

GEOTECHNICAL ENGINEER

DocuSigned by:
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SIGNATURE

ENGINEER

4/22/2020
DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

NOTES:

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

FOR REINFORCED BRIDGE APPROACH FILL, USE TYPE III REINFORCE BRIDGE APPROACH FILL. SEE BRIDGE APPROACH FILLS PROVISION AND ROADWAY DETAIL DRAWING NO. 422D10. OMIT MSE WALL REINFORCEMENT ON BACK OF END BENT CAPS.

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

MSE WALL VERTICAL SLIP JOINTS MAY BE NEEDED AND ARE TO BE INCLUDED AS REQUIRED BY THE DESIGNER.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NOS. 1 AND 2.

A DRAIN IS REQUIRED FOR RETAINING WALL NOS. 1 AND 2.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NOS. 1 AND 2, 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 WALL NOS. 1 AND 2 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 8,000 LB/SF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.8H OR 6 FT, WHICHEVER IS LONGER
- 5) MINIMUM EMBEDMENT ELEVATION = H/10 OR 2 FT, WHICHEVER IS DEEPER
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) LB/SF
COARSE	110	38	0
*SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.			

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	115	29	0

DESIGN RETAINING WALL NOS. 1 AND 2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR END BENT NOS. 1 LOCATED AT STATION 29+93.51-Y2-, 44 FT RT, AND END BENT NO. 2 LOCATED AT STATION 29+93.51-Y2-, 44 FT LT WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NOS. 1 AND 2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

PRIOR TO INSTALLING MSE RETAINING WALL DRIVE END BENT FOUNDATION PILES AT END BENT NOS. 1 AND 2 TO BEARING DEPTHS.

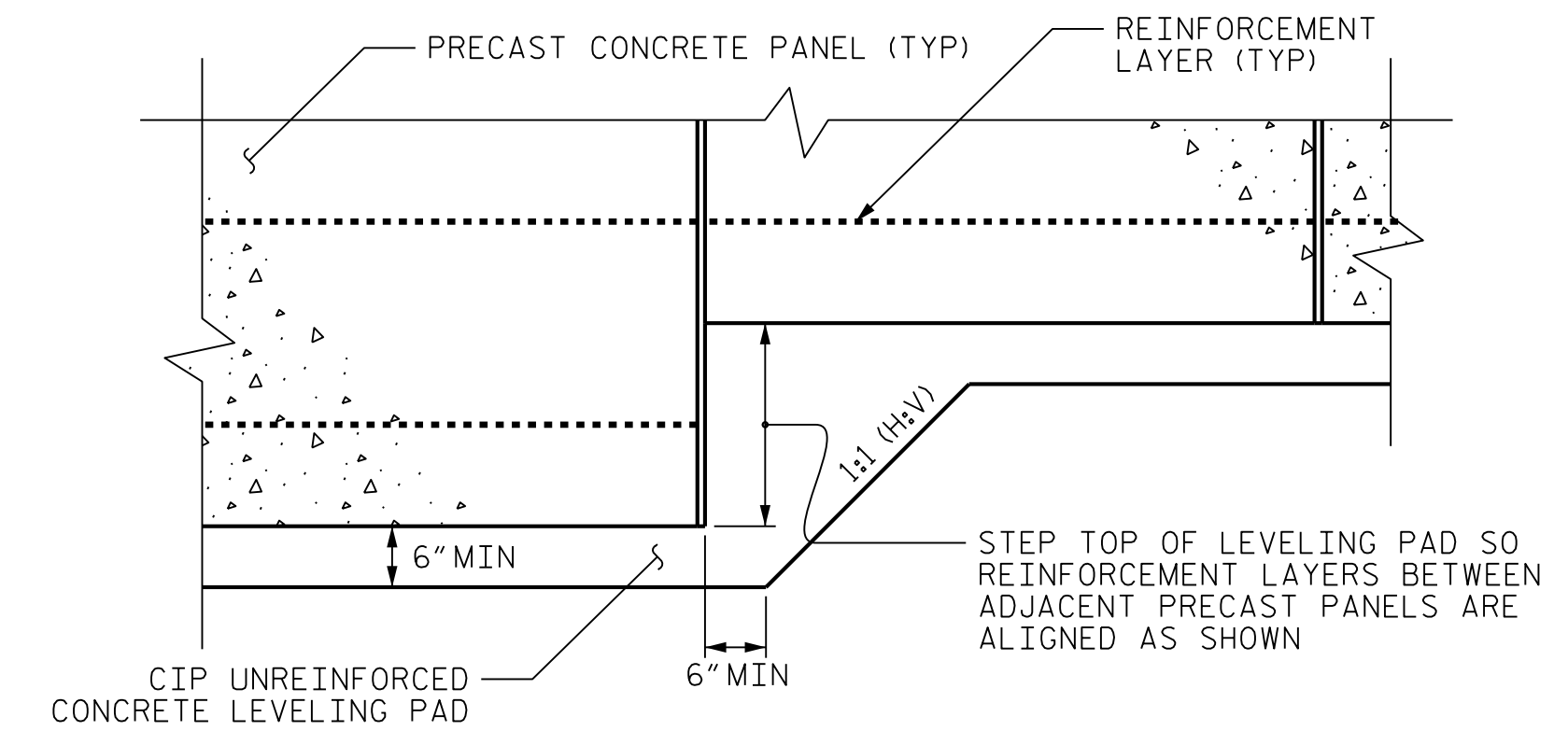
INSTALL PILE SLEEVES FOR END BENT NO. 1 LOCATED AT STATION 29+93.51-Y2-, 44 FT RT. WHILE CONSTRUCTING RETAINING WALL NO. 1. OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALLS, APPROACH FILLS AND END BENT BACK WALLS TO GRADE AND FILL SLEEVES WITH LOOSE UNCOMPACTED MSE BACKFILL BEFORE CONSTRUCTING END BENT CAPS.

INSTALL PILE SLEEVES FOR END BENT NO. 2 LOCATED AT STATION 29+93.51-Y2-, 44 FT LT WHILE CONSTRUCTING RETAINING WALL NO. 2. OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALLS, APPROACH FILLS AND END BENT BACK WALLS TO GRADE AND FILL SLEEVES WITH LOOSE UNCOMPACTED MSE BACKFILL BEFORE CONSTRUCTING END BENT CAPS.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NOS. 1 AND 2.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NOS. 1 AND 2 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

FOR SUBSURFACE INFORMATION SEE THE STRUCTURE SUBSURFACE INVENTORY FOR BRIDGE NOS. 660 AND 661.



**PRECAST PANELS
LEVELING PAD STEP DETAIL**

PROJECT NO.: 34400 (R-2233BB)
RUTHERFORD COUNTY
STATION: 733+32.53 -L-
SHEET 5 OF 5

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

**GEOTECHNICAL
ENGINEERING UNIT**

**BRIDGE NOS. 660 AND 661 ON
-L3- OVER -Y2-
RETAINING WALL NOS. 1 AND 2
NOTES**

REVISIONS						SHEET NO. W-5
NO.	BY	DATE	NO.	BY	DATE	
1	-	-	3	-	-	
2	-	-	4	-	-	

PREPARED BY: SCC	DATE: 4/9/20
REVIEWED BY: ENW	DATE: 4/9/20