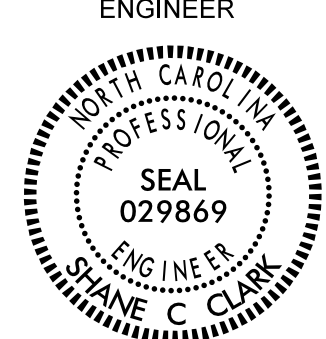


GEOTECHNICAL ENGINEER

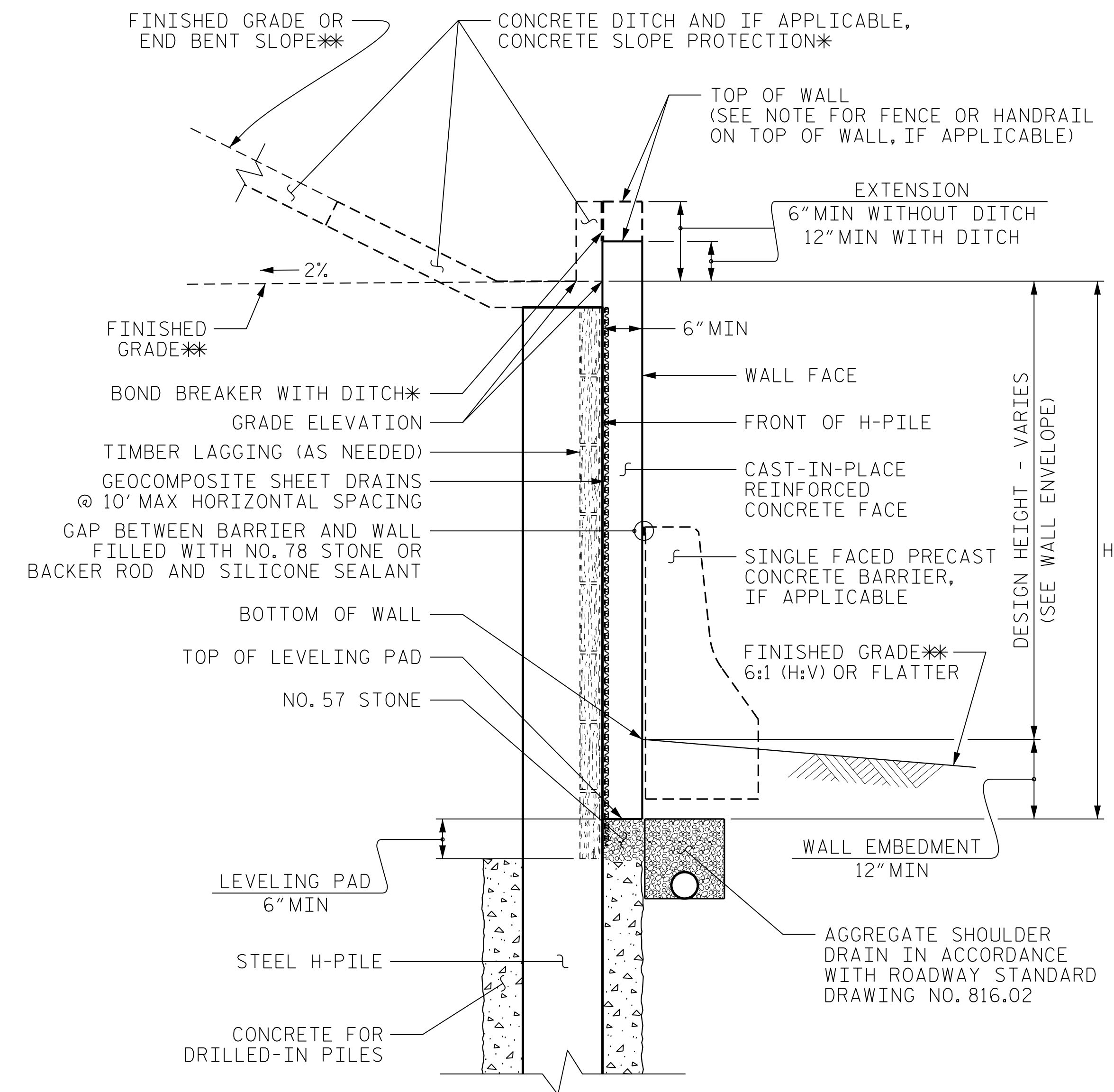


ENGINEER

DocuSigned by:
Shane C. Clark 6/2/2021

DATE SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



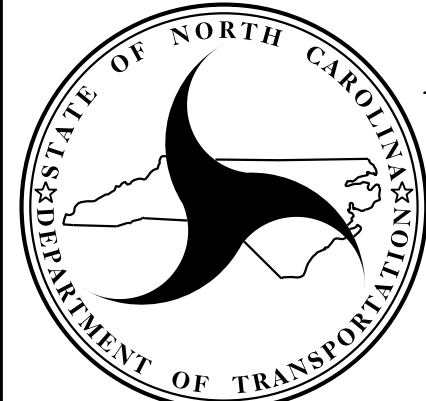
**SOLDIER PILE WALL WITH
CAST-IN-PLACE FACE - TYPICAL SECTION**

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

NOTES:

- FOR SOLDIER PILE RETAINING WALLS, SEE SOLDIER PILE RETAINING WALLS PROVISION.
FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.
- DRILLED-IN H-PILES ARE REQUIRED FOR RETAINING WALL NO. 1.
USE A SOLDIER PILE RETAINING WALL WITH A CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 1.
- AN ASHLAR ARCHITECTURAL FINISH IS REQUIRED FOR THE CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 1. INCLUDE UP TO 2" OF NON STRUCTURAL CONCRETE TO ALLOW FOR SURFACE TREATMENTS.
- BEFORE BEGINNING SOLDIER PILE 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.
- THE WALL HAS A PROPOSED ENDING HEIGHT OF 8' +/- . BASED ON FIELD OBSERVATIONS THIS OCCURS AT A ROCK OUTCROP. TURN THE WALL BACK INTO THE SLOPE AS DIRECTED BY THE ENGINEER.
- DESIGN RETAINING WALL NO. 1 FOR THE FOLLOWING:
- 1) H = DESIGN HEIGHT + WALL EMBEDMENT
 - 2) DESIGN LIFE = 75 YEARS
 - 3) MINIMUM WALL EMBEDMENT ELEVATION = 2 FT
 - 4) MINIMUM PILE PENETRATION INTO ROCK = 10 FT
 - 5) IN-SITU ASSUMED MATERIAL PARAMETERS ABOVE ELEVATION 2760 FT:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
 - 6) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION 2760 FT:
UNIT WEIGHT, $\gamma = 140$ LB/CF
FRICTION ANGLE, $\phi = 36$ DEGREES
COHESION, $c = 4,000$ LB/SF
 - 7) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION 2760 FT:
ROCK MASS SHEAR STRENGTH, $S_m = 8,000$ LB/SF

PREPARED BY: SY	DATE: 9/19/2019
REVIEWED BY: SCC	DATE: 5/20/2021



**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

PROJECT NO.: 37512.1.4 (R-2566BA)
WATAUGA
STATION: 19+35.15 -Y5- TO 21+39.07 -Y5-
SHEET 2 OF 2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			W2
2			4			