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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	33313.1.1 B-3868	1	15

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

STRUCTURE
SUBSURFACE INVESTIGATION

CONTENTS

<u>SHEET</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4-5	CROSS SECTIONS
6-12	BORE LOG & CORE REPORTS
13-15	CORE PHOTOGRAPHS

PROJ. REFERENCE NO. 33313.1.1 B-3868 F.A. PROJ. BRZ-1456(6)
COUNTY MACON
PROJECT DESCRIPTION BRIDGE NO. 172 ON SR 1456 (ROSE CREEK ROAD) OVER LITTLE TENNESSEE RIVER

SITE DESCRIPTION _____

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) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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 THIS 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.

PERSONNEL

D.C. ELLIOTT

D.O. CHEEK

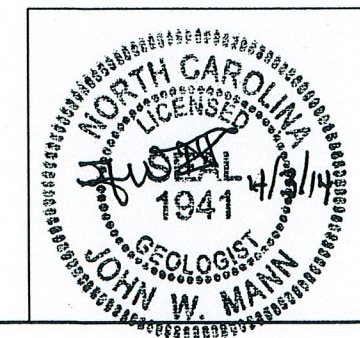
C.J. COFFEY

INVESTIGATED BY J.W. MANN

CHECKED BY J.C. KUHNE

SUBMITTED BY J.C. KUHNE

DATE 040314



PROJECT: 33313.1.1 ID: B-3868

DRAWN BY: J.W. MANN

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - 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.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

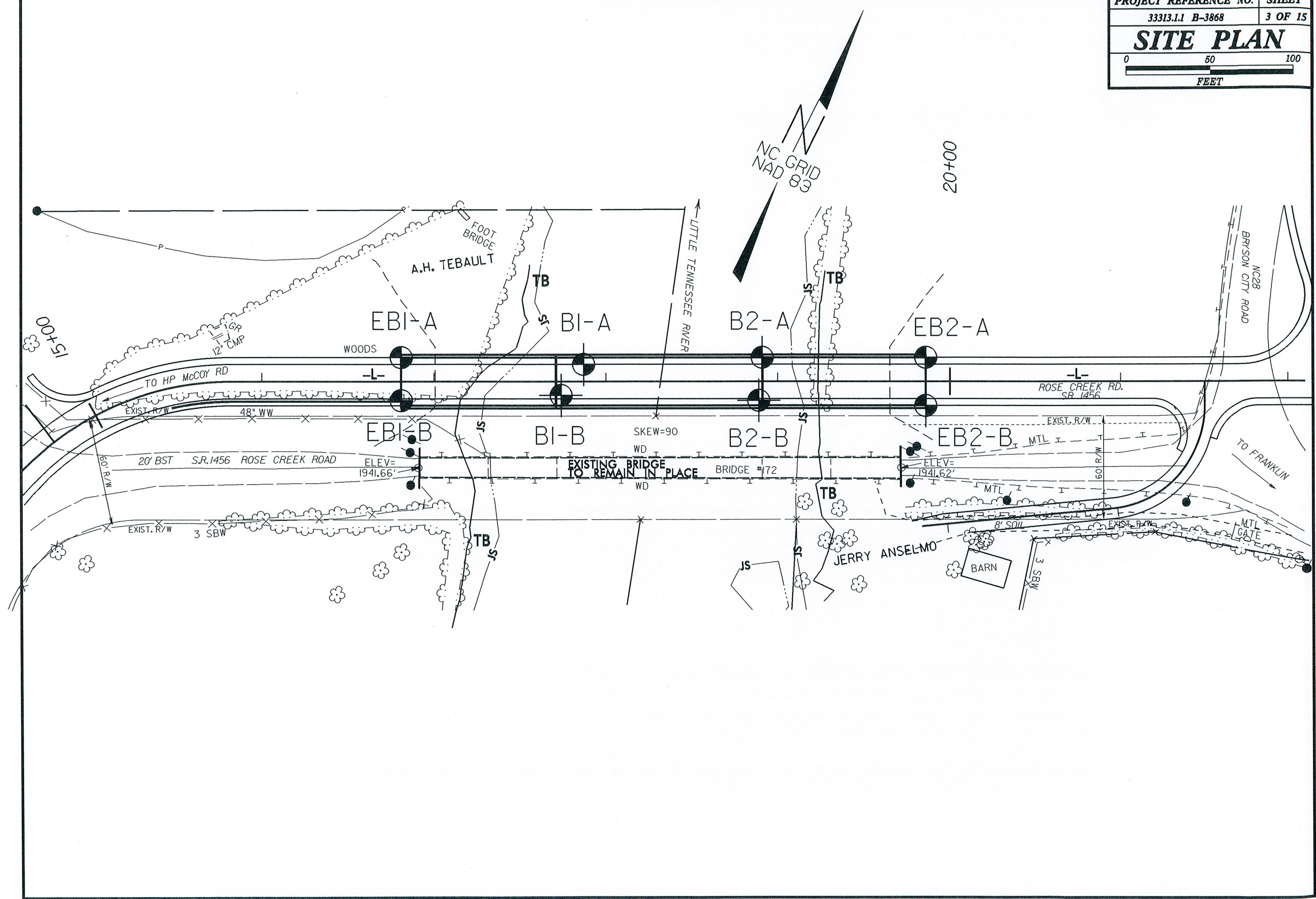
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. 33313.11 B-3868 SHEET NO. 2 OF 15

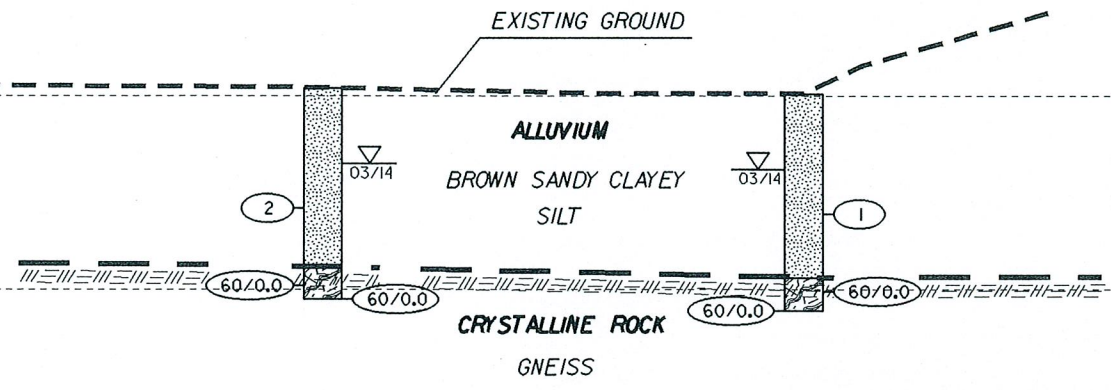
Table with columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, WEATHERING, CONSISTENCY OR DENSENESS, MISCELLANEOUS SYMBOLS, TEXTURE OR GRAIN SIZE, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, PLASTICITY, COLOR, INDURATION.



1950
1940
1930
1920
1910
1900
1890
1880
1870

EB1-A
16+81
14 LT

EB1-B
16+81
11 RT



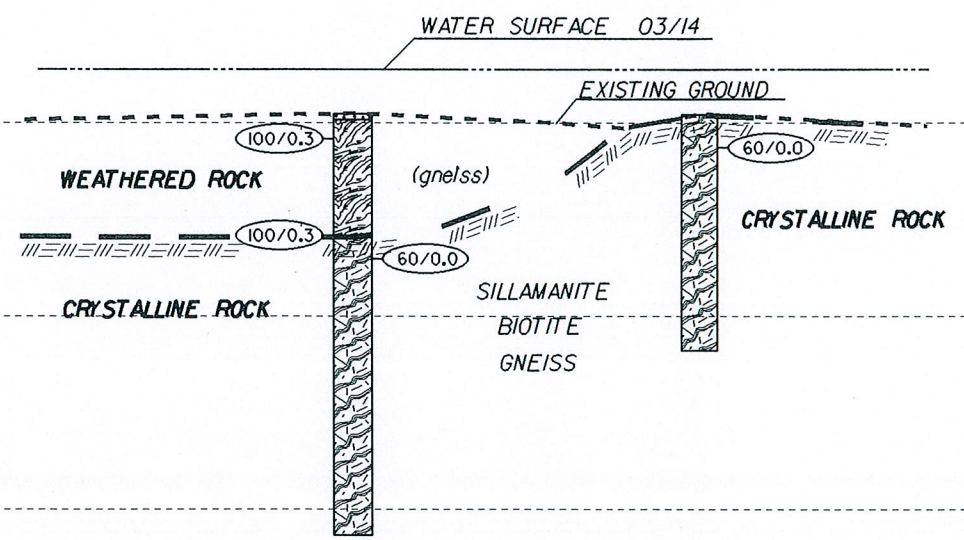
**CROSS SECTION THRU
END BENT ONE**

HORIZ. SCALE 0 10 20 (FEET) VE = 1

1950
1940
1930
1920
1910
1900
1890
1880
1870

B1-A
17+87
10 LT

B1-B
17+74
8 RT



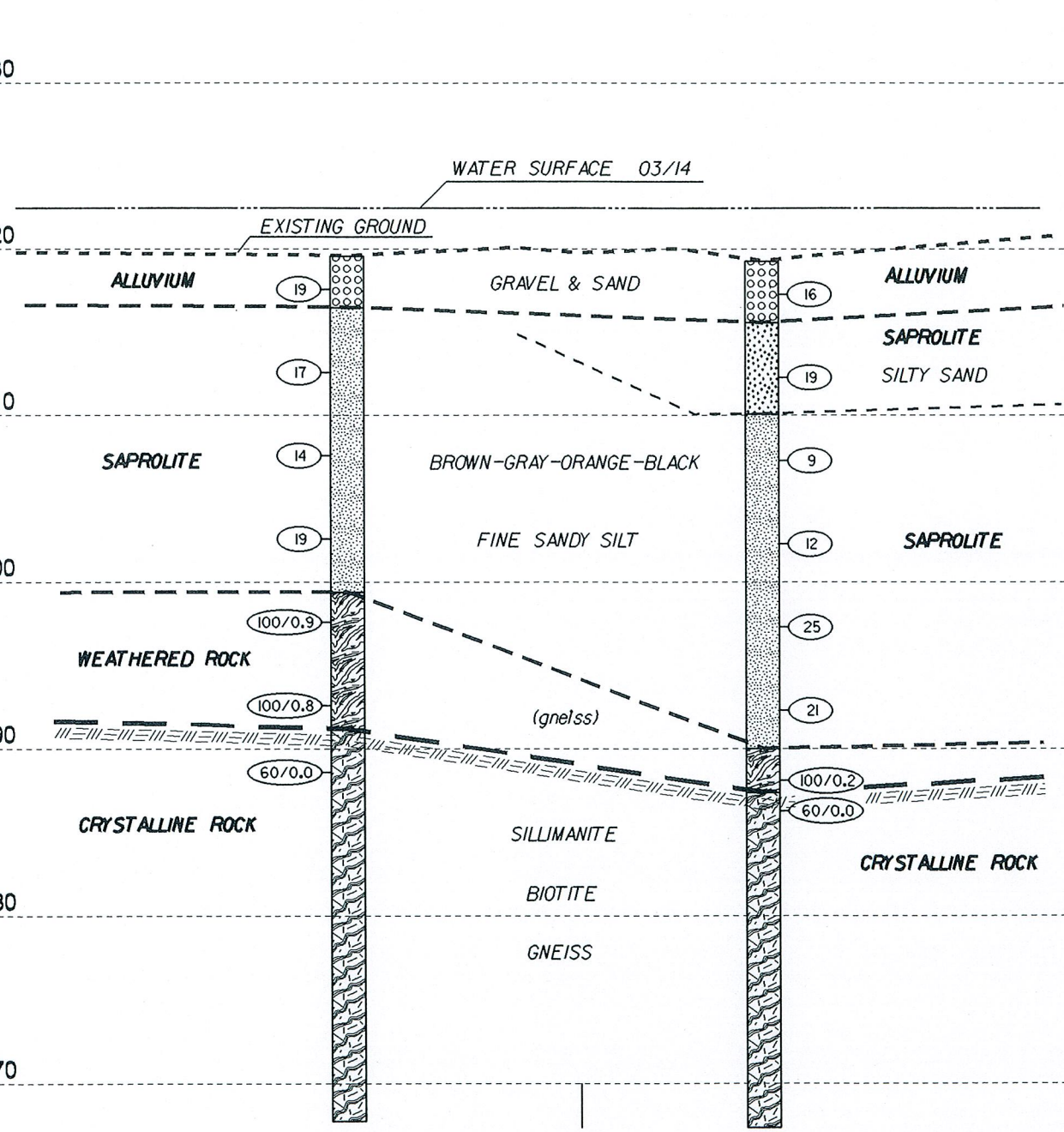
**CROSS SECTION THRU
INTERIOR BENT ONE BORINGS**

HORIZ. SCALE 0 10 20 (FEET) VE = 1

1950
1940
1930
1920
1910
1900
1890
1880
1870

B2-A
18+91
14 LT

B2-B
18+89
11 RT



⊕

HORIZ. SCALE 0 10 20 (FEET)

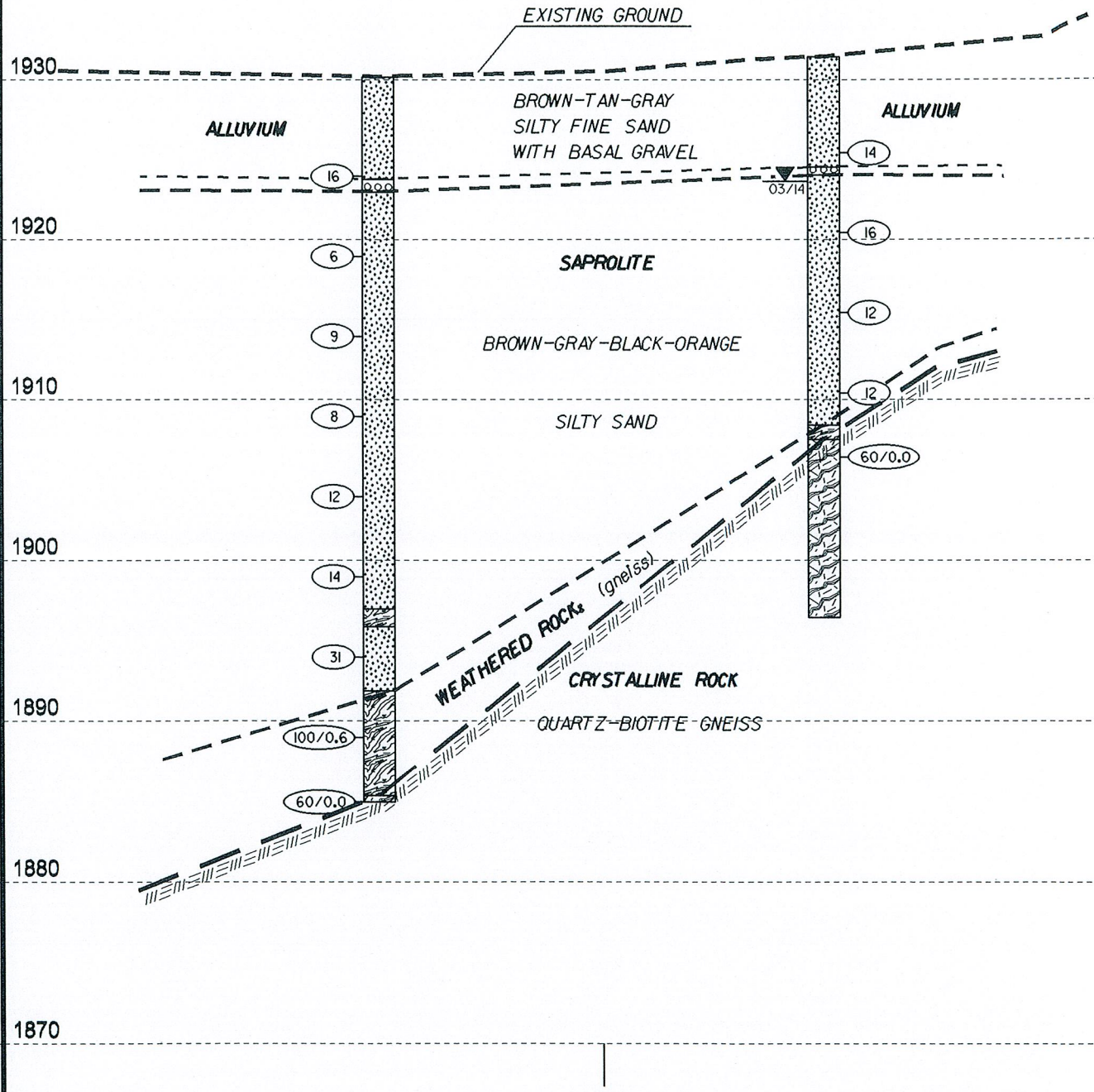
VE = 1

CROSS SECTION THRU INTERIOR BENT TWO

1950
1940
1930
1920
1910
1900
1890
1880
1870

EB2-A
19+86
14 LT

EB2-B
19+86
14 RT



⊕

HORIZ. SCALE 0 10 20 (FEET)

VE = 1

CROSS SECTION THRU END BENT TWO

WBS 33313.1.1		TIP B-3868		COUNTY MACON		GEOLOGIST Elliott, D. C.										
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River							GROUND WTR (ft)									
BORING NO. B1-A		STATION 17+87		OFFSET 10 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 1,920.5 ft		TOTAL DEPTH 21.8 ft		NORTHING 583,635		EASTING 675,009										
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 82% 11/28/2011		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic												
DRILLER Cheek, D. O.		START DATE 03/11/14		COMP. DATE 03/11/14		SURFACE WATER DEPTH 2.3ft										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1925																
1920	1,919.5	1.0														
1915	1,914.5	6.0														
	1,913.0	7.5														
1910																
1905																
1900																

WBS 33313.1.1		TIP B-3868		COUNTY MACON		GEOLOGIST Elliott, D. C.					
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River							GROUND WTR (ft)				
BORING NO. B1-A		STATION 17+87		OFFSET 10 ft LT		ALIGNMENT -L-					
COLLAR ELEV. 1,920.5 ft		TOTAL DEPTH 21.8 ft		NORTHING 583,635		EASTING 675,009					
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 82% 11/28/2011		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic							
DRILLER Cheek, D. O.		START DATE 03/11/14		COMP. DATE 03/11/14		SURFACE WATER DEPTH 2.3ft					
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)	REC. (%)	RQD (%)			
1912.97	1,913.0	7.5	4.3	N=60/0.0 0:15/0.3 1:01/1.0 1:20/1.0 1:14/1.0 1:12/1.0	(3.8)	(4.1)					
1910	1,908.7	11.8	5.0	1:03/1.0 1:12/1.0 1:15/1.0 1:08/1.0 1:18/1.0	(5.0)	(4.7)					
1905	1,903.7	16.8	5.0	1:09/1.0 1:20/1.0 1:15/1.0 1:29/1.0 1:23/1.0	100%	94%					
1900	1,898.7	21.8									

NCDOT BORE SINGLE B3868_GEO_BH_BRD0172.GPJ NC_DOT.GDT 4/2/14

NCDOT BORE SINGLE B3868_GEO_BH_BRD0172.GPJ NC_DOT.GDT 4/2/14

WBS 33313.1.1		TIP B-3868		COUNTY MACON		GEOLOGIST Elliott, D. C.											
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River							GROUND WTR (ft)										
BORING NO. B1-B		STATION 17+74		OFFSET 8 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 1,920.4 ft		TOTAL DEPTH 12.2 ft		NORTHING 583,613		EASTING 675,006											
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 82% 11/28/2011		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic													
DRILLER Cheek, D. O.		START DATE 03/11/14		COMP. DATE 03/12/14		SURFACE WATER DEPTH 1.9ft											
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							
1925																	
																	WATER SURFACE (03/11/14)
1920																	1,920.4 WATER BOTTOM 0.0
	1,918.7	1.7															CRYSTALLINE ROCK Sillamanite Biotite GNEISS Run 1: 1.7-3.2' REC=100% RQD=100% Run 2: 3.2-8.2' REC=98% RQD=98% Run 3: 8.2-12.2' REC=93% RQD=75%
1915																	
1910																	
																	RS-3
																	RS-4
																	1,908.2 Boring Terminated at Elevation 1,908.2 ft In Crystalline Rock: GNEISS 12.2

NCDOT BORE SINGLE B3868_GEO_BH_BRD0172.GPJ NC_DOT.GDT 4/2/14

WBS 33313.1.1		TIP B-3868		COUNTY MACON		GEOLOGIST Elliott, D. C.						
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River							GROUND WTR (ft)					
BORING NO. B1-B		STATION 17+74		OFFSET 8 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 1,920.4 ft		TOTAL DEPTH 12.2 ft		NORTHING 583,613		EASTING 675,006						
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 82% 11/28/2011		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic								
DRILLER Cheek, D. O.		START DATE 03/11/14		COMP. DATE 03/12/14		SURFACE WATER DEPTH 1.9ft						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	TOTAL RUN 10.5 ft		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
1918.7	1,918.7	1.7	1.5	N=60/0.0 0:57/0.5 1:40/1.0	(1.5)	(1.5)						
	1,917.2	3.2	5.0	2:31/1.0 2:57/1.0 3:34/1.0 3:21/1.0 3:44/1.0	(4.9)	(4.9)						
1915												
	1,912.2	8.2	4.0	6:52/1.0 7:37/1.0 11:55/1.0 17:21/1.0	(3.7)	(3.0)	RS-3					
1910							RS-4					
	1,908.2	12.2										1,908.2 Boring Terminated at Elevation 1,908.2 ft In Crystalline Rock: GNEISS 12.2

NCDOT CORE SINGLE B3868_GEO_BH_BRD0172.GPJ NC_DOT.GDT 4/2/14

WBS 33313.1.1	TIP B-3868	COUNTY: MACON	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River			GROUND WTR (ft)
BORING NO. EB2-A	STATION 19+86	OFFSET 14 ft LT	ALIGNMENT -L-
COLLAR ELEV. 1,930.2 ft	TOTAL DEPTH 45.2 ft	NORTHING 583,727	EASTING 675,186
DRILL RIG/HAMMER EFF./DATE AF00070 CME-550X 81% 09/03/2009		DRILL METHOD NW Casing w/ SPT	HAMMER TYPE Automatic
DRILLER Cheek, D. O.	START DATE 03/06/14	COMP. DATE 03/06/14	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				
1935														
1930													GROUND SURFACE	0.0
1925	1,925.0	5.2	22	11	5								ALLUVIAL Brown-gray silty fine SAND	
1920	1,920.0	10.2	7	3	3								ALLUVIAL GRAVEL	6.4
1915	1,915.0	15.2	5	5	4								SAPROLITE Brown-gray-black-orange garnetiferous silty SAND	7.2
1910	1,910.0	20.2	3	4	4									
1905	1,905.0	25.2	4	7	5									
1900	1,900.0	30.2	5	6	8									
1895	1,895.0	35.2	15	14	17								WEATHERED ROCK (seam of gneiss)	33.2
1890	1,890.0	40.2	13	36	64/0.1								SAPROLITE Brown-gray-black-orange garnetiferous silty SAND	34.3
1885	1,885.0	45.2	60/0.0										WEATHERED ROCK (gneiss)	38.3
													CRYSTALLINE ROCK Biotite GNEISS	44.8
													Boring Terminated with Standard Penetration Test Refusal at Elevation 1,885.0 ft In Crystalline Rock: GNEISS	45.2

NCDOT BORE SINGLE B3868_GEO_BH_BRDGG0172.GPJ NC_DOT.GDT 4/2/14

WBS 33313.1.1		TIP B-3868		COUNTY MACON		GEOLOGIST Elliott, D. C.									
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 19+86		OFFSET 14 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 1,931.4 ft		TOTAL DEPTH 35.0 ft		NORTHING 583,702		EASTING 675,198									
DRILL RIG/HAMMER EFF./DATE AFO0070 CME-550X 81% 09/03/2009		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic											
DRILLER Cheek, D. O.		START DATE 03/05/14		COMP. DATE 03/05/14		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					
1935															
1930															
1925	1,926.4	5.0	15	9	5										
1920	1,921.4	10.0	7	7	9										
1915	1,916.4	15.0	7	5	7										
1910	1,911.4	20.0	6	7	5										
1905	1,906.4	25.0	60/0.0												
1900															

WBS 33313.1.1		TIP B-3868		COUNTY MACON		GEOLOGIST Elliott, D. C.						
SITE DESCRIPTION Bridge No. 172 on SR 1456 (Rose Creek Road) over Little Tennessee River							GROUND WTR (ft)					
BORING NO. EB2-B		STATION 19+86		OFFSET 14 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 1,931.4 ft		TOTAL DEPTH 35.0 ft		NORTHING 583,702		EASTING 675,198						
DRILL RIG/HAMMER EFF./DATE AFO0070 CME-550X 81% 09/03/2009		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic								
DRILLER Cheek, D. O.		START DATE 03/05/14		COMP. DATE 03/05/14		SURFACE WATER DEPTH N/A						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	TOTAL RUN 10.0 ft		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)		REC. (%)	RQD (%)			
1906.43												
1905	1,906.4	25.0	5.0	N=60/0.0	(1.8) 36%	(0.0) 0%						
1900	1,901.4	30.0			(0.5) 10%	(0.0) 0%						
	1,896.4	35.0										

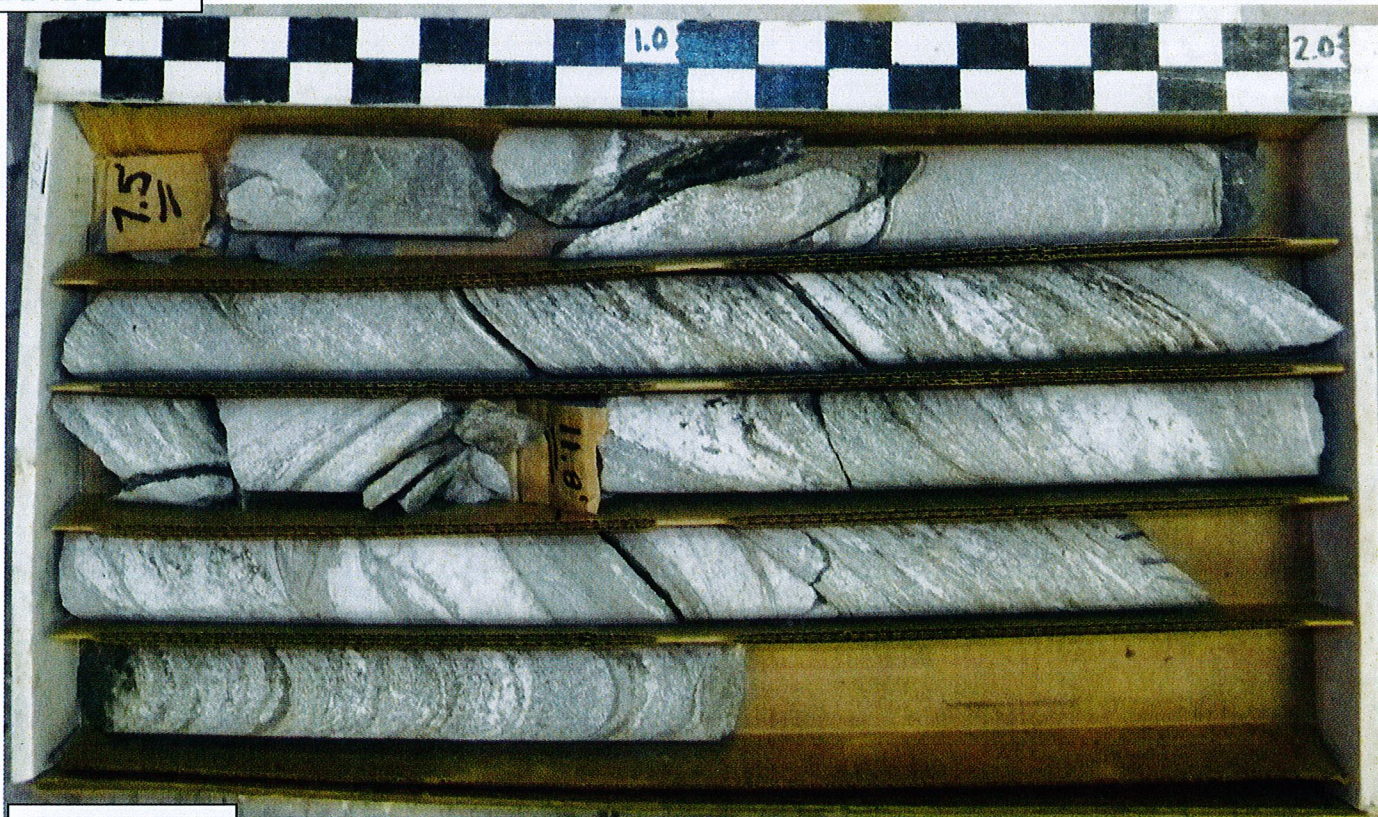
NCDOT BORE SINGLE B3868_GEO_BH_BRD0172.GPJ NC_DOT.GDT 4/2/14

NCDOT CORE SINGLE B3868_GEO_BH_BRD0172.GPJ NC_DOT.GDT 4/2/14

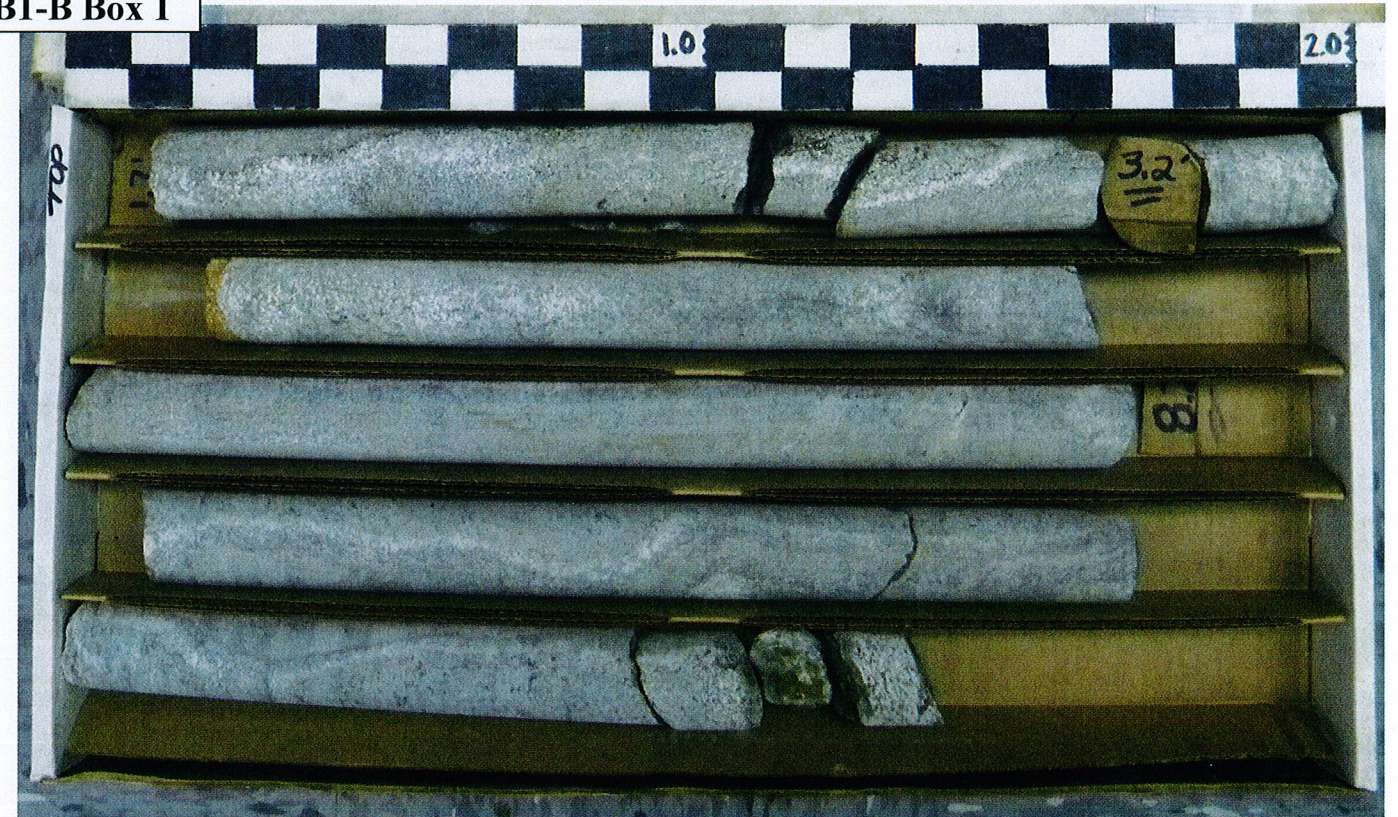
33313.1.1 (B-3868)
MACON COUNTY
BRIDGE # 172 ON SR 1456 OVER LITTLE TENNESSEE RIVER

CORE PHOTOS

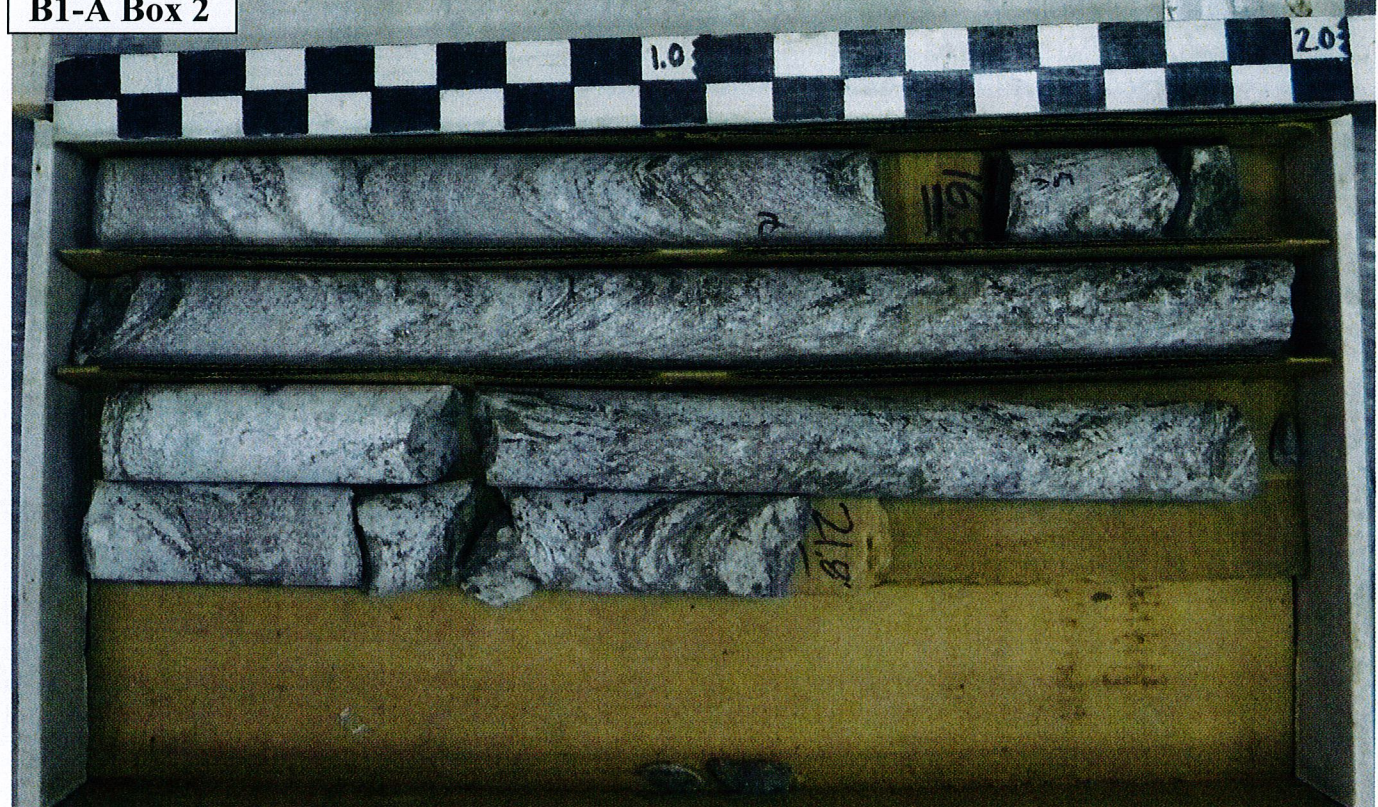
B1-A Box 1



B1-B Box 1



B1-A Box 2



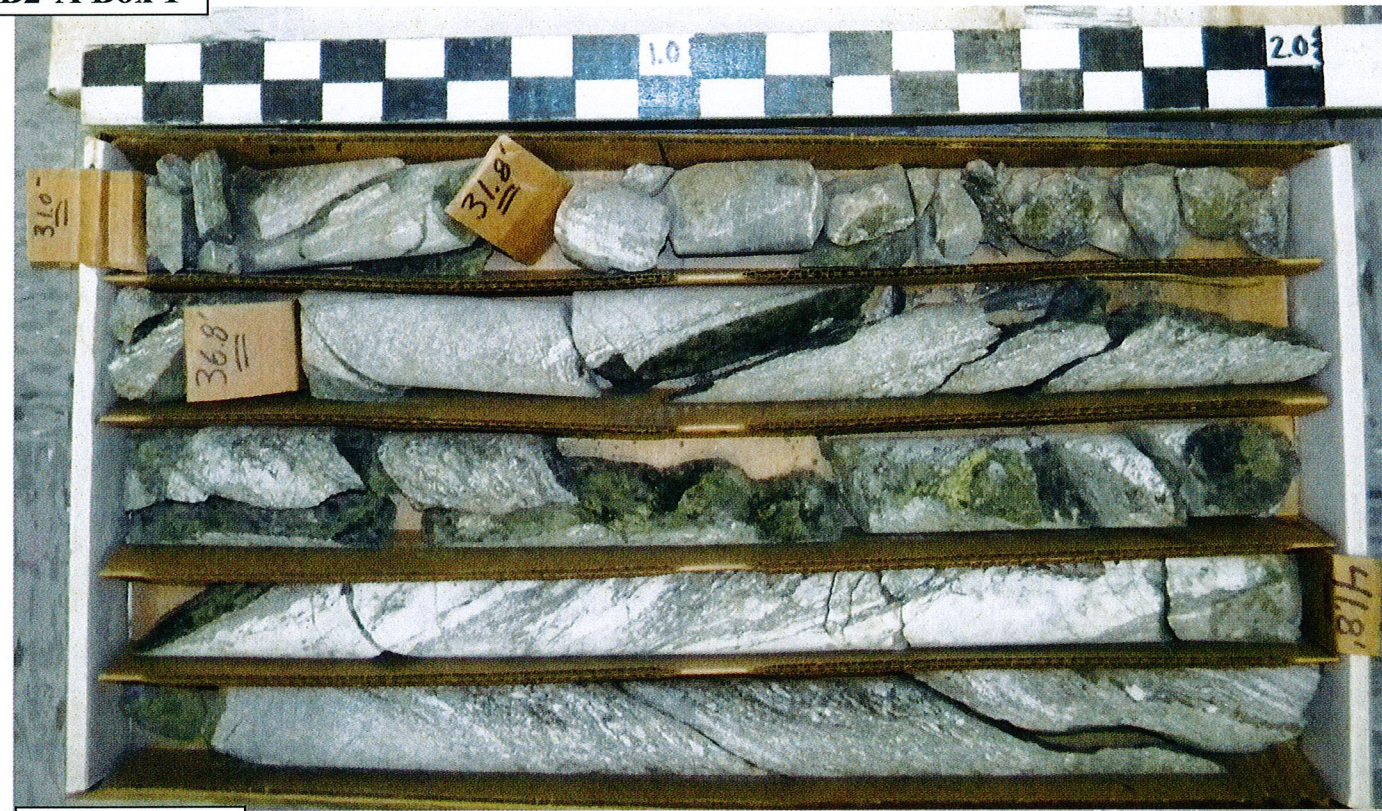
B1-B Box 2



33313.1.1 (B-3868)
MACON COUNTY
BRIDGE # 172 ON SR 1456 OVER LITTLE TENNESSEE RIVER

CORE PHOTOS

B2-A Box 1



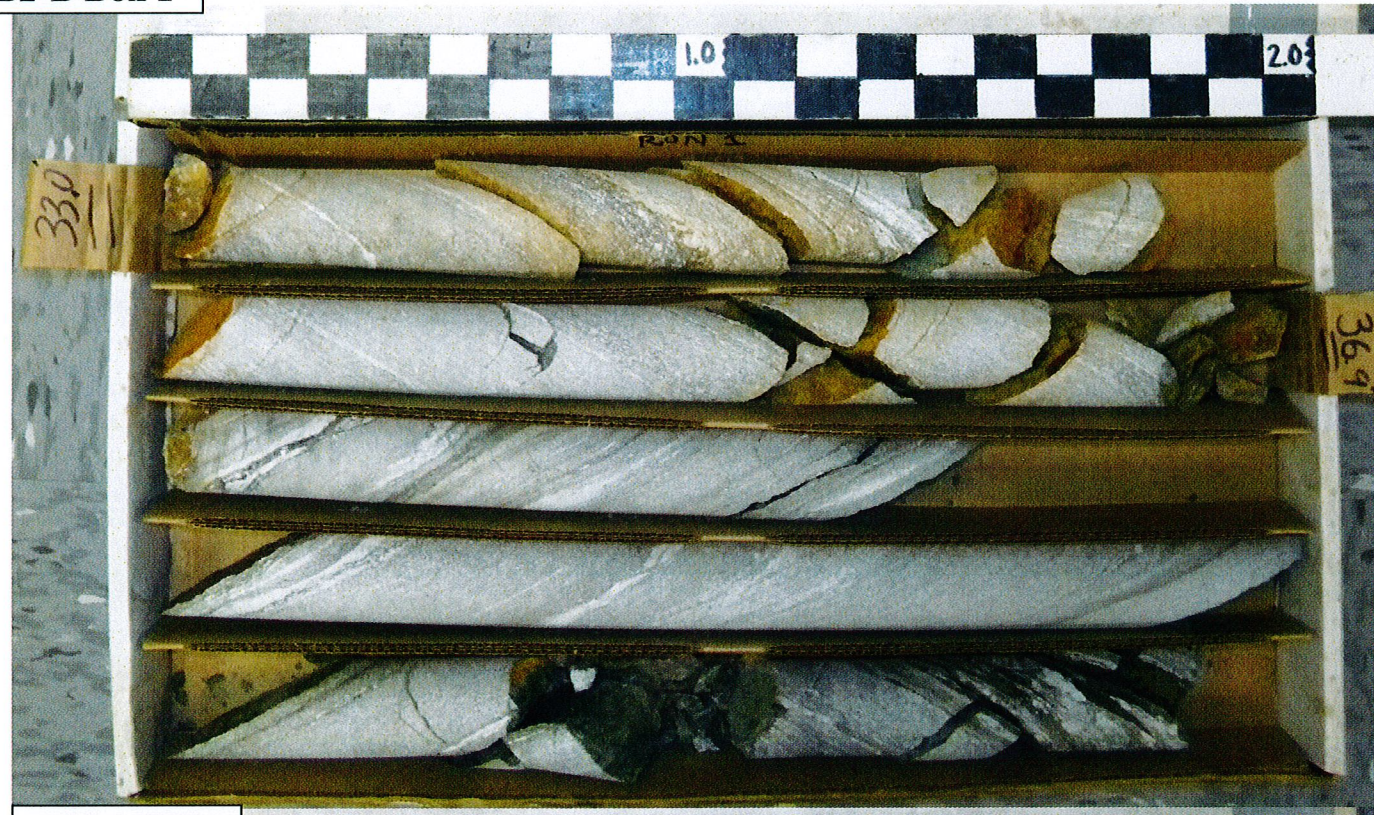
B2-A Box 2



33313.1.1 (B-3868)
MACON COUNTY
BRIDGE # 172 ON SR 1456 OVER LITTLE TENNESSEE RIVER

CORE PHOTOS

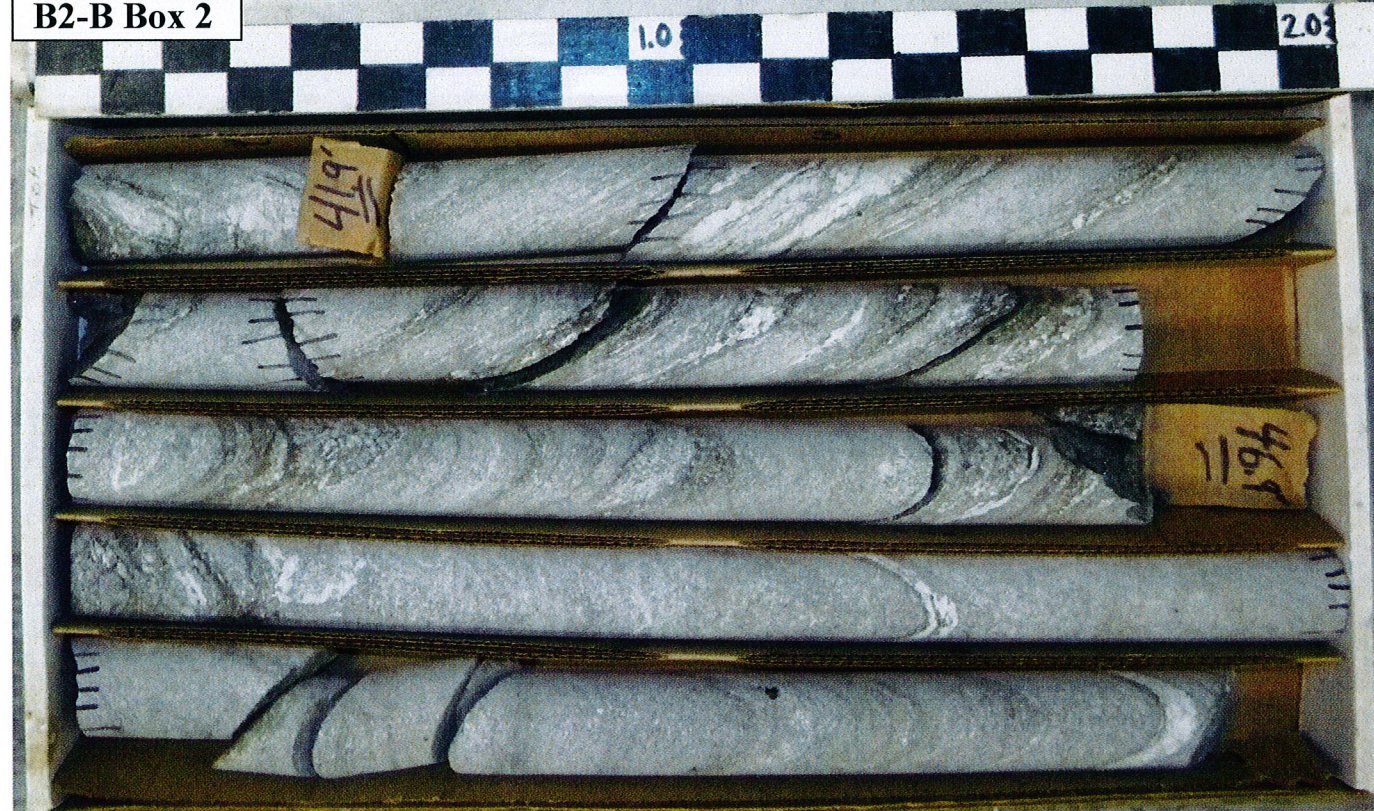
B2-B Box 1



B2-B Box 3



B2-B Box 2



EB2-B Box 1

