

REFERENCE: 17BP.12.R.64

PROJECT: SF-350354

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY GASTON
 PROJECT DESCRIPTION BRIDGE NO. 350354 OVER
GILLIAM CREEK ON SR 1422 (CAROL RD)

 SITE DESCRIPTION _____

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-6	CROSS SECTIONS
7-9	BORE LOGS
10-13	SITE PHOTOGRAPHS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.12.R.64	1	13

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 1919 TOTT-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

A. RODRIGUEZ
P. PATTON
T. MILLER

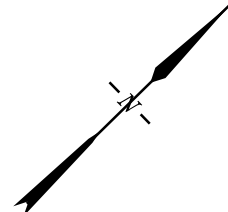
INVESTIGATED BY S&ME, INC.
 DRAWN BY N. BRADLEY
 CHECKED BY K. HILL
 SUBMITTED BY J. WILLIAMSON
 DATE JULY 2019



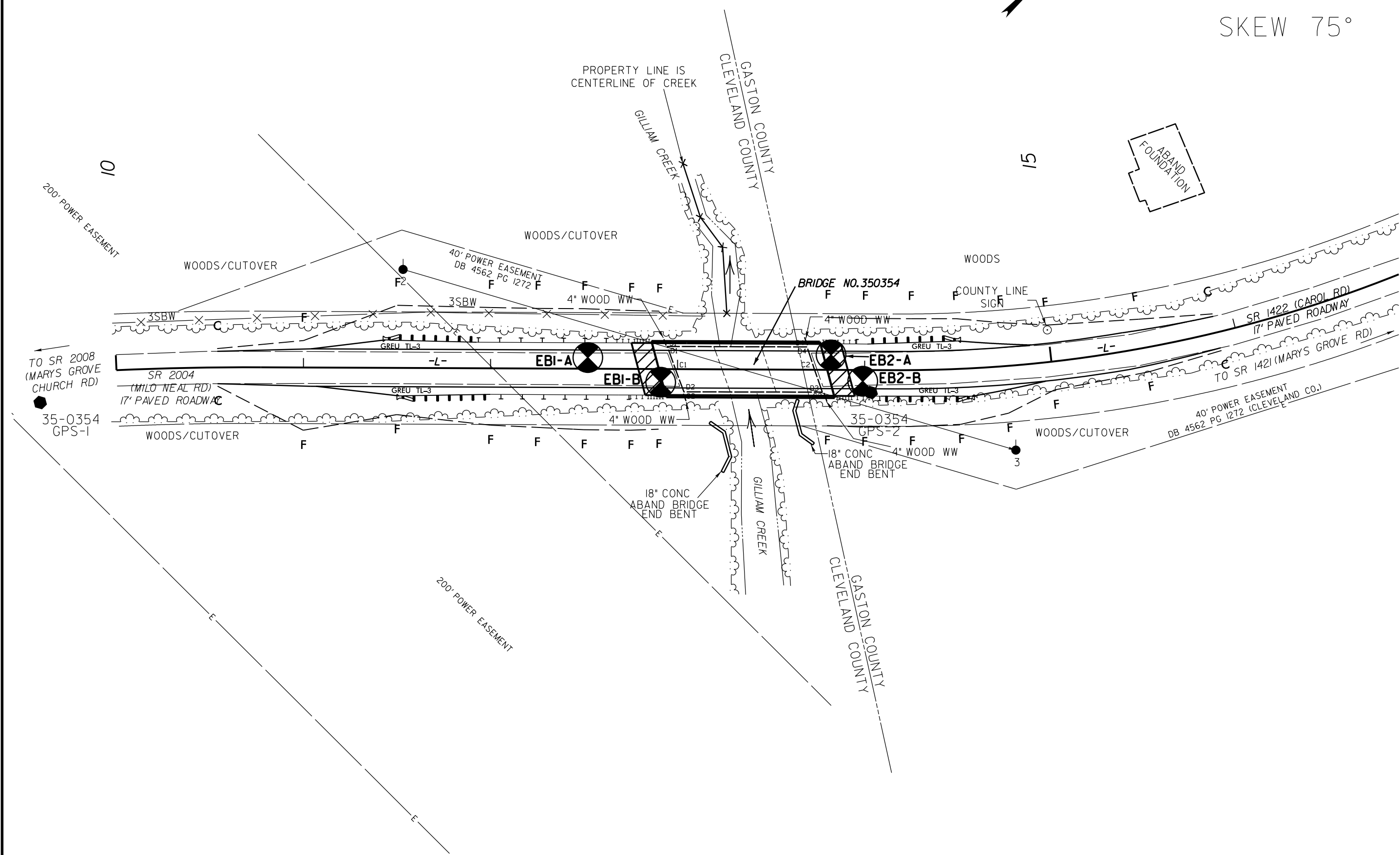
9751 SOUTHERN PINE BLVD
 CHARLOTTE, NC 28273
 (704) 523-4726

SIGNATURE _____ DATE _____

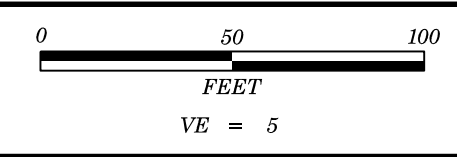
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**



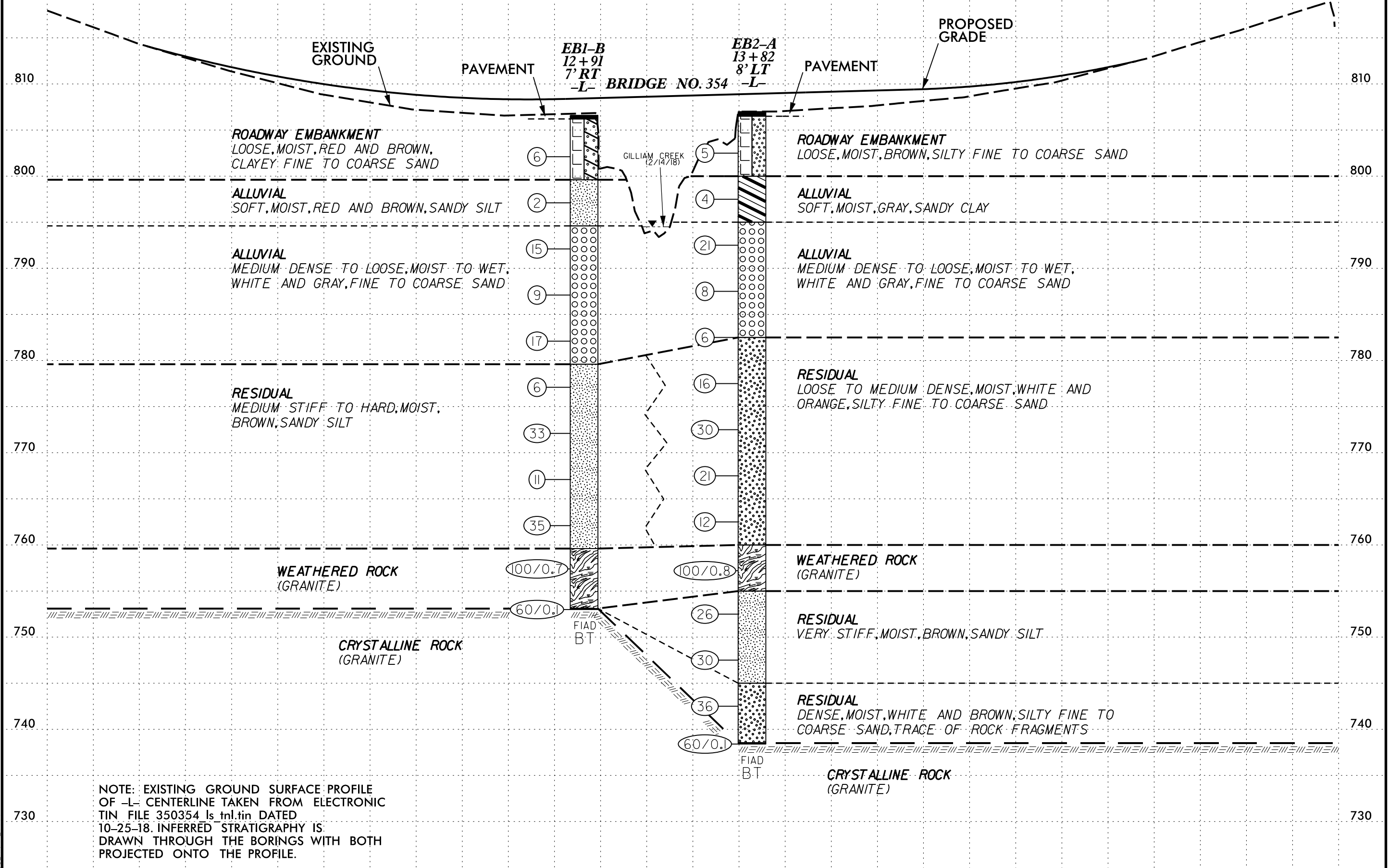
SKEW 75°



5/14/99



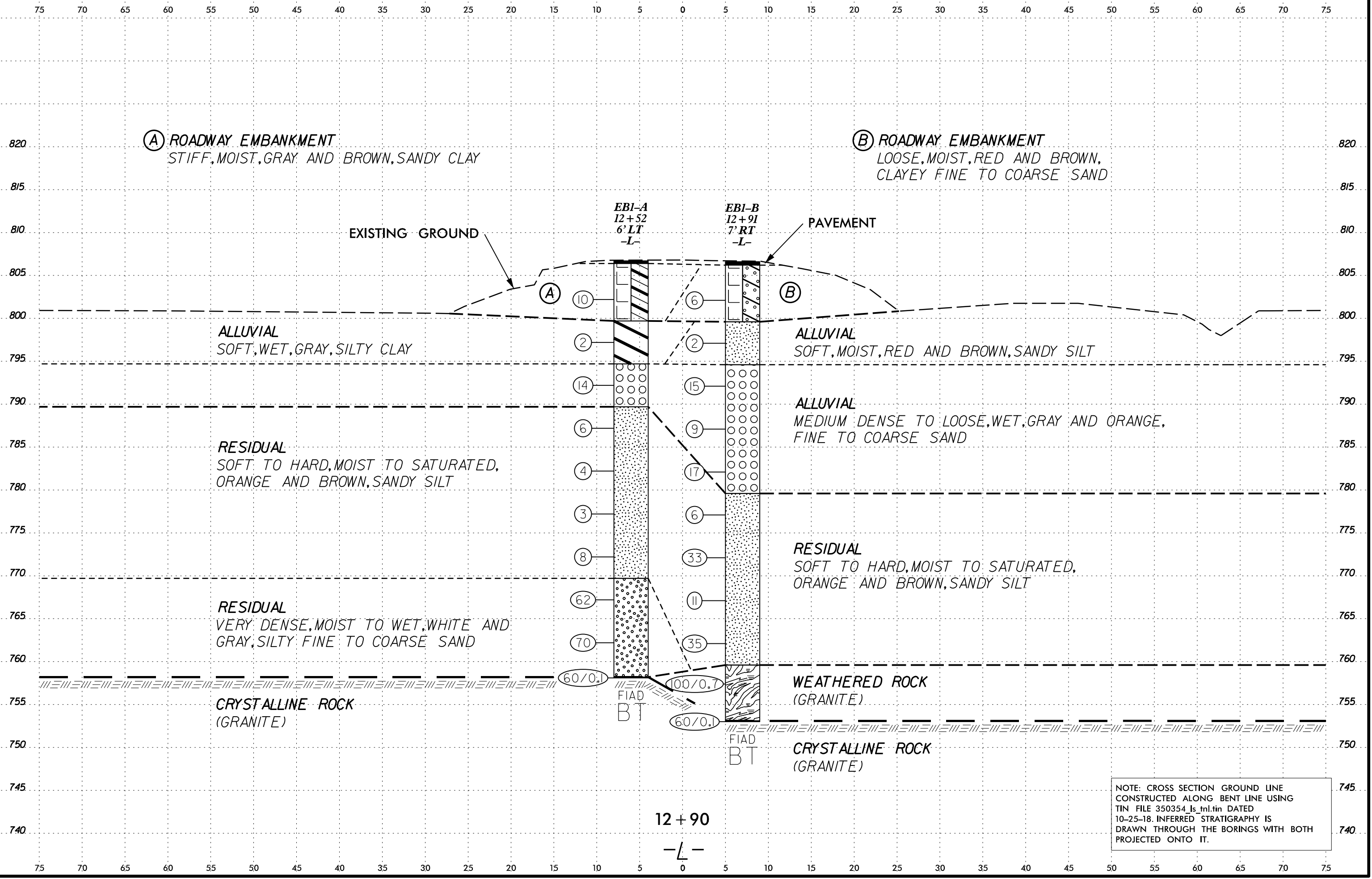
PROJECT REFERENCE NO.	SHEET NO.
17BP.12.R.64	4
PROFILE PROJECTED ALONG -L-	

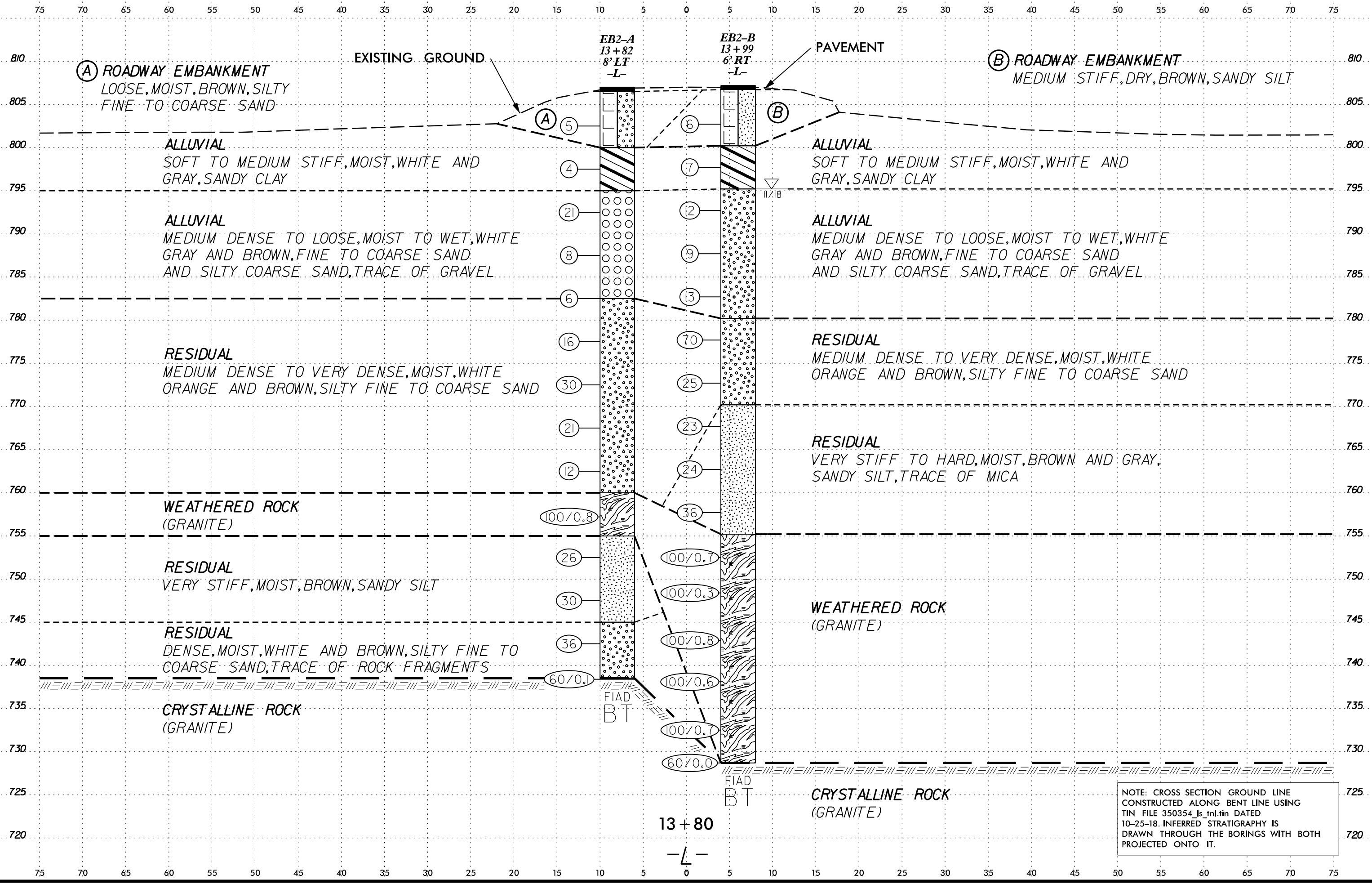


NOTE: EXISTING GROUND SURFACE PROFILE OF -L- CENTERLINE TAKEN FROM ELECTRONIC TIN FILE 350354 Is.tin DATED 10-25-18. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

SYSTEMS DESIGN GROUP

6/23/16





NOTE: CROSS SECTION GROUND LINE CONSTRUCTED ALONG BENT LINE USING TIN FILE 350354_Is.tnl.tin DATED 10-25-18. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO IT.

SYSTEMS
 DESIGN
 CONSULTANTS
 INC.
 1100
 UNIVERSITY
 AVENUE
 SUITE 100
 BOSTON
 MA 02128
 TEL: 617.552.3000
 FAX: 617.552.3001
 WWW.SDCON.COM

GEOTECHNICAL BORING REPORT

BORE LOG

WBS SF-350354		TIP 17BP.12.R.64		COUNTY GASTON		GEOLOGIST Rodriguez, A.	
SITE DESCRIPTION Bridge No. 350354 over Gilliam Creek on SR 1422 (Carol Rd)							GROUND WTR (ft)
BORING NO. EB1-A		STATION 12+52		OFFSET 6 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 806.7 ft		TOTAL DEPTH 48.6 ft		NORTHING 590,176		EASTING 1,287,836	
DRILL RIG/HAMMER EFF./DATE SME8245 CME-55 84% 04/04/2017			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER Miller, T.		START DATE 11/30/18		COMP. DATE 11/30/18		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				
810														
805	803.2	3.5	5	6	4							M	GROUND SURFACE PAVEMENT (3 INCHES) ROADWAY EMBANKMENT GRAY AND BROWN, SANDY CLAY	0.0
800	798.2	8.5	1	1	1							W	ALLUVIAL GRAY, SILTY CLAY	7.0
795	793.2	13.5	6	7	7							W	ORANGE, FINE TO COARSE SAND	12.0
790	788.2	18.5	3	2	4							M	RESIDUAL ORANGE AND BROWN, SANDY SILT	17.0
785	783.2	23.5	1	2	2							M		
780	778.2	28.5	1	1	2							Sat.		
775	773.2	33.5	4	4	4							M		
770	768.2	38.5	20	31	31							M	WHITE AND GRAY, SILTY FINE TO COARSE SAND	37.0
765	763.2	43.5	16	35	35							W		
760	758.2	48.5	60/0.1										CRYSTALLINE ROCK (GRANITE)	48.5
													Boring Terminated with Standard Penetration Test Refusal at Elevation 758.1 ft in Crystalline Rock	48.6

WBS SF-350354		TIP 17BP.12.R.64		COUNTY GASTON		GEOLOGIST Rodriguez, A.	
SITE DESCRIPTION Bridge No. 350354 over Gilliam Creek on SR 1422 (Carol Rd)							GROUND WTR (ft)
BORING NO. EB1-B		STATION 12+91		OFFSET 7 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 806.6 ft		TOTAL DEPTH 53.6 ft		NORTHING 590,195		EASTING 1,287,872	
DRILL RIG/HAMMER EFF./DATE SME8245 CME-55 84% 04/04/2017			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER Miller, T.		START DATE 11/28/18		COMP. DATE 11/28/18		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				
810														
805	803.1	3.5	2	3	3							M	GROUND SURFACE PAVEMENT (5 INCHES) ROADWAY EMBANKMENT RED AND BROWN, CLAYEY FINE TO COARSE SAND	0.0
800	798.1	8.5	2	1	1							M	ALLUVIAL RED AND BROWN, SANDY SILT	7.0
795	793.1	13.5	4	7	8							W	GRAY, FINE TO COARSE SAND	12.0
790	788.1	18.5	7	4	5							W		
785	783.1	23.5	5	7	10									
780	778.1	28.5	3	3	3							M	RESIDUAL BROWN, SANDY SILT	27.0
775	773.1	33.5	2	5	28							M		
770	768.1	38.5	4	4	7							M		
765	763.1	43.5	17	17	18							M		
760	758.1	48.5	50	50/0.2									WEATHERED ROCK (GRANITE)	47.0
755	753.1	53.5	60/0.1										CRYSTALLINE ROCK (GRANITE)	53.5
													Boring Terminated with Standard Penetration Test Refusal at Elevation 753.0 ft in Crystalline Rock	53.6

NCDOT BORE DOUBLE BORING LOGS.GPJ NC_DOT.GDT 12/31/18

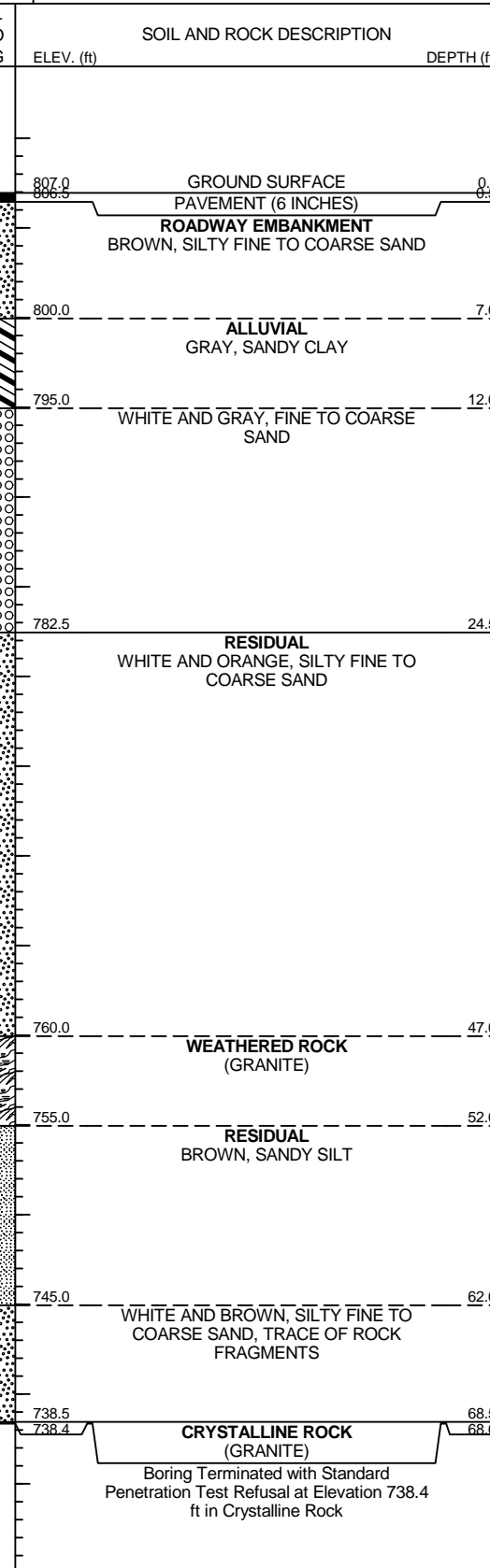
GEOTECHNICAL BORING REPORT

BORE LOG

WBS SF-350354		TIP 17BP.12.R.64		COUNTY GASTON		GEOLOGIST Rodriguez, A.	
SITE DESCRIPTION Bridge No. 350354 over Gilliam Creek on SR 1422 (Carol Rd)							GROUND WTR (ft)
BORING NO. EB2-A		STATION 13+82		OFFSET 8 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 807.0 ft		TOTAL DEPTH 68.6 ft		NORTHING 590,270		EASTING 1,287,926	
DRILL RIG/HAMMER EFF./DATE SME8245 CME-55 84% 04/04/2017				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic	
DRILLER Miller, T.		START DATE 11/29/18		COMP. DATE 11/29/18		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			ELEV. (ft)	DEPTH (ft)		
810																
															807.0	0.0
															806.5	0.5
805																
	803.5	3.5	6	3	2											
800																
	798.5	8.5	3	2	2											
795																
	793.5	13.5	3	7	14											
790																
	788.5	18.5	12	4	4											
785																
	783.5	23.5	5	3	3											
780																
	778.5	28.5	7	8	8											
775																
	773.5	33.5	14	19	11											
770																
	768.5	38.5	9	10	11											
765																
	763.5	43.5	5	4	8											
760																
	758.5	48.5	19	50	50/0.3											
755																
	753.5	53.5	9	10	16											
750																
	748.5	58.5	4	10	20											
745																
	743.5	63.5	13	20	16											
740																
	738.5	68.5	60/0.1													

NCDOT BORE DOUBLE BORING LOGS.GPJ NC_DOT.GDT 12/31/18



Boring Terminated with Standard Penetration Test Refusal at Elevation 738.4 ft in Crystalline Rock

GEOTECHNICAL BORING REPORT

BORE LOG

WBS SF-350354		TIP 17BP.12.R.64		COUNTY GASTON		GEOLOGIST Patton, P.								
SITE DESCRIPTION Bridge No. 350354 over Gilliam Creek on SR 1422 (Carol Rd)							GROUND WTR (ft)							
BORING NO. EB2-B		STATION 13+99		OFFSET 6 ft RT		ALIGNMENT -L-								
COLLAR ELEV. 807.2 ft		TOTAL DEPTH 78.5 ft		NORTHING 590,272		EASTING 1,287,947								
DRILL RIG/HAMMER EFF./DATE SME8245 CME-55 84% 04/04/2017			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic									
DRILLER Miller, T.		START DATE 11/08/18		COMP. DATE 12/03/18		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				
810														
805	803.7	3.5	4	3	3								D	GROUND SURFACE PAVEMENT (3 INCHES) ROADWAY EMBANKMENT BROWN, SANDY SILT
800	798.7	8.5	3	3	4								M	ALLUVIAL WHITE AND GRAY, SANDY CLAY
795	793.7	13.5	3	5	7								W	WHITE AND BROWN, SILTY COARSE SAND, TRACE OF GRAVEL
790	788.7	18.5	2	3	6								W	
785	783.7	23.5	3	5	8								W	
780	778.7	28.5	16	31	39								M	RESIDUAL BROWN AND WHITE, SILTY FINE TO COARSE SAND
775	773.7	33.5	6	9	16								M	
770	768.7	38.5	7	11	12								M	BROWN AND GRAY, SANDY SILT, TRACE OF MICA
765	763.7	43.5	9	10	14								M	
760	758.7	48.5	19	17	19								M	
755	753.7	53.5	28	53	47/0.2								M	WEATHERED ROCK (GRANITE)
750	748.7	58.5	100/0.3											
745	743.7	63.5	44	56/0.3										
740	738.7	68.5	86	14/0.1										
735	733.7	73.5	30	55	45/0.2									
730														

WBS SF-350354		TIP 17BP.12.R.64		COUNTY GASTON		GEOLOGIST Patton, P.								
SITE DESCRIPTION Bridge No. 350354 over Gilliam Creek on SR 1422 (Carol Rd)							GROUND WTR (ft)							
BORING NO. EB2-B		STATION 13+99		OFFSET 6 ft RT		ALIGNMENT -L-								
COLLAR ELEV. 807.2 ft		TOTAL DEPTH 78.5 ft		NORTHING 590,272		EASTING 1,287,947								
DRILL RIG/HAMMER EFF./DATE SME8245 CME-55 84% 04/04/2017			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic									
DRILLER Miller, T.		START DATE 11/08/18		COMP. DATE 12/03/18		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				
730														
	728.7	78.5	60/0.0											Boring Terminated with Standard Penetration Test Refusal at Elevation 728.7 ft on Crystalline Rock

NCDOT BORE DOUBLE BORING LOGS.GPJ NC_DOT.GDT 12/31/18

SITE PHOTOGRAPH

Bridge No. 350354 over Gilliam Creek on -L- (SR 1422 / Carol Rd)



Looking Upstation toward Marys Grove Rd

SITE PHOTOGRAPH

Bridge No. 350354 over Gilliam Creek on -L- (SR 1422 / Carol Rd)



Looking Downstation toward Marys Grove Church Rd

SITE PHOTOGRAPH

Bridge No. 350354 over Gilliam Creek on -L- (SR 1422 / Carol Rd)



Looking Upstream

SITE PHOTOGRAPH

Bridge No. 350354 over Gilliam Creek on -L- (SR 1422 / Carol Rd)



Looking Downstream