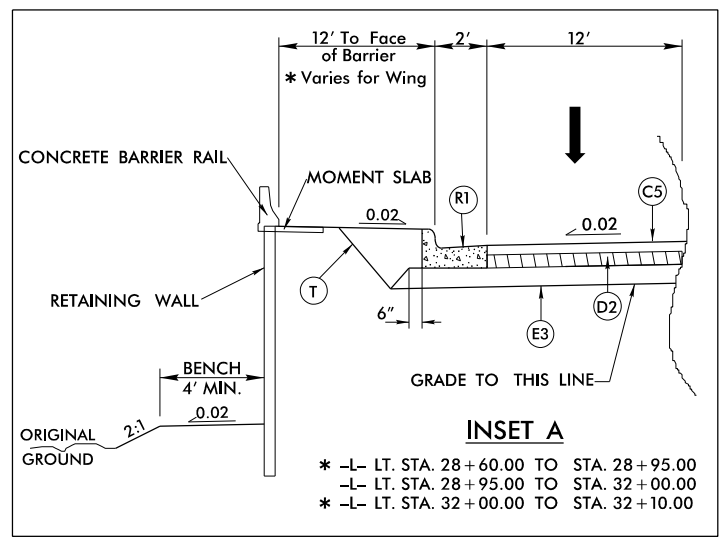
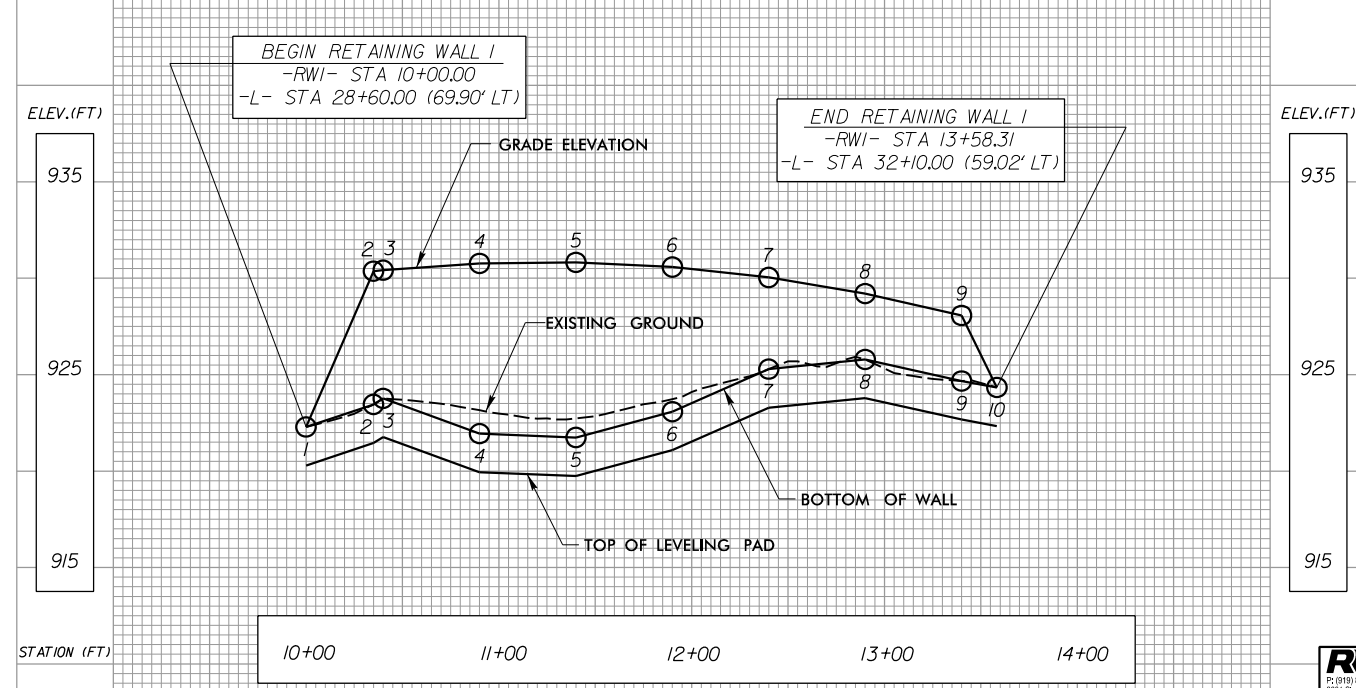


POINT NO.	-RW1- STATION	GRADE ELEVATION	BOTTOM OF WALL
1	10+00.00	922.29'	922.29'
2	10+40.24	930.37'	923.46'
3	10+45.10	930.42'	923.77'
4*	10+95.10	930.77'	921.94'
5*	11+45.10	930.82'	921.74'
6*	11+95.10	930.58'	923.08'
7	12+45.10	930.04'	925.29'
8	12+95.10	929.21'	925.79'
9	13+44.90	928.07'	924.67'
10	13+58.31	924.34'	924.34'

* Bottom elevations include 4' bench for steep existing slope

ESTIMATED QUANTITIES

RETAINING WALL NO.	MSE RETAINING WALL (SQUARE FOOT)
1	3000



NOTE: VERTICAL SCALE: 1:10
 HORIZONTAL SCALE: 1:1

PROJECT NO.: R-2577A
 FORSYTH COUNTY
 STATION: -RW1- 10+00.00 TO -RW1- 13+58.31
 -L- 28+60.00 TO -L- 32+10.00
 SHEET 1 OF 5 WALL ID RW-1

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 8801 Six Forks Road, Forest Hills, NC 27638
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GEOTECHNICAL ENGINEERING UNIT

MSE RETAINING WALL WALL NO. 1 DETAILS

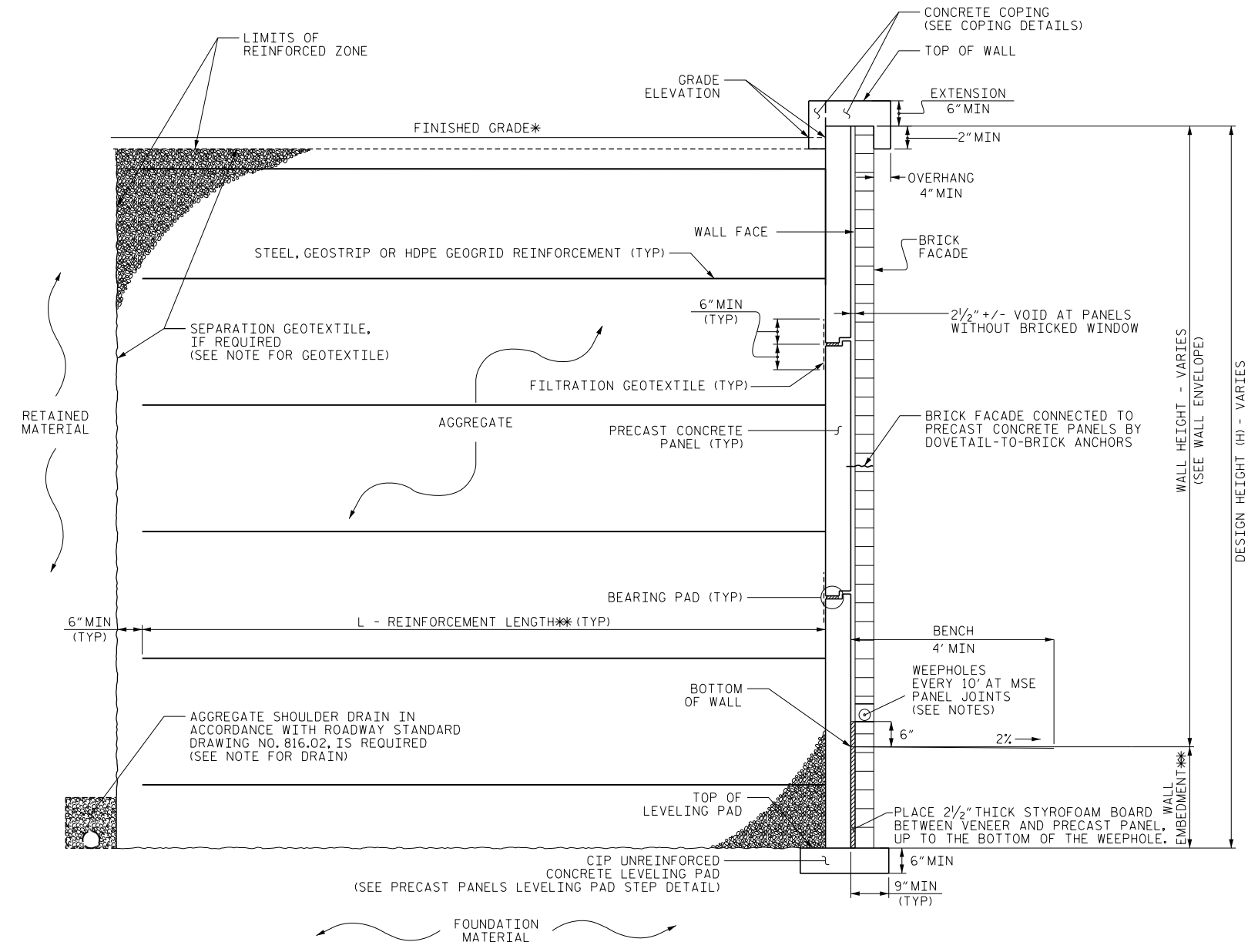
REV	DATE	BY	CHK

GEOTECHNICAL ENGINEER
ENGINEER

SEAL
041709
ENGINEER
GREGORY K. GOINS

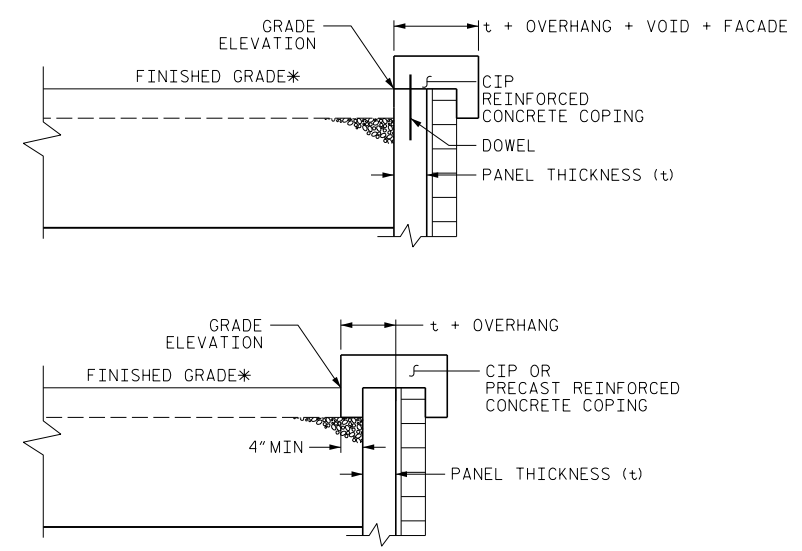
DocuSigned by:
Gregory K. Goins 11/13/2023

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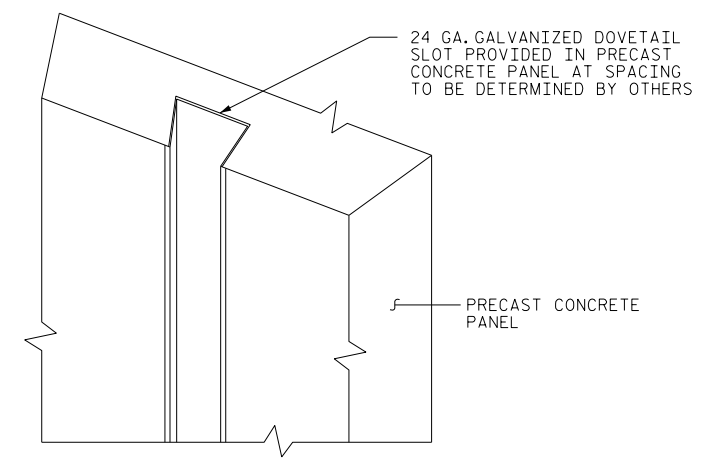
MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.
 *SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
 THIS TYPICAL SECTION IS FOR POINT NO. 1 TO 2 FROM -RW1- 10+00.0 TO 10+40.24 (-L- 28+60.00 TO 28+95.00)
 THIS TYPICAL SECTION IS FOR POINT NO. 9 TO 10 FROM -RW1- 13+44.90 TO 13+58.31 (-L- 32+00.00 TO 32+10.00)



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.



DOVETAIL SLOT

PROJECT NO.: R-2577A
 FORSYTH COUNTY
 STATION: -RW1- 10+00.00 TO -RW1- 13+58.31
 -L- 28+60.00 TO -L- 32+10.00
 SHEET 2 OF 5 WALL ID RW- 1

PREPARED BY: MAXIME METRY	DATE: 03/06/23
REVIEWED BY: JAMEY BATTS	DATE: 03/06/23

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MSE RETAINING WALL WALL NO. 1 DETAILS

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

GEOTECHNICAL ENGINEER

ENGINEER

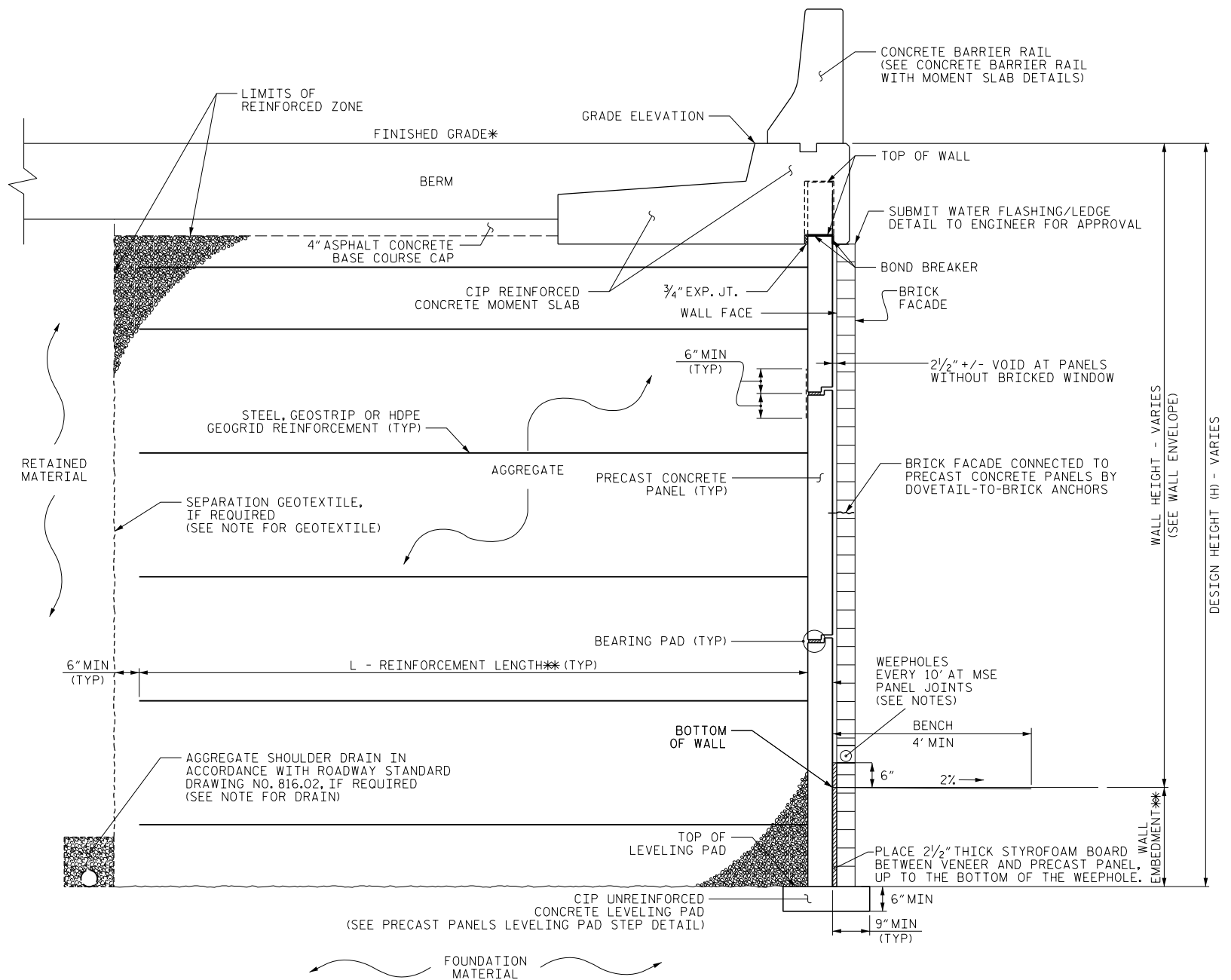
DocuSigned by: Gregory K. Goins 11/13/2023

SEAL 041709

REGISTRY K. GOINS

DATE: SIGNATURE: DATE:

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MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE, GUARDRAIL AND HANDRAILS DETAILS.
 **SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.
 THIS TYPICAL SECTION IS FOR POINT NO. 2 TO 9 FROM -RW1- 10+40.24 TO 13+44.90 (-L- 28+95.00 TO 32+00.00)

PROJECT NO.: R-2577A
 FORSYTH COUNTY
 STATION: -RW1- 10+00.00 TO -RW1- 13+58.31
 -L- 28+60.00 TO -L- 32+10.00
 SHEET 3 OF 5 WALL ID RW- 1

PREPARED BY: MAXIME METRY DATE: 03/06/23
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MSE RETAINING WALL WALL NO. 1 DETAILS

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

NOTES:

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

A CONCRETE BARRIER RAIL WITH MOMENT SLAB IS REQUIRED ABOVE RETAINING WALL NO.1. SEE PLANS FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO.1.

A SEPARATION GEOTEXTILE IS NOT REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO.1, PROVIDED FINE AGGREGATE IS USED IN THE REINFORCED ZONE.

A DRAIN IS REQUIRED FOR RETAINING WALL NO.1.

CIP REINFORCED CONCRETE COPING IS REQUIRED FOR RETAINING WALL NO.1.

A BRICK VENEER IS REQUIRED IN FRONT OF THE PRECAST CONCRETE PANELS FOR RETAINING WALL NO.1.

BRICK VENEER SHALL REST ON TOP OF THE LEVELING PAD, AS SHOWN IN THE TYPICAL SECTION.

FOR BRICK VENEERS, SUBMIT BRICK SAMPLES FOR APPROVAL BEFORE BEGINNING STANDARD MSE WALL CONSTRUCTION.

A HAND-LAID BRICK FACADE IS REQUIRED FOR RETAINING WALL NO.1. SEE ARCHITECTURAL DETAILS FOR SURFACE FINISH AND PATTERNS. THE PRECAST MSE PANEL WALL SHOULD BE CONSTRUCTED AND ALLOWED TO SETTLE PRIOR TO CONSTRUCTION OF THE BRICK FACADE.

A WAITING PERIOD IS REQUIRED PRIOR TO CONSTRUCTION OF THE BRICK FACADE FOOTING AND THE BRICK FACADE. THE WALLS SHOULD BE ALLOWED TO SETTLE FOR A MINIMUM OF 2 MONTHS FROM COMPLETION TO THEIR PROPOSED HEIGHT.

PROVIDE WEEPHOLES IN THE BRICK VENEER AS RECOMMENDED BY THE ENGINEER APPROXIMATELY EVERY 10' AT MSE PANEL JOINTS.

MAXIMUM PANEL WIDTH IS 10'.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO.1, 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.1 FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 3,300 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7H OR 6 FT, WHICHEVER IS LONGER
- 5) MINIMUM EMBEDMENT DEPTH = 2 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	29	0

DESIGN RETAINING WALL NO.1 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

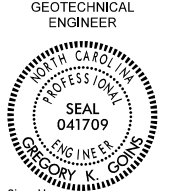
FOUNDATIONS FOR SIGNS, LIGHTING OR SIGNALS WILL BE LOCATED BEHIND RETAINING WALL NO.1 AND MAY INTERFERE WITH REINFORCEMENT. BEFORE BEGINNING MSE WALL CONSTRUCTION, SUBMIT PROPOSED CONSTRUCTION METHODS FOR THESE FOUNDATIONS FOR APPROVAL.

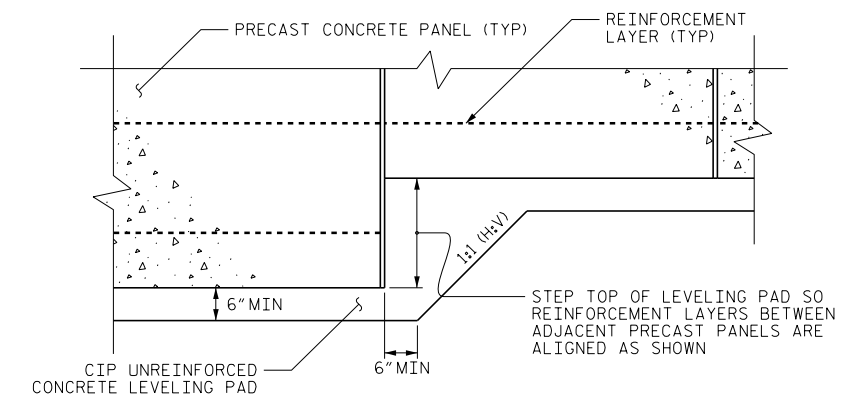
EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO.1.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO.1 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. SEE MSE RETAINING WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.

MSE LEVELING PAD WIDTH SHALL ALLOW A MINIMUM OF 9 INCHES IN FRONT OF THE MSE PANEL FACE FOR A BRICK LEDGER.

GEOTECHNICAL ENGINEER  SEAL 041709 GREGORY K. GAINS	ENGINEER
DocuSigned by: <i>Gregory K. Gains</i> 11/13/2023	DATE: 11/13/2023 SIGNATURE: _____ DATE: _____
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**PRECAST PANELS
LEVELING PAD STEP DETAIL**

PROJECT NO.: R-2577A
 FORSYTH COUNTY
 STATION: -RW1- 10+00.00 TO -RW1- 13+58.31
 -L- 28+60.00 TO -L- 32+10.00
 SHEET 4 OF 5 WALL ID RW- 1

PREPARED BY: MAXIME METRY	DATE: 03/06/23
REVIEWED BY: JAMEY BATTS	DATE: 03/06/23

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MSE RETAINING WALL WALL NO. 1 DETAILS					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. W-4

