

REFERENCE: B-5548

PROJECT: 55048

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY CABARRUS
PROJECT DESCRIPTION BRIDGE NO. 103 OVER
DUTCH BUFFALO CREEK ON NC 49 BETWEEN
SR 1006 AND SR 2444
SITE DESCRIPTION _____

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4-7	CROSS SECTION(S)
8-13	BORE AND CORE LOG(S)
14-19	CORE PHOTOS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5548	1	19

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.

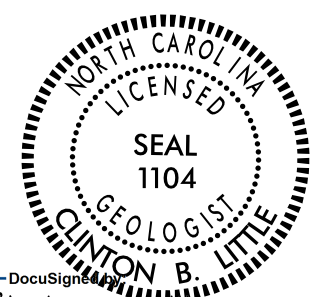
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT 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:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

- J.K. STICKNEY
C.L. SMITH
M.R. MOORE
R.W. TODD
R.J. TUCKER
R.S. HINSON

INVESTIGATED BY J.E. BEVERLY
DRAWN BY J.E. BEVERLY ^{OR} JEB
CHECKED BY C.B. LITTLE
SUBMITTED BY C.B. LITTLE
DATE FEBRUARY 2016



DocuSign
Clinton B. Little
930443D5AC8E452...

2/24/2016

SIGNATURE DATE

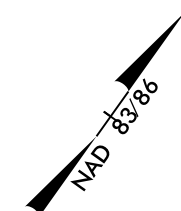
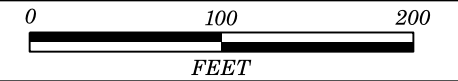
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

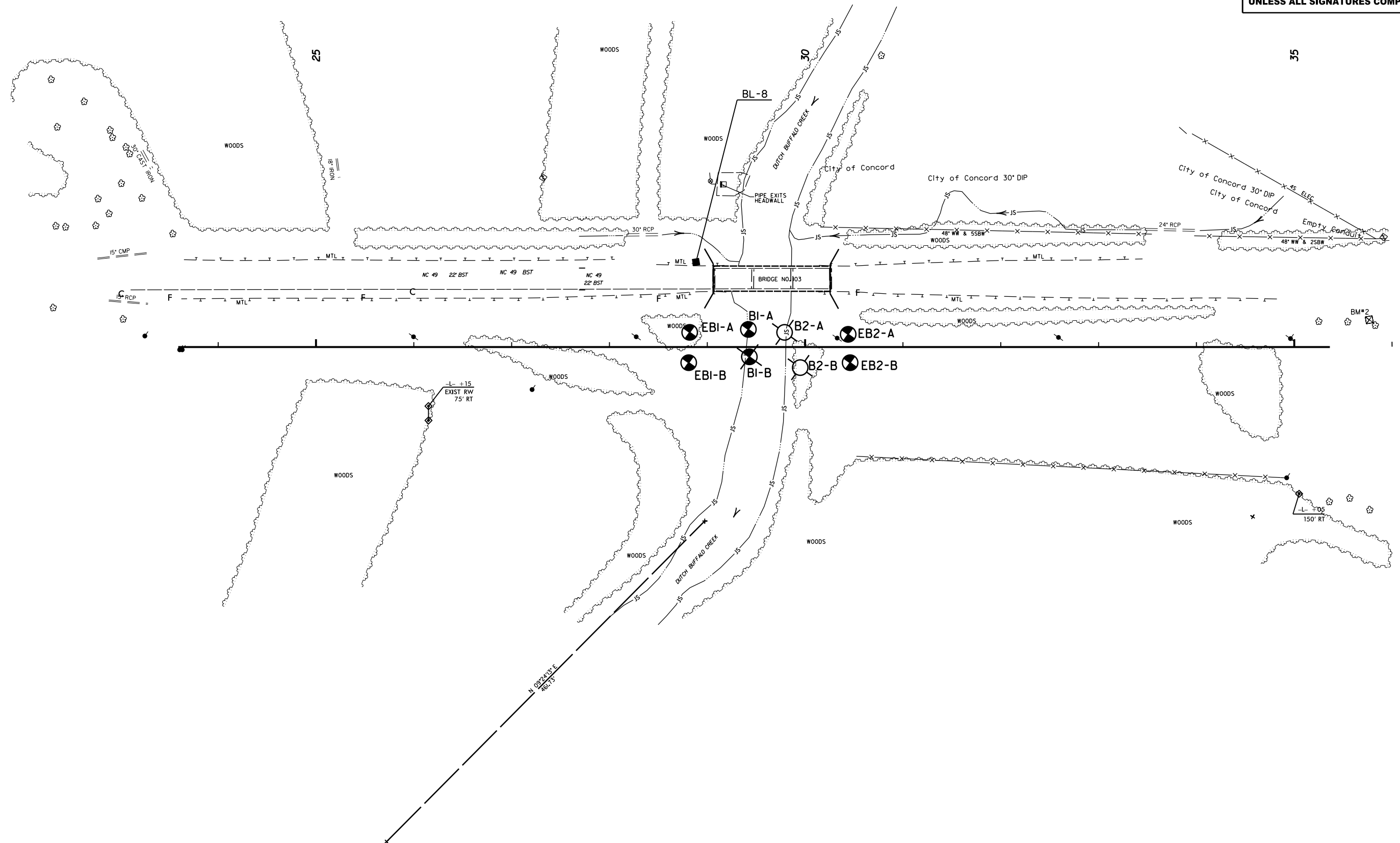
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

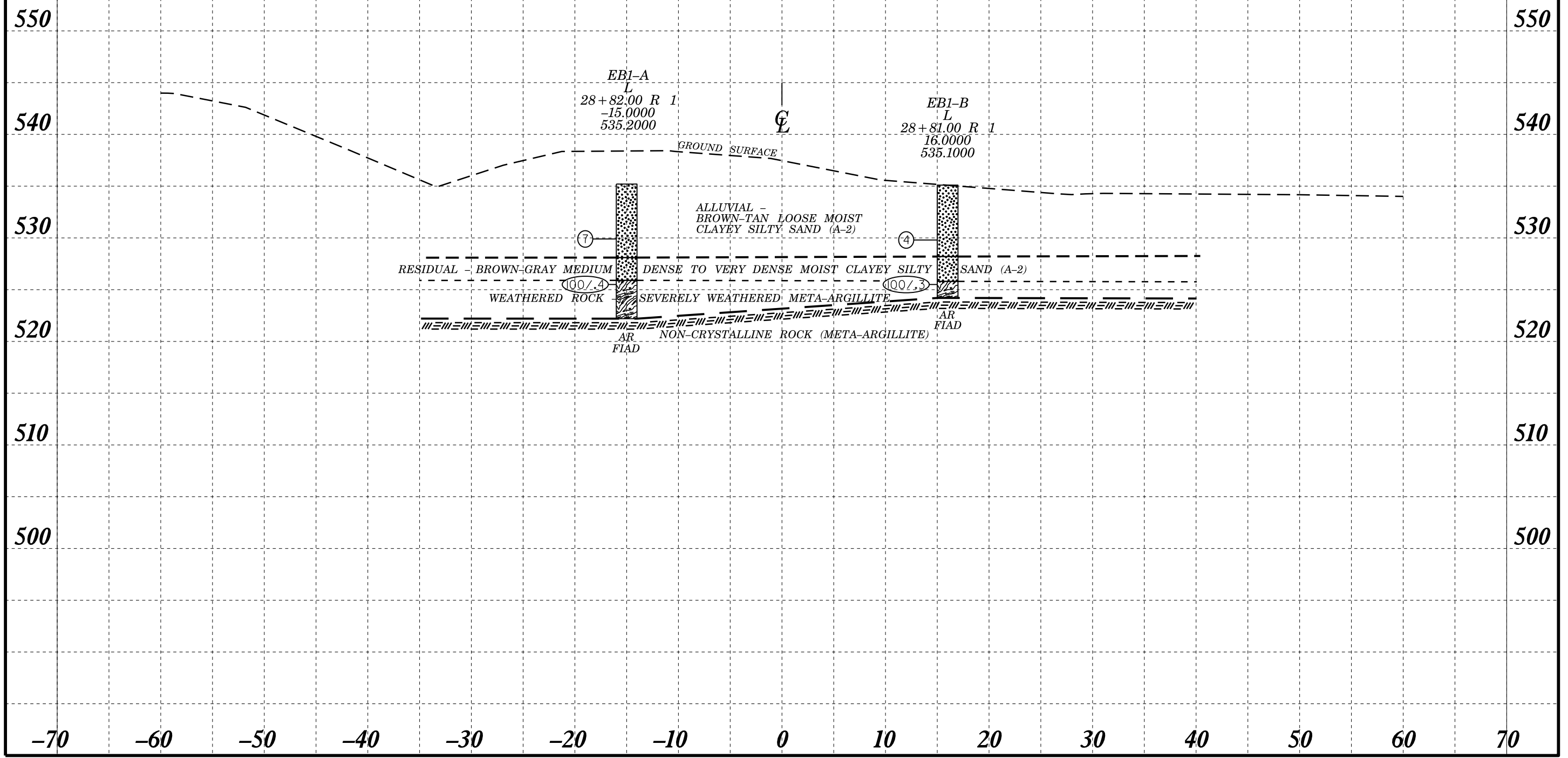
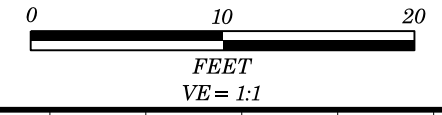
Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INUNDATION, PLASTICITY, COLOR.

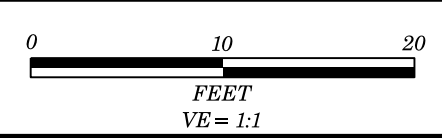
SITE PLAN



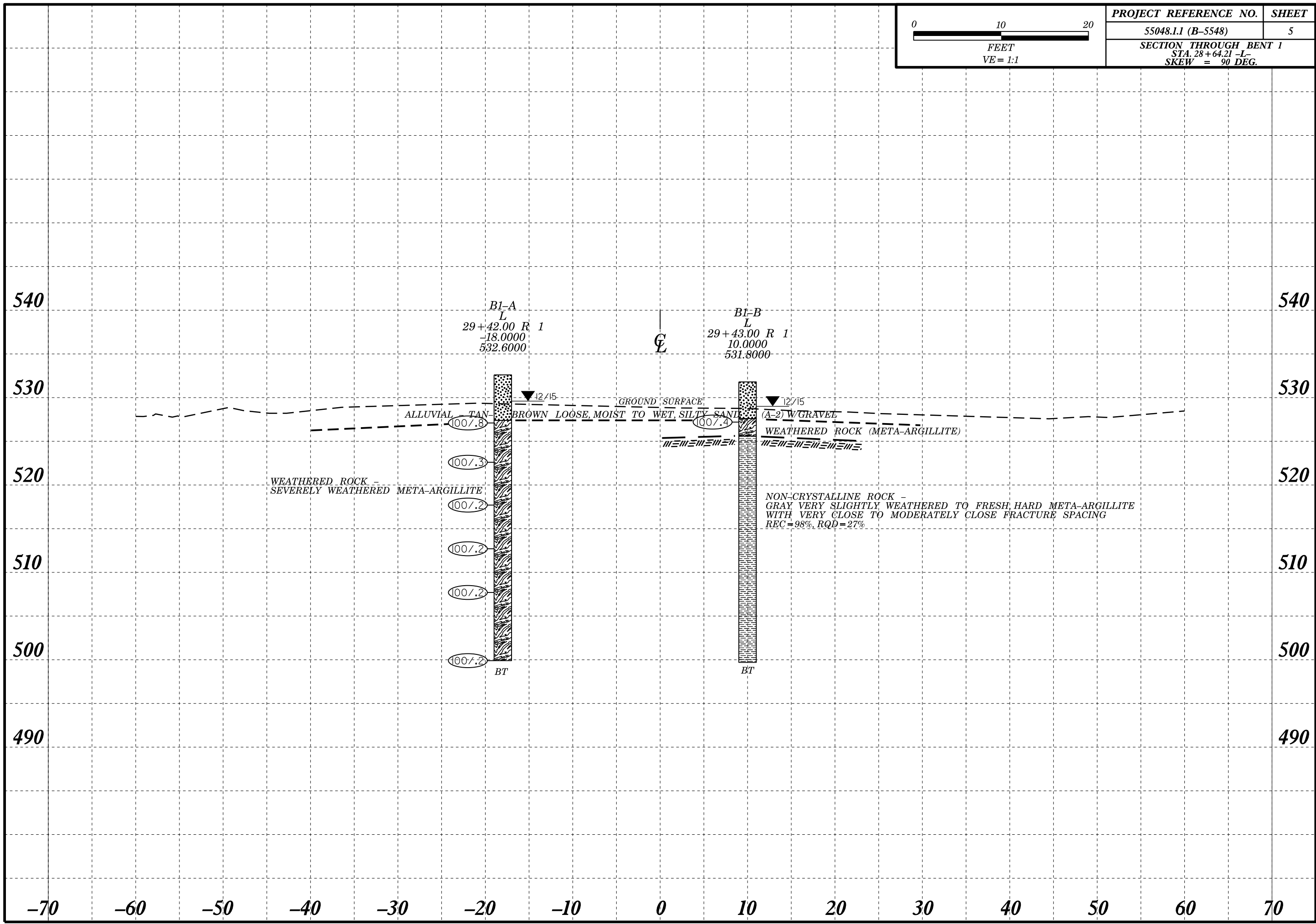
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**







PROJECT REFERENCE NO.	SHEET
55048.11 (B-5548)	5
SECTION THROUGH BENT 1	
STA. 28+64.21 -L-	
SKEW = 90 DEG.	



BI-A
L
29+42.00 R 1
-18.0000
532.6000

BI-B
L
29+43.00 R 1
10.0000
531.8000

CL

ALLUVIAL TAN

BROWN LOOSE, MOIST TO WET, SILTY SAND

(A-2) W/ GRAVEL

WEATHERED ROCK (META-ARGILLITE)

WEATHERED ROCK - SEVERELY WEATHERED META-ARGILLITE

NON-CRYSTALLINE ROCK - GRAY VERY SLIGHTLY WEATHERED TO FRESH HARD META-ARGILLITE WITH VERY CLOSE TO MODERATELY CLOSE FRACTURE SPACING
REC = 98%, RQD = 27%

100/.3

100/.2

100/.2

100/.2

100/.2

BT

BT

12/15

12/15

GROUND SURFACE

540

540

530

530

520

520

510

510

500

500

490

490

-70

-60

-50

-40

-30

-20

-10

0

10

20

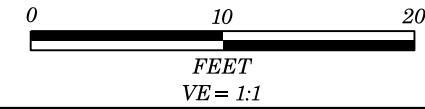
30

40

50

60

70



550

540

530

520

510

500

490

540

530

520

510

500

490

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

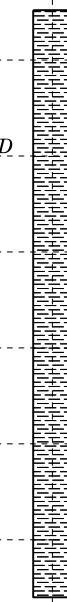
40

50

60

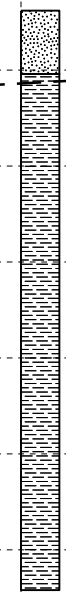
70

B2-A
L
29+79.00 R 1
-15.0000
527.6000



BT
FIAD

B2-B
L
29+95.00 R 1
21.0000
533.1000



BT
FIAD

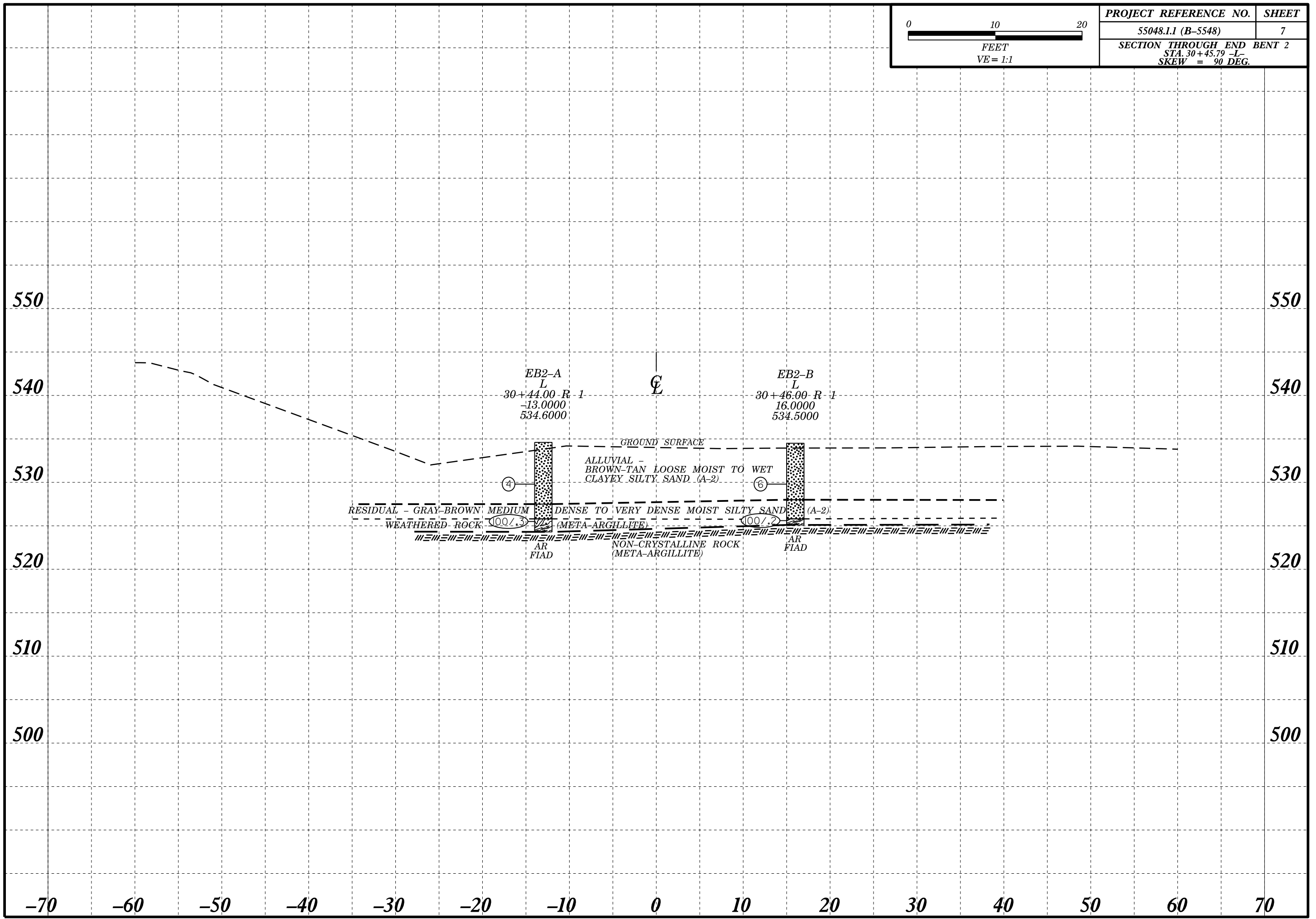
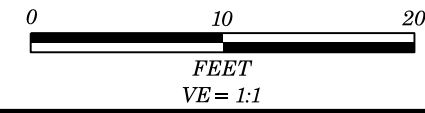
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GROUND SURFACE

NON-CRYSTALLINE ROCK -
GRAY MODERATELY WEATHERED TO FRESH, MODERATELY HARD TO HARD
META-ARGILLITE WITH VERY CLOSE TO CLOSE FRACTURE SPACING
REC = 76%, RQD = 6%

ALLUVIAL - BROWN SOFT WET SANDY SILT (A-4)

NON-CRYSTALLINE ROCK -
GRAY MODERATELY WEATHERED TO FRESH, MODERATELY HARD TO HARD
META-ARGILLITE WITH VERY CLOSE TO CLOSE FRACTURE SPACING
REC = 53% RQD = 10%



550

550

540

540

530

530

520

520

510

510

500

500

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

EB2-A
L
30+44.00 R-1
-13.0000
534.6000

EB2-B
L
30+46.00 R-1
16.0000
534.5000

GROUND SURFACE

ALLUVIAL -
BROWN-TAN LOOSE MOIST TO WET
CLAYEY SILTY SAND (A-2)

RESIDUAL - GRAY-BROWN MEDIUM DENSE TO VERY DENSE MOIST SILTY SAND (A-2)

WEATHERED ROCK (100/3)

AR
FIAD

(META-ARGILLITE)

NON-CRYSTALLINE ROCK
(META-ARGILLITE)

AR
FIAD

(100/2)

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK							GROUND WTR (ft)								
BORING NO. EB1-A		STATION 28+82		OFFSET 15 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 535.2 ft		TOTAL DEPTH 13.0 ft		NORTHING 613,229		EASTING 1,579,735									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER Smith, C.L.		START DATE 12/16/15		COMP. DATE 12/16/15		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					
540															
535														535.2	0.0
530	530.9	4.3	3	2	5							M			
525	525.9	9.3	100/4											525.9	9.3
														522.2	13.0

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK							GROUND WTR (ft)								
BORING NO. EB1-B		STATION 28+81		OFFSET 16 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 535.1 ft		TOTAL DEPTH 10.9 ft		NORTHING 613,203		EASTING 1,579,752									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER Smith, C.L.		START DATE 12/16/15		COMP. DATE 12/16/15		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					
540															
535														535.1	0.0
530	530.8	4.3	2	3	1							M			
525	525.8	9.3	100/3											525.8	9.3
														524.2	10.9

NCDOT BORE DOUBLE B5548_GEO_BRDG0103.GPJ NC_DOT.GDT 2/24/16

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.											
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK						GROUND WTR (ft)											
BORING NO. B1-A		STATION 29+42		OFFSET 18 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 532.6 ft		TOTAL DEPTH 32.7 ft		NORTHING 613,266		EASTING 1,579,782											
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic													
DRILLER Smith, C.L.		START DATE 12/15/15		COMP. DATE 12/15/15		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)		
535																	
															532.6	GROUND SURFACE	0.0
530																	
	527.9	4.7	1	100/3											527.4	ALLUVIAL TAN-BROWN LOOSE MOIST SILTY SAND (A-2)	5.2
525																	
	522.9	9.7		100/3													
520																	
	517.9	14.7		100/2													
515																	
	512.9	19.7		100/2													
510																	
	507.9	24.7		100/2													
505																	
	499.9	32.7		100/2											499.9	Boring Terminated at Elevation 499.9 ft IN SEVERELY WEATHERED META-ARGILLITE ROCK	32.7

NCDOT BORE SINGLE B5548_GEO_BRD0103.GPJ NC_DOT.GDT 2/24/16

GEOTECHNICAL BORING REPORT BORE LOG

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK						GROUND WTR (ft)									
BORING NO. B2-A		STATION 29+79		OFFSET 15 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 527.6 ft		TOTAL DEPTH 30.6 ft		NORTHING 613,285		EASTING 1,579,814									
DRILL RIG/HAMMER EFF./DATE Drilled in July 1999		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic											
DRILLER Smith, C.L.		START DATE 07/14/99		COMP. DATE 07/14/99		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
530															
														527.6	0.0
525															
520															
515															
510															
505															
500															
														497.0	30.6
Boring Terminated at Elevation 497.0 ft IN META-ARGILLITE ROCK This boring from metric project R-2533CC performed in 7/1999															

NCDOT BORE SINGLE B5548_GEO_BRDG0103.GPJ_NC_DOT.GDT 2/24/16

GEOTECHNICAL BORING REPORT CORE LOG

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK						GROUND WTR (ft)						
BORING NO. B2-A		STATION 29+79		OFFSET 15 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 527.6 ft		TOTAL DEPTH 30.6 ft		NORTHING 613,285		EASTING 1,579,814						
DRILL RIG/HAMMER EFF./DATE Drilled in July 1999		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic								
DRILLER Smith, C.L.		START DATE 07/14/99		COMP. DATE 07/14/99		SURFACE WATER DEPTH N/A						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
527.6	527.6	0.0	4.5		(2.9) 64%	(0.4) 9%		(23.2) 76%	(1.9) 6%		Ground Surface	
	525	4.5	4.5		(3.3) 73%	(0.0) 0%					NON-CRYSTALLINE ROCK GRAY MODERATELY WEATHERED TO FRESH, MODERATELY HARD TO HARD META-ARGILLITE WITH VERY CLOSE TO CLOSE FRACTURE SPACING	
	520	9.0	5.0		(4.4) 88%	(0.4) 8%						
	515	14.0	4.8		(3.3) 69%	(0.0) 0%						
	510	18.8	5.0		(5.0) 100%	(1.1) 22%						
	505	23.8	6.8		(4.3) 63%	(0.0) 0%						
	500	30.6										
	497.0	30.6										
Boring Terminated at Elevation 497.0 ft IN META-ARGILLITE ROCK This boring from metric project R-2533CC performed in 7/1999												

NCDOT CORE SINGLE B5548_GEO_BRDG0103.GPJ_NC_DOT.GDT 2/24/16

GEOTECHNICAL BORING REPORT BORE LOG

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK							GROUND WTR (ft)									
BORING NO. B2-B		STATION 29+95		OFFSET 21 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 533.1 ft		TOTAL DEPTH 30.2 ft		NORTHING 613,265		EASTING 1,579,848										
DRILL RIG/HAMMER EFF./DATE Drilled in July 1999				DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic										
DRILLER Smith, C.L.		START DATE 07/15/99		COMP. DATE 07/15/99		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						
535														533.1	GROUND SURFACE	0.0
530														529.8	ALLUVIAL BROWN SOFT WET SANDY SILT (A-4)	3.3
525															NON-CRYSTALLINE ROCK GRAY MODERATELY WEATHERED TO FRESH, MODERATELY HARD TO HARD META-ARGILLITE WITH VERY CLOSE TO CLOSE FRACTURE SPACING	
520																
515																
510																
505																
														502.9	Boring Terminated at Elevation 502.9 ft IN META-ARGILLITE ROCK This boring from metric project R-2533CC performed in 7/1999	

NCDOT BORE SINGLE B5548_GEO_BRDG0103.GPJ NC_DOT_GDT 2/24/16

GEOTECHNICAL BORING REPORT CORE LOG

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK							GROUND WTR (ft)					
BORING NO. B2-B		STATION 29+95		OFFSET 21 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 533.1 ft		TOTAL DEPTH 30.2 ft		NORTHING 613,265		EASTING 1,579,848						
DRILL RIG/HAMMER EFF./DATE Drilled in July 1999				DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic						
DRILLER Smith, C.L.		START DATE 07/15/99		COMP. DATE 07/15/99		SURFACE WATER DEPTH N/A						
CORE SIZE NW				TOTAL RUN 26.9 ft								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)		REC. (%)	RQD (%)			
529.8	529.8	3.3	6.1		(1.5) 25%	(0.7) 11%		(14.3) 53%	(2.6) 10%		Begin Coring @ 3.3 ft NON-CRYSTALLINE ROCK GRAY MODERATELY WEATHERED TO FRESH, MODERATELY HARD TO HARD META-ARGILLITE WITH VERY CLOSE TO CLOSE FRACTURE SPACING	3.3
525	523.7	9.4	4.9		(2.0) 41%	(0.0) 0%						
520	518.8	14.3	5.0		(2.7) 54%	(0.0) 0%						
515	513.8	19.3	4.6		(3.7) 80%	(0.8) 17%						
510	509.2	23.9	6.3		(4.4) 70%	(1.1) 17%						
505	502.9	30.2									Boring Terminated at Elevation 502.9 ft IN META-ARGILLITE ROCK This boring from metric project R-2533CC performed in 7/1999	30.2

NCDOT CORE SINGLE B5548_GEO_BRDG0103.GPJ NC_DOT_GDT 2/24/16

GEOTECHNICAL BORING REPORT

BORE LOG

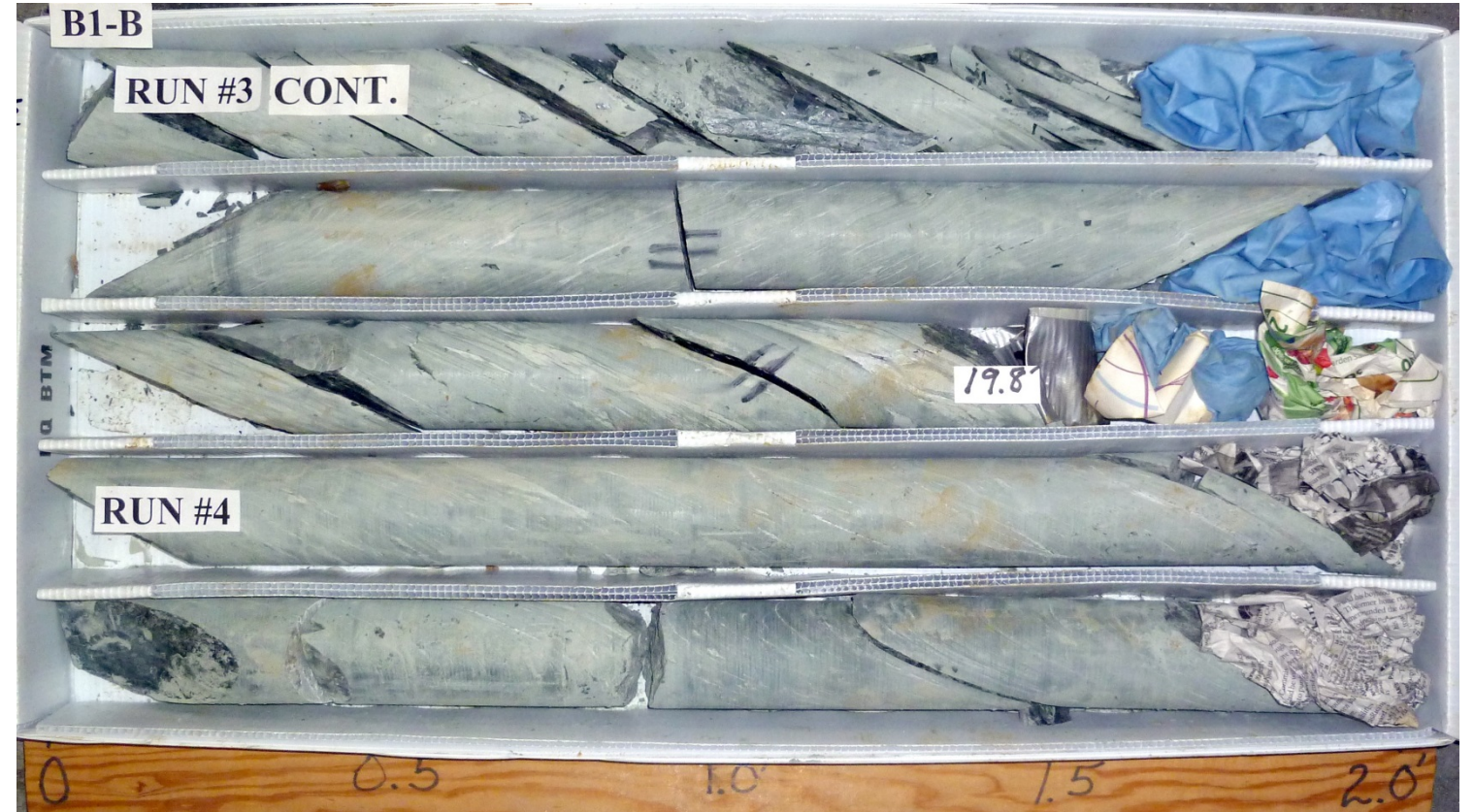
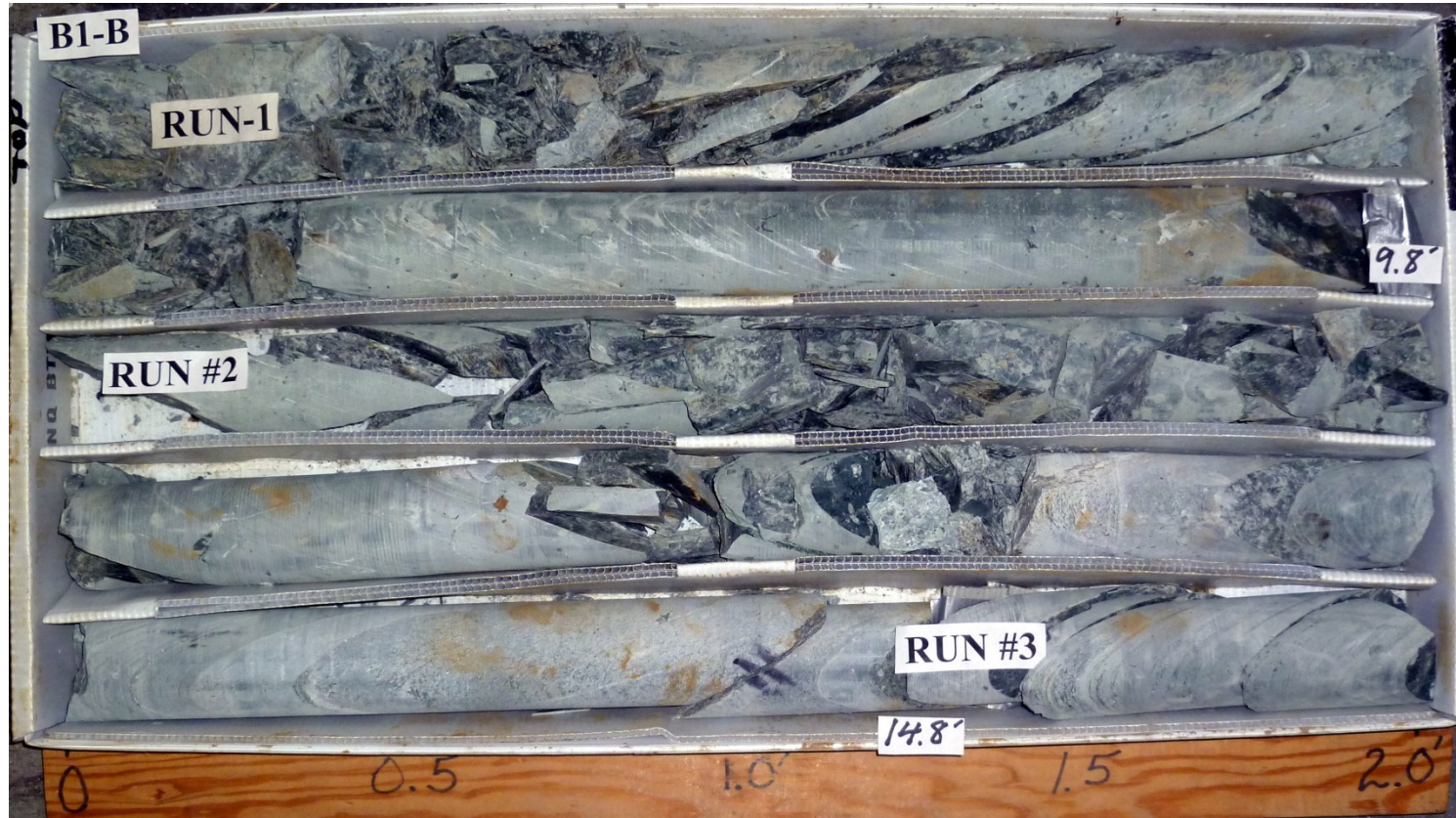
WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 30+44		OFFSET 13 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 534.6 ft		TOTAL DEPTH 10.3 ft		NORTHING 613,321		EASTING 1,579,869										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Smith, C.L.		START DATE 12/16/15		COMP. DATE 12/16/15		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						
535														534.6	GROUND SURFACE	0.0
															ALLUVIAL BROWN-TAN LOOSE MOIST TO WET CLAYEY SILTY SAND (A-2)	
530	530.8	3.8	1	2	2							W		527.5		7.1
														525.8	RESIDUAL GRAY-BROWN MEDIUM DENSE TO VERY DENSE MOIST SILTY SAND (A-2)	8.8
525	525.8	8.8	100/3											524.3	WEATHERED ROCK SEVERELY WEATHERED META-ARGILLITE	10.3
															Boring Terminated by Auger Refusal at Elevation 524.3 ft ON META-ARGILLITE ROCK	

WBS 55048.1.1		TIP B-5548		COUNTY CABARRUS		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 103 ON NC 49, BETWEEN SR 1006 and SR 2444 OVER DUTCH BUFFALO CREEK							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 30+46		OFFSET 16 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 534.5 ft		TOTAL DEPTH 9.4 ft		NORTHING 613,298		EASTING 1,579,887										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Smith, C.L.		START DATE 12/16/15		COMP. DATE 12/16/15		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						
535														534.5	GROUND SURFACE	0.0
															ALLUVIAL BROWN-TAN LOOSE MOIST TO WET CLAYEY SILTY SAND (A-2)	
530	530.8	3.7	2	3	3							W		528.0		6.5
														525.8	RESIDUAL GRAY-BROWN MEDIUM DENSE TO VERY DENSE SILTY SAND (A-2)	8.7
														525.1	WEATHERED ROCK SEVERELY WEATHERED META-ARGILLITE	9.4
															Boring Terminated by Auger Refusal at Elevation 525.1 ft ON META-ARGILLITE ROCK	

NCDOT BORE DOUBLE B5548_GEO_BRDG0103.GPJ NC_DOT.GDT 2/24/16

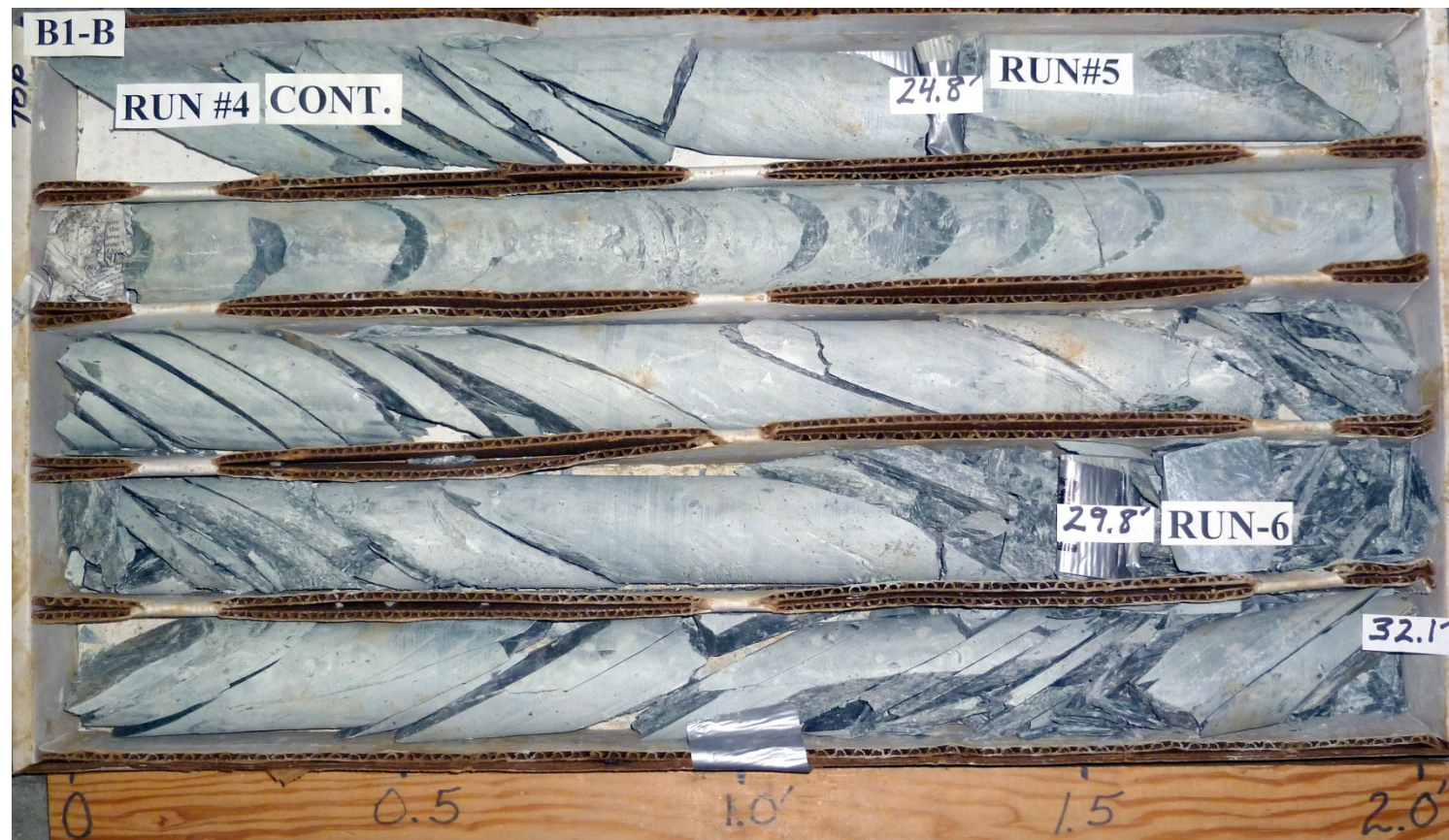
55048.1.1 (B-5548)
CABARRUS COUNTY
BRIDGE NO. 103 OVER DUTCH BUFFALO CREEK ON NC 49 BETWEEN SR 1006 AND SR 2444 (CRUISE RD.)

CORE PHOTOS



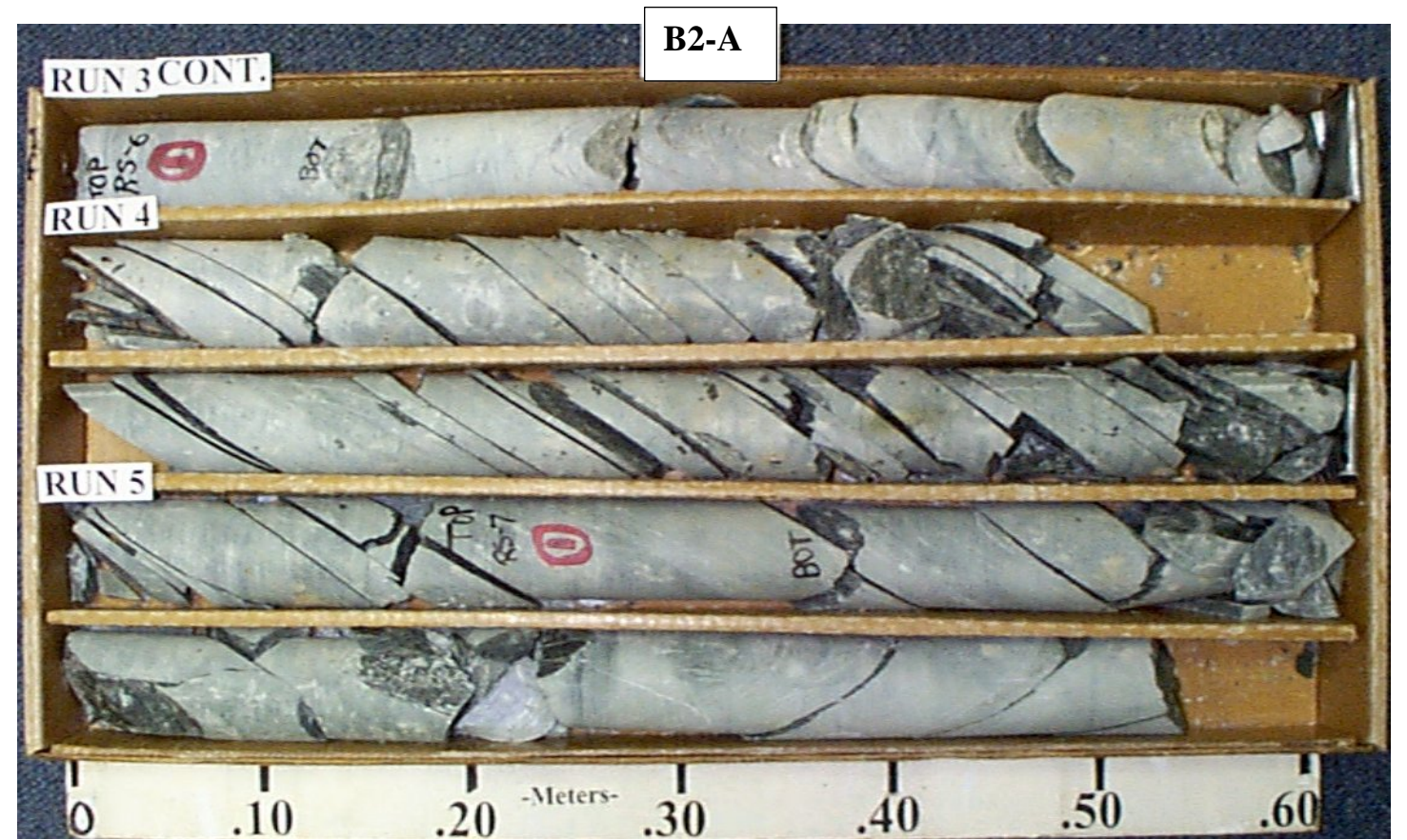
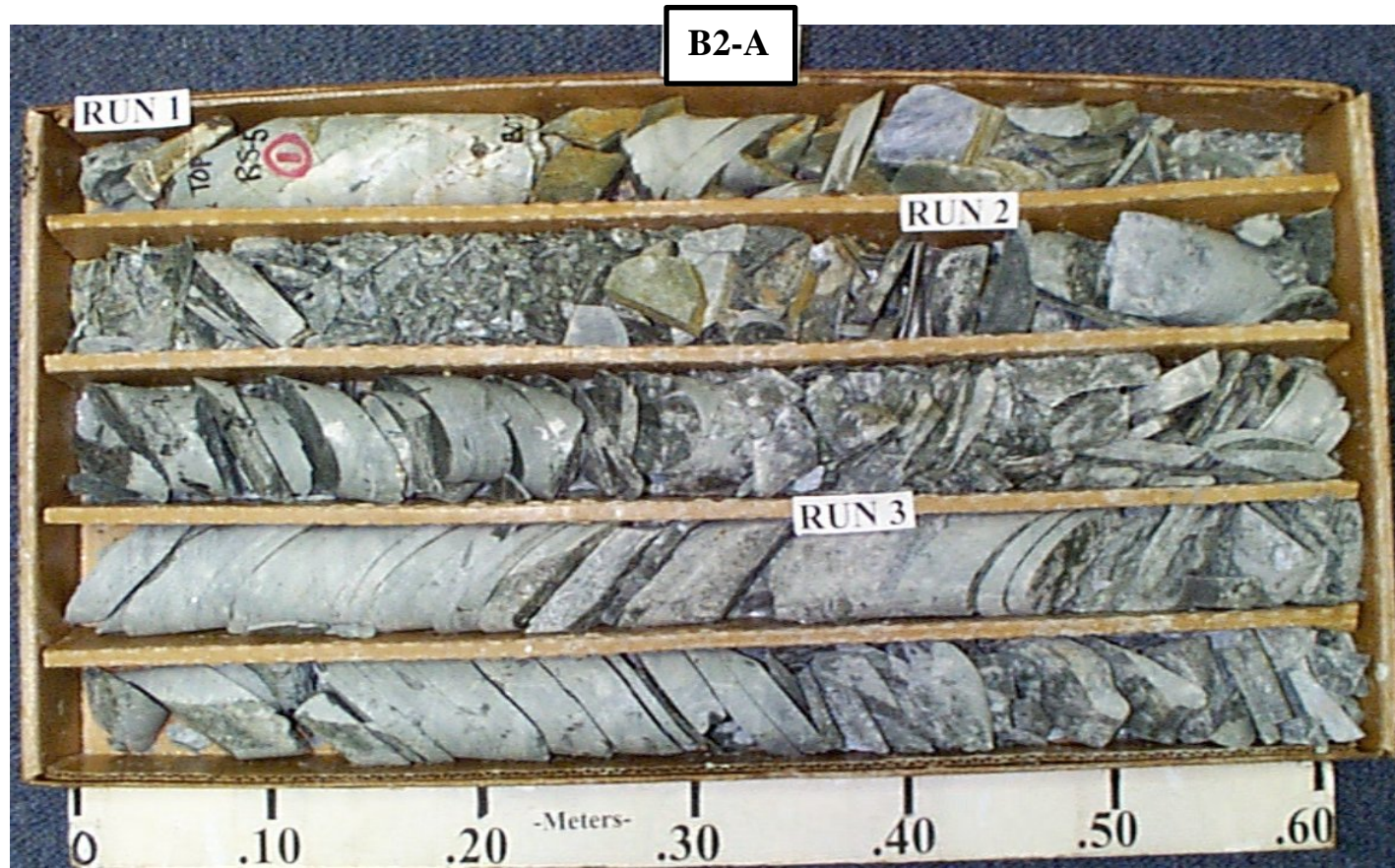
55048.1.1 (B-5548)
CABARRUS COUNTY
BRIDGE NO. 103 OVER DUTCH BUFFALO CREEK ON NC 49 BETWEEN SR 1006 AND SR 2444 (CRUISE RD.)

CORE PHOTOS



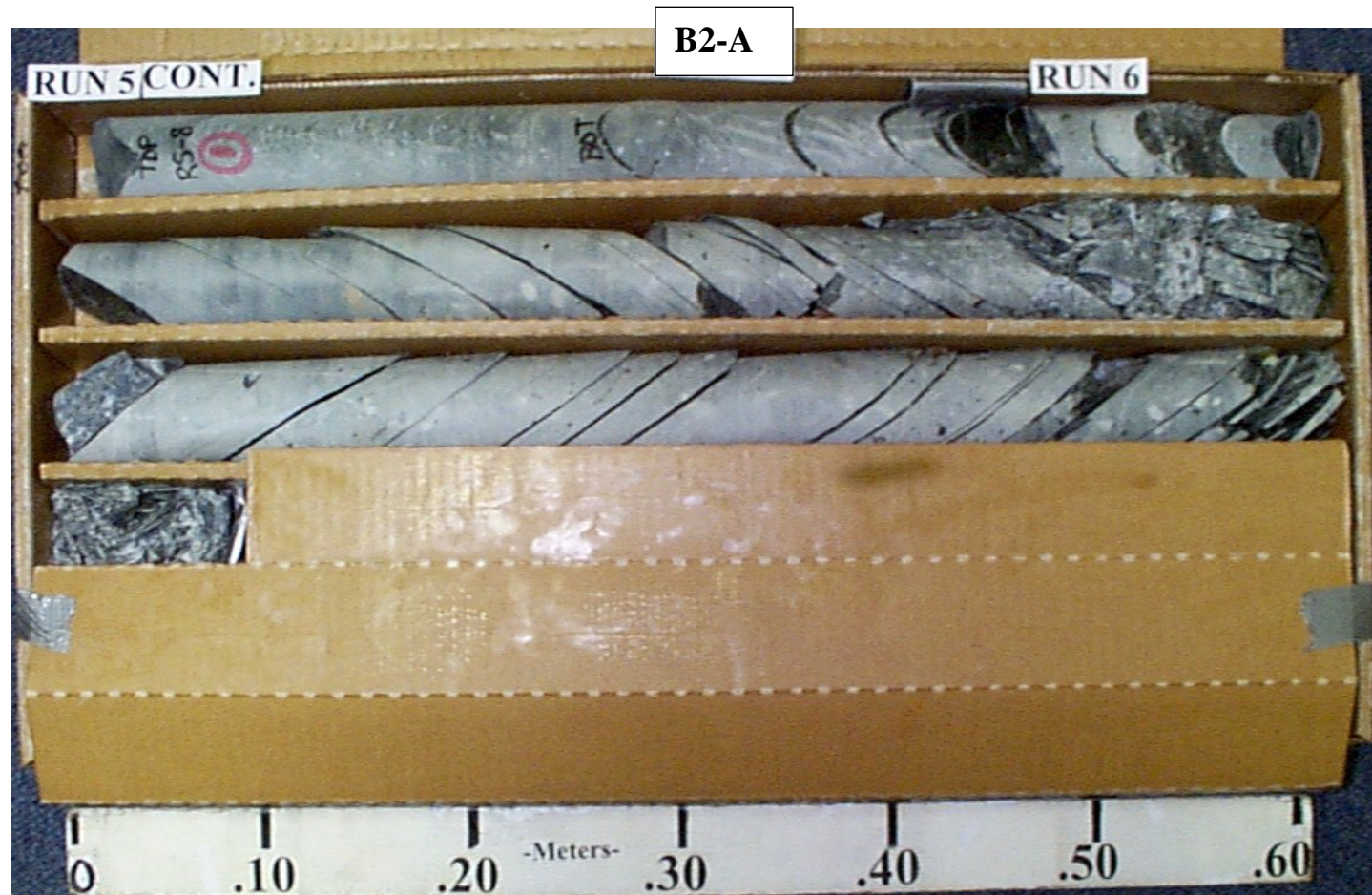
55048.1.1 (B-5548)
CABARRUS COUNTY
BRIDGE NO. 103 OVER DUTCH BUFFALO CREEK ON NC 49 BETWEEN SR 1006 AND SR 2444 (CRUISE RD.)

CORE PHOTOS



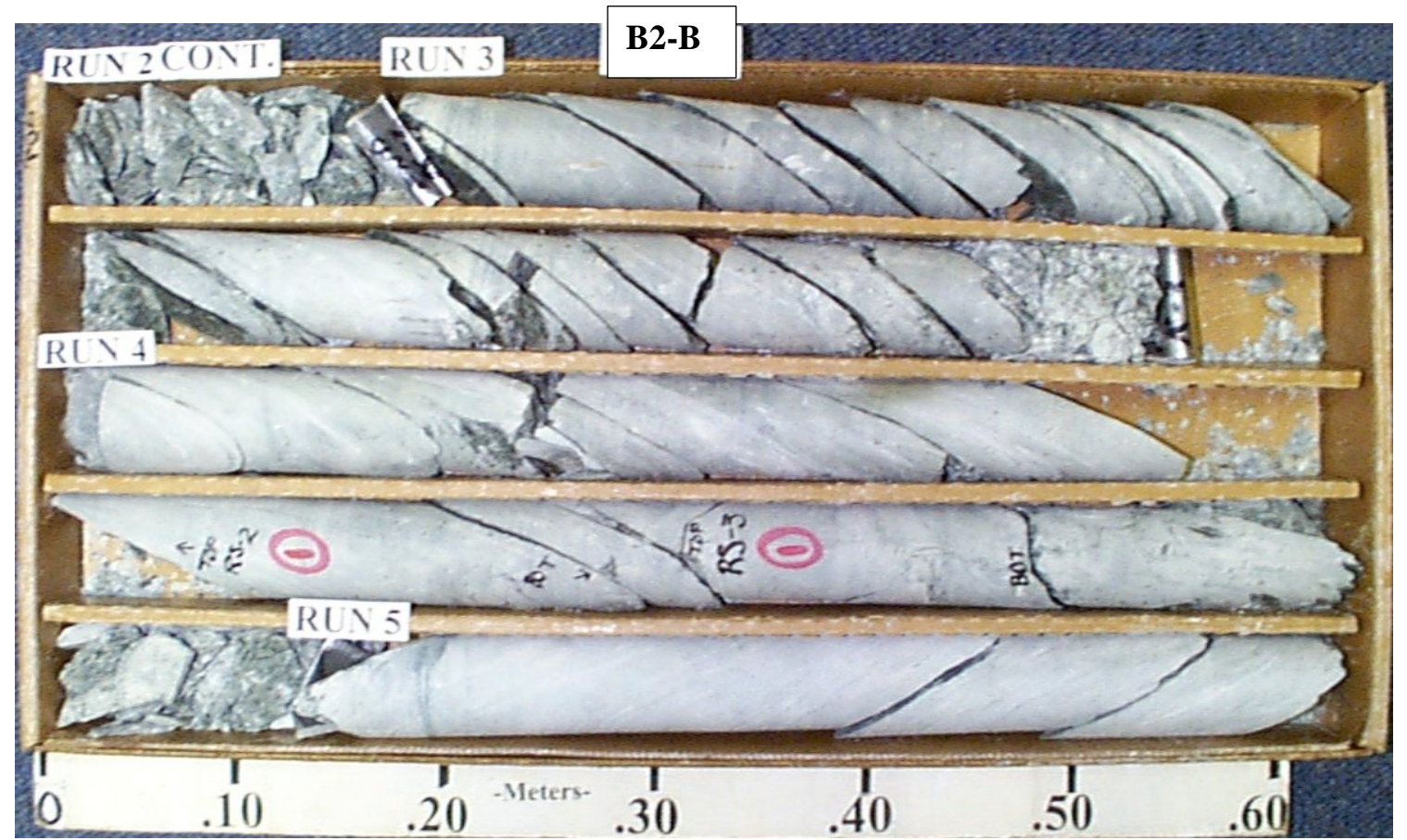
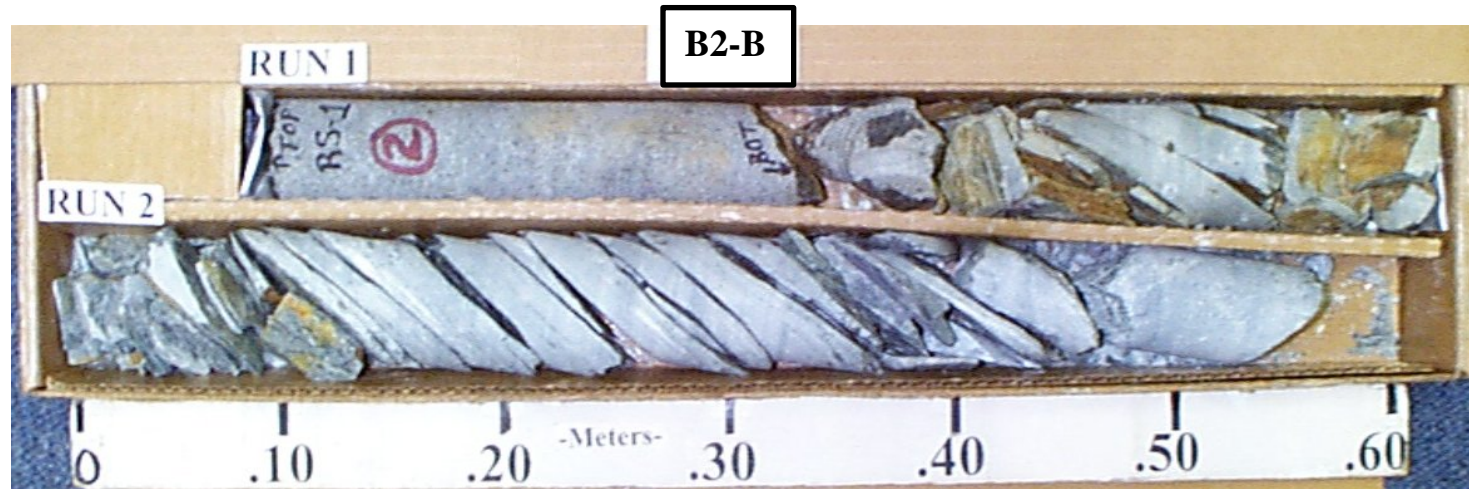
55048.1.1 (B-5548)
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CORE PHOTOS

