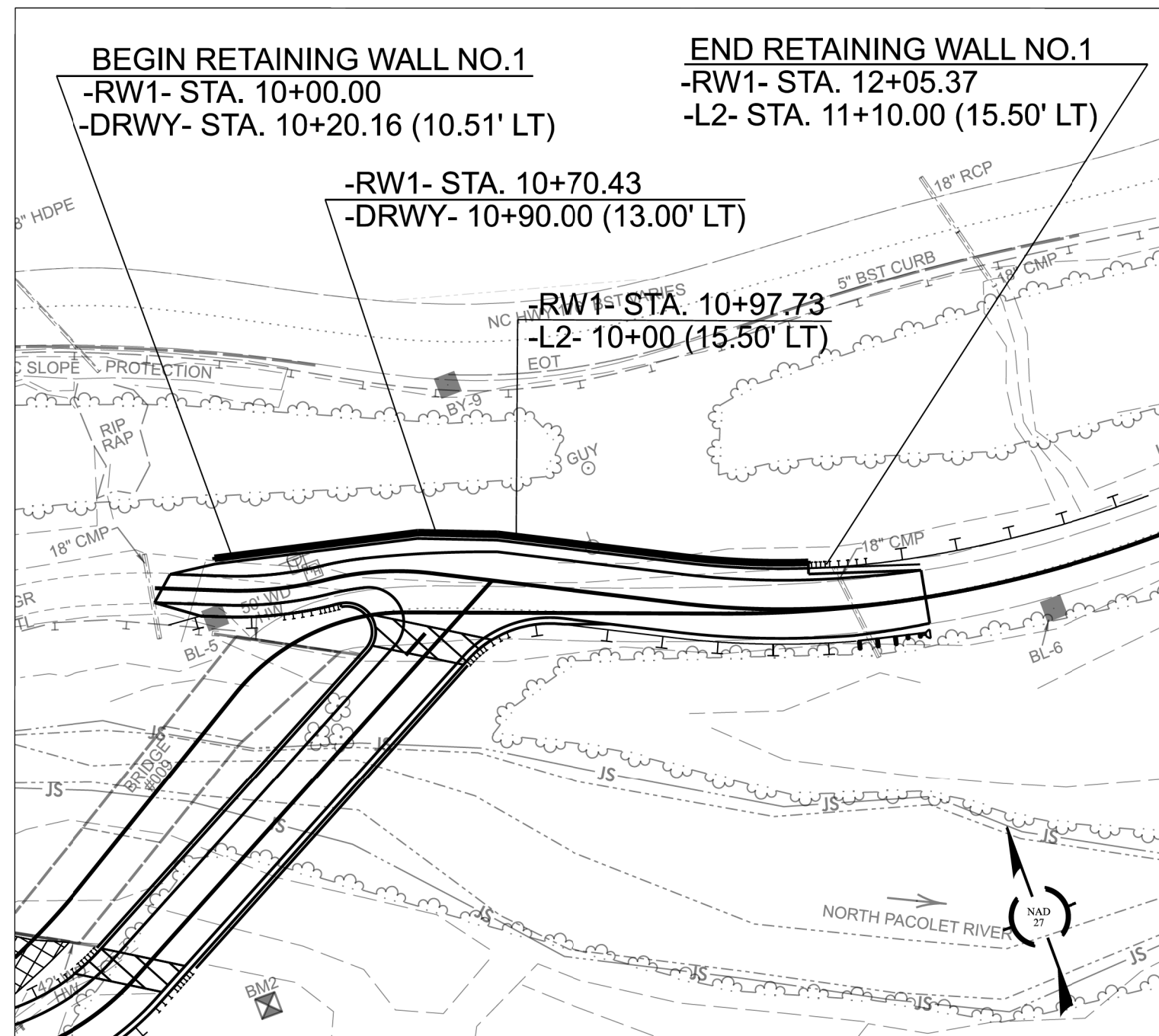
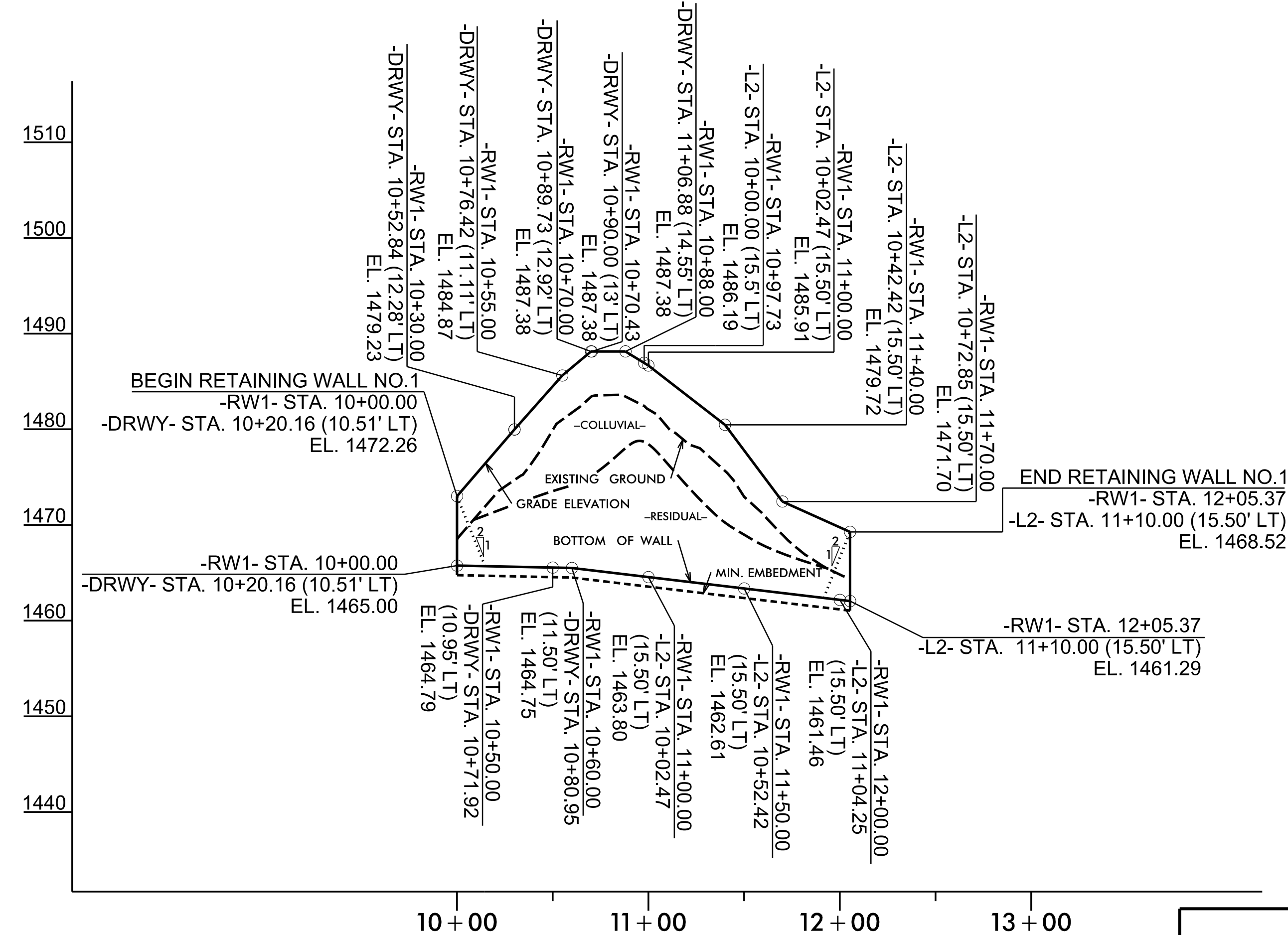


# RETAINING WALL NO. 1



## RETAINING WALL NO.1 – PLAN

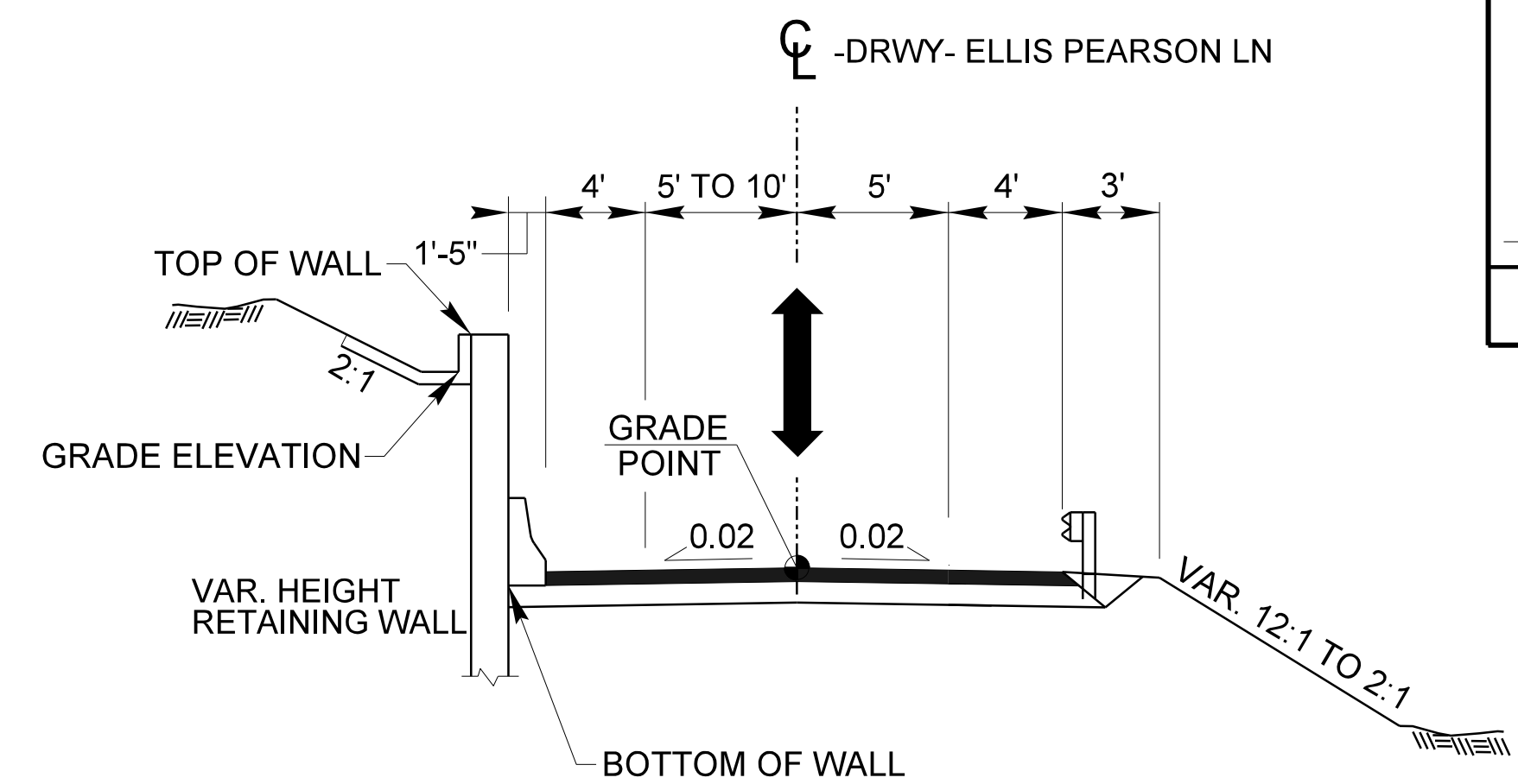
NOT TO SCALE



## RETAINING WALL NO.1 – PROFILE

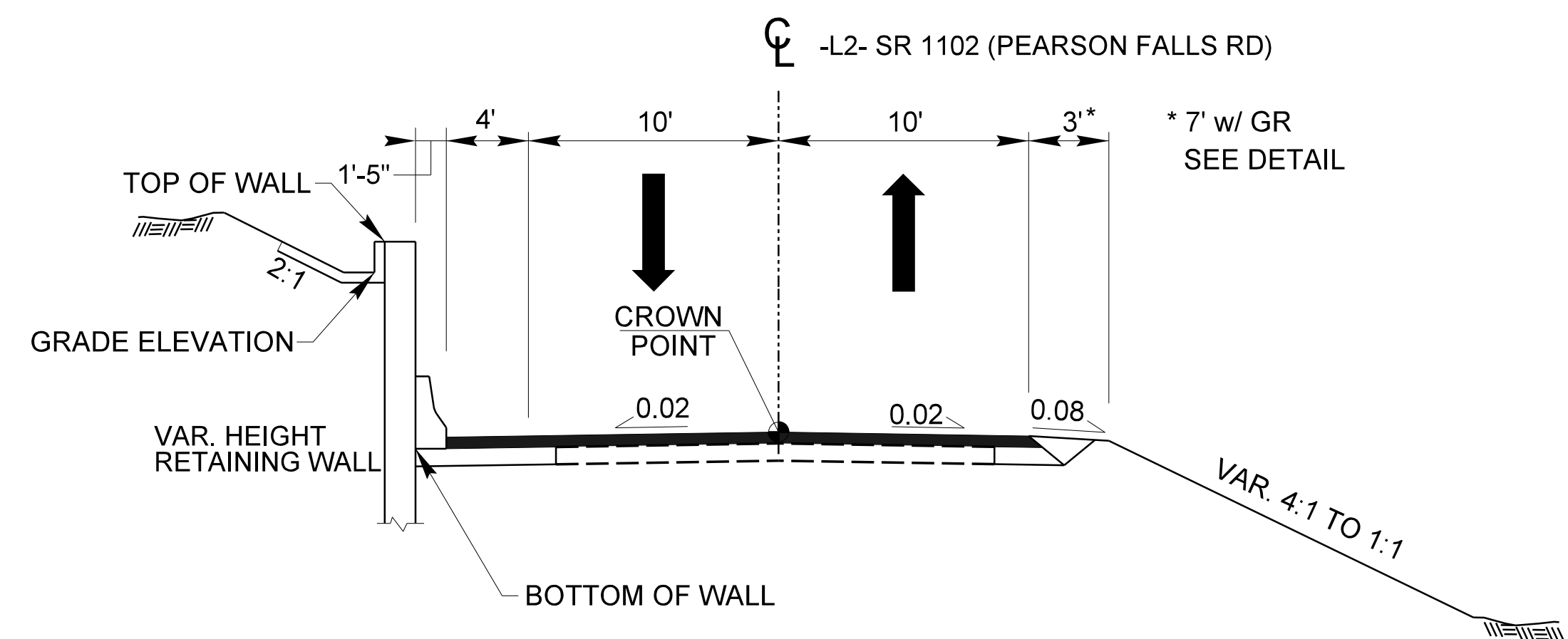
NOT TO SCALE  
(LOOKING AT FACE OF WALL)

PREPARED BY: KND	DATE: 07/25	RETAINING WALL NO.1 ENVELOPE AND WALL LAYOUT PROVIDED BY VHB 06/1/25.
REVIEWED BY: REK	DATE: 07/25	



### PARTIAL TYPICAL SECTION RETAINING WALL NO. 1

-RW1- STA. 10+00.00 TO 10+97.73  
-DRWY- STA. 10+20.00 TO 11+16.46



### PARTIAL TYPICAL SECTION RETAINING WALL NO. 1

-RW1- STA. 10+97.73 TO 12+05.37  
-L2- STA. 10+00.00 TO 11+10.00

STATION	GRADE ELEVATION (FT)	BOTTOM OF WALL ELEVATION (FT)	MIN. EMBEDMENT (FT)	TOP OF LEVELING PAD ELEVATION (FT)	WALL DESIGN HEIGHT, "H" (FT)
-DRWY- 10+20.16, LT	1472.26	1465.00	1.00	1464.00	8.26
-DRWY- 10+71.92, LT	1483.74	1464.79	1.00	1463.79	19.95
-L2- 10+02.47, LT	1485.91	1463.80	1.00	1462.80	23.11
-L2- 10+52.42, LT	1477.05	1462.61	1.00	1461.61	15.44
-L2- 11+04.25, LT	1469.00	1461.46	1.00	1460.46	8.54
-L2- 11+10.00, LT	1468.52	1461.29	1.00	1460.29	8.23

PROJECT NO.: BP14.R038

POLK COUNTY

STATION:-RW1- STA. 10+00.00 TO 12+05.37

SHEET 1 OF 2

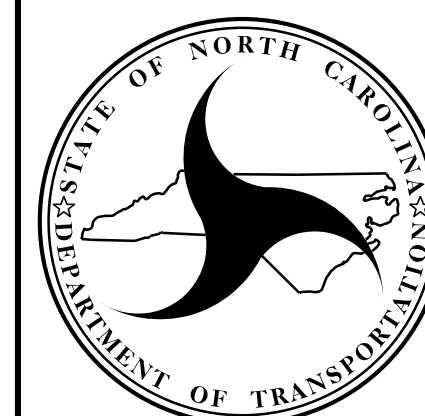
REVISIONS						SHEET NO.  W-1
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

EET  
O.  
y-1

*Prepared in the Office of:*

 **CARLINUS  
GEOTECHNICAL  
GROUP**

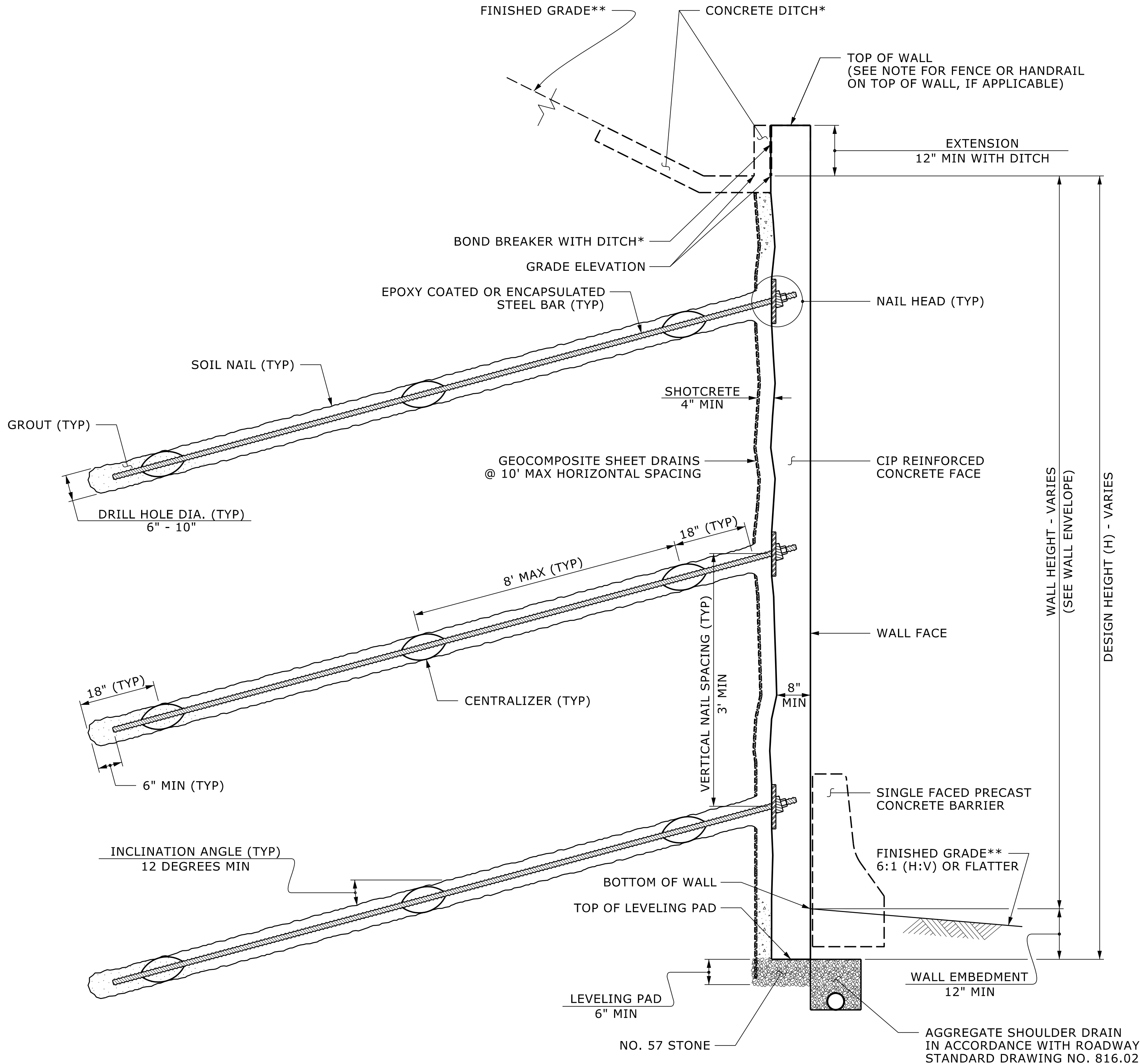
**1805 SARDIS ROAD NORTH  
SUITE 100  
CHARLOTTE, NC 28270  
(980) 339-8684**



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

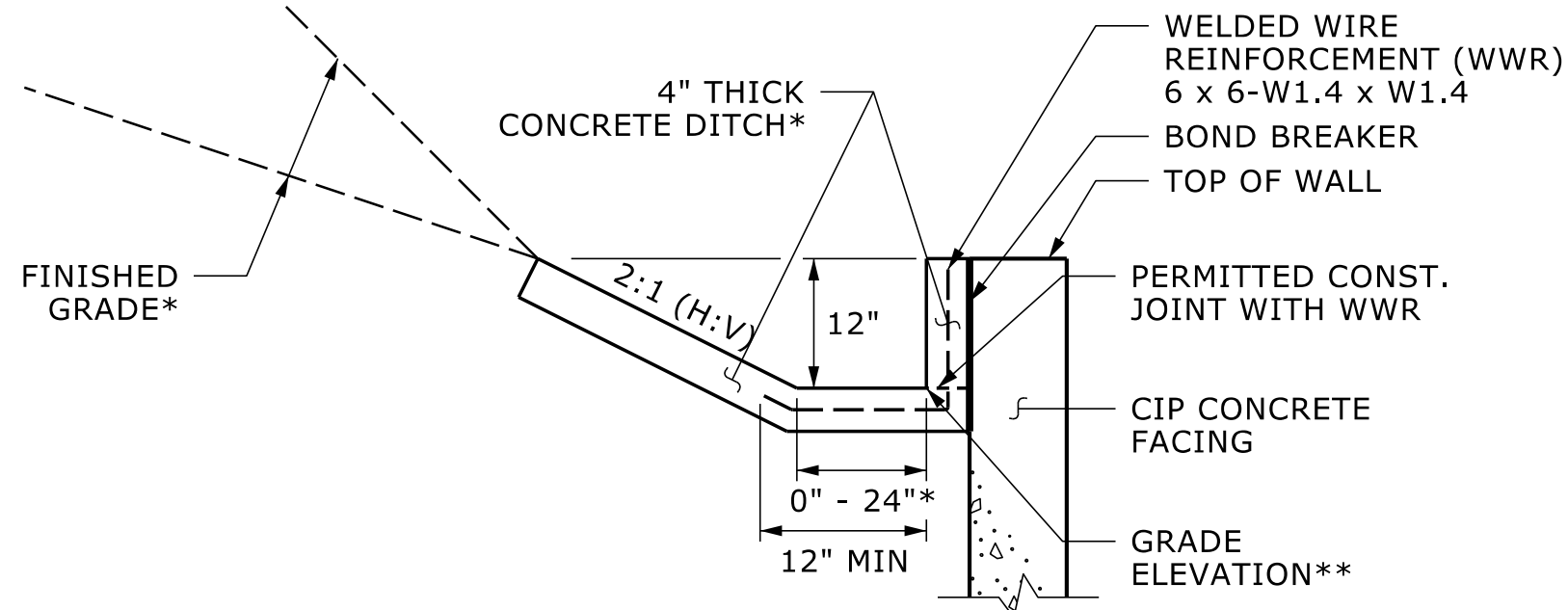
GEOTECHNICAL  
ENGINEERING UNIT





SOIL NAIL WALL - TYPICAL SECTION

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



CONCRETE DITCH BEHIND  
WALL WITH CONCRETE FACING

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

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.

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.

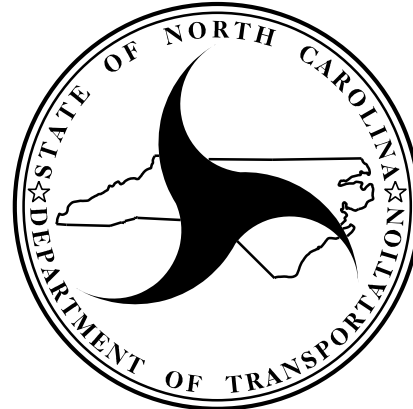
- DESIGN RETAINING WALL NO. 1 FOR THE FOLLOWING:
- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
  - 2) DESIGN LIFE = 75 YEARS
  - 3) MINIMUM WALL EMBEDMENT DEPTH = 1 FT
  - 4) MINIMUM NAIL LENGTH = 1.2H OR 10 FEET, WHICHEVER IS LONGER
  - 5) IN-SITU ASSUMED MATERIAL PARAMETERS:
    - IN COLLUVIAL:
      - UNIT WEIGHT,  $\gamma$  = 110 PCF
      - FRICTION ANGLE,  $\phi$  = 26 DEGREES
      - COHESION,  $c$  = 0 PSF
    - IN RESIDUAL:
      - UNIT WEIGHT,  $\gamma$  = 120 PCF
      - FRICTION ANGLE,  $\phi$  = 32 DEGREES
      - COHESION,  $c$  = 0 PSF
    - IN WEATHERED ROCK:
      - UNIT WEIGHT,  $\gamma$  = 135 PCF
      - FRICTION ANGLE,  $\phi$  = 32 DEGREES
      - COHESION,  $c$  = 500 PSF
    - IN CRYSTALLINE ROCK:
      - UNIT WEIGHT,  $\gamma$  = 170 PCF
      - FRICTION ANGLE,  $\phi$  = 34 DEGREES
      - COHESION,  $c$  = 1,000 PSF

SOIL NAIL WALL CONSTRUCTION WILL REQUIRE GROUND TO BE CREATED TO REACH TOP OF WALL AT SOME LOCATIONS WITHIN THE WALL ENVELOPE. CONSTRUCTION OF THE CREATED GROUND SHOULD BE ACCOUNTED FOR IN THE SOIL NAIL WALL DESIGN.

ESTIMATED SOIL NAIL WALL QUANTITIES			
RETAINING WALL NO.	SOIL NAIL RETAINING WALLS (SQUARE FEET)	SOIL NAIL VERIFICATION TESTS	SOIL NAIL PROOF TESTS
1	3,450	2 EA	7 EA

PREPARED BY: KND	DATE: 07/25
REVIEWED BY: REK	DATE: 07/25

Prepared in the Office of:  
 **CAROLINAS  
GEOTECHNICAL  
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PROJECT NO.: BP14.R038  
POLK COUNTY  
STATION: -RW1- STA. 10+00.00 TO 12+05.37  
SHEET 2 OF 2

SOIL NAIL RETAINING WALL NO. 1  
NOTES AND DETAILS

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