

**NOTES:**

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

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALLS -WALL 3- & -WALL 4-  
 A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS -WALL 3- & -WALL 4-  
 A DRAIN IS REQUIRED FOR RETAINING WALLS -WALL 3- & -WALL 4-

PILE SLEEVES ARE REQUIRED AROUND PILES FOR ALL END BENTS. END BENTS ARE LOCATED AT THE FOLLOWING STATIONS:  
 -WALL 3- END BENT NO.1 STATION 31+64.73 -L-  
 -WALL 4- END BENT NO.2 STATION 32+89.23 -L-

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS -WALL 3- & -WALL 4-, 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 -WALL 3- & -WALL 4- FOR THE FOLLOWING:  
 1) H = DESIGN HEIGHT + EMBEDMENT  
 2) DESIGN LIFE = 100 YEARS  
 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 7000 PSF  
 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.75H  
 5) MINIMUM EMBEDMENT DEPTH = 3.5 FT  
 6) 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.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) PSF
BACKFILL	120	30	0
FOUNDATION	110	28	0

DESIGN RETAINING WALLS -WALL 3- & -WALL 4- FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN RETAINING WALLS -WALL 3- & -WALL 4- FOR A PIPE EXTENDING THROUGH THE WALL AS SHOWN. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING MSE WALL DESIGN OR CONSTRUCTION.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS -WALL 3- & -WALL 4-  
 FOUNDATIONS FOR END BENTS WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS -WALL 3- & -WALL 4-. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS. END BENT LOCATIONS ARE SUMMARIZED IN ABOVE NOTE FOR PILE SLEEVES.

DESIGN RETAINING WALLS -WALL3- AND -WALL4- 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 WITHIN THE UPPER 10 FEET OF THE WALL.


INSTALL PILE SLEEVES FOR END BENT NO.1 LOCATED AT STATION 31+64.73 -L- WHILE CONSTRUCTING RETAINING WALL -WALL 3-. OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALL TO WITHIN 1 FT OF THE BOTTOM OF CAP ELEVATION. THEN, INSTALL PILES THROUGH THE CORRUGATED STEEL PIPES AND FILL PIPES WITH LOOSE UNCOMPACTED SAND BEFORE CONSTRUCTING END BENT CAPS.

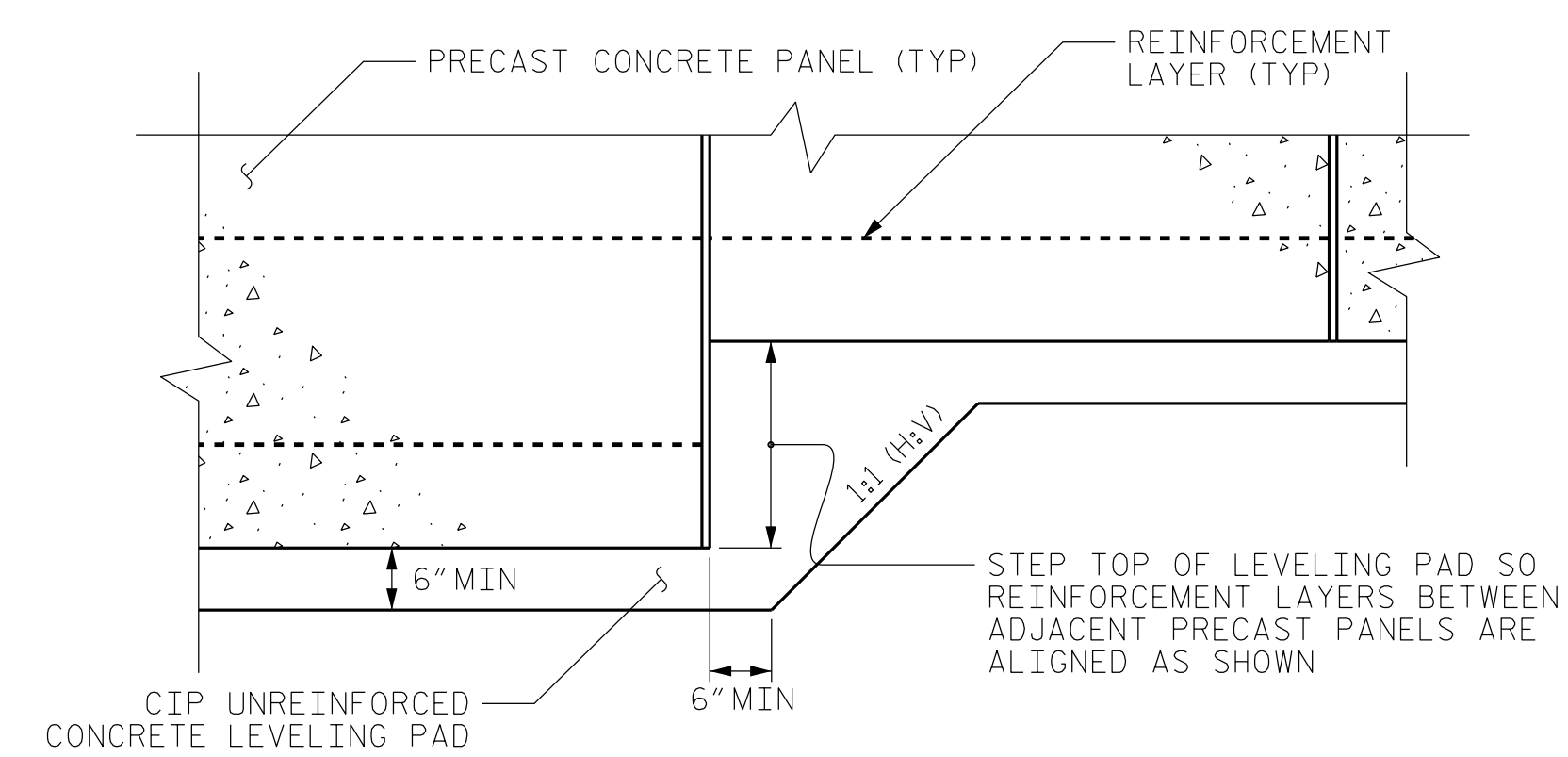
INSTALL PILE SLEEVES FOR END BENT NO.2 LOCATED AT STATION 32+89.23 -L- WHILE CONSTRUCTING RETAINING WALL -WALL 4-. OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALL TO WITHIN 1 FT OF THE BOTTOM OF CAP ELEVATION. THEN, INSTALL PILES THROUGH THE CORRUGATED STEEL PIPES AND FILL PIPES WITH LOOSE UNCOMPACTED SAND BEFORE CONSTRUCTING END BENT CAPS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALLS -WALL 3- & -WALL 4- UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED. IF UNSTABLE MATERIAL EXISTS AT THE REQUIRED EMBEDMENT DEPTH, REMOVE AND REPLACE WITH ADDITIONAL COARSE AGGREGATE AS DIRECTED BY THE ENGINEER.

TEMPORARY SHORING IS REQUIRED FOR RETAINING WALLS -WALL 3- & -WALL 4- IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE TRAFFIC CONTROL PLANS.

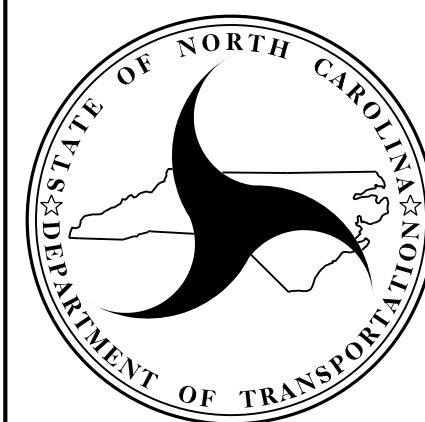
AT THE CONTRACTOR'S OPTION, "TEMPORARY SHORING FOR WALL CONSTRUCTION" MAY BE USED TO CONSTRUCT RETAINING WALLS -WALL 3- & -WALL 4-. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.

GEOTECHNICAL ENGINEER  Documented by: Signature: <u>Jeremy Hamm</u> DATE: <u>1/8/2024</u> <small>48220204882484</small> SIGNATURE      DATE      SIGNATURE      DATE	ENGINEER          SIGNATURE      DATE
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



PRECAST PANELS  
LEVELING PAD STEP DETAIL

PROJECT NO.: P-5720  
WAKE COUNTY  
 STATION: -WALL 3- & -WALL 4-  
 SHEET 8 OF 8

 <p><b>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS</b></p> <p><b>GEOTECHNICAL ENGINEERING UNIT</b></p>	<b>RETAINING WALLS NO. 3 AND NO. 4 -WALL 3- &amp; -WALL 4- WITH PANELS AND GUARDRAIL TYPICAL &amp; COPING DETAILS</b>					
	<b>REVISIONS</b>					
NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			3			W-8
2			4			

PREPARED BY: S. C. CROCKETT	DATE: 11/28/18
REVIEWED BY: J. R. HAMM	DATE: 11/30/18