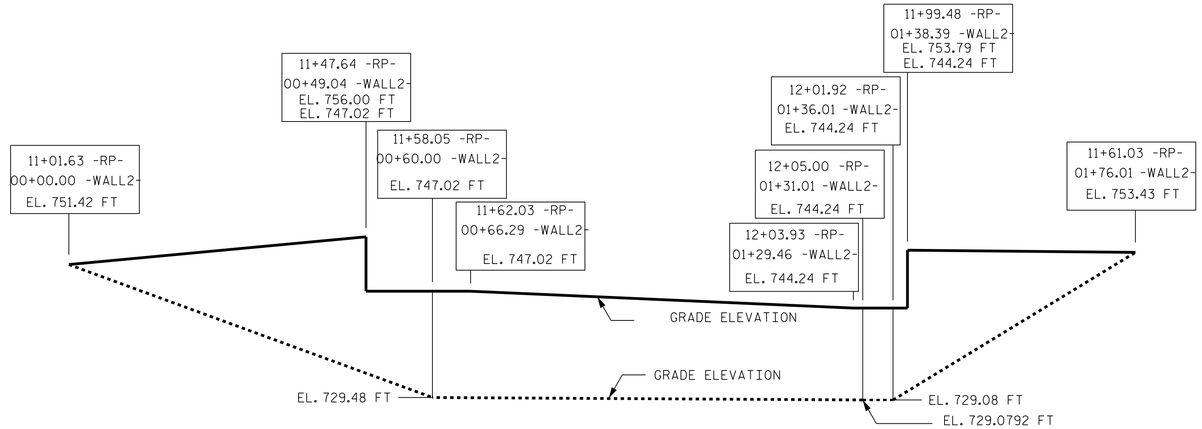
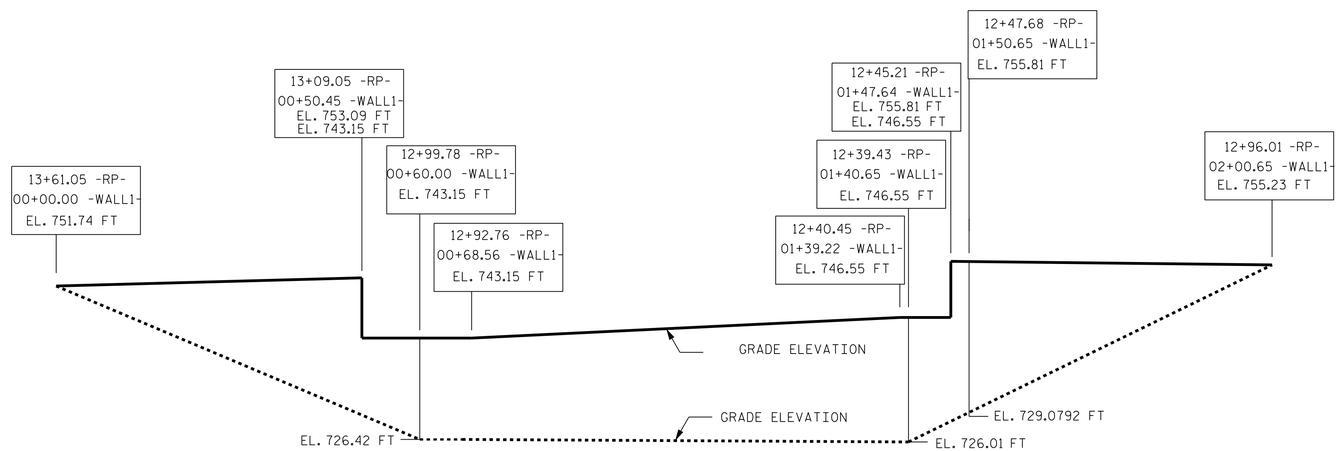
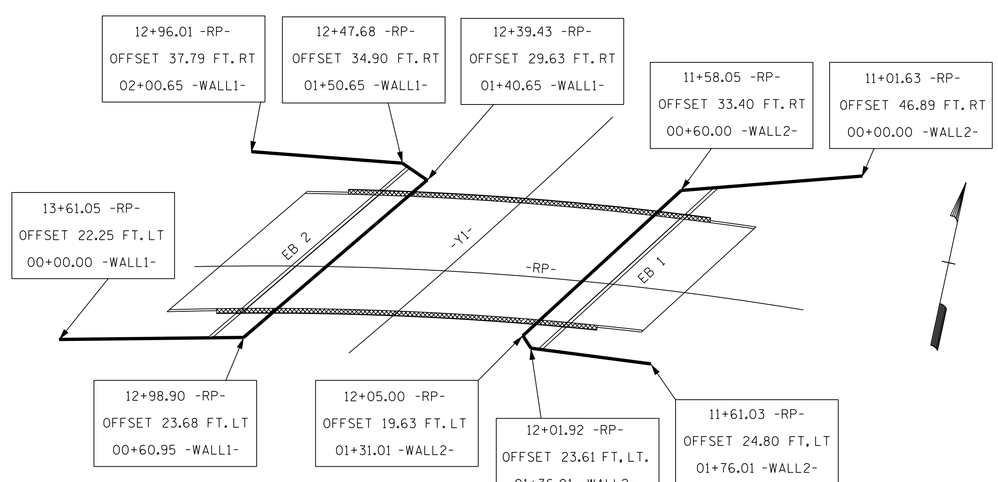
| GEOTECHNICAL ENGINEER | ENGINEER |
|---|---|
| NORTH CAROLINA PROFESSIONAL SEAL 028669 ENGINEER RICHARD SCOTT MEBB — DocuSigned by: Scott Mebb 5A2D6B8B9B4D6... 11/26/2014 DATE | SIGNATURE DATE |




## WALL #2 (WALL AT END BENT 1) ENVELOPE




## WALL #1 (WALL AT END BENT 2) ENVELOPE




## PLAN VIEW

## 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.

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

USE AN MSE WALL SYSTEM WITH PRECAST CONCRETE PANELS THAT MEET SECTION 1077 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALLS NO. 1 & 2.

DRAINS ARE NOT REQUIRED FOR RETAINING WALLS NO. 1 & 2.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. 1 & 2, 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 WALLS NO. 1 & 2 FOR THE FOLLOWING:
1) H = DESIGN HEIGHT + EMBEDMENT
2) DESIGN LIFE = 100 YEARS
3) MAXIMUM FACTORED VERTICAL STRESS ON FOUNDATION MATERIAL= 6000 LB/SF
4) MINIMUM REINFORCEMENT LENGTH (L) TO WALL HEIGHT (H) RATIO = 0.85
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. | | | |

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 | 29 | 0 |

DESIGN RETAINING WALLS NO. 1 & 2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE (La) SHOWN. LOADS SHOWN ARE PERPENDICULAR TO END BENT. CAST REINFORCEMENT CONNECTORS INTO CAP BACKWALL FOR END BENTS NO. 1 & 2 LOCATED AT STATION 11+74 -RP- AND STATION 12+77 -RP-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN CONNECTORS AND REINFORCING STEEL IN CAP.

FOUNDATIONS FOR END BENTS NO. 1 & 2 LOCATED AT STATION 11+74 -RP- AND STATION 12+77 -RP- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 & 2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALLS NO. 1 & 2 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 & 2.

"TEMPORARY SHORING" MAY BE REQUIRED FOR RETAINING WALLS NO. 1 & 2 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION.

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.

***PROJECT NO.:*** B-5119
GUILFORD ***COUNTY***
***STATION:*** 12+32 -RP-
SHEET 3 OF 3

| | | | |
|---|---|---|---|
| PREPARED BY: RSW | DS GCB | DATE: 10/23/14 | DS MAM |
| REVIEWED BY: GCB | | DATE: 10/23/14 | |

***GEOTECHNICAL ENGINEERING UNIT***
☐ *EASTERN REGIONAL OFFICE*
☐ *WESTERN REGIONAL OFFICE*
☒ *CONTRACT OFFICE*
***STATE OF NORTH CAROLINA***
***DEPARTMENT OF TRANSPORTATION***
***RALEIGH***

MSE RETAINING WALL

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