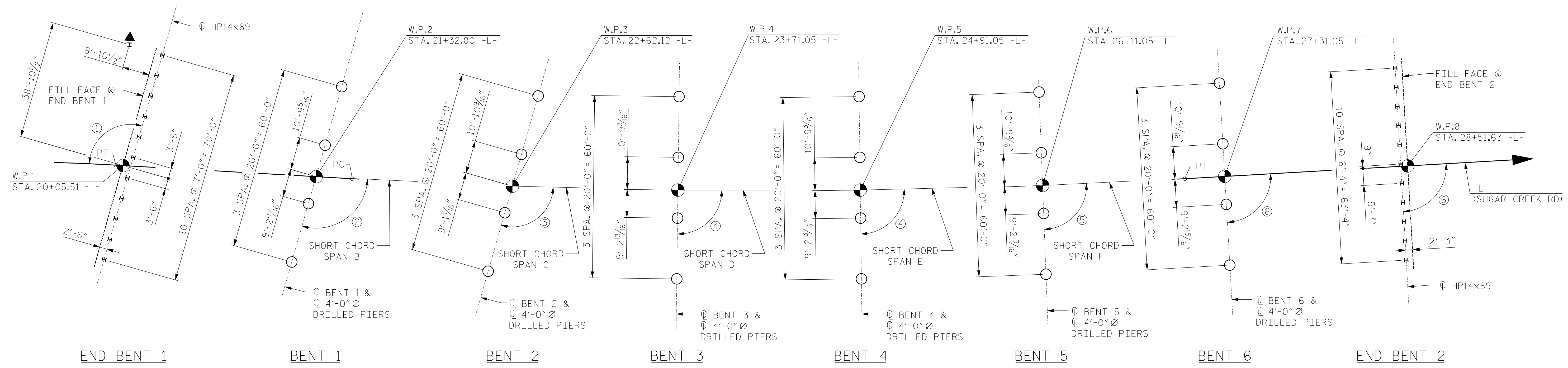


0400DEL_P30



FOUNDATION LAYOUT

DIMENSIONS LOCATING THE PILES & DRILLED PIERS ARE TO THE CENTERLINE OF THE PILES & DRILLED PIERS.

▲ - INDICATES PILE BATTERED 3:12 NORMAL TO WING WALL.

FOUNDATION RECOMMENDATION NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 186 TONS PER PILE.
- PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 176 TONS PER PILE.
- DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 290 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW.
- DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 235 TONS PER PILE.
- STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO.1 AND END BENT NO.2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40,000 TO 55,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO.1 AND END BENT NO.2. 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.
- TESTING THE FIRST TWO PRODUCTION PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED FOR END BENT NO.1. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- TESTING THE FIRST TWO PRODUCTION PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED FOR END BENT NO.2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- OBSERVE A 3 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO.1.
- OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO.2.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- DRILLED PIERS AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 894 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30 TSF.

- DRILLED PIERS AT BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 871 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 40 TSF.
- DRILLED PIERS AT BENT NO.3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 729 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 15 TSF.
- DRILLED PIERS AT BENT NO.4 ARE DESIGNED FOR A FACTORED RESISTANCE OF 881 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 35 TSF.
- DRILLED PIERS AT BENT NO.5 ARE DESIGNED FOR A FACTORED RESISTANCE OF 881 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30 TSF.
- DRILLED PIERS AT BENT NO.6 ARE DESIGNED FOR A FACTORED RESISTANCE OF 881 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30 TSF.
- INSTALL DRILLED PIERS AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN +684 FT AND WITH THE REQUIRED TIP RESISTANCE.
- INSTALL DRILLED PIERS AT BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN +687 FT AND WITH THE REQUIRED TIP RESISTANCE.
- INSTALL DRILLED PIERS AT BENT NO.3 TO A TIP ELEVATION NO HIGHER THAN +693 FT AND WITH THE REQUIRED TIP RESISTANCE.
- INSTALL DRILLED PIERS AT BENT NO.4 TO A TIP ELEVATION NO HIGHER THAN +693 FT AND WITH THE REQUIRED TIP RESISTANCE.
- INSTALL DRILLED PIERS AT BENT NO.5 TO A TIP ELEVATION NO HIGHER THAN +681 FT AND WITH THE REQUIRED TIP RESISTANCE.
- INSTALL DRILLED PIERS AT BENT NO.6 TO A TIP ELEVATION NO HIGHER THAN +678 FT AND WITH THE REQUIRED TIP RESISTANCE.
- PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT NO.2. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION +718 FT WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- SPT MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

FOUNDATION RECOMMENDATION SPECIAL NOTES

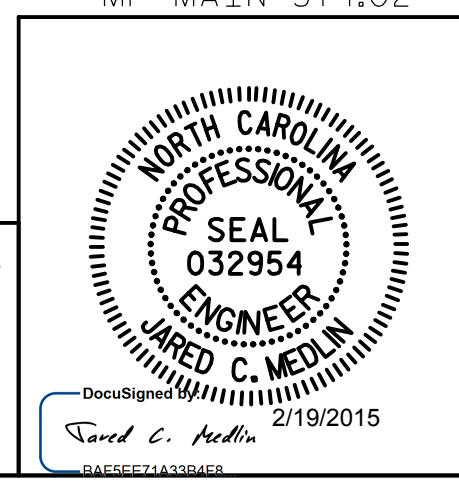
- INSTALL CROSSHOLE SONIC LOGGING (CSL) TUBES IN ALL DRILLED PIERS. CSL TEST A MINIMUM OF ONE DRILLED PIER PER BENT. IF A CSL TEST IDENTIFIES ANY DEFECT, THE ENGINEER WILL DETERMINE THE NEED FOR ADDITIONAL CSL TESTING. THE ENGINEER WILL DETERMINE WHICH PIERS WILL BE CSL TESTED. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- INSPECT DRILLED PIERS USING THE SHAFT INSPECTION DEVICE (SID) FOR ANY POUR USING THE WET METHOD OF CONCRETE PLACEMENT AND FOR ANY DRILLED PIER EXCAVATIONS THAT CANNOT BE VISUALLY INSPECTED OR HAVE REMAINED OPEN LONGER THAN 24 HOURS THAT CANNOT BE DEWATERED DUE TO UNSTABLE SOIL OR ROCK.
- A RESISTANCE FACTOR OF 0.75 WAS USED TO CALCULATE THE REQUIRED DRIVING RESISTANCE AT END BENT NO.1 AND END BENT NO.2. THE REQUIRED NUMBER OF PDA TESTS SHOWN IN 'FOUNDATION RECOMMENDATION NOTES ON PLANS' NOTES NO.8 AND NO.9 SHALL BE PERFORMED TO USE THIS RESISTANCE FACTOR.
- DRIVE PILES AT END BENT NO.1 BEFORE CONSTRUCTING MSE WALL NO.3.
- DRIVE PILES AT END BENT NO.2 BEFORE CONSTRUCTING MSE WALL NO.1.
- USE OF PILE SLEEVES (YELLOW JACKET OR SIMILAR) OR INSTALLATION OF CORRUGATED METAL CANS AROUND THE PILES FROM THE BOTTOM OF THE PILE CAP TO THE LEVELING PAD ELEVATION IS REQUIRED FOR PILES AT END BENT NO.1 AND END BENT NO.2. THE CANS SHALL BE DESIGNED TO WITHSTAND THE PRESSURES FROM COMPACTION OPERATIONS ON ADJACENT FILL WITHOUT DISTORTION.
- BACKFILL CORRUGATED METAL CANS WITH LOOSE SAND PRIOR TO CONSTRUCTION OF THE END BENT PILE CAP.
- THE CONTRACTOR SHOULD EXPECT VARIATION IN DRIVEN PILE LENGTHS OF APPROXIMATELY 25 FT (±) BETWEEN THE LEFT AND RIGHT SIDES OF THE BENT AT END BENT NO.1 DUE TO SLOPING ROCKLINE
- THE CONTRACTOR SHOULD EXPECT VARIATION IN DRIVEN PILE LENGTHS OF APPROXIMATELY 15 FT (±) BETWEEN THE LEFT AND RIGHT SIDES OF THE BENT AT END BENT NO.2 DUE TO SLOPING ROCKLINE

ANGLES

- 102°37'9.4"
- 103°8'5.6" (TO SHORT CHORD)
- 104°32'11.3" (TO SHORT CHORD)
- 90°43'9.1" (TO SHORT CHORD)
- 90°41'4.6" (TO SHORT CHORD)
- 90°0'0"

2/18/2015 1:00:00 PM Y:\00-Drawings\2011\DWG\5\B11-11_Sugar_Creek_Rd - NCDOT\Structures\RFC\SH04_U-5008_SD_FL.dgn

DRAWN BY: D.J.DICK DATE: OCT. 2014
CHECKED BY: J.C.MEDLIN DATE: OCT. 2014



PROJECT NO. U-5008
MECKLENBURG COUNTY
STATION: 20+45.05 -L- P.O.T. = 14+54.24 -Y4- P.O.T.
SHEET 4 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE ON SUGAR CREEK RD OVER BEARWOOD AVE, NCRR/NSRR, AND RALEIGH ST BTW US74/NC27 & US29/NC49					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-4
SHEETS					78