

NOTES:

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.

FOR TYPE III REINFORCED BRIDGE APPROACH FILL, SEE BRIDGE APPROACH FILLS PROVISION AND ROADWAY DETAIL DRAWING NO. 422D10 FOR RETAINING WALLS NO. W5A AND W5B.

FOR SPECIAL BRIDGE APPROACH FILL, SEE SPECIAL BRIDGE APPROACH FILLS (SPECIAL) PROVISION AND ROADWAY DETAILS 2G-8 TO 2G-10.

FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.

A CONCRETE BARRIER RAIL WITH MOMENT SLAB IS REQUIRED ABOVE RETAINING WALLS NO. W5A AND W5B. SEE PLANS FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALLS NO. W4A, W4B, W5A, W5B, W8A, AND W8B.

AN ASHLAR STONE ARCHITECTURAL FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALL NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B.

A DRAIN IS REQUIRED FOR RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B.

PILE SLEEVES ARE REQUIRED AROUND PILES FOR THE END BENTS AT RETAINING WALLS NO. W4A, W4B, W6A, W6B, W7A, W7B, W8A, AND W8B.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

- DESIGN RETAINING WALLS FOR THE FOLLOWING:
- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
 - 2) DESIGN LIFE = 100 YEARS
 - 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL =
 - 5,150 PSF (WALLS NO. W4A AND W4B)
 - 5,050 PSF (WALL NO. W5A)
 - 4,925 PSF (WALL NO. W5B -L- STA. 626+20, 76.29' LT TO -L- STA. 619+00, 76.29' LT, W5B -L- STA. 618+50, 76.29' RT TO -L- STA. 621+50, 76.29' RT)
 - 4,975 PSF (WALL NO. W5B -L- STA. 619+00, 76.29' LT TO -L- STA. 618+50, 76.29' RT)
 - 4,350 PSF (WALLS NO. W6A AND W6B)
 - 6,250 PSF (WALL NO. W7A)
 - 5,425 PSF (WALL NO. W7B)
 - 4,850 PSF (WALLS NO. W8A AND W8B)
 - 4) MINIMUM REINFORCEMENT LENGTH (L) = FOLLOWING OR 6 FT, WHICHEVER IS LONGER
 - 0.7H (WALLS NO. W5B -L- STA. 626+20, 76.29' LT TO -L- STA. 619+00, 76.29' LT, W5B -L- STA. 618+50, 76.29' RT TO -L- STA. 621+50, 76.29' RT, W7A, AND W7B)
 - 0.8H (WALLS NO. W4A, W4B, W5A, W8A, AND W8B)
 - 0.9H (WALLS NO. W6A AND W6B)
 - 1.0H (WALL NO. W5B -L- STA. 619+00, 76.29' LT TO -L- STA. 618+50, 76.29' RT)
 - 5) MINIMUM EMBEDMENT DEPTH = 2 FT OR H/10, WHICHEVER IS GREATER
 - 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PSF	WALL
COARSE	110	38	0	ALL WALLS
FINE	115	34	0	W4A, W4B, W5A, W5B, W8A, W8B

*SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PSF	WALL
RETAINED	120	30	0	ALL WALLS
FOUNDATION	115	28	0	W4A, W4B, W5A, W5B -L- STA. 626+20, 76.29' LT TO -L- STA. 619+00, 76.29' LT, W5B -L- STA. 618+50, 76.29' RT TO -L- STA. 621+50, 76.29' RT, W8A, W8B
	115	24	800	W5B -L- STA. 619+00, 76.29' LT TO -L- STA. 618+50, 76.29' RT
	115	20	800	W6A, W6B
	120	15	1500	W7A, W7B

DESIGN RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE (L) SHOWN. CAST REINFORCEMENT OR CONNECTORS INTO CAP BACKWALL FOR END BENT NO. 1 LOCATED AT STATION 616+14.60 -L- AND END BENT NO. 2 LOCATED AT STATION 618+31.89 -L-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.


EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B.

FOUNDATIONS FOR END BENTS WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

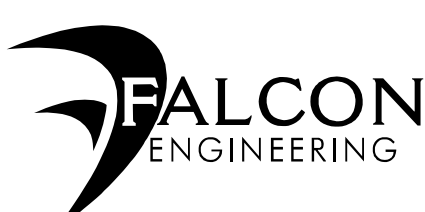
DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

"TEMPORARY SHORING" MAY BE REQUIRED FOR RETAINING WALLS NO. W4A, W4B, W5A, W5B, W6A, W6B, W7A, W7B, W8A, AND W8B IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE ROADWAY PLANS.

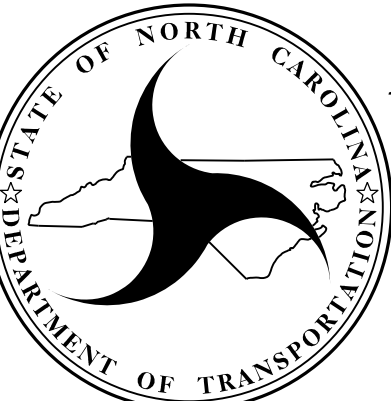
INSTALL PILE SLEEVES FOR END BENT NO. 1 LOCATED AT STA. 23+91.41 -Y4- WHILE CONSTRUCTING RETAINING WALL NO. W4A. OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE RETAINING WALL AND THE REINFORCED BRIDGE APPROACH FILL TO WITHIN 1 FT OF THE FINAL GRADE ELEVATION. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

GEOTECHNICAL ENGINEER  DocuSigned by: Stephen C. Crockett 04/12/2022 DATE	ENGINEER SIGNATURE DATE
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PREPARED BY: S. CROCKETT	DATE: 3/29/22
REVIEWED BY: J. HAMM	DATE: 3/29/22



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**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

PROJECT NO.: I-5987B
 ROBESON COUNTY
 STATION: _____
 SHEET 18 OF 19

MSE WALL WITH PANELS NOTES

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			W-18
2			4			