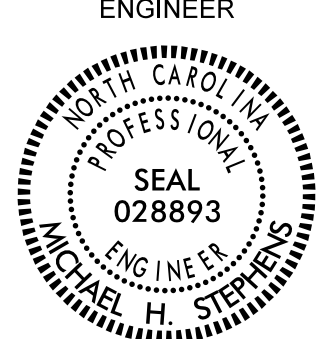


GEOTECHNICAL ENGINEER

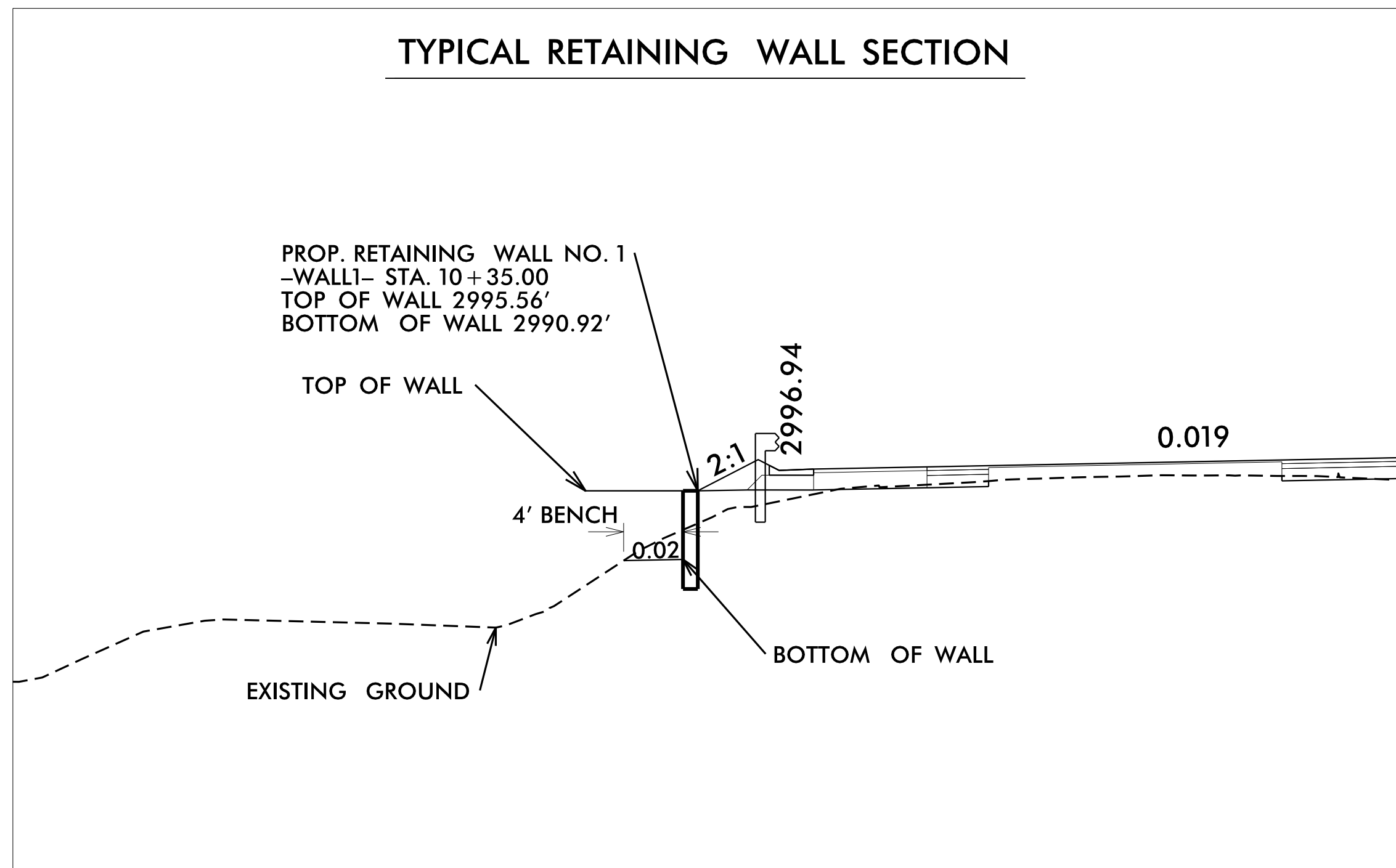
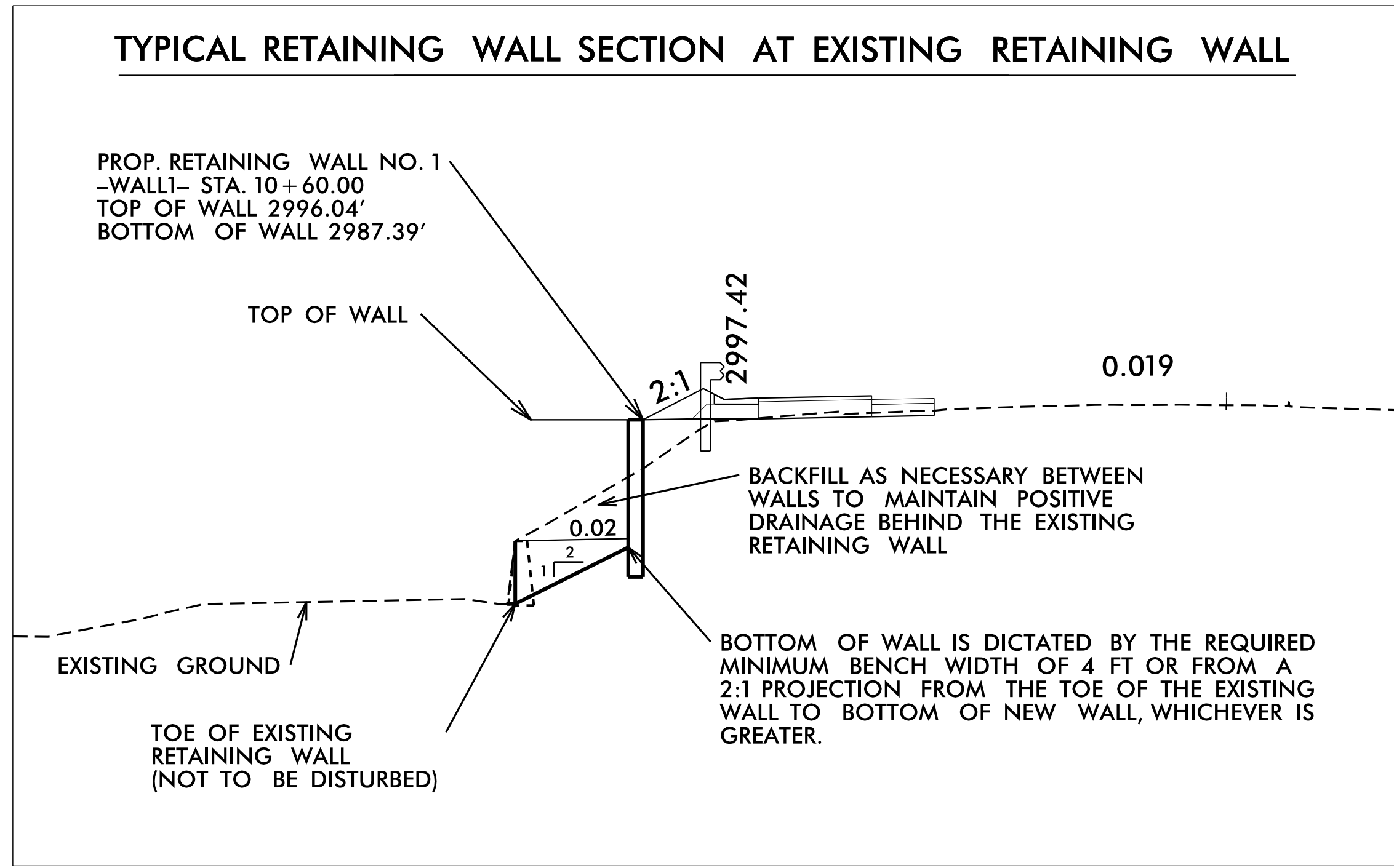
ENGINEER



DocuSigned by:  
**Michael H. Stephens**  
C44762202314CC

7/26/2016

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



**NOTES:**

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

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

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 1.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 1 WHEN COARSE AGGREGATE IS USED.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 1.

A FENCE OR HANDRAIL MAYBE REQUIRED ON TOP OF RETAINING WALL NO. 1. SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS.

A SIMULATED ASHLAR ARCHITECTURAL FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALL NO. 1. SUBMIT ASHLAR ARCHITECTURAL FINISH SAMPLES FOR APPROVAL BEFORE BEGINNING MSE WALL CONSTRUCTION.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 1, 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 FOR THE FOLLOWING:
- 1) H = DESIGN HEIGHT + EMBEDMENT
  - 2) DESIGN LIFE = 100 YEARS
  - 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 3,590 LB/SF
  - 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7H OR 6 FT, WHICHEVER IS LONGER
  - 5) MINIMUM EMBEDMENT ELEVATION = 2 FT (SEE TABLE FOR EMBEDMENT REQUIREMENTS)
  - 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (φ) 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 (γ) LB/CF	FRICTION ANGLE (φ) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	120	29	0

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

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. 1.

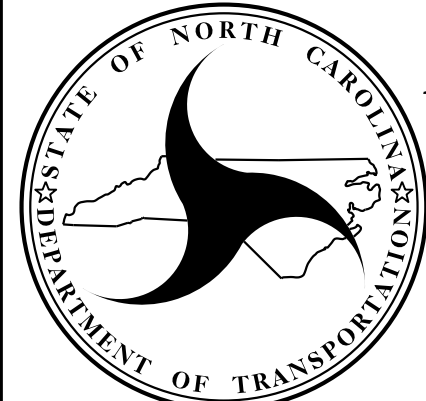
DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 1 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

"TEMPORARY SHORING" MAY BE REQUIRED FOR RETAINING WALL NO. 1 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE ROADWAY, STRUCTURE OR TRAFFIC CONTROL PLANS.

AT THE CONTRACTOR'S OPTION, "TEMPORARY SHORING FOR WALL CONSTRUCTION" MAY BE USED TO CONSTRUCT RETAINING WALL NO. 1. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.

PROJECT NO.: 34518.1.4 (R-2915C)  
 ASHE COUNTY  
 STATION: STA 321+25 TO 322+40 -L- LT 51 FT  
 SHEET 2 OF 3

PREPARED BY: MHS      DATE: 7/21/16  
 REVIEWED BY: SCC      DATE: 7/21/16



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

**GEOTECHNICAL  
 ENGINEERING UNIT**

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