

**PROJECT NO: 45360.1.BD1**



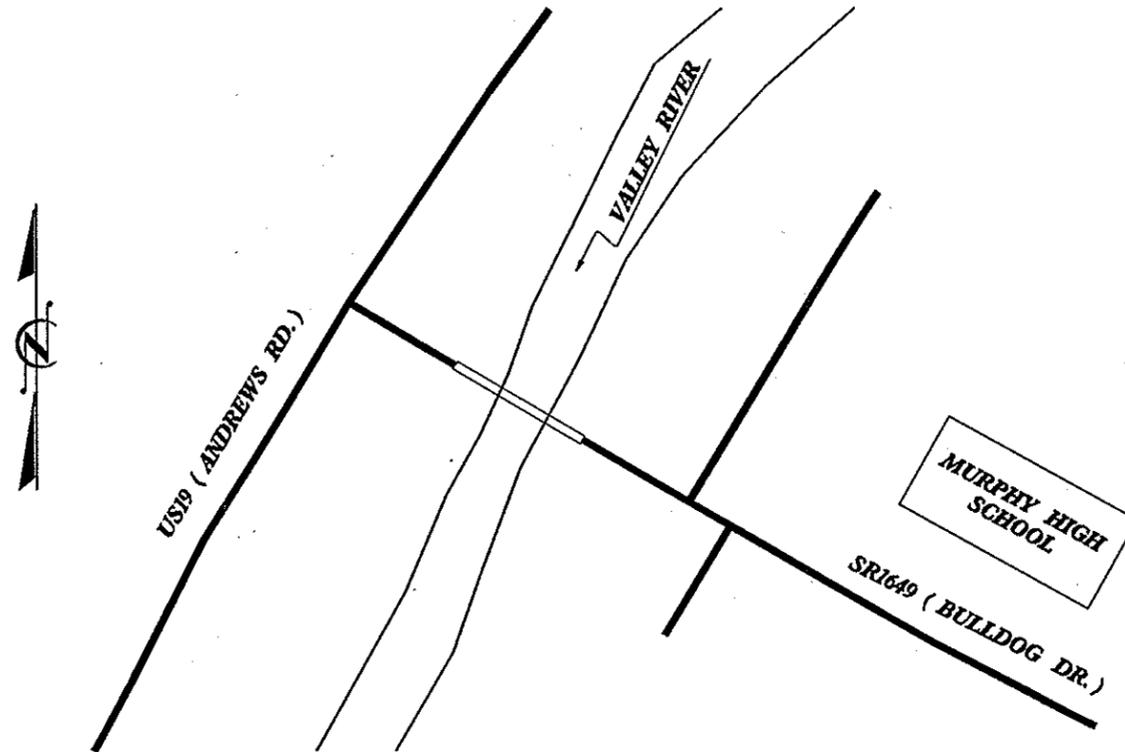
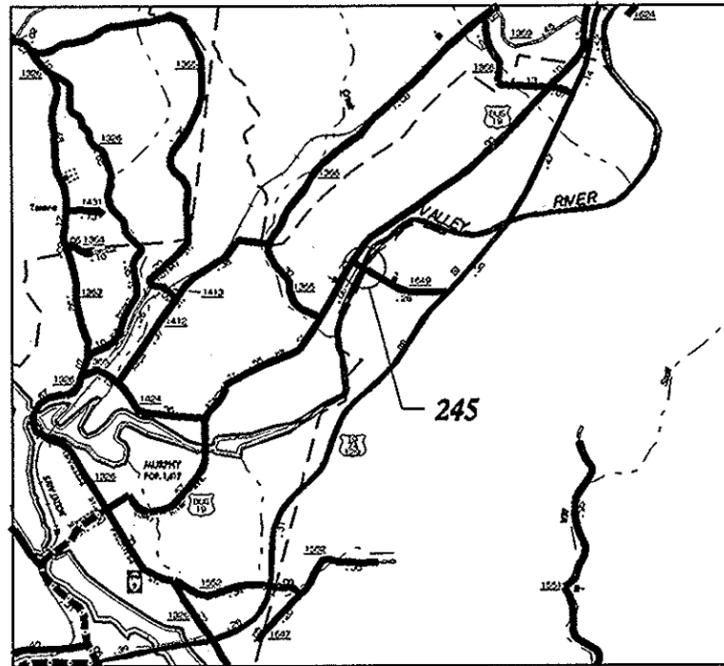
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CHEROKEE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	45360.1.BD1	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
45360.1.BD1		P.E.	
45360.1.BD1		CONST.	

LOCATION: BRIDGE #245 ON SR1649 ACROSS VALLEY RIVER

TYPE OF WORK: FOUNDATION RETROFIT, MICROPILES



**STRUCTURES**



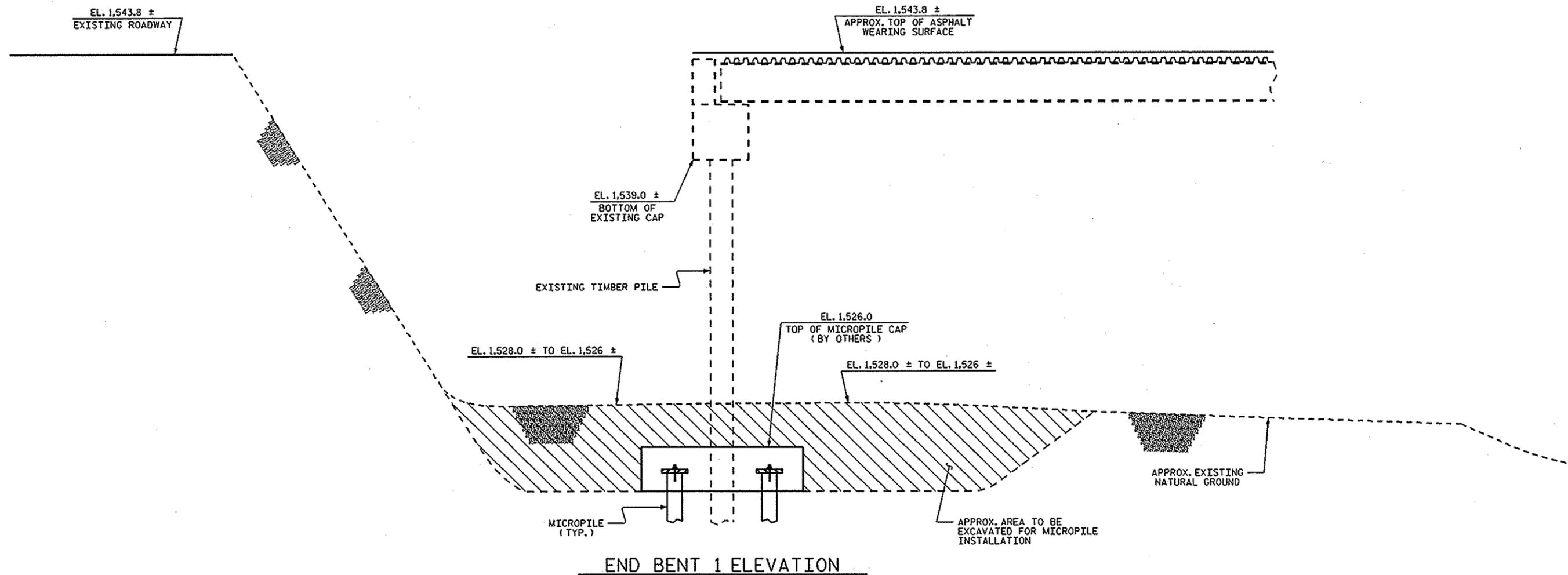
Prepared in the Office of:  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
STRUCTURES MANAGEMENT UNIT - PRESERVATION & REPAIR GROUP  
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

RICK NELSON, P.E.

2012 STANDARD SPECIFICATIONS

LETTING DATE:  
FEBRUARY 13, 2013

*Timothy M. Sherrill*  
NORTH CAROLINA  
PROFESSIONAL  
SEAL  
18565  
ENGINEER  
TIMOTHY M. SHERRILL  
02/06/13  
**TIMOTHY M. SHERRILL, P.E.**  
PROJECT DESIGN ENGINEER



TOTAL BILL OF MATERIAL	
7 7/8" Ø MICROPILES	MICROPILE PROOF TEST
( EACH )	( EACH )
12	1

PROJECT NO. 45360.1.BD1  
CHEROKEE COUNTY  
 BRIDGE: 245

SHEET 1 OF 3

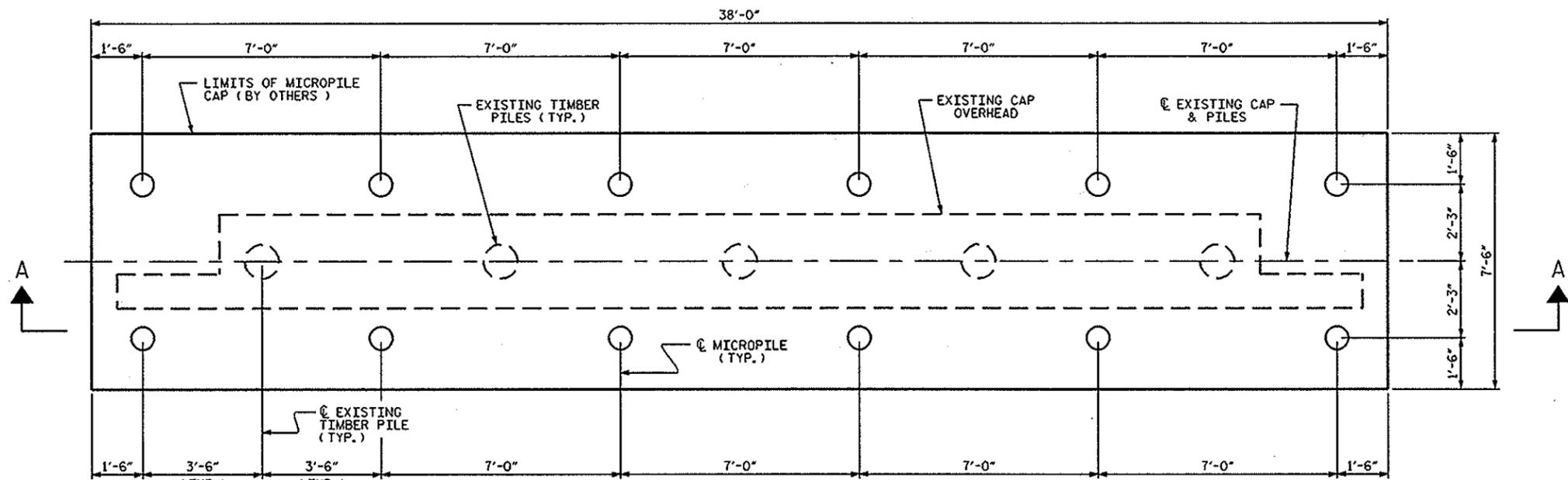
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**END BENT 1  
 ELEVATION**

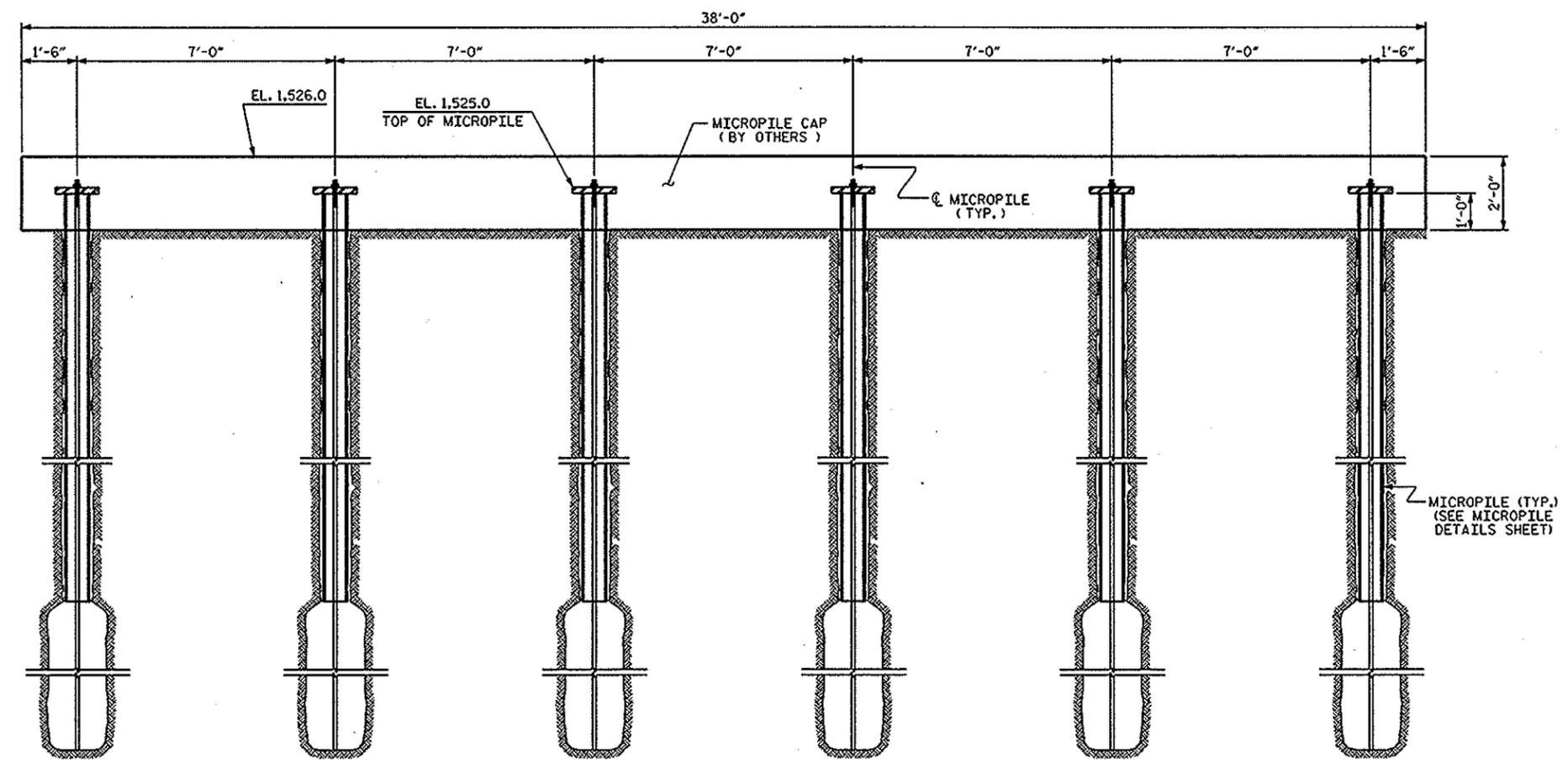


DRAWN BY : P.C. BREWER DATE : 2/5/13  
 CHECKED BY : T.M. SHERRILL DATE : 2/6/13  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

REVISIONS						SHEET NO. S-1 TOTAL SHEETS 3
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			



PLAN OF MICROPILE CAP



SECTION A-A

PROJECT NO. 45360.1.BD1  
 CHEROKEE COUNTY  
 BRIDGE: 245  
 SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 END BENT 1  
 MICROPILE LAYOUT  
 AND ELEVATIONS

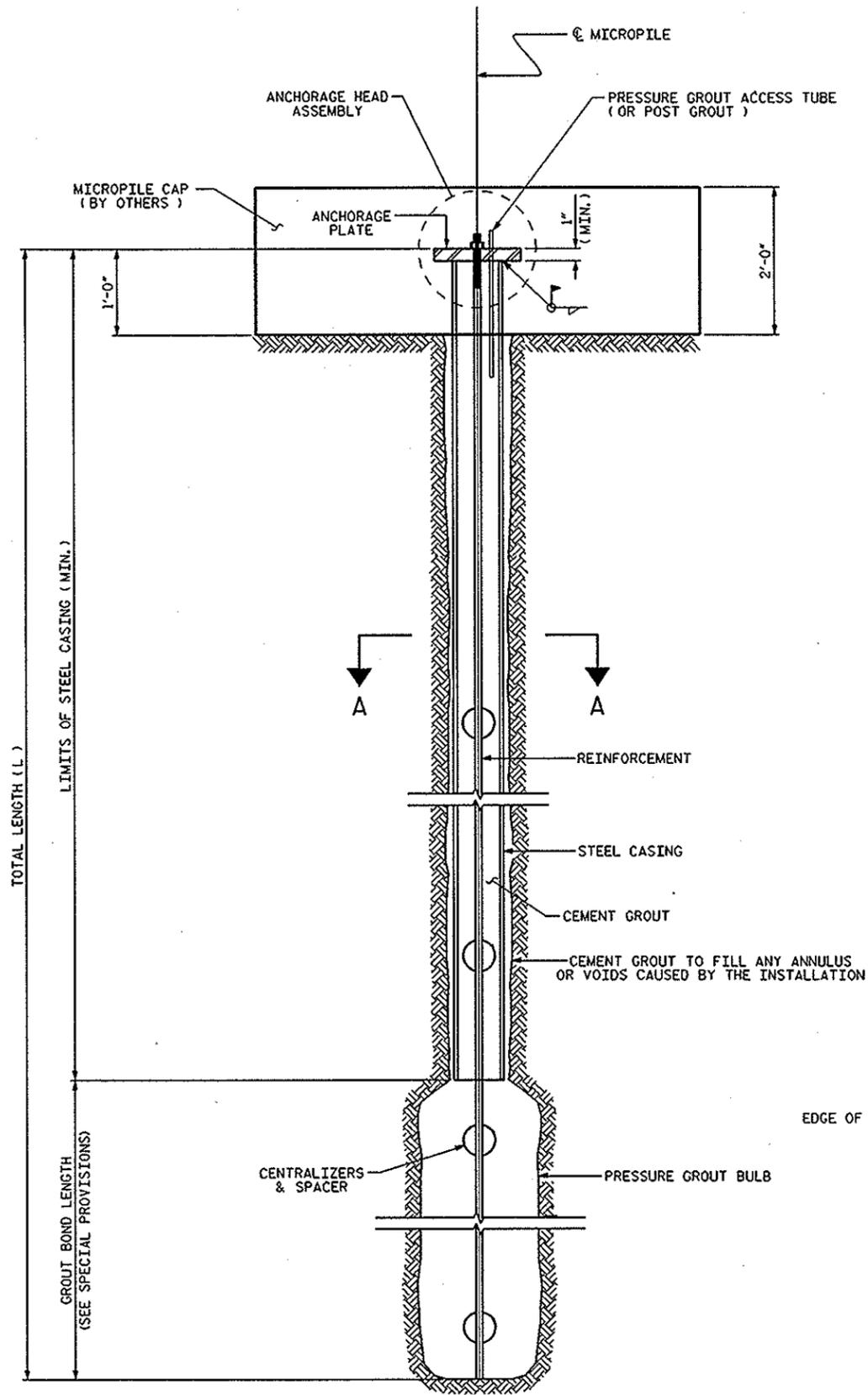


DRAWN BY: P.C. BREWER DATE: 2/5/13  
 CHECKED BY: T.M. SHERRILL DATE: 2/6/13  
 DESIGN ENGINEER OF RECORD: DATE:

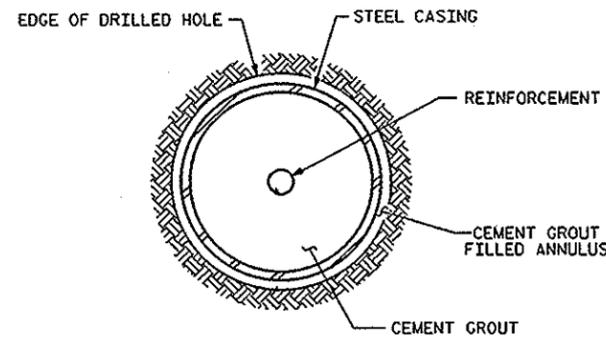
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

TOTAL SHEETS: 3

06-FEB-2013 11:19  
 S:\PR\POC\Squad C\Repair Projects\Cherokee 245\Cherokee245.S0.dgn  
 pbr/or



MICROPILE DETAIL



SECTION A-A

NOTES:

- FOR MICROPILES, SEE MICROPILES PROVISION.
- DESIGN BOND LENGTH FOR MICROPILES AT END BENT 1 FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.
- STEEL CASING MUST BE 7 7/8" IN DIAMETER (MIN.) WITH 5/16" (MIN.) WALL THICKNESS OR EQUIVALENT.
- INSTALL REINFORCING CASINGS FOR MICROPILES AT END BENT 1 TO A TIP ELEVATION NO HIGHER THAN 1500 FT.
- DO NOT LOCATE REINFORCING CASING JOINTS BETWEEN ELEVATION 1525 FT AND 1515 FT FOR MICROPILES AT END BENT 1.
- PERMANENT CASINGS MAYBE REQUIRED FOR MICROPILES AT END BENT 1. INSTALL CASINGS TO A TIP ELEVATION NO HIGHER THAN 1520 FT.
- THE SCOUR CRITICAL ELEVATION FOR END BENT 1 IS ELEVATION 1520 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- PROOF LOAD TESTS ARE REQUIRED FOR MICROPILES AT END BENT 1 AS SHOWN. LOAD TEST PILES TO TEST LOADS EQUAL TO 0.8 TIMES THE NOMINAL RESISTANCE OF THE BOND LENGTH PLUS ANY ADDITIONAL RESISTANCE TO ACCOUNT FOR MATERIAL ABOVE THE BOND LENGTH.
- OVERHEAD CLEARANCE UNDER THE STRUCTURE HAS BEEN ESTIMATED AT 10 FT ± AND IS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO BIDDING.
- ALL ELEVATIONS SHOWN ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE.
- PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND LIMITED FIELD EXPLORATIONS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIANCES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PROJECT NO. 45360.1.BD1  
CHEROKEE COUNTY  
 BRIDGE: 245

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

END BENT 1  
 MICROPILE DETAILS



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			2			TOTAL SHEETS
2			3			3

DRAWN BY : P.C. BREWER DATE : 2/5/13  
 CHECKED BY : T.M. SHERRILL DATE : 2/6/13