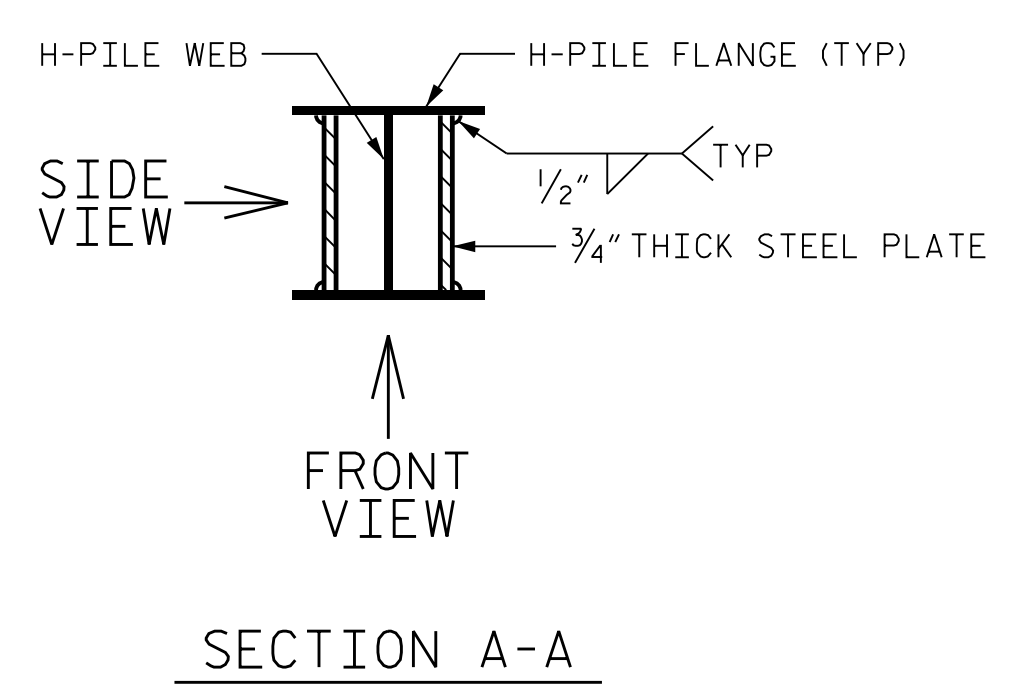
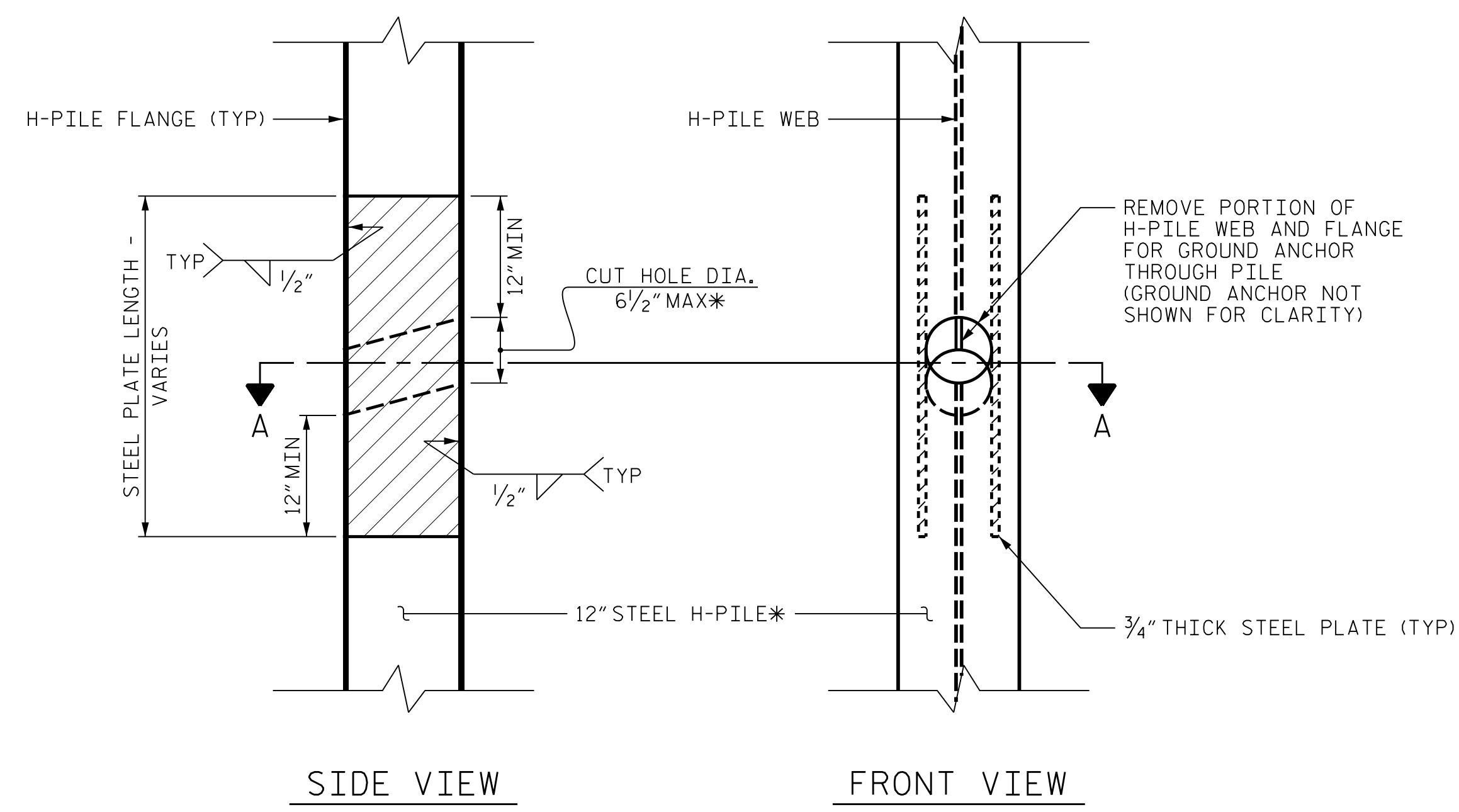


GEOTECHNICAL ENGINEER

Kenneth R. Bussey, Jr.      3/31/2022  
SIGNATURE      DATE

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

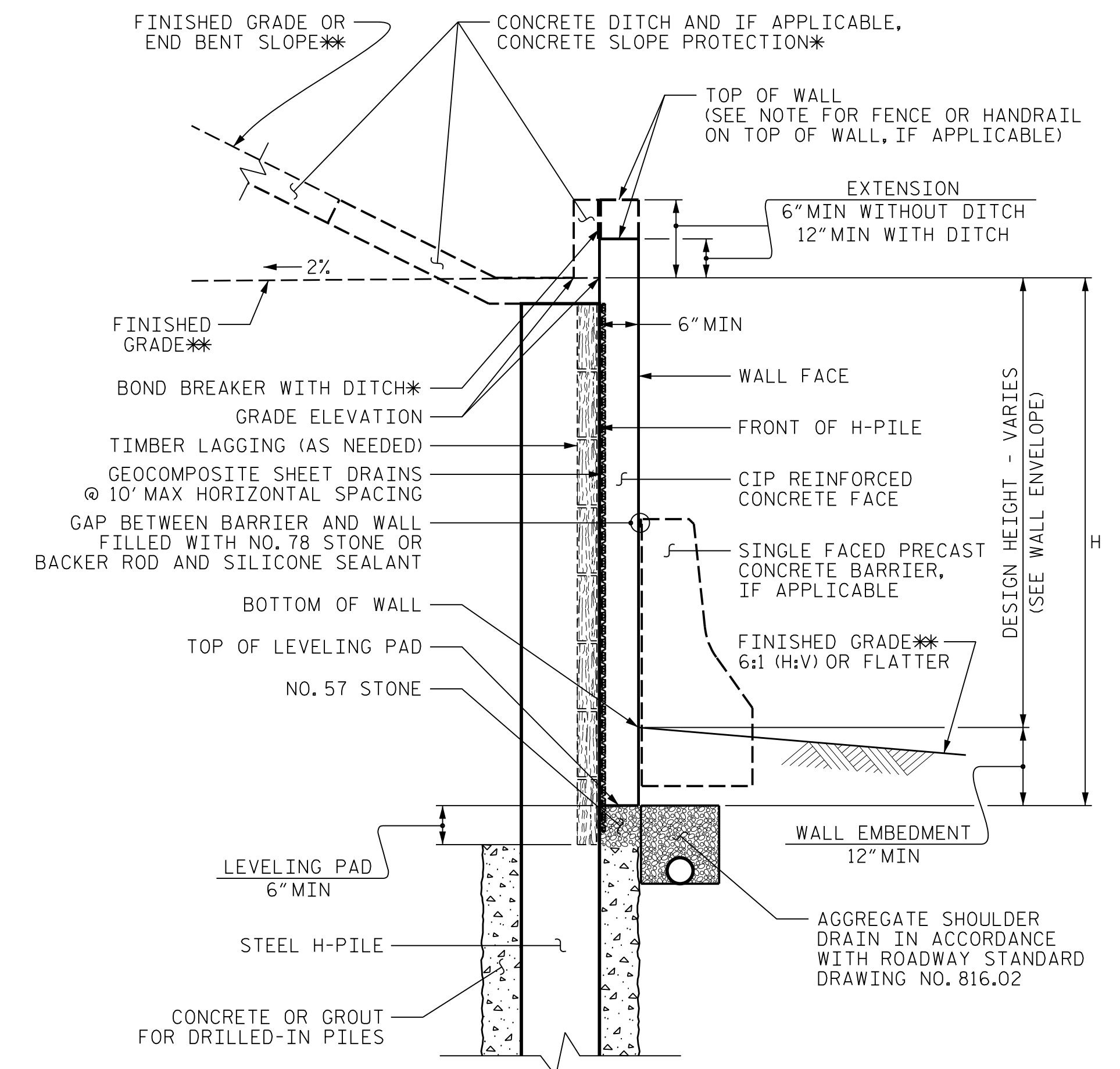
**HDR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116



\*DETAILS SHOWN ARE FOR 12" H-PILES WITH 6" DIA. GROUND ANCHORS. FOR DIFFERENT DIAMETER ANCHORS, SUBMIT ALTERNATE REINFORCED WEB DETAILS FOR ACCEPTANCE.

**NOTES:**

- FOR SOLDIER PILE RETAINING WALLS, SEE SOLDIER PILE RETAINING WALLS PROVISION.
- FOR ANCHORED RETAINING WALLS, SEE ANCHORED RETAINING WALLS PROVISION.
- ANCHORED WALLS ARE ANTICIPATED FROM WALL STATION 31+75 TO STATION 35+50 AND STATION 41+50 TO STATION 44+60.
- FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.
- A FENCE OR HANDRAIL IS REQUIRED ON TOP OF RETAINING WALL NO. 4. SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS.
- DRILLED-IN H-PILES ARE REQUIRED FOR RETAINING WALL NO. 4. THERE IS THE POTENTIAL FOR SHALLOW WEATHERED ROCK/CRYSTALLINE ROCK AT SOME LOCATIONS AND DRILLED-IN PILES MAY BE REQUIRED.
- USE A SOLDIER PILE RETAINING WALL WITH A CIP REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 4.
- BEFORE BEGINNING SOLDIER PILE WALL AND ANCHORED WALL, IF NECESSARY, DESIGN FOR RETAINING WALL NO. 4, 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. 4 FOR THE FOLLOWING:
  - 1) H = DESIGN HEIGHT + WALL EMBEDMENT
  - 2) DESIGN LIFE = 100 YEARS
  - 3) IN-SITU AND FILL ASSUMED MATERIAL PARAMETERS:
    - UNIT WEIGHT,  $\gamma = 120$  PCF
    - FRICTION ANGLE,  $\phi = 30$  DEGREES
    - COHESION,  $c = 0$  PSF
- DESIGN RETAINING WALL NO. 4 FOR PIPES EXTENDING UNDER OR THROUGH THE WALL AS SHOWN. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING SOLDIER PILE WALL DESIGN OR CONSTRUCTION.



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

PLOT DRIVER: NCDOT\_color\_eng\_50.plt      DATE: 3/31/2022  
 USER: PPETERSON      TIME: 12:16:05 PM  
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REVISIONS