

REFERENCE: BR-0002

PROJECT: 67002.1.1

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	67002.1.1	1	15

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4-7	PROFILES
8-12	CROSS SECTIONS
13-15	BORE LOGS

STRUCTURE  
SUBSURFACE INVESTIGATION

COUNTY ASHE  
PROJECT DESCRIPTION REPLACE ASHE BRIDGE #8  
ON NC 194 OVER NORTH FORK OF NEW RIVER

SITE DESCRIPTION RETAINING WALL #1  
-L- STA 15+00 - 20+00 OFFSET 26.5' RT

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919 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.D. JOHNSON

D.O. CHEEK

C.J. COFFEY

INVESTIGATED BY D.M. MULLEN

DRAWN BY D.M.M.

CHECKED BY J.C. KUHNE

SUBMITTED BY J.C. KUHNE

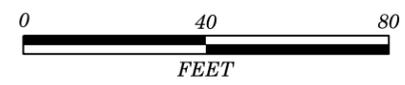
DATE 6/13/2019



DocuSigned by:  
D Matt Mullen 6/14/2019  
18909BD388409E SIGNATURE DATE

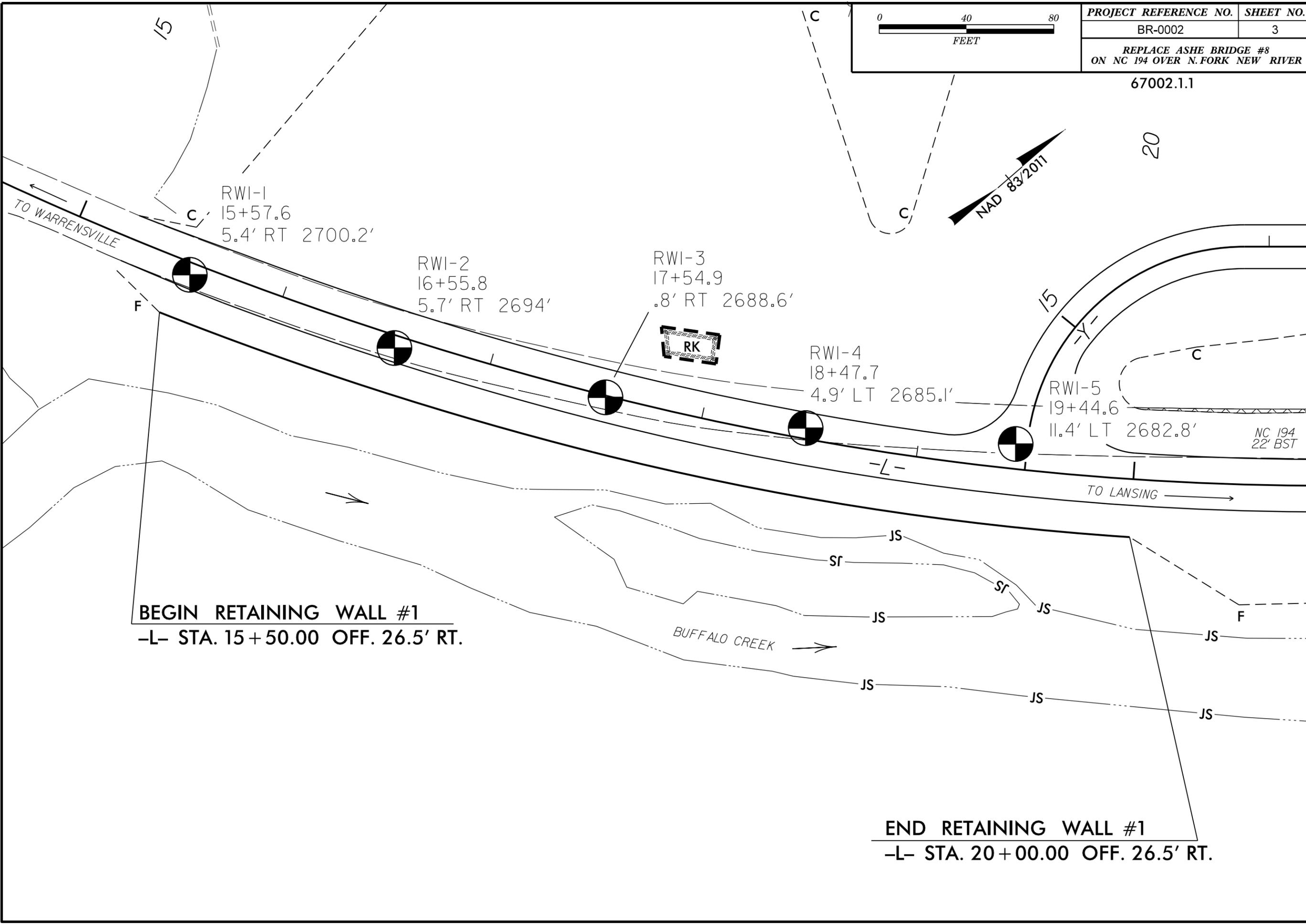
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED





67002.1.1

20



RWI-1  
15+57.6  
5.4' RT 2700.2'

RWI-2  
16+55.8  
5.7' RT 2694'

RWI-3  
17+54.9  
.8' RT 2688.6'

RWI-4  
18+47.7  
4.9' LT 2685.1'

RWI-5  
19+44.6  
11.4' LT 2682.8'

**BEGIN RETAINING WALL #1**  
-L- STA. 15+50.00 OFF. 26.5' RT.

**END RETAINING WALL #1**  
-L- STA. 20+00.00 OFF. 26.5' RT.

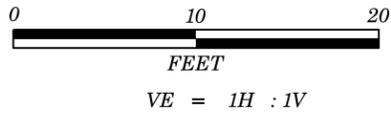
BUFFALO CREEK →

TO WARRENSVILLE ←

TO LANSING →

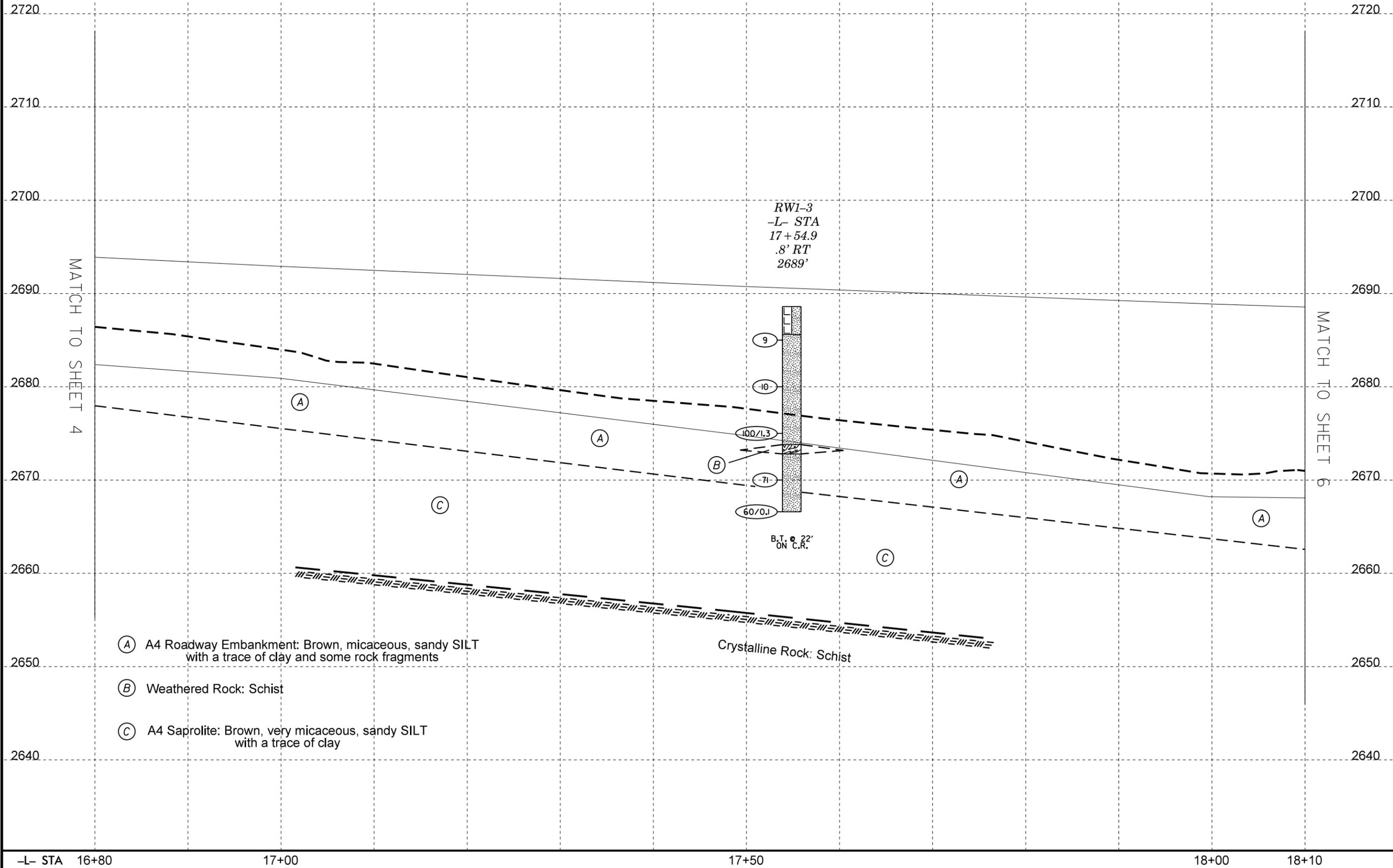
NC 194  
22' BST



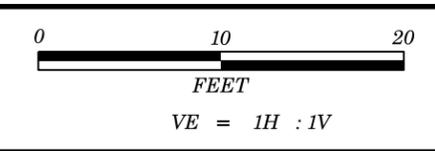


PROJECT REFERENCE NO.	SHEET NO.
BR-0002	5
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

**RETAINING WALL**  
-L+ STA 15+50 - 16+80

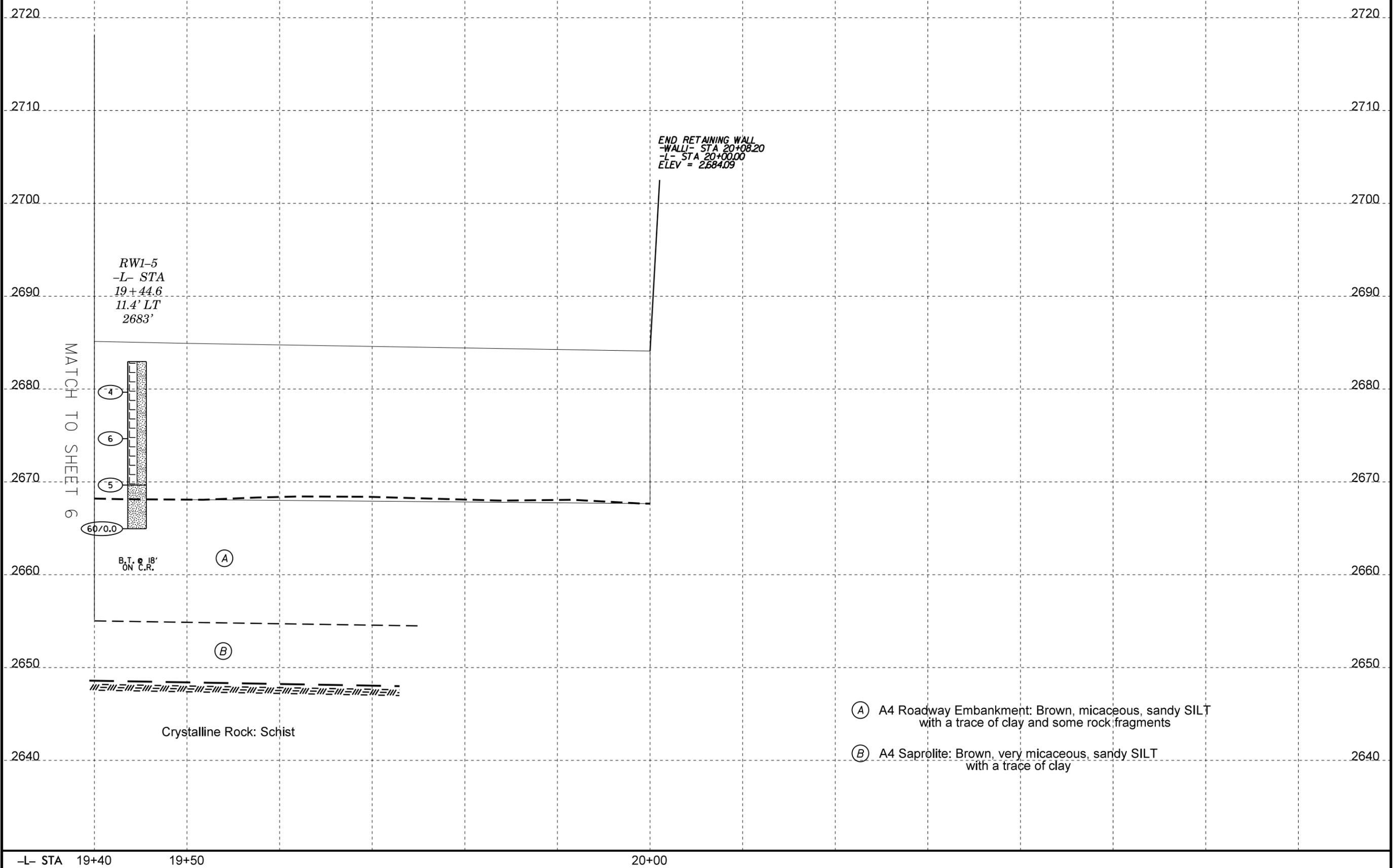






PROJECT REFERENCE NO.	SHEET NO.
BR-0002	7
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

RETAINING WALL  
-L+ STA 15+50 - 16+80



RW1-5  
-L- STA  
19+44.6  
11.4' LT  
2683'

MATCH TO SHEET 6

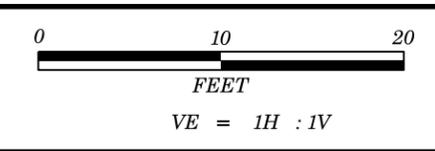
END RETAINING WALL  
- WALL - STA 20+08.20  
- L - STA 20+00.00  
ELEV = 2684.09

B.T. @ 18'  
ON C.R.



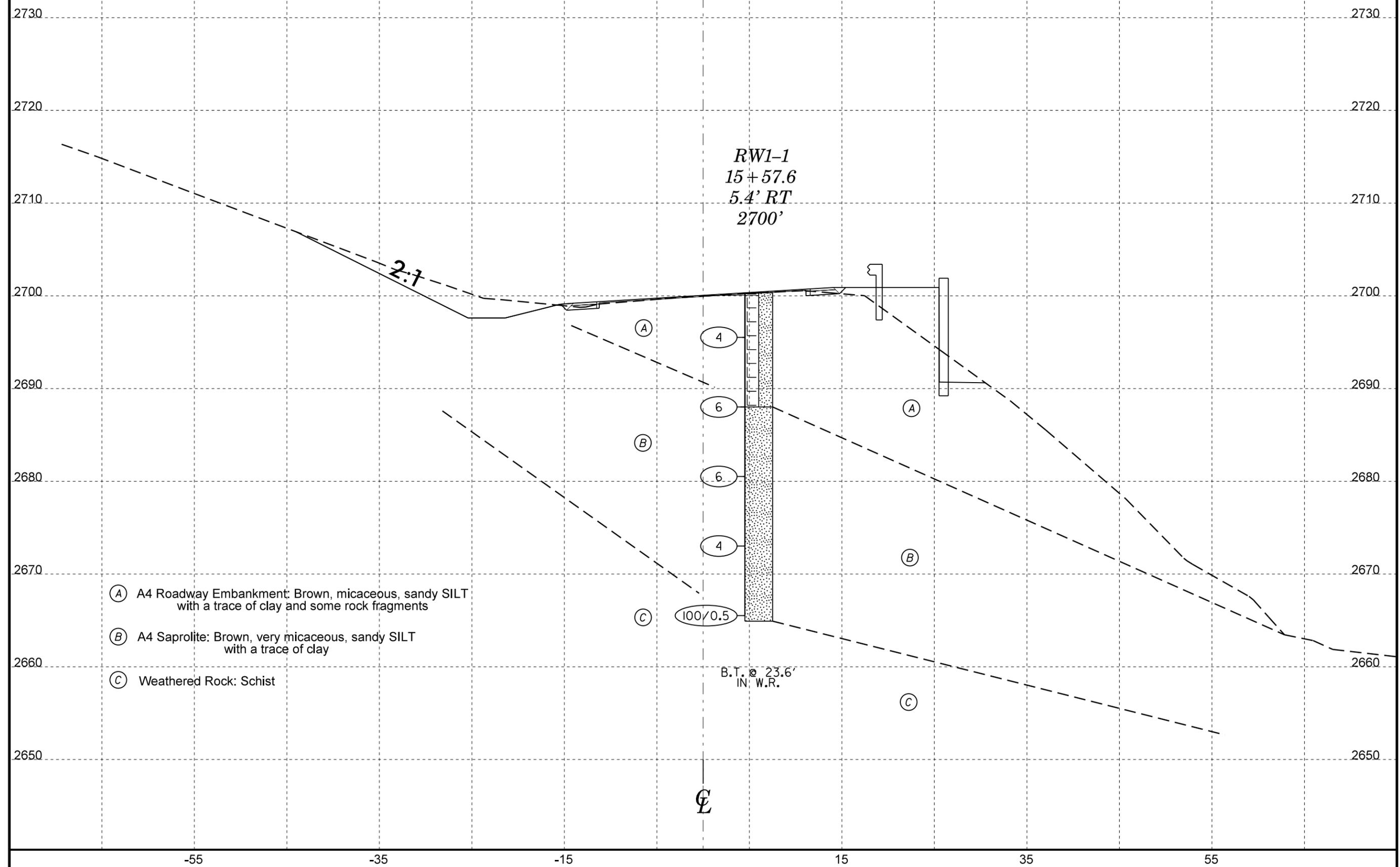
Crystalline Rock: Schist

- (A) A4 Roadway Embankment: Brown, micaceous, sandy SILT with a trace of clay and some rock fragments
- (B) A4 Saprolite: Brown, very micaceous, sandy SILT with a trace of clay



PROJECT REFERENCE NO.	SHEET NO.
BR-0002	8
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

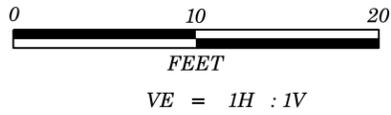
CROSS SECTION: -L- STA 15+50



- (A) A4 Roadway Embankment: Brown, micaceous, sandy SILT with a trace of clay and some rock fragments
- (B) A4 Saprolite: Brown, very micaceous, sandy SILT with a trace of clay
- (C) Weathered Rock: Schist

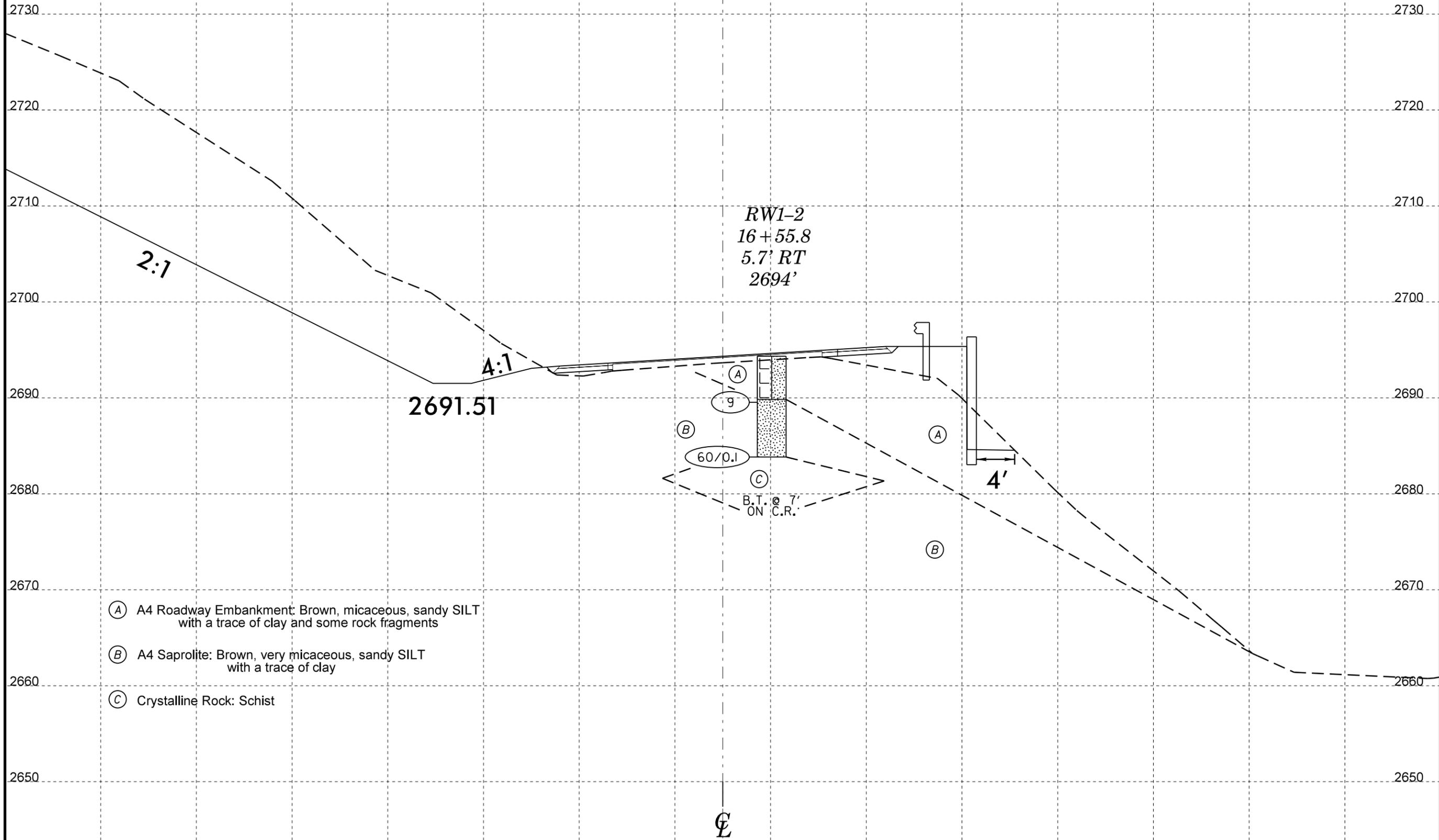
B.T. @ 23.6'  
IN W.R.

CL

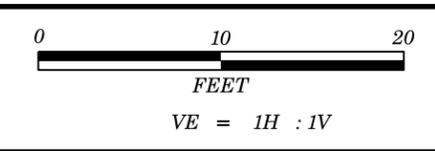


PROJECT REFERENCE NO.	SHEET NO.
BR-0002	9
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

CROSS SECTION: -L- STA 16+50

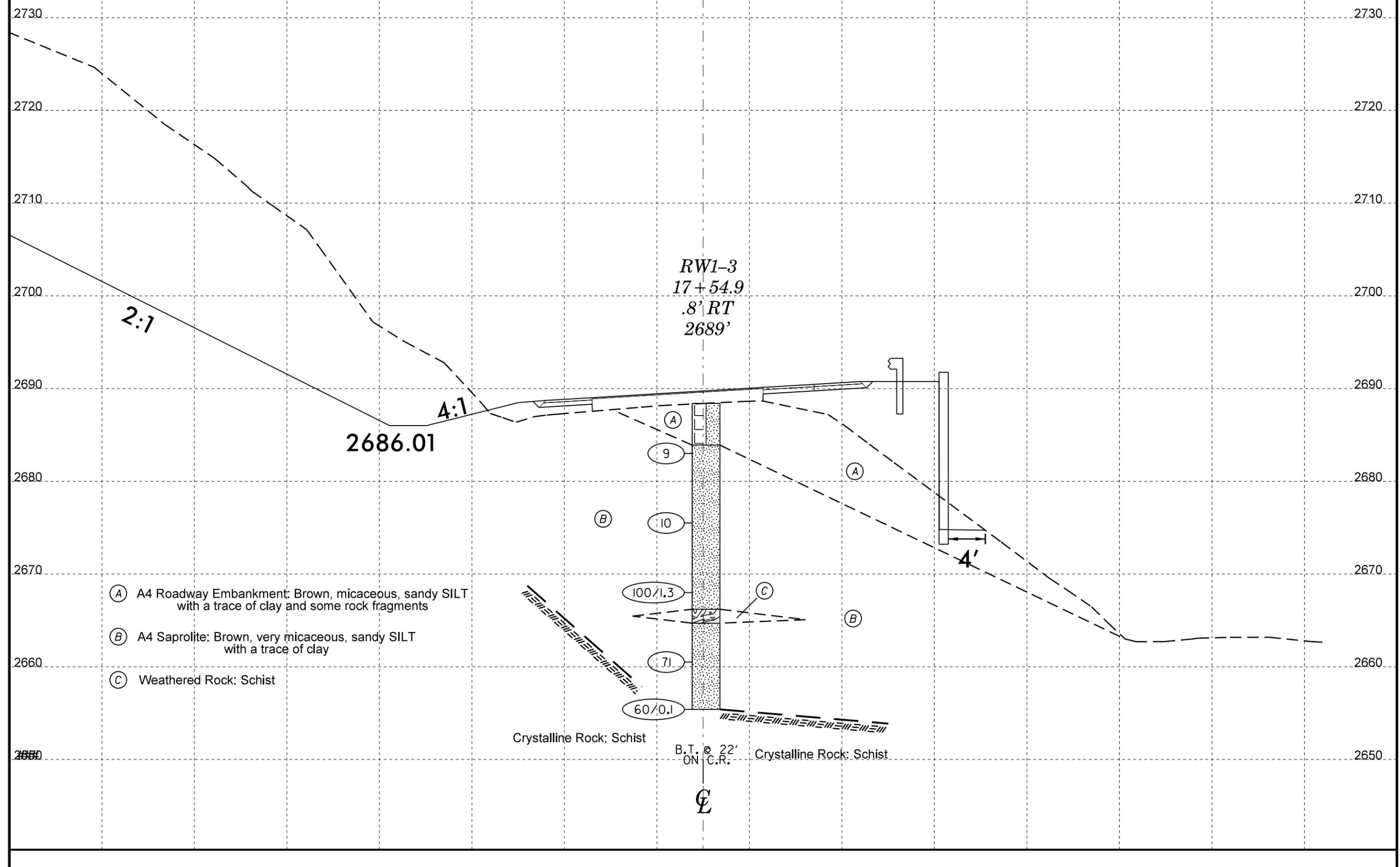


- (A) A4 Roadway Embankment: Brown, micaceous, sandy SILT with a trace of clay and some rock fragments
- (B) A4 Saprolite: Brown, very micaceous, sandy SILT with a trace of clay
- (C) Crystalline Rock: Schist



PROJECT REFERENCE NO.	SHEET NO.
BR-0002	10
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

CROSS SECTION: -L- STA 17+50

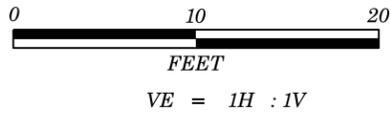


- (A) A4 Roadway Embankment: Brown, micaceous, sandy SILT with a trace of clay and some rock fragments
- (B) A4 Saprolite: Brown, very micaceous, sandy SILT with a trace of clay
- (C) Weathered Rock: Schist

Crystalline Rock: Schist

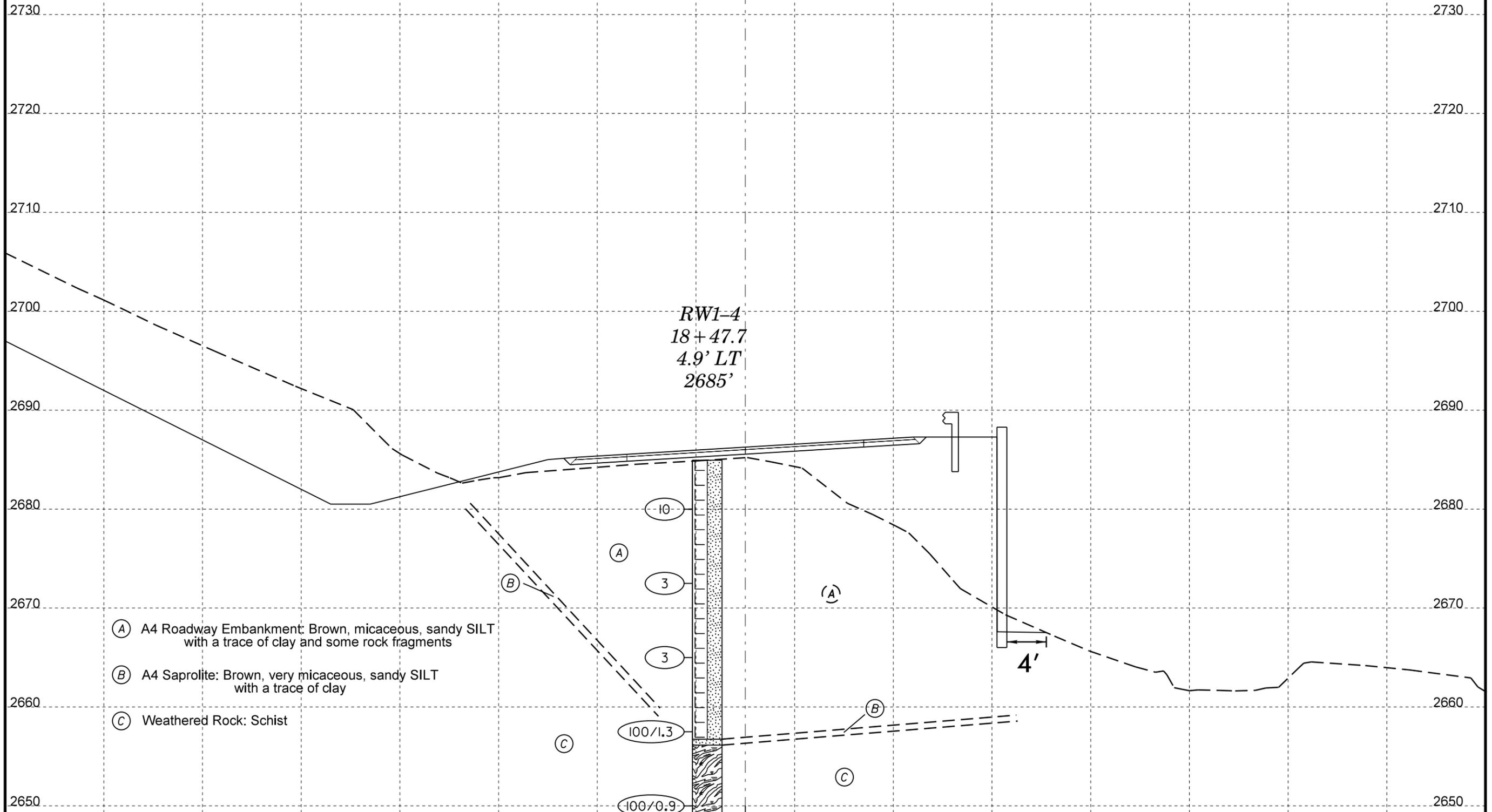
B.T. @ 22'  
ON C.R.





PROJECT REFERENCE NO.	SHEET NO.
BR-0002	11
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

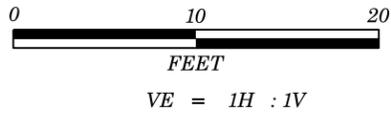
CROSS SECTION: -L- STA 18+50



- (A) A4 Roadway Embankment: Brown, micaceous, sandy SILT with a trace of clay and some rock fragments
- (B) A4 Saprolite: Brown, very micaceous, sandy SILT with a trace of clay
- (C) Weathered Rock: Schist

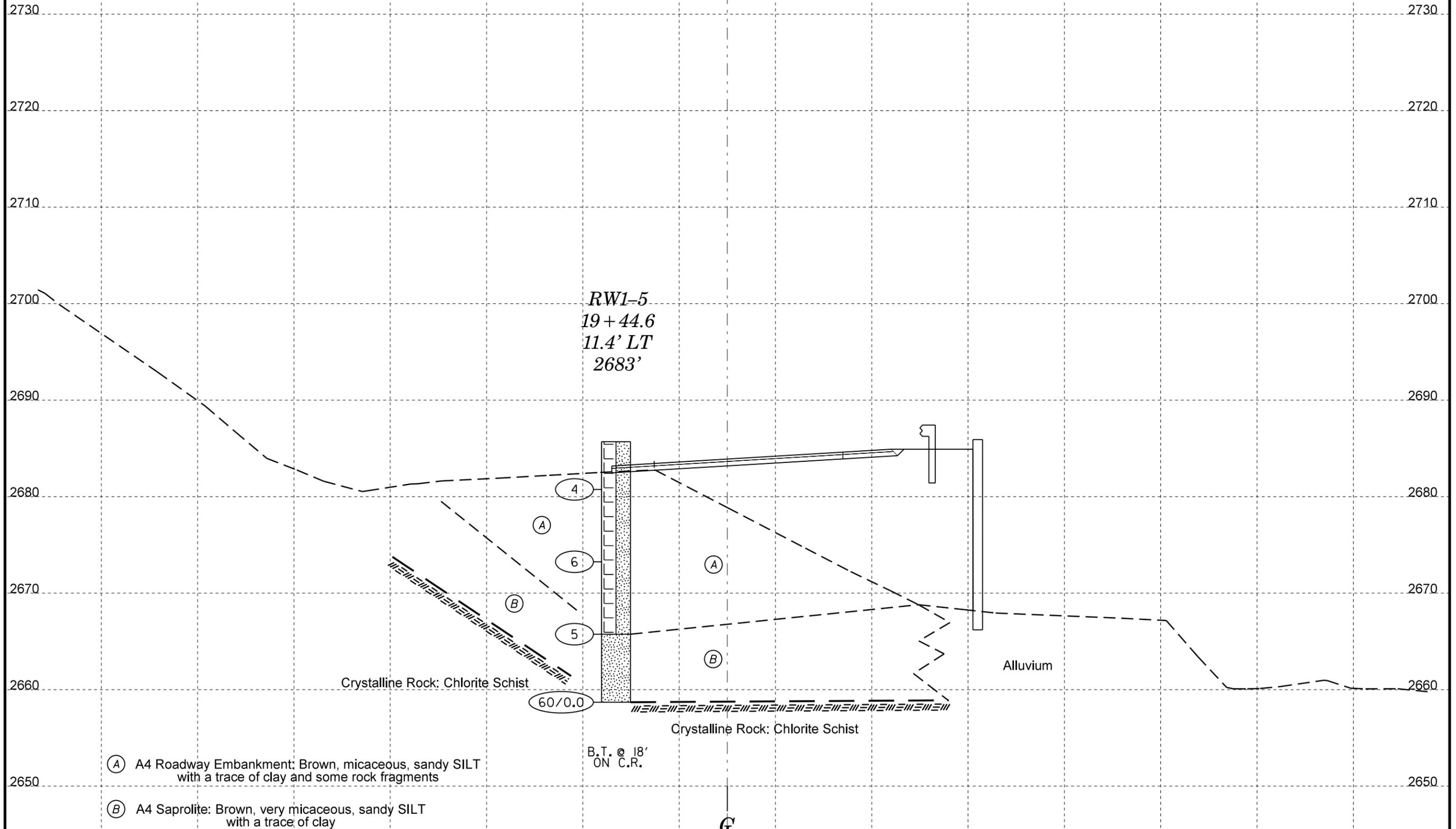
*RW1-4*  
18+47.7  
4.9' LT  
2685'

B.T. © 24  
IN W.R.



PROJECT REFERENCE NO.	SHEET NO.
BR-0002	12
REPLACE ASHE BRIDGE #8 ON NC 194 OVER N. FORK NEW RIVER	

CROSS SECTION: -L- STA 19+50



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 67002.1.1		TIP BR-0002		COUNTY ASHE		GEOLOGIST Johnson, C. D.									
SITE DESCRIPTION BORING IN EXISTING PAVEMENT NC194 FOR PROPOSED RWAL							GROUND WTR (ft)								
BORING NO. RW1-1		STATION 15+52		OFFSET 6 ft RT		ALIGNMENT L									
COLLAR ELEV. 2,700.2 ft		TOTAL DEPTH 23.7 ft		NORTHING 997,440		EASTING 1,260,993									
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 92% 07/31/2017			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Cheek, D. O.		START DATE 05/29/19		COMP. DATE 05/29/19		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					
2705															
2700															
	2,697.0	3.2													
2695															
	2,692.0	8.2													
2690															
	2,687.0	13.2													
2685															
	2,682.0	18.2													
2680															
	2,677.0	23.2													

WBS 67002.1.1		TIP BR-0002		COUNTY ASHE		GEOLOGIST Johnson, C. D.									
SITE DESCRIPTION BORING IN EXISTING PAVEMENT NC194 FOR PROPOSED RWAL							GROUND WTR (ft)								
BORING NO. RW1-2		STATION 16+50		OFFSET 5 ft RT		ALIGNMENT L									
COLLAR ELEV. 2,694.0 ft		TOTAL DEPTH 7.1 ft		NORTHING 997,489		EASTING 1,261,077									
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 92% 07/31/2017			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Cheek, D. O.		START DATE 05/29/19		COMP. DATE 05/29/19		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					
2695															
	2,694.0														
	2,691.0	3.0													
2690															
	2,690.8	3.2													
	2,687.0	7.0													

NCDOT BORE DOUBLE BR0002\_RW1\_ASHE\_BOREHOLES\_GPJ\_NC\_DOT.GDT 6/6/19

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 67002.1.1		TIP BR-0002		COUNTY ASHE		GEOLOGIST Johnson, C. D.										
SITE DESCRIPTION BORING IN EXISTING PAVEMENT NC194 FOR PROPOSED RWAL							GROUND WTR (ft)									
BORING NO. RW1-3		STATION 17+47		OFFSET 0 ft RT		ALIGNMENT L										
COLLAR ELEV. 2,688.6 ft		TOTAL DEPTH 22.0 ft		NORTHING 997,545		EASTING 1,261,157										
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 92% 07/31/2017			DRILL METHOD N/A		HAMMER TYPE Automatic											
DRILLER Cheek, D. O.		START DATE 05/29/19		COMP. DATE 05/29/19		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						
2690														2,688.6	0.0	GROUND SURFACE
														2,685.6	3.0	ROADWAY EMBANKMENT Roadway embankment
2685	2,685.0	3.6	2	3	6											SAPROLITE Brown-white-gray, micaceous sandy SILT with rock fragments
2680	2,680.0	8.6	3	4	6											
2675	2,675.0	13.6	8	11	89/0.3											
2670	2,670.0	18.6	17	24	47									2,673.8	14.8	WEATHERED ROCK Weathered rock (schist)
														2,672.8	15.8	SAPROLITE Brown-white-gray, micaceous sandy SILT with rock fragments
	2,666.7	21.9												2,666.6	22.0	CRYSTALLINE ROCK Crystalline rock (schist) Boring Terminated at Elevation 2,666.6 ft ON CR

WBS 67002.1.1		TIP BR-0002		COUNTY ASHE		GEOLOGIST Johnson, C. D.											
SITE DESCRIPTION BORING IN EXISTING PAVEMENT NC194 FOR PROPOSED RWAL							GROUND WTR (ft)										
BORING NO. RW1-4		STATION 18+44		OFFSET 4 ft LT		ALIGNMENT L											
COLLAR ELEV. 2,685.1 ft		TOTAL DEPTH 24.0 ft		NORTHING 997,608		EASTING 1,261,232											
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 92% 07/31/2017			DRILL METHOD N/A		HAMMER TYPE Automatic												
DRILLER Cheek, D. O.		START DATE 05/29/19		COMP. DATE 05/29/19		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							
2690																2,685.1	0.0
																	ROADWAY EMBANKMENT Red brown clayey slightly micaceous SILT with rock fragments and roots
2685																	
2680	2,681.8	3.3	7	6	4												
2675	2,676.8	8.3	1	1	2												
2670	2,671.8	13.3	1	2	1												
2665	2,666.8	18.3	5	41	59/0.3												
	2,661.8	23.3	39	61/0.4													
														2,666.3	18.8	SAPROLITE Brown micaceous clayey SILT	
														2,665.9	19.2	WEATHERED ROCK Weathered schist with MnO seams	
														2,661.1	24.0	Boring Terminated at Elevation 2,661.1 ft IN WR	

NCDOT BORE DOUBLE BR0002\_RW1\_ASHE\_BOREHOLES\_GPJ\_NC\_DOT.GDT 6/6/19

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 67002.1.1		TIP BR-0002		COUNTY ASHE		GEOLOGIST Johnson, C. D.										
SITE DESCRIPTION BORING IN EXISTING PAVEMENT NC194 FOR PROPOSED RWAL							GROUND WTR (ft)									
BORING NO. RW1-5		STATION 19+35		OFFSET 4 ft LT		ALIGNMENT L										
COLLAR ELEV. 2,682.8 ft		TOTAL DEPTH 18.0 ft		NORTHING 997,672		EASTING 1,261,295										
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 92% 07/31/2017				DRILL METHOD N/A		HAMMER TYPE Automatic										
DRILLER Cheek, D. O.		START DATE 05/29/19		COMP. DATE 05/29/19		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)		
2685														2,682.8	0.0	GROUND SURFACE
2680	2,679.5	3.3	2	2	2	1	1	1	1	1						ROADWAY EMBANKMENT Brown micaceous sandy SILT with a trace of clay, roots, and a few gravels
2675	2,674.5	8.3	1	2	4	1	1	1	1	1						
2670	2,669.5	13.3	1	2	3	1	1	1	1	1				2,669.5	13.3	SAPROLITE Brown gray, micaceous clayey silt with some rock fragments
2665	2,664.8	18.0	60	0	0	1	1	1	1	1				2,664.8	18.0	CRYSTALLINE ROCK Crystalline chlorite schist Boring Terminated at Elevation 2,664.8 ft ON CR

NCDOT BORE DOUBLE BR0002\_RW1\_ASHE\_BOREHOLES\_GPJ\_NC\_DOT.GDT 6/6/19