

NOTES:

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.
 FOR SPECIAL BRIDGE APPROACH FILL, SEE SPECIAL BRIDGE APPROACH FILLS SPECIAL PROVISION.
 A FENCE IS REQUIRED ON TOP OF RETAINING WALL NO. W602. SEE ROADWAY PLANS FOR FENCE LOCATION AND CONTRACTOR SHOULD SUBMIT FENCE DETAIL.
 AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALLS NO. W602 AND W1002.
 AN ASHLAR ARCHITECTURAL FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALL NO. W602.
 A DRYSTACK ARCHITECTURAL FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALL NO. W1002.
 A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. W602 AND W1002.
 A DRAIN IS REQUIRED FOR RETAINING WALLS NO. W602 AND W1002.
 PILE SLEEVES ARE REQUIRED AROUND PILES FOR END BENT NO. 2 LOCATED AT STATION -Y5RPA- 21+27.10.
 BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. W602 AND W1002, 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. W602 FOR THE FOLLOWING:
 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
 2) DESIGN LIFE = 100 YEARS
 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 3,900 PSF
 4) MINIMUM REINFORCEMENT LENGTH (L) = 1.0H OR 6 FT, WHICHEVER IS LONGER
 5) MINIMUM EMBEDMENT DEPTH = 2 FT
 6) 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.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

| MATERIAL TYPE | UNIT WEIGHT (γ) PCF | FRICTION ANGLE (ϕ) DEGREES | COHESION (c) PSF |
|---------------|------------------------------------|---|------------------------|
| RETAINED | 120 | 30 | 0 |
| FOUNDATION | 115 | 28 | 0 |

DESIGN RETAINING WALL NO. W1002 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) = 0.85H OR 6 FT, WHICHEVER IS LONGER
 5) MINIMUM EMBEDMENT DEPTH = 2 FT
 6) 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.

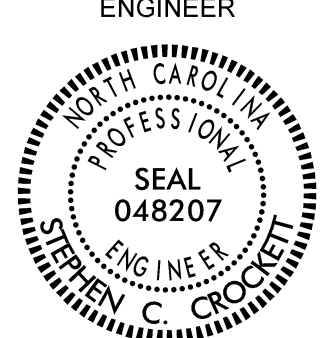

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

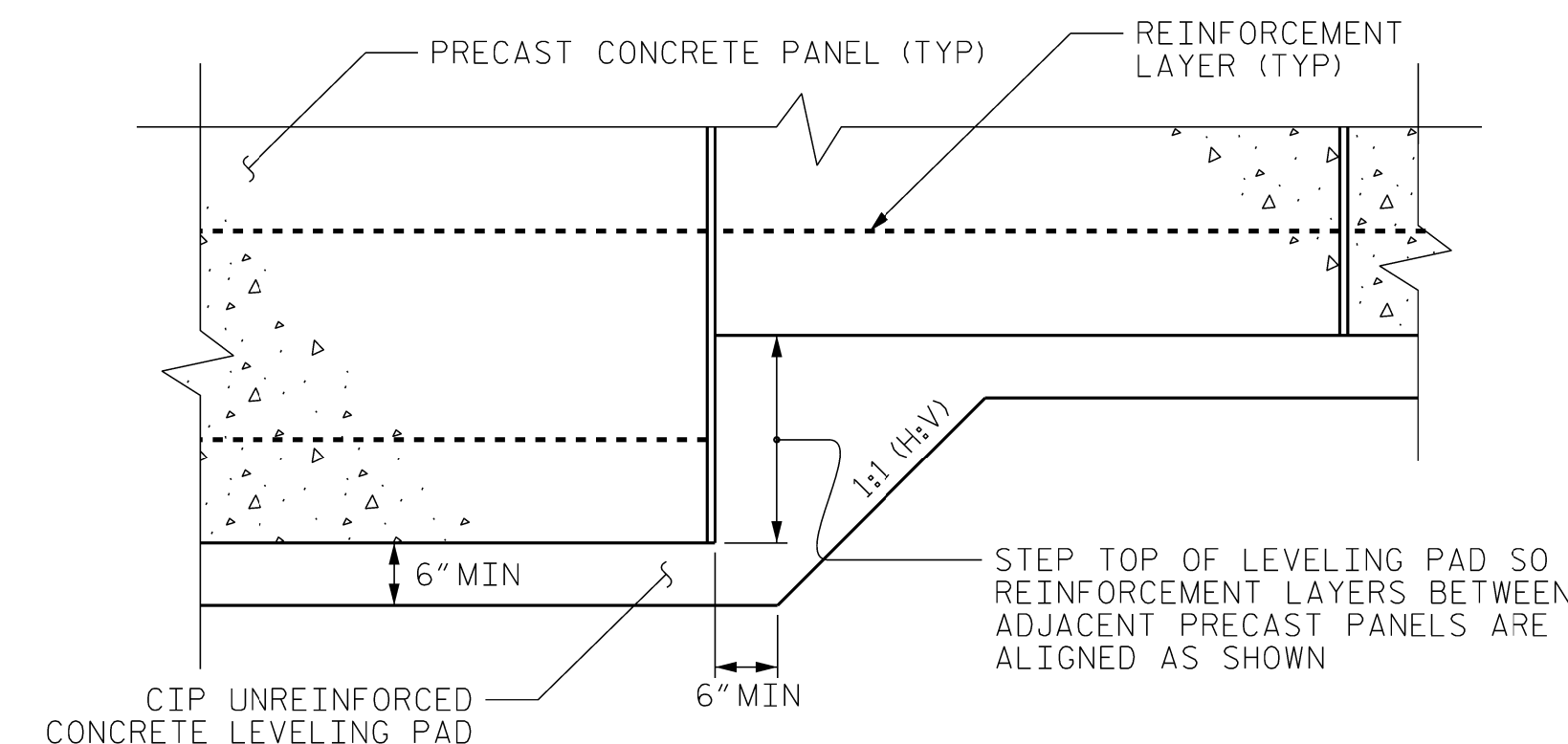
| MATERIAL TYPE | UNIT WEIGHT (γ) PCF | FRICTION ANGLE (ϕ) DEGREES | COHESION (c) PSF |
|---------------|------------------------------------|---|------------------------|
| RETAINED | 120 | 30 | 0 |
| FOUNDATION | 115 | 28 | 0 |

DESIGN RETAINING WALLS NO. W602 AND W1002 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.
 DESIGN RETAINING WALL NO. W1002 FOR A CULVERT EXTENDING THROUGH THE WALL AS SHOWN. VERIFY CULVERT LOCATION AND ELEVATION BEFORE BEGINNING MSE WALL DESIGN OR CONSTRUCTION.
 DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE (L_o) SHOWN. CAST REINFORCEMENT OR CONNECTORS INTO CAP BACKWALL FOR END BENT NO. W602 LOCATED AT STATION -Y5RPA- 21+27.10. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.
 FOUNDATIONS FOR SIGNS OR LIGHTING MAY BE LOCATED BEHIND RETAINING WALLS NO. W602 AND W1002 AND MAY INTERFERE WITH REINFORCEMENT. BEFORE BEGINNING MSE WALL CONSTRUCTION, SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS FOR APPROVAL.
 EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. W602.
 FOUNDATIONS FOR END BENT NO. 2 LOCATED AT STATION -Y5RPA- 21+27.10 WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. W602. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.
 DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALLS NO. W602 AND W1002 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
 "TEMPORARY SHORING" MAY BE REQUIRED FOR RETAINING WALLS NO. W602 AND W1002 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE ROADWAY PLANS.

AT THE CONTRACTOR'S OPTION, "TEMPORARY SHORING FOR WALL CONSTRUCTION" MAY BE USED TO CONSTRUCT RETAINING WALLS NO. W602 AND W1002. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.

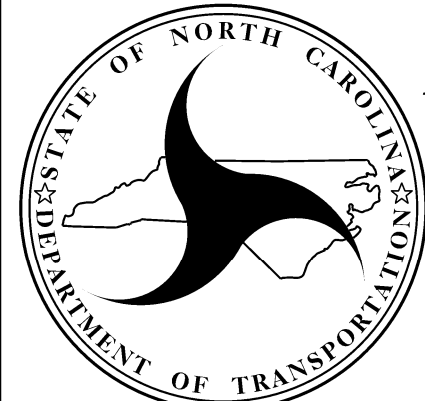
| | |
|--------------------------|--------------|
| PREPARED BY: S. CROCKETT | DATE: 9/5/23 |
| REVIEWED BY: J. HAMM | DATE: 9/7/23 |

| | |
|---|-------------------|
| GEOTECHNICAL ENGINEER  SEAL 048207 ENGINEER STEPHEN C. CROCKETT | ENGINEER |
| Date Signed by:  Stephen C. Crockett SIGNATURE | 5/14/2024 DATE |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



PRECAST PANELS
LEVELING PAD STEP DETAIL

PROJECT NO.: I-2513AA/AB
 BUNCOMBE COUNTY
 STATION: VARIES
 SHEET 5 OF 11 WALL ID W602, W1002

| | |
|---|--|
|  | NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS |
| | GEOTECHNICAL ENGINEERING UNIT |

**MSE WALL WITH PANELS NOTES
AND LEVELING PAD STEP DETAIL
FOR RETAINING WALLS NO. W602
AND W1002**

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