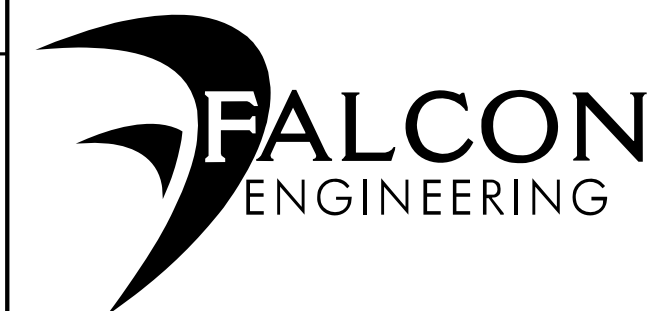


# RETAINING WALL NO. 1 & 2 DETAIL SHEET



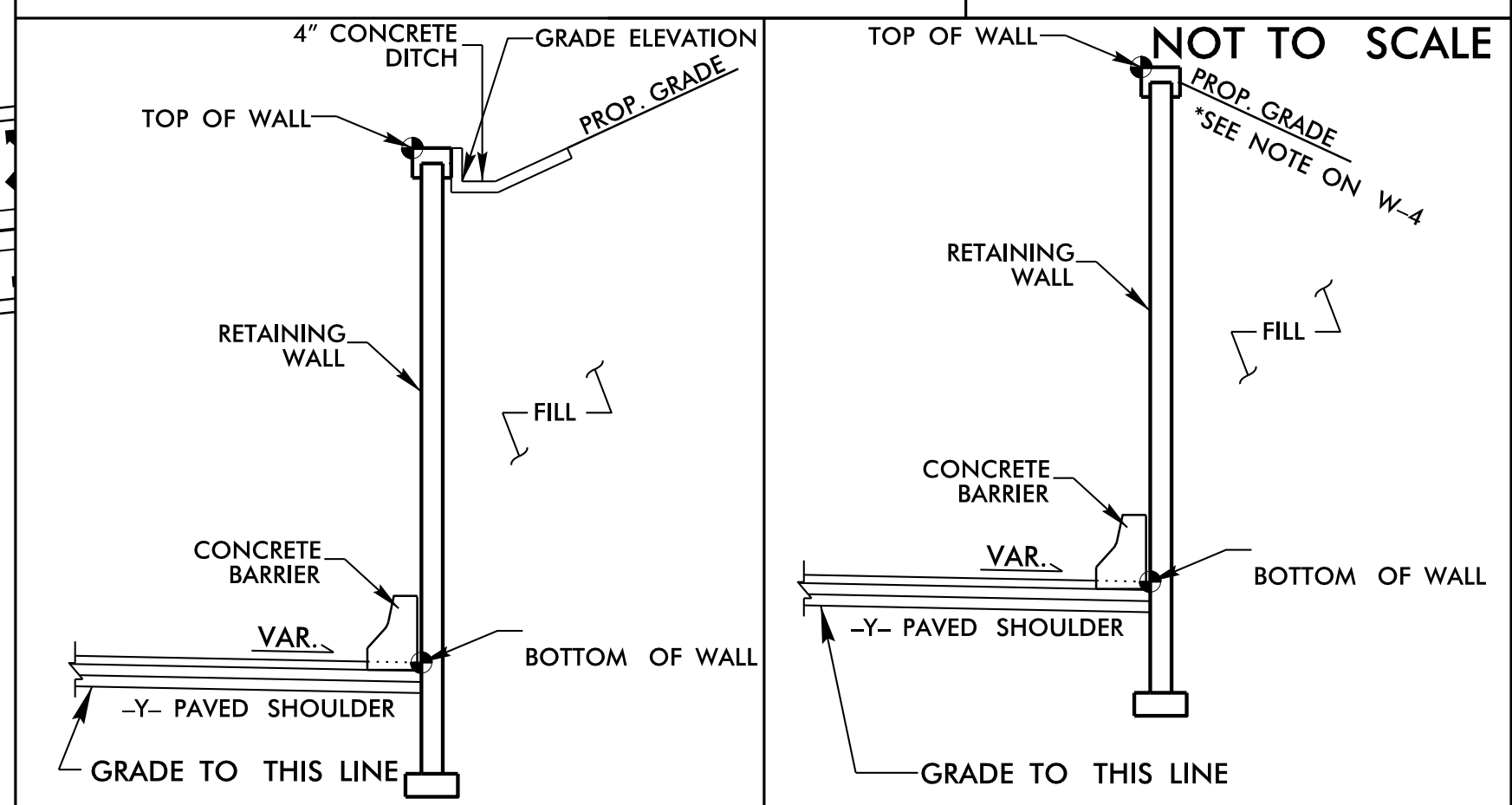
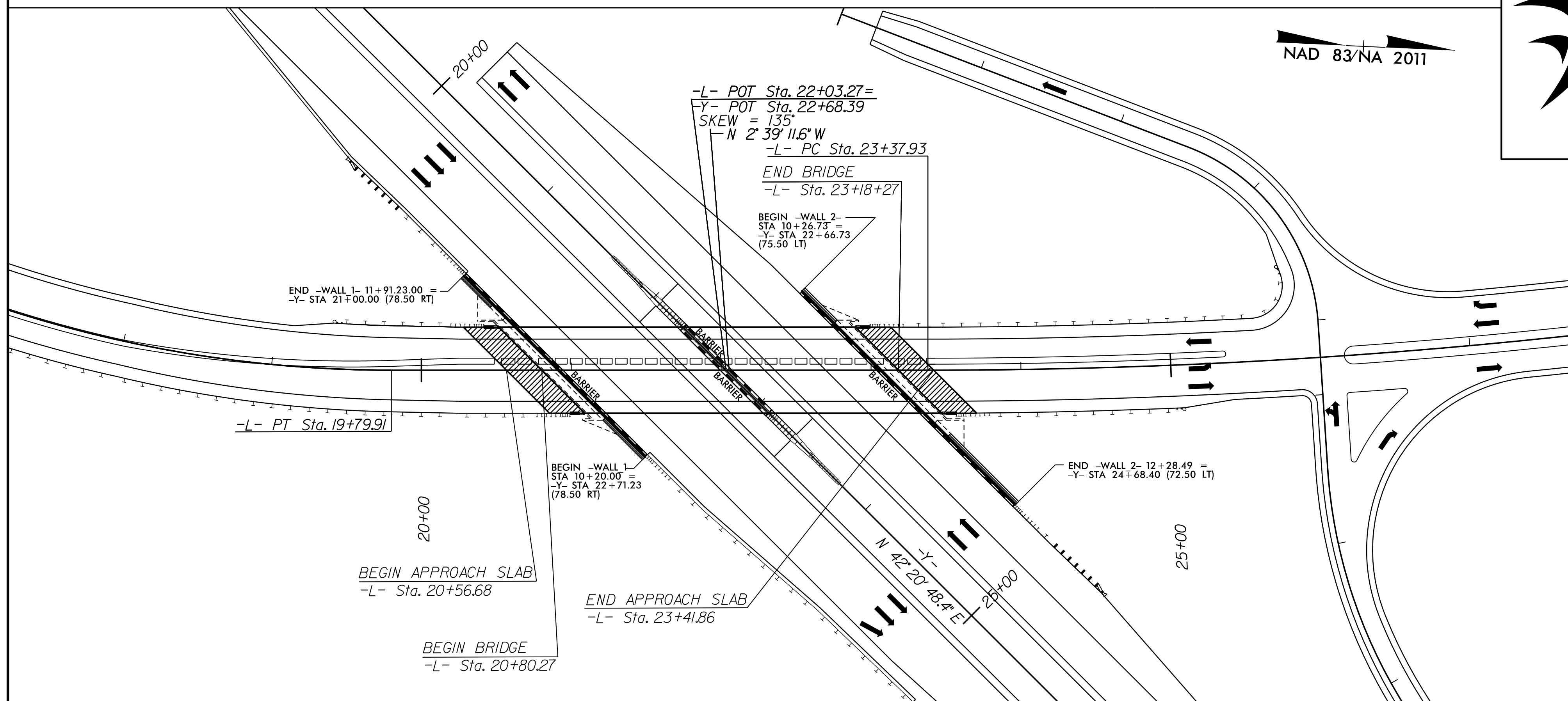
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CARY, NC 27513  
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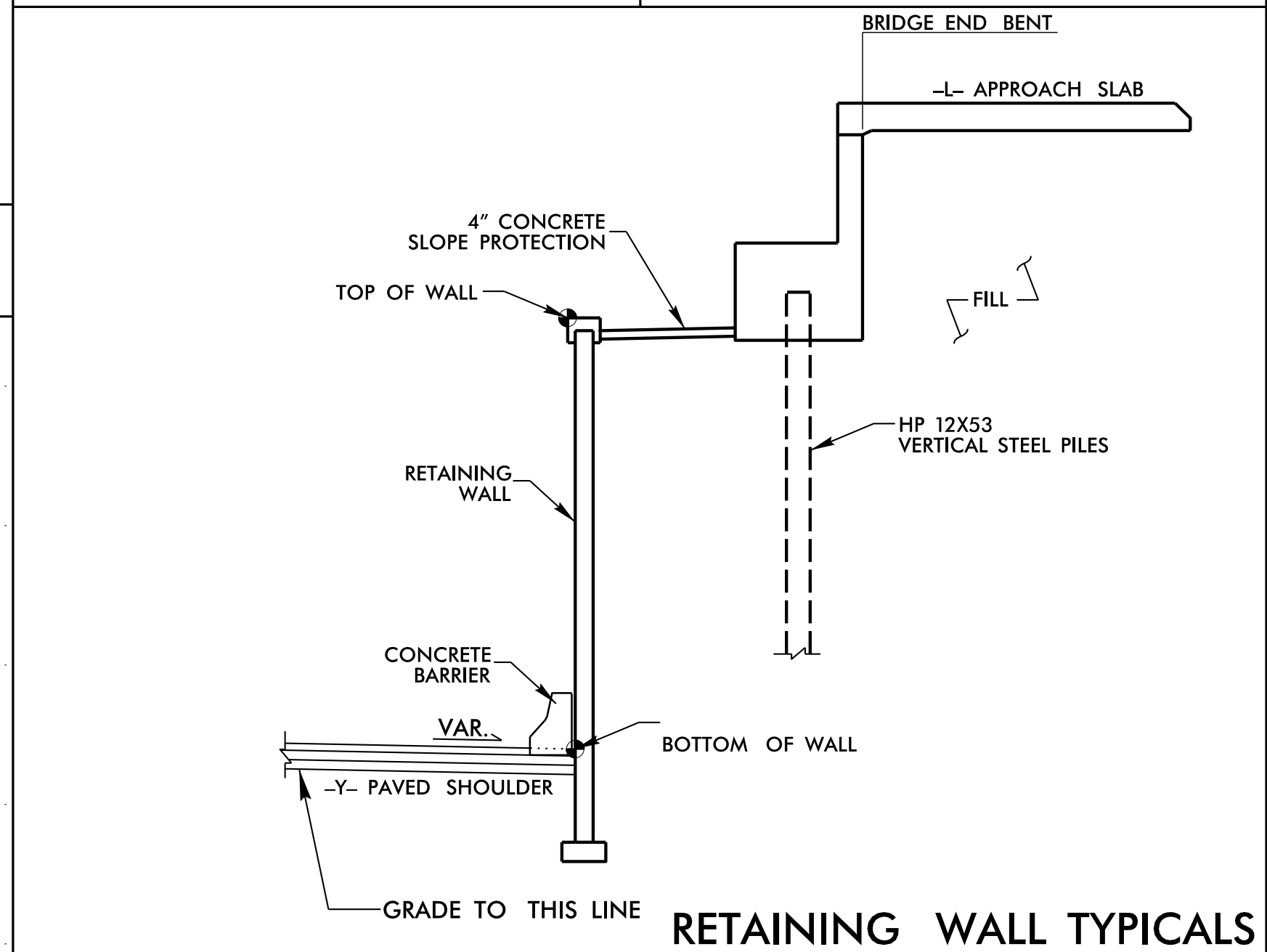
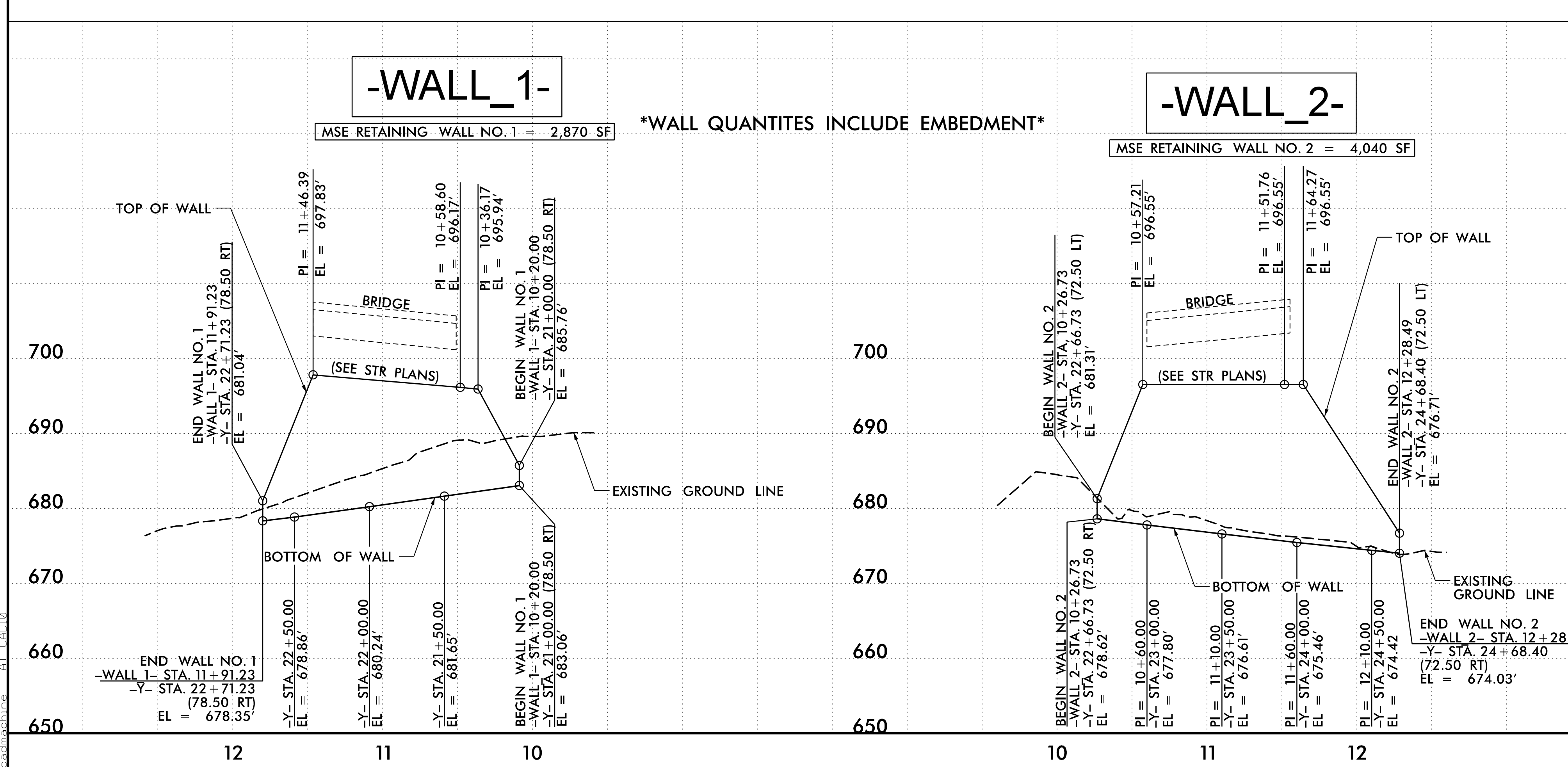


Signed by: *W. Scott Hunsberger* 2/6/2026  
SAARACR032026  
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL.

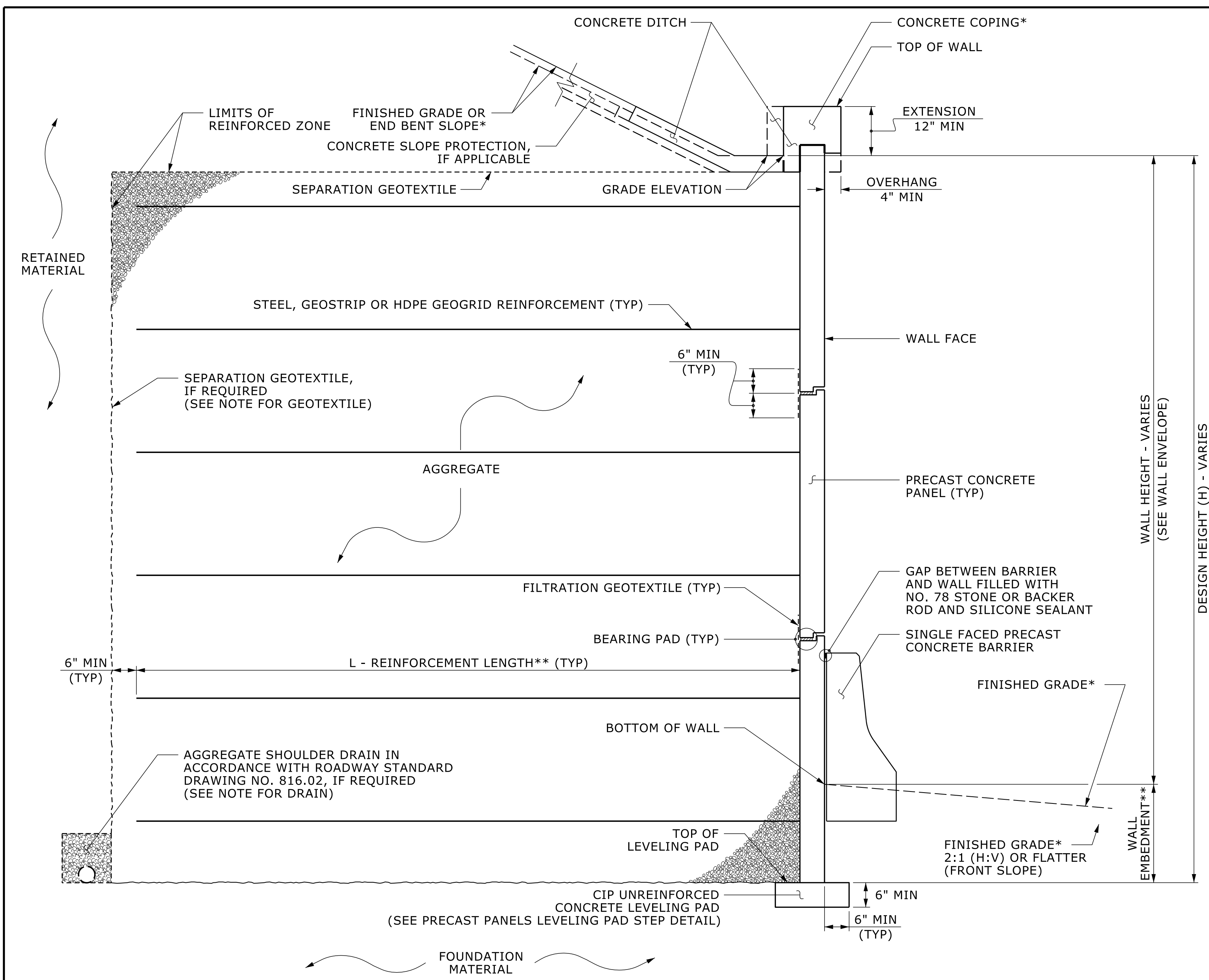


PROJECT NO.: BP7.R001  
ROCKINGHAM COUNTY  
STATION: -WALL\_1- 10+20.00 TO 11+91.23  
-WALL\_2- 10+26.73 TO 12+28.49  
SHEET 1 OF 4 RW-1 AND RW-2

MSE RETAINING WALL NO. 1&2  
PLAN AND WALL  
ENVELOPES

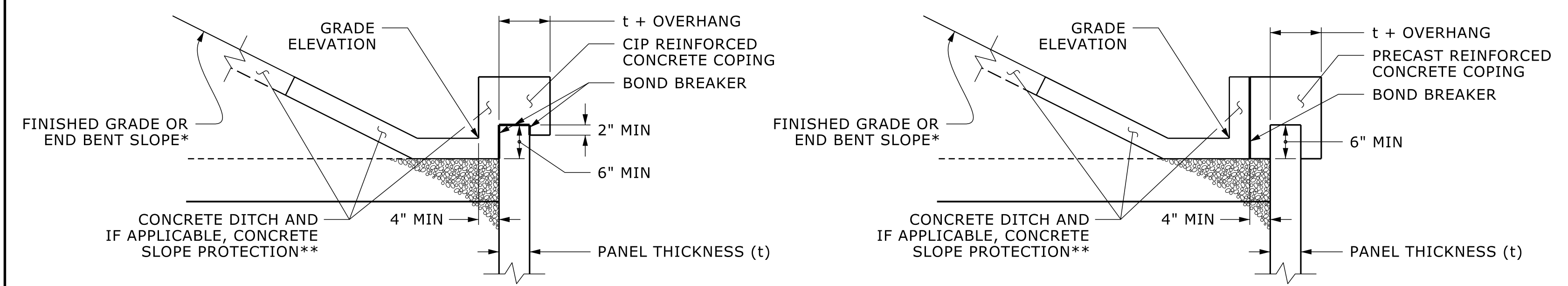
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NO.	BY	DATE	NO.	BY	DATE	
1			3			W-1
2			4			

\$DATE\$\$\$\$ 09.28  
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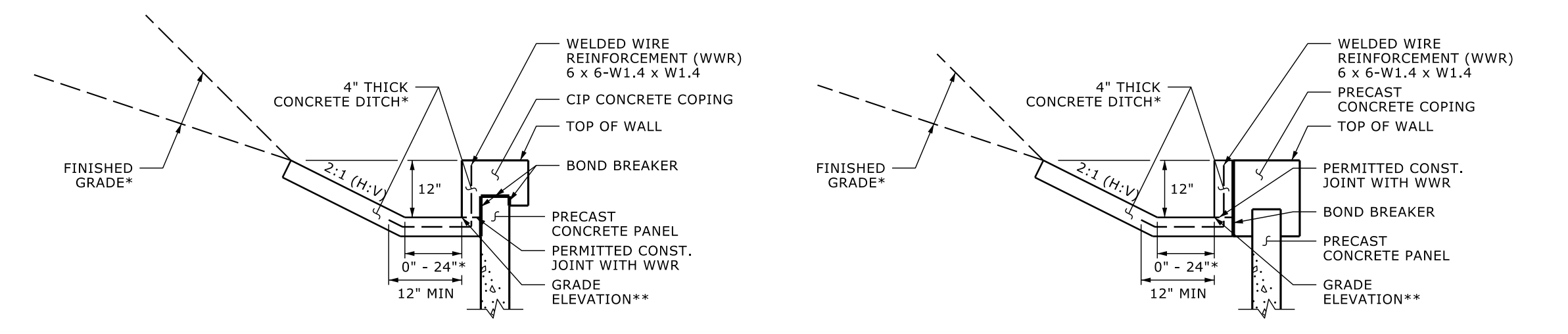
**MSE WALL WITH PRECAST PANELS - TYPICAL SECTION**

\*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 WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.



**COPING DETAILS**

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



**MSE WALL WITH PRECAST PANELS**

**CONCRETE DITCH BEHIND WALL WITH CONCRETE COPING**

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

FOR CONCRETE DITCHES, SEE SECTION 850 OF THE STANDARD SPECIFICATIONS.

GEOTECHNICAL ENGINEER  Signed by: <u>W. Scott Hunsberger</u> 2/6/2026 SAASBACR05FC04RE SIGNATURE DATE	ENGINEER SIGNATURE DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PROJECT NO.: BP7.R001  
 ROCKINGHAM COUNTY  
 STATION: -WALL\_1- 10+20 TO 10+59.42  
 AND -WALL\_1- 11+57.63 TO 11+91.23  
 -WALL\_2- 10+26.73 TO 10+57.21  
 -WALL\_2- 11+51.76 TO 12+28.49

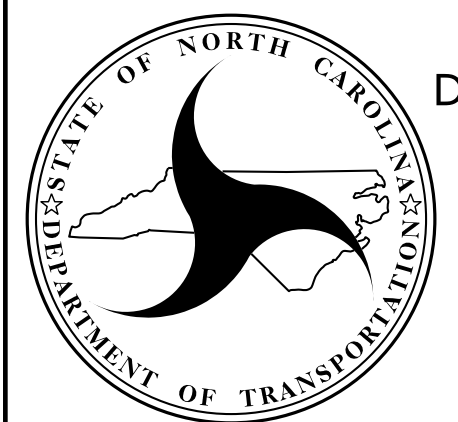
SHEET 3 OF 4 RW-1 AND RW-2

**MSE WALL WITH PANELS AND BARRIER - TYPICAL**

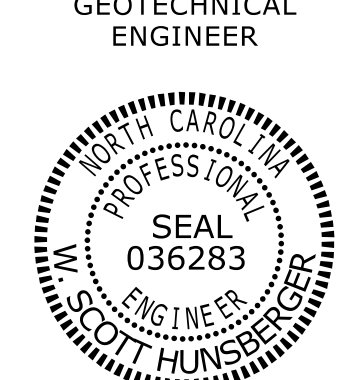
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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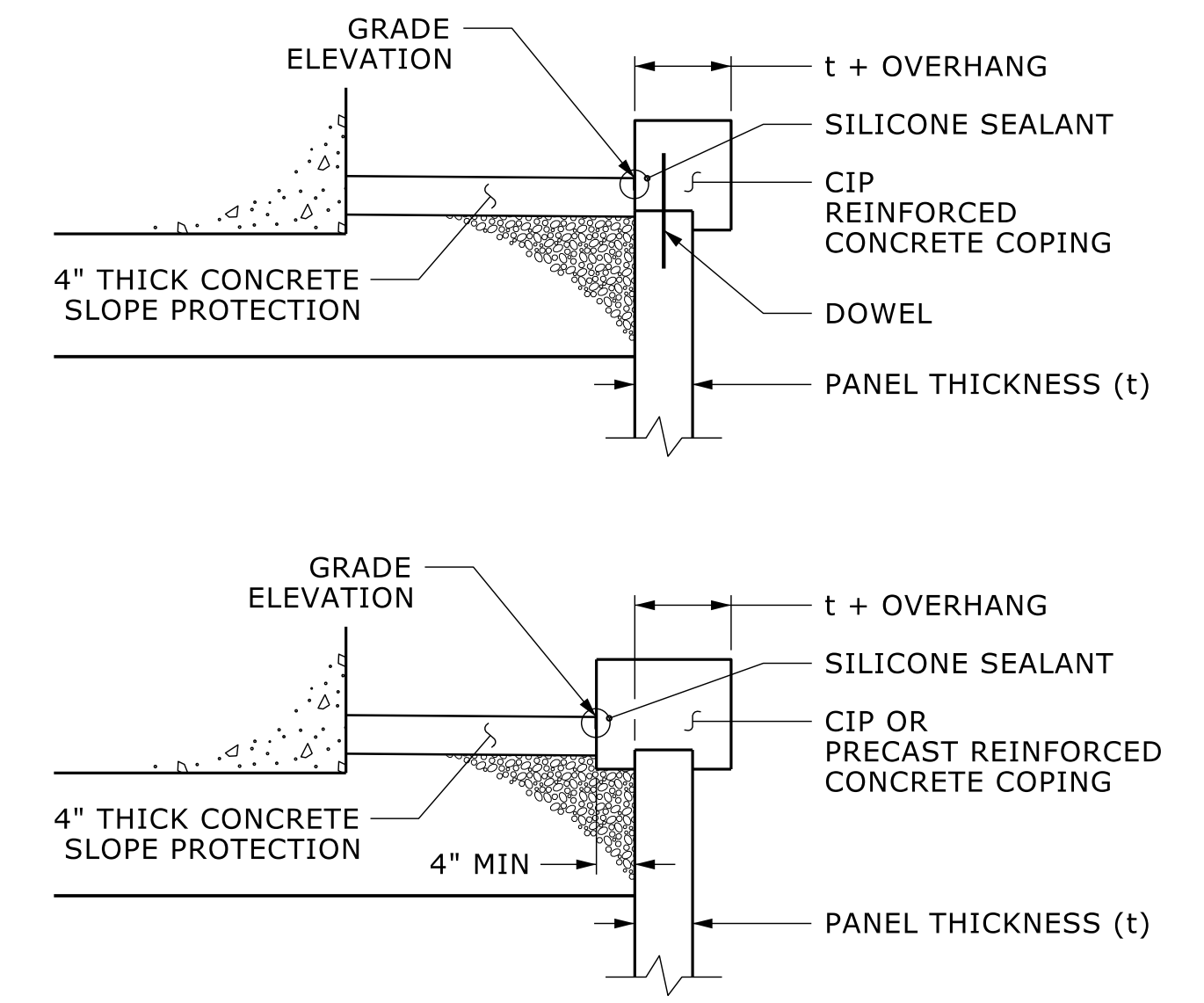
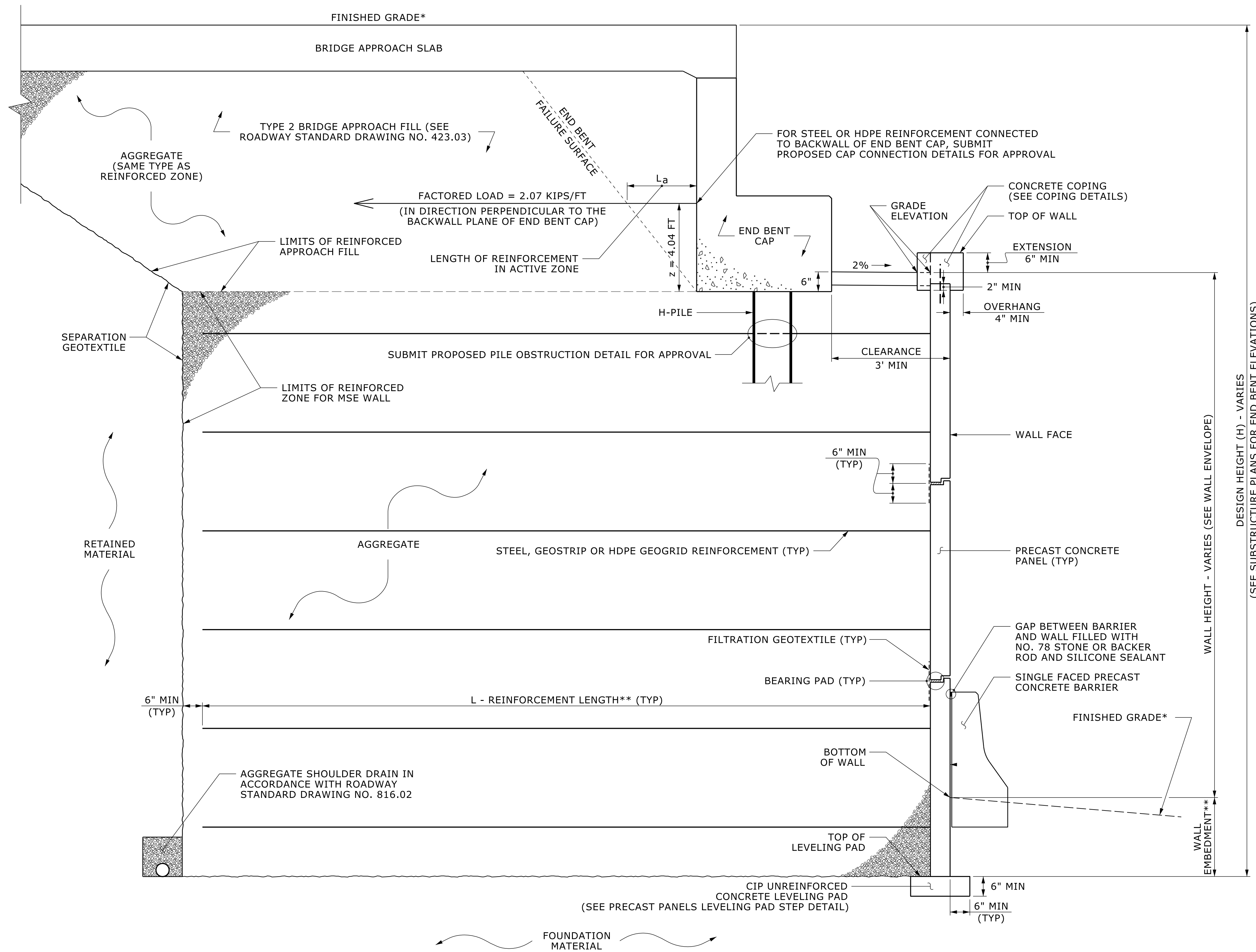
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REVIEWED BY:	DATE:

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**GEOTECHNICAL ENGINEERING UNIT**

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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



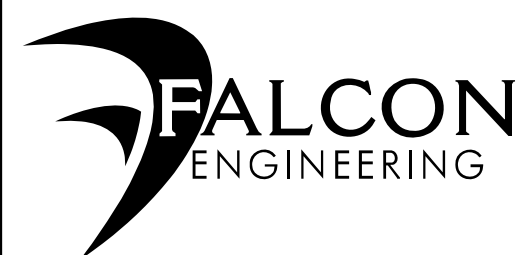
**COPING DETAILS**  
 AT THE CONTRACTOR'S OPTION, CONNECT COPING TO PANELS WITH DOWELS OR EXTEND COPING DOWN BACK OF PANELS.

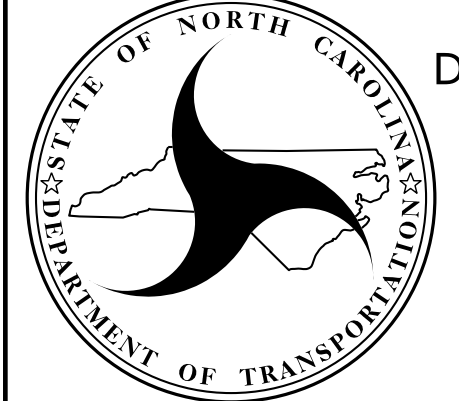
**MSE ABUTMENT WALL WITH PRECAST PANELS - TYPICAL SECTION**

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

PROJECT NO.: BP7.R001  
 ROCKINGHAM COUNTY  
 STATION: -WALL\_1- 10+59.42 TO 11+57.63  
 -WALL\_2- 10+57.21 TO 11+51.76  
 SHEET 3 OF 4 RW-1 AND RW-2

PREPARED BY:	DATE:
REVIEWED BY:	DATE:

  
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REVISIONS						SHEET NO. W-3
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 2 BRIDGE APPROACH FILL, SEE BRIDGE APPROACH FILLS PROVISION AND ROADWAY STANDARD DRAWING NO. 423.03.
- FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.
- A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. 1 AND 2.
- A DRAIN IS REQUIRED FOR RETAINING WALLS NO. 1 AND 2.
- BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. 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 WALLS NO. 1 AND 2 FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = WALL 1: 5,200 PSF WALL 2: 5,750 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = .7H, OR 6 FT, WHICHEVER IS GREATER
- 5) MINIMUM EMBEDMENT ELEVATION = 2 FT, OR H/10, WHICHEVER IS GREATER
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) PSF
COARSE	110	38	0

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

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) PSF
RETAINED	120	30	0
FOUNDATION	120	30	0


DESIGN RETAINING WALLS NO. 1 AND 2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

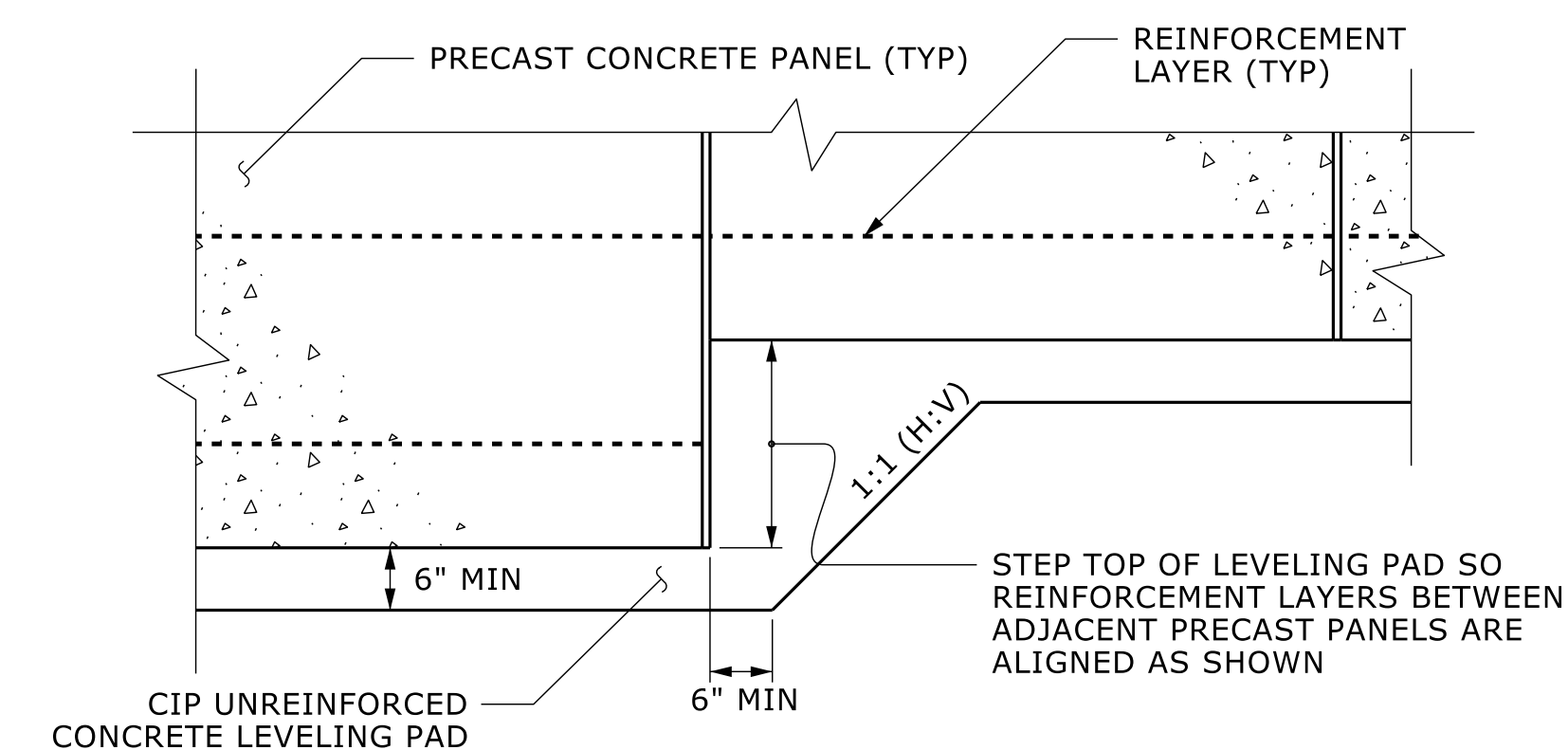
EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 AND 2.

FOUNDATIONS FOR END BENT NO. 1 AND 2 LOCATED AT STATION -L- 20+80.27 AND -L- 23+18.27 MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 AND 2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

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

WHERE RETAINING WALLS NO. 1 AND 2 FORM AN OBTUSE ANGLE WITH THE BRIDGE, THE PROPOSED GRADE WILL SLOPE AWAY NORMAL TO THE WALL. SUBMIT A DETAIL TO SKEW REINFORCEMENT HORIZONTALLY AND/OR VERTICALLY AND/OR ALTER PROPOSED GRADING TO ENSURE ADEQUATE REINFORCEMENT EMBEDMENT.

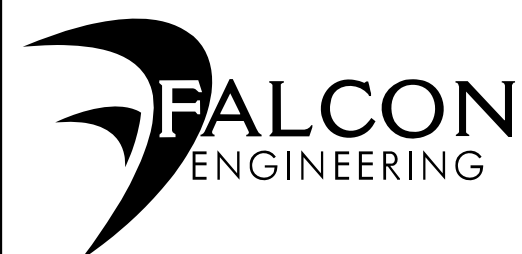
GEOTECHNICAL ENGINEER  Signed by: <u>W. Scott Hunsberger</u> 2/6/2026 SAABPAC05050505      SIGNATURE      DATE	ENGINEER SIGNATURE      DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



**PRECAST PANELS  
LEVELING PAD STEP DETAIL**

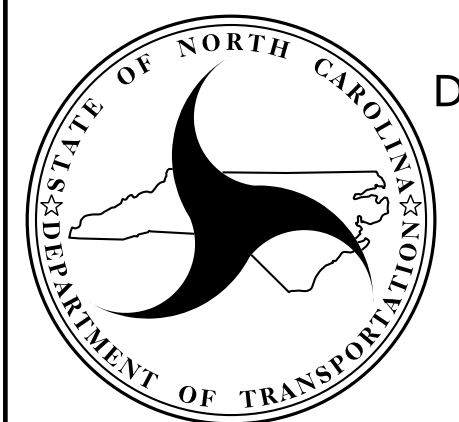
PROJECT NO.: BP7.R001  
ROCKINGHAM COUNTY  
 STATION: \_\_\_\_\_  
SHEET 4 OF 4    RW-1 AMD RW-2

PREPARED BY:	DATE:
REVIEWED BY:	DATE:



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2			4			