

GEOTECHNICAL ENGINEER

ENGINEER

Shiping Yang 11/15/2024

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SIGNATURE DATE SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES:

- FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.
- A DECORATIVE ALUMINUM FENCE IS REQUIRED ON TOP OF RETAINING WALL NO. 5. SEE ROADWAY PLANS FOR FENCE ATTACHMENT DETAILS.
- 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. 5.
- WHEN USING AN MSE WALL SYSTEM WITH SRW UNITS FOR RETAINING WALL NO. 5, FREEZE-THAW DURABLE SRW UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS ARE REQUIRED.
- DECONSTRUCT PART OF THE EXISTING BLOCK WALLS AS SHOWN ON PLANS FOR RETAINING WALL NO. 5. RECONSTRUCT THE NEW WALLS WITH THE EXISTING BLOCKS OR BLOCKS THAT MATCH THE EXISTING BLOCKS.
- AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 5.
- A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 5.
- A DRAIN IS REQUIRED FOR RETAINING WALL NO. 5.
- BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 5, 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. 5 FOR THE FOLLOWING:
- 1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
 - 2) DESIGN LIFE = 75 YEARS
 - 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2000 PSF
 - 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.8H OR 4 FT, WHICHEVER IS LONGER
 - 5) MINIMUM EMBEDMENT DEPTH = 2 FT
 - 6) REINFORCED ZONE AGGREGATE PARAMETERS:

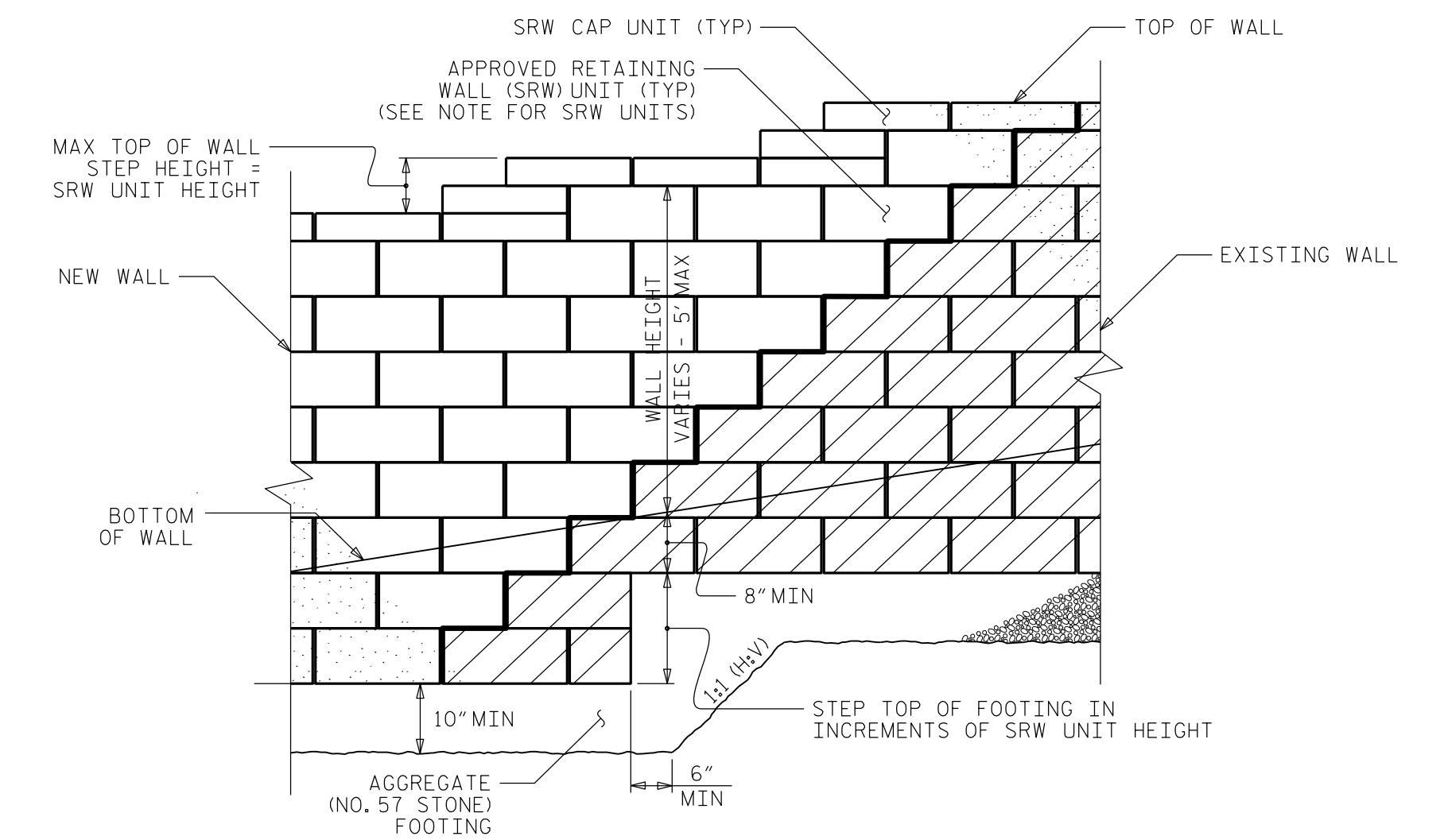
AGGREGATE TYPE*	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PSF
COARSE	110	38	0
FINE	115	34	0

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

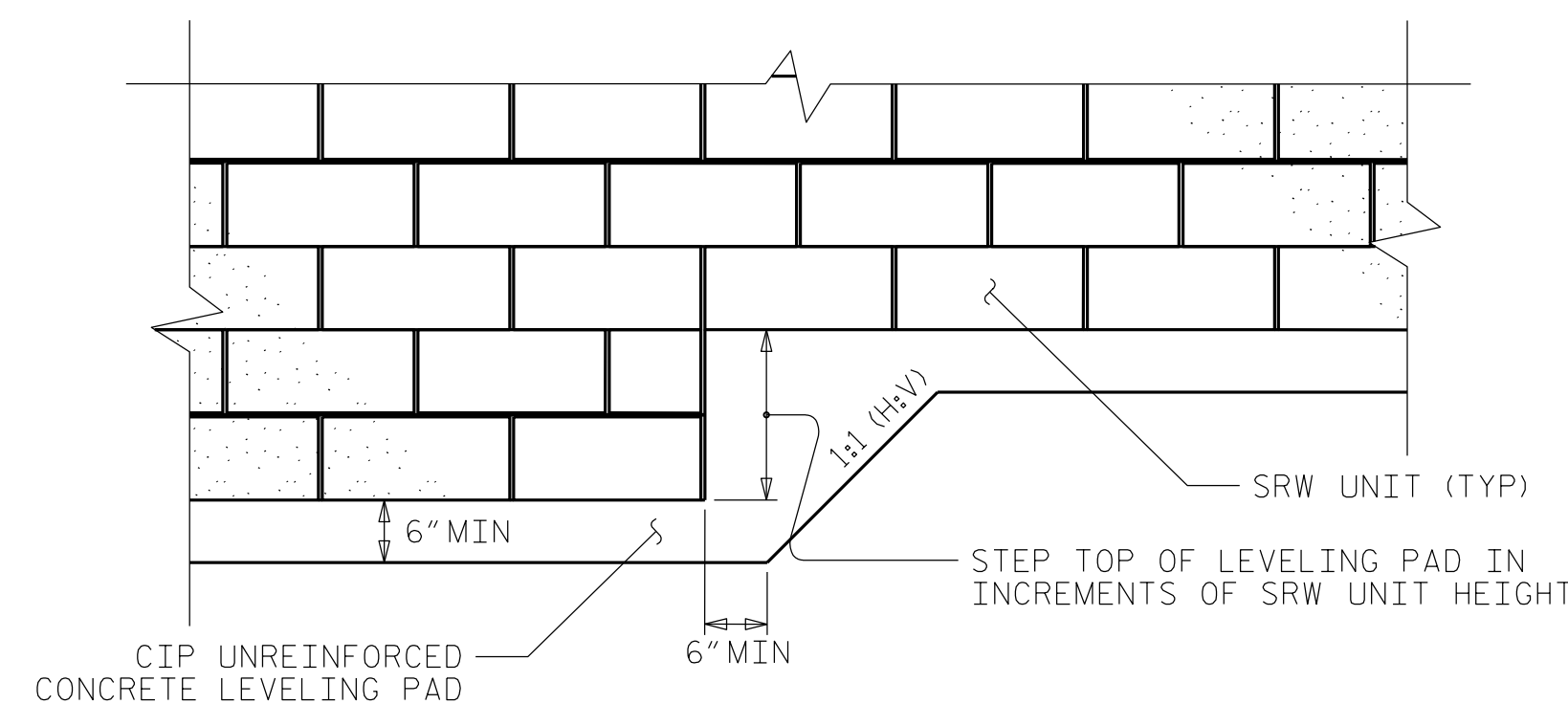
7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PSF
RETAINED	120	0	500
FOUNDATION	120	0	500

- DESIGN RETAINING WALL NO. 5 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 WALL NO. 5.
- DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 5 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
- "TEMPORARY SHORING" MAY BE REQUIRED FOR RETAINING WALL NO. 5 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE ROADWAY PLANS.
- WHERE REQUIRED, REMOVE EXISTING WALL UNITS AS SHOWN IN CONNECTION DETAIL AND CONSTRUCT NEW WALL AS SHOWN IN PLANS OR DIRECTED BY THE GEOTECHNICAL OPERATIONS ENGINEER.



WALL - CONNECTION DETAIL



SRW UNITS LEVELING PAD STEP DETAIL

PROJECT NO.: U-5536

FORSYTH COUNTY

STATION: SEE WALL ENVELOPES

SHEET 9 OF 10

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

**GEOTECHNICAL
ENGINEERING UNIT**

**RETAINING WALL NO. 5
NOTES & LEVELING PAD
STEP DETAIL**

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	SY	11/2024	3		
2			4		

SHEET NO.
W-9

PREPARED BY: SY	DATE: 10/2024
REVIEWED BY: SCC	DATE: 10/2024