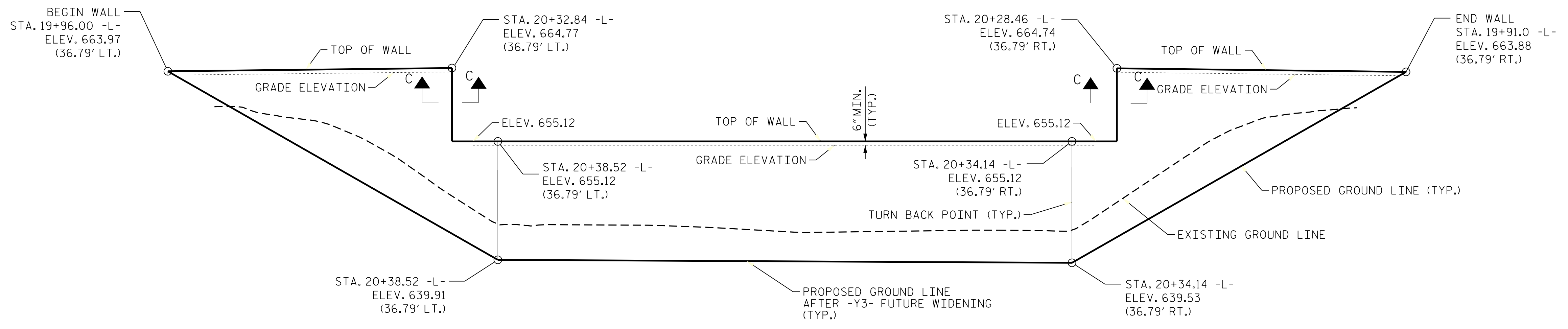
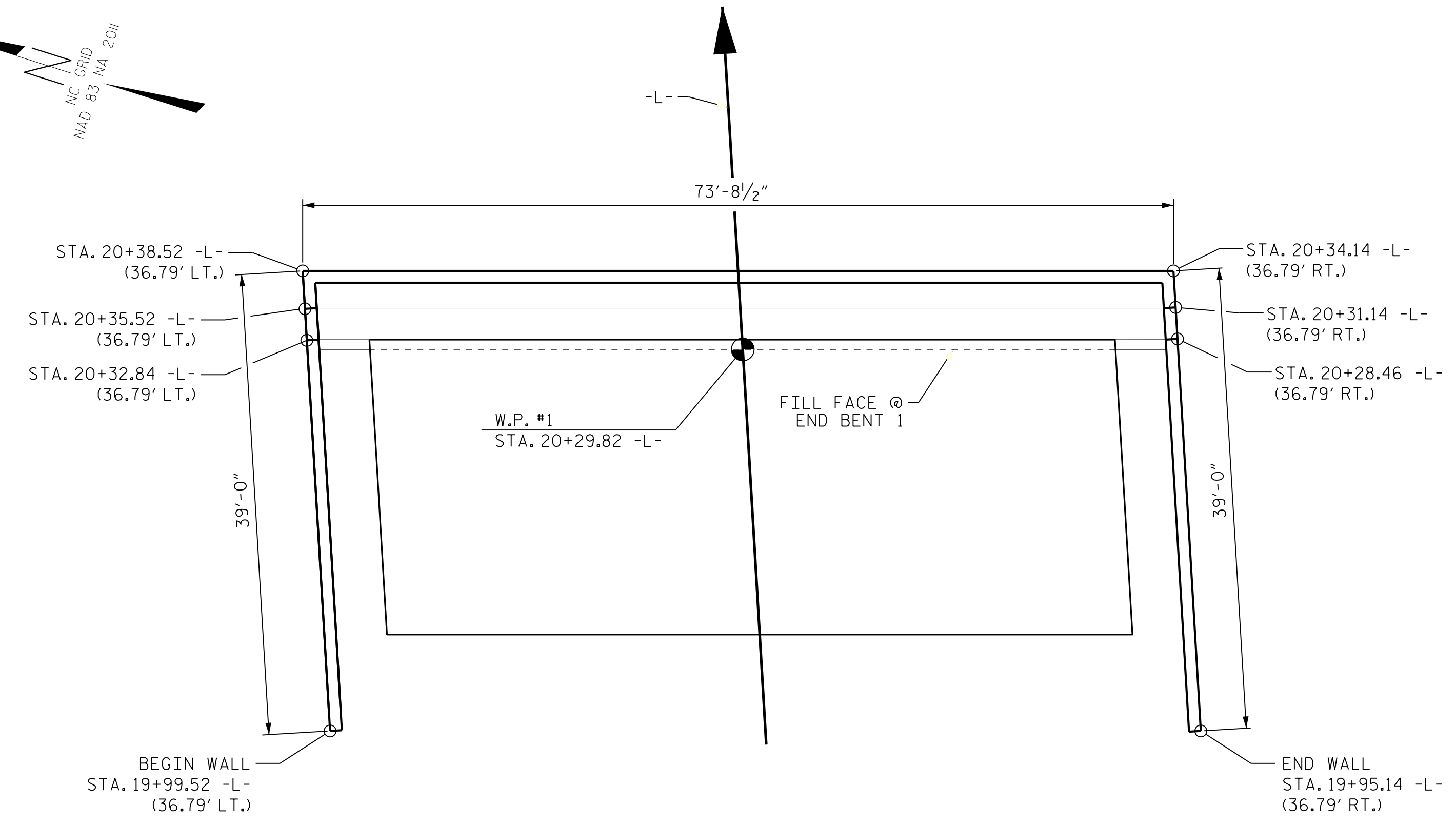
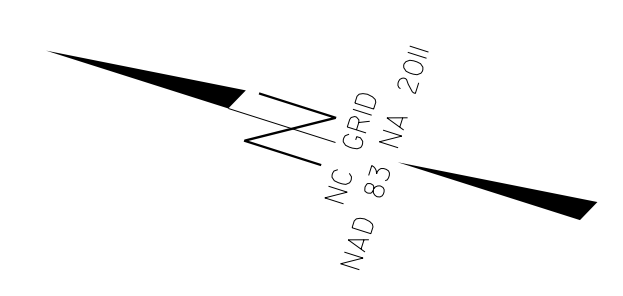


GEOTECHNICAL ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 028669
 RICHARD S. WEBB
 DocuSigned by: Scott Webb 01/20/2022
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ELEVATION - MSE WALL NO. 1
 AT END BENT 1
 STATIONS AND OFFSETS GIVEN AT FRONT FACE OF WALL



PLAN - MSE WALL NO. 1
 STATIONS AND OFFSETS GIVEN AT FRONT FACE OF WALL

ESTIMATED MSE WALL QUANTITIES (SQUARE FEET)

MSE ABUTMENT WALL NO. 1	2100 SF
MSE ABUTMENT WALL NO. 2	2100 SF
TOTAL	4200 SF

- DESIGN MSE ABUTMENT WALLS FOR THE FOLLOWING:
- 1) H = DESIGN HEIGHT + EMBEDMENT
 - 2) DESIGN LIFE = 100 YEARS
 - 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 6000 PSF
 - 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.7 H
 - 5) DESIGN PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (g) LB/CF	FRICTION ANGLE (f) DEGREES	COHESION (c) LB/SF
COARSE AGGREGATE	110	38	0
FINE AGGREGATE	120	34	0
RETAINED SOIL	120	30	0
FOUNDATION SOIL	120	30	0

DUE TO THE PRESENCE OF TRIASSIC SOIL, CUT SLOPES MAY NOT BE STABLE.
 SEE "ANALYSIS OF SLOPE FAILURE IN OVERCONSOLIDATED FISSURED RESIDUAL SOIL" PUTRICH ET AL. TRR 1089

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 ROCKINGHAM COUNTY
 STATION: 20+86.07 -L-
 SHEET 1 OF 4

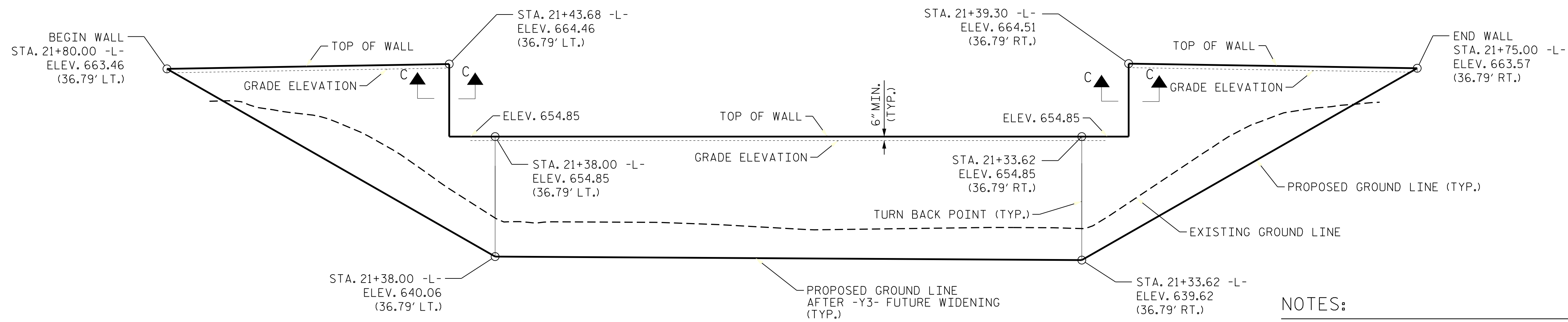
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 REVIEWED BY: D. TEAGUE DATE: 1-22

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GEOTECHNICAL ENGINEERING UNIT

MSE ABUTMENT WALLS ENVELOPES

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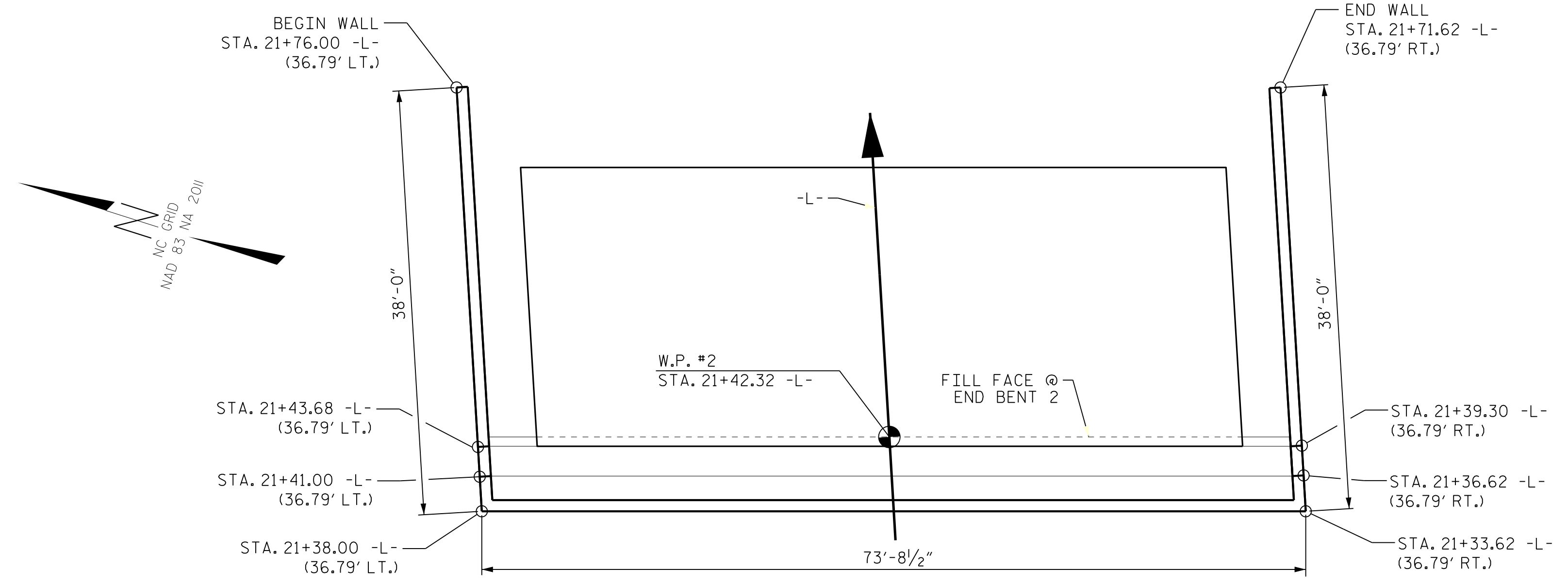
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ELEVATION - MSE WALL NO. 2
 AT END BENT 2
 STATIONS AND OFFSETS GIVEN AT FRONT FACE OF WALL

NOTES:

- FOR MSE ABUTMENT WALLS, SEE MECHANICALLY STABILIZED EARTH ABUTMENT WALLS PROVISION.
- FOR TYPE III REINFORCED BRIDGE APPROACH FILL, SEE BRIDGE APPROACH FILLS PROVISION AND ROADWAY DETAIL DRAWING NO. 422D10.
- FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.
- A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR MSE ABUTMENT WALLS.
- A DRAIN IS REQUIRED FOR MSE ABUTMENT WALLS.
- BEFORE BEGINNING WALL DESIGN FOR MSE ABUTMENT WALLS, VERIFY WALL LOCATION INCLUDING LOCATION OF BRIDGE WINGWALLS. IF NECESSARY, SUBMIT A REVISED WALL PLAN AND PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.
- DESIGN MSE ABUTMENT WALLS FOR A LIVE LOAD (TRAFFIC) SURCHARGE.
- EXISTING OR FUTURE OBSTRUCTIONS SUCH AS GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR MSE ABUTMENT WALLS.
- FOUNDATION FOR END BENT NO. 1, LOCATED AT STATION -L- 23+11, AND END BENT NO. 2, LOCATED AT STATION -L- 24+24.75, WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 & 2. SEE FOUNDATION LAYOUT SHEET FOR FOUNDATION LOCATIONS.
- DESIGN RETAINING WALL NO. 1 AND 2 FOR A LATERAL LOAD FROM FOUNDATIONS LOCATED BEHIND THE MSE WALL APPLIED AS A FACTORED UNIFORM PRESSURE OF 400 PSF TO THE BACK OF PANELS OVER TOP TEN FEET OF WALL. THIS LATERAL LOAD DOES NOT AFFECT PULLOUT.
- DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR MSE ABUTMENT WALLS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
- AT THE CONTRACTOR'S OPTION, TEMPORARY SHORING FOR WALL CONSTRUCTION MAY BE USED TO CONSTRUCT MSE ABUTMENT WALLS. SEE MSE ABUTMENT WALLS PROVISION FOR TEMPORARY SHORING FOR WALL CONSTRUCTION.
- FOR CONCRETE DITCHES, SEE SECTION 850 OF THE STANDARD SPECIFICATIONS PROVISION.
- COORDINATE WITH BRIDGE CONTRACTOR TO CONSTRUCT VERTICAL COPING FOR MSE ABUTMENT WALLS.
- DO NOT CONNECT MSE WALL REINFORCEMENT TO END BENT CAPS.
- AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 1 & 2.
- PILE SLEEVES ARE REQUIRED AROUND PILES FOR END BENT NO. 1 LOCATED AT STATION 20+29.82 AND END BENT NO. 2 LOCATED AT STATION 21+42.32.



PLAN - MSE WALL NO. 2
 STATIONS AND OFFSETS GIVEN AT FRONT FACE OF WALL

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 ROCKINGHAM COUNTY
 STATION: 20+86.07 -L-
 SHEET 2 OF 4

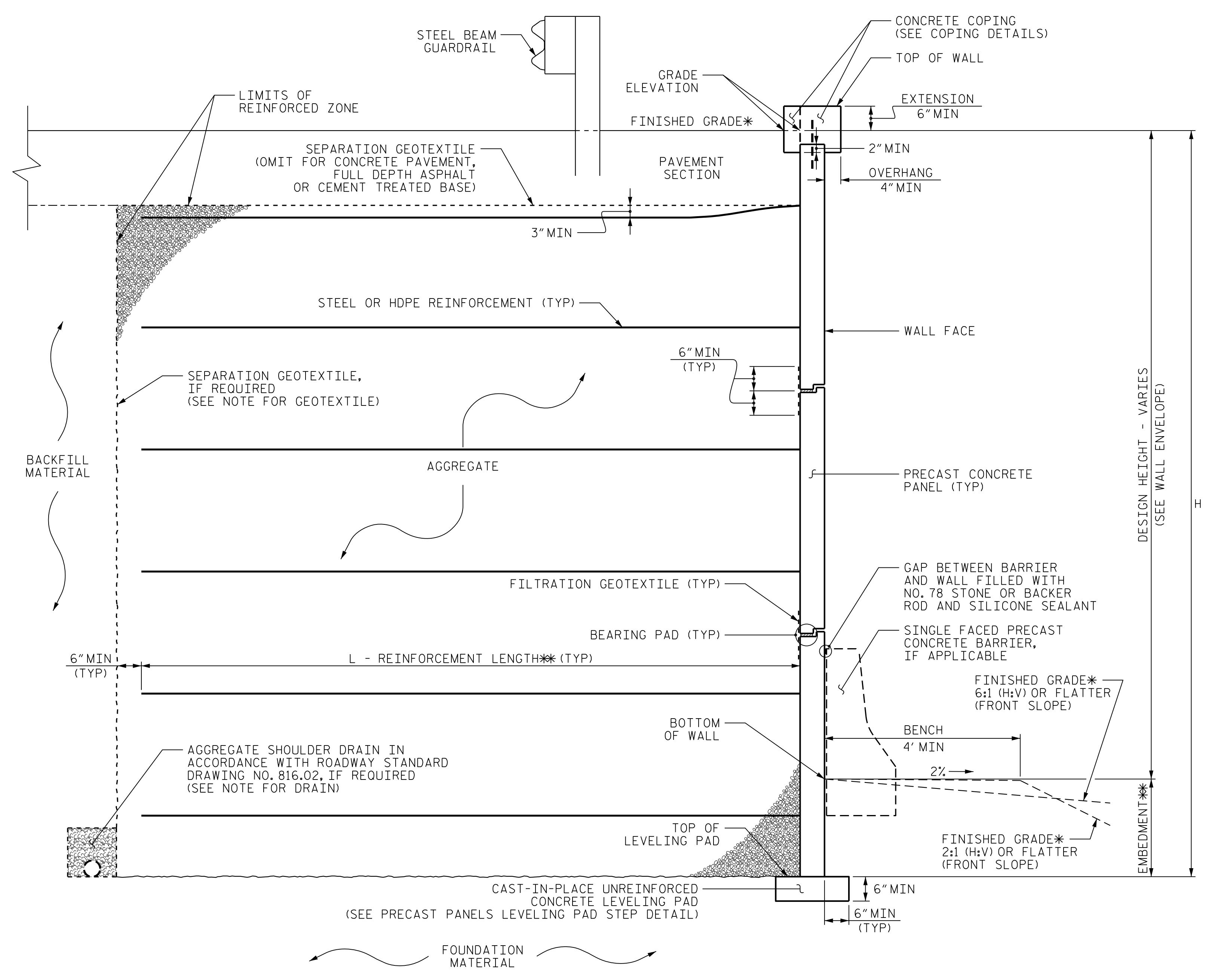
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MSE ABUTMENT WALLS
 PLAN AND NOTES

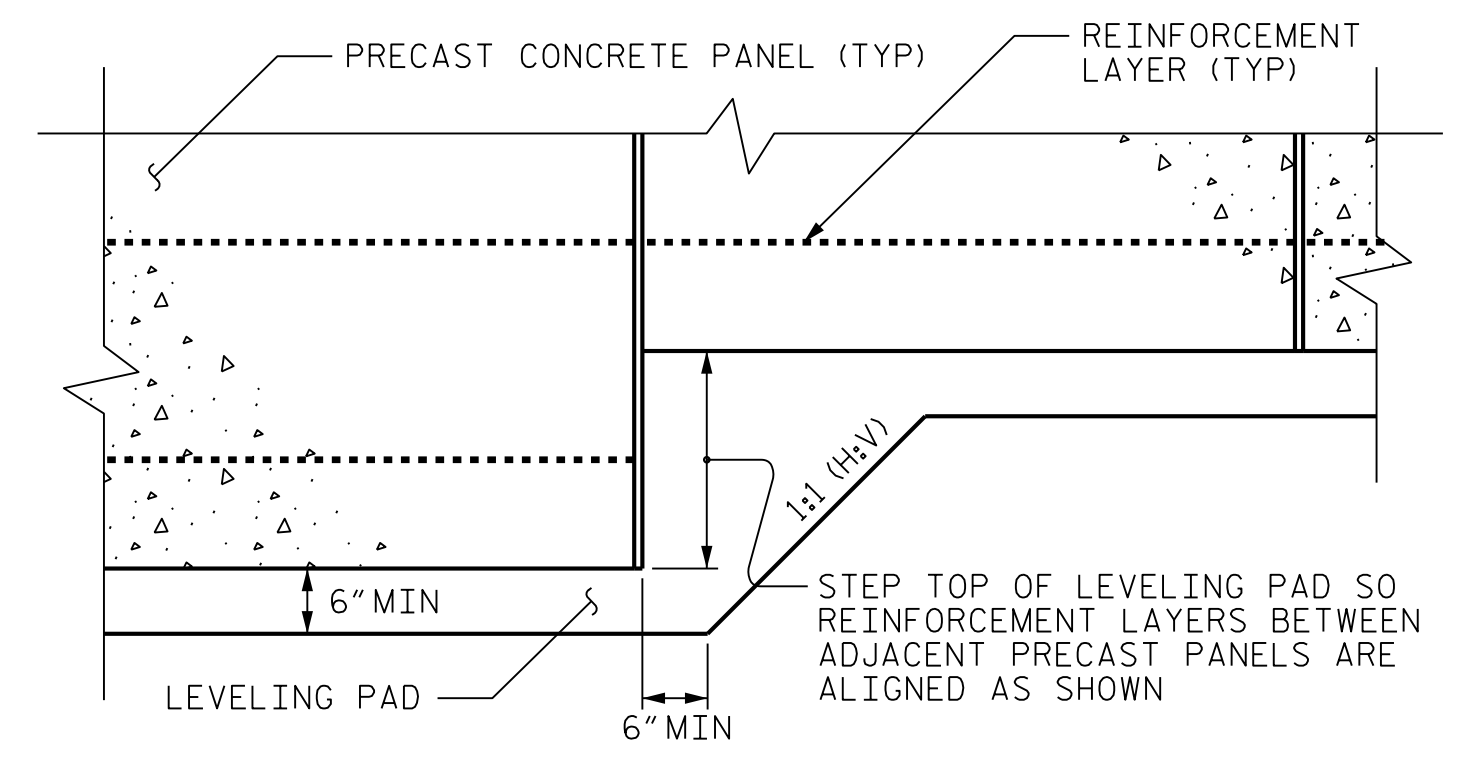
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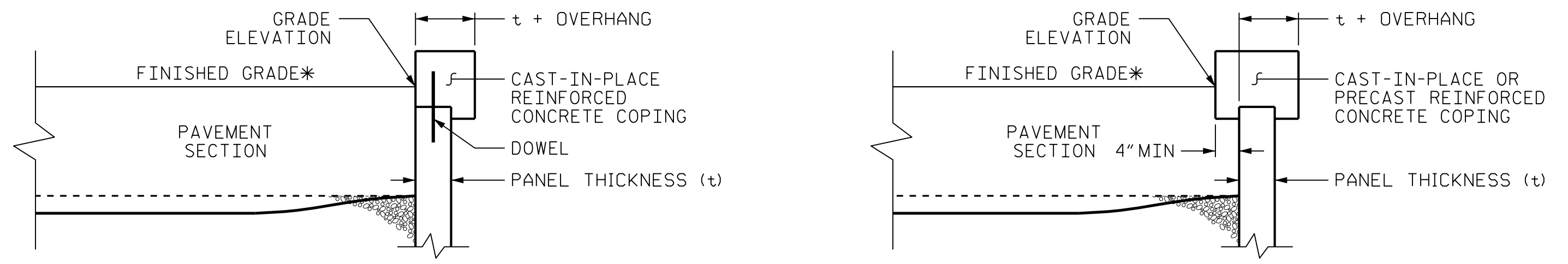


MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.
 *SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.



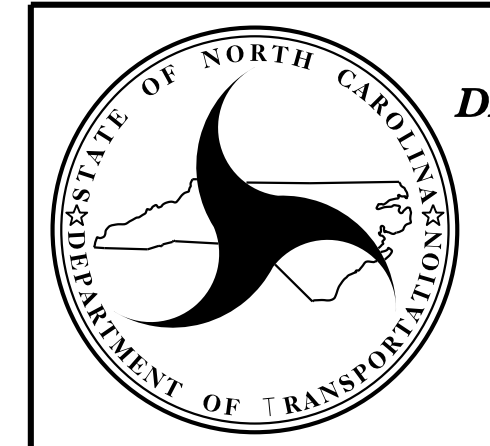
PRECAST PANELS LEVELING PAD STEP DETAIL



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.

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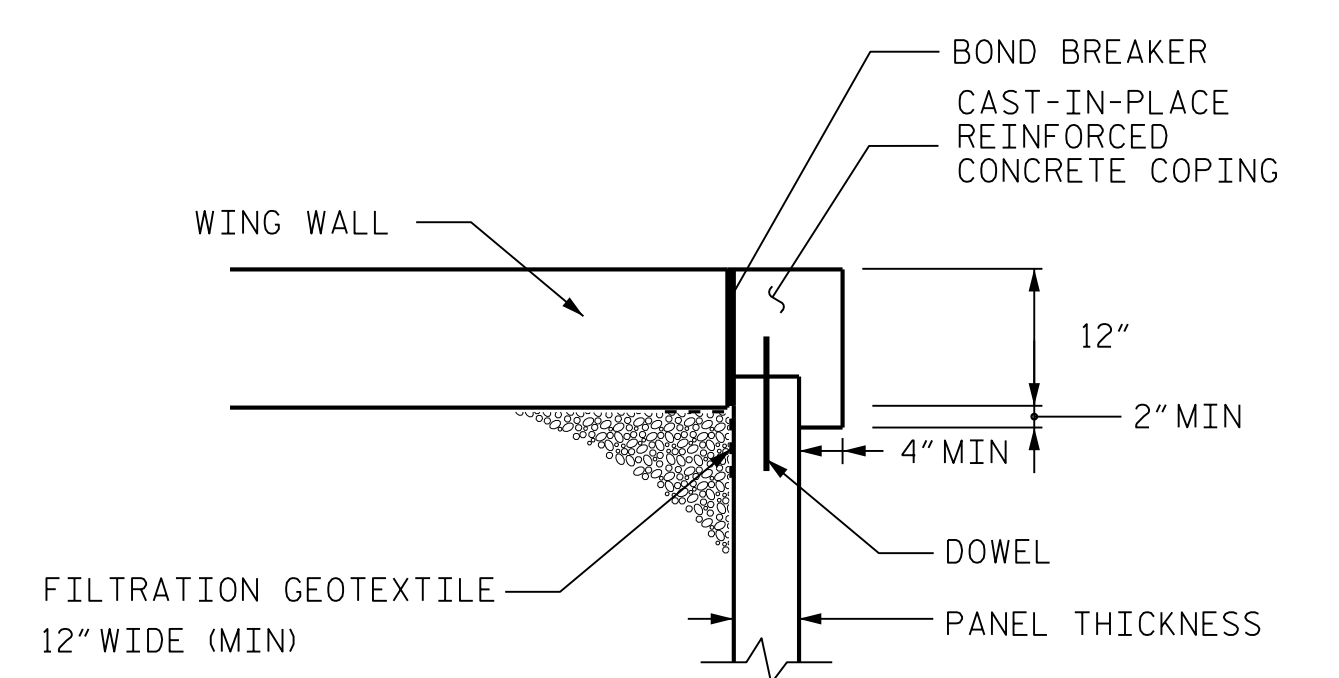
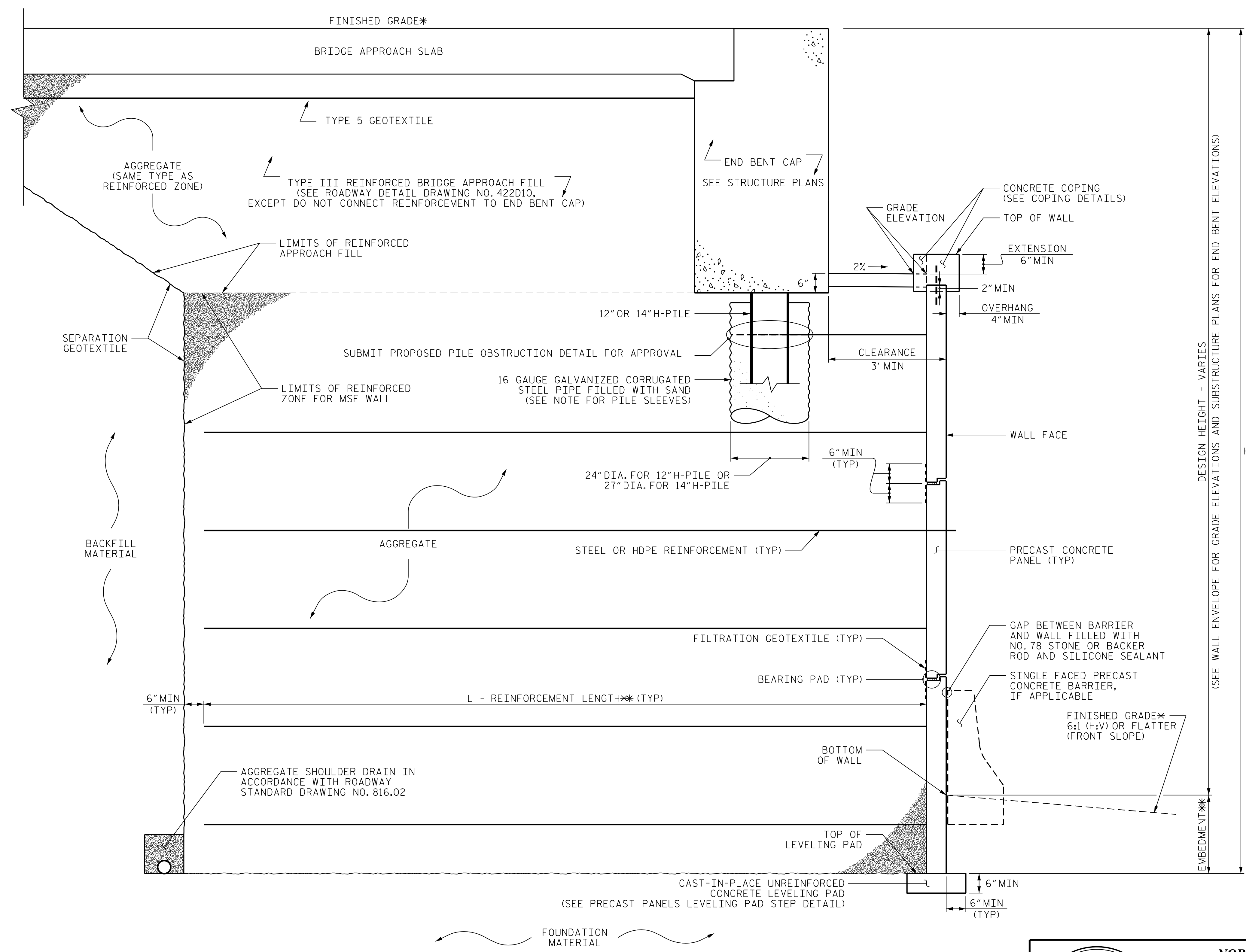


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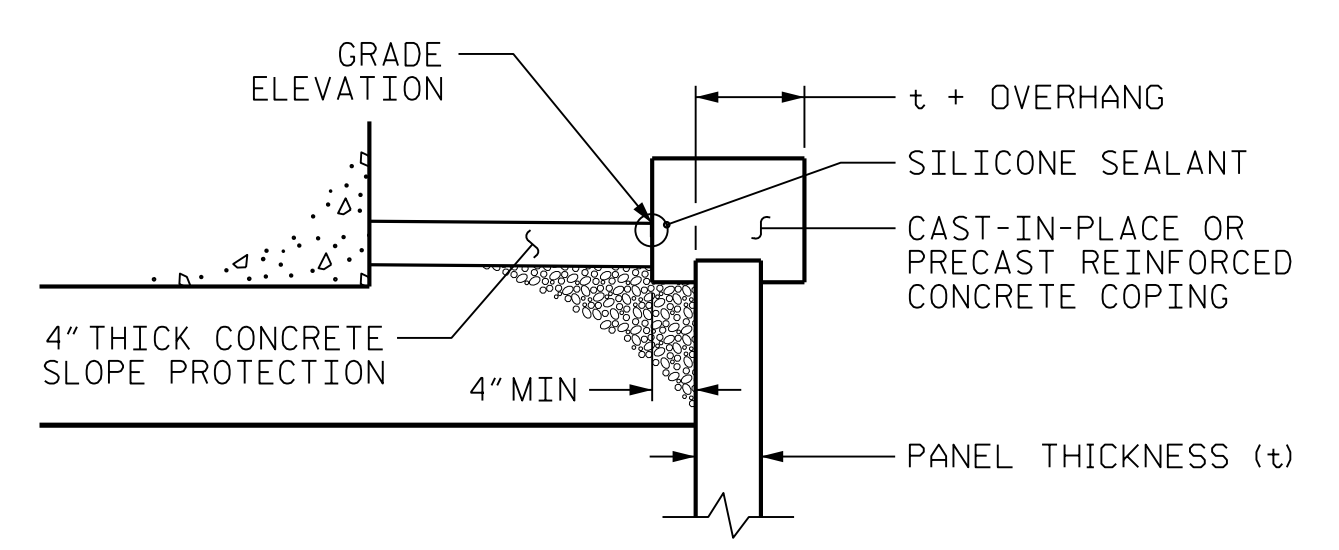
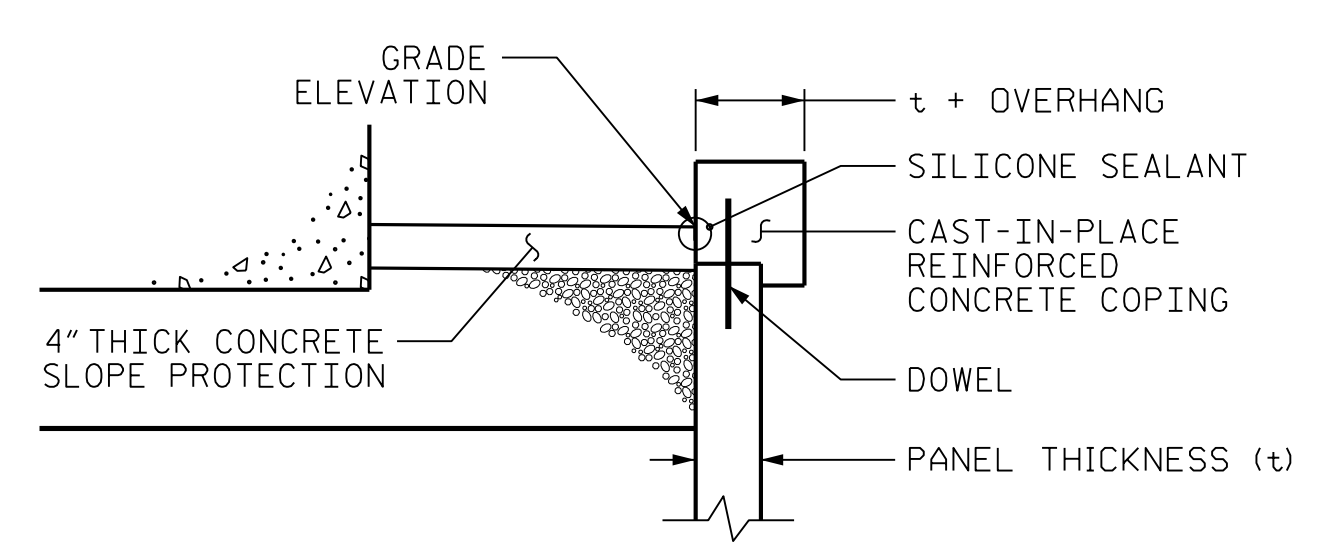
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 ROCKINGHAM COUNTY
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 SHEET 3 OF 4

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VERTICAL COPING SECTION C-C



COPING DETAILS

AT THE CONTRACTOR'S OPTION, CONNECT COPING TO PANELS WITH DOWELS OR EXTEND COPING DOWN BACK OF PANELS.

MSE ABUTMENT WALL WITH PRECAST PANELS - TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
 **SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

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 GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.: B-5737
 ROCKINGHAM COUNTY
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 SHEET 4 OF 4

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