

SEE SHEET 3 FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5861	1	11

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4 - 9	CROSS SECTIONS
10	WALL PROFILE
11	BORING LOGS

STRUCTURE  
SUBSURFACE INVESTIGATION

COUNTY CHEROKEE  
PROJECT DESCRIPTION WIDENING US 19/29 FROM  
THE GEORGIA STATE LINE TO US 6474  
SITE DESCRIPTION RETAINING WALL NO. 1  
FROM -L- STA. 115+50 (RT) TO -L- STA. 117+50 (RT)

INVENTORY

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

J. MIZE

S&ME PERSONNEL

INVESTIGATED BY RK&K, LLP

DRAWN BY M. METRY

CHECKED BY A. ASOUDEH

SUBMITTED BY RK&K, LLP

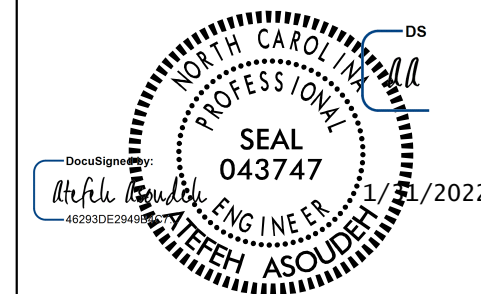
DATE DECEMBER 2021



P: (919) 878-9560  
8601 Six Forks Road, Forum 1, Suite 700  
Raleigh, North Carolina 27615-3960  
NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists  
www.rkk.com

Responsive People | Creative Solutions



SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

REFERENCE: R-5861

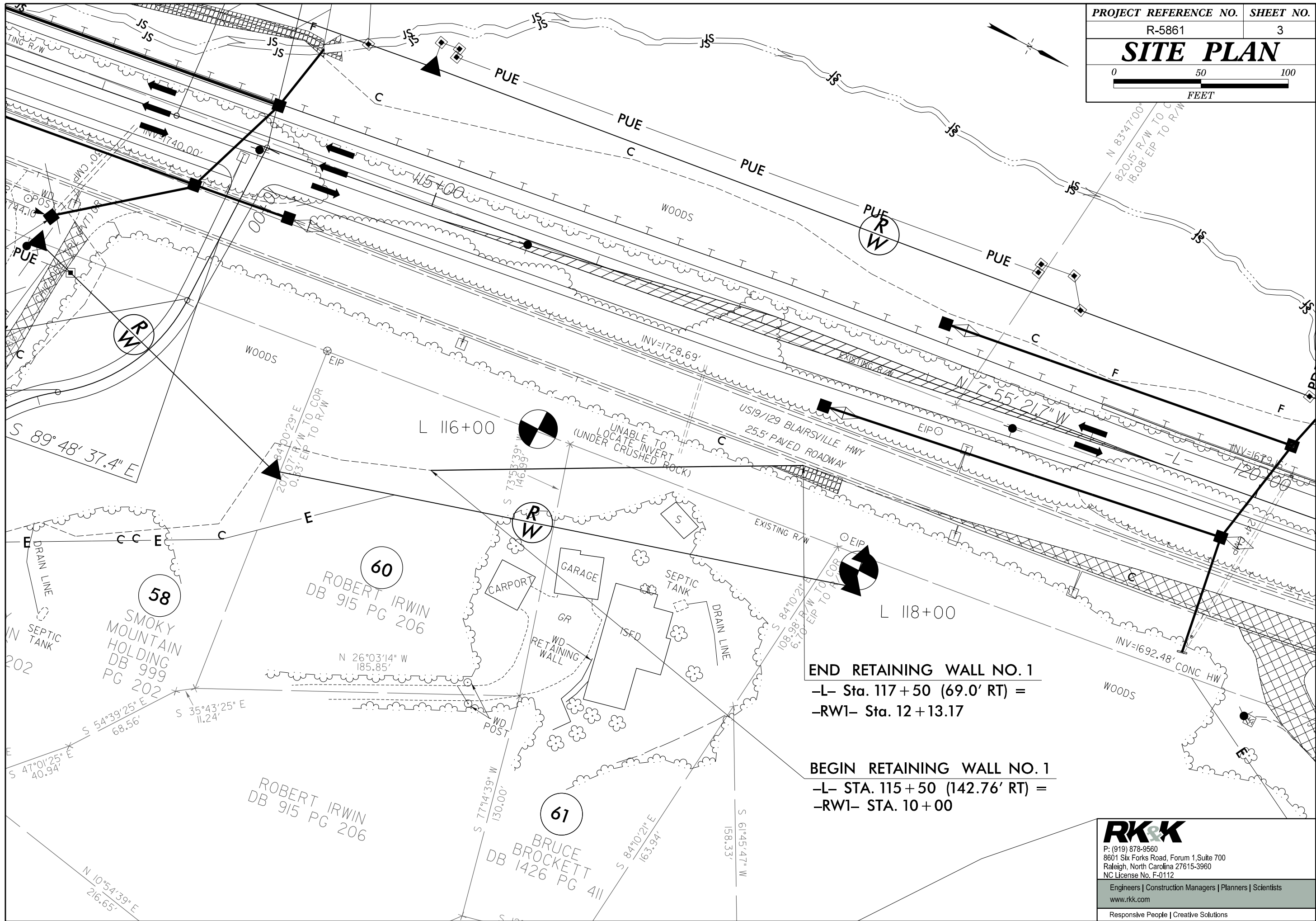
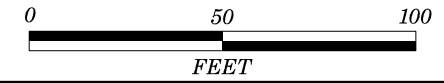
PROJECT: 47427

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

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, ROCK HARDNESS, FRACTURE SPACING, BEDDING, INDURATION, BENCH MARK, ELEVATION, FEET, NOTES.

# SITE PLAN



**END RETAINING WALL NO. 1**  
 -L- Sta. 117+50 (69.0' RT) =  
 -RW1- Sta. 12+13.17

**BEGIN RETAINING WALL NO. 1**  
 -L- STA. 115+50 (142.76' RT) =  
 -RW1- STA. 10+00



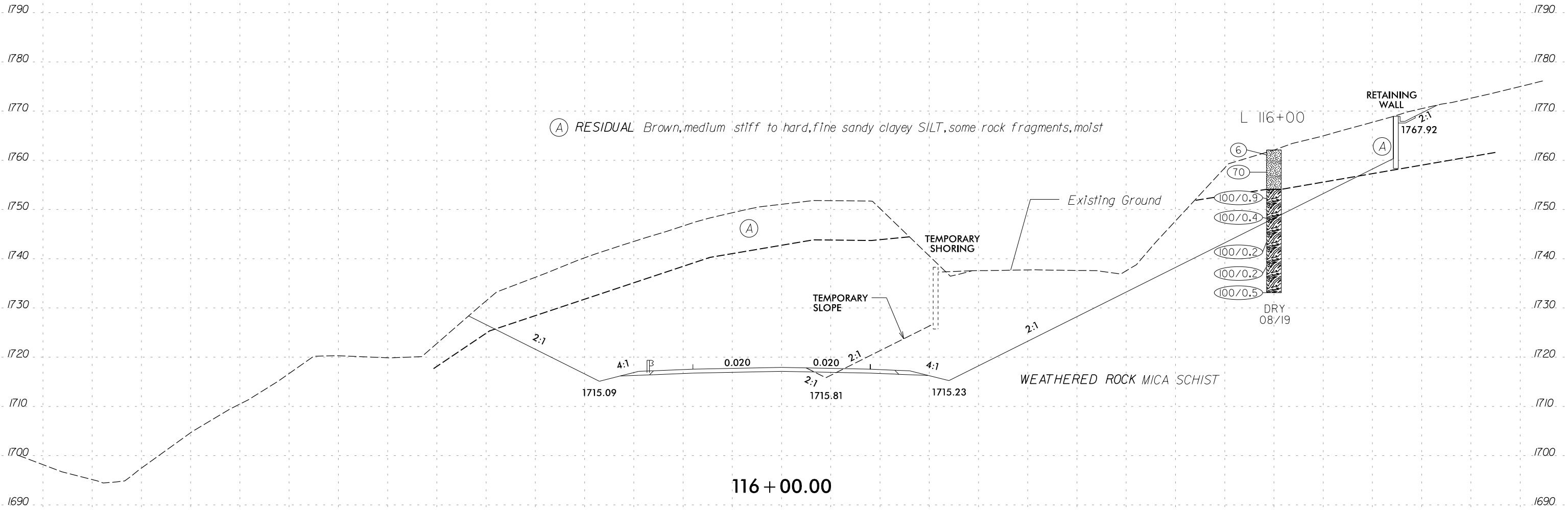
P: (919) 878-9560  
 8601 Six Forks Road, Forum 1, Suite 700  
 Raleigh, North Carolina 27615-3960  
 NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists  
 www.rkk.com

Responsive People | Creative Solutions

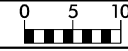


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

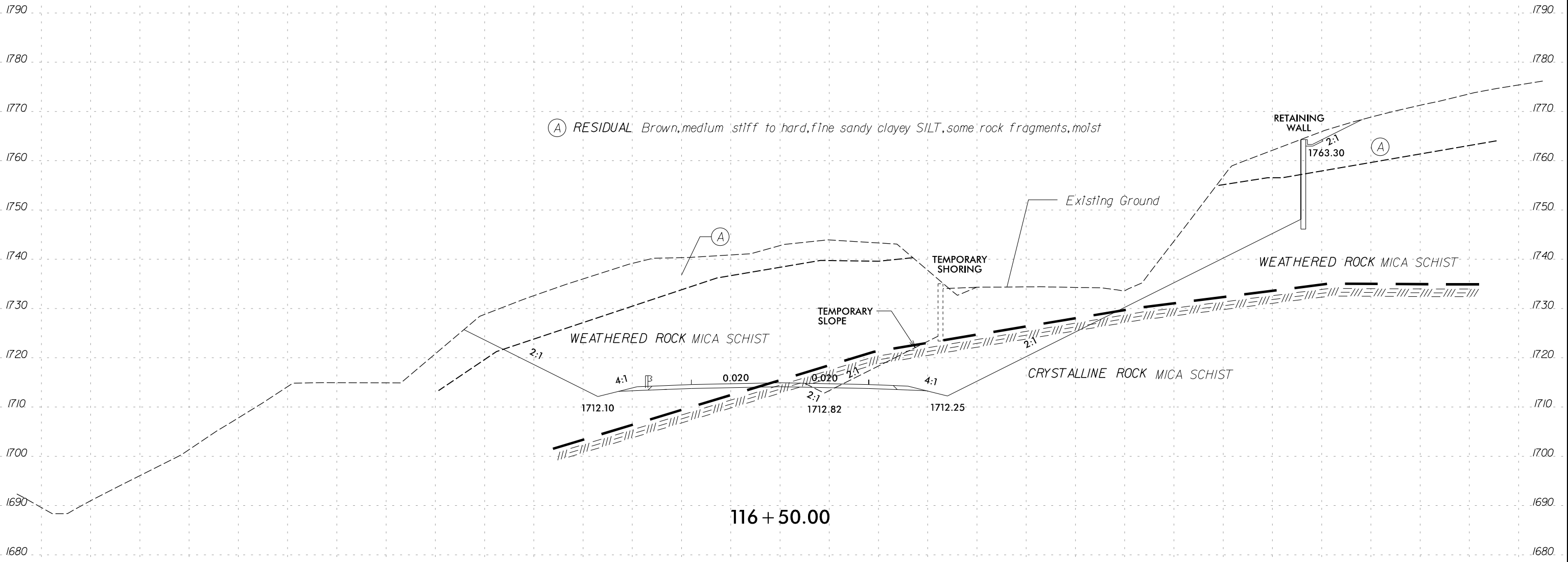


116 + 00.00





150 140 130 120 110 100 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



(A) RESIDUAL Brown, medium stiff to hard, fine sandy clayey SILT, some rock fragments, moist

RETAINING WALL

1763.30

Existing Ground

TEMPORARY SHORING

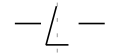
TEMPORARY SLOPE

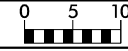
WEATHERED ROCK MICA SCHIST

WEATHERED ROCK MICA SCHIST

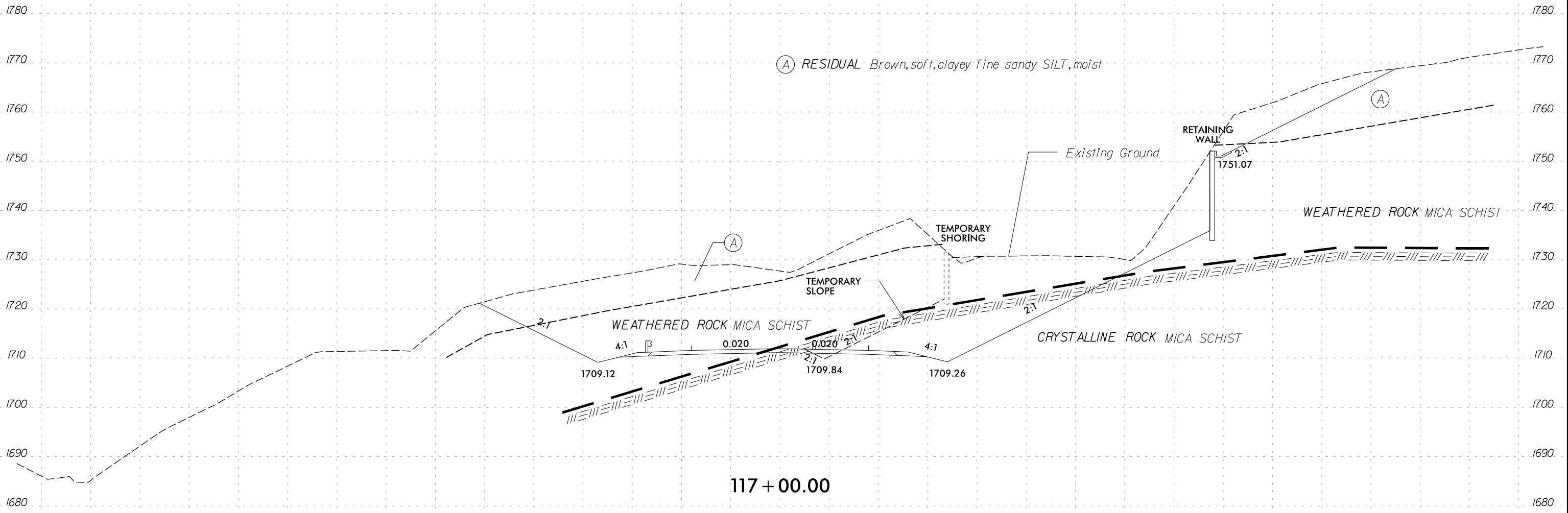
CRYSTALLINE ROCK MICA SCHIST

116 + 50.00





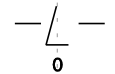
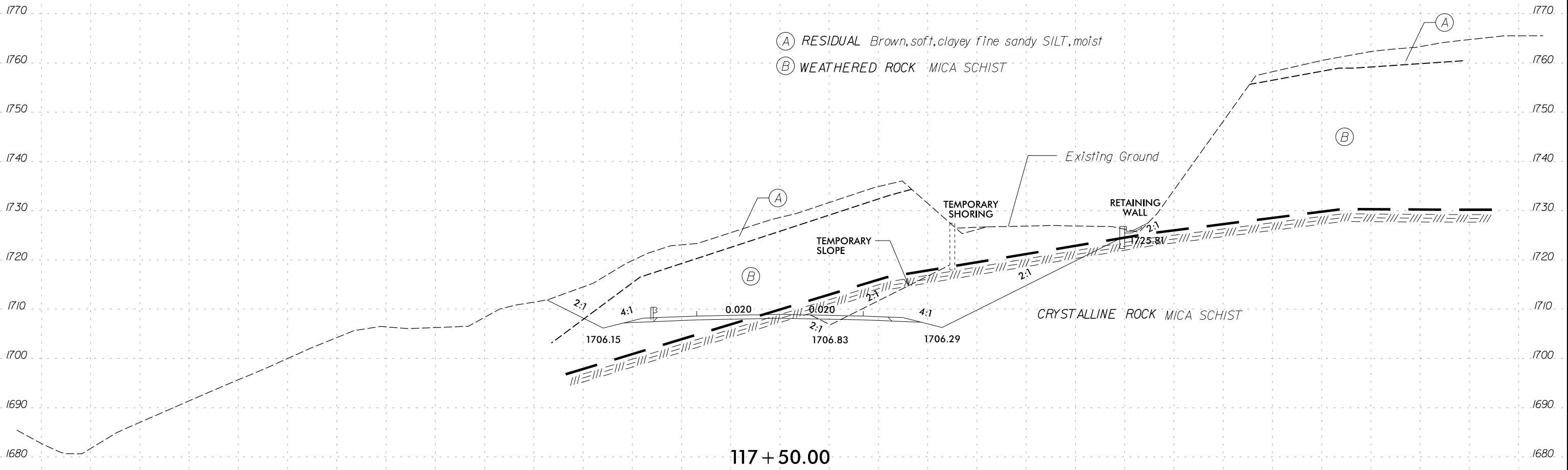
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



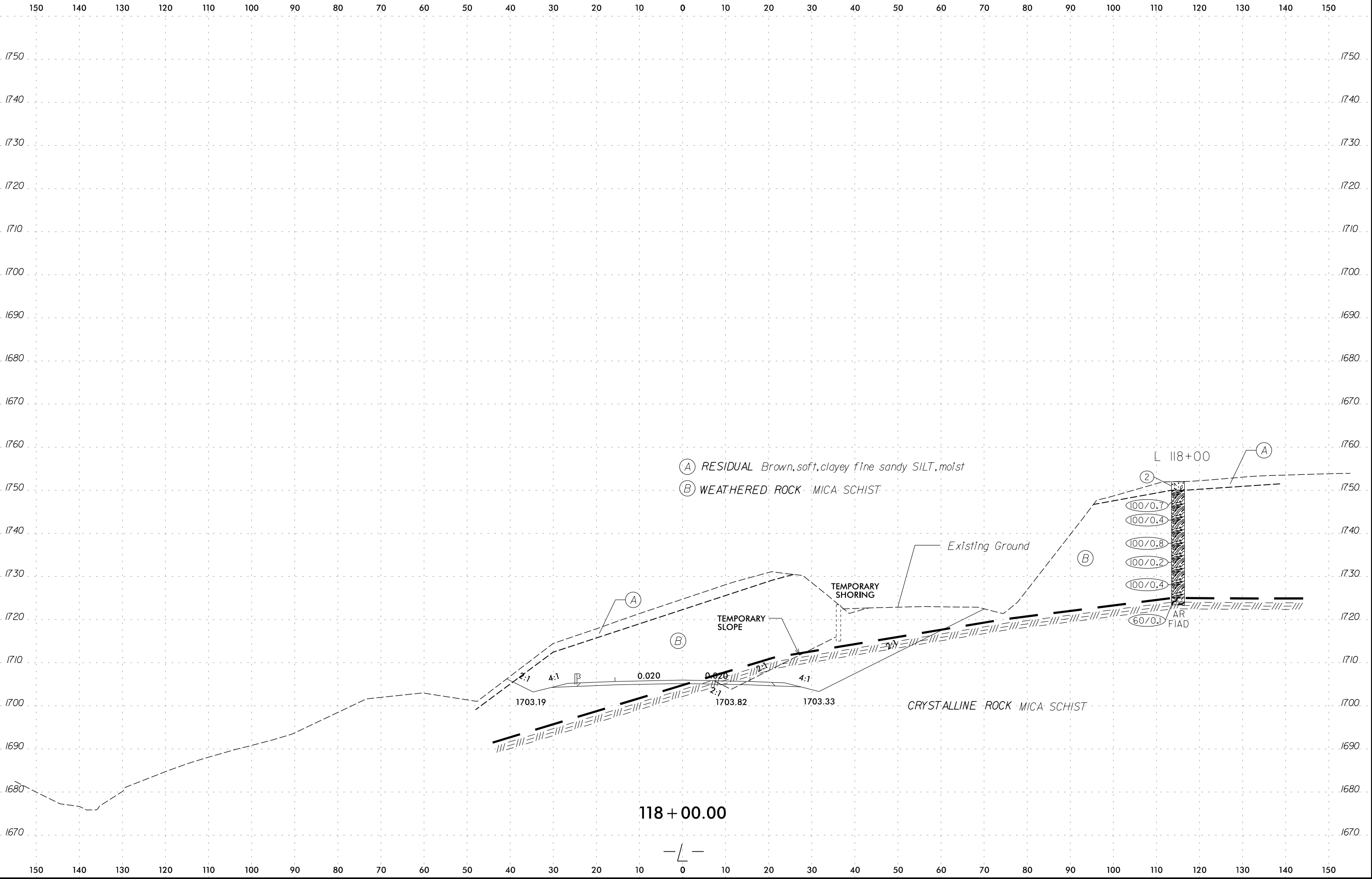
117 + 00.00



150 140 130 120 110 100 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

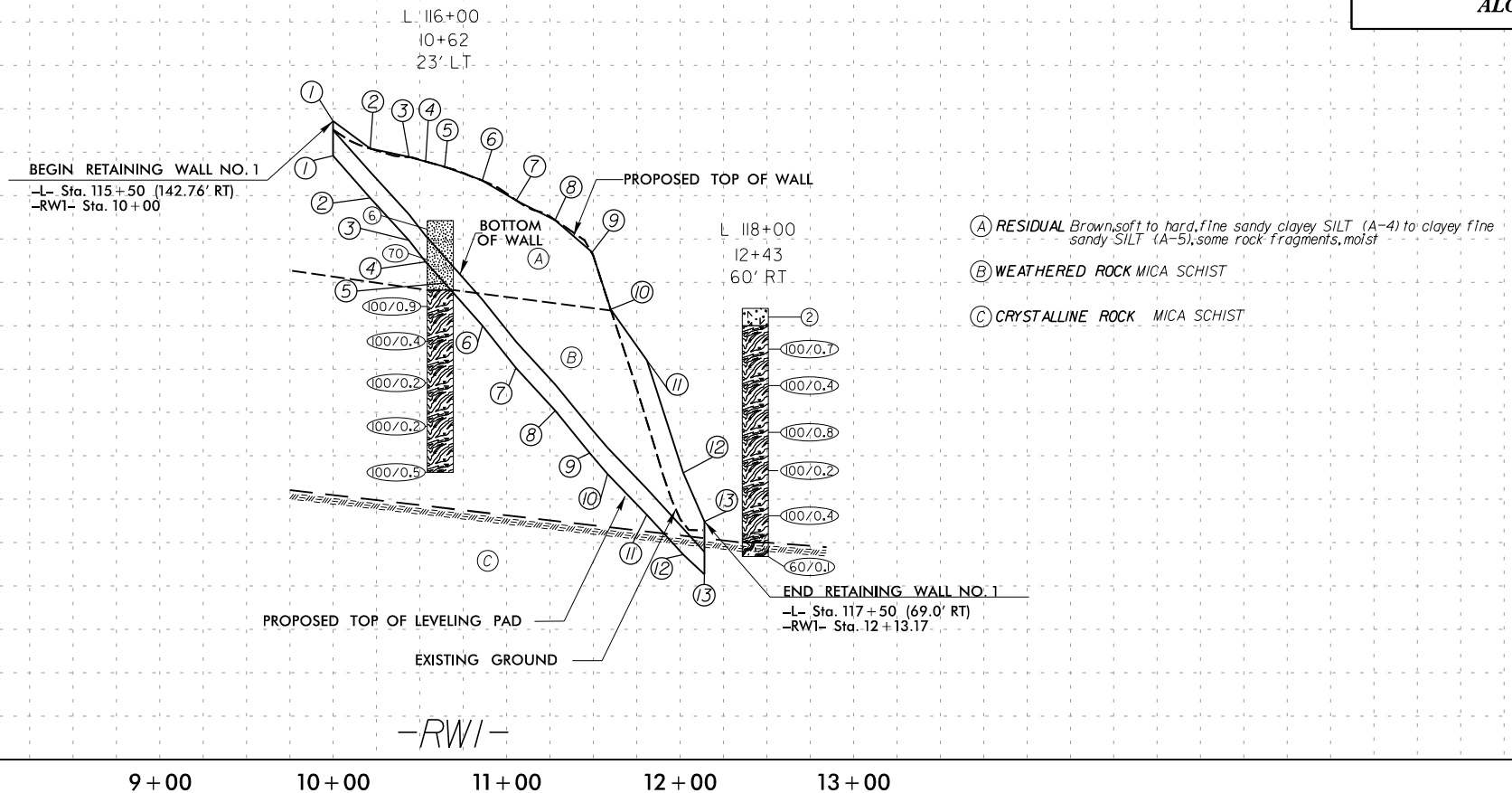






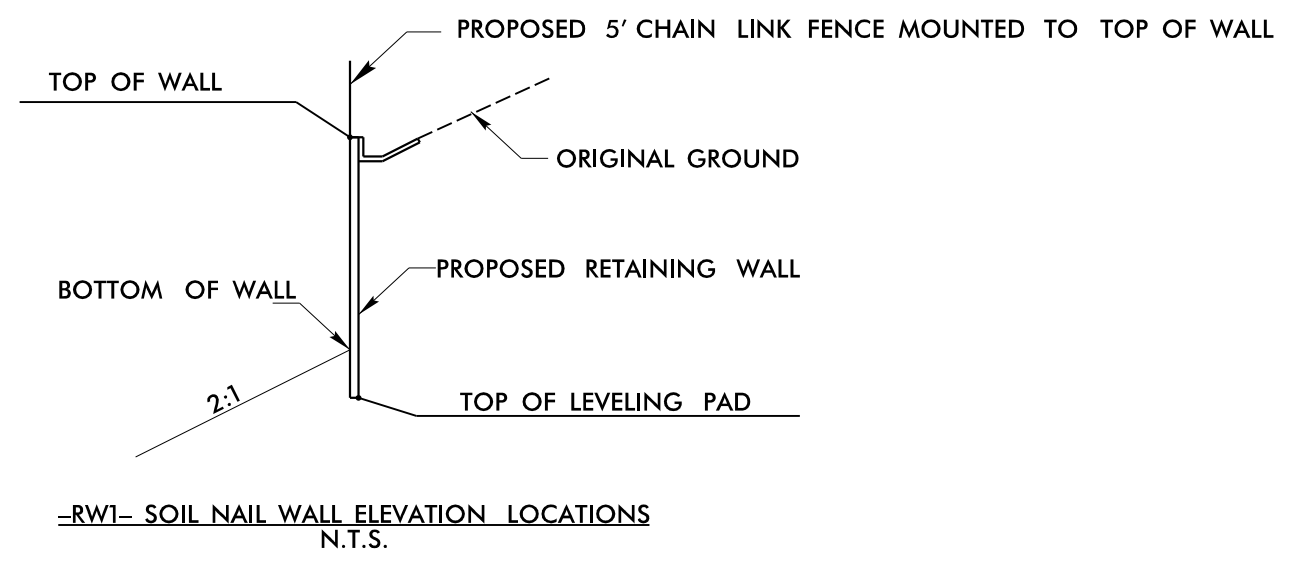
1,790  
1,780  
1,770  
1,760  
1,750  
1,740  
1,730  
1,720  
1,710  
1,700

1,780  
1,770  
1,760  
1,750  
1,740  
1,730  
1,720  
1,710  
1,700



9+00 10+00 11+00 12+00 13+00

POINT NO.	WALL STATION	TOP OF WALL ELEVATION (FT)	BOTTOM OF WALL ELEVATION (FT)	TOP OF LEVELING PAD ELEVATION (FT)
1	10+00.00	1773.58	1772.58	1769.58
2	10+21.33	1770.42	1767.71	1764.71
3	10+42.65	1769.44	1762.81	1759.81
4	10+53.31	1768.92	1760.35	1757.35
5	10+63.98	1768.32	1757.90	1754.90
6	10+85.30	1766.80	1753.01	1750.01
7	11+06.62	1764.30	1748.12	1745.12
8	11+27.95	1762.17	1743.22	1740.22
9	11+49.27	1758.46	1738.33	1735.33
10	11+59.94	1751.89	1735.89	1732.89
11	11+80.85	1746.02	1731.21	1728.21
12	12+01.77	1733.03	1726.62	1723.62
13	12+13.17	1727.43	1724.33	1721.33



**RK&K**  
 P: (919) 878-9560  
 8601 Six Forks Road, Forum 1, Suite 700  
 Raleigh, North Carolina 27615-3960  
 NC License No. F-0112  
 Engineers | Construction Managers | Planners | Scientists  
 www.rkk.com  
 Responsive People | Creative Solutions

12/2/2021 10:20:10 AM Tech\InvestigationDesign\CADD\GEO\TECH\Site&Sub\RP5861\_GEO\_RWAL Inv.pln.amd\_envelope.dgn  
 rkk.com

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 47427.1.1		TIP R-5861		COUNTY CHEROKEE		GEOLOGIST Mize, J.									
SITE DESCRIPTION Retaining Wall No. 1 from -L- Sta. 115+50 (RT) to -L- Sta. 117+50 (RT)							GROUND WTR (ft)								
BORING NO. L 116+00		STATION 10+62		OFFSET 23 ft LT		ALIGNMENT RW1									
COLLAR ELEV. 1,762.1 ft		TOTAL DEPTH 29.0 ft		NORTHING 498,218		EASTING 478,091									
DRILL RIG/HAMMER EFF./DATE SME267 DIEDRICH D-50 88% 05/08/2019			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Blizzard, B.		START DATE 08/03/19		COMP. DATE 08/03/19		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					
1765															
	1,762.1	0.0	2	3	3									1,762.1	0.0
1760	1,758.6	3.5	4	12	58										
	1,753.6	8.5	16	45	55/0.4									1,754.1	8.0
1755	1,748.6	13.5	100/0.4												
1750	1,743.6	18.5	100/0.2												
1745	1,738.6	23.5	100/0.2												
1740	1,733.6	28.5	100/0.5											1,733.1	29.0
1735															

WBS 47427.1.1		TIP R-5861		COUNTY CHEROKEE		GEOLOGIST Mize, J.									
SITE DESCRIPTION Retaining Wall No. 1 from -L- Sta. 115+50 (RT) to -L- Sta. 117+50 (RT)							GROUND WTR (ft)								
BORING NO. L 118+00		STATION 12+12		OFFSET 56 ft RT		ALIGNMENT RW1									
COLLAR ELEV. 1,752.0 ft		TOTAL DEPTH 28.6 ft		NORTHING 498,418		EASTING 478,079									
DRILL RIG/HAMMER EFF./DATE SME267 DIEDRICH D-50 88% 05/08/2019			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Blizzard, B.		START DATE 08/03/19		COMP. DATE 08/03/19		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					
1755															
	1,752.0	0.0	3	1	1									1,752.0	0.0
1750	1,748.5	3.5	37	57	43/0.2									1,750.0	2.0
	1,743.5	8.5	100/0.4												
1745	1,738.5	13.5	58	42/0.3											
1740	1,733.5	18.5	100/0.2												
1735	1,728.5	23.5	100/0.4												
1730	1,723.5	28.5	60/0.1											1,723.4	28.6
1725															

NCDOT BORE DOUBLE R-5861\_RW1.GPJ NC\_DOT.GDT 12/2/21