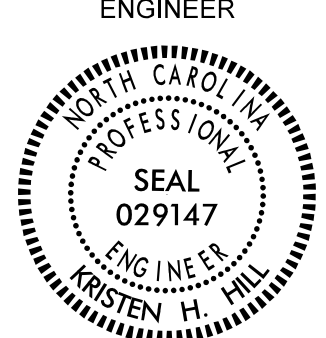



GEOTECHNICAL ENGINEER  DocuSigned by:  5/12/2021 <small>ES2CECB84622AF2</small> SIGNATURE DATE	ENGINEER     SIGNATURE DATE
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**NOTES:**

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

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

FOR TYPE III REINFORCED BRIDGE APPROACH FILL SEE BRIDGE FILL PROVISION AND ROADWAY DETAIL DRAWING NO. 422D10.

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

FOUNDATIONS FOR END BENT NO.1 LOCATED AT STATION 26+14.44 -Y1- AND END BENT NO.2 AT STATION 28+03.94 -Y1-, WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO.1 AND RETAINING WALL NO.2. SEE FOUNDATION LAYOUT SHEET FOR FOUNDATION LOCATIONS.

USE AN MSE WALL SYSTEM WITH PRECAST CONCRETE PANELS THAT MEET SECTION 1077 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALLS AT END BENT NO.1 AND END BENT NO.2.

AN ASHLAR STONE PATTERN ARCHITECTURAL FINISH AND ANTI-GRAFFITI COATING IS REQUIRED FOR PRECAST CONCRETE PANELS. FOR ARCHITECTURAL FINISH, SEE THE ARCHITECTURAL CONCRETE SURFACE TREATMENT SPECIAL PROVISION.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO.1 AND NO.2.

A DRAIN IS REQUIRED FOR RETAINING WALL NO.1 AND NO.2.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO.1 AND NO.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 NO.1 AND NO.2 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 5910 LB/SF FOR WALL NO.1 AND WALL NO.2
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7H OR 6 FT WHICH EVER IS LONGER.
- 5) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT ( $\gamma$ ) LB/CF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) LB/SF
COARSE	110	38	0
*SEE MSE RETAINING WALLS PROVISION FOR COARSE AGGREGATE MATERIAL REQUIREMENTS.			

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT ( $\gamma$ ) LB/CF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	120	30	0

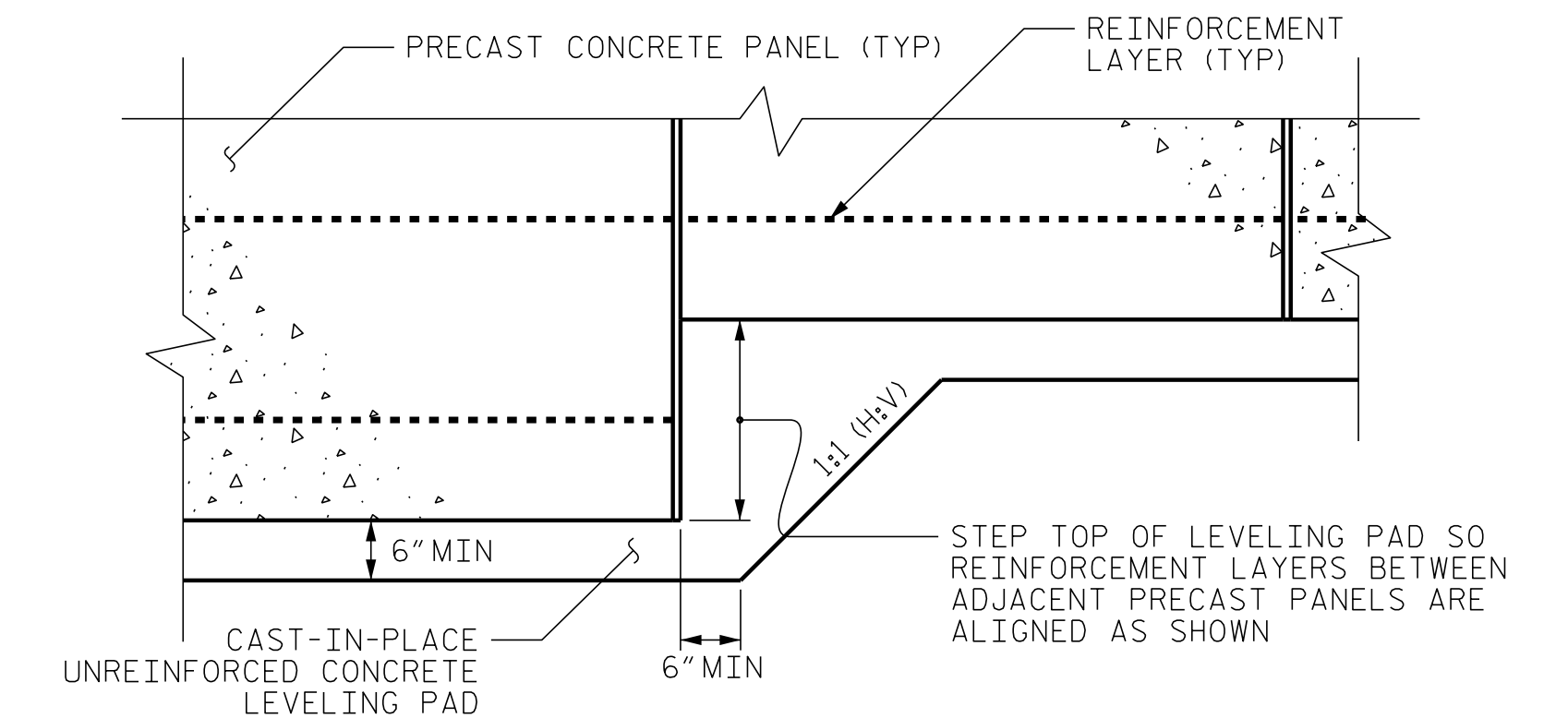
DESIGN RETAINING WALL NO.1 AND NO.2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE ( $L_a$ ) SHOWN. CAST REINFORCEMENT OR CONNECTORS INTO CAP BACKWALL FOR END BENT NO.1 LOCATED AT STATION 26.14.44 -Y1- AND END BENT NO.2 LOCATED AT STATION 28+03.94 -Y1-. MAINTAIN A CLEARANCE OF AT LEAST 3' BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.

INSTALL PILE SLEEVES FOR END BENT NO.1 LOCATED AT STATION 26.14.44 -Y1- WHILE CONSTRUCTING RETAINING WALL NO.1. INSTALL PILE SLEEVES FOR END BENT NO.2 LOCATED AT STATION 28+03.94 -Y1-. OBSERVE A 3 MONTH WAITING PERIOD AFTER CONSTRUCTING THE THE MSE ABUTMENT 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.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAILS, FENCE OR HANDRAIL POST, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO.1 AND NO.2

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO.1 AND NO.2 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.




**PRECAST PANELS  
LEVELING PAD STEP DETAIL**

PROJECT NO.: I-5883

HARNETT COUNTY

STATION: 27+09.19 -Y16- / 1101+61.98 -L-

SHEET 5 OF 5



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

**GEOTECHNICAL  
ENGINEERING UNIT**

**MSE RETAINING WALL  
NO. 1 AND NO. 2  
NOTES**

**REVISIONS**

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

SHEET NO.  
W-5

PREPARED BY: KHH	DATE: 2/7/19
REVIEWED BY: SEM	DATE: 2/7/19