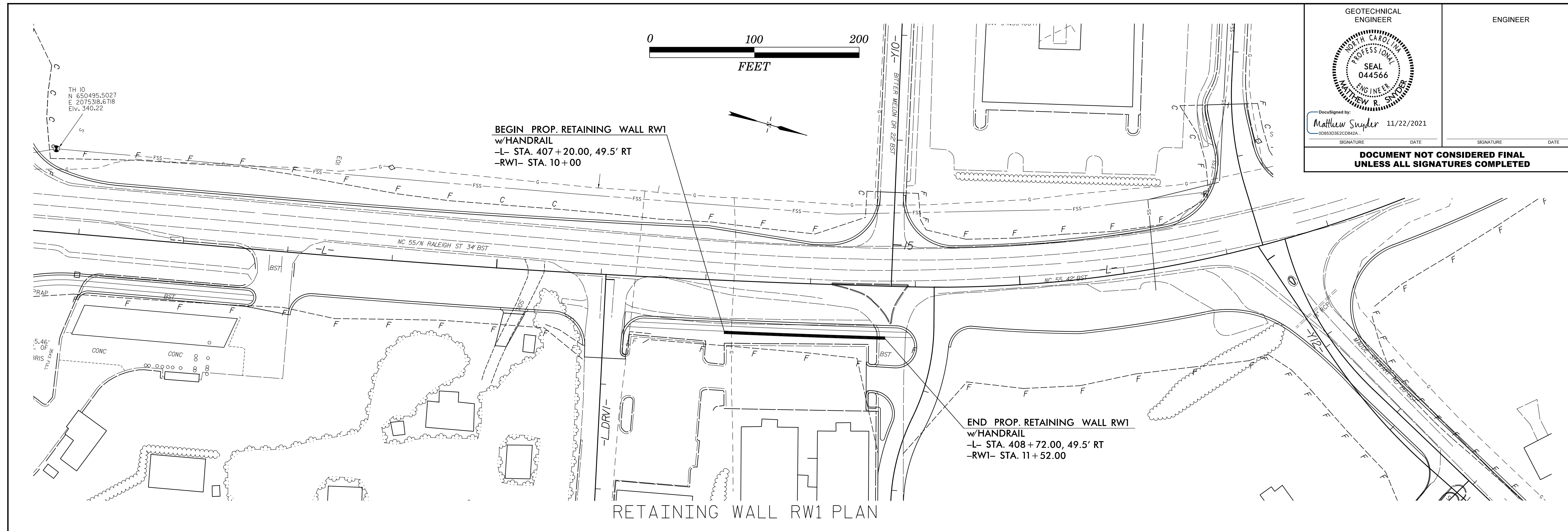


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GEOTECHNICAL ENGINEER

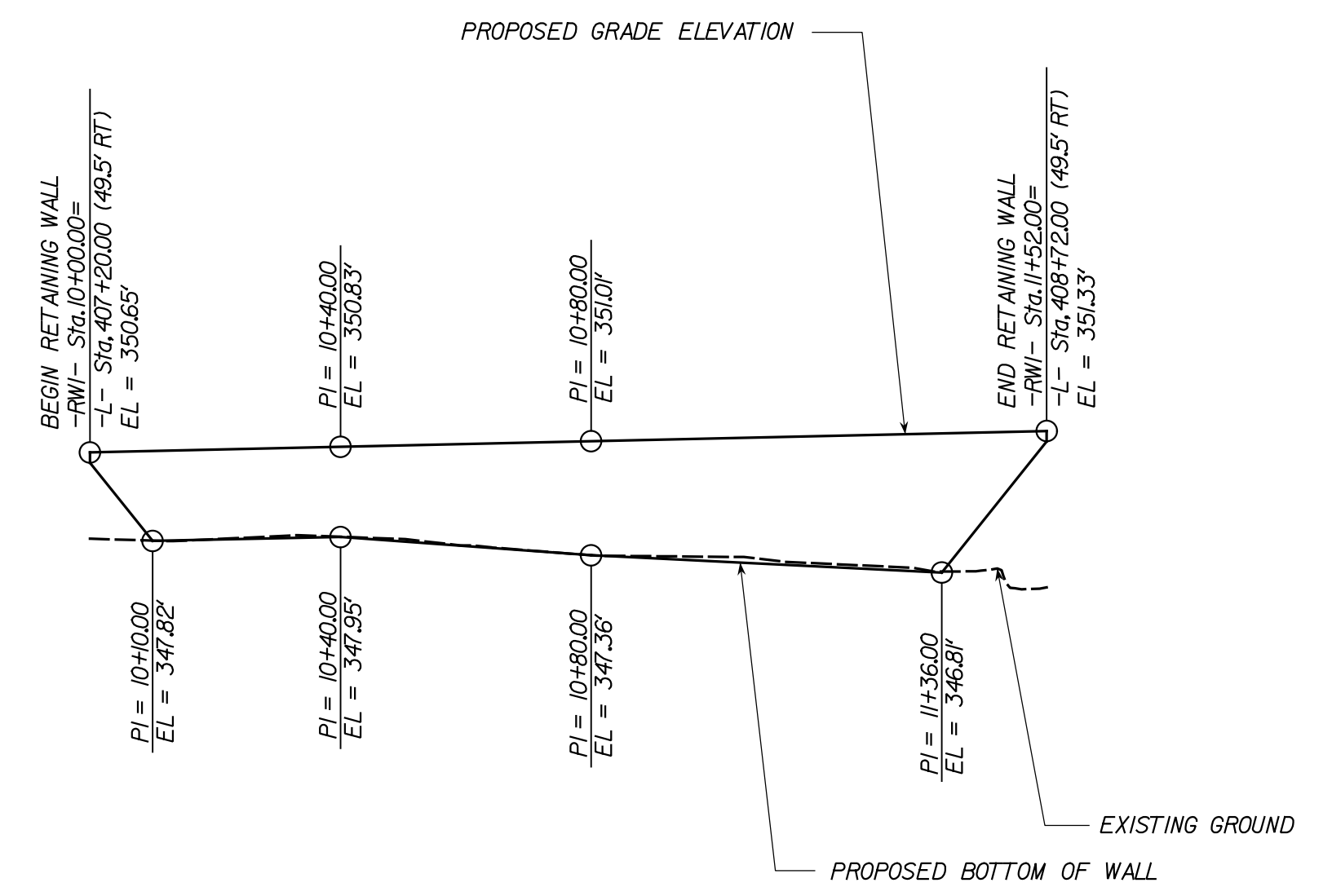
ENGINEER

STATE OF NORTH CAROLINA  
PROFESSIONAL SEAL  
044566  
ENGINEER  
MATTHEW R. SNYDER

DocuSigned by:  
**Matthew Snyder** 11/22/2021

SIGNATURE      DATE      SIGNATURE      DATE

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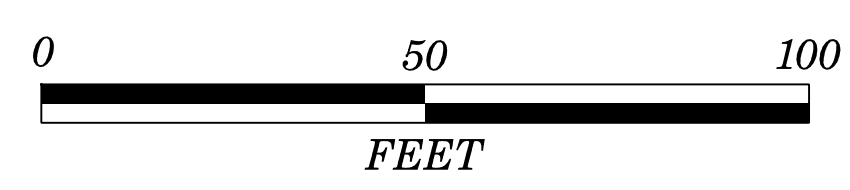


**ESTIMATED MSE RETAINING WALL QUANTITY**  
(SQUARE FEET)

MSE RETAINING WALL NO. RW1	730 SF
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**RETAINING WALL RW1 ENVELOPE**

VE 5:1



PROJECT NO.: R-5705B  
HARNETT AND WAKE COUNTY  
STATION: -L- 407+20  
SHEET 1 OF 3

PREPARED BY: MRS      DATE: 11/21  
REVIEWED BY: JSJ      DATE: 11/21



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**GEOTECHNICAL  
ENGINEERING UNIT**

**RETAINING WALL RW1 DETAILS**  
NC 55 FROM NC 210 TO  
SR 4809 (JICARILLA LANE)

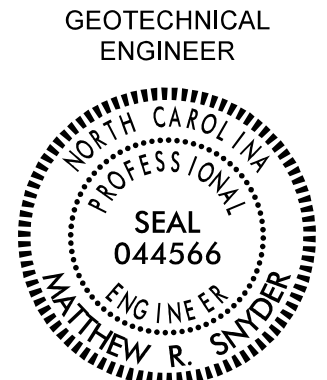
REVISIONS						SHEET NO. W-1
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			





GEOTECHNICAL ENGINEER

ENGINEER



DocuSigned by:  
*Matthew Snyder* 11/22/2021

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UNLESS ALL SIGNATURES COMPLETED**

**NOTES:**

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

USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL (SRW) UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL RW1.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL RW1.

CIP REINFORCED CONCRETE COPING IS REQUIRED FOR RETAINING WALL RW1.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL RW1.

A DRAIN IS REQUIRED FOR RETAINING WALL RW1.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL RW1, 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 RW1 FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 1,600 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7H OR 6 FT, WHICHEVER IS LONGER
- 5) MINIMUM WALL EMBEDMENT DEPTH = 1 FT
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) 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:

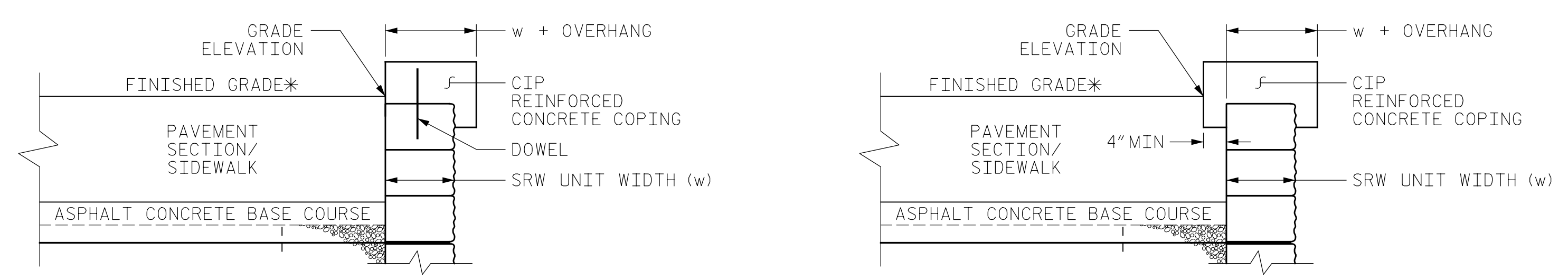
MATERIAL TYPE	UNIT WEIGHT ( $\gamma$ ) PCF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION (c) PSF
RETAINED	120	30	0
FOUNDATION	115	28	0

DESIGN RETAINING WALL RW1 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL RW1.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL RW1 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

DESIGN AND DETAIL CONNECTION OF HANDRAIL TO TOP OF WALL.



**COPING DETAILS**

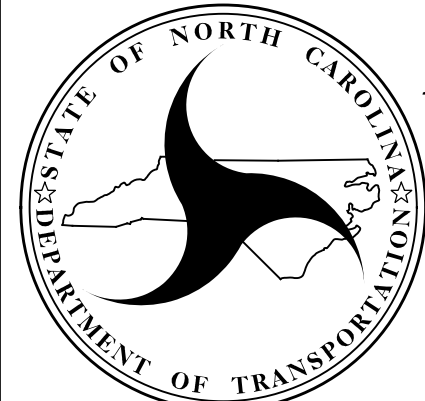
AT THE CONTRACTOR'S OPTION, CONNECT COPING TO SRW UNITS WITH DOWELS OR EXTEND COPING DOWN BACK OF SRW UNITS.  
\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

PROJECT NO.: R-5705B  
HARNETT AND WAKE COUNTY  
STATION: -L- 407+20  
SHEET 3 OF 3

PREPARED BY: MRS	DATE: 11/21
REVIEWED BY: JSJ	DATE: 11/21



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS



**GEOTECHNICAL  
ENGINEERING UNIT**

**RETAINING WALL RW1 NOTES  
NC 55 FROM NC 210 TO  
SR 4809 (JICARILLA LANE)**

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