

GEOTECHNICAL ENGINEER

ENGINEER

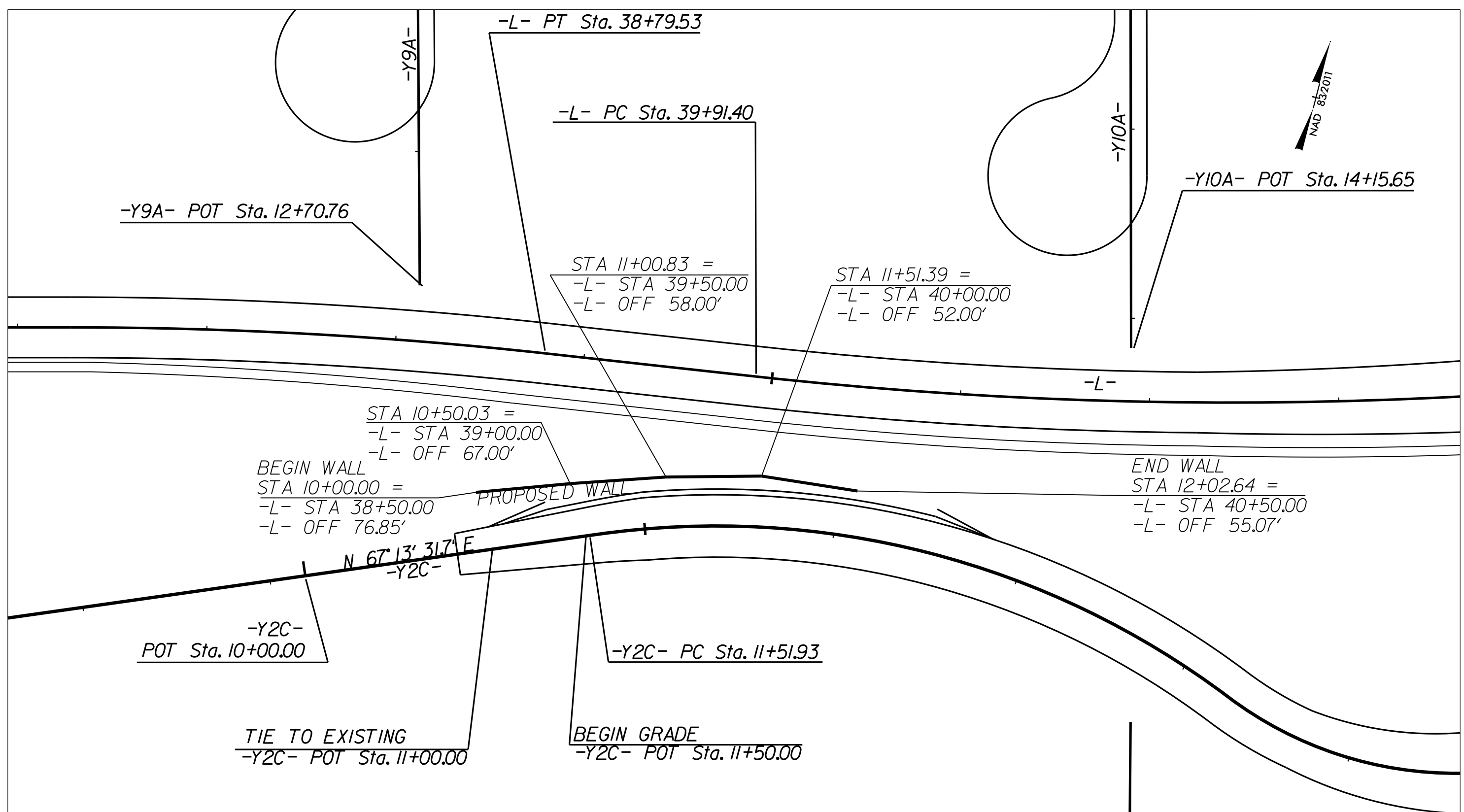
SEAL 028893

PROF. REG. NO. 209234CC

1/4/2019

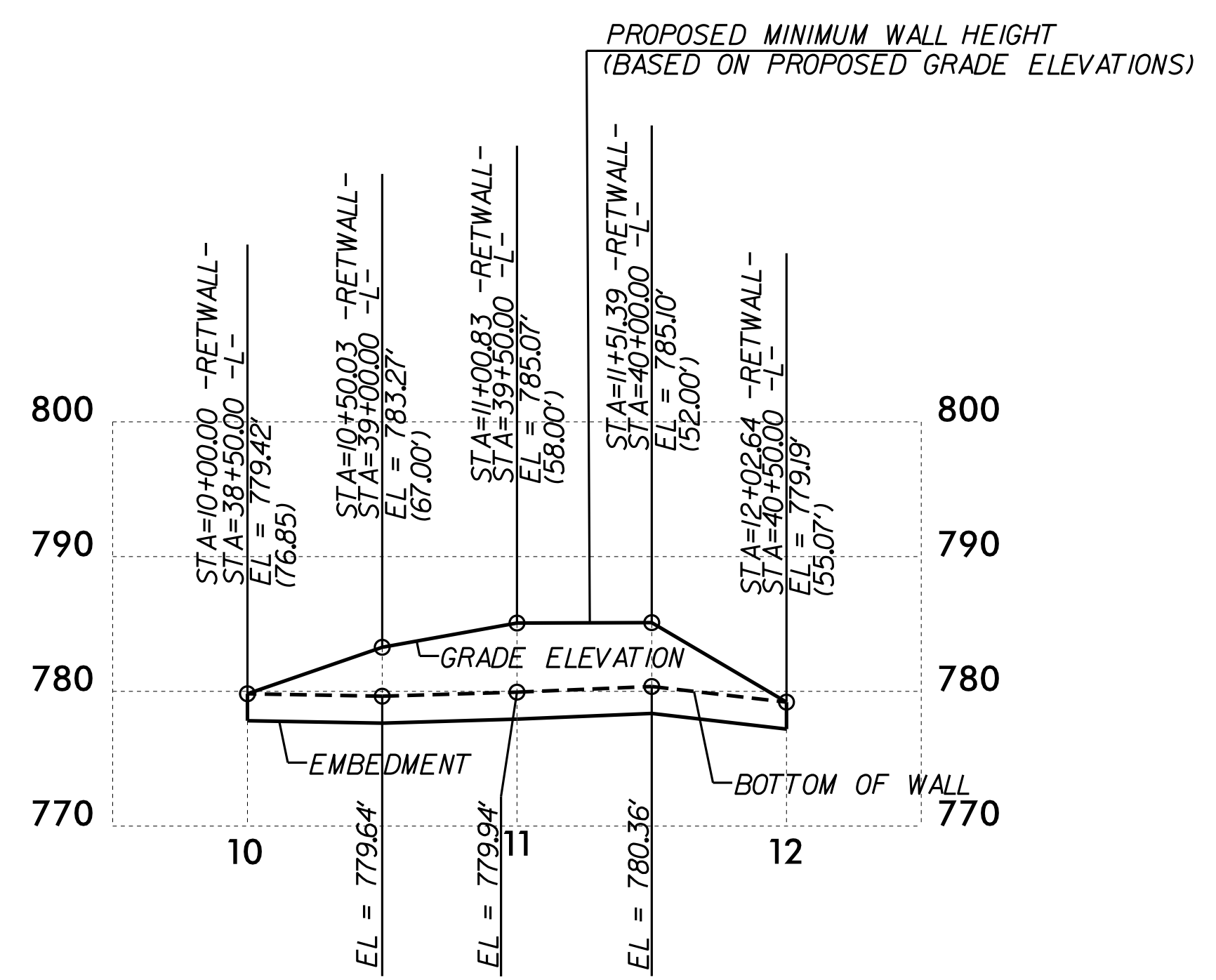
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PLAN VIEW - RETAINING WALL NO. 1

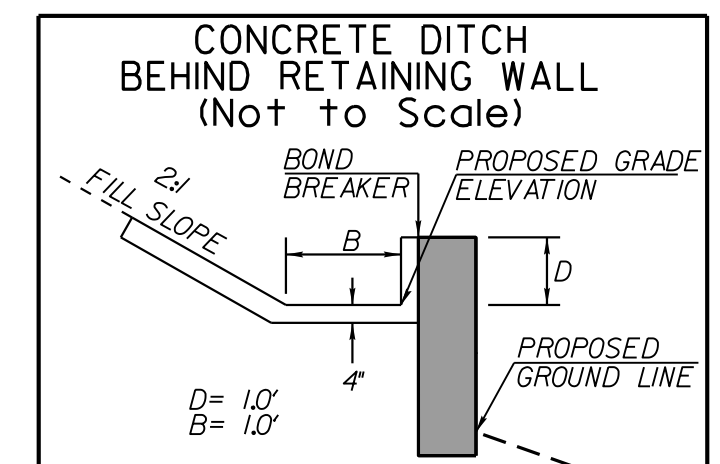
ESTIMATED MSE WALL QUANTITIE (SQUARE FEET)	
MSE RETAINING WALL NO. 1	1075 SF



NOTE: THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL

WALL ENVELOPE - RETAINING WALL NO. 1

NOTE: OFFSET DIMENSIONS ARE FROM FACE OF WALL



PROJECT NO.: 40325.1.46 (Y-4810K)

CABARRUS COUNTY

STATION: 38+50 -L-

SHEET 1 OF 4

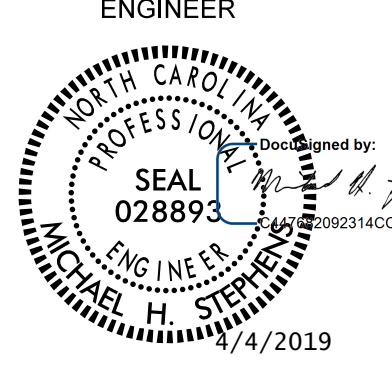
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

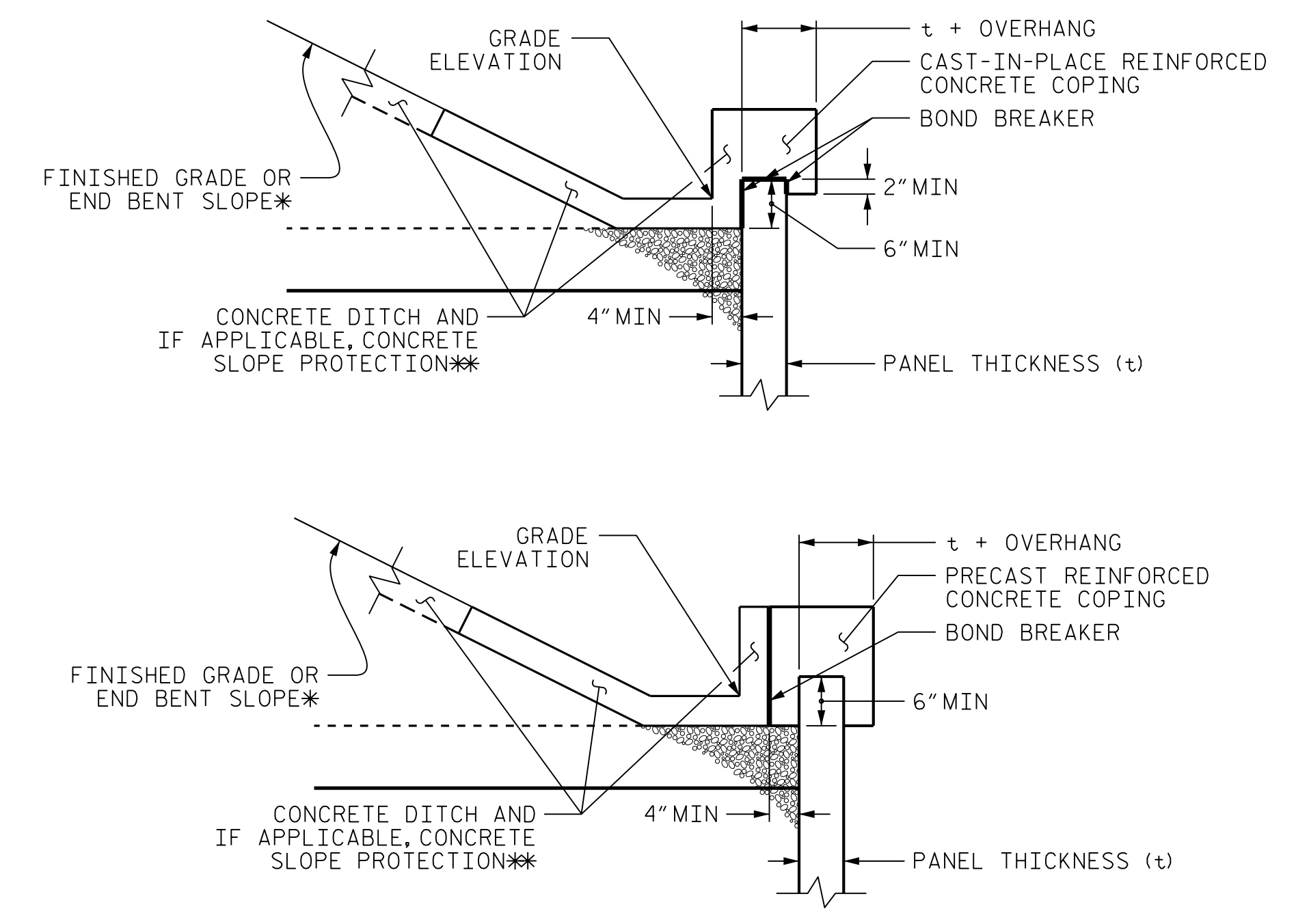
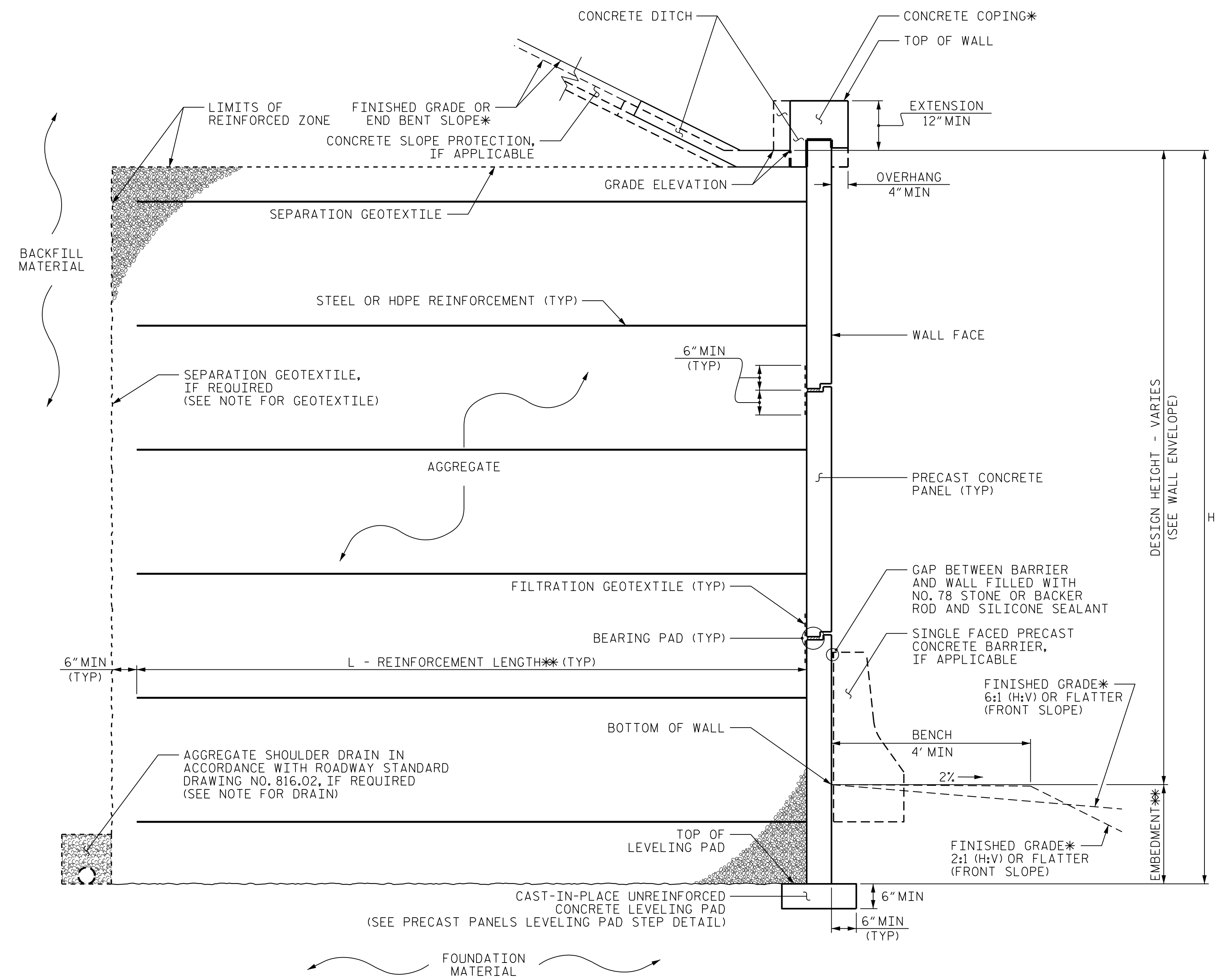
GEOTECHNICAL ENGINEERING UNIT

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

SHEET NO. W-1

PREPARED BY: MHS	DATE: 4/3/19
REVIEWED BY: SCC	DATE: 4/3/19

GEOTECHNICAL ENGINEER  SEAL 028893 MICHAEL H. STEPHENS 4/2019	ENGINEER _____ SIGNATURE DATE
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COPING DETAILS

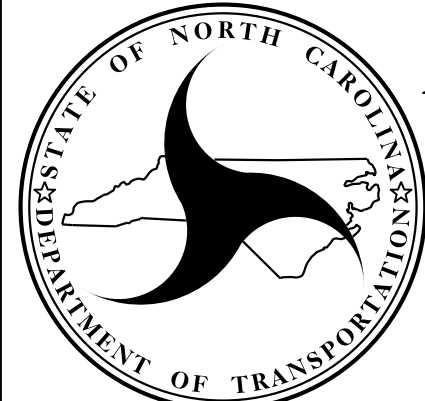
*SEE PLANS FOR FINISHED GRADE OR END BENT SLOPE DETAILS.
**SEE CONCRETE DITCH BEHIND WALL DETAILS.

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 EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

PROJECT NO.: 40325.1.46 (Y-4810K)
 CABARRUS COUNTY
 STATION: 38+50 -L-
 SHEET 2 OF 4

PREPARED BY: MHS DATE: 4/3/19
 REVIEWED BY: SCC DATE: 4/3/19

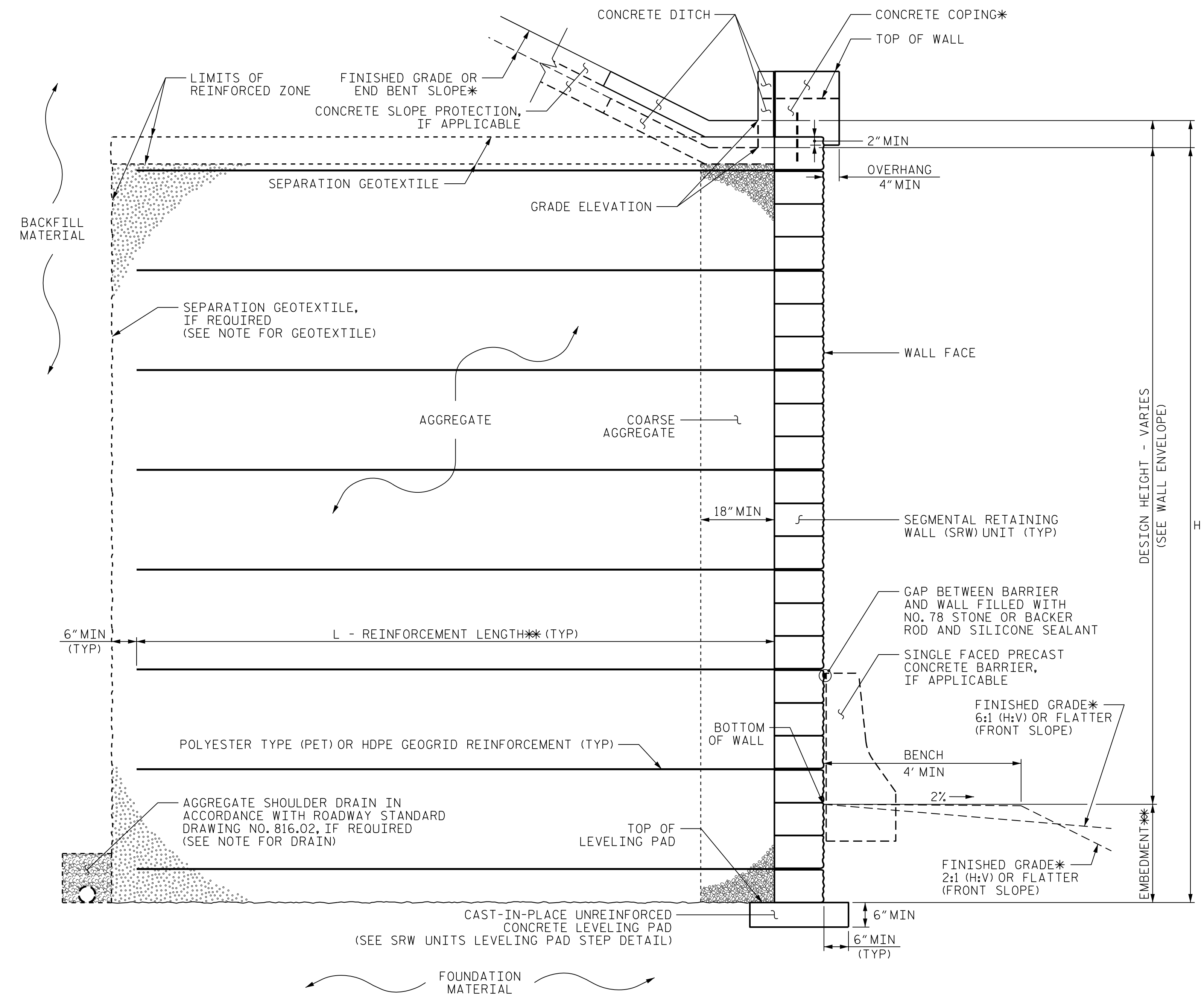


**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

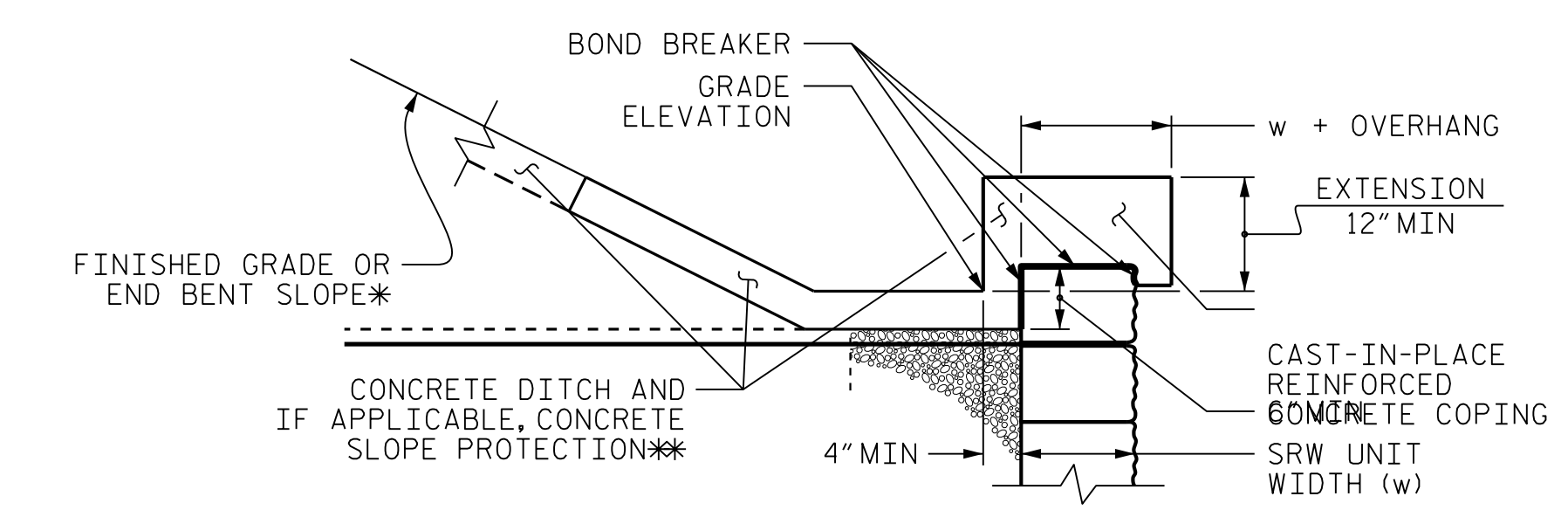
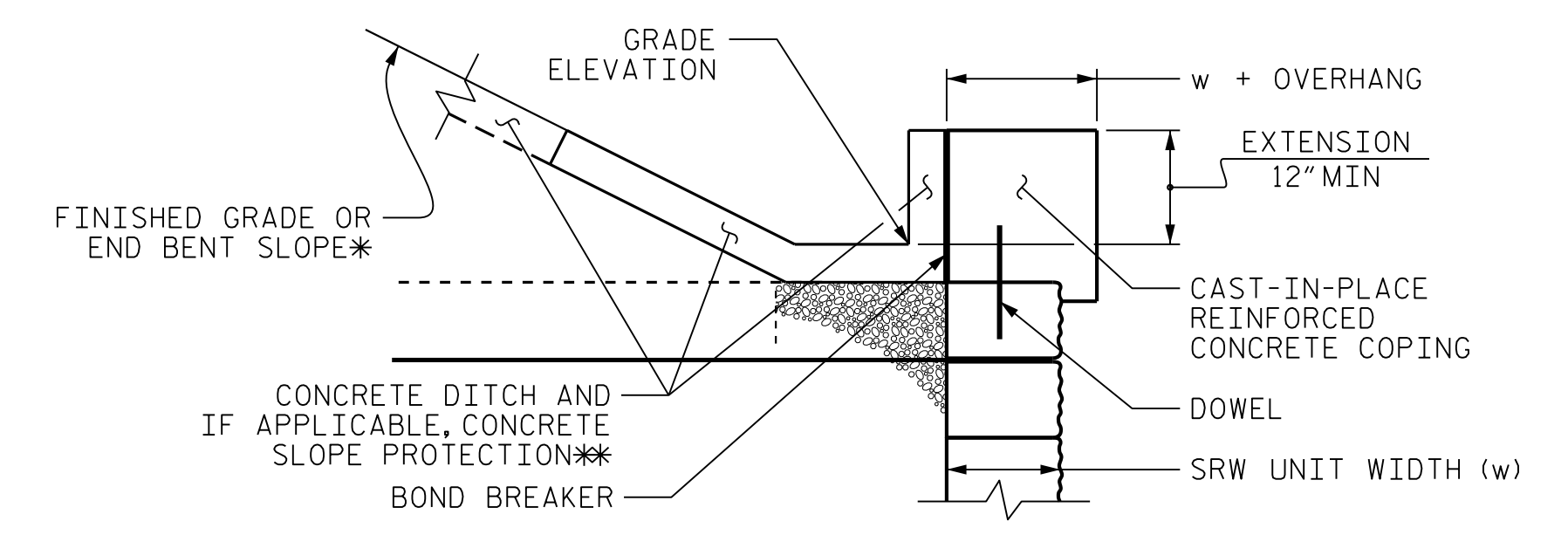
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. W-2



MSE WALL WITH SRW UNITS - 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 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 PLANS FOR FINISHED GRADE OR END BENT SLOPE DETAILS.
 **SEE CONCRETE DITCH BEHIND WALL DETAILS.

PROJECT NO.: 40325.1.46 (Y-4810K)
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 SHEET 3 OF 4

NORTH CAROLINA
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**GEOTECHNICAL
 ENGINEERING UNIT**

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

PREPARED BY: MHS	DATE: 4/3/19
REVIEWED BY: SCC	DATE: 4/3/19

GEOTECHNICAL ENGINEER

ENGINEER

SEAL
028893
ENGINEER
MICHAEL H. STEPHENS
4/4/2019

DESIGNED BY: _____

DATE: _____

**DOCUMENT NOT CONSIDERED FINAL
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NOTES:

- FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.
- AT THE CONTRACTOR'S OPTION, USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL (SRW) UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL NO. 1.
- 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. 1.
- WHEN USING AN MSE WALL SYSTEM WITH SRW UNITS FOR RETAINING WALL NO. 1, FREEZE-THAW DURABLE SRW UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS ARE REQUIRED.
- 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.
- 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) H = DESIGN HEIGHT + EMBEDMENT
 - 2) DESIGN LIFE = 100 YEARS
 - 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2.5 LB/SF
 - 4) MINIMUM REINFORCEMENT LENGTH (L) = 1 H OR 6 FT, WHICHEVER IS LONGER
 - 5) MINIMUM EMBEDMENT ELEVATION = 1 FT
 - 6) REINFORCED ZONE AGGREGATE PARAMETERS:

AGGREGATE TYPE*	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) LB/SF
COARSE	110	38	0
FINE	115	34	0

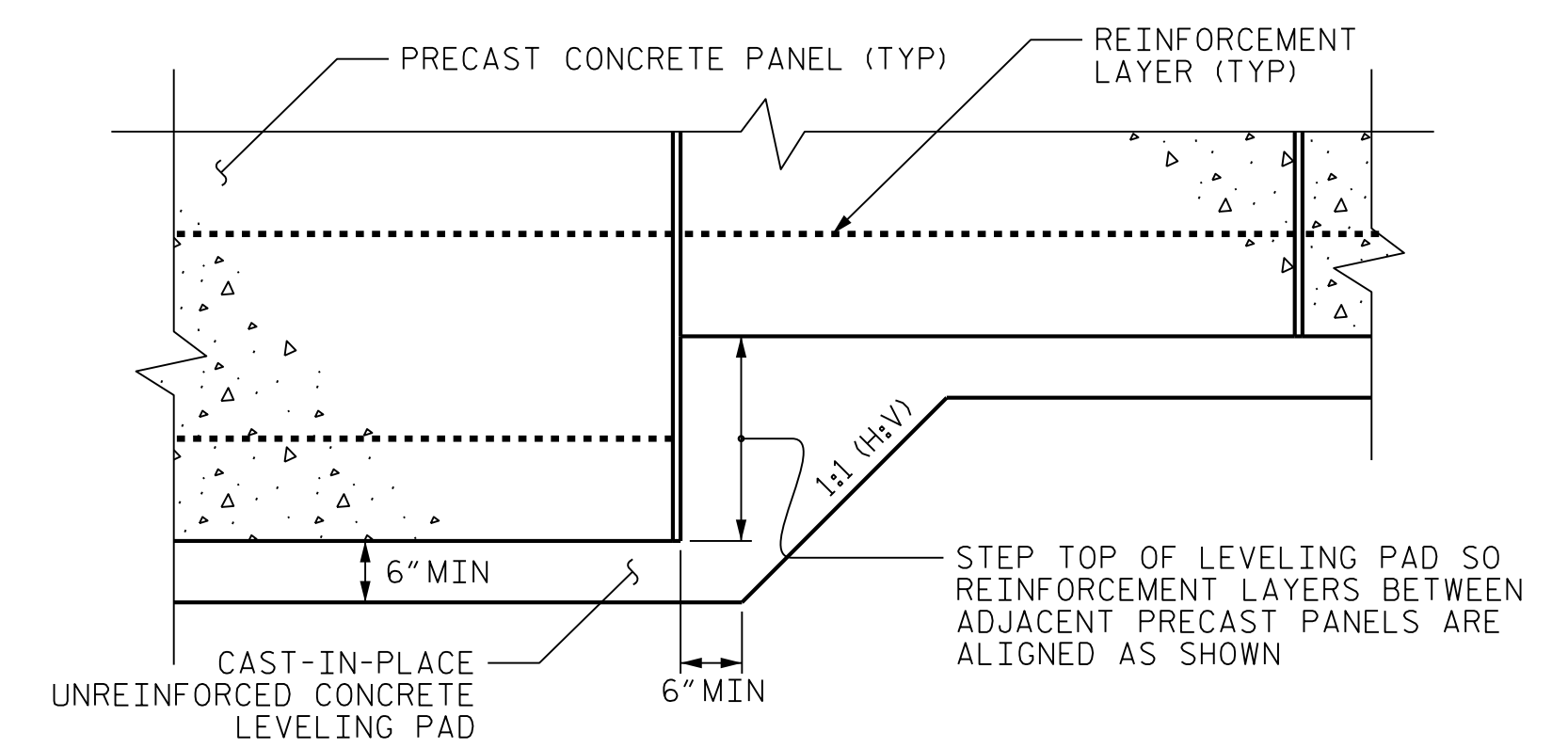
*SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

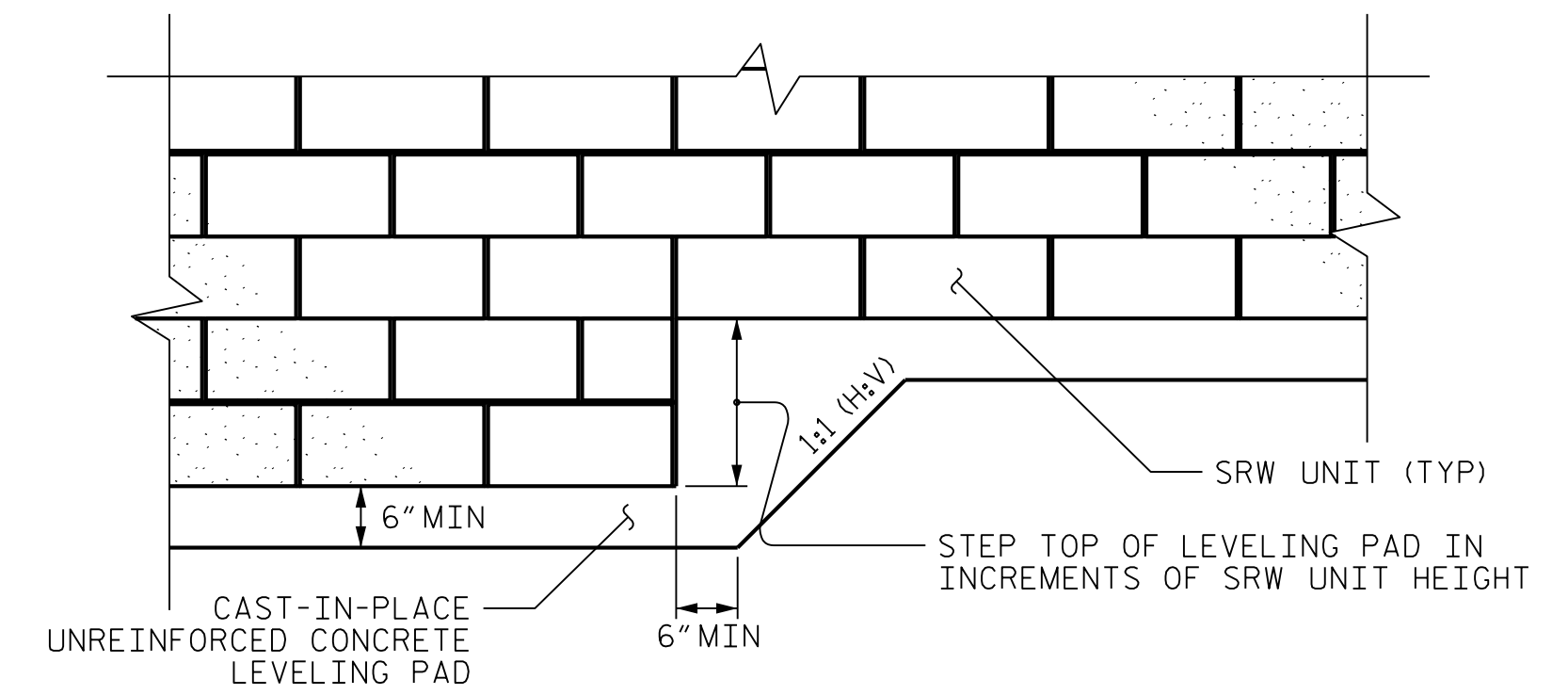
MATERIAL TYPE	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	120	30	0

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

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 1 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



**PRECAST PANELS
LEVELING PAD STEP DETAIL**



SRW UNITS LEVELING PAD STEP DETAIL

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 SHEET 4 OF 4

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2			4			

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REVIEWED BY: SCC	DATE: 4/3/19