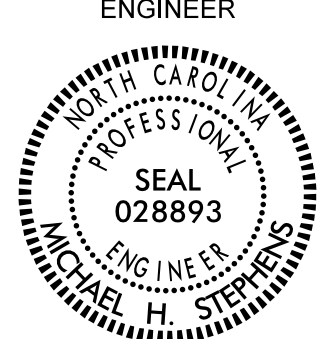
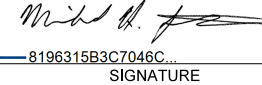


|   |  |
|---|--|
| GEOTECHNICAL<br>ENGINEER<br><br>DocuSigned by:<br><br>6/1/2021<br><small>819631583CT046C</small><br>SIGNATURE DATE | ENGINEER<br><br><br><br><br>SIGNATURE DATE |
| <b>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</b>  |  |

**NOTES:**

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

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

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 LOCATED AT STA 29+93.81 -Y4- AND 31+41.50 -Y4-.

A SEPARATION GEOTEXTILE IS REQUIRED LOCATED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS AT STA 29+93.81 -Y4- AND 31+41.50 -Y4-.

A DRAIN IS REQUIRED FOR RETAINING WALLS LOCATED AT STA 29+93.81 -Y4- AND 31+41.50 -Y4-.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS LOCATED AT STA 29+93.81 -Y4- AND 31+41.50 -Y4-, 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 LOCATED AT STA 29+93.81 -Y4- AND 31+41.50 -Y4- FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 6,400 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7 H OR 6 FT, WHICHEVER IS LONGER
- 5) MINIMUM EMBEDMENT DEPTH = 2 FT
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

| AGGREGATE TYPE* | UNIT WEIGHT<br>( $\gamma$ )<br>PCF | FRICTION ANGLE<br>( $\phi$ )<br>DEGREES | COHESION<br>(c)<br>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<br>( $\gamma$ )<br>PCF | FRICTION ANGLE<br>( $\phi$ )<br>DEGREES | COHESION<br>(c)<br>PSF |
|---------------|------------------------------------|---|------------------------|
| BACKFILL      | 120                                | 30                                      | 0                      |
| FOUNDATION    | 120                                | 30                                      | 0                      |

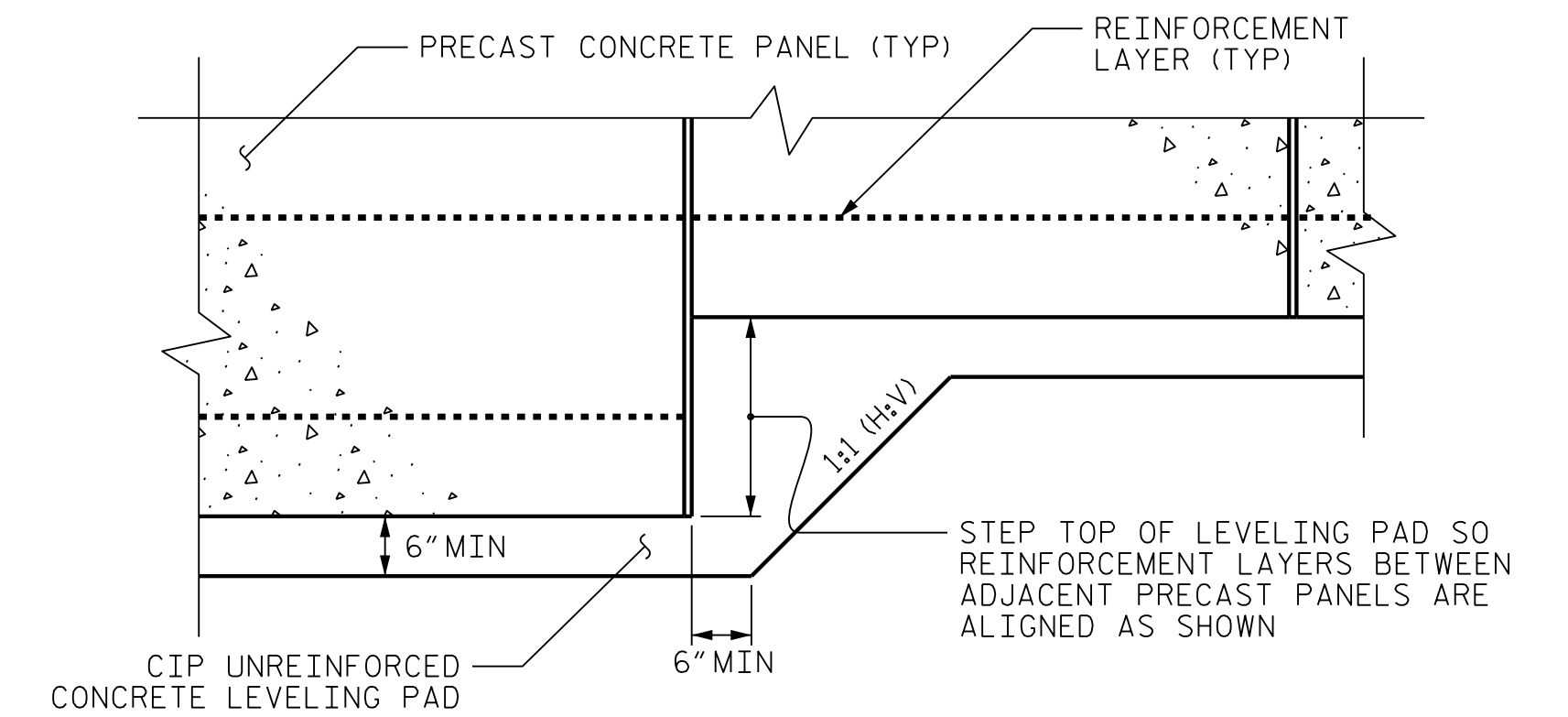
DESIGN RETAINING WALLS LOCATED AT STA 29+93.81 -Y4- AND 31+41.50 -Y4- FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

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 AT STATION 29+86.66 -Y4- AND END BENT NO.2 AT STATION 31+49.66 -Y4-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.

FOUNDATIONS PILES FOR END BENT NO.1 AT STATION 29+86.66 -Y4- AND END BENT NO.2 AT STATION 31+49.66 -Y4- WILL BE INSTALLED PRIOR TO THE CONSTRUCTION OF THE MSE RETAINING WALLS LOCATED AT STA 29+93.81 -Y4- AND 31+41.50 -Y4-. SEE STRUCTURE PLANS FOR PILE LOCATIONS AND INSTALLATION DEPTHS.


FOUNDATIONS FOR END BENT NO.1 AT STATION 29+86.66 -Y4- AND END BENT NO.2 AT STATION 31+49.66 -Y4- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS AT STA 29+93.81 -Y4- AND 31+41.50 -Y4-. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALLS AT STA 29+93.81 -Y4- AND 31+41.50 -Y4- UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



**PRECAST PANELS  
LEVELING PAD STEP DETAIL**

PROJECT NO.: 34839.1.1 (U-2579AB)  
 FORSYTH COUNTY  
 STATION: 29+93.81 -Y4- AND 31+41.50 -Y4-  
 SHEET 5 OF 5 WALL ID RW - BRIDGE NO. 723



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

**GEOTECHNICAL  
ENGINEERING UNIT**

**MSE RETAINING WALL  
NOTES AND DETAILS**

| REVISIONS |    |      |     |    |      | SHEET<br>NO.<br>W-5 |
|-----------|----|------|-----|----|------|---------------------|
| NO.       | BY | DATE | NO. | BY | DATE |                     |
| 1         |    |      | 3   |    |      |                     |
| 2         |    |      | 4   |    |      |                     |

|                  |              |
|------------------|--------------|
| PREPARED BY: MHS | DATE: 6/1/21 |
| REVIEWED BY: SCC | DATE: 6/1/21 |