

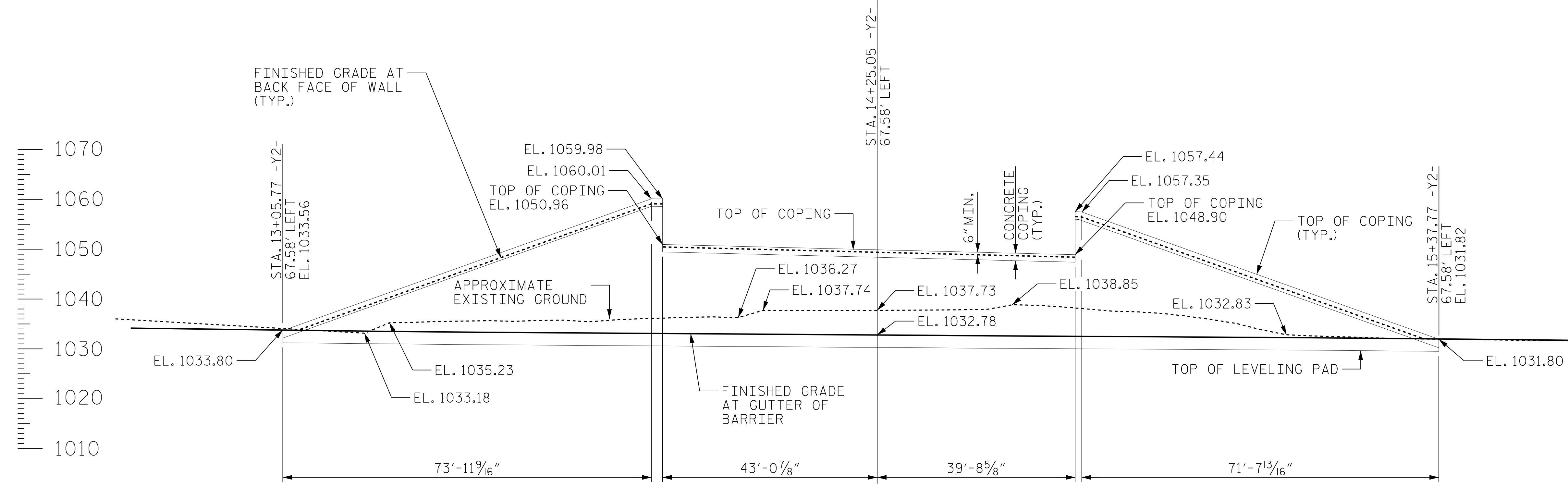
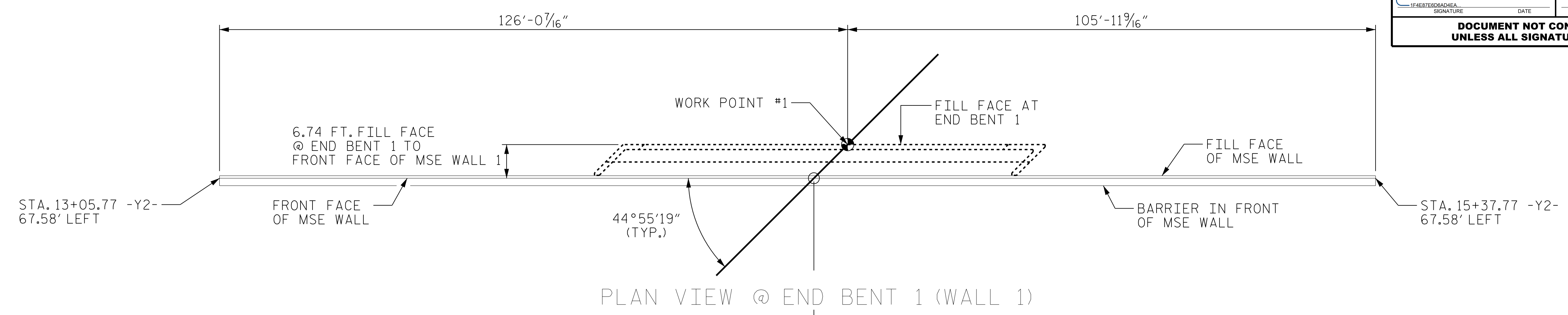
GEOTECHNICAL ENGINEER

DocuSigned by:
Shane C. Clark
4/27/2020

ENGINEER

SIGNATURE DATE

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MSE WALL QUANTITY (SQUARE FEET)	
MSE RETAINING WALL NO. 1	3,850 SF
* EST. QTY INCLUDES 2 FT EMBEDMENT	

PROJECT NO.: 67047 (BR-0047)
 STOKES COUNTY
 STATION: 13+57.28 -Y2-
 SHEET 1 OF 5

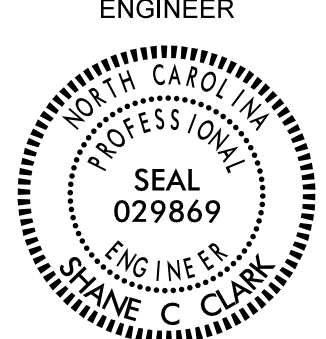
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DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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REVIEWED BY: ENW	DATE: 4/24/20

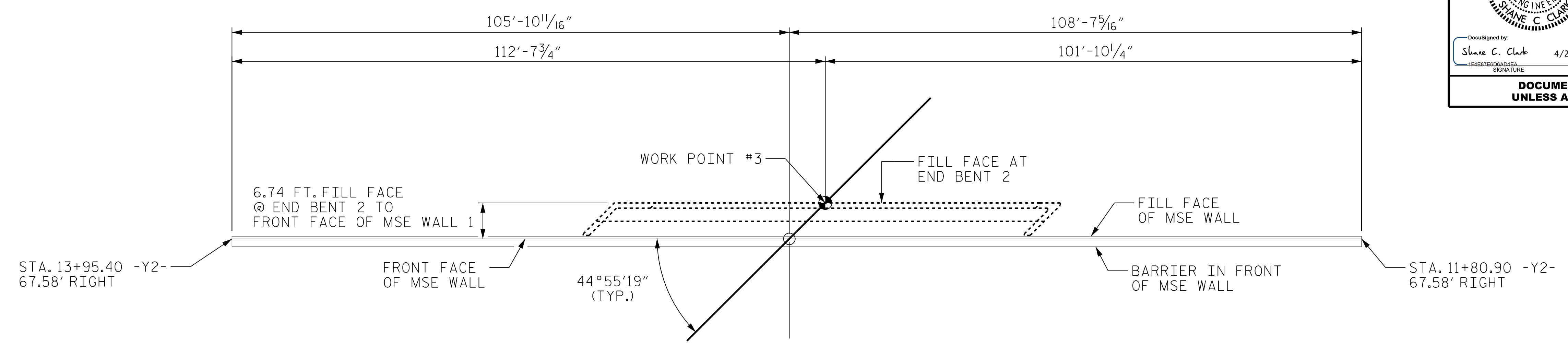
GEOTECHNICAL ENGINEER



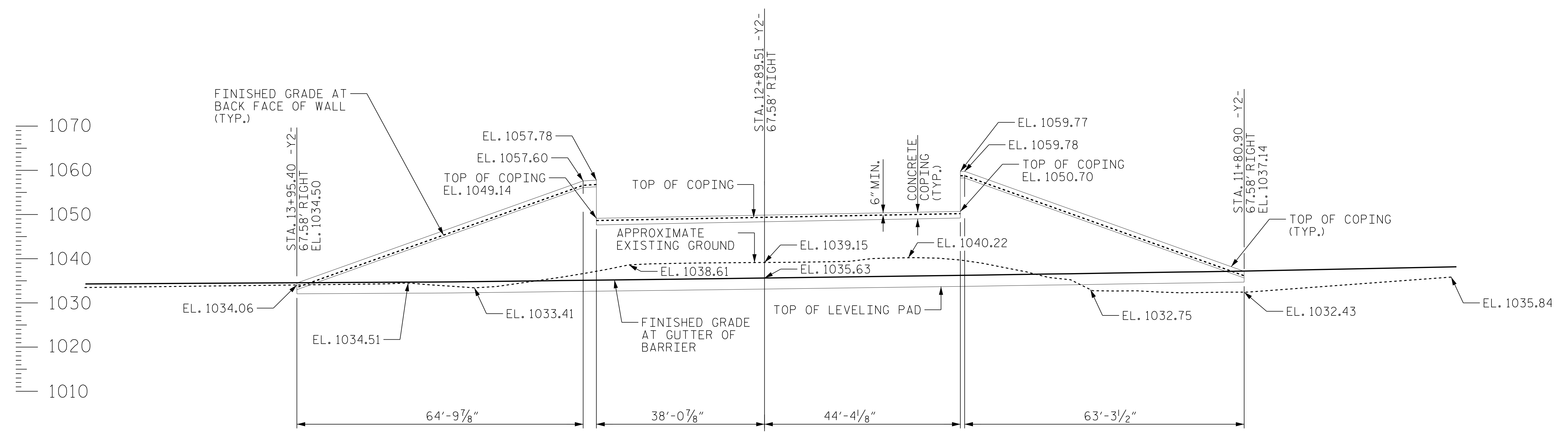
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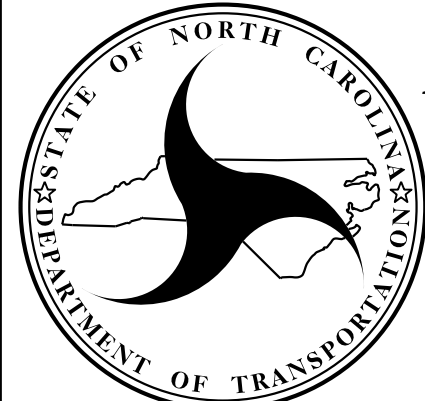
PLAN VIEW @ END BENT 2 (WALL 2)



EXPOSED WALL FACE ENVELOPE - RETAINING WALL NO. 2 @ END BENT 2
(LOOKING AHEAD STATION, BACKWALL AND WINGWALL NOT SHOWN FOR CLARITY)

MSE WALL QUANTITY (SQUARE FEET)	
MSE RETAINING WALL NO. 2	3,114 SF
* EST. QTY INCLUDES 2 FT EMBEDMENT	

PROJECT NO.: 67047 (BR-0047)
STOKES COUNTY
STATION: 13+57.28 -Y2-
SHEET 2 OF 5



**NORTH CAROLINA
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DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

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NO.	BY	DATE	NO.	BY	DATE	
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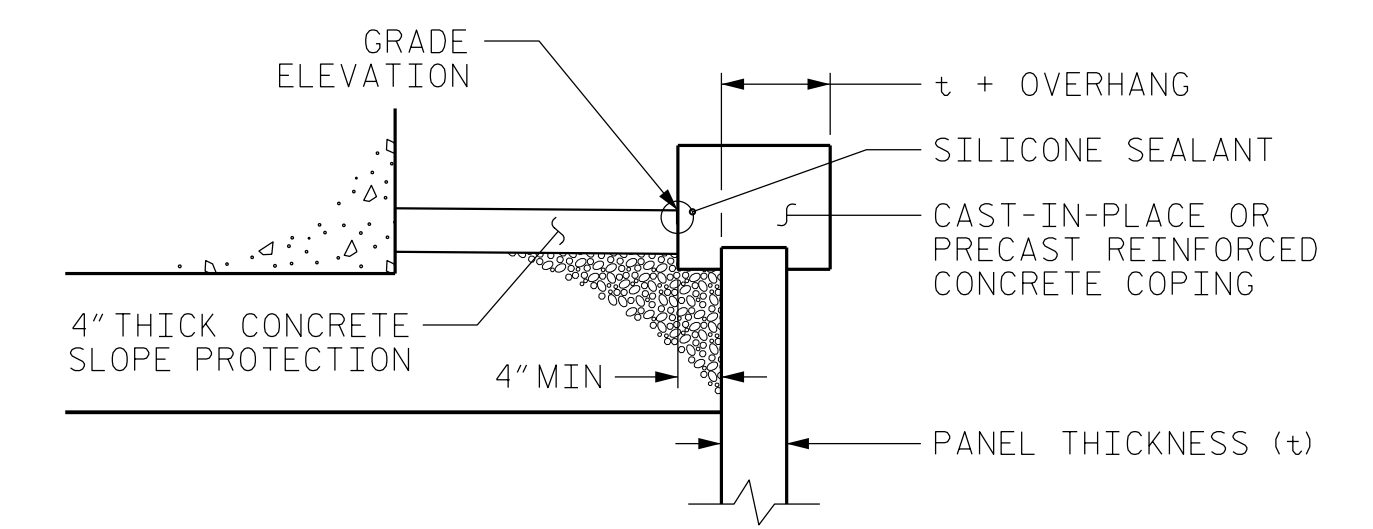
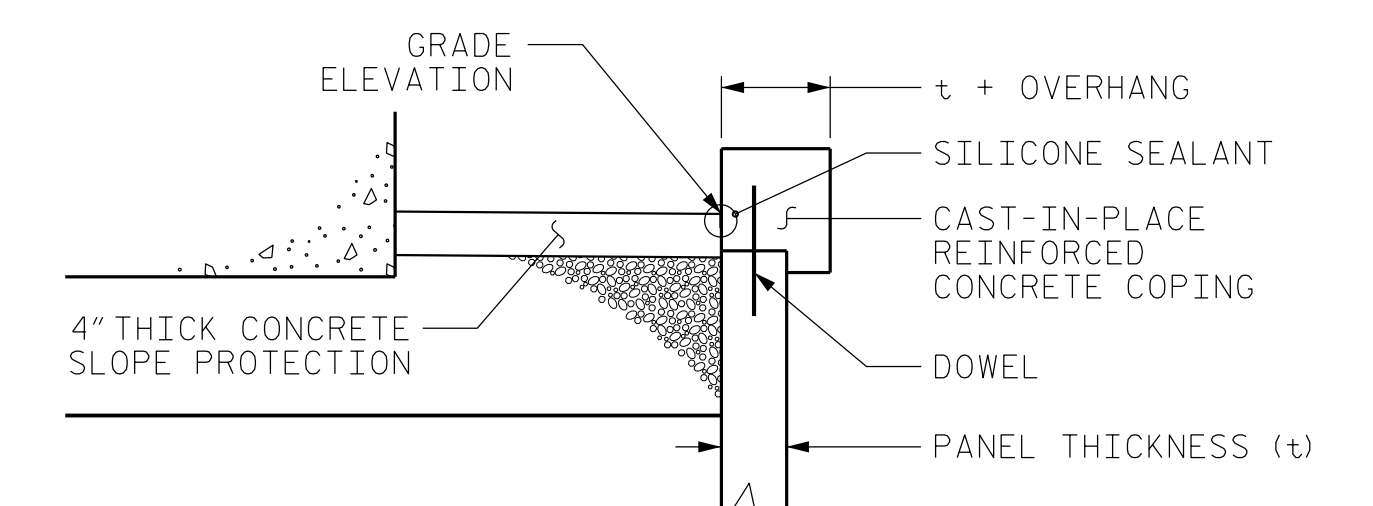
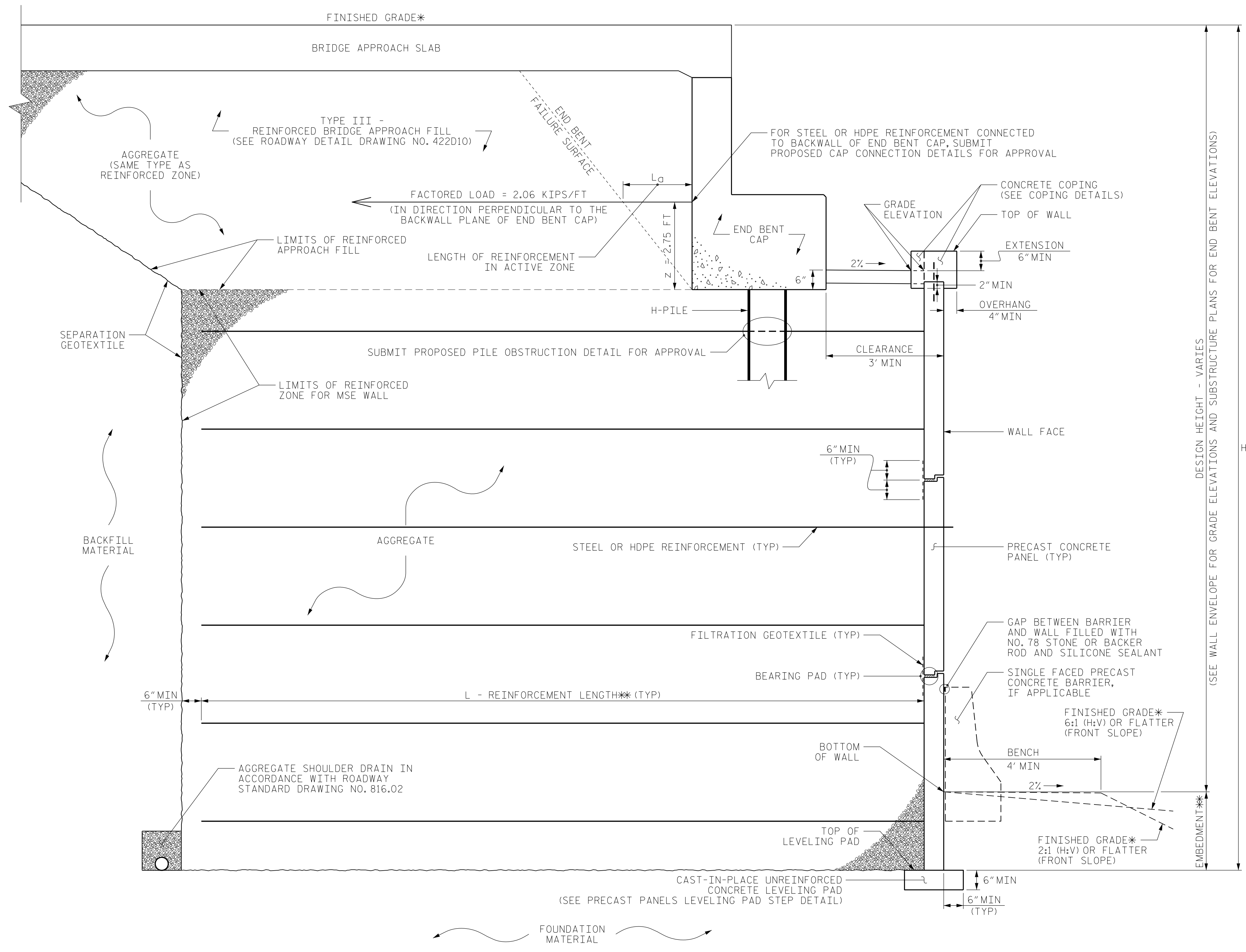
ENGINEER

SEAL 029869

SHANE C. CLARK

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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.: 67047 (BR-0047)

STOKES COUNTY

STATION: 13+57.28 -Y2-

SHEET 3 OF 5

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

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

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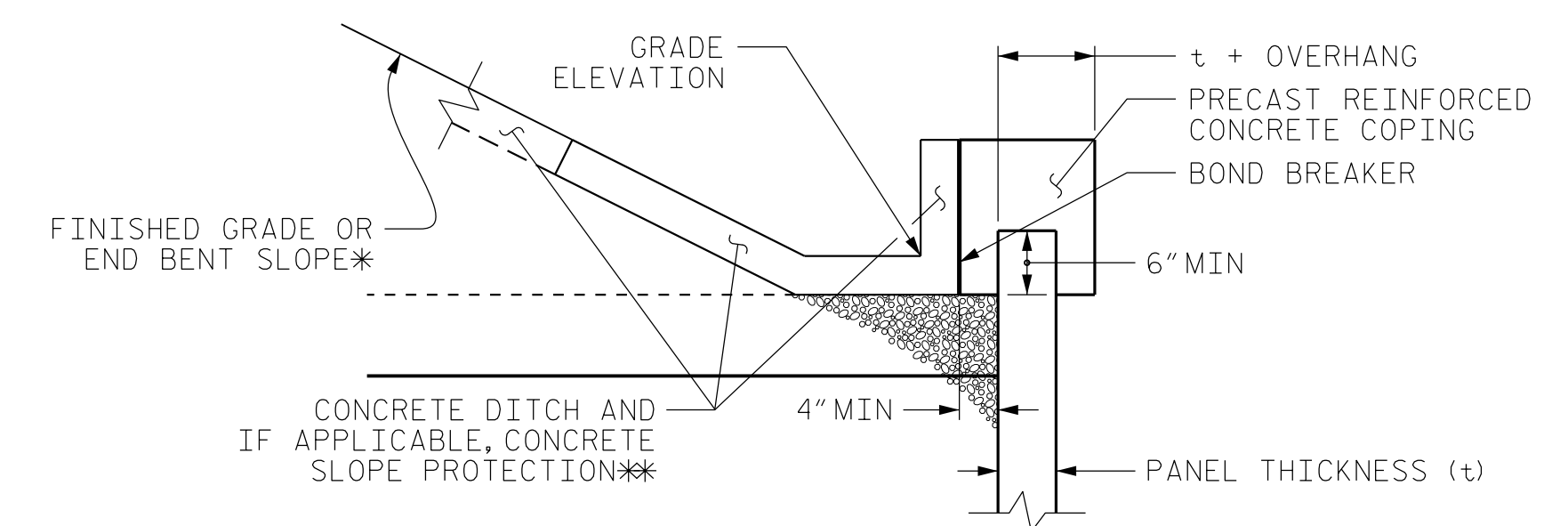
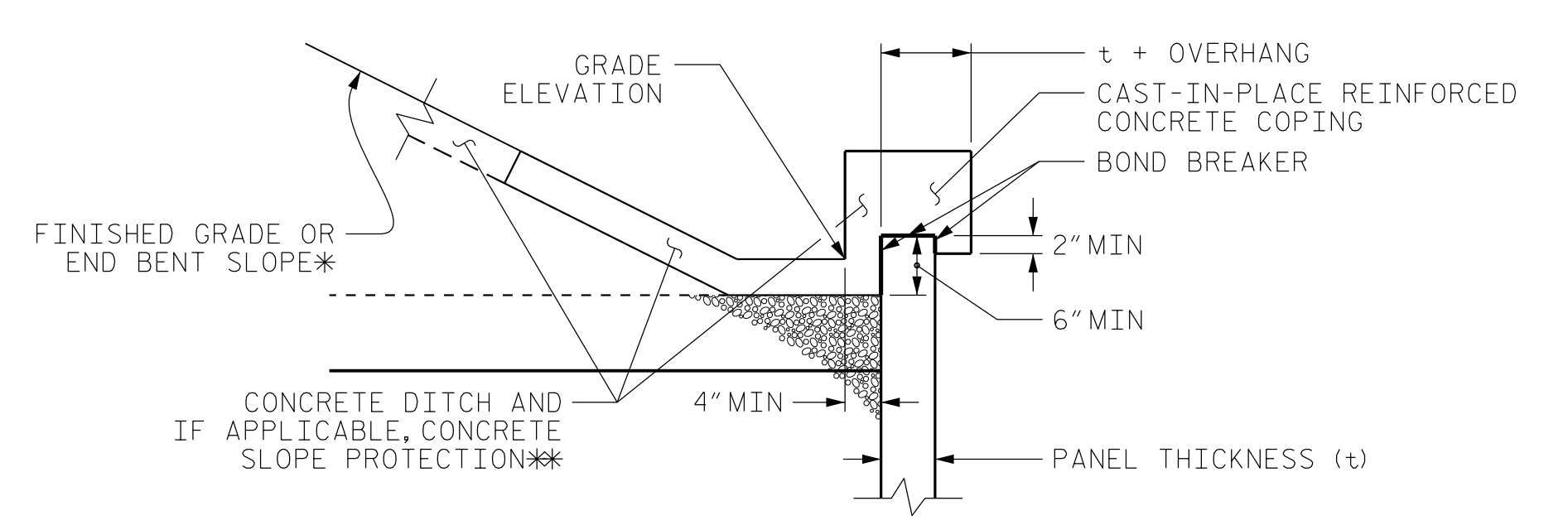
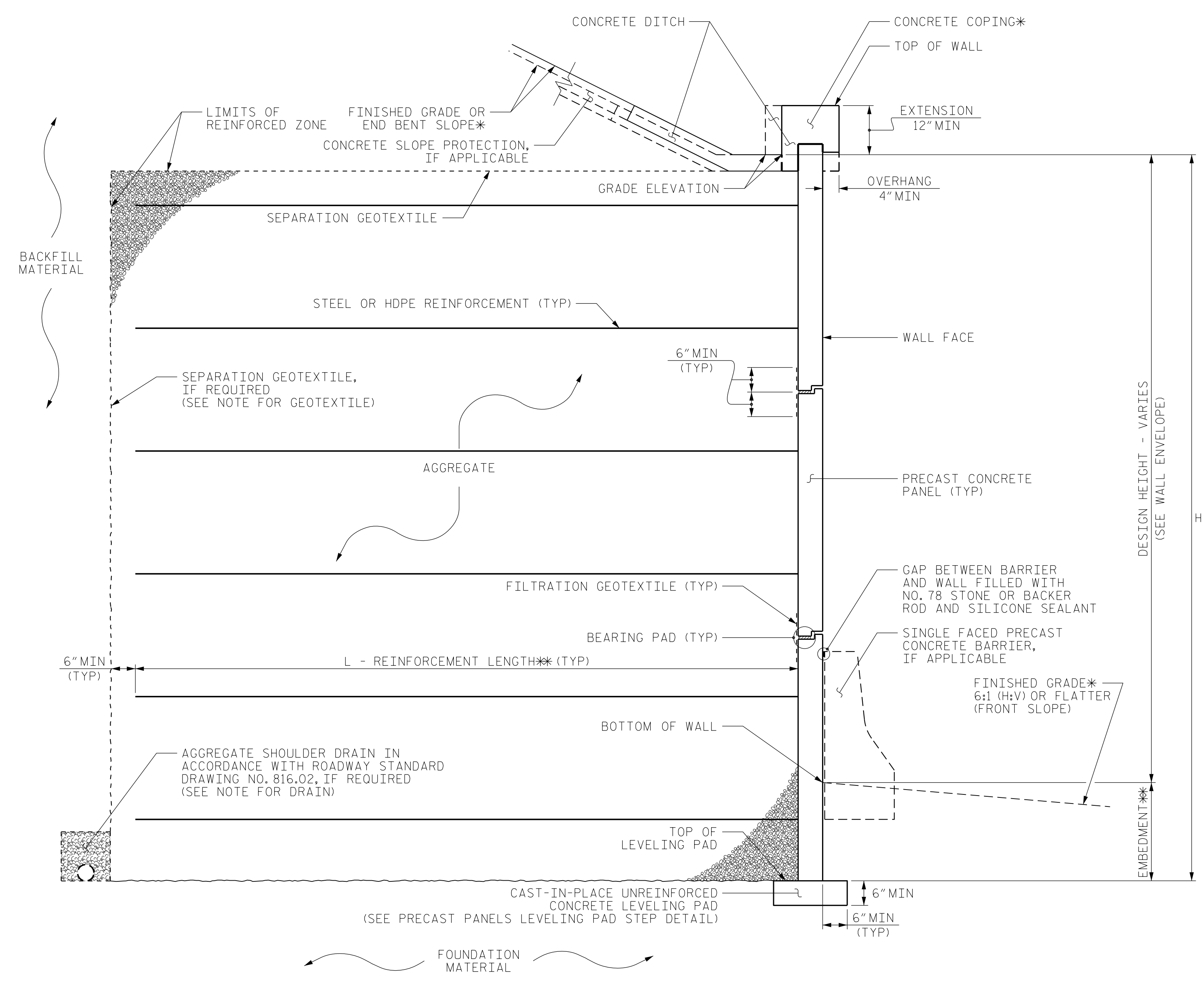
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COPING DETAILS

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

MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE COPING DETAILS AND PLANS FOR FINISHED GRADE OR END BENT SLOPE DETAILS.
**SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

PROJECT NO.: 67047 (BR-0047)
STOKES COUNTY
STATION: 13+57.28 -Y2-
SHEET 4 OF 5

PREPARED BY: SCC	DATE: 4/20/20
REVIEWED BY: ENW	DATE: 4/24/20

**NORTH CAROLINA
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**GEOTECHNICAL
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REVISIONS						SHEET NO. W-4
NO.	BY	DATE	NO.	BY	DATE	
1	-	-	3	-	-	
2	-	-	4	-	-	

NOTES:

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.
 FOR TYPE III REINFORCED BRIDGE APPROACH FILL, SEE BRIDGE APPROACH FILLS PROVISION AND ROADWAY DETAIL DRAWING NO. 422D10.
 FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.
 AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 1&2.
 A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NOS. 1&2.
 A DRAIN IS REQUIRED FOR RETAINING WALL NOS. 1&2.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NOS. 1&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 = 9000 PSF
 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.8H OR 6 FT, WHICHEVER IS LONGER
 5) MINIMUM EMBEDMENT ELEVATION = 3.0 FT BELOW FINISHED GRADE
 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (ϕ) 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 (γ) PCF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) PSF
BACKFILL	120	30	0
FOUNDATION	125	22	500

DESIGN RETAINING WALL NOS. 1&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 14+25.05 -Y2-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.

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. 2 LOCATED AT STATION 12+89.51 -Y2-. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN REINFORCEMENT OR CONNECTORS AND REINFORCING STEEL IN CAP.

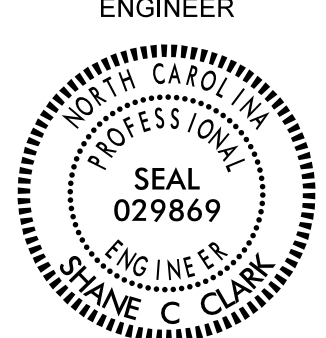
EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NOS. 1&2.

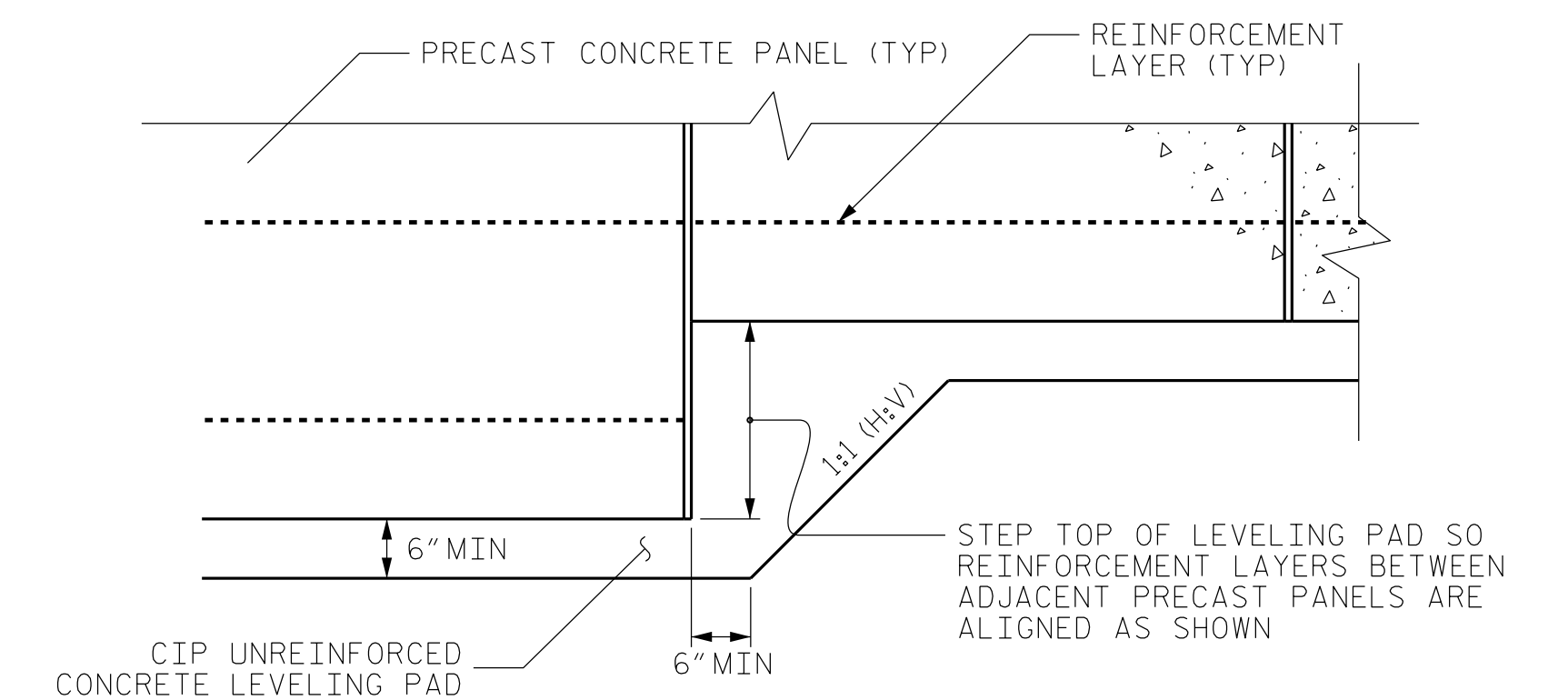
FOUNDATIONS FOR END BENT NOS. 1&2 LOCATED AT STATION WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NOS. 1&2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NOS. 1&2 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

AT THE CONTRACTOR'S OPTION, "TEMPORARY SHORING FOR WALL CONSTRUCTION" MAY BE USED TO CONSTRUCT RETAINING WALL NO. 1&2. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.


SUBSURFACE INFORMATION CAN BE FOUND IN THE SUBSURFACE INVESTIGATION FOR THE BRIDGE.

GEOTECHNICAL ENGINEER  SEAL 029869 SHANE C. CLARK	ENGINEER
DocuSigned by: Shane C. Clark 4/27/2020 SIGNATURE DATE	SIGNATURE DATE
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**PRECAST PANELS
LEVELING PAD STEP DETAIL**

PROJECT NO.: 67047 (BR-0047)
 STOKES COUNTY
 STATION: 13+57.28 -Y2-
 SHEET 5 OF 5

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT
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NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

**MSE RETAINING WALL
NOS. 1 AND 2 NOTES**

SHEET NO.
W-5

PREPARED BY: SCC	DATE: 4/20/20
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