

NOTE: SEE SHEET 1A 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.	B-3619	1	1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33167.1.1	BRZ-3439(1)	PE	
33167.2.2	BRZ-3439(1)	RW & UTILS	
33167.3.1	BRZ-3439(1)	CONST	

CONTENTS

LINE	STATION	PLAN	XSECT	BORELOG
-L-	9+90.00 to 14+20.00	4	5	11

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 DETAILS 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.

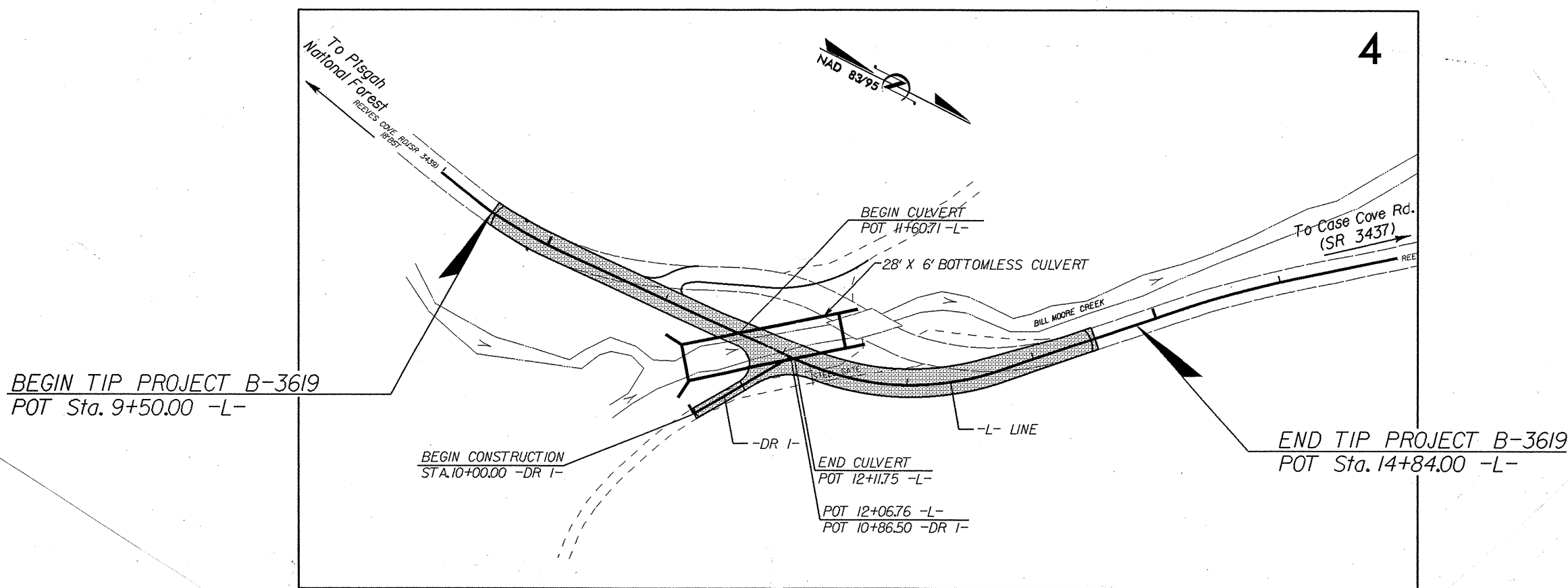
ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 33167.1.1 (B-3619) F.A. PROJ. BRZ-3439(1)
COUNTY BUNCOMBE
PROJECT DESCRIPTION APPROACHES TO BRIDGE NO.56
ON SR-3439 OVER BILL MOORE CREEK

INVENTORY

ID: B-3619

CONTRACT: C202649



PERSONNEL

M M HAGER
T B DANIEL
D O CHEEK
G K ROSE

INVESTIGATED BY C A DUNNAGAN
CHECKED BY W D FRYE, Jr
SUBMITTED BY W D FRYE, Jr
DATE JANUARY 2009

DRAWN BY: C A DUNNAGAN

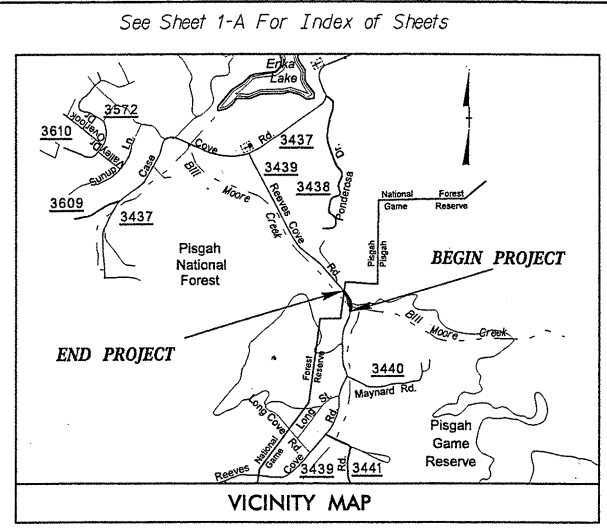
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NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

C A Dunnagan

09/08/09
 CONTRACT: B-3619
 TIP PROJECT: B-3619
 SYSTEMTIME
 DCN
 USERNAME

TIP PROJECT: B-3619



11/03/2008
 25% SUBMITTAL

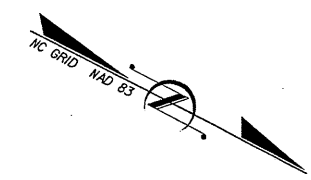
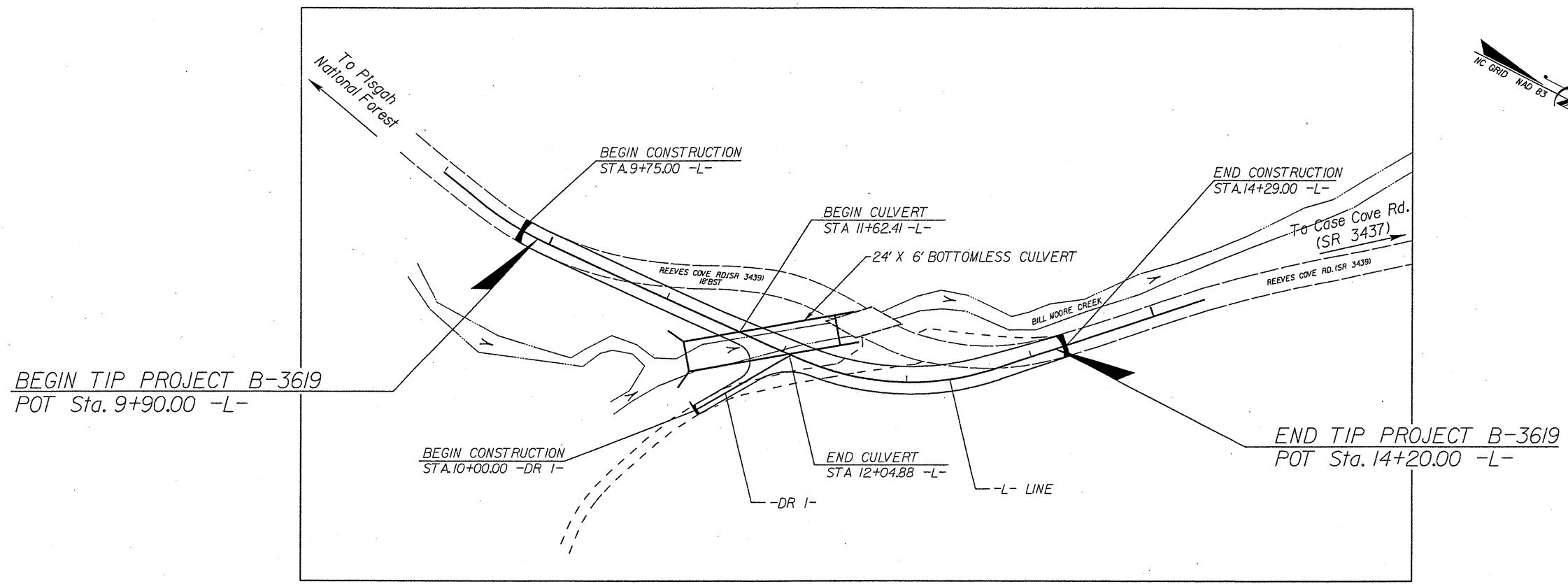
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

BUNCOMBE

**LOCATION: BRIDGE No. 56 OVER BILL MOORE CREEK
 ON SR 3439**

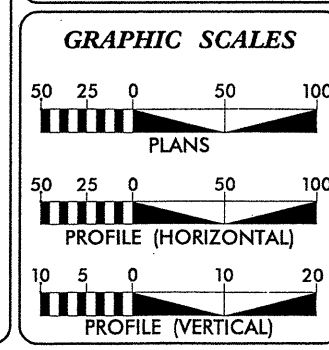
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3619	1A	11
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33167.1.1	BRZ-3439(1)	PE	



- THIS PROJECT IS NOT WITHIN ANY CITY LIMITS.
 **DESIGN EXCEPTION FOR DESIGN SPEED, LANE WIDTH AND SHOULDER WIDTH REQUIRED.
 CLEARING FOR THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD ...

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2010 =	1500
ADT 2030 =	2300
DHV =	60 %
T =	3 % *
V =	25 MPH**
FUNC. CLASSIFICATION:	RURAL LOCAL
* TTST 1%	DUAL 2%

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3619 =	0.073 MI.
LENGTH OF CULVERT TIP PROJECT B-3619 =	0.008 MI.
TOTAL LENGTH OF TIP PROJECT B-3619 =	0.081 MI.

Prepared in the Office of:

Stantec
 Stantec Consulting Inc.
 Suite 300, 801 Jones Franklin Road
 Raleigh, NC U.S.A. 27606
 Tel. 919.851.6866
 Fax. 919.851.7054
 www.stantec.com

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 OCT. 16, 2009

LETTING DATE:
 OCT. 19, 2010

ROBERT WILLIAMS, PE
 PROJECT ENGINEER

KEITH HUDSON
 PROJECT DESIGN ENGINEER

CATHY S. HOUSER, PE
 PROJECT ENGINEER - ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. 33167.1.1 (B-3619) SHEET NO. 2/11

Main content area containing SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, MISCELLANEOUS SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION, and TERMS AND DEFINITIONS.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

January 22, 2009

STATE PROJECT: 33167.1.1 (B-3619)
F. A. PROJECT: BRZ-3439(1)
COUNTY: Buncombe
DESCRIPTION: Approaches to Bridge No. 56 on SR-3439 over Bill Moore Creek
SUBJECT: Geotechnical Report – Inventory

Project Description

This project is part of the overall project of replacing the aging Bridge No. 56. The alignment has been shifted to the east (upstream) by approximately 55.0 feet. This puts the northern approach into the hillside right of centerline. Two borings were advanced in this cut section.

Areas of Special Geotechnical Interest

(1) The following section contains rock exposed in an existing cut.

<u>Line</u>	<u>Station Interval</u>
-L-	12+90 to 14+15

(2) The following borings encountered rock above grade.

<u>Line</u>	<u>Station</u>
-L-	12+31, 117' RT
-L-	13+43, 74' RT

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
CENTURY CENTER COMPLEX
BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Physiography and Geology

The project corridor is undeveloped. The right side of centerline is part of Pisgah National Forest. To the left of centerline is shown on the plans as belonging to BASF Corporation. However, it is believed that this land was acquired by the people responsible for the Biltmore Lake development. Except for removal of the existing structure and pavement, construction will be on U. S. Forest Service land.

The terrain is fairly steep, gorge-like, and lies within the Blue Ridge Belt. The rock is essentially a biotite gneiss.

Soil and Rock Properties

The soils encountered on this project include alluvium, colluvium and saprolite. The alluvium is made of loose silty sand and medium stiff sandy silt. The silt contains trace amounts of organic matter; both the silt and sand horizons contain trace amounts of gravel. A loose basal gravel layer is not uncommon.

The colluvium consists of approximately 6.0 feet of stiff sandy silt with clay and a trace of gravel. The saprolite within this project is composed of stiff to very stiff sandy silt and dense to very dense silty sand. Both types of saprolite contain some mica and manganese.

The weathered rock and crystalline rock encountered on this project is a biotite gneiss with gravels.

Groundwater Properties

Primary drainage is provided by Bill Moore Creek. Static groundwater was not recorded in either of the two borings advanced for the roadway.

Geotechnical Descriptive Analysis

Station 9+90.00 to 11+62.41

This interval involves emplacement of embankment. The maximum height of the proposed embankment is 9.0 feet at the centerline.

Station 11+62.41 to 12+04.88

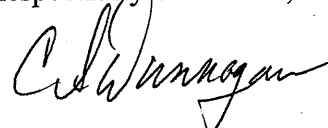
This interval will be occupied by the proposed culvert.

Station 12+04.88 to 14+20.00

This interval is from the culvert to the end of the project. The major construction feature is a cut, right of centerline. This cut is 13.0 feet at its deepest, as measured at the ditchline. Two borings were advanced within the cut section. One, B-1 (12+31, 117' RT), was taken to crystalline rock, then continued using NXWL coring equipment. The other, B-2 (13+43, 74' RT), was terminated

by hollow auger refusal on crystalline rock. Colluvium was encountered in B-1, but not B-2. This material is a 6.5 feet layer of stiff sandy silt with clay and a trace of gravel. Saprolite throughout this interval is composed of medium to very dense silty sand and very stiff sandy silt. Both soil types contained mica. Manganese is present along foliation. This presents a nearly frictionless surface. Weathered rock was encountered at 19.5 feet in B-1, and at 24.6 in B-2. Again, manganese was noted along foliation in "some" amounts. B-2 was terminated by auger refusal at 26.6 on biotite gneiss. In B-1, coring was initiated at 24.9 feet and terminated at 57.0 feet. The interval between 24.9 feet and 45.4 feet contains biotite gneiss that is severely to moderately severely weathered. The Recoveries were from 14% to 97% (51% average); RQD's were from 0% to 28% (11% average). Oddly, these values decreased with depth. From 45.4 feet to 57.0 feet, the biotite gneiss is very lightly weathered to fresh. There are severely to moderately severely weathered zones from 46.8 to 47.6 feet, 49.2 feet to 49.9 feet, 51.4 feet to 51.8 feet, 52.6 feet to 53.1 feet and 55.4 feet to 55.6 feet. The Recoveries were from 86% to 100% (92% average); RQD's were from 42% to 89% (67% average). Rock is exposed in the existing cut within this interval. Between -L- Station intervals 13+05 to 13+30 and 13+85 to 14+15, there are continuous outcrops. Between -L- Station intervals 12+90 to 13+05 and 13+30 to 13+85, the outcrops are sporadic and with dimensions of approximately 2 feet by 2 feet.

Respectfully Submitted,



Charles A. Dunnagan, L.G.
Project Geological Engineer

30/11

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT TIP # B-3619

COUNTY Buncombe

DATE 7/18/2011

SHEET 1 OF 1 SHEETS

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMBANK 15%	BORROW	ROCK WASTE	SUITABLE WASTE	TOTAL WASTE
Summary No. 1															
-L-	9+90.00	12+00.00	16				16	1763		1763	2027	2011			
Total Summary No. 1			16				16	1763		1763	2027	2011			
Summary No. 2												0			
-L-	12+00.00	14+60	7040	409			6631	565	409	54	471	0	0	6569	6569
-DR 1-	10+00.00	10+75.40	422				422	342		342	394	0		28	28
Total Summary No. 2			7462	409			7053	907	409	396	865	0	0	6597	6597
PROJECT SUBTOTAL			7478	409	0	0	7069	2670	409	2159	2892	2011	0	6597	6597
												0			
ADDITIONAL UNDERCUT												0			
WASTE IN LIEU OF BORROW												-2011		-2011	-2011
LOSS DUE TO CLEARING & GRUBBING			-750				-750							-750	-750
PROJECT TOTAL			6728	409	0	0	6319	2670	409	2159	2892	0	0	3836	3836
GRAND TOTAL			6728												3836
SAY			6750												3850

Est. Undercut, Contingency Item = 10 Cu. Yd.
 Est Select Granular Material = 50 Cu.Yd.
 Est Class IV Subgrade Stabilization, Contingency = 60 Ton
 Est Fabric for Soil Stabilization Contingency = 100 Sq. Yd.
 Est Shallow Undercut Contingency = 35 Cu.Yd.

* EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT.
 THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA
 PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

PROJECT REFERENCE NO. B-3619	SHEET NO. 4/11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

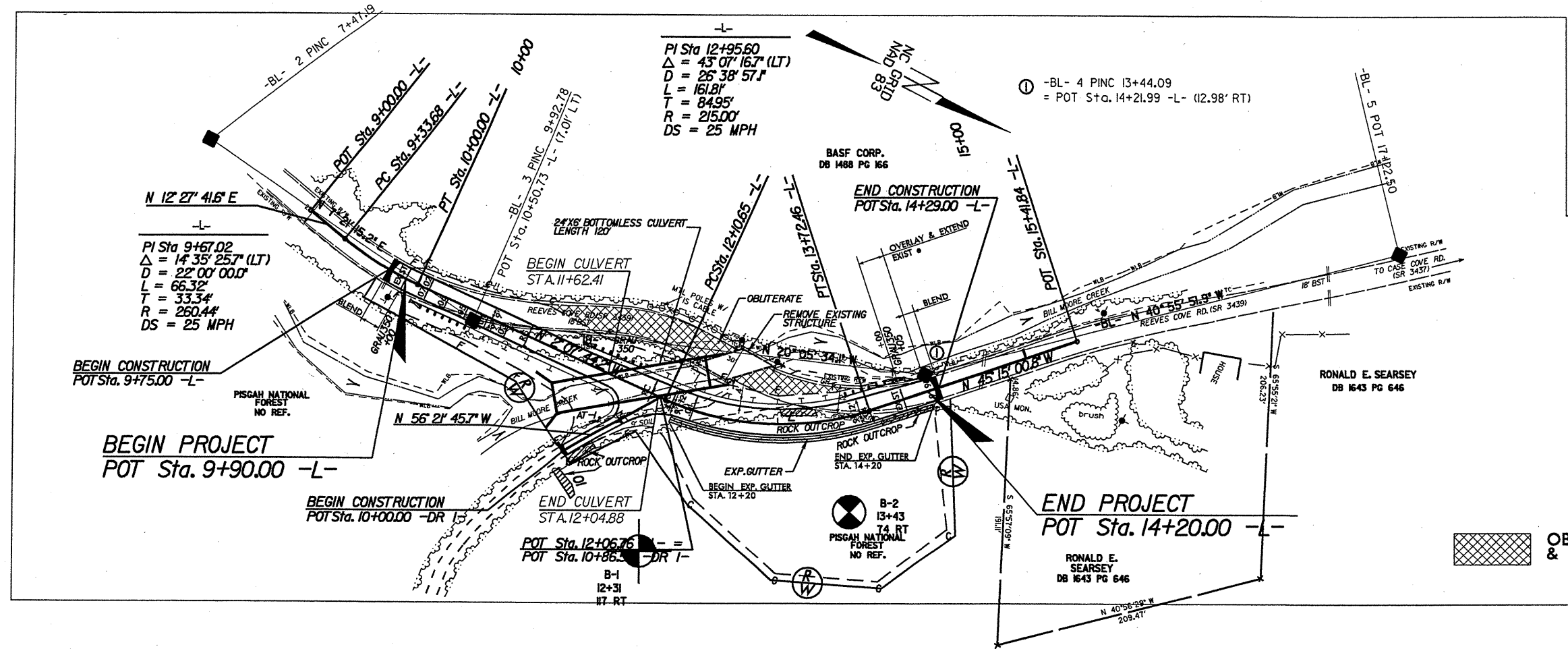
SR 3439

BRIDGE No. 56

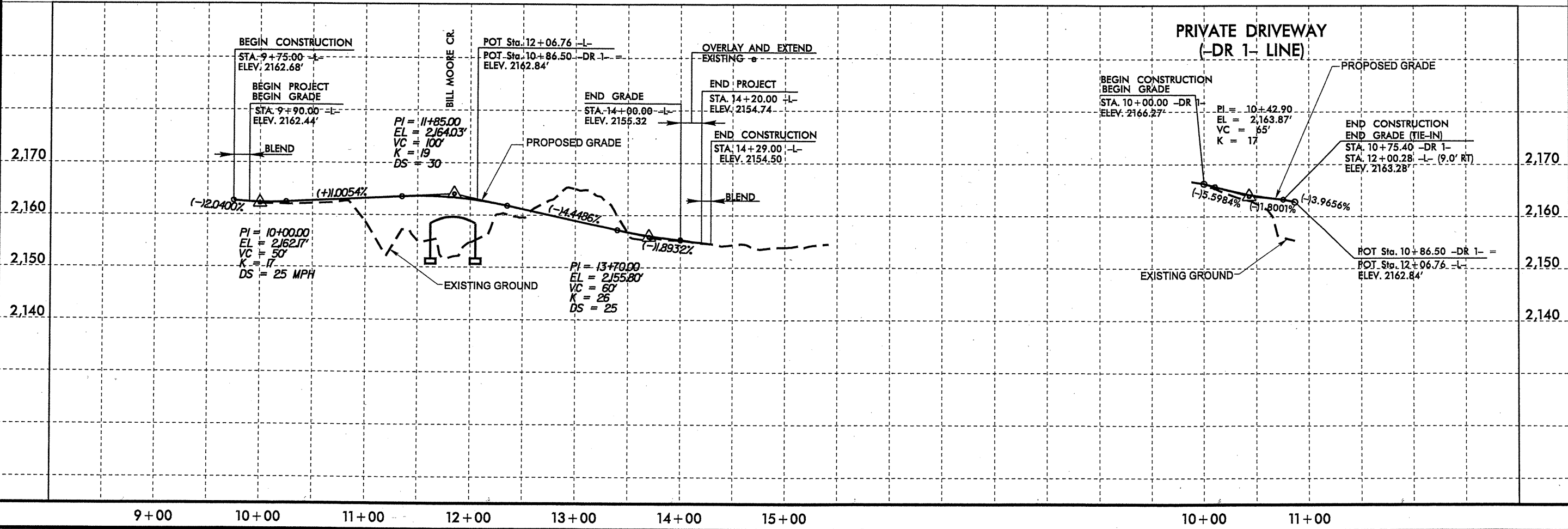
2300

SR 3439

DESIGN YEAR 2030
AVERAGE DAILY TRAFFIC VOLUMES



OBLITERATE REMOVE & GRADE TO DRAIN

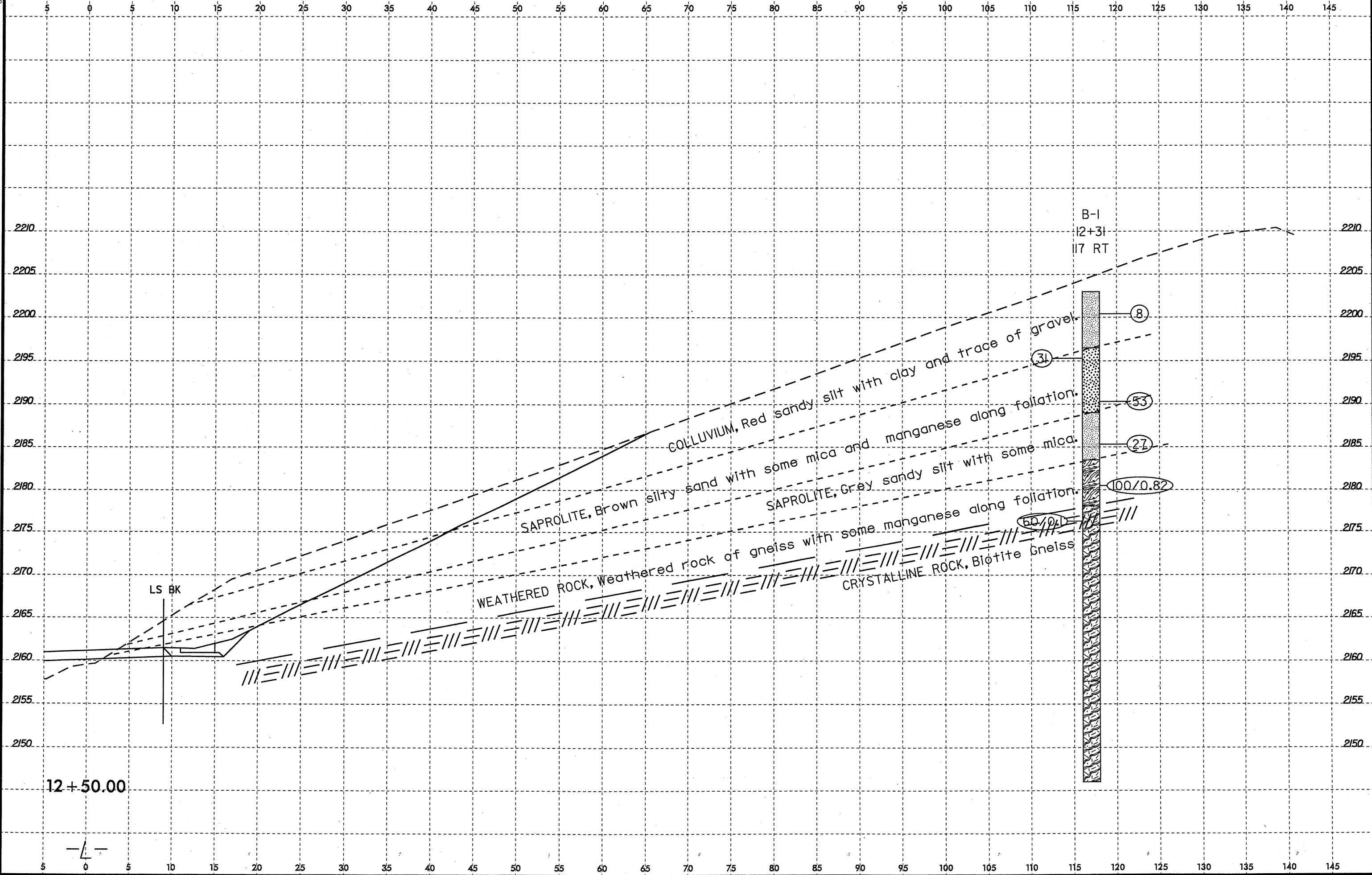


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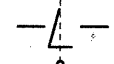
REVISIONS

8/17/99

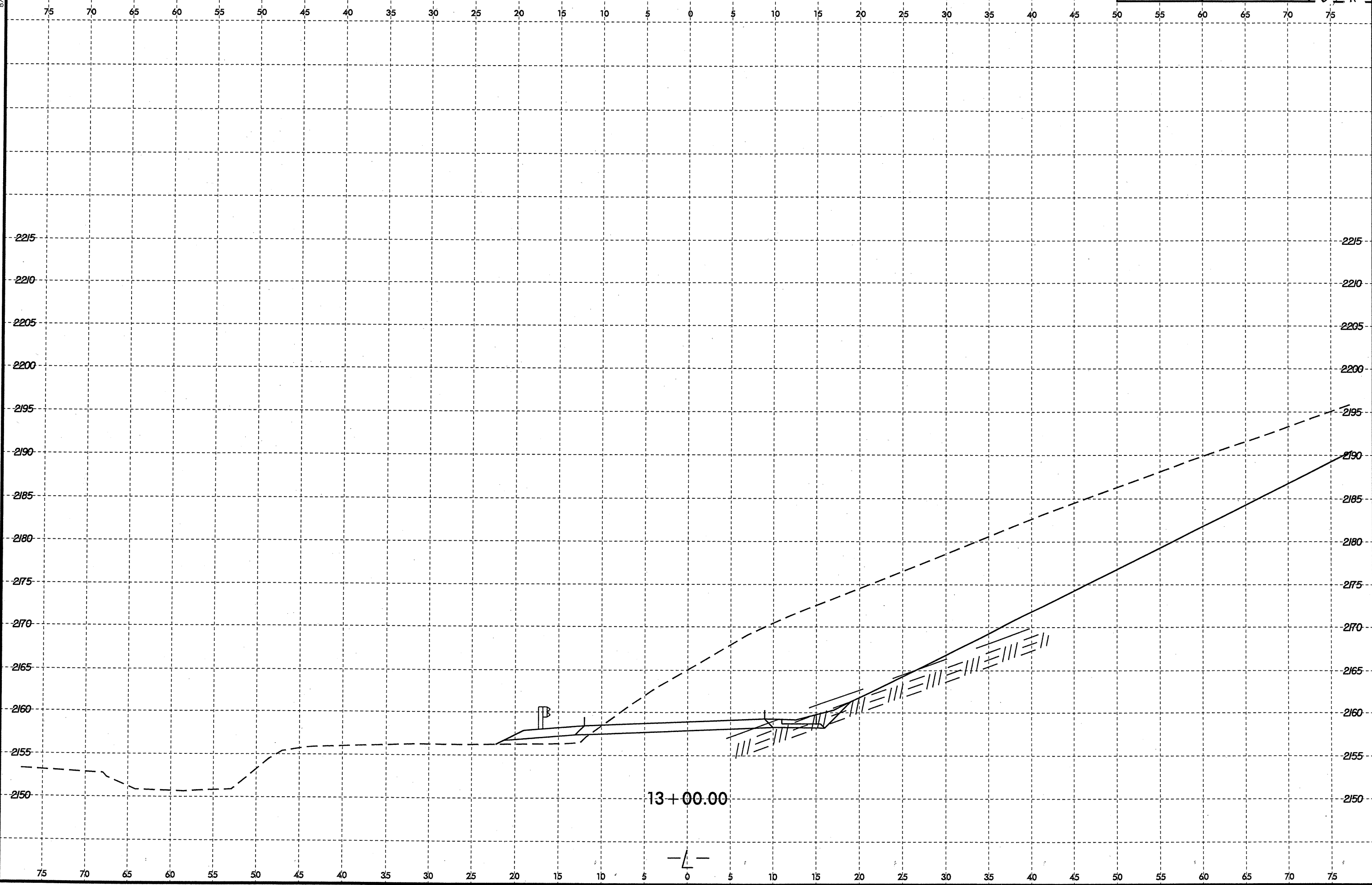
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SUBSERIAL



12+50.00

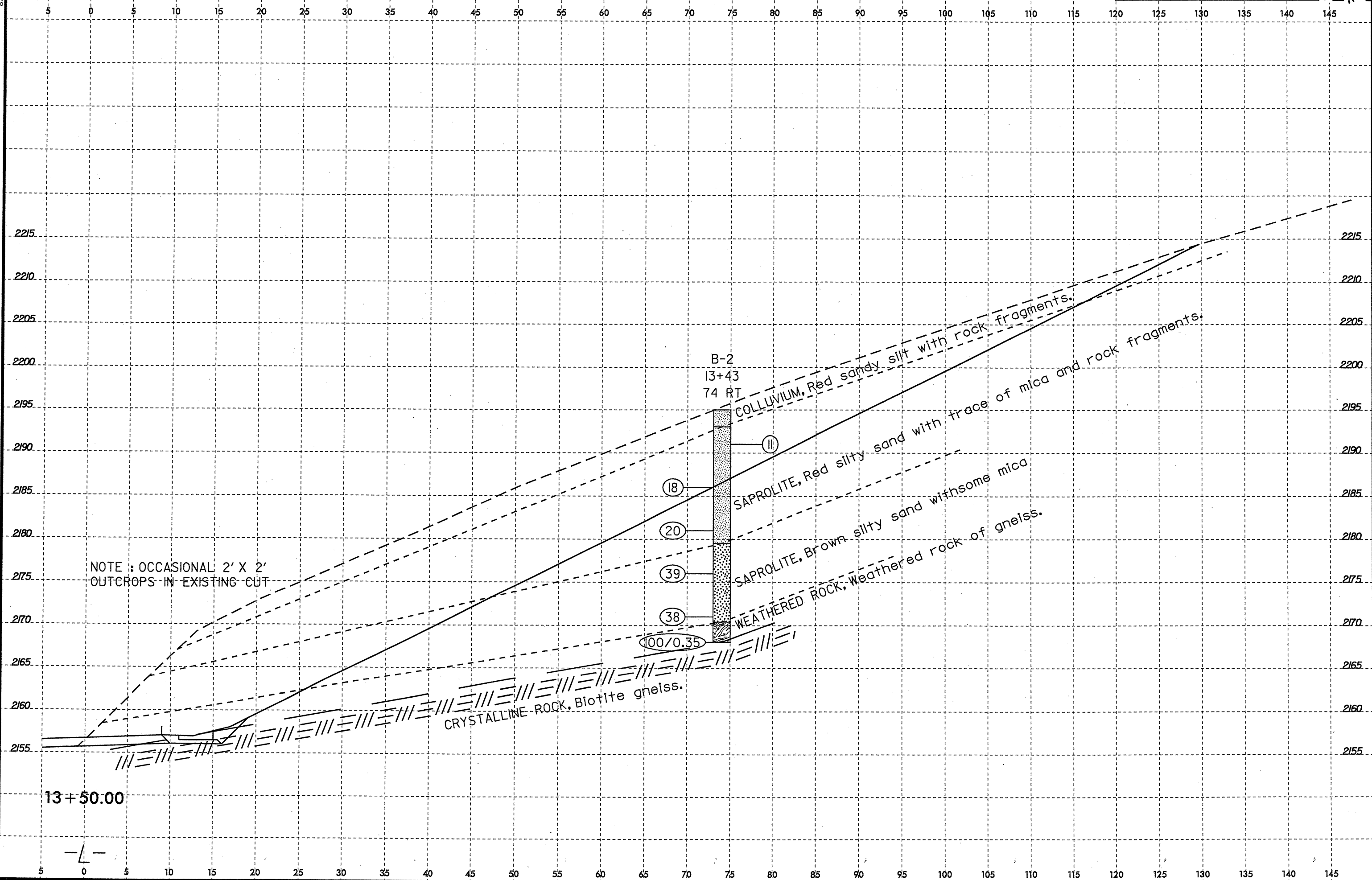


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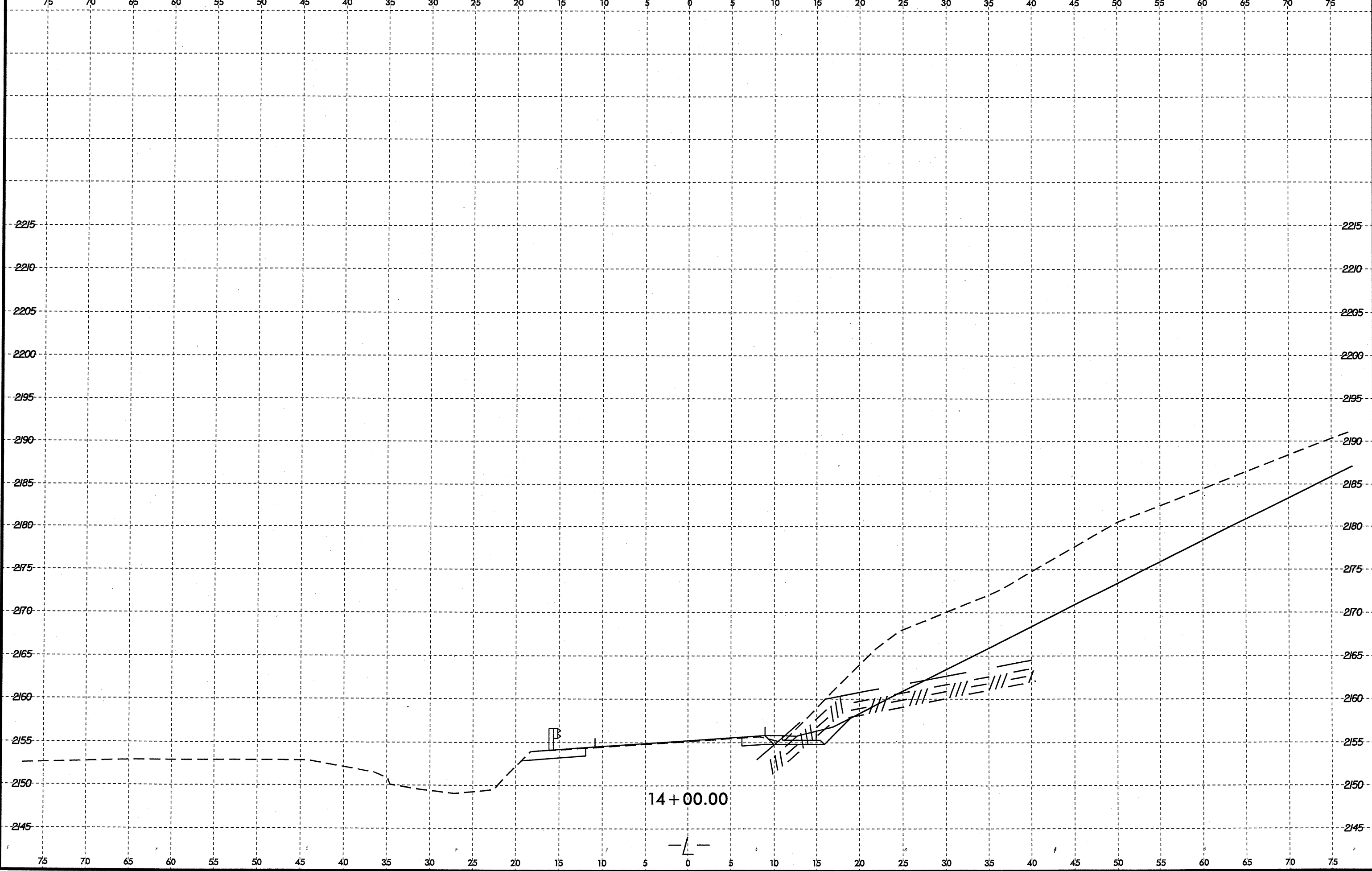
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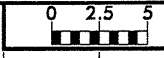
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8/23/99



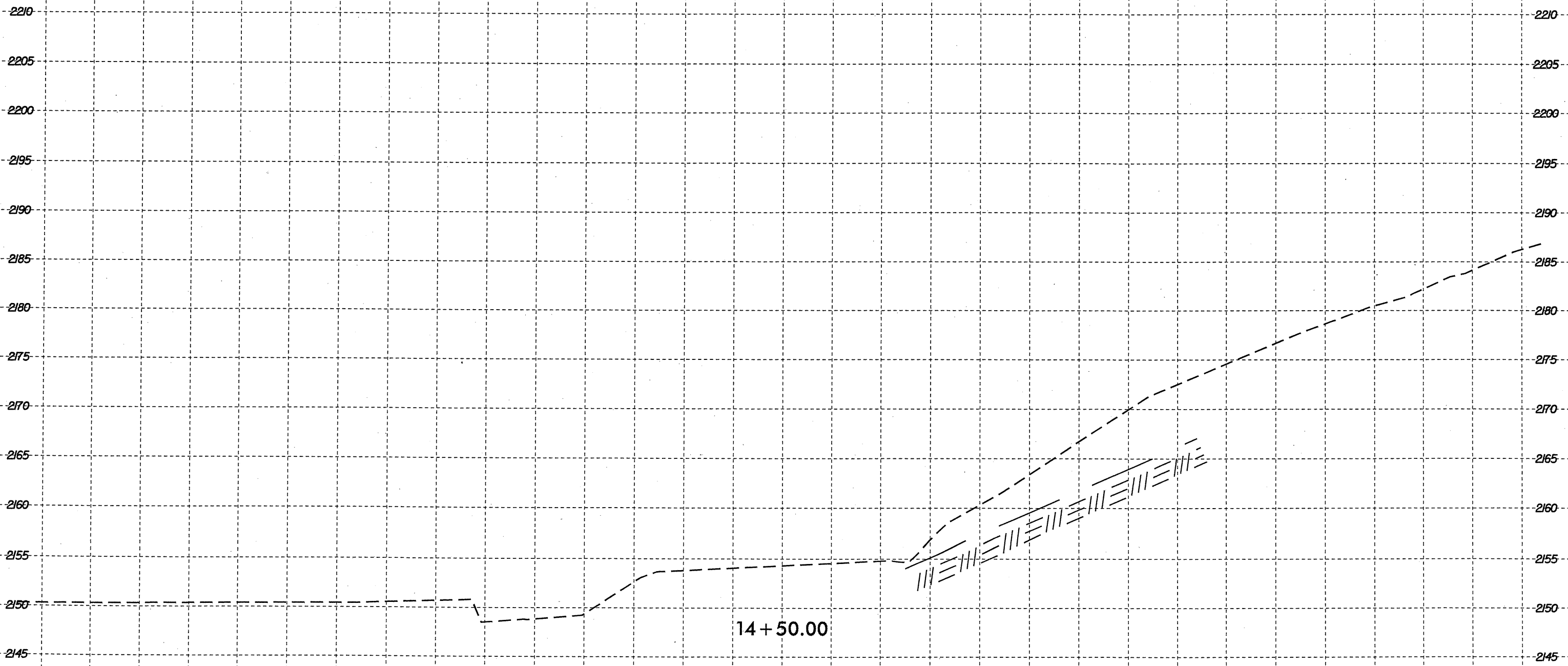
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PROJ. REFERENCE NO.
B-3619

SHEET NO.
9/11

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PROJECT NO. 33167.1.1		ID. B-3619		COUNTY Buncombe		GEOLOGIST Hager, M. M.									
SITE DESCRIPTION Approaches to Bridge No. 56 on SR-3439 over Bill Moore Creek							GROUND WTR (ft)								
BORING NO. B-1		STATION 12+31		OFFSET 117ft RT		ALIGNMENT -L-									
COLLAR ELEV. 2,203.0 ft		TOTAL DEPTH 57.0 ft		NORTHING 663,438		EASTING 913,578									
DRILL MACHINE CME-45C		DRILL METHOD NW Casing w/ SPT Core		HAMMER TYPE Automatic		DEPTH TO ROCK 24.9 ft									
START DATE 05/11/06		COMP. DATE 05/15/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 24.9 ft									
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					
2205															
2200	2,201.3	1.7	2	1	7							M	GROUND SURFACE COLLUVIUM Red sandy silt with clay and trace of gravel.	0.0	
2195	2,196.3	6.7	9	22	9							M	SAPROLITE Brown silty sand with some mica and manganese along foliation.	6.5	
2190	2,191.3	11.7	10	19	34							M	SAPROLITE Grey sandy silt with some mica.	14.0	
2185	2,186.3	16.7	10	13	14							W	WEATHERED ROCK Weathered rock of gneiss with some manganese along foliation.	19.5	
2180	2,181.3	21.7	28	62	38/0.32							M	CRYSTALLINE ROCK	24.9	
2175	2,176.3	26.7	60/0.1									M	CRYSTALLINE ROCK	24.9	
2170															
2165															
2160															
2155															
2150															
2145															
2140															
2135															
2130															

OT BORE SINGLE BORELOGS.GPJ NC_DOT_GDT 1/9/09

PROJECT NO. 33167.1.1		ID. B-3619		COUNTY Buncombe		GEOLOGIST Hager, M. M.						
SITE DESCRIPTION Approaches to Bridge No. 56 on SR-3439 over Bill Moore Creek							GROUND WTR (ft)					
BORING NO. B-1		STATION 12+31		OFFSET 117ft RT		ALIGNMENT -L-						
COLLAR ELEV. 2,203.0 ft		TOTAL DEPTH 57.0 ft		NORTHING 663,438		EASTING 913,578						
DRILL MACHINE CME-45C		DRILL METHOD NW Casing w/ SPT Core		HAMMER TYPE Automatic		DEPTH TO ROCK 24.9 ft						
START DATE 05/11/06		COMP. DATE 05/15/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 24.9 ft						
CORE SIZE NXWL		TOTAL RUN 29.7 ft		DRILLER Cheek, D. O.								
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 (%)			
2175.7												
2175	2,175.7	27.3	2.9		(2.8) 97%	(0.8) 28%						
2170	2,172.8	30.2	5.0		(3.0) 60%	(0.7) 14%						
2165	2,167.8	35.2	5.0		(1.7) 34%	(0.0) 0%						
2160	2,162.8	40.2	5.0		(0.7) 14%	(0.0) 0%						
2155	2,157.8	45.2	5.0		(4.3) 86%	(2.1) 42%						
2150	2,152.8	50.2	5.0		(4.5) 90%	(3.5) 70%						
2145	2,147.8	55.2	1.8		(1.8) 100%	(1.6) 89%						
2140	2,146.0	57.0										
2135												
2130												
2125												
2120												
2115												
2110												
2105												
2100												

2,157.6
CRYSTALLINE ROCK
45.4

2,146.0
Boring Terminated at Elevation 2,146.0 ft in biotite gneiss.
57.0

2,157.6
CRYSTALLINE ROCK
45.4

2,146.0
Boring Terminated at Elevation 2,146.0 ft in biotite gneiss.
57.0

Begin Coring @ 27.3 ft
CRYSTALLINE ROCK
Brown biotite gneiss with some garnets. Severly to moderately severely weathered with occasional very severely weathered zones. Well foliated with interlayers of massive zones.
a) Abundant parts along foliation @ 30°.
b) Occasional joints @ 10° (continued)

CRYSTALLINE ROCK
Gray biotite gneiss with some garnets. Very slightly weathered to fresh with sverely to moderately sverely weathered zones at 46.8'-47.6, 49.2'-49.9', 51.4'-51.8', 52.6'-53.1' and 55.4'-55.6'.
a) Occasional parts on foliation @ 30°.
b) Occasional joints @ 30°.
c) Occasional joints @ 10°.

NCDOT CORE SINGLE BORELOGS.GPJ NC_DOT_GDT 1/9/09



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

PROJECT NO. 33167.1.1	ID. B-3619	COUNTY Buncombe	GEOLOGIST Hager, M. M.
SITE DESCRIPTION Approaches to Bridge No. 56 on SR-3439 over Bill Moore Creek			GROUND WTR (ft)
BORING NO. B-2	STATION 13+43	OFFSET 74ft RT	ALIGNMENT -L-
COLLAR ELEV. 2,195.0 ft	TOTAL DEPTH 27.0 ft	NORTHING 663,525	EASTING 913,495
DRILL MACHINE CME-45C	DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
START DATE 05/15/06	COMP. DATE 05/15/06	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 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					
2195														2,195.0 GROUND SURFACE 0.0	
	2,192.0	3.0												2,193.0 Red sandy silt with rock fragments. 2.0	
2190			5	6	5									SAPROLITE Red silty sand with trace of mica and rock fragments.	
	2,187.0	8.0													
2185			8	8	10										
	2,182.0	13.0													
2180			8	7	13										
	2,177.0	18.0													
2175			15	15	24										
	2,172.0	23.0													
2170			8	16	22										
	2,168.4	26.6												2,170.4 WEATHERED ROCK 24.6	
														2,168.4 Weathered rock of gneiss. 26.6	
2165														Boring Terminated by Auger Refusal at Elevation 2,168.1 ft on biotite gneiss.	
2160															
2155															
2150															
2145															
2140															
2135															
2130															
2125															
2120															
2115															

NCDOT BORE SINGLE BORELOGS.GPJ NC_DOT.GDT 1/12/09