816.9	23.5	5	7	23								W			

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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)										
BORING NO. NW3a-21		STATION 31+00		OFFSET CL		ALIGNMENT -NW3a-											
COLLAR ELEV. 833.9 ft		TOTAL DEPTH 13.9 ft		NORTHING 568,954		EASTING 1,259,555											
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
835															833.9	GROUND SURFACE	0.0
	832.9	1.0	9	9	7												
830	830.4	3.5	3	8	18												
	827.9	6.0	13	17	7												
825	825.4	8.5	17	20	21												
820	820.4	13.5															

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)										
BORING NO. NW3a-22		STATION 32+00		OFFSET CL		ALIGNMENT -NW3a-											
COLLAR ELEV. 819.4 ft		TOTAL DEPTH 10.0 ft		NORTHING 568,858		EASTING 1,259,584											
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER Estep, J. E.		START DATE 07/31/19		COMP. DATE 07/31/19		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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
820															819.4	GROUND SURFACE	0.0
	818.4	1.0	2	3	5												
815	815.9	3.5	9	24	17												
	813.4	6.0	2	1	2												
810	810.9	8.5	1	1	2												

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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT																	
BORING NO. NW3a-23		STATION 43+93		OFFSET 4 ft LT		ALIGNMENT -NW3a-											
COLLAR ELEV. 803.8 ft		TOTAL DEPTH 15.0 ft		NORTHING 567,752		EASTING 1,260,028											
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Estep, J. E.		START DATE 08/06/19		COMP. DATE 08/06/19		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
805																	
	802.8	1.0		2		5		4									
800	800.3	3.5		1		1		2									
	797.8	6.0		1		2		1									
795	795.3	8.5	WOH	1		1											
	790.3	13.5		2		4		3									
790																	

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT																	
BORING NO. NW3a-24		STATION 50+00		OFFSET CL		ALIGNMENT -NW3a-											
COLLAR ELEV. 798.9 ft		TOTAL DEPTH 9.3 ft		NORTHING 567,217		EASTING 1,260,313											
DRILL RIG/HAMMER EFF./DATE N/A				DRILL METHOD Hand Auger		HAMMER TYPE N/A											
DRILLER N/A		START DATE 08/06/19		COMP. DATE 08/06/19		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
800																	

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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)										
BORING NO. NW3a-25		STATION 51+00		OFFSET CL		ALIGNMENT -NW3a-											
COLLAR ELEV. 794.8 ft		TOTAL DEPTH 4.1 ft		NORTHING 567,131		EASTING 1,260,365											
DRILL RIG/HAMMER EFF./DATE N/A		DRILL METHOD Hand Auger		HAMMER TYPE N/A													
DRILLER N/A		START DATE 08/06/19		COMP. DATE 08/06/19		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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
795															794.8	GROUND SURFACE	0.0
													M		790.7	RESIDUAL RED-TAN, MED DENSE TO DENSE, SILTY SAND (A-2-4) WITH LITTLE ROCK FRAGMENTS Boring Terminated at Elevation 790.7 ft ON ROCK FRAGMENTS/COBBLES	4.1

WBS 34497.1.1		TIP R-2707D		COUNTY CLEVELAND		GEOLOGIST Goodnight, D. J.											
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT							GROUND WTR (ft)										
BORING NO. NW3a-26		STATION 52+06		OFFSET 12 ft RT		ALIGNMENT -NW3a-											
COLLAR ELEV. 787.9 ft		TOTAL DEPTH 10.0 ft		NORTHING 567,035		EASTING 1,260,411											
DRILL RIG/HAMMER EFF./DATE N/A		DRILL METHOD Hand Auger		HAMMER TYPE N/A													
DRILLER N/A		START DATE 08/06/19		COMP. DATE 08/06/19		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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
790															787.9	GROUND SURFACE	0.0
785													M			RESIDUAL RED-BROWN, MED. DENSE, CLAYEY SILTY SAND (A-2-5)	
													M		782.9	TAN, MED. STIF TO STIFF, SANDY SILT (A-4)	5.0
780													M		778.9 777.9	TAN, MED. DENSE, SILTY SAND (A-2-4) WITH ROCK FRAGMENTS Boring Terminated at Elevation 777.9 ft IN RESIDUAL: SILTY SAND	9.0 10.0

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