

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. W2A AND W2B.
 AN ASHLAR STONE ARCHITECTURAL FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALLS NO. W2A AND W2B.
 A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. W2A AND W2B.
 A DRAIN IS REQUIRED FOR RETAINING WALLS NO. W2A AND W2B.
 PILE SLEEVES ARE REQUIRED AROUND PILES FOR SITE 2 END BENT NO.1 LOCATED AT STATION 40+34.41 -Y1A-.
 PILE SLEEVES ARE REQUIRED AROUND PILES FOR SITE 2 END BENT NO.2 LOCATED AT STATION 42+03.64 -Y1A-.
 BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. W2A AND W2B, 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. W2A AND W2B 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. W2A = 4,751 PSF
 4) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL FOR RETAINING WALL NO. W2B = 4,704 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 (γ) PCF	FRICTION ANGLE (ϕ) 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 (γ) PCF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) PSF
RETAINED	115	34	0
FOUNDATION	115	25	0

THE WALL SITES FOR RETAINING WALLS NO. W2A AND W2B LOCATED AT STATION 40+34.41 -Y1A- AND STA. 42+03.64 -Y1A-, RESPECTIVELY, ARE CLASSIFIED AS AASHTO SITE CLASS E.

DESIGN RETAINING WALLS NO. W2A AND W2B FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR SIGNS WILL BE LOCATED BEHIND RETAINING WALLS NO. W2A AND W2B 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. W2A AND W2B.

FOUNDATIONS FOR END BENT NO.1 LOCATED AT STATION 40+34.41 -Y1A- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. W2A. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

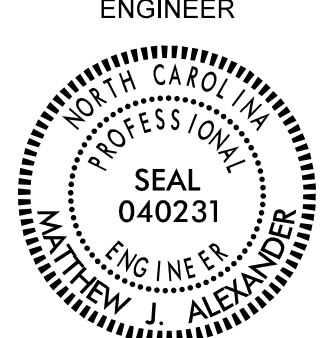
FOUNDATIONS FOR END BENT NO.2 LOCATED AT STATION 42+03.64 -Y1A- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. W2B. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

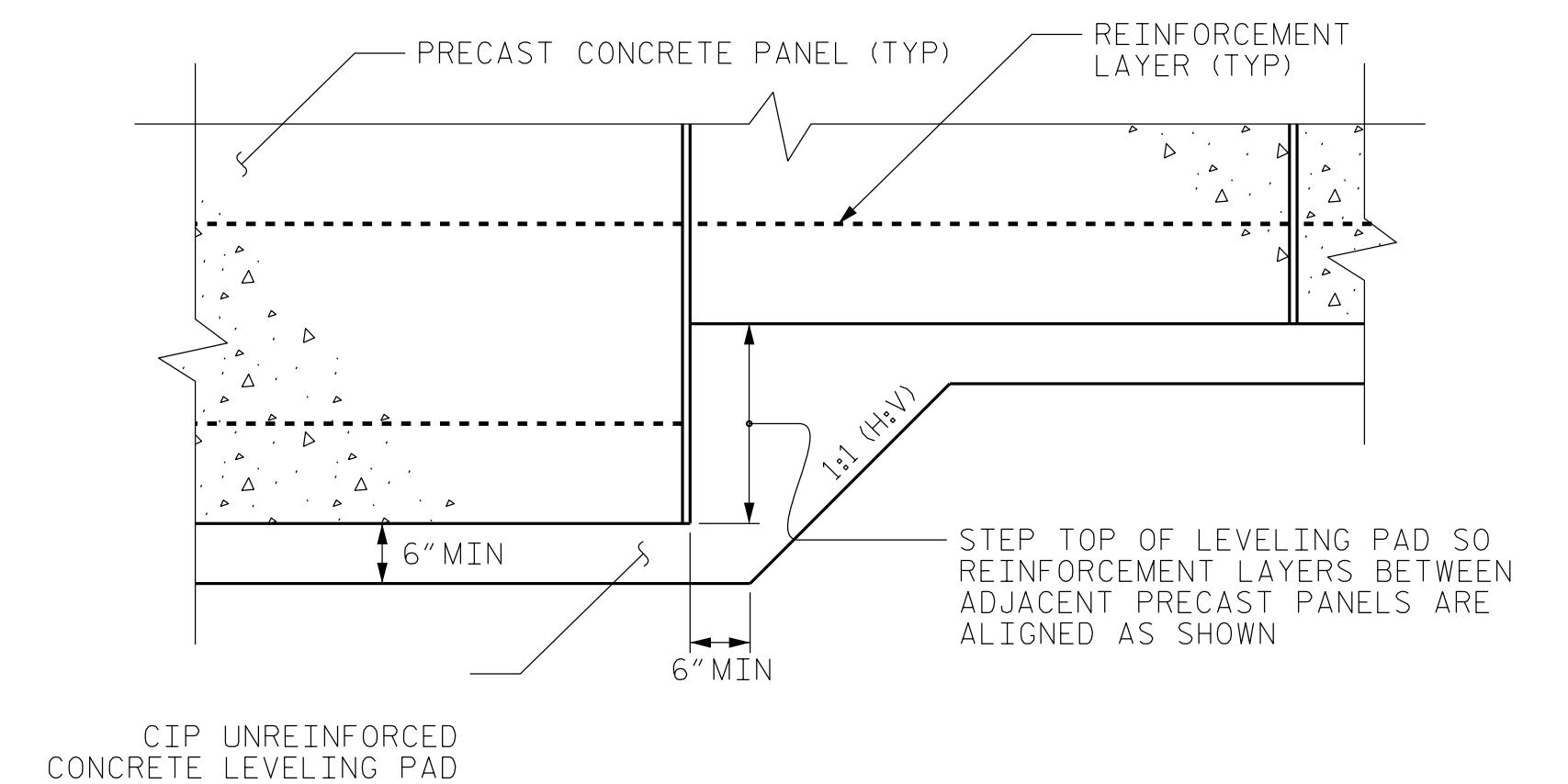
DESIGN RETAINING WALLS NO. W2A AND W2B FOR A LATERAL LOAD FROM FOUNDATIONS LOCATED BEHIND THE MSE WALL APPLIED AS A FACTORED UNIFORM PRESSURE OF 600 PSF TO THE BACK OF PANELS.

INSTALL PILE SLEEVES FOR END BENT NO.1 LOCATED AT STATION 40+34.41 -Y1A- AND END BENT NO.2 LOCATED AT STATION 42+03.64 -Y1A- WHILE CONSTRUCTING RETAINING WALLS NO. W2A AND W2B, RESPECTIVELY. OBSERVE A 4 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALL AND THE 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 40+34.41 -Y1A- AND END BENT NO.2 LOCATED AT STATION 42+03.64 -Y1A- 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 SPECIAL BRIDGE APPROACH FILL DETAILS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALLS NO. W2A OR W2B UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

GEOTECHNICAL ENGINEER  Decided by: Signature: <i>Matthew J. Alexander</i> DATE: 04/19/2022 OF 040231 SIGNATURE DATE	ENGINEER SIGNATURE DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



**PRECAST PANELS
LEVELING PAD STEP DETAIL**

PROJECT NO.: 47533.1.2 (I-5987A)
 ROBESON COUNTY
 STATION: VARIES
 SHEET 10 OF 11 WALL ID NO. W2A, W2B

PREPARED BY: ALEXANDER, M. J.	DATE: 04/2022
REVIEWED BY: RIGGS, A. F.	DATE: 04/2022

Prepared in the Office of:

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 NC REGISTERED GEOLOGIC FIRM: C-367

NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

**MSE ABUTMENT RETAINING
WALLS NO. W2A AND W2B
NOTES AND LEVELING
PAD DETAILS**

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

SHEET NO. W-10