

# MSE ABUTMENT WALL WITH PRECAST PANELS - NOTES (ALTERNATE)

## NOTES:

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION. AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 12 AND 13.

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

CAST-IN-PLACE REINFORCED CONCRETE COPING IS REQUIRED AT VERTICAL EDGES ONLY OF THE ALTERNATE MSE RETAINING WALL NO. 12 AND NO. 13.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 12 AND NO. 13.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 12 AND NO. 13.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 12 AND NO. 13, 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. 12 AND NO. 13 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 6500 LB/SF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.9xH OR 6 FT, WHICHEVER 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
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 ( $\gamma$ ) LB/CF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	120	32	0

DESIGN RETAINING WALL NO. 12 AND NO. 13 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE (L) SHOWN. CAST REINFORCEMENT CONNECTORS INTO CAP BACKWALL FOR END BENT NO. 1 LOCATED AT STATION 24+10.12 -Y6- AND END BENT NO. 2 LOCATED AT STATION 26+29.62 -Y6-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN CONNECTORS AND REINFORCING STEEL IN CAP.

FOUNDATIONS FOR SIGNS, LIGHTING or SIGNALS WILL BE LOCATED BEHIND RETAINING WALL NO. 12 AND RETAINING WALL NO. 13 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 MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 12 AND NO. 13.

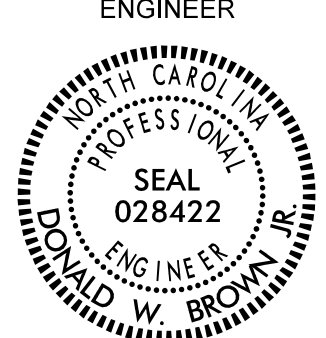
FOUNDATIONS FOR END BENT NO. 1 LOCATED AT STATION 24+10.12 -Y6- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 12. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

FOUNDATIONS FOR END BENT NO. 2 LOCATED AT STATION 26+29.62 -Y6- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 13. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 12 AND NO. 13 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

AT THE CONTRACTOR'S OPTION, "TEMPORARY SHORING FOR WALL CONSTRUCTION" MAY BE USED TO CONSTRUCT RETAINING WALL NO. 12 AND NO. 13. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.

REINFORCED BRIDGE APPROACH FILL IS NOT REQUIRED AT END BENTS FOR MSE WALLS.

GEOTECHNICAL ENGINEER   SEAL 028422 ENGINEER DONALD W. BROWN	ENGINEER
DocuSigned by: Donald W. Brown Jr. 5/12/2016 056848203967464 SIGNATURE	DATE
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

# SOIL NAIL WALL - NOTES

## NOTES:

FOR SOIL NAIL RETAINING WALLS, SEE SOIL NAIL RETAINING WALLS PROVISION.

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

BEFORE BEGINNING SOIL NAIL WALL DESIGN FOR RETAINING WALL NO. 12 AND NO. 13, 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. 12 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) IN-SITU ASSUMED MATERIAL PARAMETERS ABOVE ELEVATION 835 FT:  
UNIT WEIGHT,  $\gamma = 120$  LB/CF  
FRICTION ANGLE,  $\phi = 30$  DEGREES  
COHESION,  $c = 0$  LB/SF
- 4) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION 835 FT:  
UNIT WEIGHT,  $\gamma = 120$  LB/CF  
FRICTION ANGLE,  $\phi = 32$  DEGREES  
COHESION,  $c = 0$  LB/SF

DESIGN RETAINING WALL NO. 13 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) IN-SITU ASSUMED MATERIAL PARAMETERS ABOVE ELEVATION 825 FT:  
UNIT WEIGHT,  $\gamma = 120$  LB/CF  
FRICTION ANGLE,  $\phi = 30$  DEGREES  
COHESION,  $c = 0$  LB/SF
- 4) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION 825 FT:  
UNIT WEIGHT,  $\gamma = 120$  LB/CF  
FRICTION ANGLE,  $\phi = 34$  DEGREES  
COHESION,  $c = 0$  LB/SF

DESIGN RETAINING WALL NO. 12 AND NO. 13 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR SIGNS, LIGHTING or SIGNALS WILL BE LOCATED BEHIND RETAINING WALL NO. 12 AND NO. 13 AND MAY INTERFERE WITH SOIL NAILS. SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS WITH THE SOIL NAIL WALL CONSTRUCTION PLAN.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH SOIL NAILS FOR RETAINING WALL NO. 12 AND NO. 13.

FOUNDATIONS FOR END BENT NO. 1 LOCATED AT STATION 24+10.12 -Y6- WILL INTERFERE WITH SOIL NAILS FOR RETAINING WALL NO. 12. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

FOUNDATIONS FOR END BENT NO. 2 LOCATED AT STATION 26+29.62 -Y6- WILL INTERFERE WITH SOIL NAILS FOR RETAINING WALL NO. 13. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

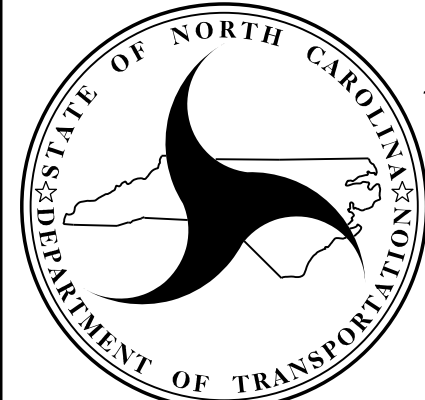
REINFORCED BRIDGE APPROACH FILL IS REQUIRED AT END BENTS FOR SOIL NAIL WALLS.

PROJECT NO.: U-2524D (34820.1.2)

GUILFORD COUNTY

STATION: -Y6- 25+18.62

SHEET 5 OF 5

 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS  <b>GEOTECHNICAL ENGINEERING UNIT</b>	<b>RETAINING WALL NO. 12 AND RETAINING WALL NO. 13 NOTES</b>					
	<b>REVISIONS</b>					
NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			3			W-8
2			4			

PREPARED BY: N. MOHS	DATE: 5/02/2016
REVIEWED BY: D. BROWN	DATE: 5/10/2016