GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039779 JEREMY R HAMM

DocuSigned by: Jeremy Hamm 4/15/2025
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SIGNATURE DATE

SIGNATURE DATE

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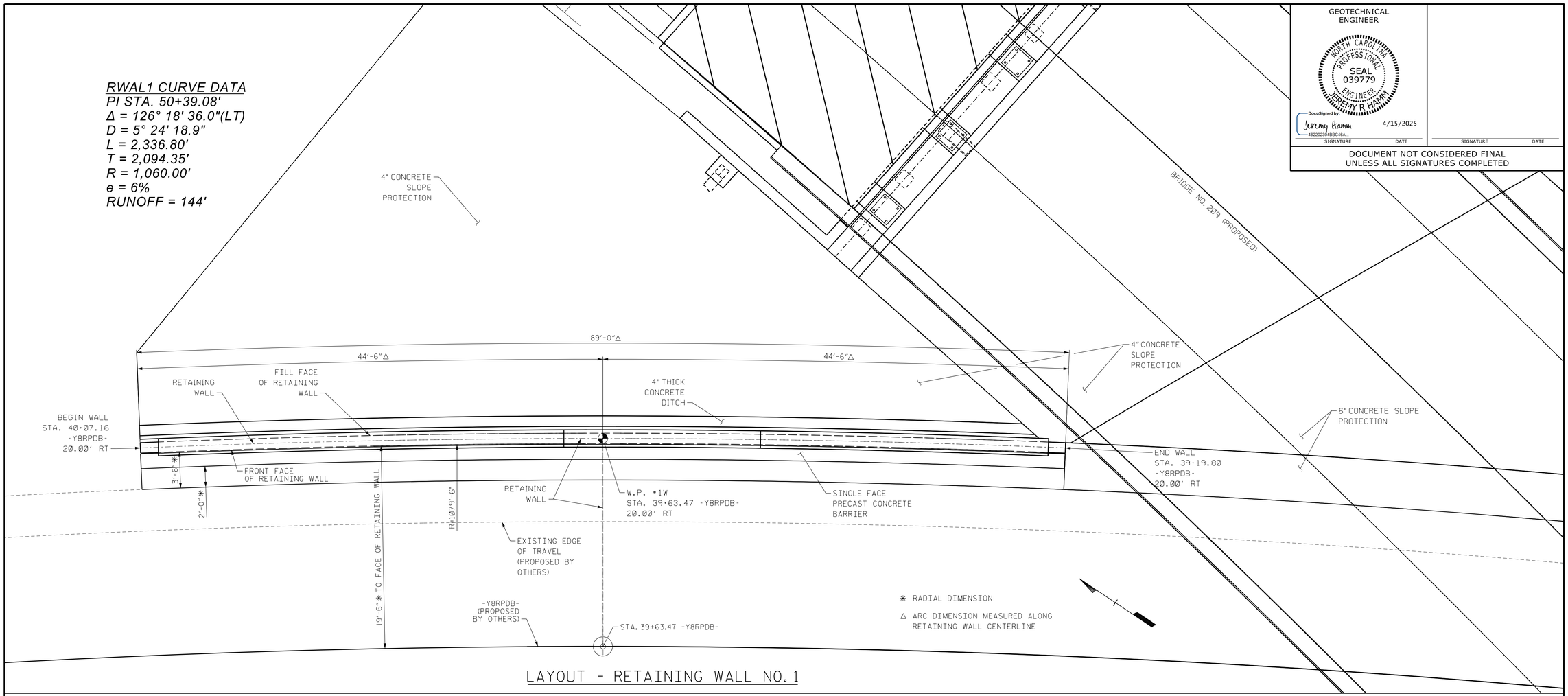
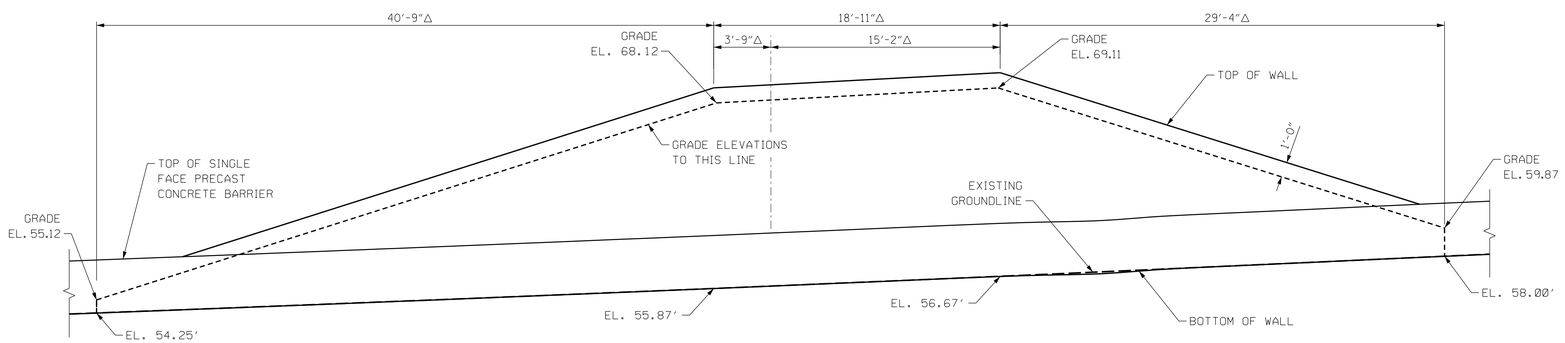
RWAL1 CURVE DATA
PI STA. 50+39.08'
Δ = 126° 18' 36.0"(LT)
D = 5° 24' 18.9"
L = 2,336.80'
T = 2,094.35'
R = 1,060.00'
e = 6%
RUNOFF = 144'



LAYOUT - RETAINING WALL NO. 1



ELEVATION - RETAINING WALL NO. 1

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

ESTIMATED MSE WALL QUANTITIES (SQUARE FEET)	
MSE RETAINING WALL NO. 1	1,070 SF *

*QUANTITY ACCOUNTS FOR 3 FT MINIMUM EMBEDMENT

PROJECT NO.: R-3300A
NEW HANOVER COUNTY
STATION: 39+19.80-40+07.16 -Y8RPDB-
SHEET 1 OF 3 WALL ID RW-1

PREPARED BY: JRH	DATE: 4/2/25
REVIEWED BY: SCC	DATE: 4/2/25

FALCON ENGINEERING
FALCON ENGINEERING, INC.
1210 TRINITY ROAD, SUITE 110
CARY, NC 27513
PHONE: 919.871.0800
www.falconengineers.com
NC Firm License C-3193

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 1
PLAN VIEW AND
WALL ENVELOPE

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	W-1
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.

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.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 1 IF COARSE AGGREGATE IS USED IN THE REINFORCED ZONE.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 1.

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 = 4,520 PSF
4) MINIMUM REINFORCEMENT LENGTH (L) = 0.87*H OR 6 FT, WHICHEVER IS LONGER
5) MINIMUM EMBEDMENT DEPTH = 3.0 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	120	30	0

THE WALL SITE FOR RETAINING WALL NO. 1 LOCATED AT END BENT NO. 2 IS CLASSIFIED AS AASHTO SITE CLASS E.

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.

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039779 ENGINEER JEREMY R HAMM

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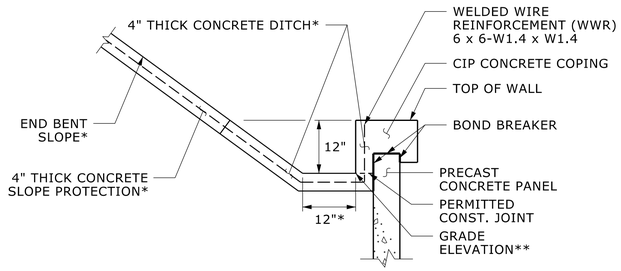
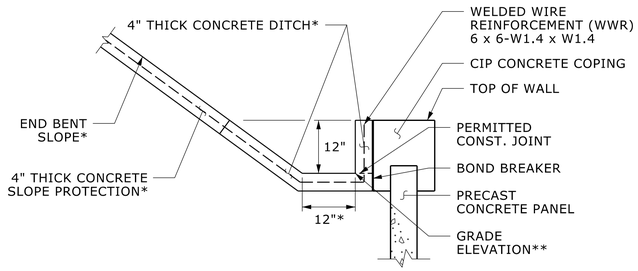


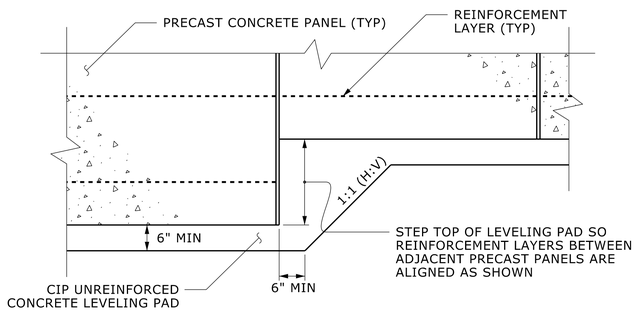


MSE WALL WITH PRECAST PANELS

CONCRETE DITCH BEHIND WALL WITH CONCRETE SLOPE PROTECTION AND COPING

*SEE PLANS FOR CONCRETE DITCH AND END BENT SLOPE DETAILS.
**SEE WALL ENVELOPE FOR GRADE ELEVATIONS.

FOR CONCRETE DITCHES, SEE SECTION 850 OF THE STANDARD SPECIFICATIONS.
FOR CONCRETE SLOPE PROTECTION, SEE SECTION 462 OF THE STANDARD SPECIFICATIONS.



PRECAST PANELS
LEVELING PAD STEP DETAIL

PROJECT NO.: R-3300A
NEW HANOVER COUNTY
STATION: 39+19.80-40+07.16 -Y8RPDB-
SHEET 3 OF 3 WALL ID RW-1

PREPARED BY: JRH	DATE: 4/2/25
REVIEWED BY: SCC	DATE: 4/2/25

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RETAINING WALL NO. 1
NOTES AND DETAILS

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

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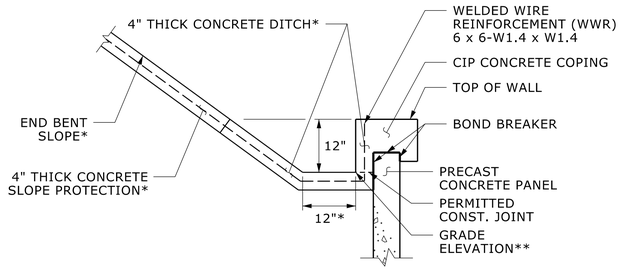

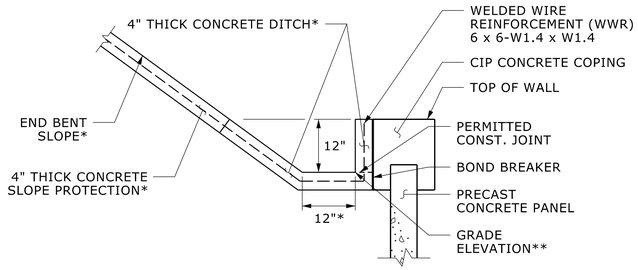

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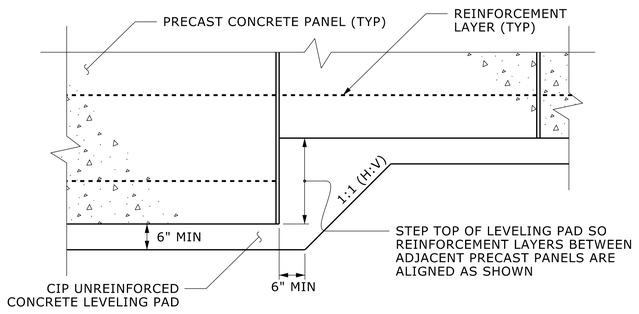

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STATION: 39+19.80-40+07.16 -Y8RPDB-
SHEET 3 OF 3 WALL ID RW-1

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