
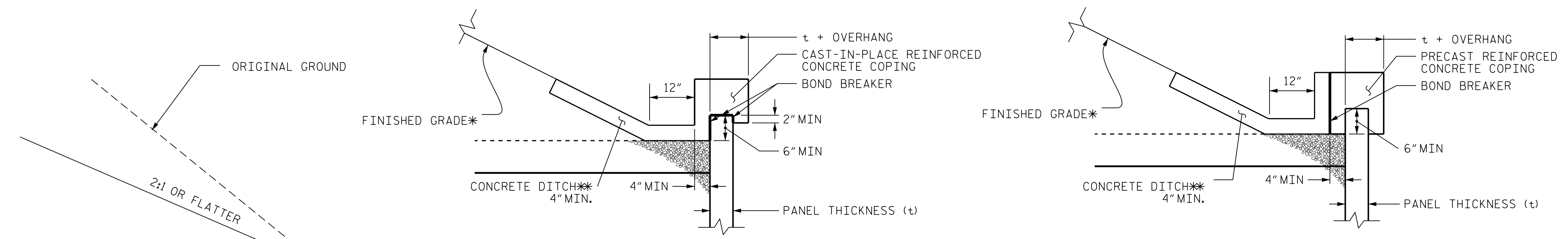
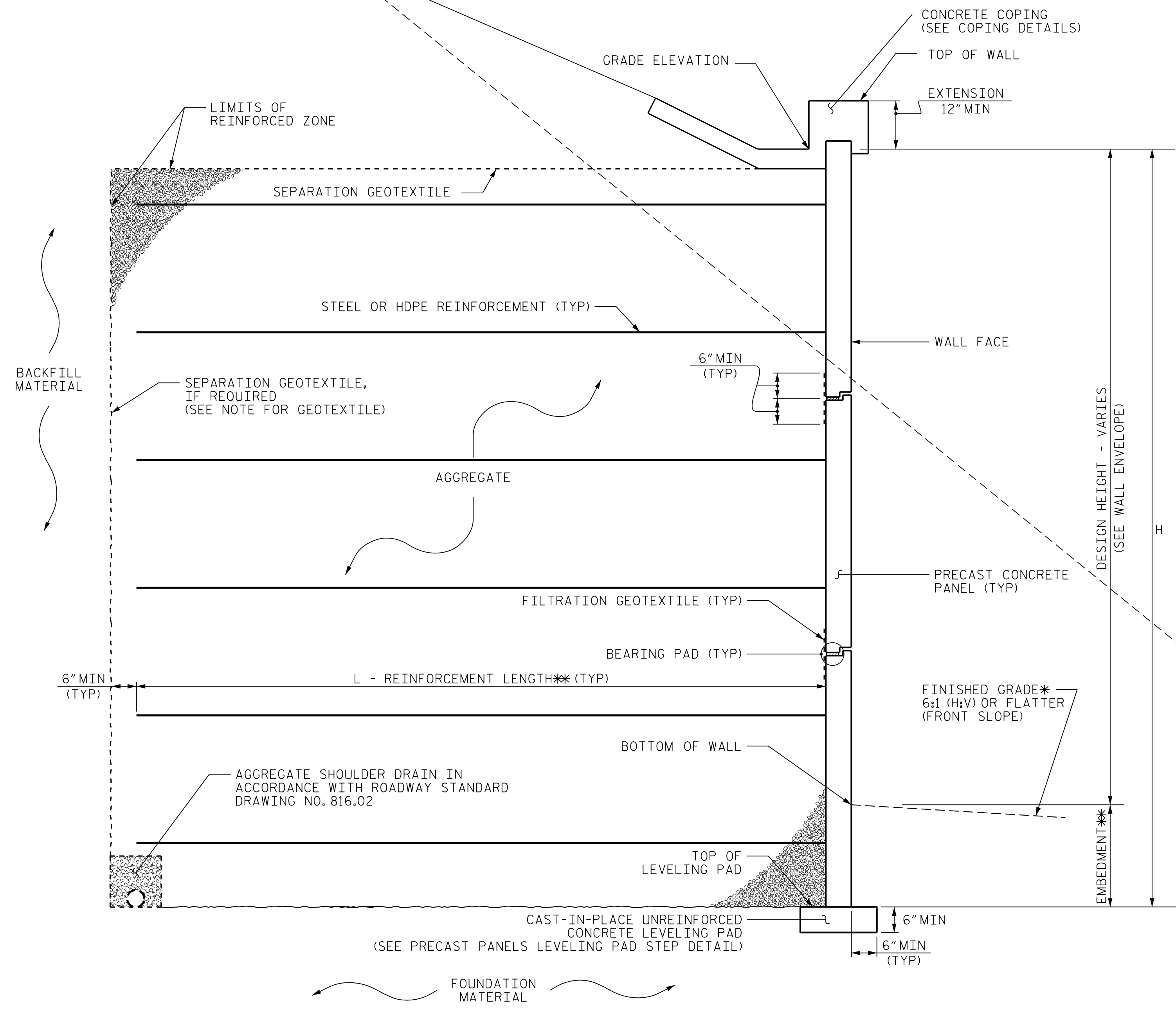


GEOTECHNICAL ENGINEER
 ENGINEER

 DocuSigned by:
 Scott Webb 6/6/2017
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



COPING DETAILS



MSE WALL WITH PRECAST PANELS - TYPICAL B-B

*SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

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 DRAWING NO. 422D10.
- A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. 1 & 2.
- A DRAIN IS REQUIRED FOR RETAINING WALLS NO. 1 & 2.
- WITHIN 33 FEET OF CENTERLINE DESIGN RETAINING WALLS NO. 1 & 2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.
- FOUNDATIONS FOR END BENT NO. 1 LOCATED AT STA. 18+27.02 -L- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 1. FOUNDATIONS FOR END BENT NO. 2 LOCATED AT STA. 19+21.19 -L- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.
- 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 STA. 18+27.02 -L- AND END BENT NO. 2 LOCATED AT STA. 19+21.19 -L-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.
- DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 1 & 2 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
- AT THE CONTRACTOR'S OPTION, "TEMPORARY SHORING FOR WALL CONSTRUCTION" MAY BE USED TO CONSTRUCT RETAINING WALLS NO. 1 & 2. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.
- EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 & 2.
- BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 1 & 2, SURVEY WALL LOCATION AND SUBMIT REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPES ARE ACCEPTED.
- PILE SLEEVES ARE REQUIRED AROUND PILES FOR END BENT NO. 1 LOCATED AT STATION 18+27 -L- AND PILES FOR END BENT NO. 2 LOCATED AT STATION 19+21 -L-. AT THE CONTRACTOR'S OPTION, AND WITH THE ENGINEER'S APPROVAL, PILE SLEEVES MAY BE OMITTED IF THE NEUTRAL PLANE METHOD FHWA-NHI-16-009 SHOWS THE PILE DESIGN IS ADEQUATE FOR DOWNDRAW. USE AN UNFACTORED PERMANENT LOAD ON THE PILE OF 80 TONS, A LOAD FACTOR FOR DRAG FORCE OF 1.5, AND A SOIL ELASTIC MODULUS OF 100 KSF.
- FOR RETAINING WALL NO. 2, SEE ROADWAY PLANS FOR DRAINAGE PIPE LOCATION BEHIND THE WALL. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING MSE WALL DESIGN OR CONSTRUCTION.

DESIGN RETAINING WALL NO. 1 & 2 FOR THE FOLLOWING:

- A) H = DESIGN HEIGHT + EMBEDMENT
- B) DESIGN LIFE = 100 YEARS
- C) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 7000 LB/SF
- D) MINIMUM REINFORCEMENT LENGTH (L) FOR WALL 1 = 22 FEET WITHIN 20 FEET OF CENTERLINE
 MINIMUM REINFORCEMENT LENGTH (L) FOR WALL 2 = 20 FEET WITHIN 20 FEET OF CENTERLINE
 MINIMUM REINFORCEMENT LENGTH (L) = .75 H FOR WALL 1 MORE THAN 20 FEET FROM CENTERLINE
 MINIMUM REINFORCEMENT LENGTH (L) = .7 H FOR WALL 2 MORE THAN 20 FEET FROM CENTERLINE
- E) REINFORCED ZONE AGGREGATE PARAMETERS:

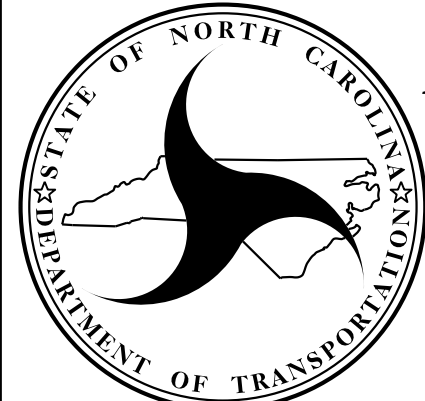
AGGREGATE TYPE*	UNIT WEIGHT (g) LB/CF	FRICTION ANGLE (f) DEGREES	COHESION (c) LB/SF
COARSE	110	38	0

*SEE MSE RETAINING WALLS PROVISION FOR COARSE AGGREGATE MATERIAL REQUIREMENTS.

F) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (g) LB/CF	FRICTION ANGLE (f) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	120	30	0

PROJECT NO.: B-4964
 ROCKINGHAM COUNTY
 STATION: 18+73.69 -L-
 SHEET 3 OF 3


 NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
**GEOTECHNICAL
 ENGINEERING UNIT**

**MSE WALL WITH
 PANELS & BACKSLOPE
 TYPICAL & COPING DETAILS**

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

SHEET NO. W-3

PREPARED BY: R. WEBB
 REVIEWED BY: D. TEAGUE
 DATE: 5-17
 DATE: 5-17