

SEE SHEET 5 OF 9 FOR CONTINUATION

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINE AT BOTTOM OF THE CAP OR FOOTING, MEASURED FROM THE TANGENT TO -Y15FLYBD- AT EACH WORK POINT.

⊕ FOOTING IN THE TRANSVERSE DIRECTION IS COINCIDENT WITH THE BENT CONTROL LINE, AND RADIAL TO -Y15FLYBD-, AT ALL BENTS.

OBSERVE PILE ORIENTATION AND LOCATION OF OMITTED PILES IN EACH FOOTING.

NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 50,000 - 70,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NOS. 1 AND 2 AND INTERIOR BENT NOS. 2 AND 6. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
- OBSERVE A 3 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO FINISHED GRADE BEFORE BEGINNING END BENT CONSTRUCTION, WHICH INCLUDES PILE DRIVING, AT END BENT NOS. 1 AND 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS FOR THE SETTLEMENT GAUGES REQUIRED AT END BENT NOS. 1 AND 2.
- 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.
- SEE SHEET "SUBSTRUCTURE MICROPILE DETAILS" FOR ADDITIONAL DETAILS AND THE FACTORED RESISTANCE, MINIMUM CASING TIP, MINIMUM TIP ELEVATION, AND MINIMUM WEATHERED ROCK AND ROCK PENETRATION FOR MICROPILES.
- PILES AT END BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 210 KIPS PER PILE. DRIVE PILES AT END BENT NO. 1 TO A REQUIRED DRIVING RESISTANCE OF 350 KIPS PER PILE. DESIGN MICROPILES AT BENT NO. 1 FOR A FACTORED RESISTANCE OF 270 KIPS PER PILE.
- PILES AT BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 290 KIPS PER PILE AND A FACTORED UPLIFT RESISTANCE OF 25 KIPS PER PILE. DRIVE PILES AT BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 483 KIPS PER PILE. DESIGN MICROPILES AT BENT NO. 3 FOR A FACTORED RESISTANCE OF 270 KIPS PER PILE AND A FACTORED UPLIFT RESISTANCE OF 30 KIPS PER PILE.
- DESIGN MICROPILES AT BENT NO. 4 FOR A FACTORED RESISTANCE OF 235 KIPS PER PILE AND A FACTORED UPLIFT RESISTANCE OF 35 KIPS PER PILE.
- DESIGN MICROPILES AT BENT NO. 5 FOR A FACTORED RESISTANCE OF 265 KIPS PER PILE. PILES AT BENT NO. 6 ARE DESIGNED FOR A FACTORED RESISTANCE OF 290 KIPS PER PILE. DRIVE PILES AT BENT NO. 6 TO A REQUIRED DRIVING RESISTANCE OF 483 KIPS PER PILE. PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 225 KIPS PER PILE. DRIVE PILES AT END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 375 KIPS PER PILE.

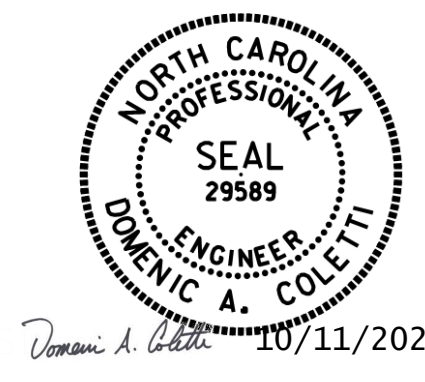
LEGEND

H	HP14X73 VERTICAL PILE
H with cross-hatch	HP14X73 BRACE PILE (BATTER 3H:12V)
H with circle	HP14X73 TENSION PILE
○	9 5/8" Ø STEEL MICROPILE (TYPE 1)
⊙	9 5/8" Ø STEEL TENSION MICROPILE (TYPE 2)

PROJECT NO. U-2579AB
FORSYTH COUNTY
 STATION: 47+63.62 -Y15FLYBD-
 SHEET 4 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON -Y15FLYBD- IN
 INTERCHANGE CONNECTING WINSTON-SALEM
 NORTHERN BELTWAY AND I-40 BYPASS
 BETWEEN SR 4315 AND SR 2679



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	505-004	
1	--	--	3	--	--	TOTAL SHEETS 116	
2	--	--	4	--	--		

PLOT DRIVER: NCDOT_pdf_color_eng-50dpi
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DES BY: <u>K. OLIVER</u>	DATE: <u>11/19</u>	DWG BY: <u>B. PETERSON</u>	DATE: <u>12/19</u>
DES CHK: <u>N. LIU</u>	DATE: <u>11/19</u>	CHK BY: <u>M. WERNER</u>	DATE: <u>12/19</u>

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10/11/2021
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