

**NOTES:**

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.  
 FOR BRIDGE APPROACH FILLS, SEE SPECIAL BRIDGE APPROACH FILLS PROVISION AND SHEETS 2G-5 THROUGH 2G-7 OF THE ROADWAY PLANS.  
 FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.  
 FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.  
 AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALLS NO. W1A AND W1B.  
 AN ASHLAR STONE ARCHITECTURAL FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALLS NO. W1A AND W1B.  
 A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. W1A AND W1B.  
 A DRAIN IS REQUIRED FOR RETAINING WALLS NO. W1A AND W1B.  
 PILE SLEEVES ARE REQUIRED AROUND PILES FOR SITE 1 END BENT NO.1 LOCATED AT STATION 28+80.29 -Y2-.  
 PILE SLEEVES ARE REQUIRED AROUND PILES FOR SITE 1 END BENT NO.2 LOCATED AT STATION 30+71.29 -Y2-.  
 BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. W1A AND W1B, 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 NO. W1A AND W1B FOR THE FOLLOWING:  
 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT  
 2) DESIGN LIFE = 100 YEARS  
 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL FOR RETAINING WALL NO. W1A = 5,179 PSF  
 4) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL FOR RETAINING WALL NO. W1B = 4,671 PSF  
 5) MINIMUM REINFORCEMENT LENGTH (L) = 0.85H OR 6 FT, WHICHEVER IS LONGER  
 6) MINIMUM EMBEDMENT DEPTH = 2 FT OR H/10, WHICHEVER IS GREATER  
 7) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) PSF
COARSE	110	38	0
FINE	115	34	0

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

**B) IN-SITU ASSUMED MATERIAL PARAMETERS:**

MATERIAL TYPE	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) PSF
RETAINED	115	34	0
FOUNDATION	115	25	0

THE WALL SITES FOR RETAINING WALLS NO. W1A AND W1B LOCATED AT STATION 28+80.29 -Y2- AND STATION 30+71.29 -Y2-, RESPECTIVELY, ARE CLASSIFIED AS AASHTO SITE CLASS E.

DESIGN RETAINING WALLS NO. W1A AND W1B FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR SIGNS WILL BE LOCATED BEHIND RETAINING WALLS NO. W1A AND W1B AND MAY INTERFERE WITH REINFORCEMENT. BEFORE BEGINNING MSE WALL CONSTRUCTION, SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS FOR APPROVAL.

FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. W1A AND W1B.

FOUNDATIONS FOR END BENT NO.1 LOCATED AT STATION 28+80.29 -Y2- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. W1A. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

FOUNDATIONS FOR END BENT NO.2 LOCATED AT STATION 30+71.29 -Y2- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. W1B. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

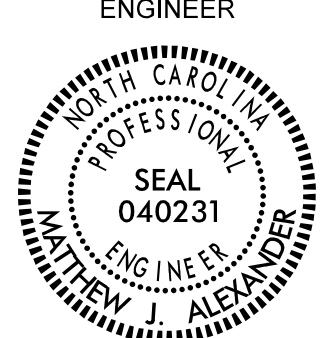
DESIGN RETAINING WALLS NO. W1A AND W1B FOR A LATERAL LOAD FROM FOUNDATIONS LOCATED BEHIND THE MSE WALL APPLIED AS A FACTORED UNIFORM PRESSURE OF 600 PSF TO THE BACK OF PANELS.

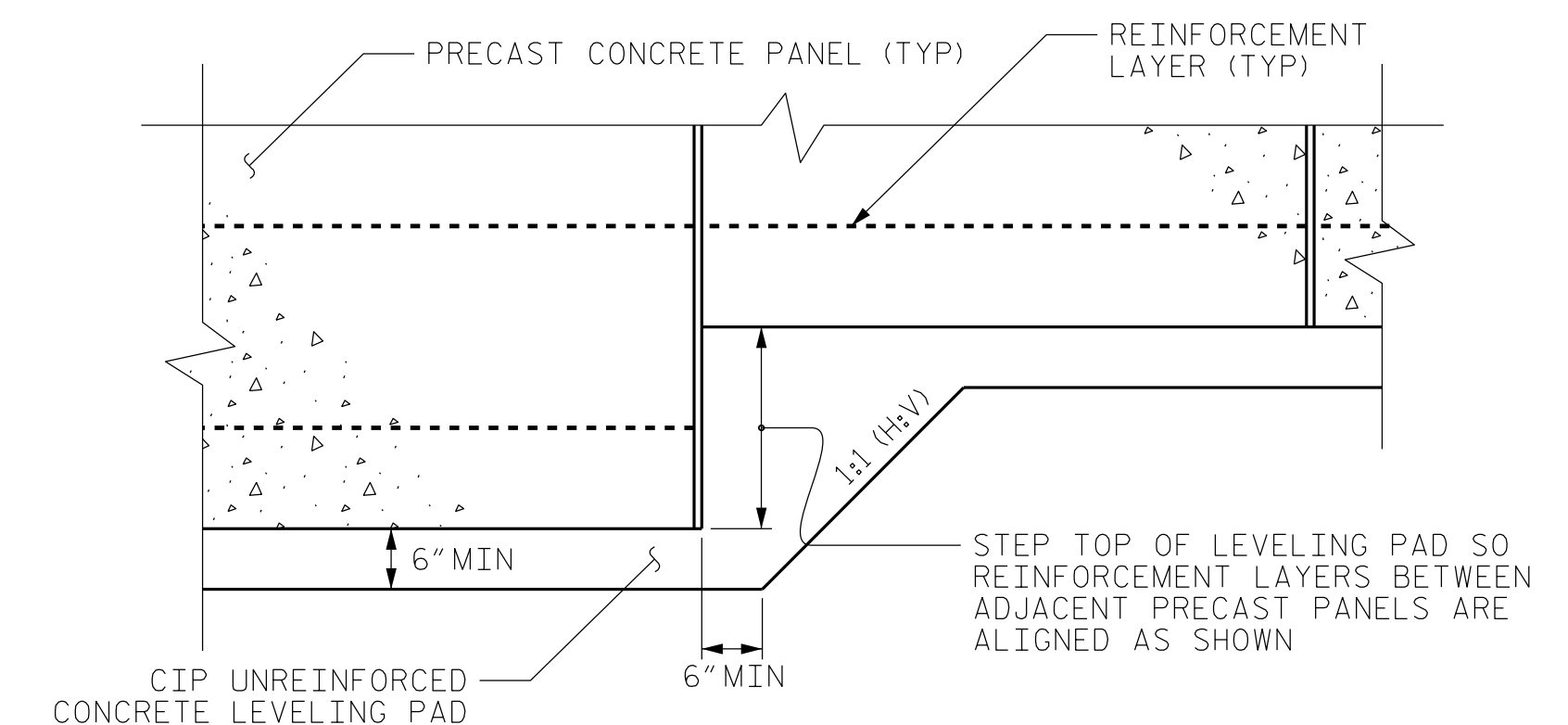
INSTALL PILE SLEEVES FOR END BENT NO.1 LOCATED AT STATION 28+80.29 -Y2- AND END BENT NO.2 LOCATED AT STATION 30+71.29 -Y2- WHILE CONSTRUCTING RETAINING WALLS NO. W1A AND W1B, RESPECTIVELY. OBSERVE A 4 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALL AND THE SPECIAL BRIDGE APPROACH FILL. INSTALL PILES THROUGH THE PILE SLEEVES AND FILL PILE SLEEVES WITH LOOSE UNCOMPACTED SAND BEFORE CONSTRUCTING END BENT CAPS.

USE SPECIAL BRIDGE APPROACH FILLS AT END BENT NO.1 LOCATED AT STATION 28+80.29 -Y2- AND END BENT NO.2 LOCATED AT STATION 30+71.29 -Y2- TO CONSTRUCT THE EMBANKMENT TO FINISHED GRADE BEFORE OBSERVING THE BRIDGE WAITING PERIODS. SEE SPECIAL BRIDGE APPROACH FILLS PROVISION AND SHEETS 2G-5 THROUGH 2G-7 OF THE ROADWAY PLANS FOR BRIDGE APPROACH FILL DETAILS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALLS NO. W1A OR W1B UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

"TEMPORARY SHORING" MAY BE REQUIRED FOR RETAINING WALLS NO. W1A AND W1B IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE TRAFFIC CONTROL PLANS.

GEOTECHNICAL ENGINEER  SEAL 040231 MATTHEW J. ALEXANDER	ENGINEER
Date Signed by: <u>Matthew J. Alexander</u> 04/19/2022 Signature: _____ Date: _____	Signature: _____ Date: _____
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



PRECAST PANELS  
LEVELING PAD STEP DETAIL

PROJECT NO.: 47533.1.2 (I-5987A)  
 ROBESON COUNTY  
 STATION: VARIES  
 SHEET 9 OF 11 WALL ID NO. W1A, W1B

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NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

**GEOTECHNICAL  
ENGINEERING UNIT**

**MSE ABUTMENT RETAINING  
WALLS NO. W1A AND W1B  
NOTES AND LEVELING  
PAD DETAILS**

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

SHEET NO. W-9