

PROJECT REFERENCE NO.
R-5759

SHEET NO.
W-2

GEOTECHNICAL ENGINEER



DocuSigned by:
A. F. Riggs, Jr.
CSFEACAB007481
SIGNATURE

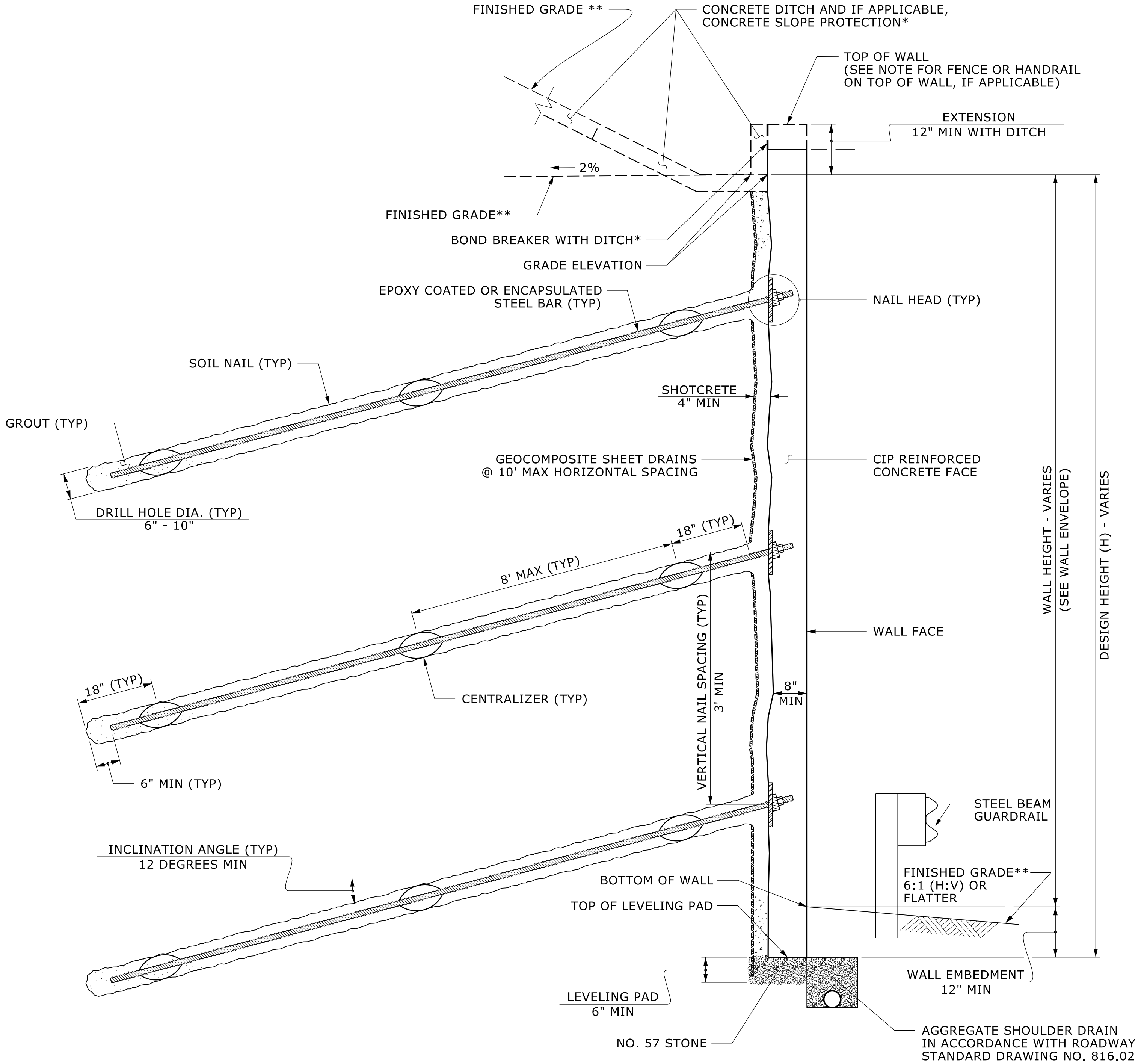
ENGINEER

8/10/2026
DATE

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



NOTES:

FOR SOIL NAIL RETAINING WALLS, SEE SOIL NAIL RETAINING WALLS PROVISION.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

AN ARCHITECTURAL FINISH IS REQUIRED FOR THE CIP REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 2. SEE SPECIAL PROVISION FOR ARCHITECTURAL FINISH.

BEFORE BEGINNING SOIL NAIL WALL DESIGN FOR RETAINING WALL NO. 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. 2 FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 75 YEARS
- 3) MINIMUM WALL EMBEDMENT DEPTH= 1.0 FT
- 4) IN-SITU ASSUMED MATERIAL PARAMETERS:
 - UNIT WEIGHT, γ = 115 PCF
 - FRICTION ANGLE, ϕ = 30 DEGREES
 - COHESION, c = 0 PSF
- 5) MINIMUM NAIL LENGTH= 0.7(H) OR 10 FT, WHICHEVER IS LONGER

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH SOIL NAILS FOR RETAINING WALL NO. 2.

SOIL NAIL WALL - TYPICAL SECTION

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

SHEET 2 OF 2

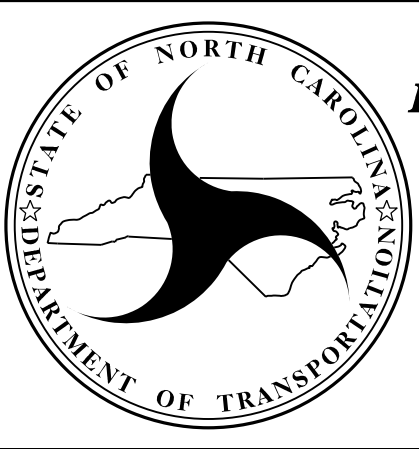
PROJECT NO.: 44691.1.1 (R-5759)
WILKES COUNTY
STATION: STA. 68+25.00 TO 69+60.00 -L-

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, Jr., A. F.	DATE: 10/22/2025

Prepared in the Office of:



3150 SPRING FOREST ROAD, SUITE 100
RALEIGH, NORTH CAROLINA 27616
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367

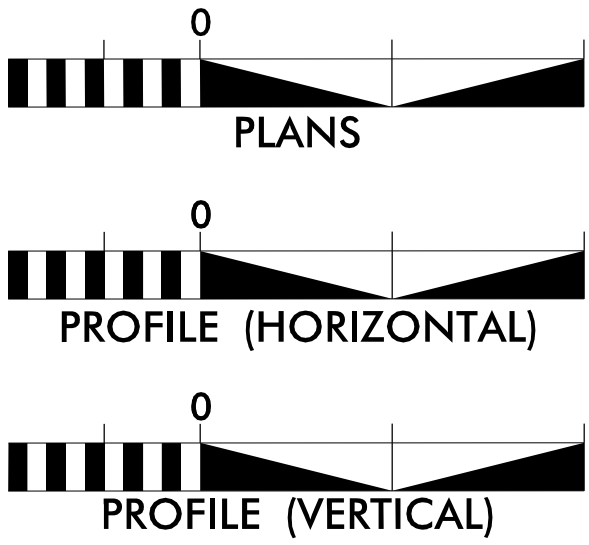


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

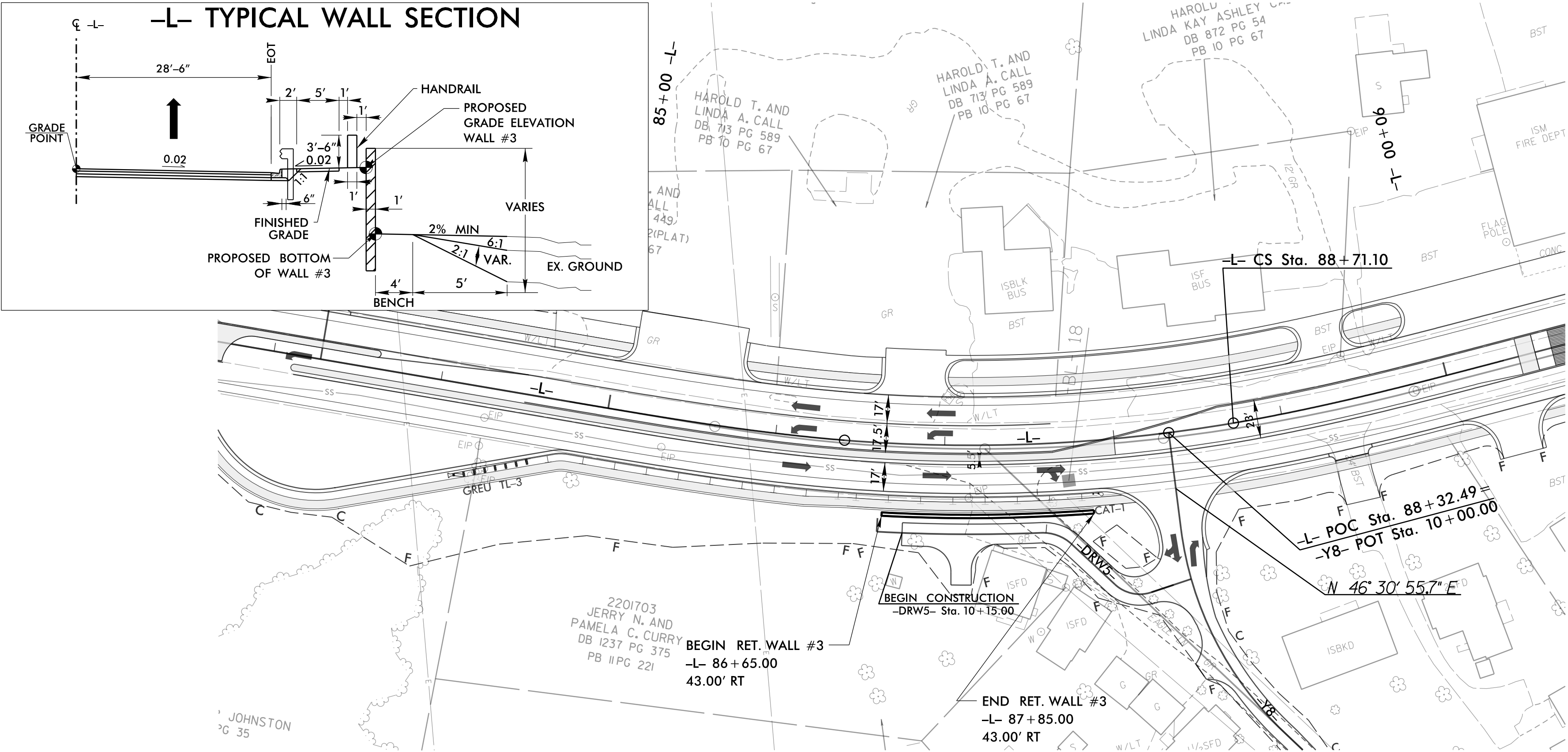
GEOTECHNICAL
ENGINEERING UNIT

SOIL NAIL WALL NO.2 WITH BACK SLOPE TYPICAL & NOTES						SHEET NO.
REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

GRAPHIC SCALES



MSE RETAINING WALL NO.3 PLAN



PROJECT REFERENCE NO.
R-5759

SHEET NO.
W-3

GEOTECHNICAL ENGINEER

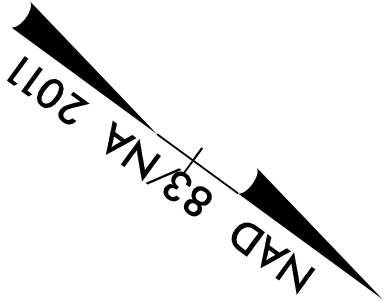
DocuSigned by:
R. F. Riggs, Jr.
C286ACAB427481
SIGNATURE

ENGINEER

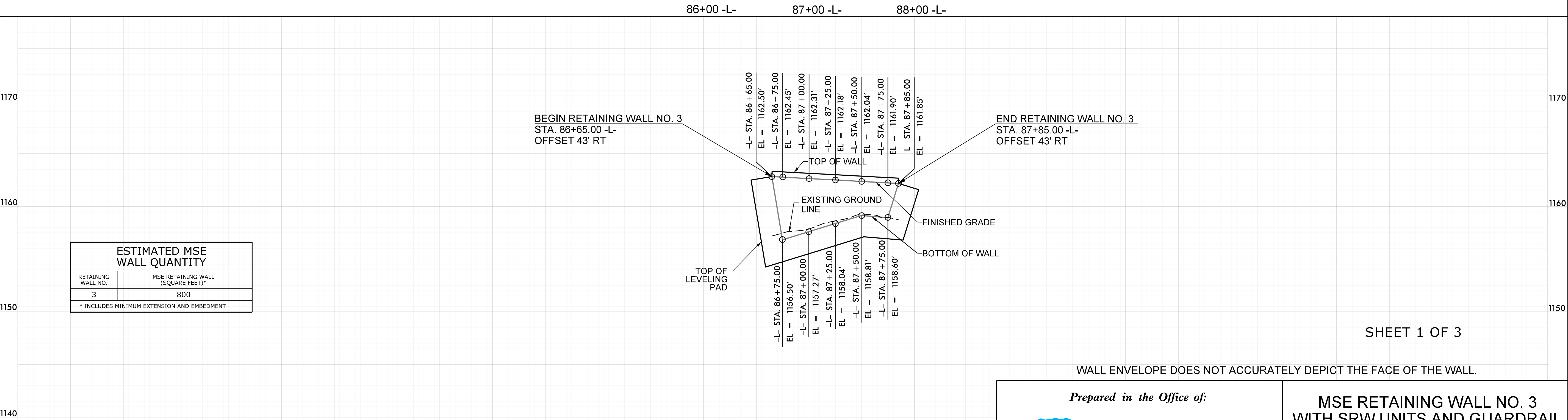
SIGNATURE

DATE

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MSE RETAINING WALL NO.3 ENVELOPE



ESTIMATED MSE WALL QUANTITY	
RETAINING WALL NO.	MSE RETAINING WALL (SQUARE FEET)*
3	800
* INCLUDES MINIMUM EXTENSION AND EMBEDMENT	

SHEET 1 OF 3

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

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, JR., A. F.	DATE: 10/22/2025

Prepared in the Office of:

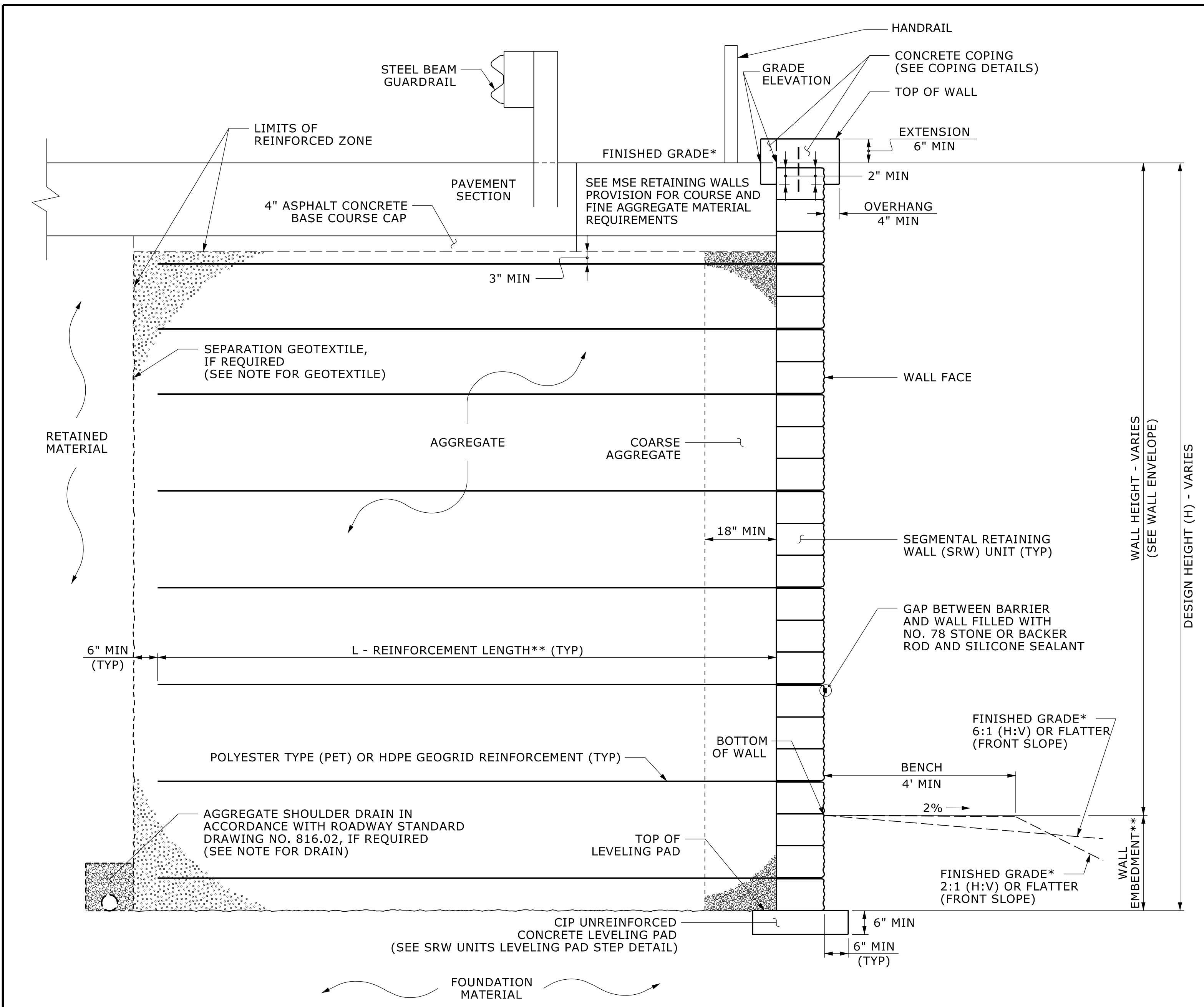
3150 SPRING FOREST ROAD, SUITE 100
RALEIGH, NORTH CAROLINA 27616
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367

MSE RETAINING WALL NO. 3
WITH SRW UNITS AND GUARDRAIL
PLAN AND ENVELOPE

REVISIONS

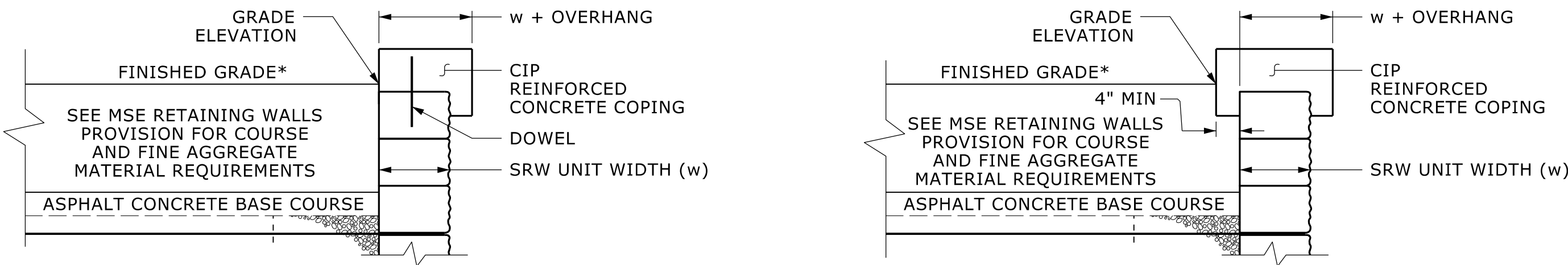
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO.



MSE WALL WITH SRW UNITS - 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.



COPING DETAILS

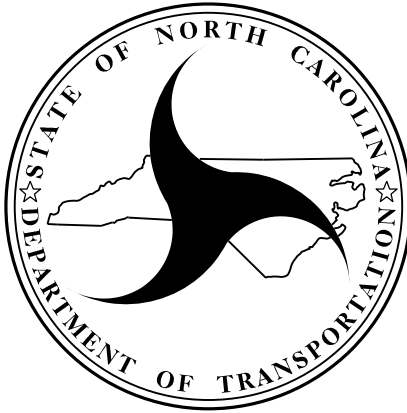
AT THE CONTRACTOR'S OPTION, CONNECT COPING TO SRW UNITS
WITH DOWELS OR EXTEND COPING DOWN BACK OF SRW UNITS.
*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, Jr., A. F.	DATE: 10/22/2025

Prepared in the Office of:



3150 SPRING FOREST ROAD, SUITE 100
RALEIGH, NORTH CAROLINA 27616
NC REGISTERED ENGINEERING FIRM: F-086
NC REGISTERED GEOLOGIC FIRM: C-367



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

**GEOTECHNICAL
ENGINEERING UNIT**

MSE RETAINING WALL NO. 3
WITH SRW UNITS AND GUARDRAIL
TYPICAL AND COPING DETAILS

REVISIONS						SHEET NO.
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 STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL UNITS (SRW) UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL NO. 3.

WHEN USING AN MSE WALL SYSTEM WITH SRW UNITS FOR RETAINING WALL NO. 3, FREEZE-THAW DURABLE SRW UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS ARE REQUIRED.

FOR HANDRAIL ON RETAINING WALL NO.3, WALL CONTRACTOR SHALL SUBMIT THE DESIGN AND DETAILS OF HANDRAIL POST TO ENGINEER FOR REVIEW.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 3.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 3.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 3.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 3, 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. 3 FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 75 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2,330 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.8(H) OR 6.0 FT, WHICHEVER IS LONGER
- 5) MINIMUM EMBEDMENT DEPTH = 2.0 FT
- 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
RETAINED	120	30	0
FOUNDATION	115	28	0

DESIGN RETAINING WALL NO. 3 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR SIGNS, LIGHTING or SIGNALS WILL BE LOCATED BEHIND RETAINING WALL NO. 3 AND WILL INTERFERE WITH REINFORCEMENT. BEFORE BEGINNING MSE WALL CONSTRUCTION, SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS FOR APPROVAL.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 3.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 3 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

PROJECT REFERENCE NO.

SHEET NO.

R-5759

W-5

GEOTECHNICAL
ENGINEER

ENGINEER



DocuSigned by

A. F. Riggs, Jr.

8/10/2026

C2F0ACAB4B21451

DATE

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SHEET 3 OF 3

PROJECT NO.: R-5759

WILKES COUNTY

STATION: STA. 86+65.00 TO 87+85.00 -L-



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

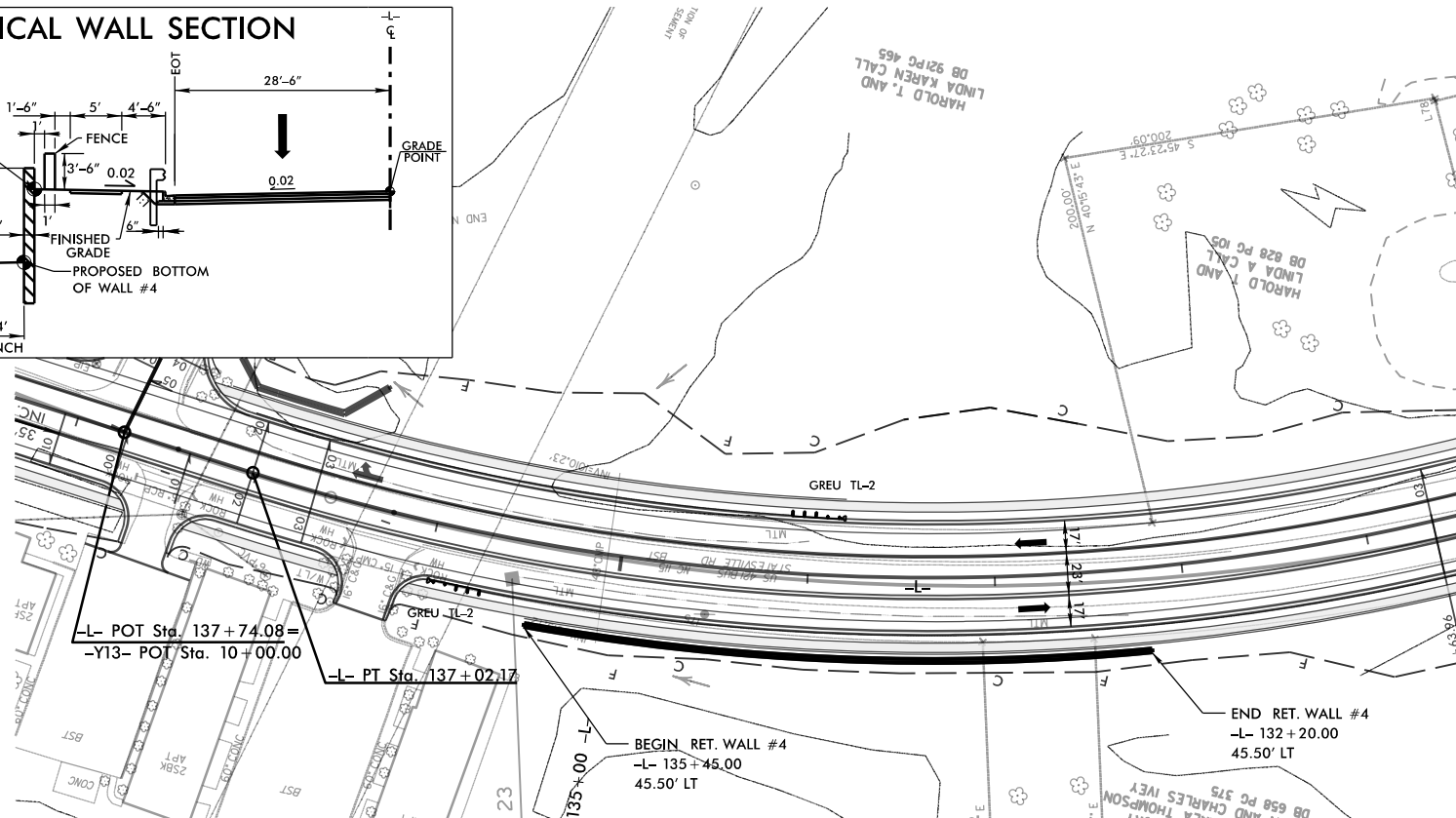
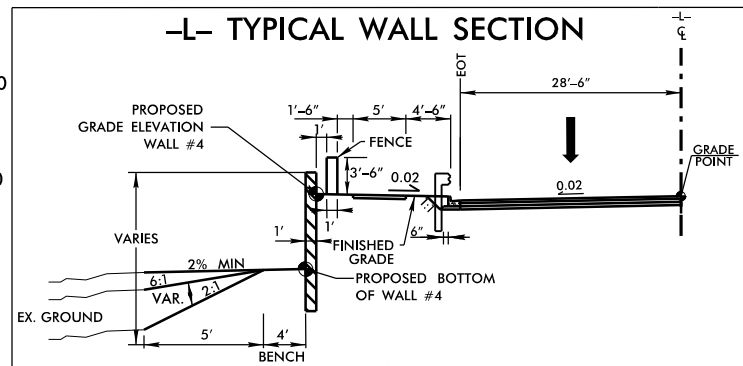
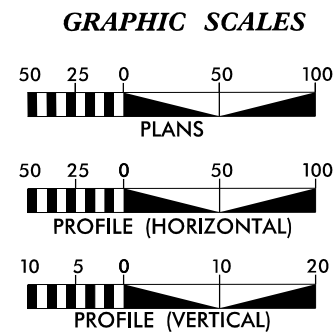
MSE RETAINING WALL NO. 3
WITH SRW UNITS AND GUARDRAIL
NOTES

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, Jr., A. F.	DATE: 10/22/2025

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	FIELDS, W. D.	8/10/26	3		
2			4		

SHEET
NO.

MSE RETAINING WALL NO.4 PLAN



PROJECT REFERENCE NO.	SHEET NO.
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R-5759

W-6

GEOTECHNICAL
ENGINEER

ENGINEER



DocuSigned by:

Abner Riggs Jr.

8/10/2026

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UNLESS ALL SIGNATURES COMPLETED**

SHEET 1 OF 3

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

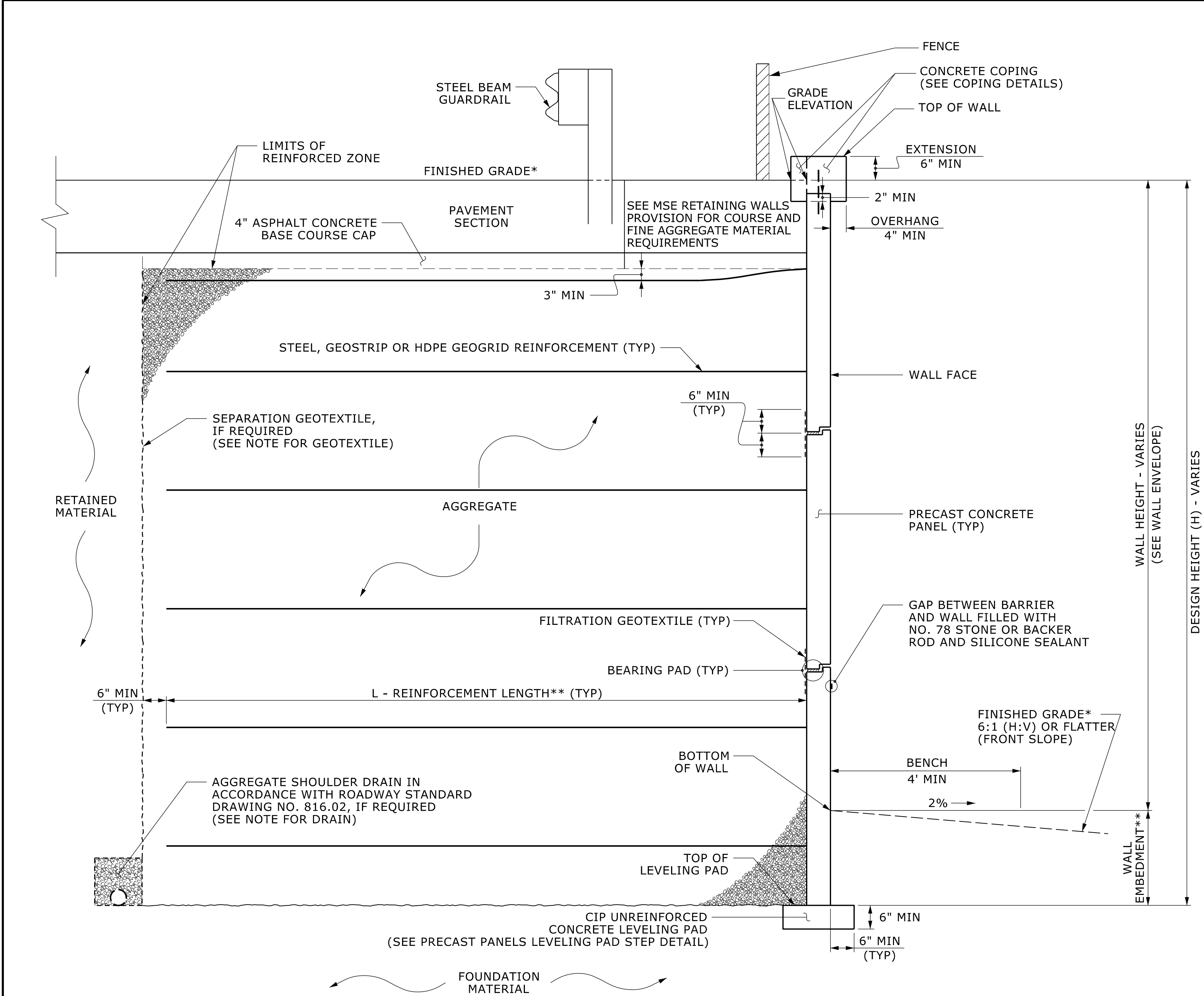
Prepared in the Office of:



MSE RETAINING WALL NO.4 WITH PANELS AND GAURDRAIL PLAN AND ENVELOPE

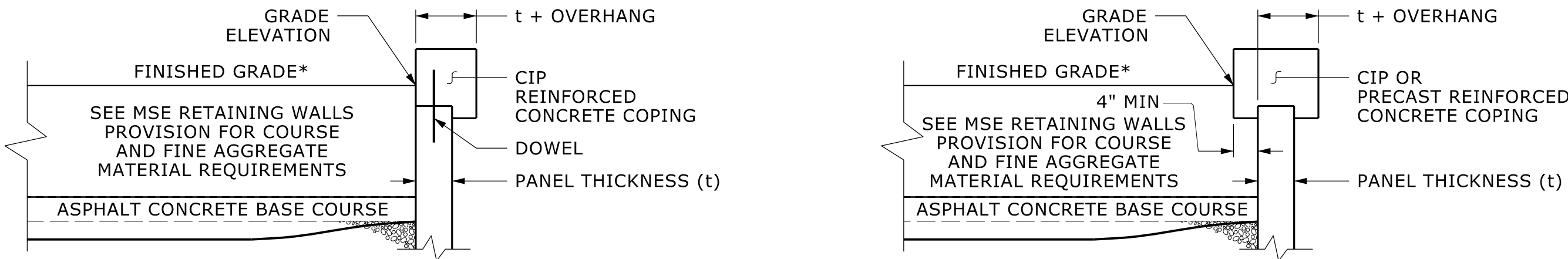
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	FIELDS, W. D.	8/10/26	3			
2			4			

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, JR., A. F.	DATE: 10/22/2025



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 WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.



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.

PROJECT REFERENCE NO. SHEET NO.

R-5759 W-7

GEOTECHNICAL
ENGINEER



DocuSigned by:

Almer Riggs Jr.

CSF6ACAM027481

8/10/2026

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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UNLESS ALL SIGNATURES COMPLETED

SHEET 2 OF 3

PROJECT NO.: 44691.1.1 (R-5759)

WILKES COUNTY

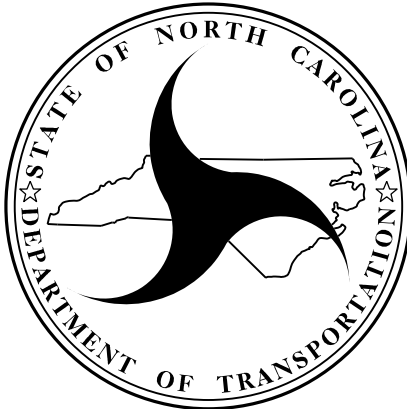
STATION: STA. 135+45.00 TO 132+20.00 -L-

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, Jr., A. F.	DATE: 10/22/2025

Prepared in the Office of:



3150 SPRING FOREST ROAD, SUITE 100
RALEIGH, NORTH CAROLINA 27616
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

MSE RETAINING WALL NO.4
WITH PANELS AND GAURDRAIL
TYPICAL AND COPING DETAILS

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

SHEET
NO.

NOTES:

- FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.
- FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.
- FOR FENCE ON RETAINING WALL NO. 4, WALL CONTRACTOR SHALL SUBMIT THE DESIGN AND DETAILS OF FENCE POST TO ENGINEER FOR REVIEW.
- AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 4.
- A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 4.
- A DRAIN IS REQUIRED FOR RETAINING WALL NO. 4.
- BEFORE BEGINNING MSE WALL 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) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
 - 2) DESIGN LIFE = 75 YEARS
 - 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 5,273 PSF
 - 4) MINIMUM REINFORCEMENT LENGTH (L) = 1.0 (H) OR 6.0 FT, WHICHEVER IS LONGER.
 - 5) MINIMUM EMBEDMENT DEPTH = 4.0 FT OR 2.0 FT BELOW BOTTOM OF STREAM CHANNEL, WHICHEVER IS DEEPER.
 - 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
RETAINED	120	26	0
FOUNDATION	120	26	0

DESIGN RETAINING WALL NO. 4 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR SIGNS, LIGHTING or SIGNALS WILL BE LOCATED BEHIND RETAINING WALL NO. 4 AND WILL INTERFERE WITH REINFORCEMENT. BEFORE BEGINNING MSE WALL CONSTRUCTION, SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS FOR APPROVAL.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 4.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 4 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

"TEMPORARY SHORING" IS REQUIRED FOR RETAINING WALL NO. 4 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE ROADWAY, STRUCTURE or TRAFFIC CONTROL PLANS.

PROJECT REFERENCE NO.

R-5759

SHEET NO.

W-8

GEOTECHNICAL ENGINEER



ENGINEER

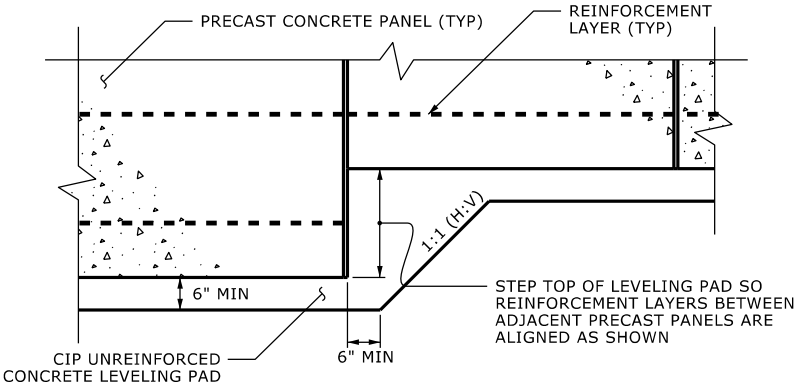
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8/10/2026

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PRECAST PANELS
LEVELING PAD STEP DETAIL

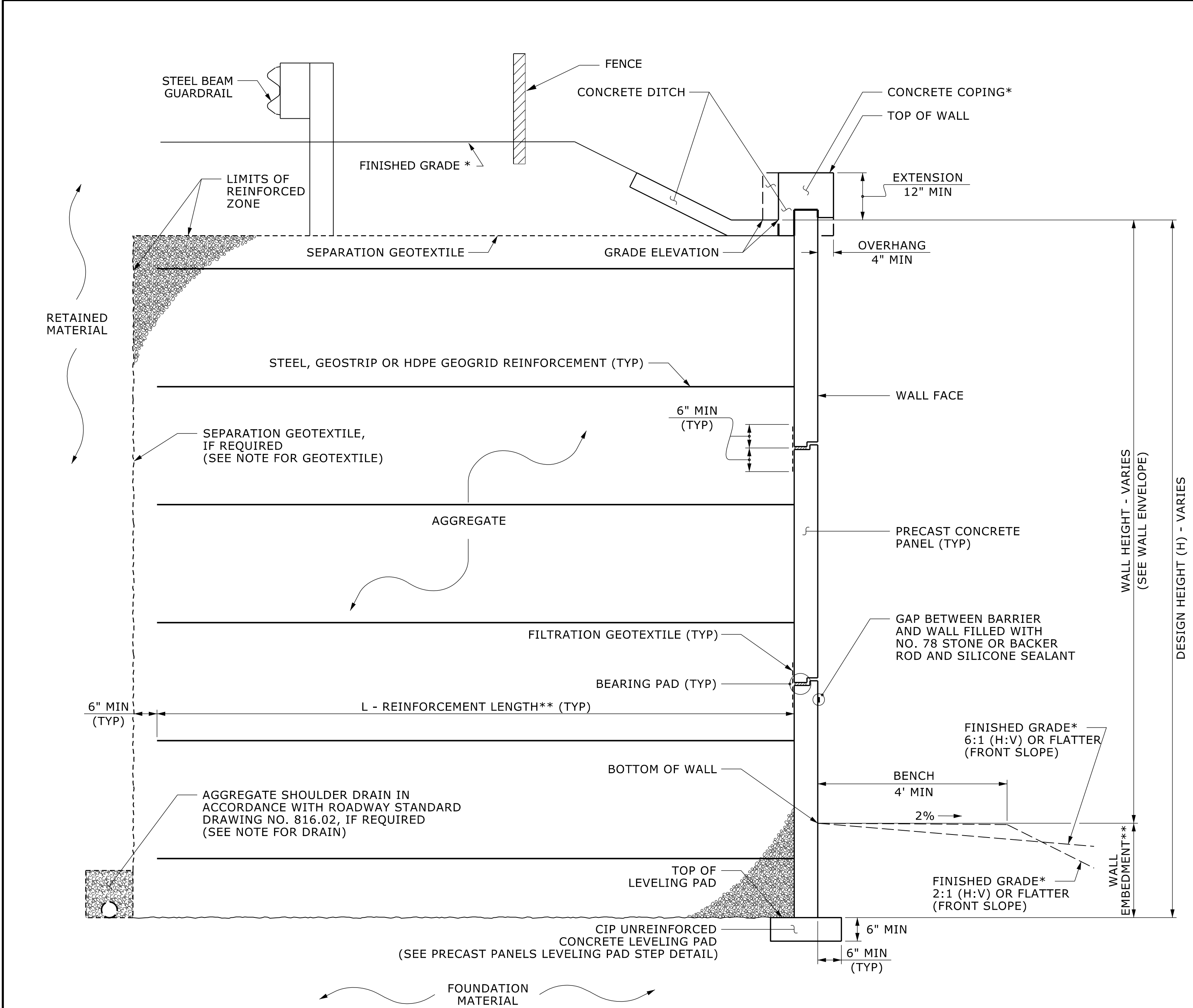


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

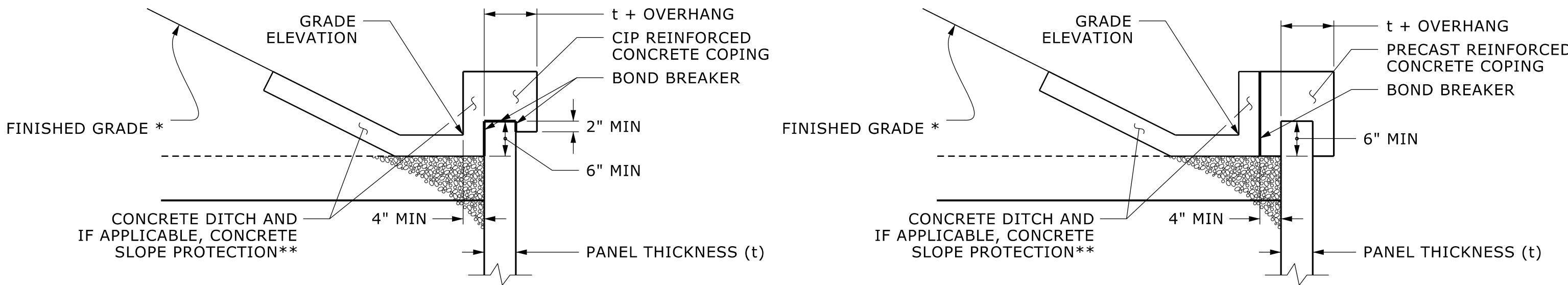
MSE RETAINING WALL NO.4
WITH PANELS AND GAURDRAIL
LEVELING PAD STEP
DETAIL AND NOTES

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	FIELDS, W. D.	8/10/26	3			
2			4			



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.

PROJECT REFERENCE NO.
R-5759

SHEET NO.
W-10

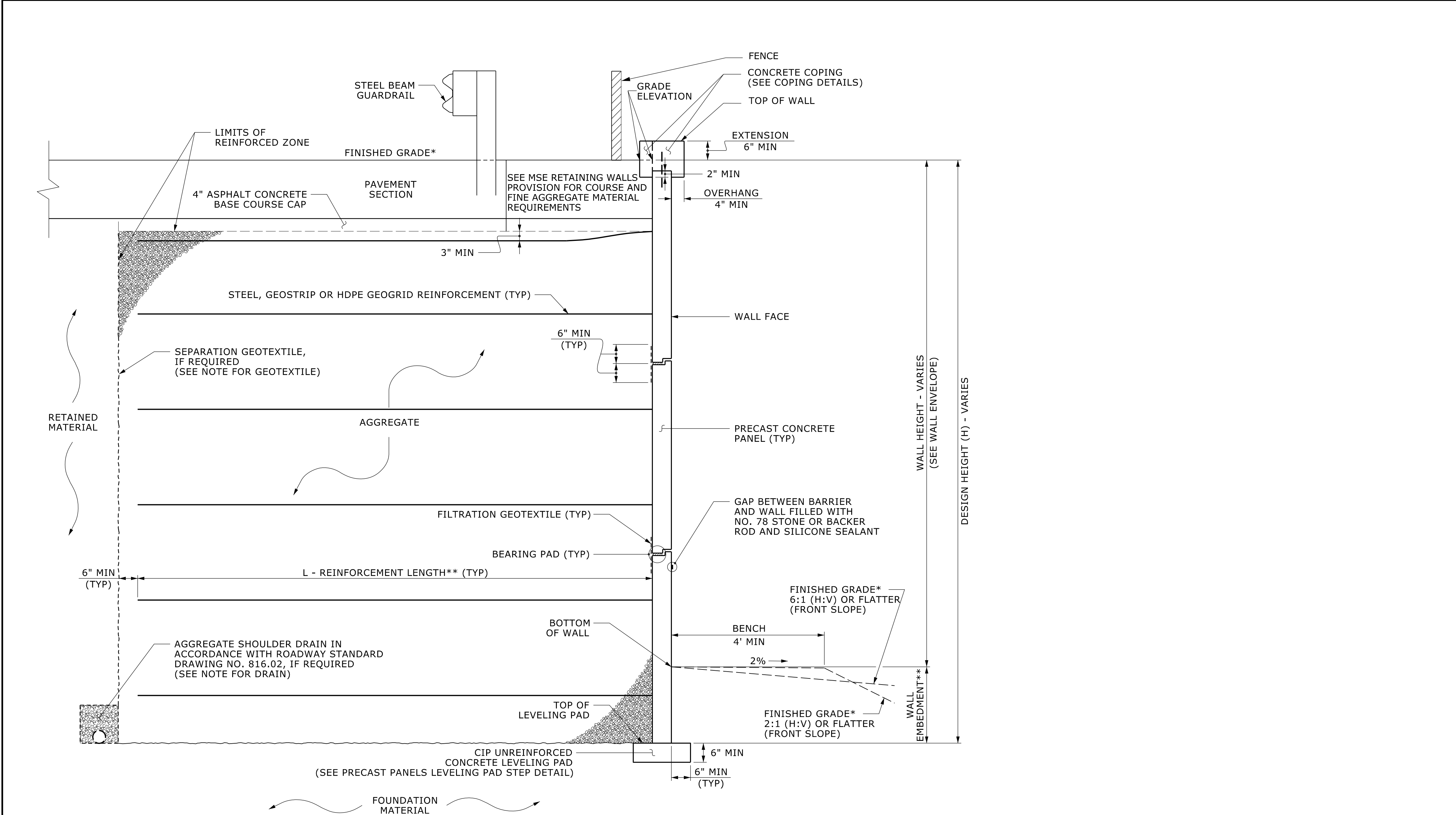
GEOTECHNICAL ENGINEER

DocuSigned by:
Almar Riggs Jr.
C2F8ACABD75F81
8/10/2026

ENGINEER

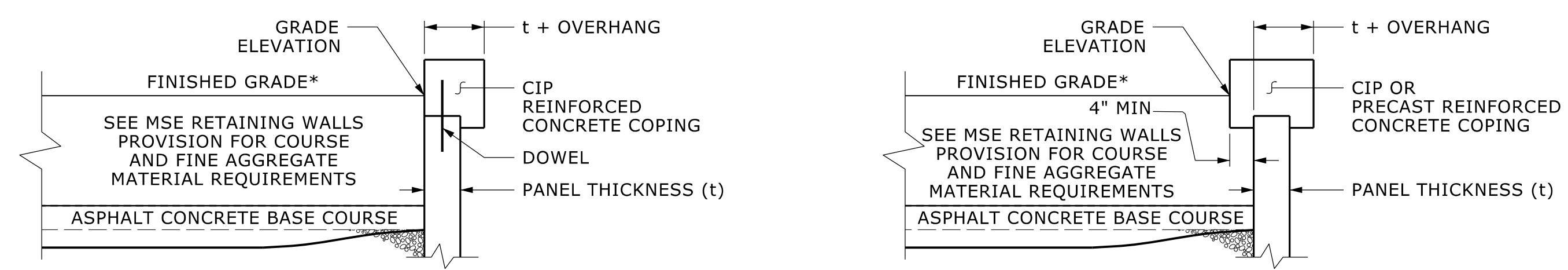
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DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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 WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.



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.

PROJECT REFERENCE NO.		SHEET NO.	
R-5759		W- 11	
GEOTECHNICAL ENGINEER		ENGINEER	
DocuSigned by: <i>Almer Riggs Jr.</i> C2F8ACAB027AB1 SIGNATURE		8/10/2026 DATE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SHEET 3 OF 4

PROJECT NO.: 44691.1.1 (R-5759)
WILKES COUNTY
STATION: STA. 10+27.02 TO 11+82.90 -RWAL6-

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, Jr., A. F.	DATE: 10/22/2025

Prepared in the Office of:

3150 SPRING FOREST ROAD, SUITE 100
RALEIGH, NORTH CAROLINA 27616
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

MSE RETAINING WALL NO.6 WITH PANELS AND GAURDRAIL TYPICAL AND COPING DETAILS					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO.

NOTES:

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

FOR FENCE ON RETAINING WALL NO. 6, WALL CONTRACTOR SHALL SUBMIT THE DESIGN AND DETAILS OF FENCE TO ENGINEER FOR REVIEW.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 6.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 6.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 6.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 6, 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.6 FOR THE FOLLOWING:

1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
2) DESIGN LIFE = 75 YEARS
3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2,268 PSF
4) MINIMUM REINFORCEMENT LENGTH (L) = 10.0 FT
5) MINIMUM EMBEDMENT DEPTH = 2.0 FT OR 2.0 FT BELOW BOTTOM OF STREAM CHANNEL, WHICHEVER IS DEEPER.
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
RETAINED	120	30	0
FOUNDATION	105	27	0

DESIGN RETAINING WALL NO. 6 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

FOUNDATIONS FOR SIGNS, LIGHTING or SIGNALS WILL BE LOCATED BEHIND RETAINING WALL NO. 6 AND WILL INTERFERE WITH REINFORCEMENT. BEFORE BEGINNING MSE WALL CONSTRUCTION, SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS FOR APPROVAL.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 6.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO.6 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

"TEMPORARY SHORING" IS REQUIRED FOR RETAINING WALL NO.6 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE ROADWAY, STRUCTURE or TRAFFIC CONTROL PLANS.

PROJECT REFERENCE NO.

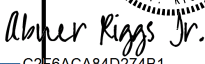
R-5759

SHEET NO.

W-12

GEOTECHNICAL ENGINEER

DocuSigned by



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SEAL

014155

ALMER RIGGS JR.

ENGINEER

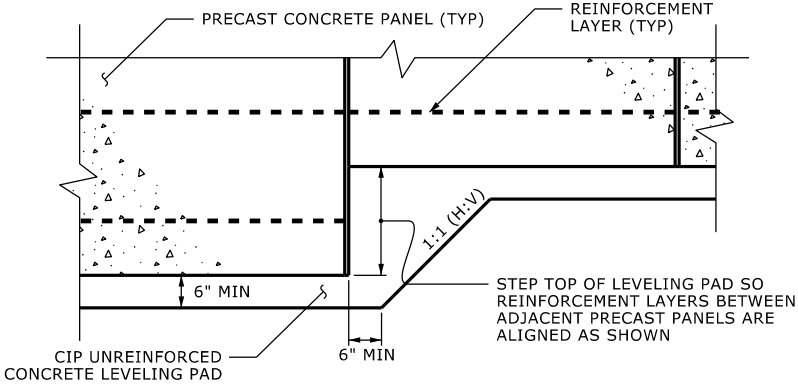
8/10/2026

ENGINEER

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PRECAST PANELS
LEVELING PAD STEP DETAIL

PROJECT NO.: R-5759
WILKES COUNTY
STATION: STA. 10+00 TO 11+82.90 -RWAL6-

PREPARED BY: ALMULLA, H.	DATE: 10/22/2025
REVIEWED BY: RIGGS, Jr., A. F.	DATE: 10/22/2025

Prepared in the Office of:



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

MSE RETAINING WALL NO.6
WITH PANELS AND GAURDRAIL
LEVELING PAD STEP
DETAIL AND NOTES

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	FIELDS, W. D.	8/10/26	3		
2			4		

SHEET NO.