

NOTES:

FOR SOIL NAIL RETAINING WALLS BUILD-OUT, SEE SOIL NAIL RETAINING WALLS PROVISION.

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

FOR MICROPILES AND MICROPILE FOOTING, SEE MICROPILE SLOPE STABILIZATION PROVISION.

AVOID SOIL NAILS WITH INSTALLING GUARDRAIL POSTS.

DESIGN SOIL NAIL RETAINING WALLS AND MICROPILE SLOPE STABILIZATION FOR INTERNAL, EXTERNAL, AND GLOBAL STABILITY.

PER THE TYPICAL SECTION, THE EXISTING GROUND IS LOCATED BEHIND THE FUTURE SOIL NAIL WALL FACE. AT THE CONTRACTOR'S OPTION, CONSTRUCT NEW GROUND PRIOR TO BEGINNING SOIL NAIL WALL CONSTRUCTION OR INSTALL SOIL NAILS INTO THE EXISTING GROUND AND EXTEND THE NAILS TO FACING FALSEWORK. BACKFILL BEHIND THE FALSEWORK AFTER CONSTRUCTING THE WALL FINAL FACING.

BEFORE BEGINNING SOIL NAIL WALL DESIGN FOR SOIL NAIL RETAINING WALL AT SITE 4, SURVEY WALL LOCATION AND SUBMIT A WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE WALL ENVELOPE IS ACCEPTED.

DESIGN SOIL NAIL RETAINING WALL AT SITE 4 FOR THE FOLLOWING:

- 1) H= DESIGN HEIGHT
- 2) DESIGN LIFE = 75 YEARS
- 3) IN-SITU ASSUMED MATERIAL PARAMETERS (RESIDUAL SOILS):

UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

- 4) IN-SITU ASSUMED MATERIAL PARAMETERS (WEATHERED ROCK):

UNIT WEIGHT, γ = 130 PCF
FRICTION ANGLE, ϕ = 41 DEGREES
COHESION, c = 0 PSF

- 5) DESIGN FAILURE PLANE AT WALL AND FOOTING EQUAL TO AN INFERRED ROCK LINE AT A DEPTH OF 5 FT BELOW PROPOSED BOTTOM OF FOOTING.

DESIGN SOIL NAIL RETAINING WALL FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN SOIL NAIL RETAINING WALL FOR A 300 LB/FT HORIZONTAL TRAFFIC IMPACT LOAD.

EXISTING AND FUTURE OBSTRUCTIONS SUCH AS GUARDRAIL, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH SOIL NAILS FOR RETAINING WALL.

REMOVE THE LOOSE DEBRIS ON THE SURFACE OF THE SLOPE TO THE SATISFACTION OF THE ENGINEER BEFORE INSTALLING SOIL NAILS.

DO NOT DISTURB EXISTING VEGETATION BEYOND THE LIMITS OF THE SOIL NAILS INSTALLATION AREA.

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF SITE 4. THE INFORMATION PROVIDED FOR DESIGN WAS BASED ON VISUAL OBSERVATIONS AND APPROXIMATIONS AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

PROJECT NO.: DF18314.2045063

COUNTY: HENDERSON

PREPARED BY: C. WANG, P.E.	DATE: 08/2025
REVIEWED BY: P. ALTON, P.E.	DATE: 08/2025

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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS


GEOTECHNICAL
ENGINEERING UNIT

HURRICANE HELENE EMERGENCY REPAIRS
SOIL NAIL SHOULDER BUILD OUT
SITE 4- BALD ROCK RD.

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
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SHEET
NO.
2G-4c

GEOTECHNICAL
ENGINEER



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DATE

ENGINEER

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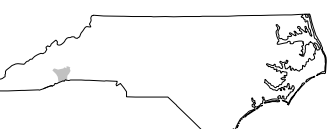
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DF18314.
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NORTH CAROLINA
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HENDERSON COUNTY



HIGHWAY DIVISION 14

REVISIONS