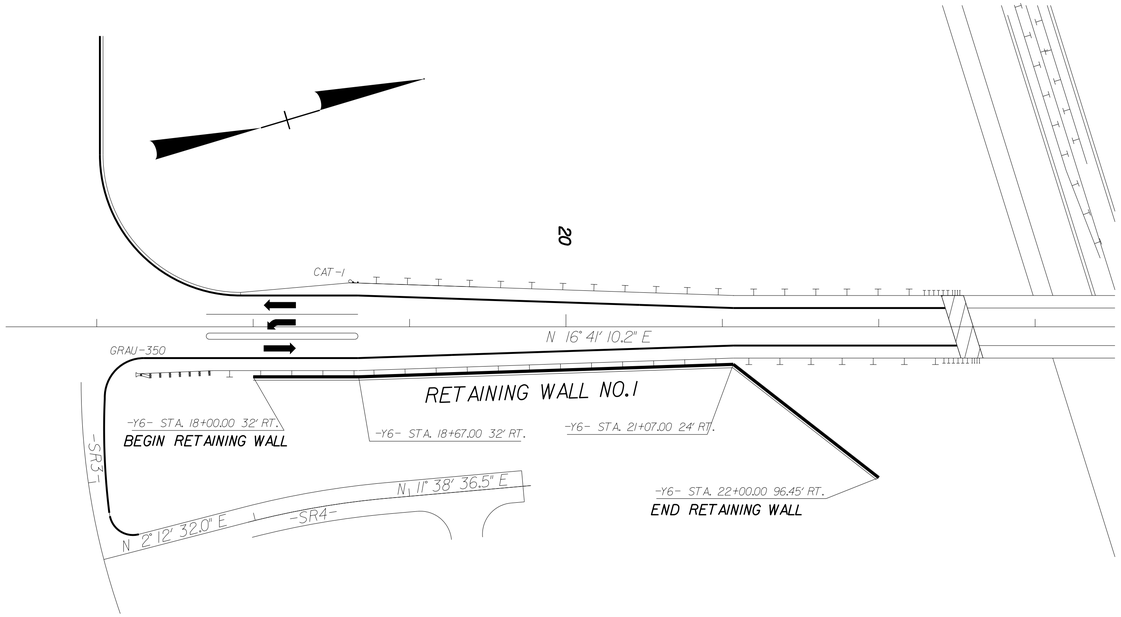
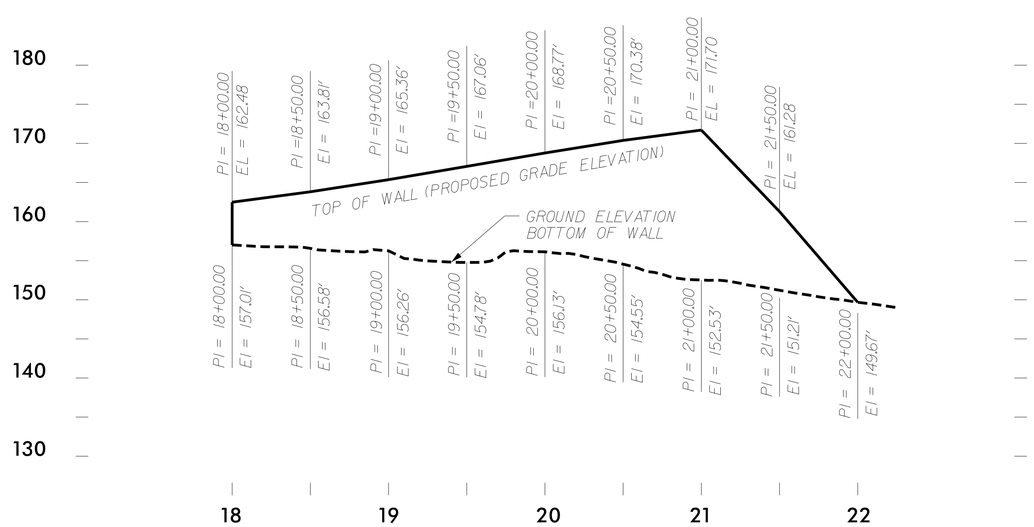
| GEOTECHNICAL ENGINEER | ENGINEER |
|---|---|
| NORTH CAROLINA PROFESSIONAL SEAL 036278 ENGINEER MAJID KHAZAEI<br>DocuSigned by: Majid Khazaei 1/14/2015<br>3A5A0A0F5A3 SIGNATURE DATE | SIGNATURE DATE |




## RETAINING WALL PLAN AND ELEVATION

N.T.S.

## 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.

USE AN MSE WALL SYSTEM WITH SRW UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL NO. 1.

WHEN USING AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL (SRW) UNITS FOR RETAINING WALL NO. 1, FREEZE-THAW DURABLE SRW UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS ARE REQUIRED.

SRW FACING UNITS FOR RETAINING WALL NO. 1 SHALL BE COLORED FS 33446, FS 33531 or FS 36555 (TAN) OR SIMILAR COLOR APPROVED BY THE ENGINEER. DO NOT BEGIN UNIT PRODUCTION UNTIL SAMPLE SRW UNITS OF THE TYPE, FACE AND COLOR PROPOSED FOR THE PROJECT ARE APPROVED.

A DRAIN IS NOT REQUIRED FOR RETAINING WALL NO. 1.

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 = 75 YEARS
3) MAXIMUM FACTORED VERTICAL STRESS ON FOUNDATION MATERIAL = 6000 LB/SF
4) MINIMUM L/H = 0.8 , WHERE H = DESIGN HEIGHT + EMBEDMENT
L = REINFORCEMENT LENGTH

5) AGGREGATE PARAMETERS:

| AGGREGATE TYPE* | UNIT WEIGHT ($\gamma$) LB/CF | FRICTION ANGLE ($\phi$) DEGREES | COHESION (c) LB/SF |
|---|---|---|---|
| COARSE | 110 | 38 | 0 |
| FINE | 125 | 34 | 0 |
| *SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS. | | | |

6) 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 | 30 | 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.

| ESTIMATED MSE WALL QUANTITIY (SQUARE FEET) | |
|---|---|
| MSE RETAINING WALL NO. 1 | 4470 SF |

***PROJECT NO.:*** W-5107
JOHNSTON ***COUNTY***
***STATION:*** 18+00 -Y6- RT

| PREPARED BY: M. KHAZAEI | DATE: 04/30/14 |
|---|---|
| REVIEWED BY: K.J. KIM | DATE: 04/30/14 |

***GEOTECHNICAL ENGINEERING UNIT***

☒ ***EASTERN REGIONAL OFFICE***
☐ ***WESTERN REGIONAL OFFICE***
☐ ***CONTRACT OFFICE***

***STATE OF NORTH CAROLINA***
***DEPARTMENT OF TRANSPORTATION***
***RALEIGH***

MSE RETAINING WALL NO. 1
PLAN, ELEVATION & NOTES

***REVISIONS***

| NO. | BY | DATE | NO. | BY | DATE |
|---|---|---|---|---|---|
| 1 | M.Khazaei | 11/20/14 | 3 | | |
| 2 | | | 4 | | |

SHEET NO. W-1
TOTAL SHEETS W-3