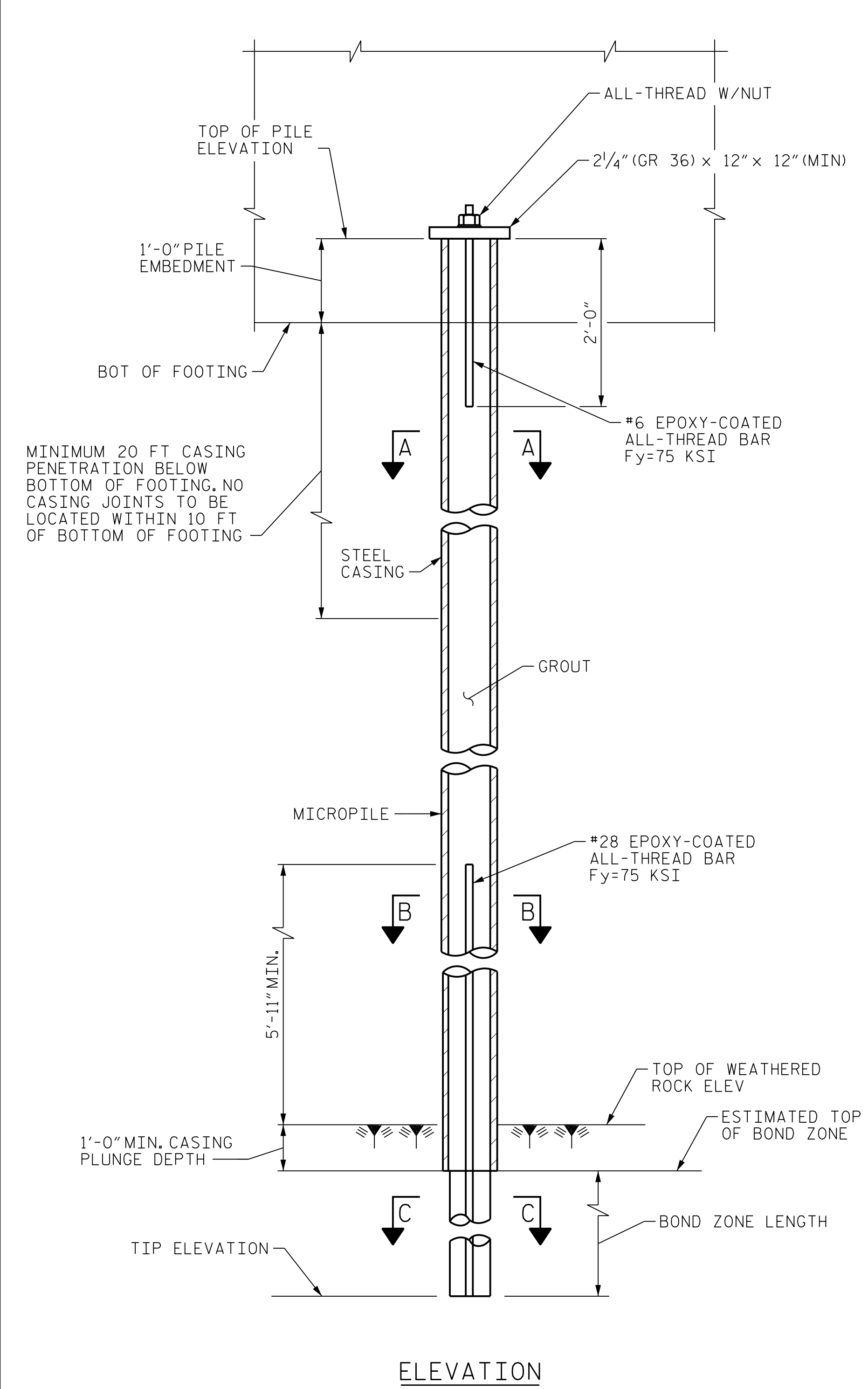
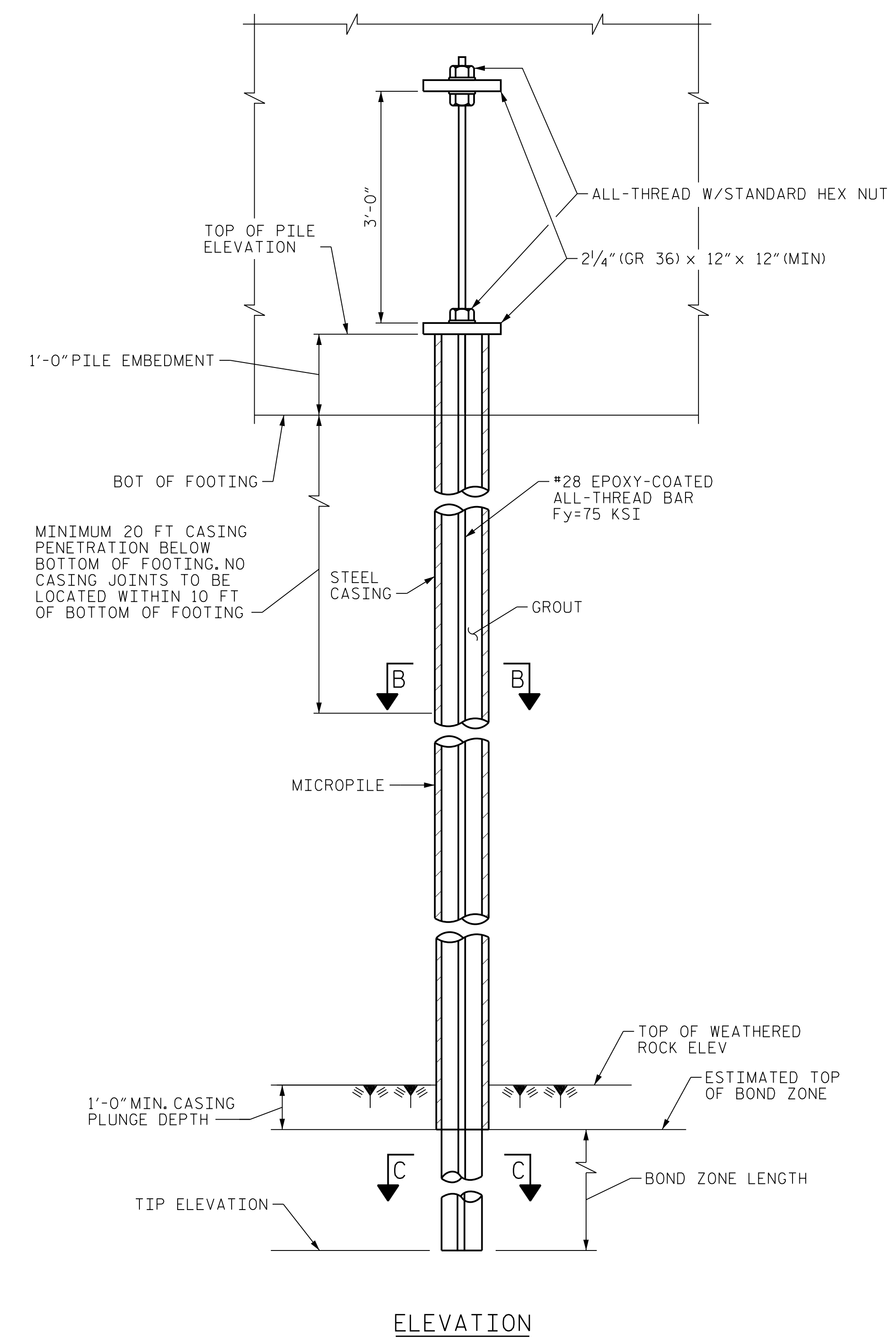


PLOT DRIVER: NCDOT...
 USER: PPETERSO...
 DATE: 10/11/2021...
 FILE: ...MICROP



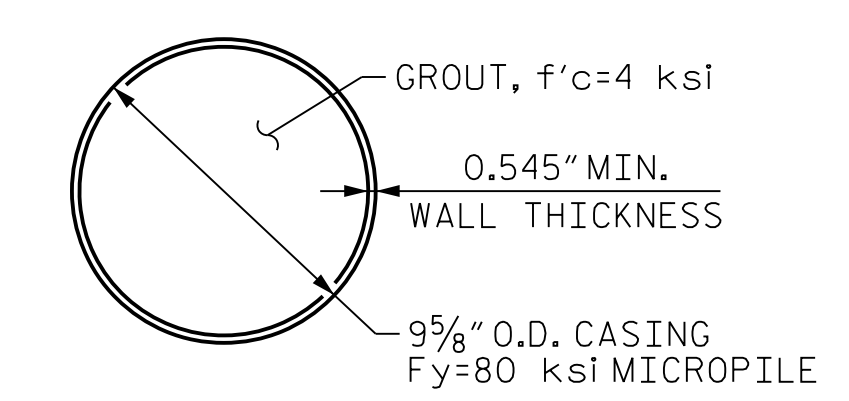
MICROPILE TYPE 1 DETAIL



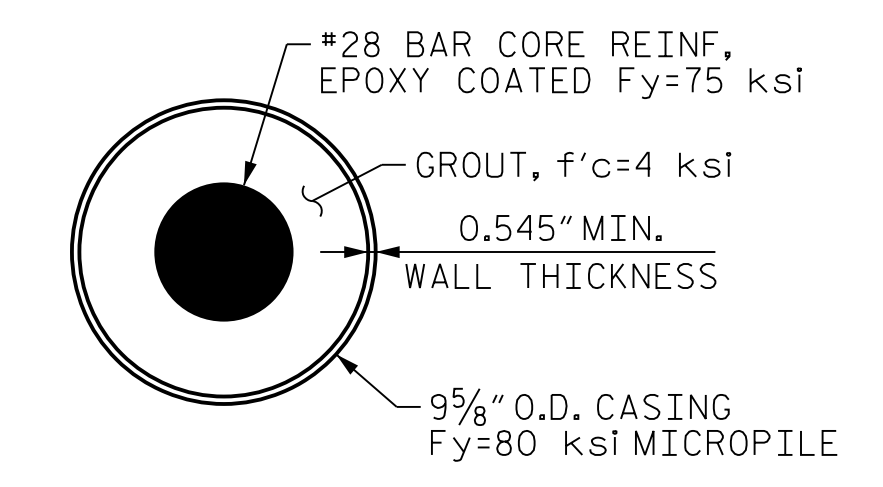
MICROPILE TYPE 2 DETAIL

MICROPILE NOTES:

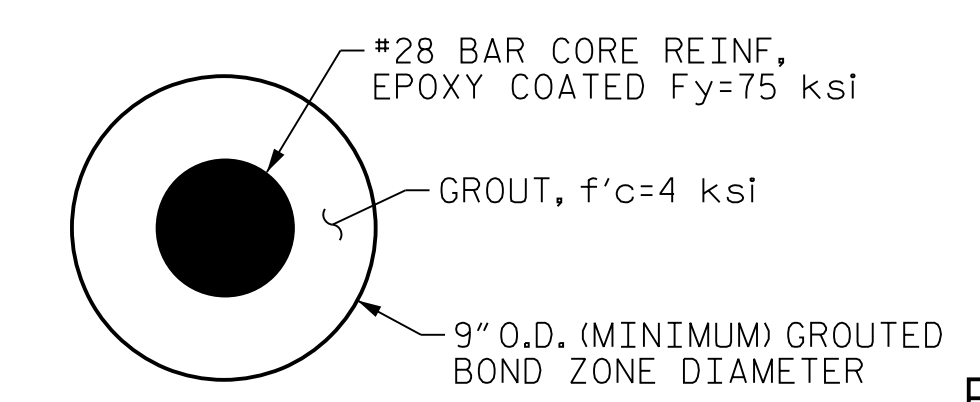
- FOR MICROPILES, SEE MICROPILE PROVISION.
- USE PRIME DOMESTIC REINFORCING CASINGS WITH YIELD STRENGTHS OF AT LEAST 80 KSI AND A NOMINAL WALL THICKNESS OF 0.545 IN FOR MICROPILES AT BENT NOS. 1, 3, 4, AND 5.
- REINFORCING CASING FOR MICROPILES ARE TO BE INSTALLED TO A DEPTH OF 20 FT BELOW THE BOTTOM OF FOOTING ELEVATION. MINIMUM CASING LENGTH IS REQUIRED TO RESIST A LATERAL FACTORED LOAD OF 7 KIPS PER PILE. NO CASING JOINTS WILL BE LOCATED WITHIN 10 FEET BELOW BOTTOM OF FOOTING.
- MICROPILE ESTIMATED LENGTHS ARE BASED ON NCDOT GEOTECHNICAL DESIGN ASSUMPTION AND IS FOR INFORMATION PURPOSES ONLY. CONTRACTOR TO VERIFY MICROPILE LENGTHS FOR ESTIMATING PURPOSES.
- A MINIMUM OF ONE VERIFICATION TEST IS REQUIRED ON A DEMONSTRATION MICROPILE INSTALLED AT THE SITE. ADDITIONAL VERIFICATION TEST AND DEMONSTRATION PILES MAYBE REQUIRED TO VERIFY ALL GEOTECHNICAL DESIGN BOND ASSUMPTIONS. PERFORM VERIFICATION TEST ON DEMONSTRATION PILE AT BENT NO. 3. LOCATION OF DEMONSTRATION PILE TO BE APPROVED BY ENGINEER.
- PROOF TESTING IS REQUIRED AT EACH BENT LOCATION.
- USE TYPE 2 MICROPILES FOR ALL TENSION PILES AS NOTED ON THE STRUCTURE PLANS AND ALL TEST PILES. USE TYPE 1 MICROPILES IN ALL OTHER LOCATIONS.
- USE MICROPILE SUPPORTED FOUNDATIONS AT BENT NOS. 1, 3, 4, AND 5. SEE MICROPILE DATA TABLE FOR FACTORED RESISTANCE, MINIMUM CASING TIP, MINIMUM TIP ELEVATION, AND MINIMUM WEATHERED ROCK AND ROCK PENETRATION.



SECTION A-A



SECTION B-B



SECTION C-C

MICROPILE DATA TABLE									
BENT NO.	BOTTOM OF FOOTING ELEVATION (FT)	NUMBER OF MICROPILES	FACTORED AXIAL RESISTANCE (KIPS)	FACTORED LATERAL RESISTANCE (KIPS)	FACTORED UPLIFT RESISTANCE (KIPS)	MIN. CASING TIP ELEV. FOR LATERAL RESISTANCE (FT)	ESTIMATED MICROPILE LENGTH (FT)	MIN. WEATHERED ROCK PENETRATION (FT)	MIN. ROCK PENETRATION (FT)
1	872.65	40	270	6.9	N/A	852.5	60.0	20.0	10
3	841.99	54	270	5.3	30	822.0	65.0	20.0	10
4	842.36	54	235	3.9	35	822.0	65.0	20.0	10
5	865.22	48	265	3.8	N/A	845.0	75.0	20.0	10

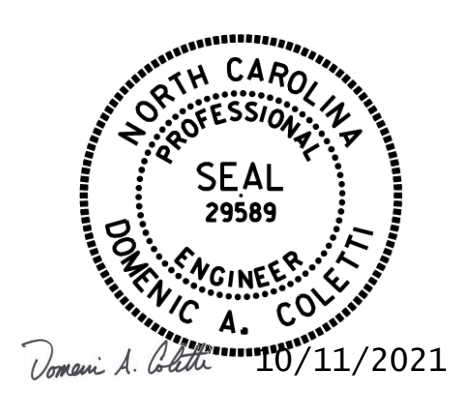
PROJECT NO. U-2579AB
 FORSYTH COUNTY
 STATION: 47+63.62 -Y15FLYBD-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
MICROPILE DETAILS**

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--

SHEET NO. S05-110
 TOTAL SHEETS 116



10/11/2021

DES BY: K. OLIVER DATE: 12/19 DWG BY: K. RYAN DATE: 12/19
 DES CHK: N. LIU DATE: 12/19 CHK BY: N. LIU DATE: 1/20



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