GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 23481 ENGINEER J. DEAN HARDISTER

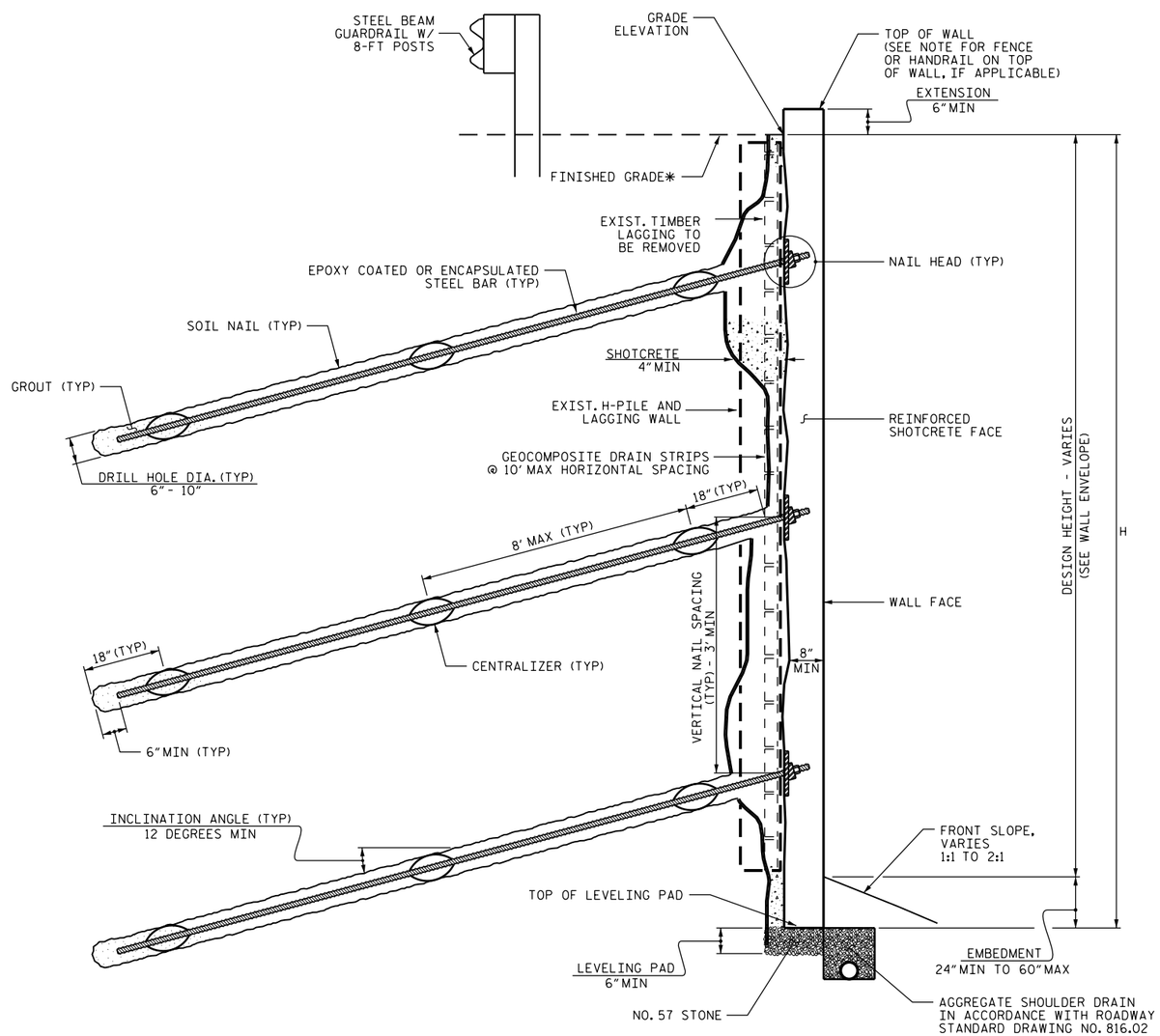
DocuSigned by: J. Dean Hardister

SIGNATURE DATE

12/18/2017

ENGINEER

SIGNATURE DATE



SOIL NAIL WALL - TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE AND DITCH DETAILS.

NOTES:

FOR SOIL NAIL RETAINING WALLS, SEE SOIL NAIL RETAINING WALLS PROVISION.

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

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

DESIGN RETAINING WALL NO. 1 FOR INTERNAL, EXTERNAL, AND GLOBAL STABILITY.

BEFORE BEGINNING SOIL NAIL 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) IN-SITU ASSUMED MATERIAL PARAMETERS (SOIL):
   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF
4) IN-SITU ASSUMED MATERIAL PARAMETERS (WEATHERED ROCK):
   UNIT WEIGHT, γ = 135 LB/CF
   FRICTION ANGLE, ϕ = 40 DEGREES
   COHESION, c = 50 LB/SF

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

DESIGN RETAINING WALL NO. 1 FOR A PIPE EXTENDING THROUGH THE WALL. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING SOIL NAIL WALL DESIGN OR CONSTRUCTION.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH SOIL NAILS FOR RETAINING WALL NO. 1.

TOTAL STRUCTURE QUANTITIES - OPTION #2

RETAINING WALL NO. 1	6,250	SQ. FT.
SOIL NAIL VERIFICATION TESTS	2	EA.
SOIL NAIL PROOF TESTS	10	EA.

PROJECT NO.: 41665.10B

GRAHAM *COUNTY*

STATION: 13+21.00 -L-

SHEET 1 OF 1

PREPARED BY:	D. Hardister, PE	DATE:	12/2017
REVIEWED BY:	E. Williams, PE	DATE:	12/2017

GEOTECHNICAL ENGINEERING UNIT

☐ *EASTERN REGIONAL OFFICE*

☒ *WESTERN REGIONAL OFFICE*

☐ *CONTRACT OFFICE*

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RETAINING WALL NO. 1
OPTION #2
SOIL NAIL RETAINING WALL

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