

GEOTECHNICAL
ENGINEER

ENGINEER



Signed by:

Michael J. Walko

05/27/2026

SIGN

DATE _____

SIGNATURE

ATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



ESTIMATED SOIL NAIL WALL QUANTITIES			
RETAINING WALL NO.	SOIL NAIL RETAINING WALLS (SQUARE FEET)	SOIL NAIL VERIFICATION TESTS	SOIL NAIL PROOF TESTS
1	7,750	3	16

PROJECT NO.: U-4700CB

Caldwell County

STATION:-L- STA. 617+84.99 TO STA. 621+39.98, LT

SHEET 1 OF 2

SOIL NAIL RETAINING WALL PLAN AND PROFILE

REVISIONS						SH M V
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

SHEET
NO.

W-1

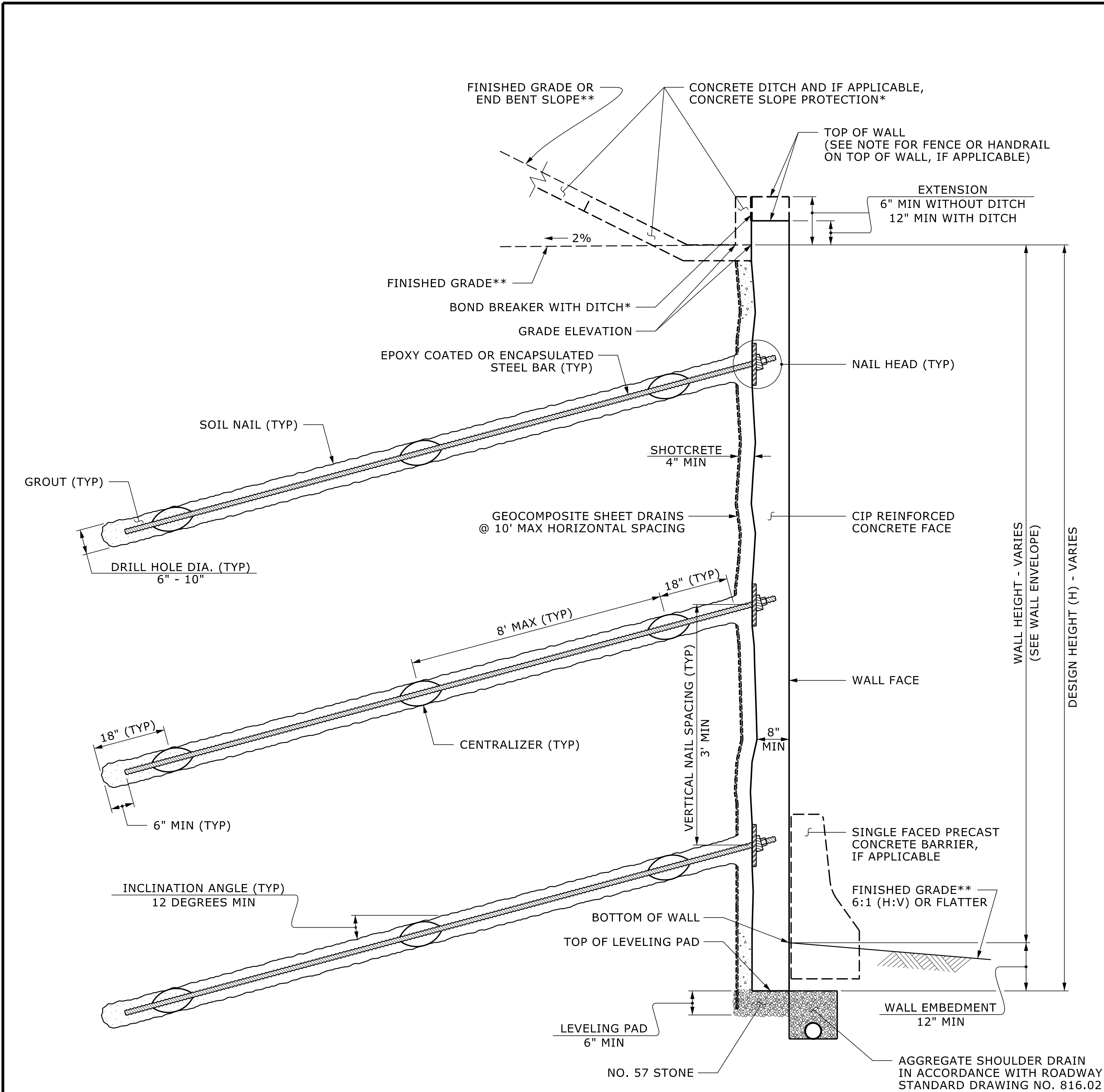
PREPARED BY: KND	DATE: 05/26
REVIEWED BY: MJW	DATE: 05/26

RETAINING WALL ENVELOPE AND WALL LAYOUT PROVIDED BY JMT IN MAY 2026.

Prepared in the Office of:

 | **CARLINAS
GEOTECHNICAL
GROUP**

**1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684**



SOIL NAIL WALL - TYPICAL SECTION

*SEE CONCRETE DITCH BEHIND WALL DETAILS.
**SEE PLANS FOR FINISHED GRADE OR END BENT SLOPE DETAILS.

NOTES:

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

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

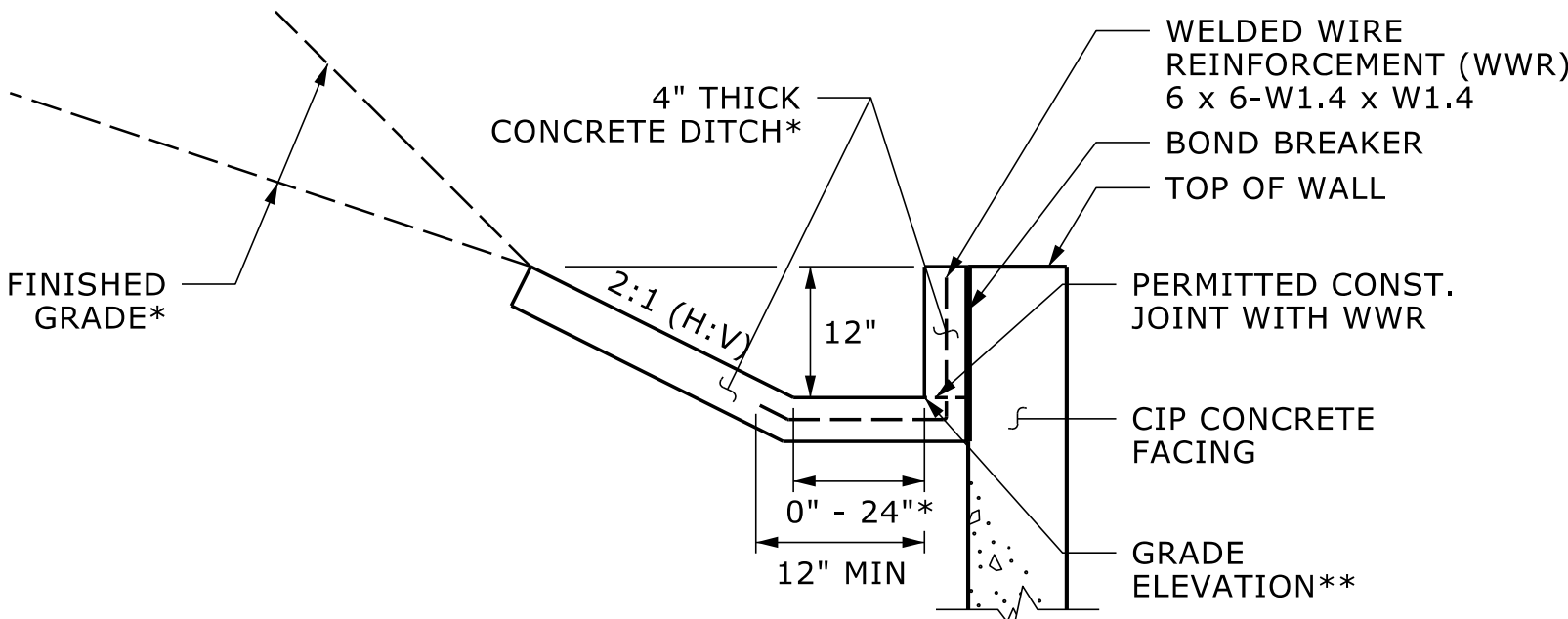
WALL CONTRACTOR SHALL VERIFY IF AN ARCHITECTURAL FINISH IS REQUIRED FOR THE CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 1.

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) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MINIMUM WALL EMBEDMENT = 1 FT
- 4) IN-SITU ASSUMED MATERIAL PARAMETERS FOR RESIDUAL:
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, f = 30 DEGREES
COHESION, c = 0 PSF
- 5) IN-SITU ASSUMED MATERIAL PARAMETERS FOR WEATHERED ROCK:
UNIT WEIGHT, γ = 130 PCF
FRICTION ANGLE, f = 34 DEGREES
COHESION, c = 500 PSF
- 6) IN-SITU ASSUMED MATERIAL PARAMETERS FOR CRYSTALLINE ROCK:
UNIT WEIGHT, γ = 170 PCF
FRICTION ANGLE, f = 34 DEGREES
COHESION, c = 1,000 PSF
- 7) WHERE CRYSTALLINE ROCK IS ENCOUNTERED IN THE WALL ENVELOPE, DESIGNERS SHOULD REFER TO THE FHWA PRESUMPTIVE STRENGTH PARAMETERS OR OTHER REPRESENTATIVE AND REPEATABLE VALUES AND PROVIDE SOURCE REFERENCES IN THEIR DESIGN SUBMITTAL.

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



CONCRETE DITCH BEHIND
WALL WITH CONCRETE FACING

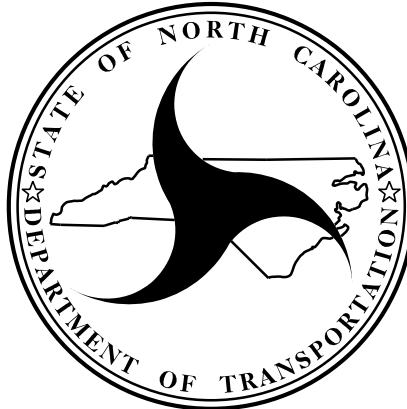
*SEE ROADWAY PLANS FOR CONCRETE
DITCH AND FINISHED GRADE DETAILS.
**SEE WALL ENVELOPE FOR GRADE ELEVATIONS.

PROJECT NO.: U-4700CB

CALDWELL COUNTY
STATION: -L- STA. 617+84.99 TO STA. 621+39.98, LT
SHEET 2 OF 2

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REVIEWED BY: MJW	DATE: 05/26

Prepared in the Office of:
CG2 | **CAROLINAS
GEOTECHNICAL
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SUITE 100
CHARLOTTE, NC 28270
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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

SOIL NAIL RETAINING WALL
NOTES AND TYPICAL SECTION

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET
NO.
W-2