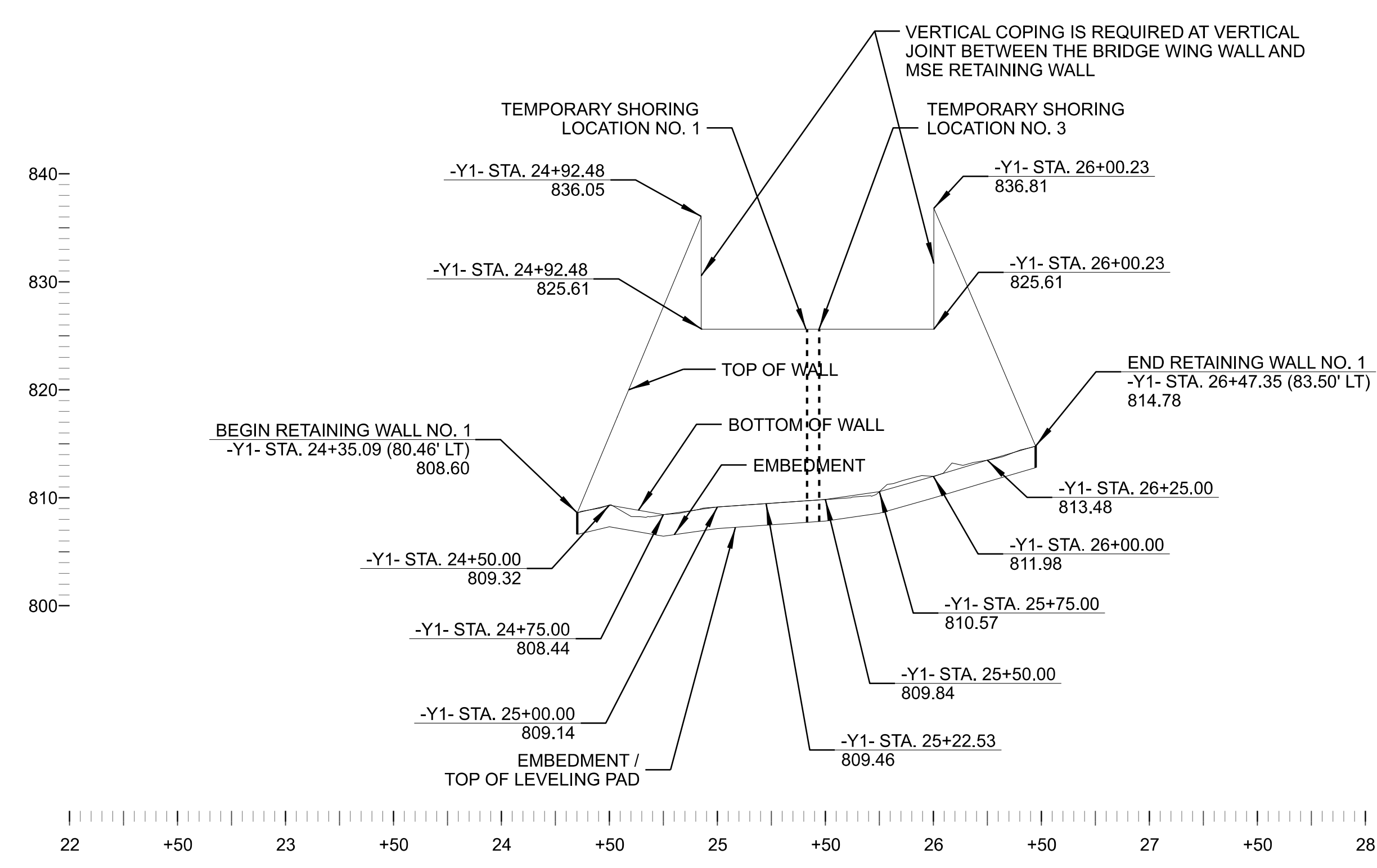


MSE RETAINING WALL NO. 1
TYPICAL CROSS SECTION

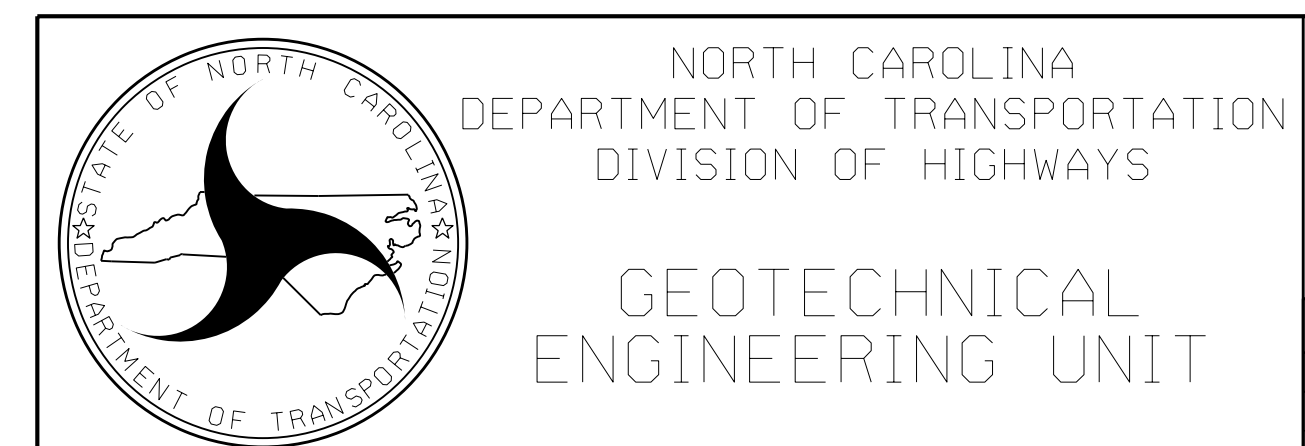


MSE RETAINING WALL NO. 1
ENVELOPE VIEW

ESTIMATED MSE WALL QUANTITIES (SQUARE FEET)	
MSE RETAINING WALL NO. 1	3,460 SF

ESTIMATED ARCHITECTURAL FACING QUANTITY (SQUARE FEET)	
MSE RETAINING WALL NO. 1	3,460 SF

PROJECT NO.: BR-0168
FOSYTH COUNTY
STATION: -Y1- STA. 24+35.09
SHEET 1 OF 5 BRIDGE NO. 289



MSE ABUTMENT
RETAINING WALL NO. 1
END BENT NO. 1
PLAN AND ENVELOPE VIEWS

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

SHEET NO. W-1

GEOTECHNICAL ENGINEER

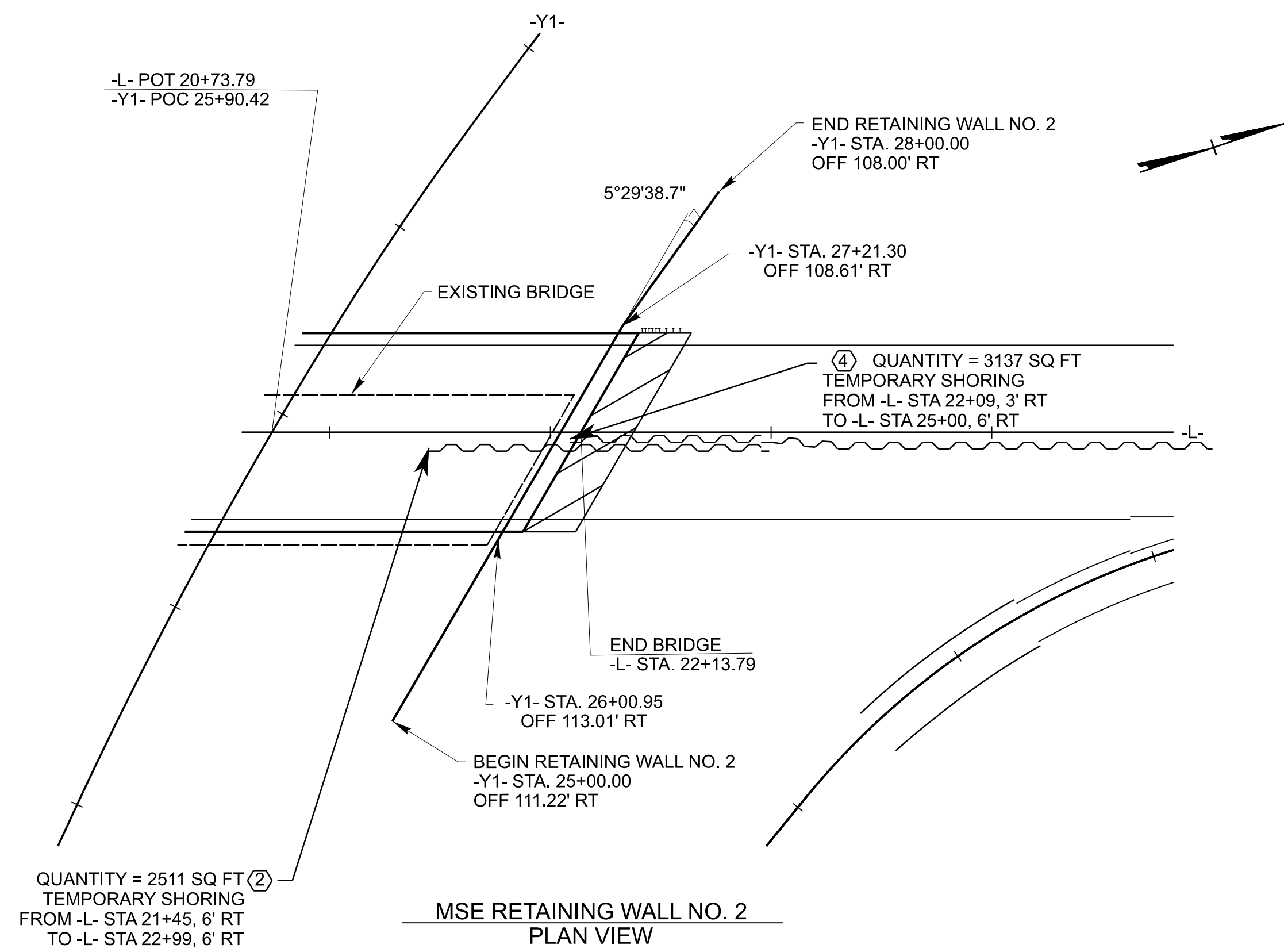
ENGINEER

SEAL 028893

Signed by: *[Signature]* DATE: 11/21/2025

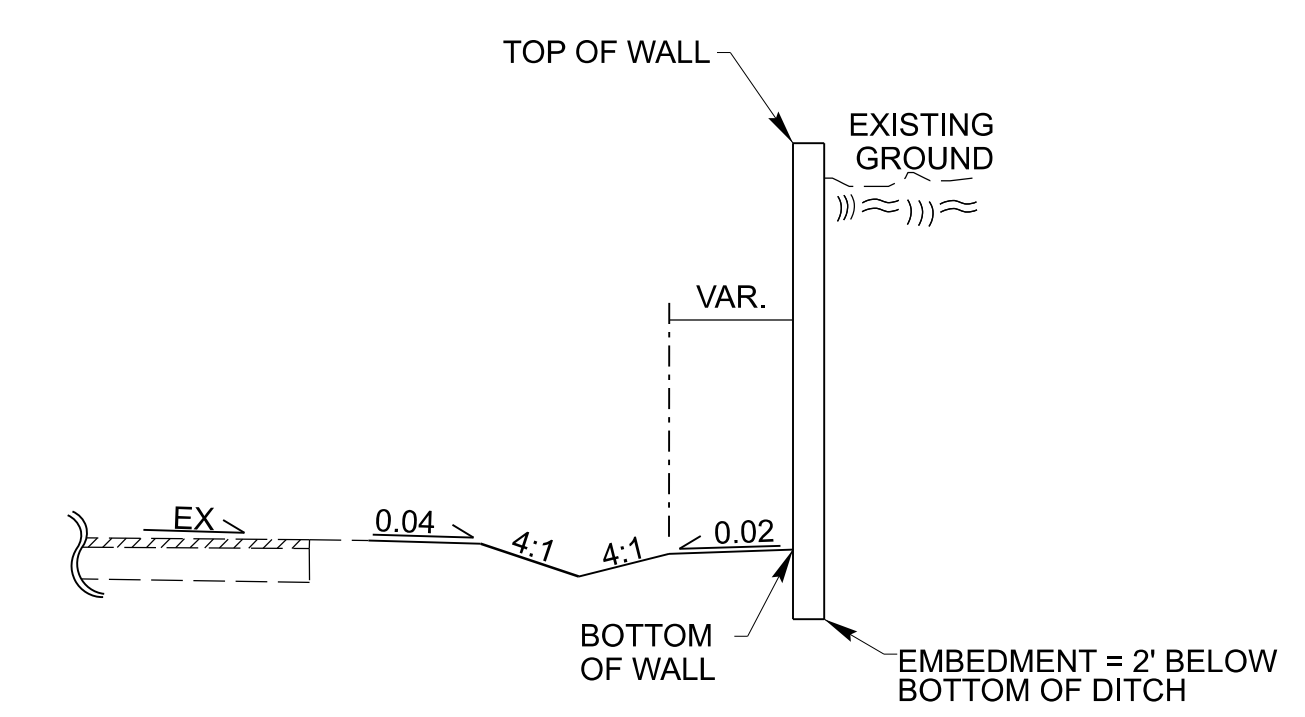
C447902921400 SIGNATURE DATE SIGNATURE DATE

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



ESTIMATED MSE WALL QUANTITIES
(SQUARE FEET)

MSE RETAINING WALL NO. 2	5,800 SF
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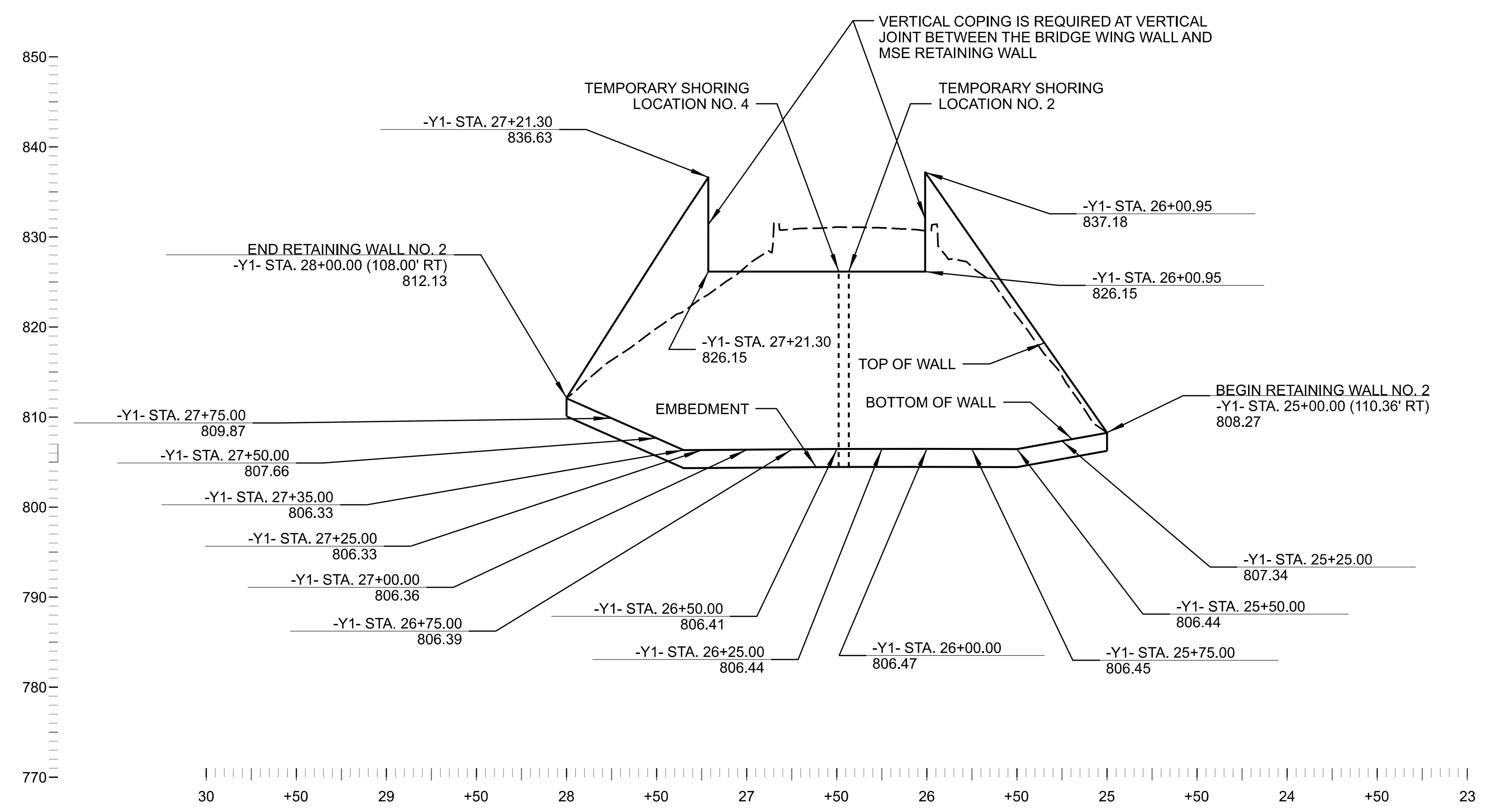


ESTIMATED MSE WALL QUANTITIES
(SQUARE FEET)

MSE RETAINING WALL NO. 2	5,800 SF
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ESTIMATED ARCHITECTURAL FACING QUANTITY
(SQUARE FEET)

MSE RETAINING WALL NO. 2	5,800 SF
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PROJECT NO.: BR-0168
 FOSYTH COUNTY
 STATION: -Y1- STA. 25+00.00
 SHEET 2 OF 5 BRIDGE NO. 289

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

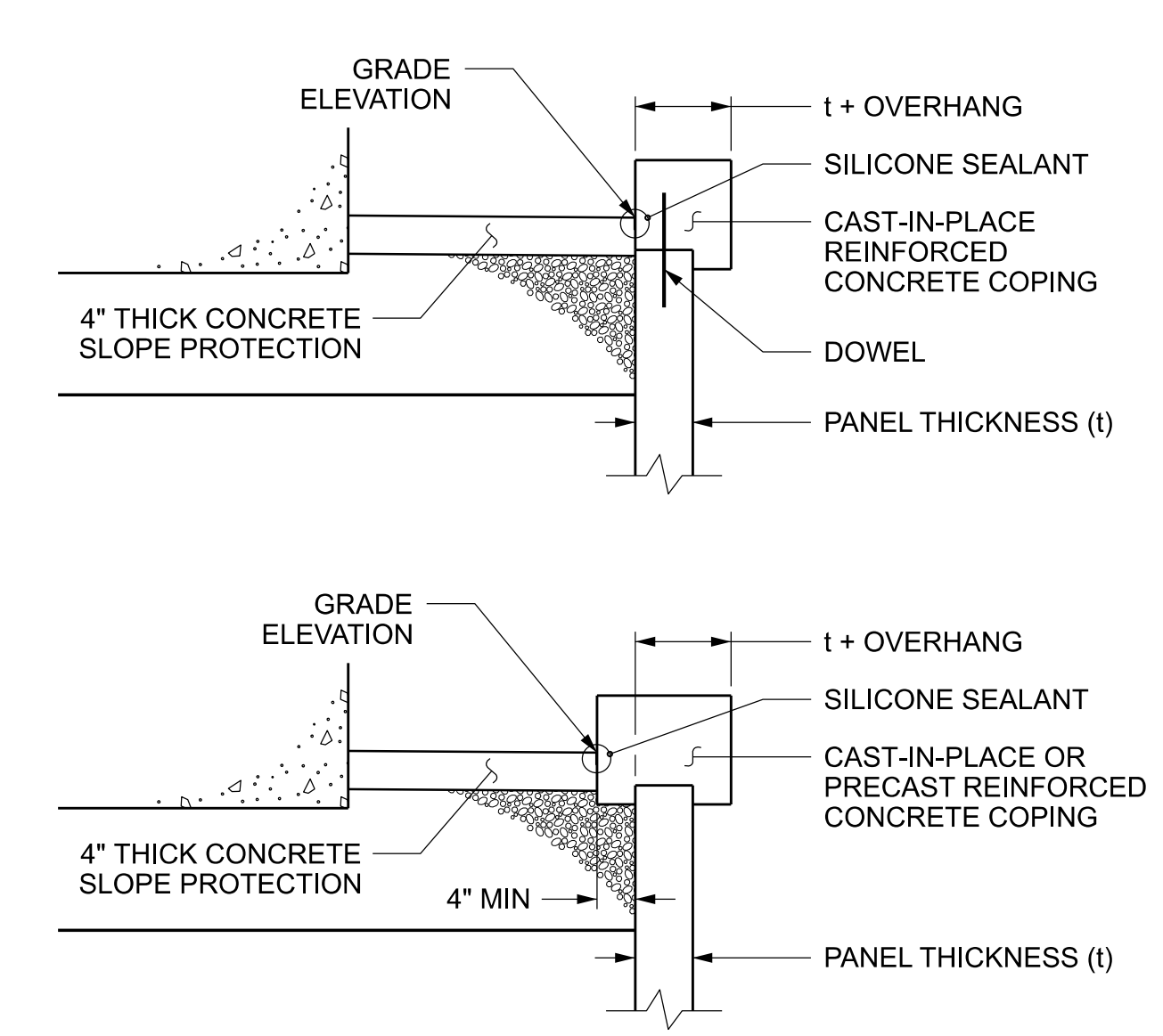
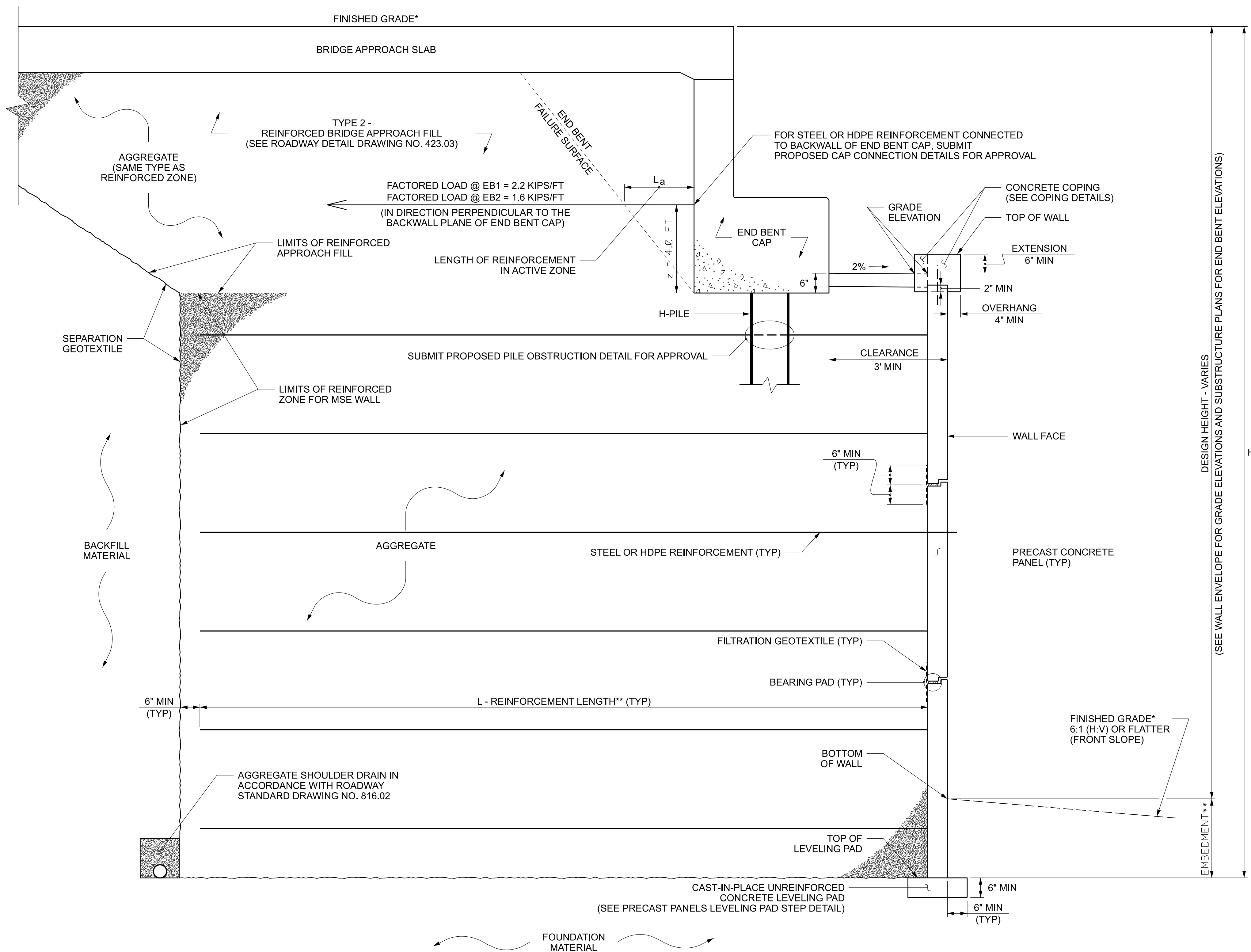
GEOTECHNICAL ENGINEERING UNIT

MSE ABUTMENT RETAINING WALL NO. 2 END BENT NO. 2 PLAN AND ENVELOPE VIEWS

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

SHEET NO. W-2

PREPARED BY: MHS DATE: 11/25
 REVIEWED BY: SCC DATE: 11/25



COPING DETAILS
 AT THE CONTRACTOR'S OPTION, CONNECT COPING TO PANELS WITH DOWELS OR EXTEND COPING DOWN BACK OF PANELS.

MSE ABUTMENT WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
 **SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE.
 MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

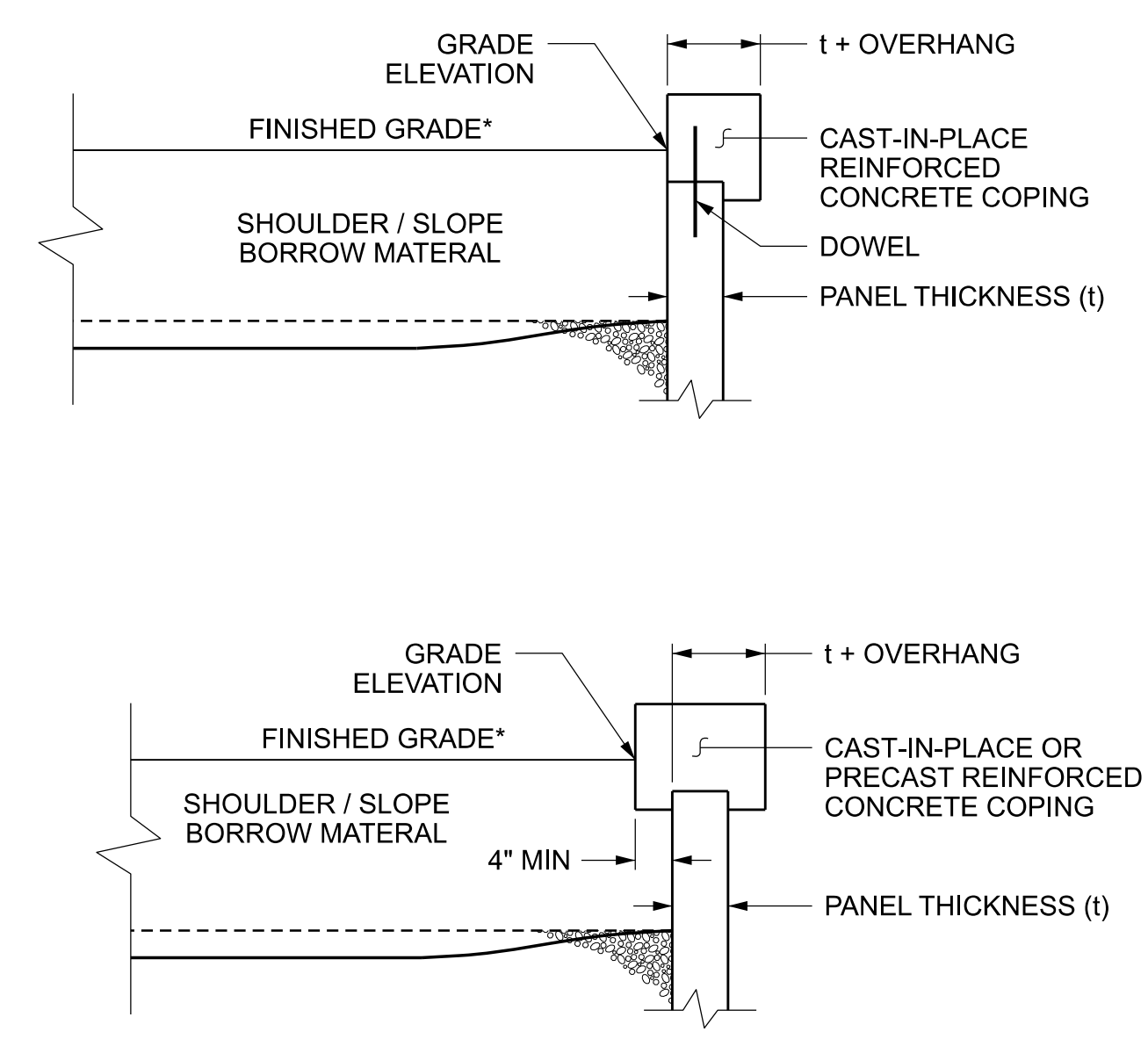
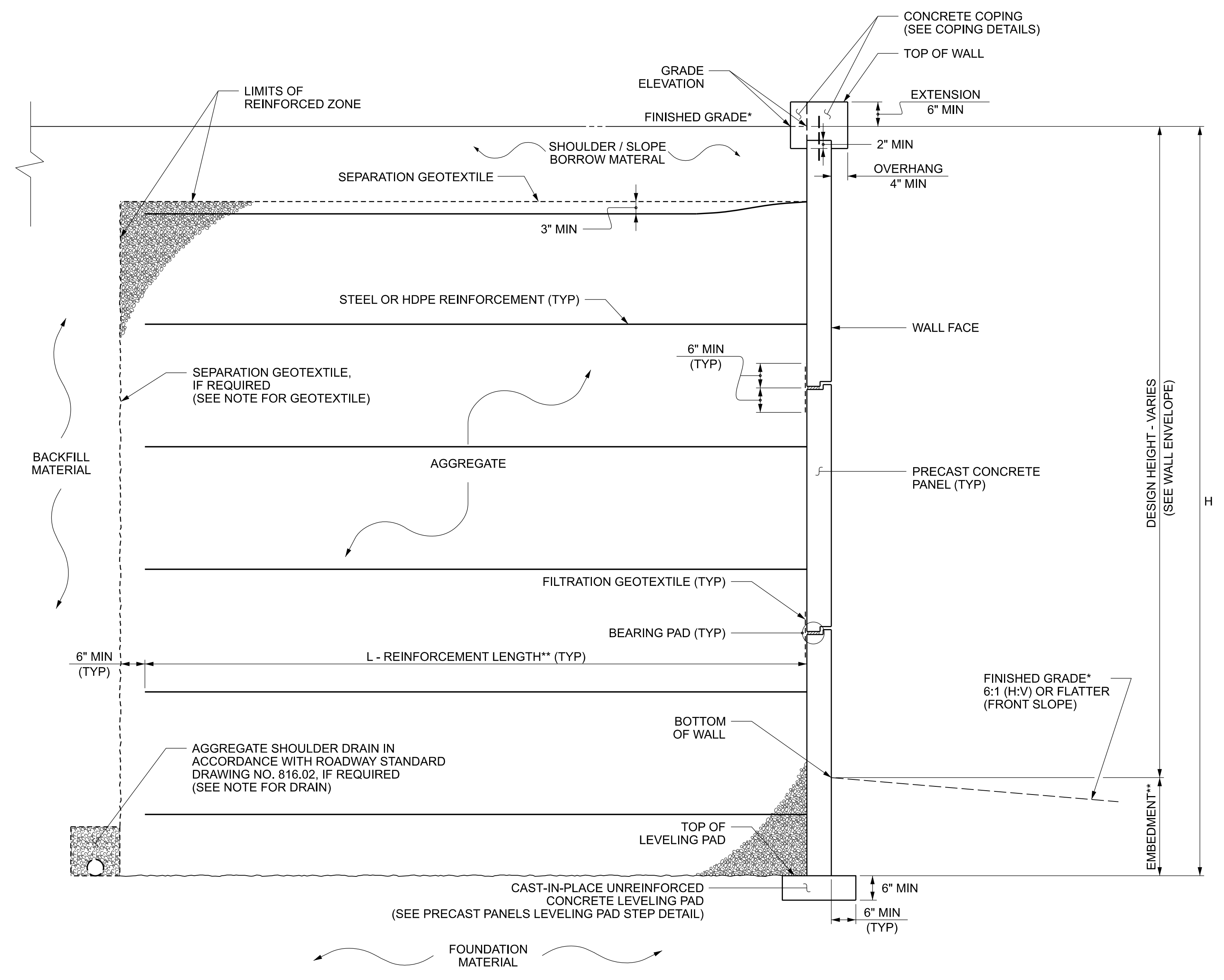
PROJECT NO.: BR-0168
 FOSYTH COUNTY
 STATION: -Y1- STA. 24+35/25+00
 SHEET 3 OF 5 BRIDGE NO. 289

NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GEOTECHNICAL
 ENGINEERING UNIT

MSE ABUTMENT RETAINING WALLS TYPICAL SECTION AND COPING DETAILS

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

SHEET NO. W-3

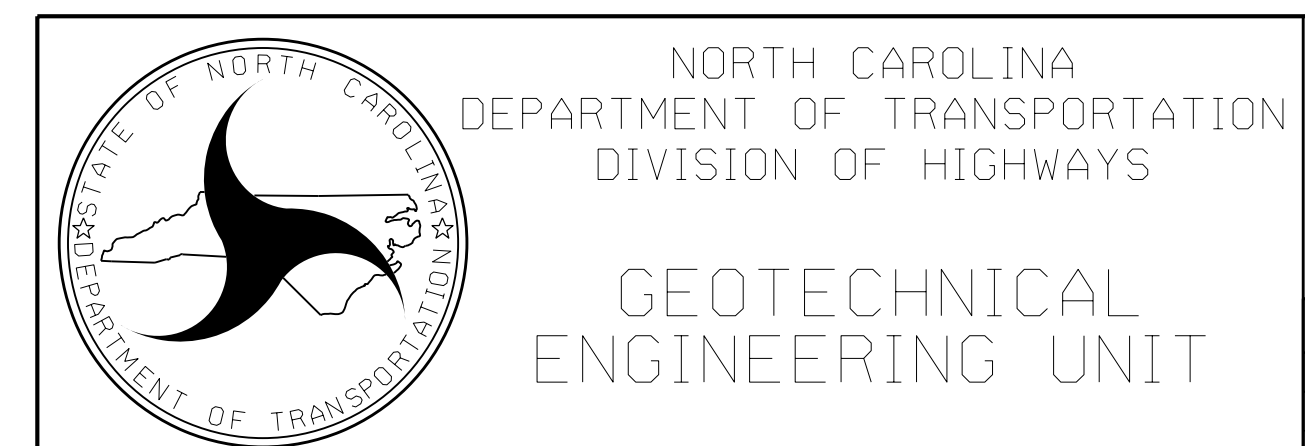


COPING DETAILS
AT THE CONTRACTOR'S OPTION, CONNECT COPING TO PANELS WITH DOWELS OR EXTEND COPING DOWN BACK OF PANELS.
*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
**SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

PROJECT NO.: BR-0168
FOSYTH COUNTY
STATION: -Y1- STA. 24+35/25+00
SHEET 4 OF 5 BRIDGE NO. 289



MSE ABUTMENT
RETAINING WALLS
TYPICAL SECTION
AND COPING DETAILS

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

SHEET NO. W-4

PREPARED BY: MHS	DATE: 11/25
REVIEWED BY: SCC	DATE: 11/25

NOTES:

- FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.
- FOR TYPE 2 REINFORCED BRIDGE APPROACH FILL, SEE BRIDGE APPROACH FILLS PROVISION AND ROADWAY DETAIL DRAWING NO. 423.03.
- AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NOS. 1 AND 2.
- AN ARCHITECTURAL SURFACE TREATMENT FINISH IS REQUIRED FOR PRECAST CONCRETE PANELS FOR RETAINING WALL NOS. 1 AND 2.
- VERTICAL COPING IS REQUIRED AT THE VERTICAL JOINT BETWEEN THE BRIDGE WING WALL AND MSE RETAINING WALL.
- A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NOS. 1 AND 2.
- A DRAIN IS REQUIRED FOR RETAINING WALL NOS. 1 AND 2.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NOS. 1 AND 2, 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. FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 4,500 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7H OR 6 FT, WHICHEVER IS LONGER
- 5) MINIMUM EMBEDMENT ELEVATION = 2 FT BELOW BOTTOM OF DITCH OR 2FT, WHICHEVER IS DEEPER
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT (g) PCF	FRICTION ANGLE (f) DEGREES	COHESION (c) PSF
COARSE	110	38	0
FINE	115	34	0

*SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (g) PCF	FRICTION ANGLE (f) DEGREES	COHESION (c) PSF
BACKFILL	120	30	0
FOUNDATION	120	30	0

DESIGN RETAINING WALL NOS. 1 AND 2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

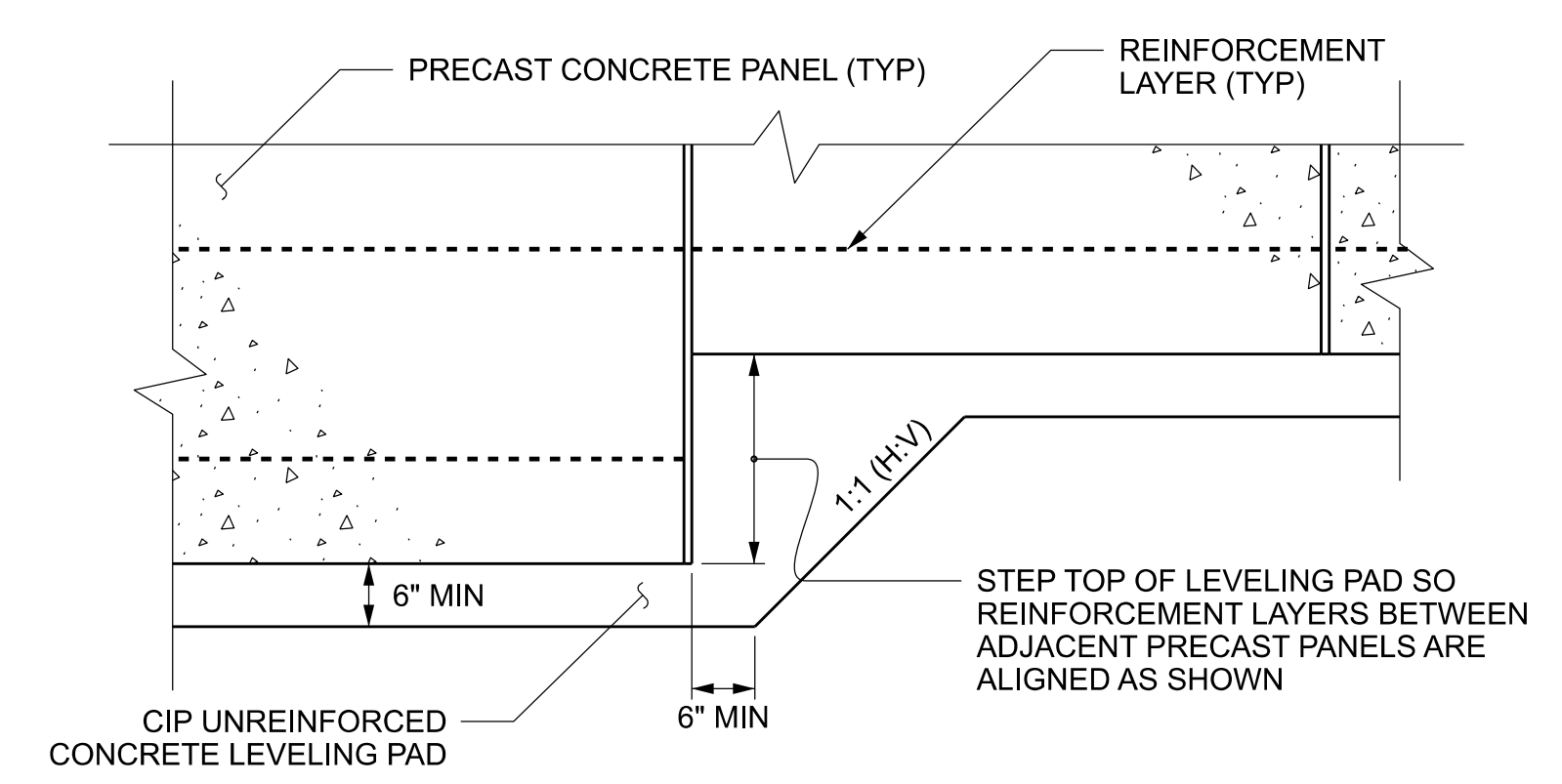
DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE (L_a) SHOWN. CAST REINFORCEMENT OR CONNECTORS INTO CAP BACKWALL FOR END BENT NO. 1 LOCATED AT STATION 19+73.79 -L- AND END BENT NO. 2 AT STATION 22+13.79 -L-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NOS. 1 AND 2.

FOUNDATIONS FOR END BENT NO. 1 LOCATED AT STATION 19+73.79 -L- AND END BENT NO. 2 AT STATION 22+13.79 -L- WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NOS. 1 AND 2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 1 AND 2 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

TEMPORARY SHORING IS REQUIRED FOR RETAINING WALL NOS. 1 AND 2 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE STRUCTURES AND TRAFFIC CONTROL PLANS.



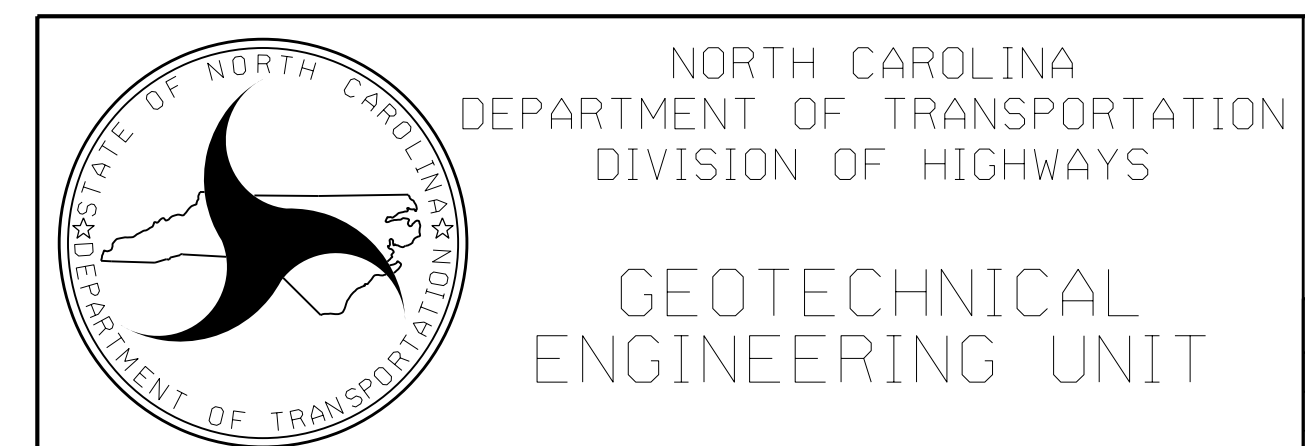
PRECAST PANELS LEVELING PAD STEP DETAIL

PROJECT NO.: BR-0168

FOSYTH COUNTY

STATION: -Y1- STA. 24+35/25+00

SHEET 5 OF 5 BRIDGE NO. 289



RETAINING MSE ABUTMENT RETAINING WALLS NOTES AND LEVELING PAD DETAIL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	-	-	3	-	-	W-5
2	-	-	4	-	-	

PREPARED BY: MHS	DATE: 11/25
REVIEWED BY: SCC	DATE: 11/25