

REFERENCE: B-5744

PROJECT: 45700

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

**STRUCTURE  
SUBSURFACE INVESTIGATION**

COUNTY SCOTLAND  
PROJECT DESCRIPTION BRIDGE NO. 50 ON SR 1615  
(HASTY ROAD) OVER BRIDGE CREEK

**CONTENTS**

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5744	1	9

**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:
- 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

N. MOHS, LG

E. MAYR, PE

CAROLINA DRILLING

M. RADFORD

W. HAMER

INVESTIGATED BY N. MOHS, LG

DRAWN BY N. MOHS, LG

CHECKED BY D. BROWN, PE

SUBMITTED BY N. MOHS, LG

DATE JUNE 2016

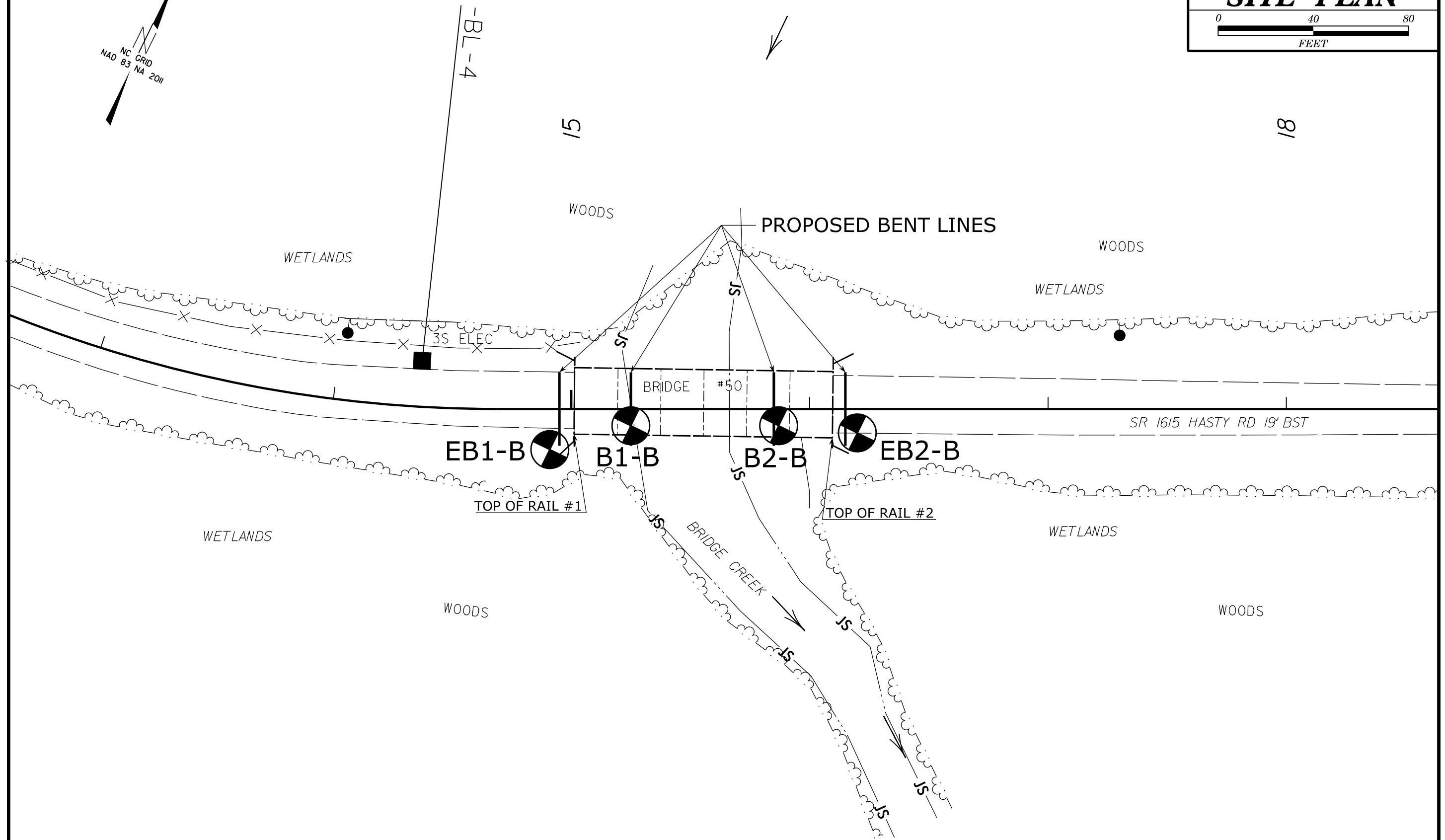
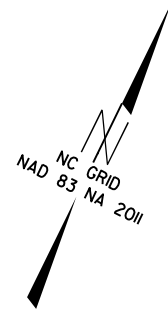


DocuSigned by:  
Nathan Mohs 7/22/2016  
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SIGNATURE DATE

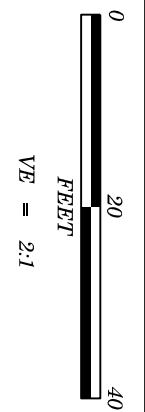
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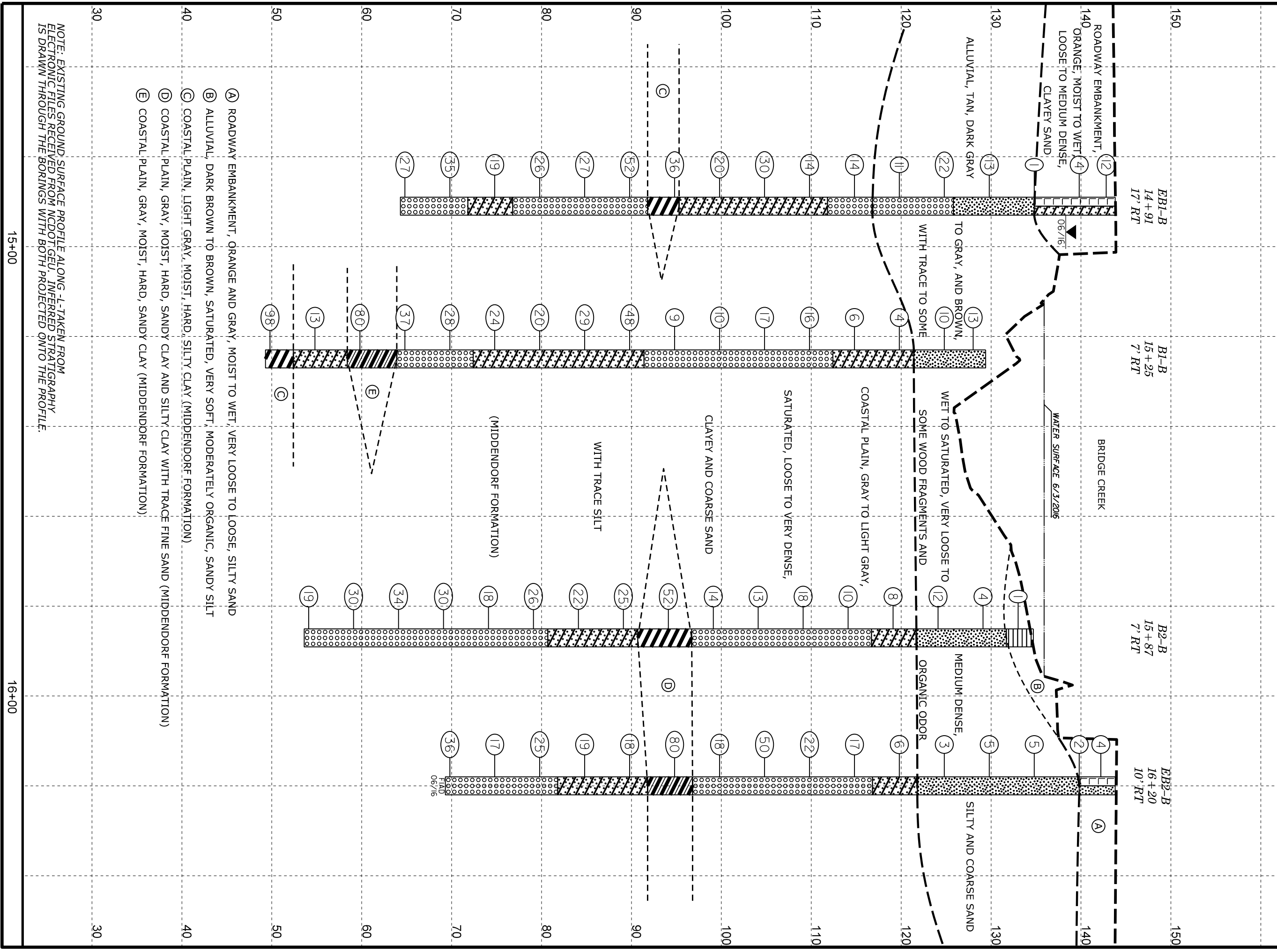
# SITE PLAN



SKIEW=90°



PROJECT REFERENCE NO.	B-5744	SHEET NO.	4
PROFILE OF BORINGS ALONG CENTERLINE OF -L-			



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

15+00

16+00

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE									
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)								
BORING NO. EB1-B		STATION 14+91		OFFSET 17 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 143.8 ft		TOTAL DEPTH 79.5 ft		NORTHING 331,373		EASTING 1,864,671									
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 06/03/16		COMP. DATE 06/03/16		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					
145	143.8	0.0	5	6	6								143.8	GROUND SURFACE	0.0
	140.8	3.0	3	2	2									ROADWAY EMBANKMENT	
	135.8	8.0	1	0	1									ALLUVIAL	
	130.8	13.0	1	5	8									Dark Gray to Gray and Brown, Silty Sand with Trace Wood Fragments and Organic Odor	
	125.8	18.0	6	10	12									Tan, Coarse Sand with Some Wood Fragments	
	120.8	23.0	7	5	6									COASTAL PLAIN	
	115.8	28.0	5	6	8									Gray, Coarse Sand with Trace Silt (Middendorf Formation)	
	110.8	33.0	3	5	9									Gray, Clayey Sand (Middendorf Formation)	
	105.8	38.0	11	15	15										
	100.8	43.0	4	9	11										
	95.8	48.0	4	13	23									Light Gray, Silty Clay (Middendorf Formation)	
	90.8	53.0	25	23	29									Gray, Coarse Sand with Trace Silt (Middendorf Formation)	
	85.8	58.0	9	13	14										
	80.8	63.0	8	11	15										
	75.8	68.0	7	7	12									Gray, Clayey Sand (Middendorf Formation)	
	70.8	73.0	15	17	18									Light Gray, Coarse Sand with Trace Silt (Middendorf Formation)	
	65.8	78.0	9	11	16										

NCDOT BORE DOUBLE B5744\_GEO\_BRDG0050\_BH.GPJ NC\_DOT.GDT 6/16/16

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE									
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)								
BORING NO. EB1-B		STATION 14+91		OFFSET 17 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 143.8 ft		TOTAL DEPTH 79.5 ft		NORTHING 331,373		EASTING 1,864,671									
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 06/03/16		COMP. DATE 06/03/16		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					
65														Match Line	
															Boring Terminated at Elevation 64.3 ft in Coarse Sand (Middendorf Formation)

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE									
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)								
BORING NO. B1-B		STATION 15+25		OFFSET 7 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 129.4 ft		TOTAL DEPTH 80.1 ft		NORTHING 331,397		EASTING 1,864,697									
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 06/02/16		COMP. DATE 06/02/16		SURFACE WATER DEPTH 6.4ft									
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					
140															
135															
130	129.0	0.4	3	10	3										
125	125.8	3.6	4	5	5										
120	120.8	8.6	3	1	3										
115	115.8	13.6	3	3	3										
110	110.8	18.6	5	7	9										
105	105.8	23.6	7	8	9										
100	100.8	28.6	4	5	5										
95	95.8	33.6	3	4	5										
90	90.8	38.6	23	21	27										
85	85.8	43.6	7	12	17										
80	80.8	48.6	7	8	12										
75	75.8	53.6	9	12	12										
70	70.8	58.6	10	13	15										
65	65.8	63.6	11	16	21										
60	60.8	68.6	22	36	44										

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE									
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)								
BORING NO. B1-B		STATION 15+25		OFFSET 7 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 129.4 ft		TOTAL DEPTH 80.1 ft		NORTHING 331,397		EASTING 1,864,697									
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 06/02/16		COMP. DATE 06/02/16		SURFACE WATER DEPTH 6.4ft									
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					
60															
55	55.8	73.6	6	5	8										
50	50.8	78.6	19	28	70										

Match Line

NCDOT BORE DOUBLE B5744\_GEO\_BRDG0050\_BH.GPJ NC\_DOT.GDT 6/16/16

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE	
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)
BORING NO. B2-B		STATION 15+87		OFFSET 7 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 134.7 ft		TOTAL DEPTH 81.1 ft		NORTHING 331,424		EASTING 1,864,753	
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Radford		START DATE 06/06/16		COMP. DATE 06/06/16		SURFACE WATER DEPTH 1.2ft	

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)			
135	134.0	0.7														134.7	0.0	
			WOH															
130	130.1	4.6	3	2	2											131.7	3.0	
125	125.1	9.6	5	5	7													
120	120.1	14.6	2	3	5											121.7	13.0	
115	115.1	19.6	4	4	6											116.7	18.0	
110	110.1	24.6	4	10	8													
105	105.1	29.6	6	6	7													
100	100.1	34.6	4	6	8													
95	95.1	39.6	12	22	30											96.7	38.0	
90	90.1	44.6	11	13	12											90.7	44.0	
85	85.1	49.6	8	10	12													
80	80.1	54.6	12	13	13											80.7	54.0	
75	75.1	59.6	6	7	11													
70	70.1	64.6	12	14	16													
65	65.1	69.6	5	12	22													
60	60.1	74.6	15	15	15													
55	55.1	79.6																

NCDOT BORE DOUBLE B5744\_GEO\_BRDG0050\_BH.GPJ NC\_DOT.GDT 6/16/16

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE	
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)
BORING NO. B2-B		STATION 15+87		OFFSET 7 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 134.7 ft		TOTAL DEPTH 81.1 ft		NORTHING 331,424		EASTING 1,864,753	
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Radford		START DATE 06/06/16		COMP. DATE 06/06/16		SURFACE WATER DEPTH 1.2ft	

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)		
55																55.6	81.1
Match Line																	
Boring Terminated at Elevation 53.6 ft in Coarse Sand (Middendorf Formation)																	

WBS 45700.1.1		TIP B-5744		COUNTY SCOTLAND		GEOLOGIST E. Mayr, PE										
SITE DESCRIPTION Bridge No. 50 on SR 1615 (Hasty Road) over Bridge Creek							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 16+20		OFFSET 10 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 143.8 ft		TOTAL DEPTH 74.5 ft		NORTHING 331,436		EASTING 1,864,784										
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 06/03/16		COMP. DATE 06/03/16		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						
145														143.8	GROUND SURFACE	0.0
	143.2	0.6	5	2	2	4							M		ROADWAY EMBANKMENT	
	140.8	3.0	1	1	1	2							W		Orange and Gray, Silty Sand	
140														139.8	ALLUVIAL	4.0
															Dark Gray to Gray and Tan, Silty Sand with Trace Organics	
135	135.8	8.0	1	2	3	5							Sat.			
130	130.8	13.0	1	2	3	5							Sat.			
125	125.8	18.0	3	2	1	3							Sat.			
120	120.8	23.0	2	3	3	6							Sat.	121.8	COASTAL PLAIN	22.0
															Light Gray, Clayey Sand (Middendorf Formation)	
115	115.8	28.0	4	8	9	17							Sat.	116.8	Gray, Coarse Sand with Trace Silt (Middendorf Formation)	27.0
110	110.8	33.0	8	11	11	22							Sat.			
105	105.8	38.0	11	21	29	50							Sat.			
100	100.8	43.0	5	9	9	18							Sat.			
95	95.8	48.0	13	24	56	80							Sat.	96.8	Gray, Sandy Clay (Middendorf Formation)	47.0
													M			
90	90.8	53.0	5	7	11	18							Sat.	91.8	Light Gray, Clayey Sand (Middendorf Formation)	52.0
85	85.8	58.0	6	9	10	19							Sat.			
80	80.8	63.0	9	11	14	25							Sat.	81.8	Light Gray, Coarse Sand with Trace Silt (Middendorf Formation)	62.0
75	75.8	68.0	8	7	10	17							Sat.			
70	70.8	73.0	12	17	19	36							Sat.	69.3	Boring Terminated at Elevation 69.3 ft in Coarse Sand (Middendorf Formation)	74.5



SITE PHOTOGRAPH



VIEW LOOKING EAST FROM END BENT 1