

REFERENCE: SF-750371

PROJECT: 17BP.8.R.101

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY RANDOLPH
PROJECT DESCRIPTION BRIDGE NO. 371 ON SR 2182
(ALLRED ST.) OVER PENWOOD BRANCH

SITE DESCRIPTION CULVERT NO. 1206

CONTENTS

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2	LEGEND
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-750371	1	7

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

Stephen Abernathy

Mike Morgan

INVESTIGATED BY D. Michael Gragg

DRAWN BY Tamara Stivers

CHECKED BY Kenneth Bussey

SUBMITTED BY HDR|ICA

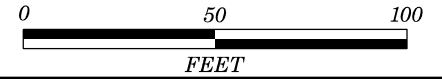
DATE September 2016



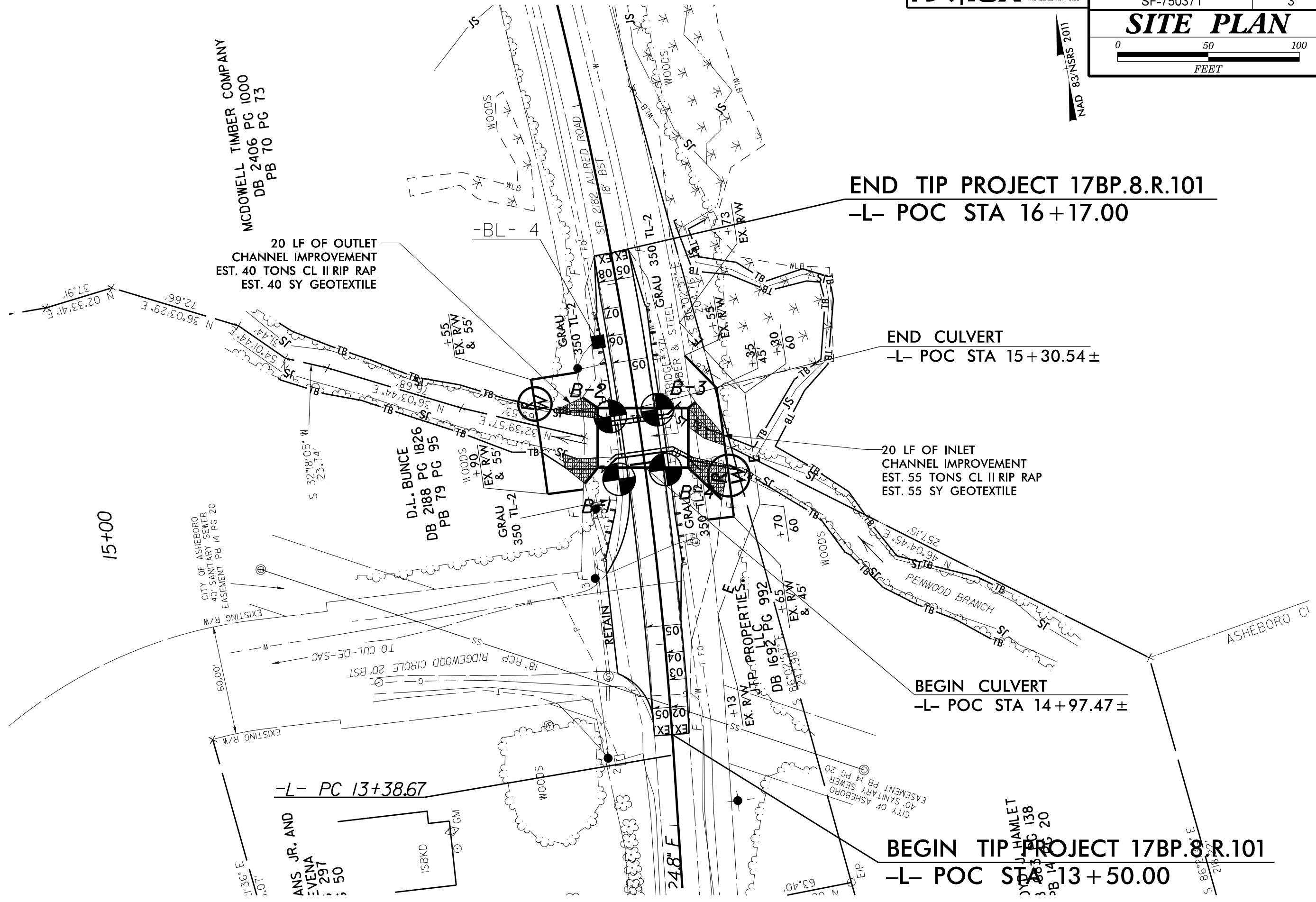
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Kenneth Bussey 9/6/2016
6EB2C05E304409E DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SITE PLAN



NAD 83/NSRS 2011



END TIP PROJECT 17BP.8.R.101
-L- POC STA 16+17.00

END CULVERT
-L- POC STA 15+30.54 ±

20 LF OF INLET
CHANNEL IMPROVEMENT
EST. 55 TONS CL II RIP RAP
EST. 55 SY GEOTEXTILE

BEGIN CULVERT
-L- POC STA 14+97.47 ±

BEGIN TIP PROJECT 17BP.8.R.101
-L- POC STA 13+50.00

MCDOWELL TIMBER COMPANY
DB 2406 PG 1000
PB 70 PG 73

20 LF OF OUTLET
CHANNEL IMPROVEMENT
EST. 40 TONS CL II RIP RAP
EST. 40 SY GEOTEXTILE

D.L. BUNCE
DB 2188 PG 1826
PB 79 PG 95

JTP PROPERTIES LLC
DB 1692 PG 992
PB 14 PG 20

CITY OF ASHEBORO
40' SANITARY SEWER
EASEMENT PB 14 PG 20

15+00

-L- PC 13+38.67

ANS JR. AND
EVENA
DB 297 PG 297
PB 14 PG 20

JUHAMLET
DB 138 PG 138
PB 14 PG 20

ASHEBORO CI

WOODS

24.8" F

CITY OF ASHEBORO
40' SANITARY SEWER
EASEMENT PB 14 PG 20

WOODS

PENWOOD BRANCH

WOODS

WOODS

WOODS

WOODS

WOODS

WOODS

WOODS

WOODS

WOODS

WOODS

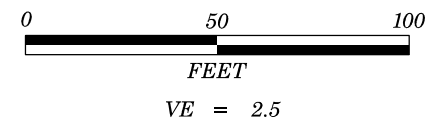
WOODS

WOODS

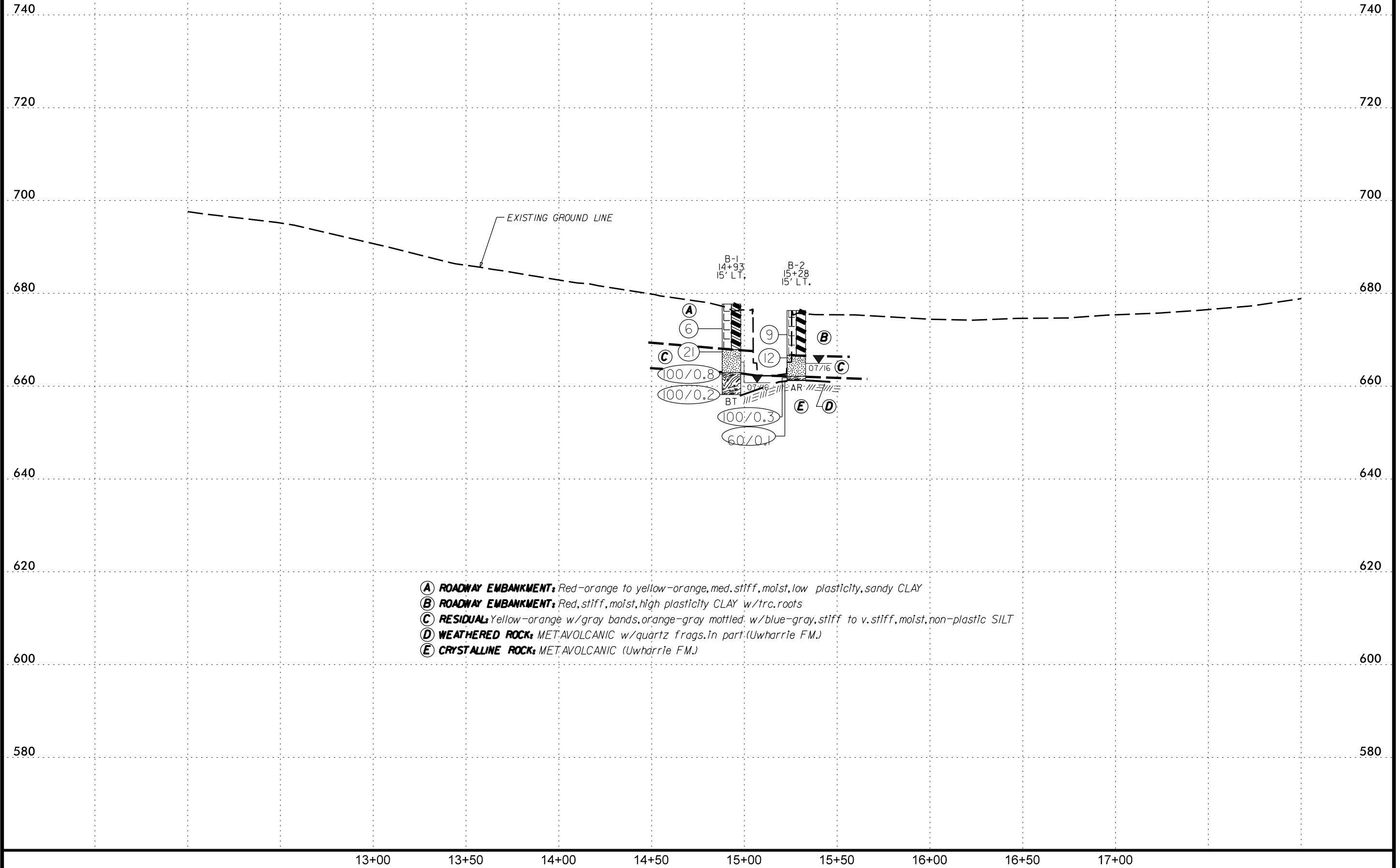
WOODS

GENERALIZED SUBSURFACE PROFILE 15' LT. of -L-

GROUNDLINE PROFILE CREATED FROM 750371_ls_tnl.tin FILE RECEIVED FROM NCDOT DATED 3-17-2016
 INFERRED STRATIGRAPHY IS DRAWN AT THE PROFILE OFFSET WITH THE BORINGS PROJECTED ONTO THE PROFILE



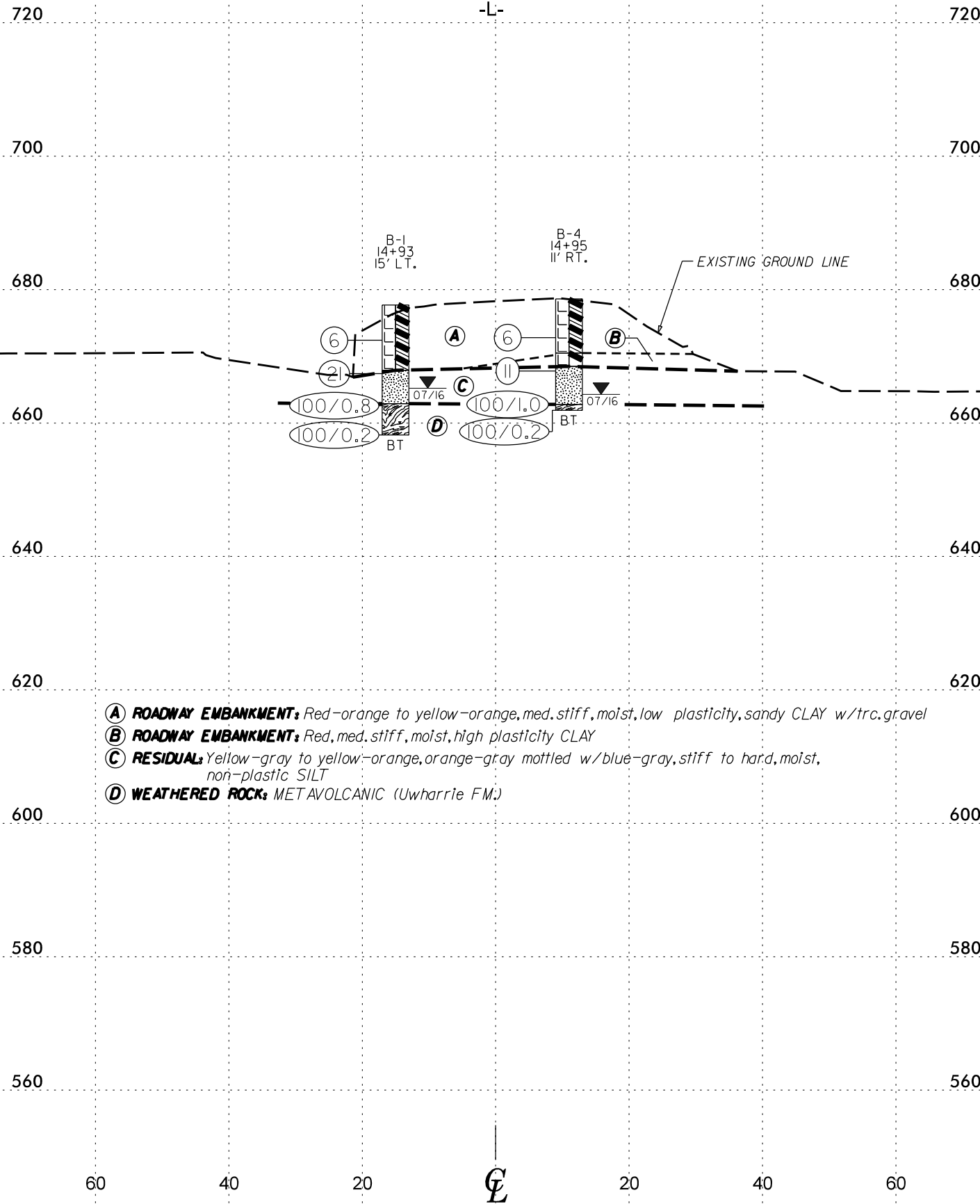
PROJECT REFERENCE NO.	SHEET NO.
SF-750371	4
CULVERT NO. 1206 PROFILE	



- Ⓐ **ROADWAY EMBANKMENT:** Red-orange to yellow-orange, med. stiff, moist, low plasticity, sandy CLAY
- Ⓑ **ROADWAY EMBANKMENT:** Red, stiff, moist, high plasticity CLAY w/trc.roots
- Ⓒ **RESIDUAL:** Yellow-orange w/gray bands, orange-gray mottled; w/blue-gray, stiff to v.stiff, moist, non-plastic SILT
- Ⓓ **WEATHERED ROCK:** MET.AVOLCANIC w/quartz frags.in part:(Uwharrie FM.)
- Ⓔ **CRYSTALLINE ROCK:** MET.AVOLCANIC (Uwharrie FM.)

GENERALIZED SUBSURFACE CROSS SECTION STA. 14 + 97.47

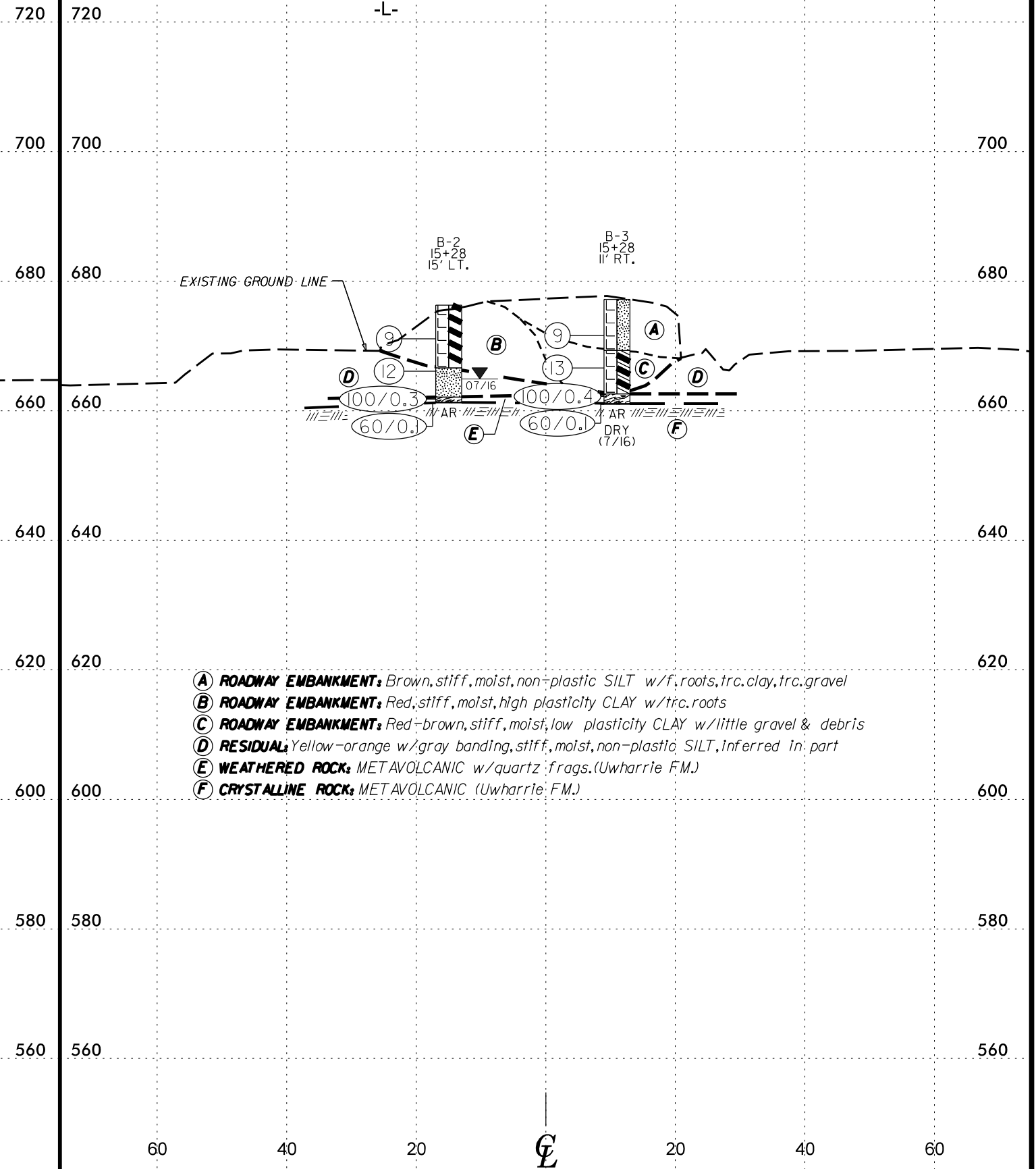
83° SKEW
-L-



- (A) ROADWAY EMBANKMENT: Red-orange to yellow-orange, med. stiff, moist, low plasticity, sandy CLAY w/trc. gravel
- (B) ROADWAY EMBANKMENT: Red, med. stiff, moist, high plasticity CLAY
- (C) RESIDUAL: Yellow-gray to yellow-orange, orange-gray mottled w/blue-gray, stiff to hard, moist, non-plastic SILT
- (D) WEATHERED ROCK: METAVOLCANIC (Uwharrie FM.)

GENERALIZED SUBSURFACE CROSS SECTION STA. 15 + 30.54

83° SKEW
-L-



- (A) ROADWAY EMBANKMENT: Brown, stiff, moist, non-plastic SILT w/f. roots, trc. clay, trc. gravel
- (B) ROADWAY EMBANKMENT: Red, stiff, moist, high plasticity CLAY w/trc. roots
- (C) ROADWAY EMBANKMENT: Red-brown, stiff, moist, low plasticity CLAY w/little gravel & debris
- (D) RESIDUAL: Yellow-orange w/gray banding, stiff, moist, non-plastic SILT, inferred in part
- (E) WEATHERED ROCK: METAVOLCANIC w/quartz frags. (Uwharrie FM.)
- (F) CRYSTALLINE ROCK: METAVOLCANIC (Uwharrie FM.)

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.8.R.101		TIP SF-750371		COUNTY RANDOLPH		GEOLOGIST Abernathy, S.										
SITE DESCRIPTION Bridge #371 on SR 2182 (Allred St.) over Penwood Branch							GROUND WTR (ft)									
BORING NO. B-1		STATION 14+93		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 677.7 ft		TOTAL DEPTH 19.5 ft		NORTHING 724,043		EASTING 1,766,833										
DRILL RIG/HAMMER EFF./DATE HDR0404 CME-45C 91.5% 11/10/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Morgan, M.		START DATE 07/12/16		COMP. DATE 07/12/16		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						
680														677.7	GROUND SURFACE	0.0
675	673.4	4.3	3	2	4								M	ROADWAY EMBANKMENT Red-orange to yellow-orange, med. stiff, low plasticity, sandy CLAY (A-6).		
670	668.4	9.3	3	8	13								M	RESIDUAL Orange-gray mottled w/blue-gray, very stiff, non-plastic SILT (A-4).	9.8	
665	663.4	14.3	15	85/0.3										WEATHERED ROCK Metavolcanic	14.8	
660	658.4	19.3	100/0.2											Boring Terminated at Elevation 658.2 ft in WR (Metavolcanic Rock - Uwharrie Fm.). Cuttings became muddy between 14.3' & 19.3'.	19.5	

WBS 17BP.8.R.101		TIP SF-750371		COUNTY RANDOLPH		GEOLOGIST Abernathy, S.										
SITE DESCRIPTION Bridge #371 on SR 2182 (Allred St.) over Penwood Branch							GROUND WTR (ft)									
BORING NO. B-2		STATION 15+28		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 676.3 ft		TOTAL DEPTH 15.1 ft		NORTHING 724,037		EASTING 1,766,868										
DRILL RIG/HAMMER EFF./DATE HDR0404 CME-45C 91.5% 11/10/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Morgan, M.		START DATE 07/12/16		COMP. DATE 07/12/16		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						
680														676.3	GROUND SURFACE	0.0
675													M	ROADWAY EMBANKMENT Red, stiff, high plasticity CLAY w/trc. roots (A-7-5).		
670	672.1	4.2	3	3	6								M	RESIDUAL Yellow-orange w/bands of gray, stiff, non-plastic, SILT (A-4).	9.7	
665	667.1	9.2	3	4	8								M	WEATHERED ROCK Metavolcanic w/quartz fragments	14.2	
	662.1	14.2	100/0.3											WEATHERED ROCK Metavolcanic	15.0	
	661.3	15.0	60/0.1											CRYSTALLINE ROCK Metavolcanic	15.1	
														Boring Terminated with Standard Penetration Test Refusal at Elevation 661.2 ft in CR (Metavolcanic Rock - Uwharrie Fm.). Borehole caved to 11.6' after removing augers, muddy soil at bottom caused water level indicator to activate.		

NCDOT BORE DOUBLE_SF750371_GEO_CULV1206_PENWOOD BRANCH.GPJ_NC_DOT.GDT 9/1/16

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.8.R.101		TIP SF-750371		COUNTY RANDOLPH		GEOLOGIST Abernathy, S.											
SITE DESCRIPTION Bridge #371 on SR 2182 (Allred St.) over Penwood Branch							GROUND WTR (ft)										
BORING NO. B-3		STATION 15+28		OFFSET 11 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 677.2 ft		TOTAL DEPTH 16.2 ft		NORTHING 724,011		EASTING 1,766,862											
DRILL RIG/HAMMER EFF./DATE HDR0404 CME-45C 91.5% 11/10/2015		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER Morgan, M.		START DATE 07/12/16		COMP. DATE 07/12/16		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							
680															677.2	GROUND SURFACE	0.0
675																ROADWAY EMBANKMENT Brown, stiff, non-plastic SILT w/f. roots & trcs. clay & gravel (A-4).	
670	672.6	4.6	3	4	5								M				
665	667.6	9.6	3	5	8								M		669.3	Red-brown, stiff, low-plasticity, sli. gravelly CLAY w/plastic bottle cap (A-6).	7.9
	662.6	14.6	100/0.4												662.6	WEATHERED ROCK Metavolcanic	14.6
	661.1	16.1	60/0.1												661.1	CRYSTALLINE ROCK Metavolcanic	16.1
															661.0	Boring Terminated with Standard Penetration Test Refusal at Elevation 661.0 ft in CR (Metavolcanic Rock - Uwharrie Fm.).	16.2
																Borehole caved to 11.3' after removing augers, no water detected at that time.	

WBS 17BP.8.R.101		TIP SF-750371		COUNTY RANDOLPH		GEOLOGIST Abernathy, S.											
SITE DESCRIPTION Bridge #371 on SR 2182 (Allred St.) over Penwood Branch							GROUND WTR (ft)										
BORING NO. B-4		STATION 14+95		OFFSET 11 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 678.6 ft		TOTAL DEPTH 16.7 ft		NORTHING 724,018		EASTING 1,766,830											
DRILL RIG/HAMMER EFF./DATE HDR0404 CME-45C 91.5% 11/10/2015		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER Morgan, M.		START DATE 07/12/16		COMP. DATE 07/12/16		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							
680															678.6	GROUND SURFACE	0.0
675																ROADWAY EMBANKMENT Red, med. stiff, low plasticity, sli. gravelly, CLAY w/silt (A-6).	
670	673.8	4.8	4	3	3								M		670.5	Red, med. stiff, high plasticity CLAY (A-7-5).	8.1
665	668.8	9.8	2	4	7								M		668.5	RESIDUAL Yellow-gray to yellow-orange, stiff to hard, non-plastic SILT (A-4).	10.1
	663.8	14.8	16	84/0.5											662.8	WEATHERED ROCK Metavolcanic	15.8
	662.1	16.5	100/0.2												661.9	Boring Terminated at Elevation 661.9 ft in WR (Metavolcanic Rock - Uwharrie Fm.).	16.7

NCDOT BORE DOUBLE_SF750371_GEO_CULV1206_PENWOOD BRANCH.GPJ NC_DOT.GDT 9/1/16