

REFERENCE: U-5906

PROJECT: 46451

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3-6	SITE PLANS
7-11	PROFILES
12-17	BORING LOGS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY MECKLENBURG

PROJECT DESCRIPTION TORRENCE CHAPEL ROAD /
CATAWBA AVENUE INTERSECTION & SURROUNDING
AREA IMPROVEMENTS

SITE DESCRIPTION RETAINING WALLS -RW1-, -RW2-,
-RW3-, -RW4-, AND -RW5-

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5906	1	17

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

C. DRISCOLL

TRIGON EXPLORATION

INVESTIGATED BY C. DRISCOLL

DRAWN BY C. DRISCOLL

CHECKED BY T. WELLS

SUBMITTED BY KLEINFELDER, INC

DATE FEBRUARY 2019

Prepared in the Office of:



KLEINFELDER
Bright People. Right Solutions.
7343 WEST FRIENDLY AVE, SUITE B
GREENSBORO, NORTH CAROLINA 27410
NC ENGINEERING FIRM LICENSE NO. F-1312



Designed by:
Thomas R Wells

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DATE 2/27/2019

SIGNATURE
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

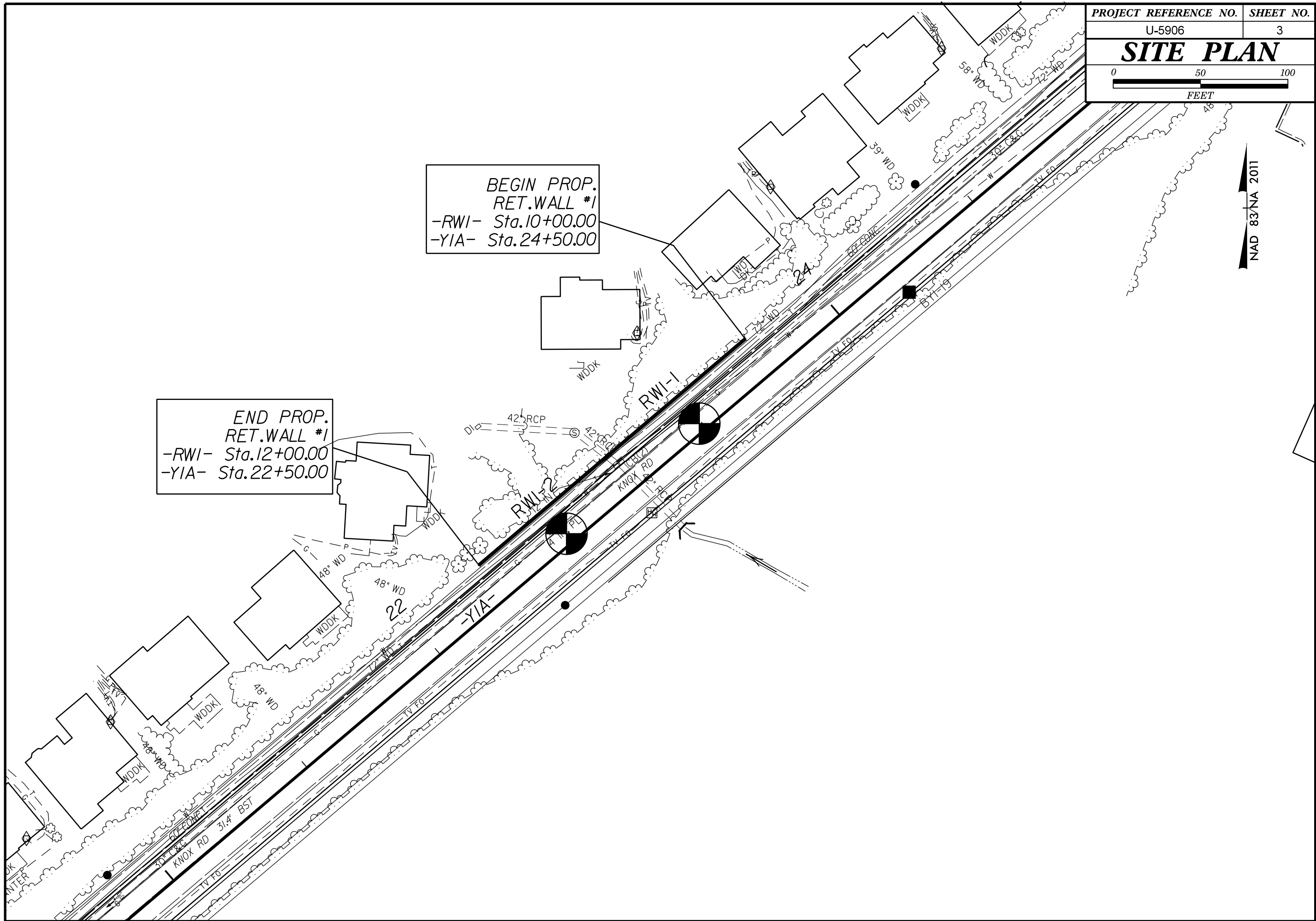
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

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 (RQD) - 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 (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.	
SOIL LEGEND AND AASHTO CLASSIFICATION		ANGULARITY OF GRAINS		WEATHERED ROCK (WR)		CRISTALLINE ROCK (CR)	
GENERAL CLASS.		MINERALOGICAL COMPOSITION		NON-CRYSTALLINE ROCK (NCR)		COASTAL PLAIN SEDIMENTARY ROCK (CP)	
GROUP CLASS.		COMPRESSIBILITY		WEATHERING		FRESH	
SYMBOL		PERCENTAGE OF MATERIAL		VERY SLIGHT (V SL.)		SLIGHT (SL.)	
%		GROUND WATER		MODERATE (MOD.)		MODERATELY SEVERE (MOD. SEV.)	
PASSING #10 #20 #40 #60 #100		MISCELLANEOUS SYMBOLS		SEVERE (SEV.)		VERY SEVERE (V SEV.)	
MATERIAL		RECOMMENDATION SYMBOLS		COMPLETE		VERY HARD	
PASSING #40 LL PI		ABBREVIATIONS		HARD		MODERATELY HARD	
GROUP INDEX		EQUIPMENT USED ON SUBJECT PROJECT		MEDIUM HARD		SOFT	
USUAL TYPES OF MAJOR MATERIALS		FRACTURE SPACING		VERY SOFT		BENCH MARK: N/A	
GEN. RATING AS SUBGRADE		BEDDING		INDURATION		NOTES:	
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30		INDURATION		FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.		BORING ELEVATIONS OBTAINED FROM PROJECT TIN FILE u5906_ls.tbl.tin, RECEIVED ON SEPTEMBER 19, 2018.	
CONSISTENCY OR DENSENESS		FRIABLE		MODERATELY INDURATED		FIAD - FILLED IMMEDIATELY AFTER DRILLING	
PRIMARY SOIL TYPE		MODERATELY INDURATED		INDURATED			
COMPACTNESS OR CONSISTENCY		EXTREMELY INDURATED					
RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)							
RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)							
TEXTURE OR GRAIN SIZE							
U.S. STD. SIEVE SIZE OPENING (MM)							
BOULDER (BLDR.)							
COBBLE (COB.)							
GRAVEL (GR.)							
COARSE SAND (CSE. SD.)							
FINE SAND (F SD.)							
SILT (SL.)							
CLAY (CL.)							
GRAIN SIZE							
SOIL MOISTURE - CORRELATION OF TERMS							
SOIL MOISTURE SCALE (ATTERBERG LIMITS)							
FIELD MOISTURE DESCRIPTION							
GUIDE FOR FIELD MOISTURE DESCRIPTION							
LL - LIQUID LIMIT							
PL - PLASTIC LIMIT							
OM - OPTIMUM MOISTURE SHRINKAGE LIMIT							
SL - SHRINKAGE LIMIT							
PLASTICITY							
NON PLASTIC							
SLIGHTLY PLASTIC							
MODERATELY PLASTIC							
HIGHLY PLASTIC							
COLOR							
DESCRIPTORS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.							

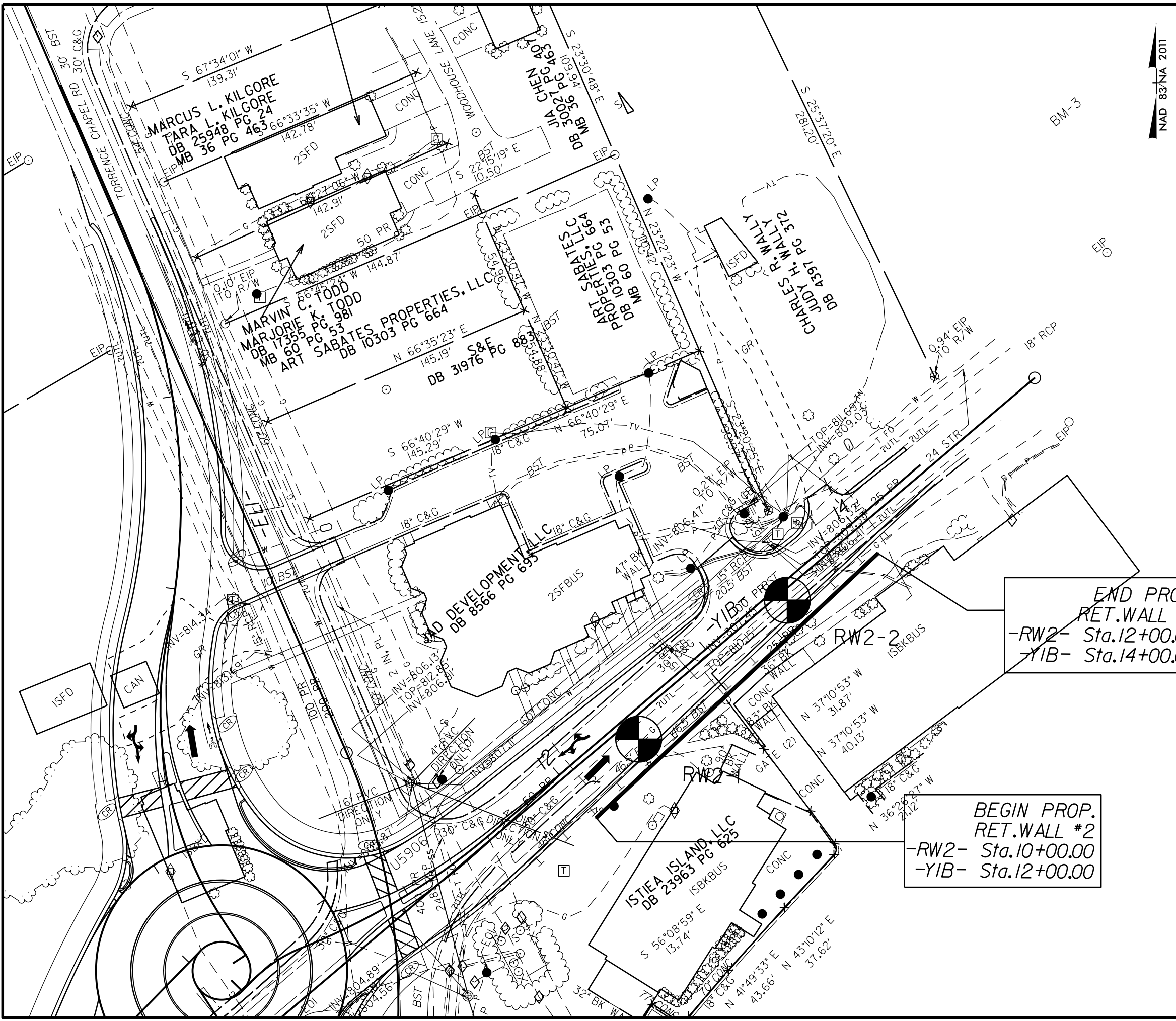


BEGIN PROP.
RET.WALL #1
-RWI- Sta.10+00.00
-YIA- Sta.24+50.00

END PROP.
RET.WALL #1
-RWI- Sta.12+00.00
-YIA- Sta.22+50.00



NAD 83/NA 2011



END PROP.
RET.WALL #2
-RW2- Sta.12+00.00
-YIB- Sta.14+00.00

BEGIN PROP.
RET.WALL #2
-RW2- Sta.10+00.00
-YIB- Sta.12+00.00

845

835

825

815

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795

785

775

765

755

745

8+50

9+00

9+50

10+00

10+50

11+00

11+50

12+00

12+50

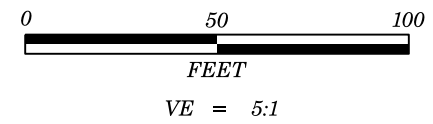
13+00

13+50

14+00

14+50

15+00



PROJECT REFERENCE NO.	SHEET NO.
U-5609	7
PROFILE ALONG RETAINING WALL -RW1-	

835

825

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745

BEGIN GRADE -RW1-
STA. 10+00.00 EL. 795.46
=-Y1A- STA. 24+50.00, (25.50' LT.)

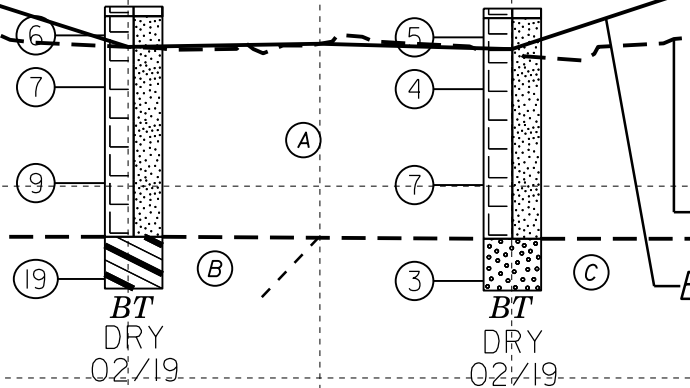
- (A) ROADWAY EMBANKMENT: MOIST, MEDIUM, STIFF TO STIFF, RED TO BROWN, COARSE TO FINE SANDY SILT
(B) RESIDUAL: MOIST, VERY STIFF, TAN, COARSE TO FINE SANDY CLAY
(C) RESIDUAL: MOIST, VERY LOOSE, BROWN, SILTY, COARSE TO FINE SAND

GRADE
ELEVATION

END GRADE -RW1-
STA. 12+00.00 EL. 795.43
=-Y1A- STA. 22+50.00, (25.50' LT.)

RW1-1
10+51
20' LT

RW1-2
11+50
19' LT



INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS
WITH BOTH PROJECTED ONTO THE PROFILE.

NOTES: GROUNDLINE TAKEN FROM PROJECT TINFILE,
U5906_LS_TNL.TIN. RECEIVED ON SEPTEMBER 19, 2018.

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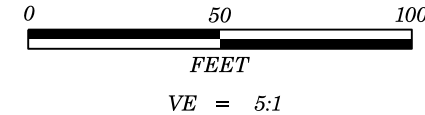
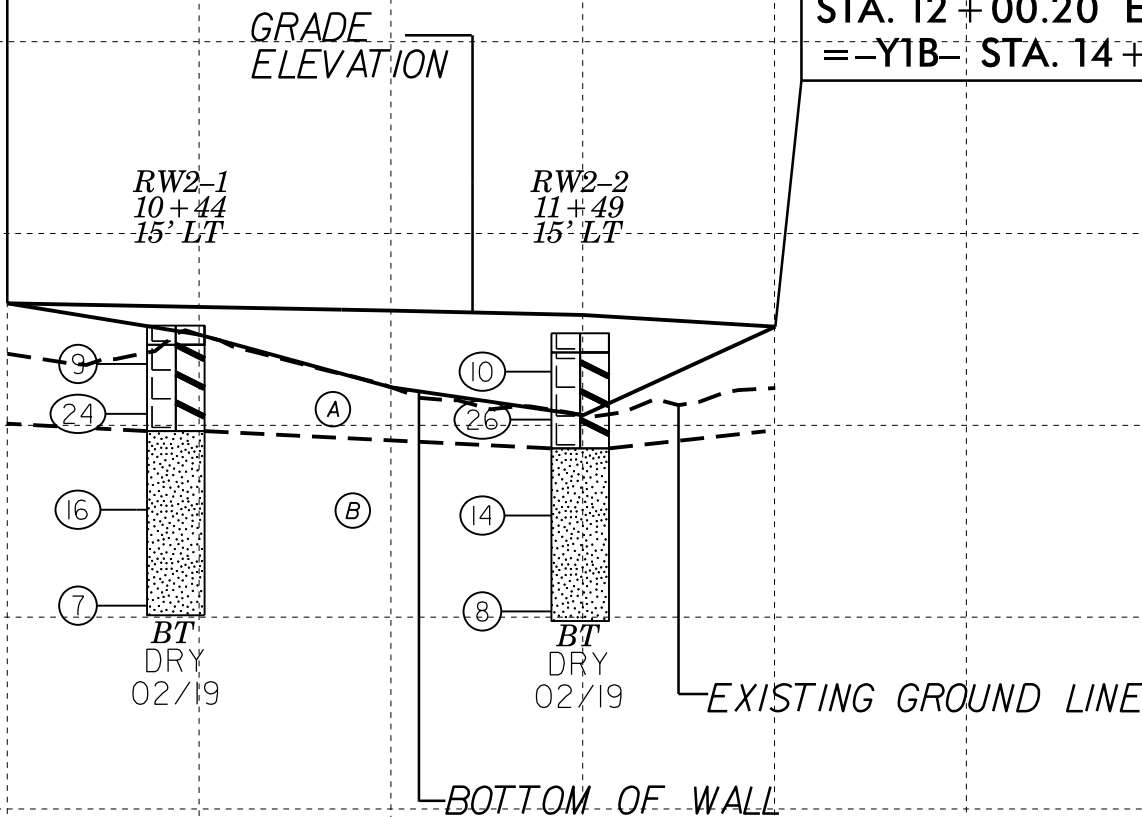
765

755

BEGIN GRADE -RW2-
STA. 10 + 00.00 EL. 811.36
=-Y1B- STA. 12 + 00.00, (29.80' RT.)

- (A) **ROADWAY EMBANKMENT:** MOIST, STIFF TO VERY STIFF, RED AND BROWN, SILTY CLAY
(B) **RESIDUAL:** MOIST, VERY STIFF TO STIFF, TAN-RED, COARSE TO FINE SANDY SILT

END GRADE -RW2-
STA. 12 + 00.20 EL. 810.14
=-Y1B- STA. 14 + 00.00, (20.95' RT.)



PROJECT REFERENCE NO.	SHEET NO.
U-5609	8
PROFILE ALONG RETAINING WALL -RW2-	

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8+50

9+00

9+50

10+00

10+50

11+00

11+50

12+00

12+50

13+00

13+50

14+00

14+50

15+00

INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS
WITH BOTH PROJECTED ONTO THE PROFILE.

NOTES: GROUNDLINE TAKEN FROM PROJECT TINFILE,
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8+50

9+00

9+50

10+00

10+50

11+00

11+50

12+00

12+50

13+00

13+50

14+00

14+50

15+00

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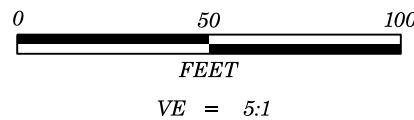
815

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PROJECT REFERENCE NO.	SHEET NO.
U-5609	9
PROFILE ALONG RETAINING WALL -RW3-	

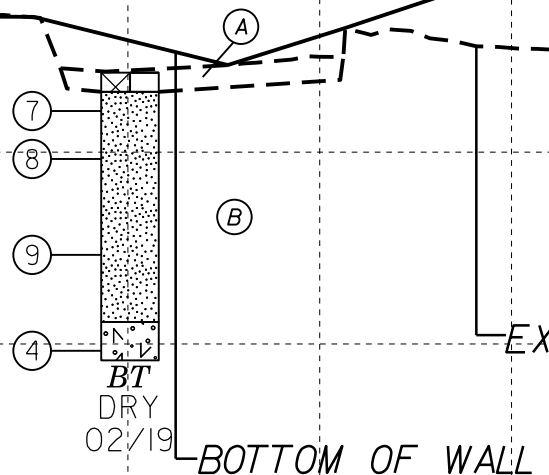
BEGIN GRADE -RW3-
STA. 10+00.00 EL. 801.30
=-Y4B- STA. 16+25.00, (44.00' RT.)

- (A) ARTIFICIAL FILL: ASPHALT
(B) RESIDUAL: MOIST, MEDIUM STIFF TO STIFF, ORANGE, RED, AND TAN,
COARSE TO FINE SANDY SILT TO CLAYEY SILT

END GRADE -RW3-
STA. 12+13.66 EL. 805.27
=-Y4B- STA. 17+80.16, (118.88' RT.)

GRADE
ELEVATION

RW3-1
11+01
4' RT



INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS
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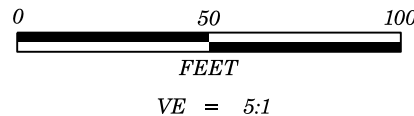
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PROJECT REFERENCE NO. SHEET NO.

U-5609

10

PROFILE ALONG RETAINING WALL -RW4-

BEGIN GRADE -RW4-
STA. 10+00.00 EL. 806.79
=-DRIVE3- STA. 10+84.99, (24.40' RT.)

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(A) ARTIFICIAL FILL: ASPHALT

(B) RESIDUAL: MOIST, STIFF TO MEDIUM STIFF, TAN, BROWN, RED, AND YELLOW,
COARSE TO FINE SANDY SILT, COARSE TO FINE SANDY CLAY TO
FINE SANDY, SILTY CLAY

RW4-2
10+99
3' RT

RW4-3
12+36
28' RT

RW4-4
13+40
1' LT

RW4-5
14+45
18' RT

RW4-1
9+99
3' RT

END GRADE -RW4-
STA. 14+44.63 EL. 813.12
=-Y6A- STA. 14+30.04, (31.50' LT.)

(12)
(10)
(7)
BT
DRY
02/19

(14)
(11)
(6)
(4)
BT
DRY
02/19

(7)
(12)
(11)
(4)
BT
DRY
02/19

(10)
(12)
(6)
(4)
BT
DRY
02/19

(9)
(13)
(6)
(4)
BT
DRY
02/19

EXISTING GROUND LINE

BOTTOM OF WALL

INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS
WITH BOTH PROJECTED ONTO THE PROFILE.

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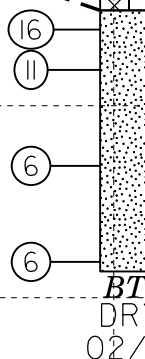
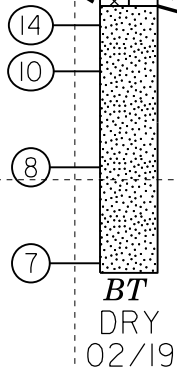
BEGIN GRADE -RW5-
STA. 10+00.00 EL. 818.78
=-Y6B- STA. 10+94.42, (38.79' LT.)

- (A) ARTIFICIAL FILL: ASPHALT
(B) RESIDUAL: MOIST, STIFF TO VERY STIFF, RED AND TAN,
COARSE TO FINE SANDY SILT

RW5-1
10+64
1' LT

RW5-2
11+54
4' LT

END GRADE -RW5-
STA. 12+32.99 EL. 808.73
=-DRIVE3- STA. 10+99.94, (21.93' LT.)

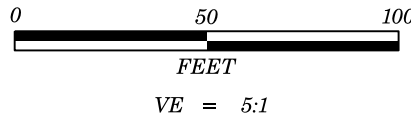


GRADE
ELEVATION

EXISTING GROUND LINE
BOTTOM OF WALL

INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS
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PROJECT REFERENCE NO.	SHEET NO.
U-5609	11
PROFILE ALONG RETAINING WALL -RW5-	

8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50 15+00

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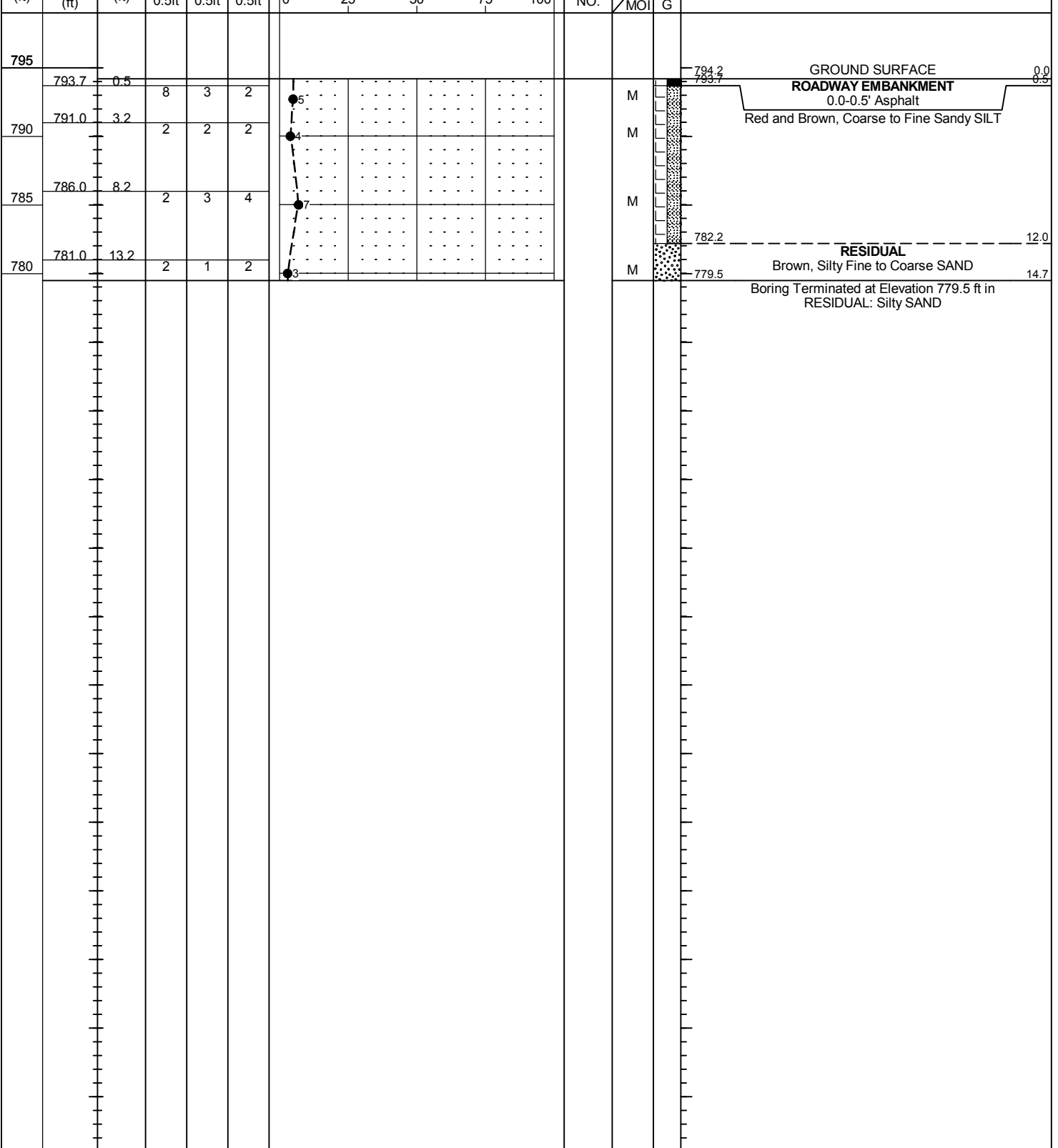
765

755

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll				
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)				
BORING NO. RW1-1			STATION 10+51			OFFSET 20 ft LT			ALIGNMENT -RW1-			0 HR. Dry	
COLLAR ELEV. 794.3 ft			TOTAL DEPTH 14.7 ft			NORTHING 636,772			EASTING 1,440,259			24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER R. Toothman			START DATE 02/11/19			COMP. DATE 02/11/19			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)
795													
	793.8	0.5	11	3	3	1					M	794.3	0.0
	791.1	3.2	3	4	3	6					M	793.8	0.5
790													
	786.1	8.2	3	3	6	7					M		
785													
	781.1	13.2	6	9	10	9					M	782.3	12.0
780												779.6	14.7

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll				
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)				
BORING NO. RW1-2			STATION 11+50			OFFSET 19 ft LT			ALIGNMENT -RW1-				
COLLAR ELEV. 794.2 ft			TOTAL DEPTH 14.7 ft			NORTHING 636,709			EASTING 1,440,183				
									0 HR. Dry				
									24 HR. FIAD				
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER R. Toothman			START DATE 02/11/19			COMP. DATE 02/11/19			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			
795	793.7	0.5	8	3	2								
790	791.0	3.2	2	2	2								
785	786.0	8.2	2	3	4								
780	781.0	13.2	2	1	2								
													

NCDOT BORE DOUBLE U5906 GEO RWAL GINT.GPJ NC DOT GDT 2/19/19

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll				
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)				
BORING NO. RW2-2			STATION 11+49			OFFSET 15 ft LT			ALIGNMENT -RW2-			0 HR. Dry	
COLLAR ELEV. 809.7 ft			TOTAL DEPTH 15.0 ft			NORTHING 638,093			EASTING 1,441,829			24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER R. Toothman			START DATE 02/11/19			COMP. DATE 02/11/19			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		MOI	
810													
	808.7	1.0	5	4	6								
805	806.2	3.5	6	11	15								
800	801.2	8.5	4	7	7								
795	796.2	13.5	2	4	4								

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll						
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)						
BORING NO. RW3-1			STATION 11+01			OFFSET 4 ft RT			ALIGNMENT -RW3-			0 HR. Dry			
COLLAR ELEV. 799.1 ft			TOTAL DEPTH 15.0 ft			NORTHING 635,659			EASTING 1,441,118			24 HR. FIAD			
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER R. Toothman			START DATE 02/12/19			COMP. DATE 02/12/19			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				ELEV. (ft)	DEPTH (ft)
800															
795	798.1	1.0	3	3	4									799.1	0.0
	795.6	3.5	2	3	5									798.1	1.0
790	790.6	8.5	2	4	5										
785	785.6	13.5	2	2	2									786.1	13.0
														784.1	15.0
Boring Terminated at Elevation 784.1 ft in RESIDUAL: Clayey SILT															

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll					
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)					
BORING NO. RW4-1			STATION 9+99			OFFSET 3 ft RT			ALIGNMENT -RW4-			0 HR. Dry		
COLLAR ELEV. 806.3 ft			TOTAL DEPTH 9.7 ft			NORTHING 636,810			EASTING 1,440,964			24 HR. FIAD		
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER R. Toothman			START DATE 02/11/19			COMP. DATE 02/11/19			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				
810														
805	805.8	0.5	4	5	7	12								806.3
	803.1	3.2	3	4	6	10								805.8
800														
	798.1	8.2	2	3	4	7								
			</											

NCDOT BORE DOUBLE U5906_GEO_RWAL_GINT.GPJ NC_DOT.GDT 2/19/19

WBS 46451.1.1		TIP U-5906		COUNTY MECKLENBURG		GEOLOGIST C. Driscoll							
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements								GROUND WTR (ft)					
BORING NO. RW4-3		STATION 12+36		OFFSET 28 ft RT		ALIGNMENT -RW4-		0 HR. Dry					
COLLAR ELEV. 809.3 ft		TOTAL DEPTH 15.0 ft		NORTHING 636,674		EASTING 1,441,048		24 HR. FIAD					
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic							
DRILLER R. Toothman		START DATE 02/11/19		COMP. DATE 02/11/19		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	MOI		
810													
	808.6	0.7	3	4	3								809.3 GROUND SURFACE 0.0
													808.6 0.7
805	805.8	3.5	3	4	8								806.3 ARTIFICIAL FILL 0.0-0.7' Asphalt 0.7
													RESIDUAL
													Red and Brown, Coarse to Fine Sandy SILT
													Brown and Tan, Fine to Coarse Sandy CLAY
800	800.8	8.5	4	4	7								
795	795.8	13.5	1	2	2								797.3 12.0
													Brown and Tan, Coarse to Fine Sandy SILT
													794.3 15.0
													Boring Terminated at Elevation 794.3 ft in RESIDUAL: Sandy SILT

NCDOT BORE DOUBLE U5906 GEO RWAL GINT.GPJ NC DOT GDT 2/19/19

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll					
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)					
BORING NO. RW4-5			STATION 14+45			OFFSET 18 ft RT			ALIGNMENT -RW4-			0 HR. Dry		
COLLAR ELEV. 807.1 ft			TOTAL DEPTH 14.9 ft			NORTHING 636,471			EASTING 1,440,980			24 HR. FIAD		
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER R. Toothman			START DATE 02/11/19			COMP. DATE 02/11/19			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				
810														
805	806.1	1.0	2	4	5	9						M		807.1 GROUND SURFACE 0.0 806.1 ARTIFICIAL FILL 0.0-1.0' Asphalt 1.0
	803.7	3.4	4	6	7	13						M		804.1 RESIDUAL Brown, Silty CLAY 3.0 Yellow and Red, Coarse to Fine Sandy SILT
800														
	798.7	8.4	1	3	3	6						M		
795														
	793.7	13.4	1	2	2	4						M		792.2 Boring Terminated at Elevation 792.2 ft in RESIDUAL: Sandy SILT 14.9

NCDOT BORE DOUBLE U5906 GEO RWAL GINT.GPJ NC DOT GDT 2/19/19

WBS 46451.1.1			TIP U-5906			COUNTY MECKLENBURG			GEOLOGIST C. Driscoll				
SITE DESCRIPTION Torrence Chapel Rd/Catawba Avenue Intersection & Surrounding Area Improvements									GROUND WTR (ft)				
BORING NO. RW5-2			STATION 11+54			OFFSET 4 ft LT			ALIGNMENT -RW5-			0 HR. Dry	
COLLAR ELEV. 810.9 ft			TOTAL DEPTH 14.6 ft			NORTHING 636,821			EASTING 1,441,072			24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 87% 03/19/2018						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER R. Toothman			START DATE 02/12/19			COMP. DATE 02/12/19			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			
815													
810	809.9	1.0	3	7	9								810.9 GROUND SURFACE 0.0
805	807.8	3.1	3	5	6								809.9 ARTIFICIAL FILL 0.0-1.0' Asphalt 1.0
	802.8	8.1	2	3	3								RESIDUAL Tan and Red, Coarse to Fine Sandy SILT
800	797.8	13.1	2	2	4								796.3 Boring Terminated at Elevation 796.3 ft in RESIDUAL: Sandy SILT 14.6