

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

REFERENCE: B-5313

PROJECT: 46027

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WILSON
PROJECT DESCRIPTION BRIDGE NO. 109 OVER TOWN
CREEK ON SR 1002 AT -L- STATION 15+45.5

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5-8	CROSS SECTIONS
9-15	BORE LOGS
16	SITE PHOTOGRAPHS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5313	1	16

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

E. MAYR, PE

SDS

D. BLAKELY

K. GODFREY

INVESTIGATED BY D. BROWN, PE

DRAWN BY D. BROWN, PE

CHECKED BY E. MAYR, PE

SUBMITTED BY D. BROWN, PE

DATE JUNE 2015



DocuSigned by:

Donald W. Brown, Jr. 6/24/2015

056948D03967464...

SIGNATURE

DATE

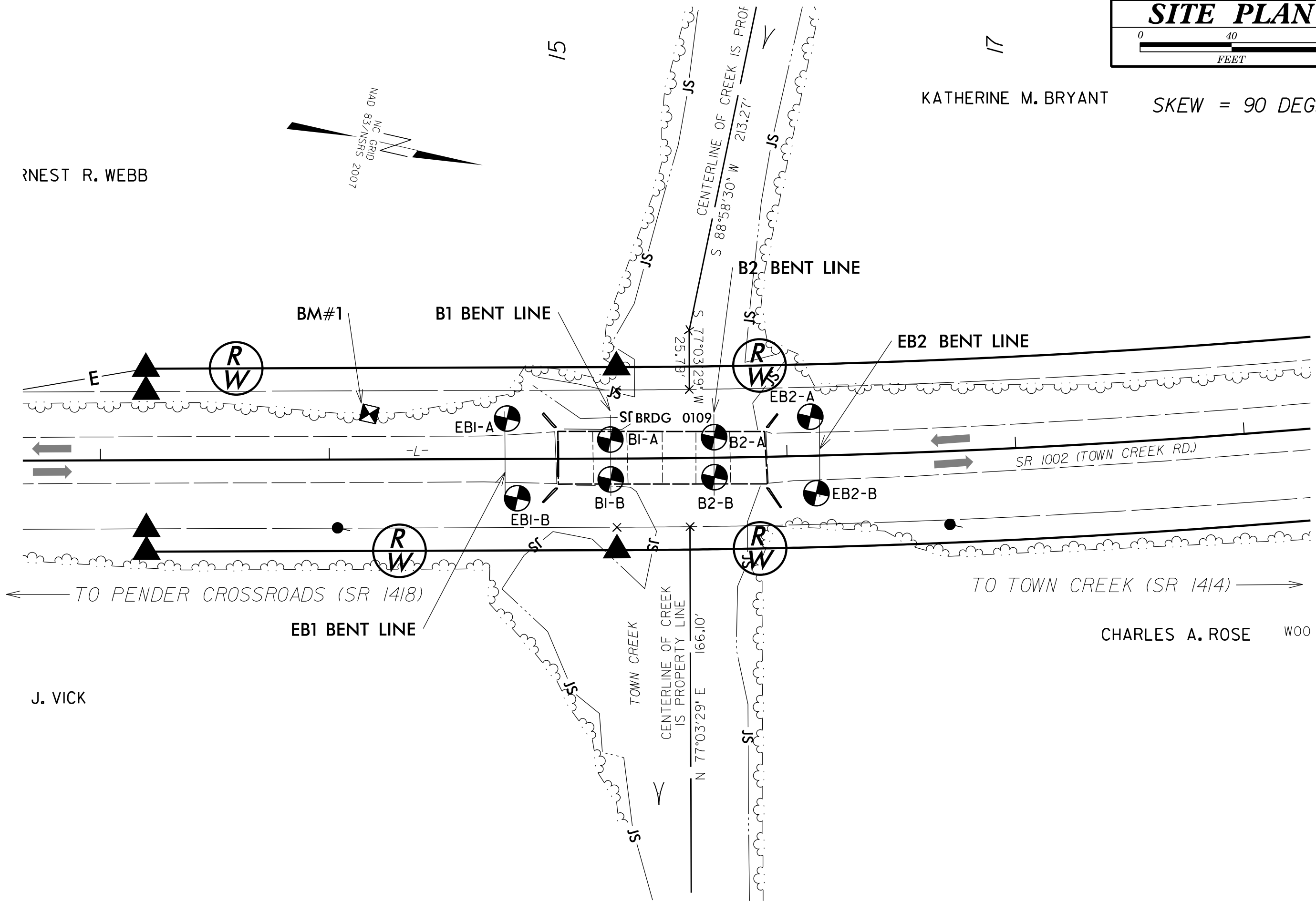
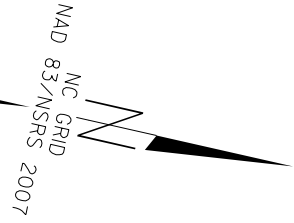
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like 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, FRACTURE SPACING, BEDDING, and INDURATION.

KATHERINE M. BRYANT

SKEW = 90 DEG.

RNEST R. WEBB



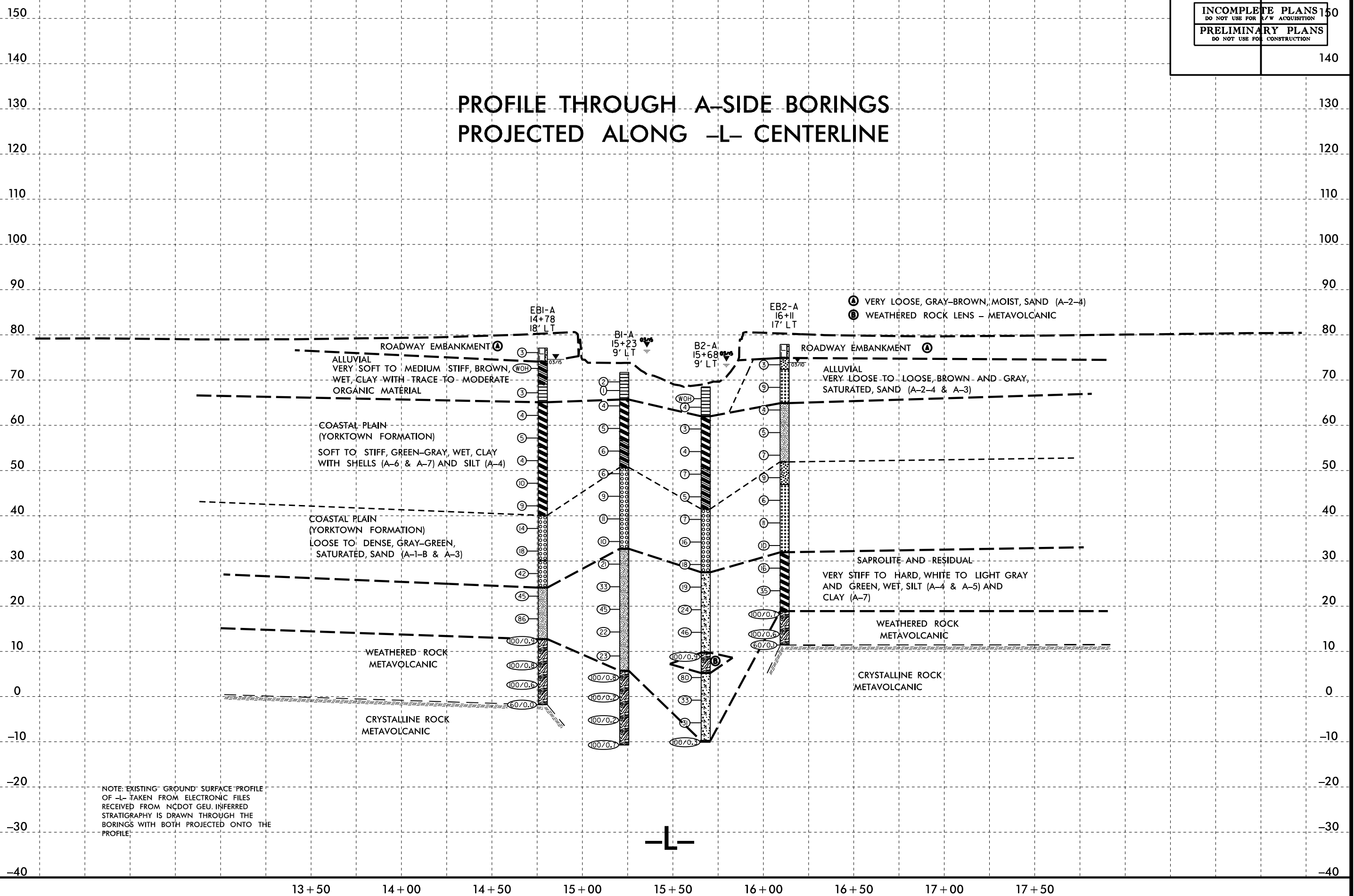
J. VICK

CHARLES A. ROSE W00

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5313	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PROFILE THROUGH A-SIDE BORINGS PROJECTED ALONG -L- CENTERLINE

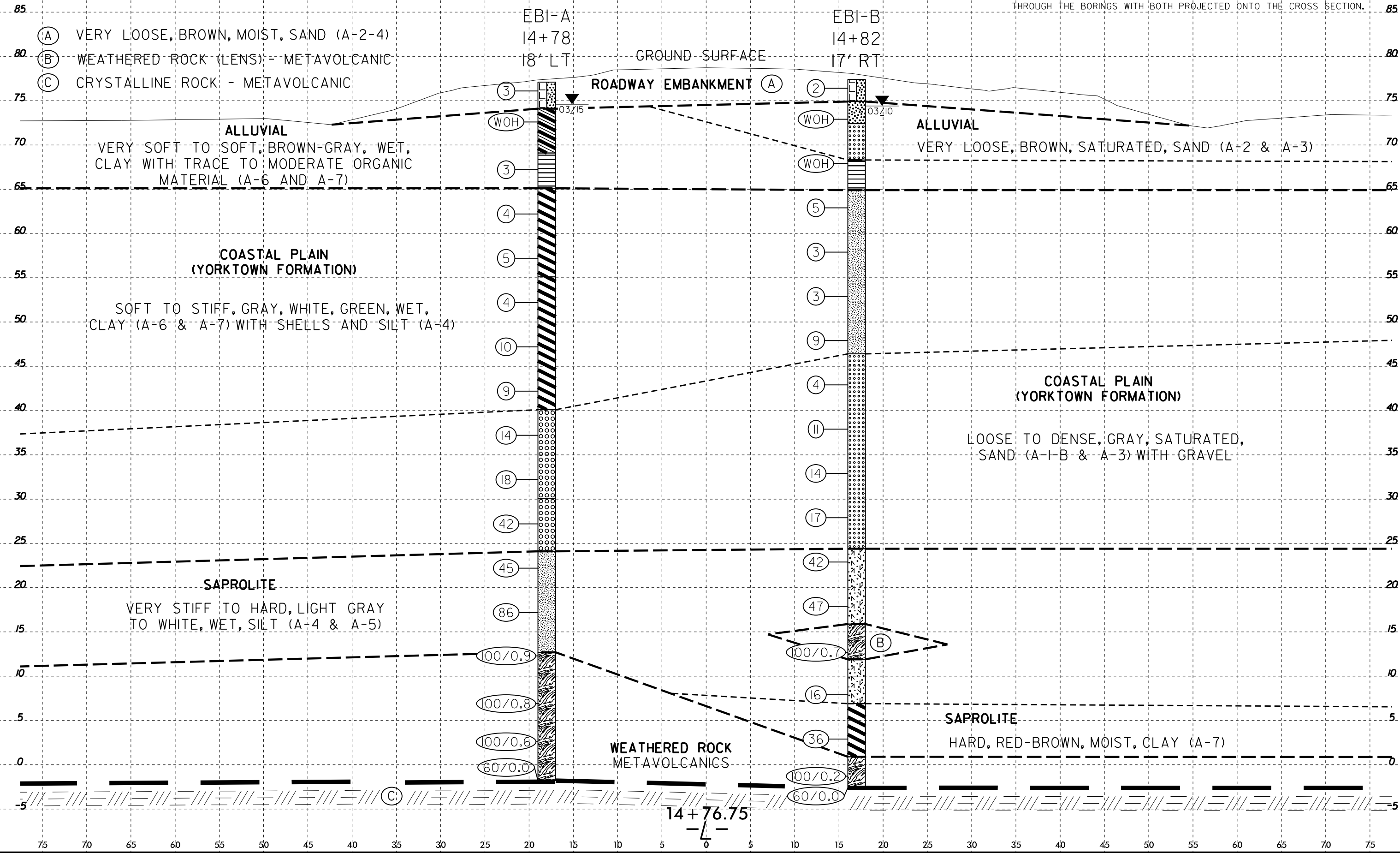


-L-

8/23/99

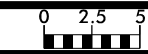
CROSS SECTION ALONG END BENT I

NOTE: EXISTING GROUND SURFACE PROFILE OF -L- TAKEN FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.

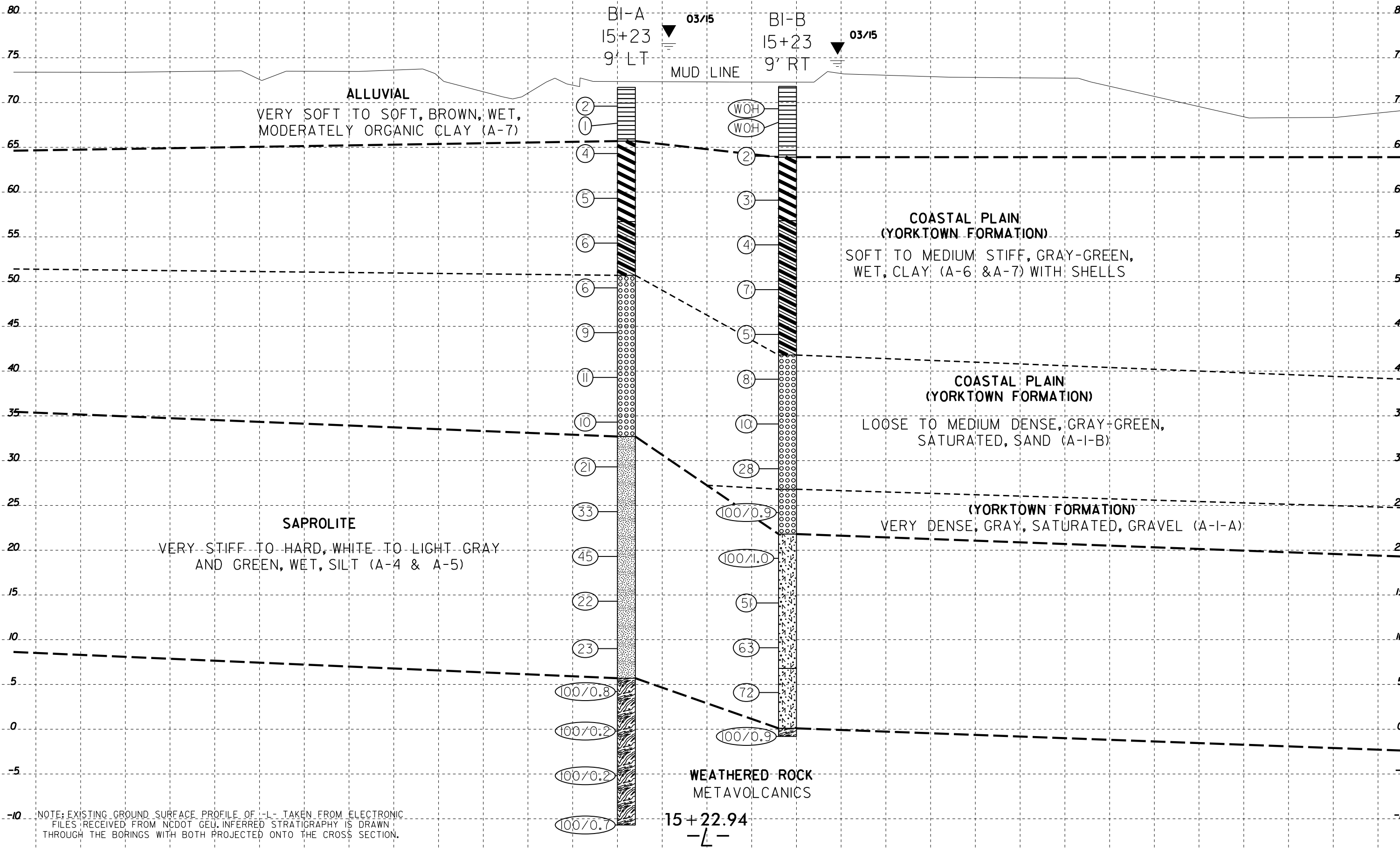


\$\$\$\$\$ TIME\$\$\$\$\$
\$\$\$\$\$ DATE\$\$\$\$\$
\$\$\$\$\$ DRAWN BY\$\$\$\$\$
\$\$\$\$\$ CHECKED BY\$\$\$\$\$
\$\$\$\$\$ SCALE\$\$\$\$\$

8/23/99



CROSS SECTION ALONG BENT 1



ALLUVIAL
VERY SOFT TO SOFT, BROWN, WET,
MODERATELY ORGANIC CLAY (A-7)

COASTAL PLAIN
(YORKTOWN FORMATION)
SOFT TO MEDIUM STIFF, GRAY-GREEN,
WET, CLAY (A-6 & A-7) WITH SHELLS

COASTAL PLAIN
(YORKTOWN FORMATION)
LOOSE TO MEDIUM DENSE, GRAY-GREEN,
SATURATED, SAND (A-I-B)

(YORKTOWN FORMATION)
VERY DENSE, GRAY, SATURATED, GRAVEL (A-I-A)

SAPROLITE
VERY STIFF TO HARD, WHITE TO LIGHT GRAY
AND GREEN, WET, SILT (A-4 & A-5)

WEATHERED ROCK
METAVOLCANICS

BI-A 15+23 9' LT
BI-B 15+23 9' RT
MUD LINE
03/15

- (2)
- (1)
- (4)
- (5)
- (6)
- (6)
- (9)
- (11)
- (10)
- (21)
- (33)
- (45)
- (22)
- (23)
- (100/0.8)
- (100/0.2)
- (100/0.2)
- (100/0.7)

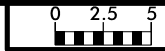
- (WOH)
- (WOH)
- (2)
- (3)
- (4)
- (7)
- (5)
- (8)
- (10)
- (28)
- (100/0.9)
- (100/1.0)
- (51)
- (63)
- (72)
- (100/0.9)

15+22.94
-L-

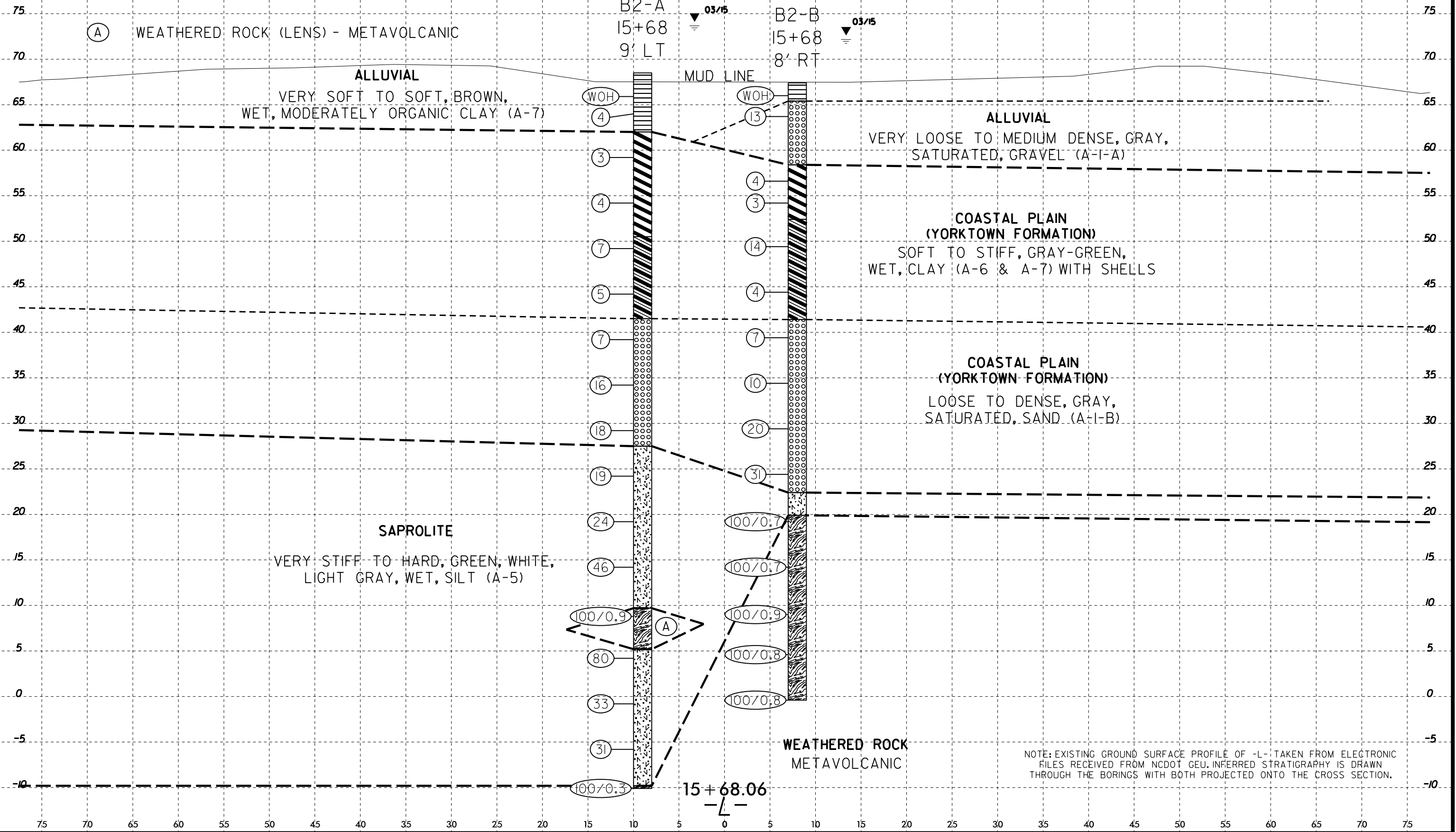
NOTE: EXISTING GROUND SURFACE PROFILE OF -L- TAKEN FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.

SYSTEM TIME: 8/23/99 10:00:00 AM

8/23/99



CROSS SECTION ALONG BENT 2



(A) WEATHERED ROCK (LENS) - METAVOLCANIC

ALLUVIAL
VERY SOFT TO SOFT, BROWN,
WET, MODERATELY ORGANIC CLAY (A-7)

ALLUVIAL
VERY LOOSE TO MEDIUM DENSE, GRAY,
SATURATED, GRAVEL (A-I-A)

COASTAL PLAIN
(YORKTOWN FORMATION)
SOFT TO STIFF, GRAY-GREEN,
WET, CLAY (A-6 & A-7) WITH SHELLS

COASTAL PLAIN
(YORKTOWN FORMATION)
LOOSE TO DENSE, GRAY,
SATURATED, SAND (A-I-B)

SAPROLITE
VERY STIFF TO HARD, GREEN, WHITE,
LIGHT GRAY, WET, SILT (A-5)

WEATHERED ROCK
METAVOLCANIC

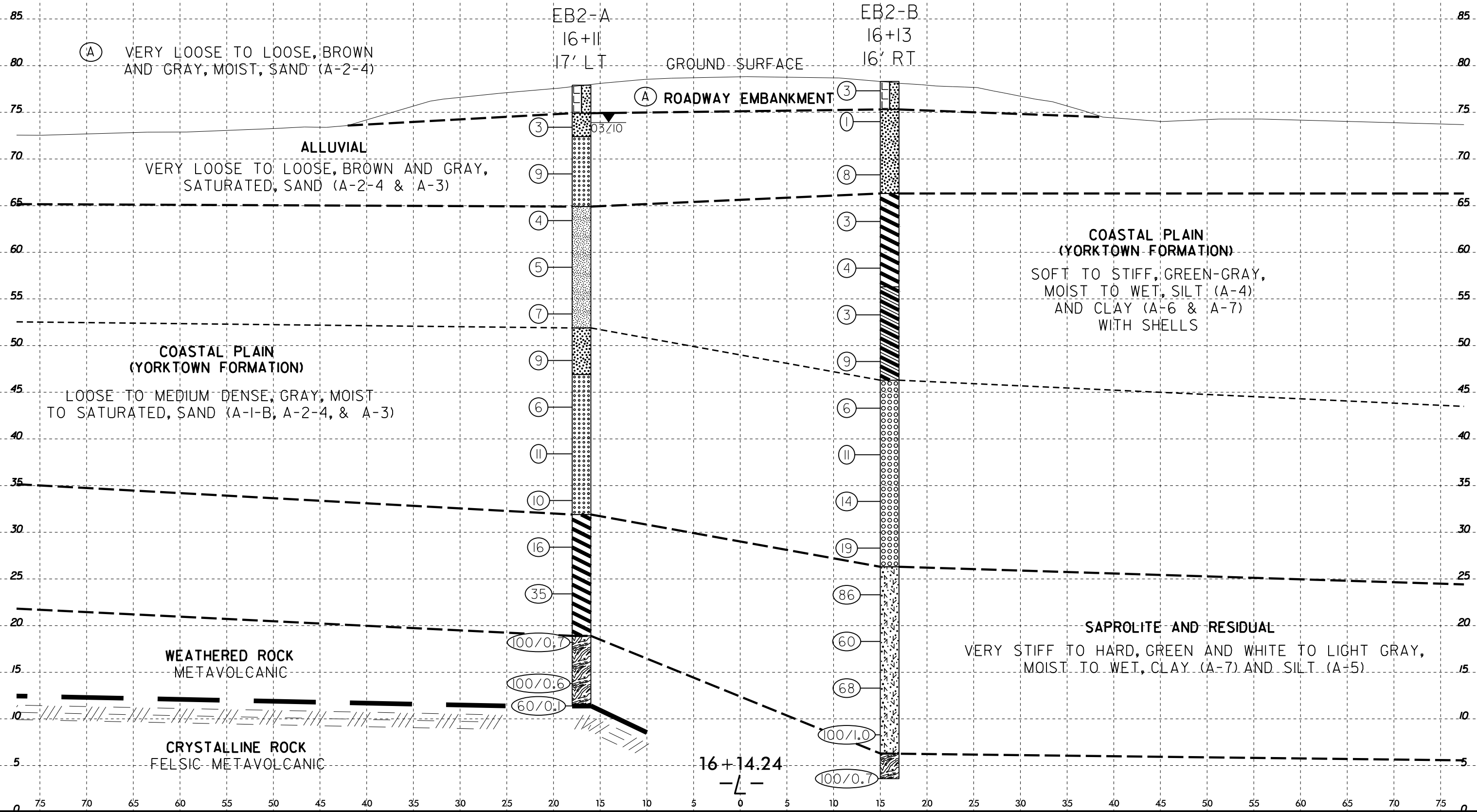
NOTE: EXISTING GROUND SURFACE PROFILE OF -L- TAKEN FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.

SYTIME\$\$\$\$
AUDITION\$\$\$\$
SERIAL\$\$\$\$
\$\$\$\$

8/23/99

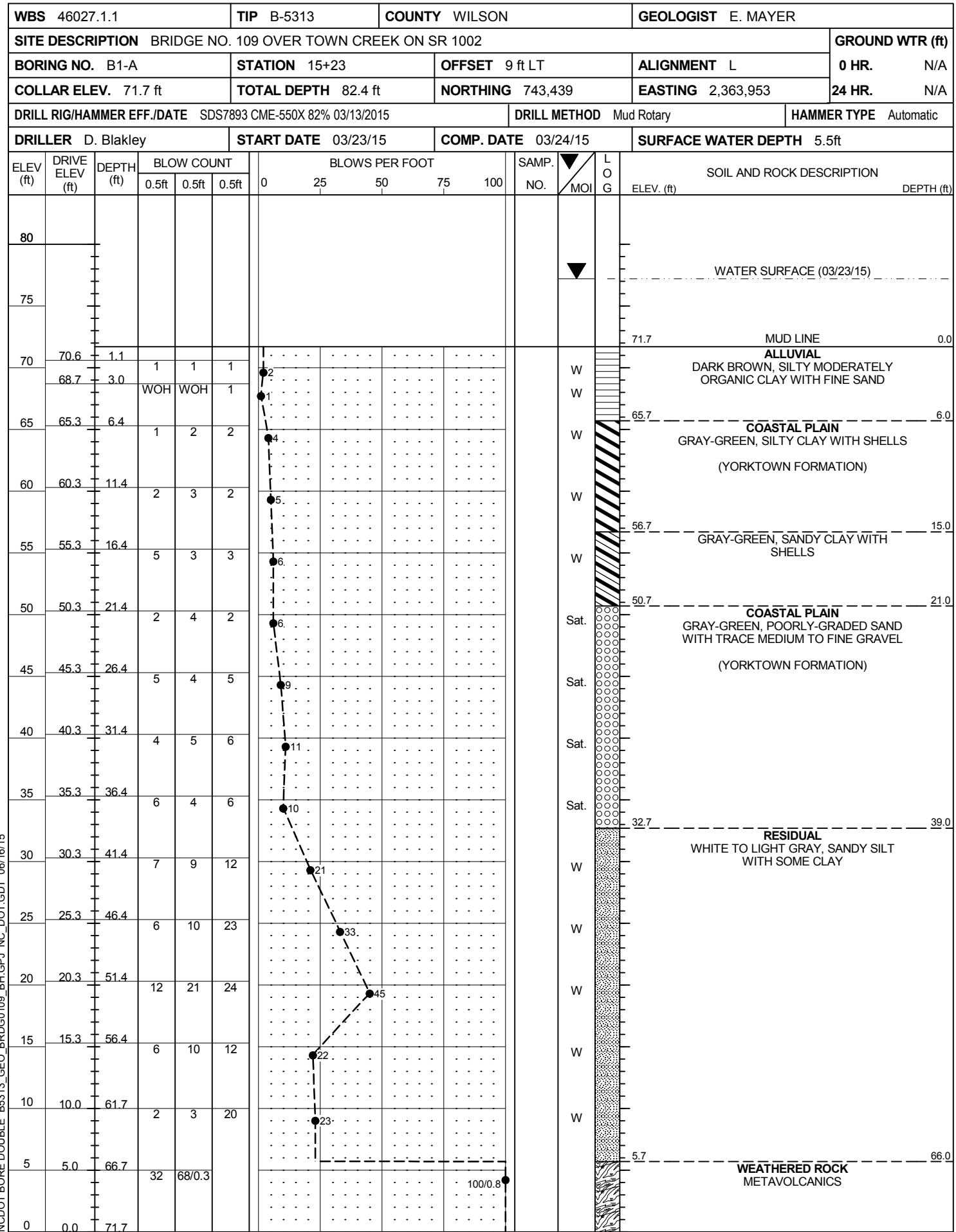
CROSS SECTION ALONG END BENT 2

NOTE: EXISTING GROUND SURFACE PROFILE OF -L- TAKEN FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.

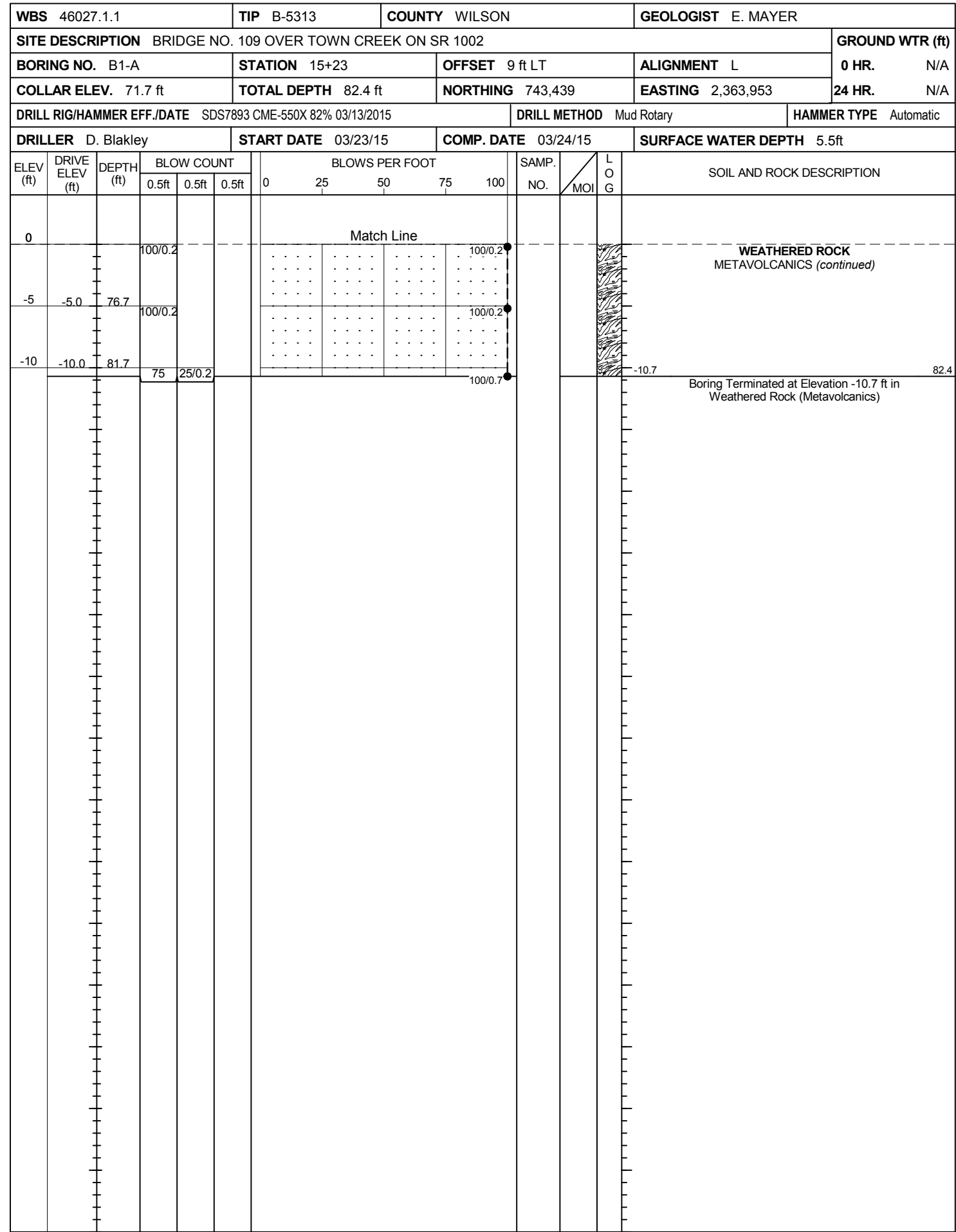


\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

GEOTECHNICAL BORING REPORT BORE LOG



NCDOT BORE DOUBLE B5313_GEO_BRDG0109_BH.GPJ_NC_DOT.GDT 06/16/15



GEOTECHNICAL BORING REPORT

BORE LOG

WBS 46027.1.1		TIP B-5313		COUNTY WILSON		GEOLOGIST E. MAYER											
SITE DESCRIPTION BRIDGE NO. 109 OVER TOWN CREEK ON SR 1002							GROUND WTR (ft)										
BORING NO. B2-A		STATION 15+68		OFFSET 9 ft LT		ALIGNMENT L											
COLLAR ELEV. 68.5 ft		TOTAL DEPTH 78.6 ft		NORTHING 743,483		EASTING 2,363,942											
DRILL RIG/HAMMER EFF./DATE SDS7893 CME-550X 82% 03/13/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER D. Blakley		START DATE 03/25/15		COMP. DATE 03/25/15		SURFACE WATER DEPTH 5.6ft											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
80																	
75																	
70																	
	66.9	1.6															
65	65.0	3.5	WOH	WOH	WOH												
60	60.2	8.3	1	1	2												
55	55.2	13.3	2	2	2												
50	50.2	18.3	3	3	4												
45	45.2	23.3	2	2	3												
40	40.2	28.3	3	3	4												
35	35.2	33.3	5	6	10												
30	30.2	38.3	5	8	10												
25	25.2	43.3	5	7	12												
20	20.2	48.3	7	11	13												
15	15.2	53.3	11	20	26												
10	10.2	58.3	20	45	55/0.4												
5	5.2	63.3	22	33	47												
0	0.2	68.3															

NCDOT BORE DOUBLE B5313_GEO_BRDG0109_BH.GPJ NC_DOT.GDT 06/16/15

WBS 46027.1.1		TIP B-5313		COUNTY WILSON		GEOLOGIST E. MAYER											
SITE DESCRIPTION BRIDGE NO. 109 OVER TOWN CREEK ON SR 1002							GROUND WTR (ft)										
BORING NO. B2-A		STATION 15+68		OFFSET 9 ft LT		ALIGNMENT L											
COLLAR ELEV. 68.5 ft		TOTAL DEPTH 78.6 ft		NORTHING 743,483		EASTING 2,363,942											
DRILL RIG/HAMMER EFF./DATE SDS7893 CME-550X 82% 03/13/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER D. Blakley		START DATE 03/25/15		COMP. DATE 03/25/15		SURFACE WATER DEPTH 5.6ft											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
0																	
-5	-4.8	73.3	17	15	16												
-10	-9.8	78.3	100/0.3														

Match Line

SAPROLITE
GREEN, CLAYEY SILT WITH FINE SAND
(continued)

WEATHERED ROCK
METAVOLCANICS
Boring Terminated at Elevation -10.1 ft in
Weathered Rock (Metavolcanics)

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 46027.1.1		TIP B-5313		COUNTY WILSON		GEOLOGIST Pedro, J. L.											
SITE DESCRIPTION BRIDGE NO. 109 OVER TOWN CREEK ON SR 1002							GROUND WTR (ft)										
BORING NO. EB2-A		STATION 16+11		OFFSET 17 ft LT		ALIGNMENT L											
COLLAR ELEV. 77.9 ft		TOTAL DEPTH 66.5 ft		NORTHING 743,522		EASTING 2,363,924											
DRILL RIG/HAMMER EFF./DATE CME-550			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic											
DRILLER Contract Driller		START DATE 03/11/10		COMP. DATE 03/11/10		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
80																77.9	GROUND SURFACE
																74.9	ROADWAY EMBANKMENT GRAY-BROWN, SILTY SAND
75	74.4	3.5	2	1	2											72.4	ALLUVIAL BROWN, SILTY SAND GRAY, SAND
70	69.4	8.5	3	4	5											64.9	COASTAL PLAIN GREEN-GRAY, SANDY SILT WITH SOME SHELLS (YORKTOWN FORMATION)
65	64.4	13.5	2	2	2											51.9	COASTAL PLAIN GREEN-GRAY, SILTY SAND WITH SOME SHELLS (YORKTOWN FORMATION)
60	59.4	18.5	2	2	3											46.9	COASTAL PLAIN GRAY, SAND WITH SOME ROUND QUARTZ GRAVEL (YORKTOWN FORMATION)
55	54.4	23.5	WOH	2	5											31.9	RESIDUAL DARK GREEN, SILTY CLAY
50	49.4	28.5	5	5	4											18.9	WEATHERED ROCK (MAFIC METAVOLCANIC)
45	44.4	33.5	2	3	3											11.5	CRYSTALLINE ROCK (MAFIC METAVOLCANIC)
40	39.4	38.5	3	4	7											11.4	CRYSTALLINE ROCK (MAFIC METAVOLCANIC)
35	34.4	43.5	4	4	6												
30	29.4	48.5	10	7	9												
25	24.4	53.5	6	12	23												
20	19.4	58.5	32	65	35/0.2												
15	14.4	63.5	82	18/0.1													
	11.5	66.4	60/0.1														

WBS 46027.1.1		TIP B-5313		COUNTY WILSON		GEOLOGIST E. MAYER											
SITE DESCRIPTION BRIDGE NO. 109 OVER TOWN CREEK ON SR 1002							GROUND WTR (ft)										
BORING NO. EB2-B		STATION 16+13		OFFSET 16 ft RT		ALIGNMENT L											
COLLAR ELEV. 78.3 ft		TOTAL DEPTH 74.7 ft		NORTHING 743,532		EASTING 2,363,956											
DRILL RIG/HAMMER EFF./DATE SDS7893 CME-550X 82% 03/13/2015			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic											
DRILLER D. Blakley		START DATE 03/31/15		COMP. DATE 04/01/15		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
80																78.3	GROUND SURFACE
																75.3	ROADWAY EMBANKMENT BROWN, SILTY FINE SAND
75	75.0	3.3	WOH	WOH	1											66.3	ALLUVIAL BROWN, SILTY FINE SAND
70	69.3	9.0	4	5	3											56.3	COASTAL PLAIN GRAY-GREEN, SILTY CLAY WITH SHELLS AND SOME FINE SAND (YORKTOWN FORMATION)
65	64.3	14.0	1	1	2											46.3	COASTAL PLAIN GRAY, POORLY-GRADED SAND WITH TRACE CLAY (YORKTOWN FORMATION)
60	59.3	19.0	1	2	2											26.3	SAPROLITE WHITE TO LIGHT GRAY, CLAYEY SILT WITH SOME FINE SAND
55	54.3	24.0	1	2	1												
50	49.3	29.0	4	4	5												
45	44.3	34.0	3	3	3												
40	39.3	39.0	4	4	7												
35	34.3	44.0	4	7	7												
30	29.3	49.0	7	9	10												
25	24.3	54.0	15	32	54												
20	19.3	59.0	16	25	35												
15	14.3	64.0	16	28	40												
10	9.3	69.0	13	87/0.5													
5	4.3	74.0	48	52/0.2													

NCDOT BORE DOUBLE B5313_GEO_BRDG109_BH.GPJ, NC_DOT_GDT_06/16/15

SITE PHOTOGRAPHS



PHOTOGRAPH 1: VIEW LOOKING UPSTATION (NORTH) ALONG -L- FROM END BENT 1.



PHOTOGRAPH 2: VIEW LOOKING DOWNSTATION (SOUTH) ALONG -L- FROM END BENT 2.