


GEOTECHNICAL ENGINEER



THEIN TUN ZAN
ENGINEER

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DocuSigned by:
Thein Tun Zan 5/19/2016

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SIGNATURE DATE SIGNATURE DATE

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

NOTES:

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

A CONCRETE BARRIER RAIL WITH MOMENT SLAB IS REQUIRED ABOVE RETAINING WALL NO. 7, 8, 9 & 10. SEE PLANS FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 7, 8, 9 & 10.

CAST-IN-PLACE REINFORCED CONCRETE COPING IS REQUIRED AT VERTICAL EDGES ONLY AT RETAINING WALL NO. 7, 8, 9 & 10.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 7, 8, 9 & 10.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 7, 8, 9 & 10.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 7, 8, 9 & 10, 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. 7, 8, 9 & 10 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 7,850 LB/SF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.8H OR 6 FT, WHICHEVER IS LONGER
- 5) 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.

6) 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	30	0

DESIGN RETAINING WALL NO. 7, 8, 9 & 10 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 CONNECTORS INTO CAP BACKWALL FOR END BENT NO. 1 LOCATED AT STATION 494+06.25 AND 494+03.39 -LREV- AND END BENT NO. 2 LOCATED AT STATION 496+32.70 AND 496+32.70 -LREV- AND 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. 7, 8, 9 & 10 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. 7, 8, 9 & 10.

FOUNDATIONS FOR END BENT NO. 1 LOCATED AT STATION 494+06.25 AND STATION 494+03.39 -LREV- AND END BENT NO. 2 AT STATION 496+32.70 AND 496+32.70 -LREV- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 7, 8, 9 & 10. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 7, 8, 9 & 10 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. 7, 8, 9 & 10. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.

PROJECT NO.: U-2524D
 GUILFORD COUNTY
 STATION: 495+22.00 -LREV- (18+84.00 -Y8-)
 SHEET 10 OF 12



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

**GEOTECHNICAL
ENGINEERING UNIT**

**WALL NO. 7, 8, 9 & 10
MSE RETAINING WALL
NOTES**

REVISIONS						SHEET NO. W-18
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

PREPARED BY: THEIN T. ZAN	DATE: 05-2016
REVIEWED BY: JAMES R. BATTS	DATE: 05-2016