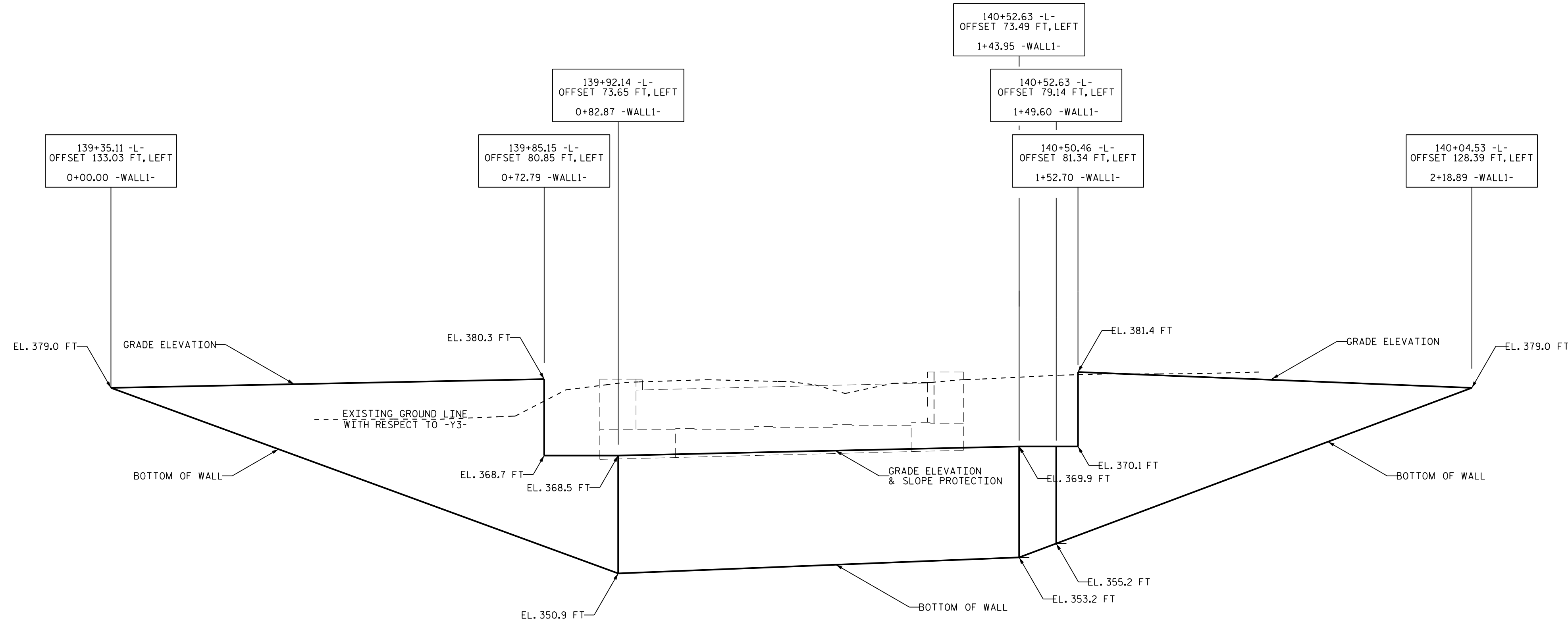
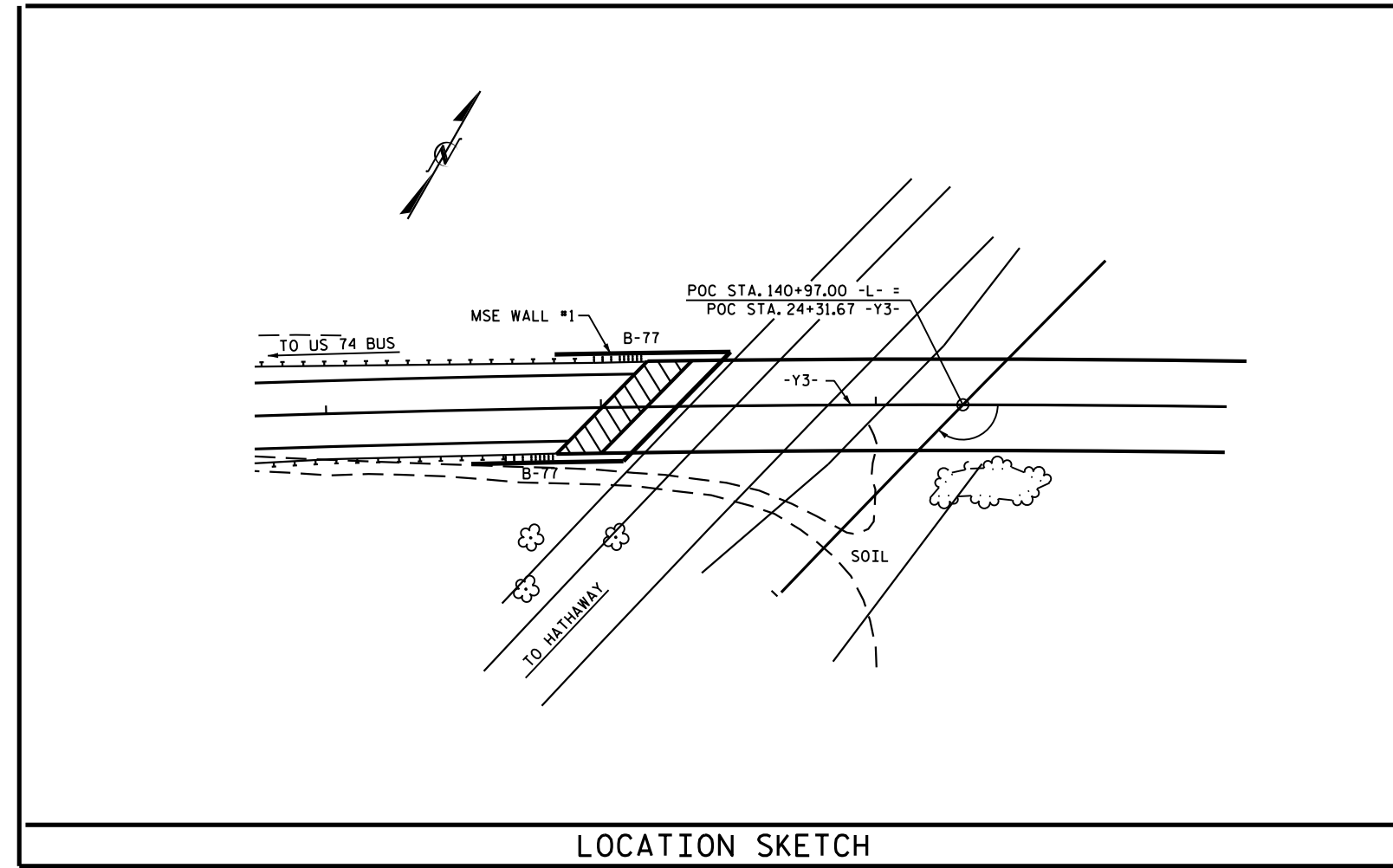




DocuSigned by:
Brian D. Kearney 8/19/2019
 SIGNATURE DATE



TOTAL STRUCTURE QUANTITIES	
MECHANICALLY STABILIZED EARTH WALL	*3615 SQ. FT.

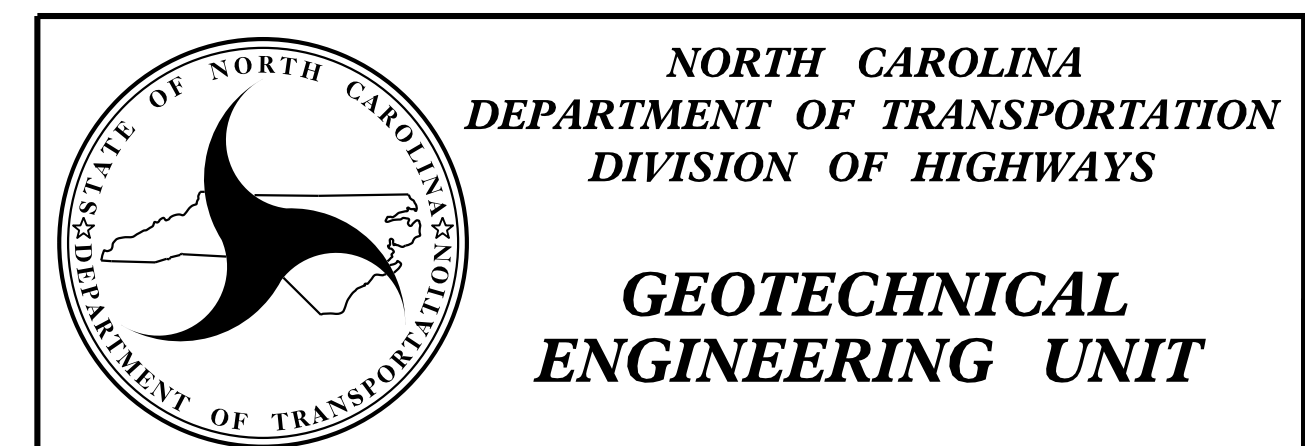
*The MSE square foot quantity provided includes a two foot minimum embedment to the top of the leveling pad. See MECHANICALLY STABILIZED EARTH RETAINING WALLS Special Provision for embedment requirements.

R-3421B EB 1 & WALL 1:
VIEWED DOWN STATION, WITH WALL UNFOLDED

PROJECT NO.: R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L- POC= 24+31.67 -Y3- POC
 SHEET 1 OF 6

PREPARED BY: CGM	DATE: 9/2015
REVIEWED BY: BDK	DATE: 9/2015

NOTE: WALL ENVELOPE PROVIDED BY NCDOT-SMU

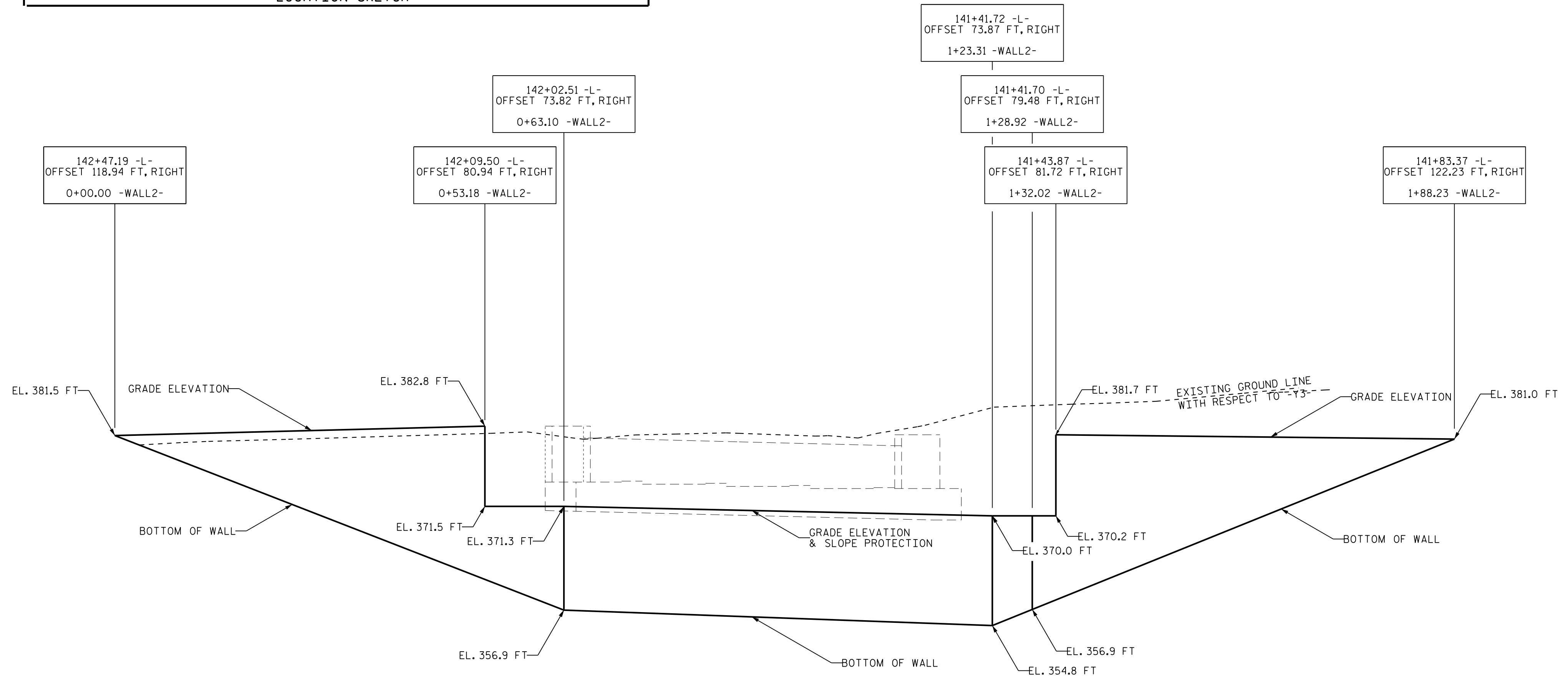
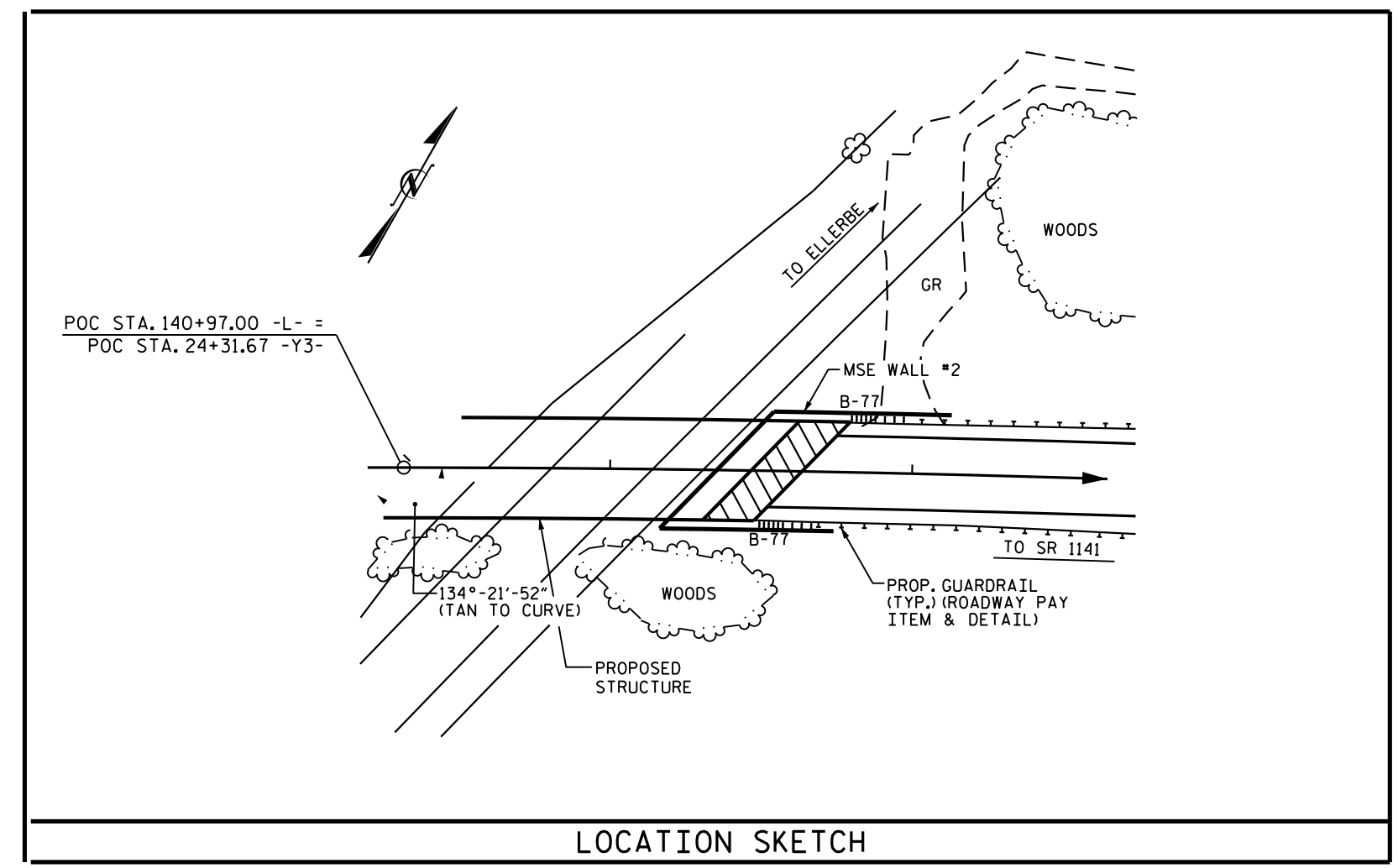


Mechanically Stabilized Earth (MSE) Retaining Wall #1, End Bent #1

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



DocuSigned by:
Brian D. Kenney
 8/19/2019
 SIGNATURE DATE



TOTAL STRUCTURE QUANTITIES	
MECHANICALLY STABILIZED EARTH WALL	*2725 SQ. FT.

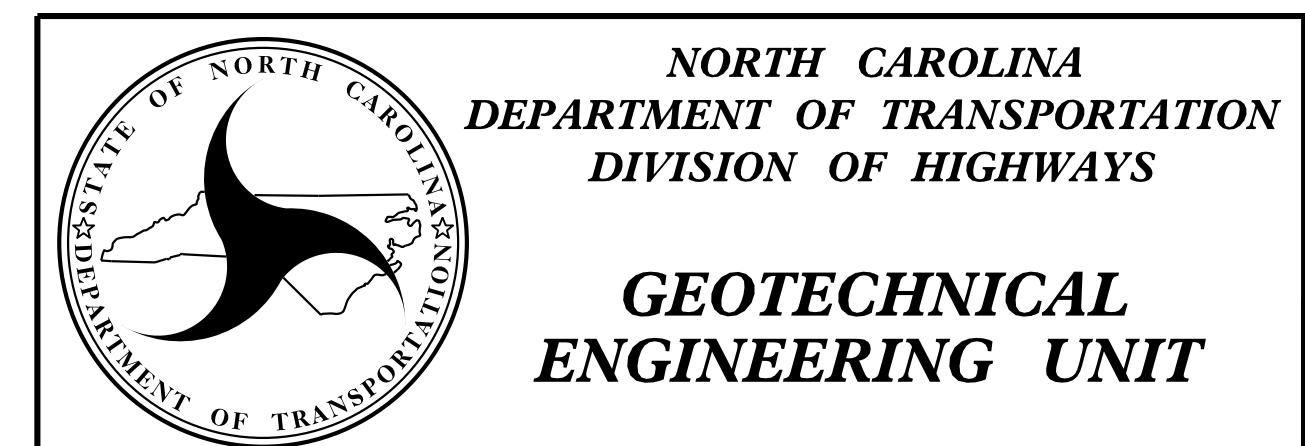
*The MSE square foot quantity provided includes a two foot minimum embedment to the top of the leveling pad. See MECHANICALLY STABILIZED EARTH RETAINING WALLS Special Provision for embedment requirements.

R-3421B EB 2 & WALL 2:
 VIEWED UP STATION, WITH WALL UNFOLDED

PROJECT NO.: R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L- POC= 24+31.67 -Y3- POC
 SHEET 2 OF 6

PREPARED BY: CGM DATE: 9/2015
 REVIEWED BY: BDK DATE: 9/2015

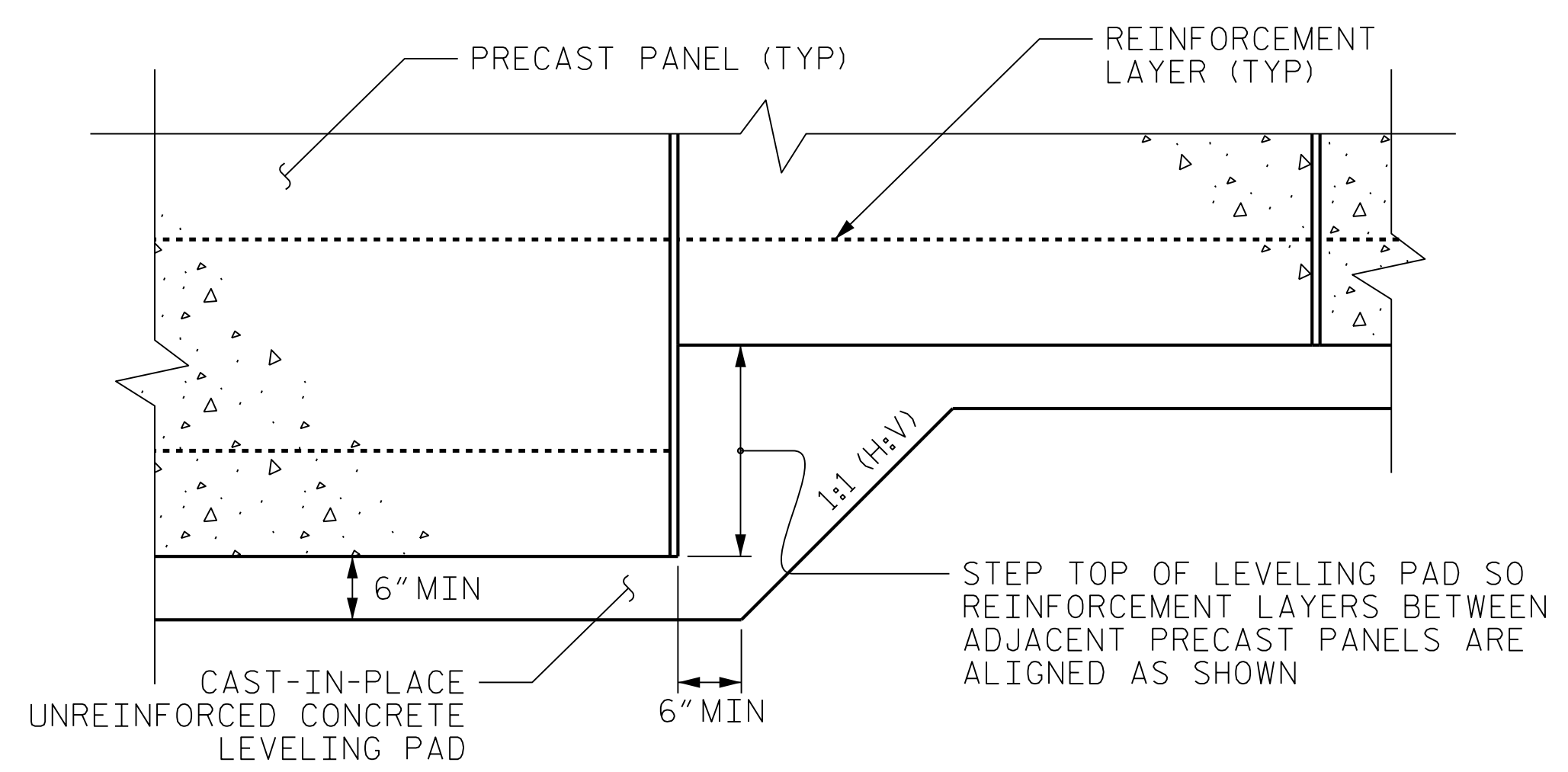
NOTE: WALL ENVELOPE PROVIDED BY NCDOT-SMU



Mechanically Stabilized Earth (MSE) Retaining Wall #2, End Bent #2

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

SHEET NO. W-2



PRECAST CONCRETE PANELS
LEVELING PAD STEP DETAILS

NOTES:

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

A DRAIN IS REQUIRED ALONG THE FRONT FACE FOR RETAINING WALLS NO. 1 AND NO. 2.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALLS NO. 1 AND NO. 2.

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.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALLS NO. 1 AND NO. 2, 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 WALLS NO. 1 AND NO. 2 FOR THE FOLLOWING:
- 1) H = DESIGN HEIGHT + EMBEDMENT
 - 2) DESIGN LIFE = 100 YEARS
 - 3) MAXIMUM FACTORED VERTICAL STRESS ON FOUNDATION MATERIAL = 7,100 LB/SF
 - 4) AGGREGATE PARAMETERS:

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

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

5) 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	31	0

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

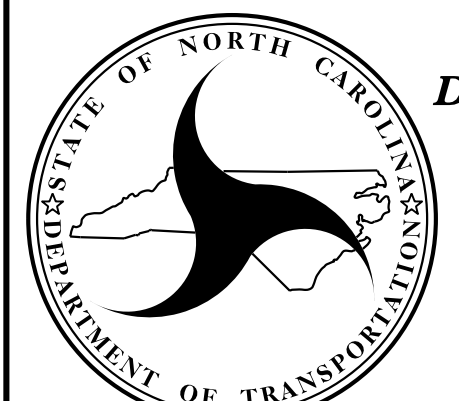
EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL.

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

DESIGN REINFORCEMENT CONNECTED TO END BENT CAPS FOR FACTORED LOAD AND LENGTH OF REINFORCEMENT IN ACTIVE ZONE (L) SHOWN. CAST REINFORCEMENT CONNECTORS INTO CAP BACKWALL FOR END BENTS NO. 1 AND NO. 2 LOCATED AT STATIONS 23+16.67 AND 25+46.67, RESPECTIVELY. MAINTAIN A CLEARANCE OF AT LEAST 3" BETWEEN CONNECTORS AND REINFORCING STEEL IN CAP.

FOUNDATIONS FOR END BENT NO. 1 AND END BENT NO. 2 LOCATED AT STATIONS 23+16.67 AND 25+46.67, RESPECTIVELY, WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALLS NO. 1 AND NO. 2. SEE "FOUNDATION LAYOUT" SHEET FOR FOUNDATION LOCATIONS.

PROJECT NO.: R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L- POC= 24+31.67 -Y3- POC
 SHEET 3 OF 6



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

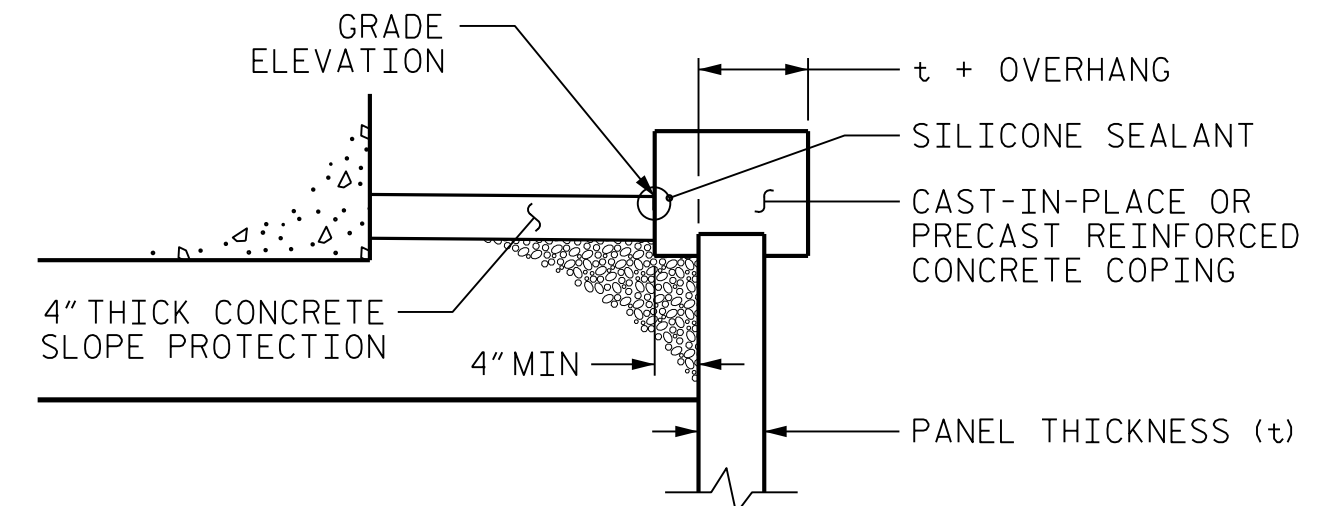
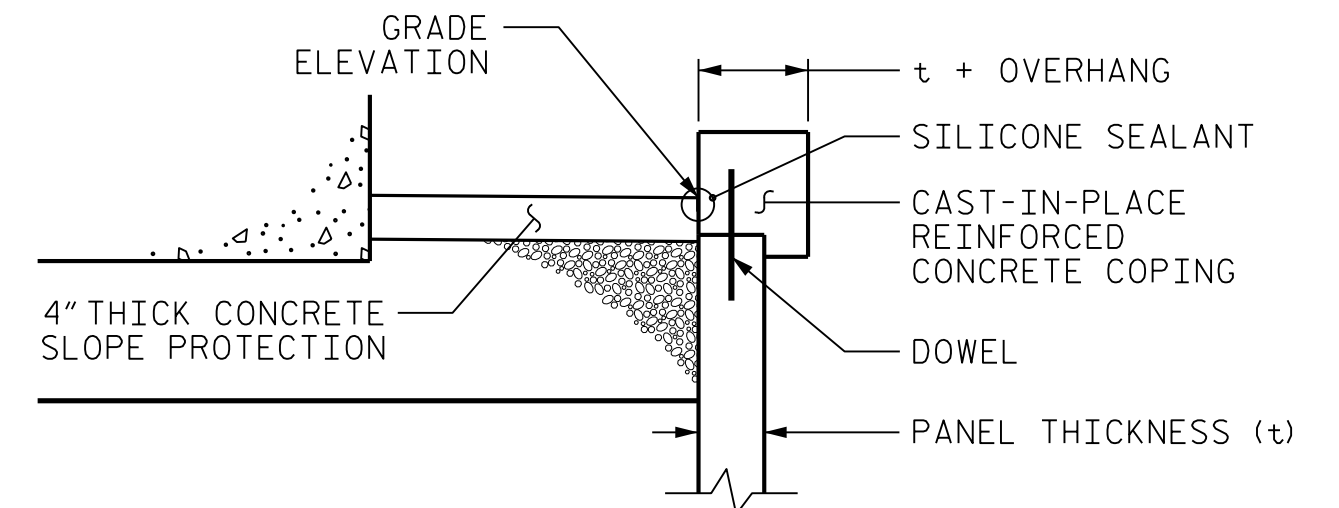
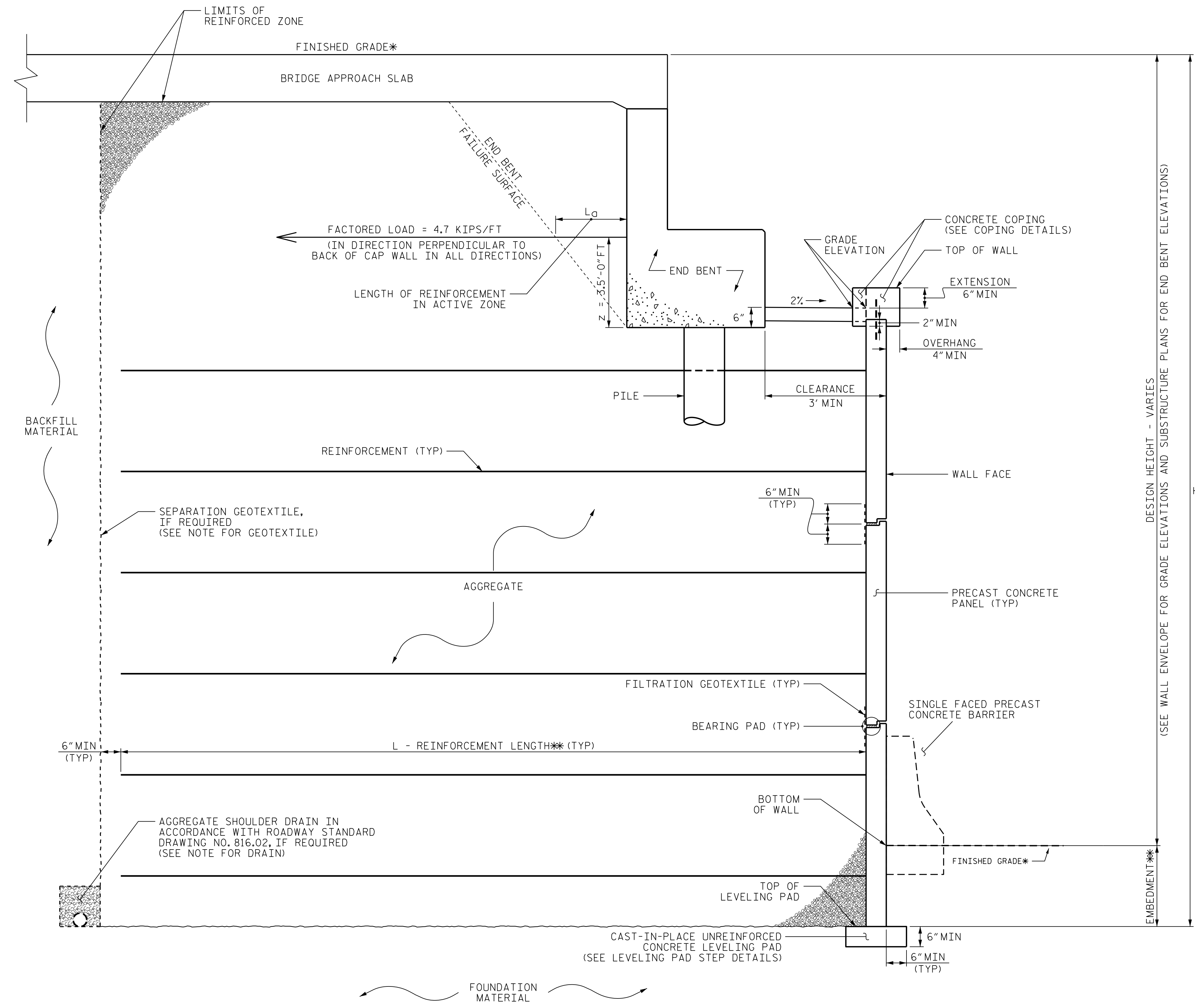
**GEOTECHNICAL
ENGINEERING UNIT**

Mechanically Stabilized
Earth (MSE)
Retaining Walls #1 and #2
End Bent #1 and #2

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

SHEET NO. W-3

PREPARED BY:	DATE:
REVIEWED BY:	DATE:



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.

PROJECT NO.: R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L- POC= 24+31.67 -Y3- POC
 SHEET 4 OF 6

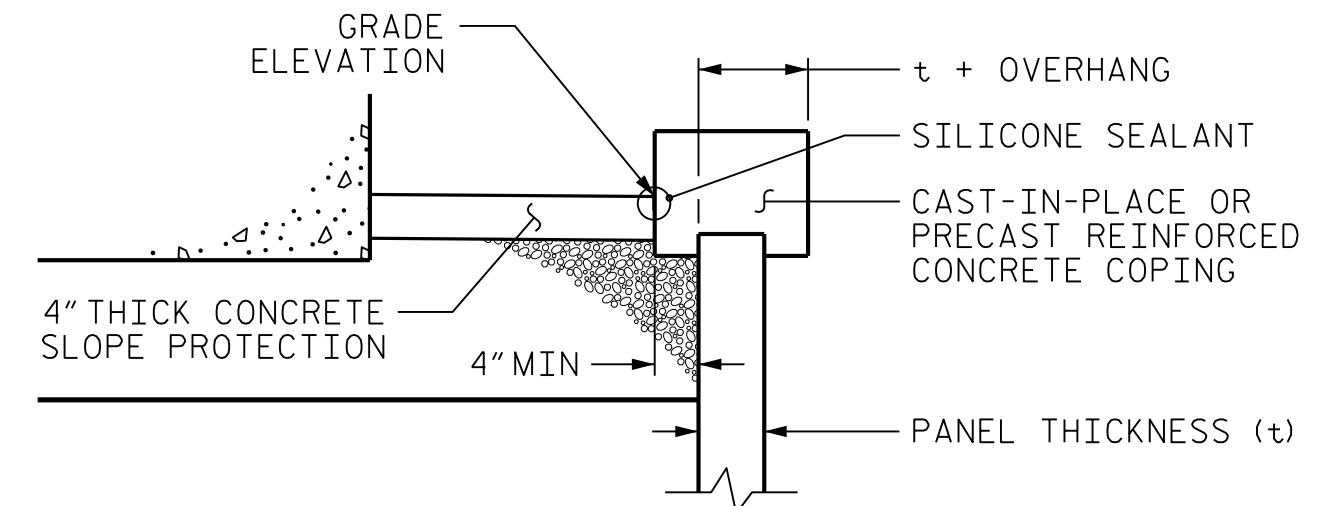
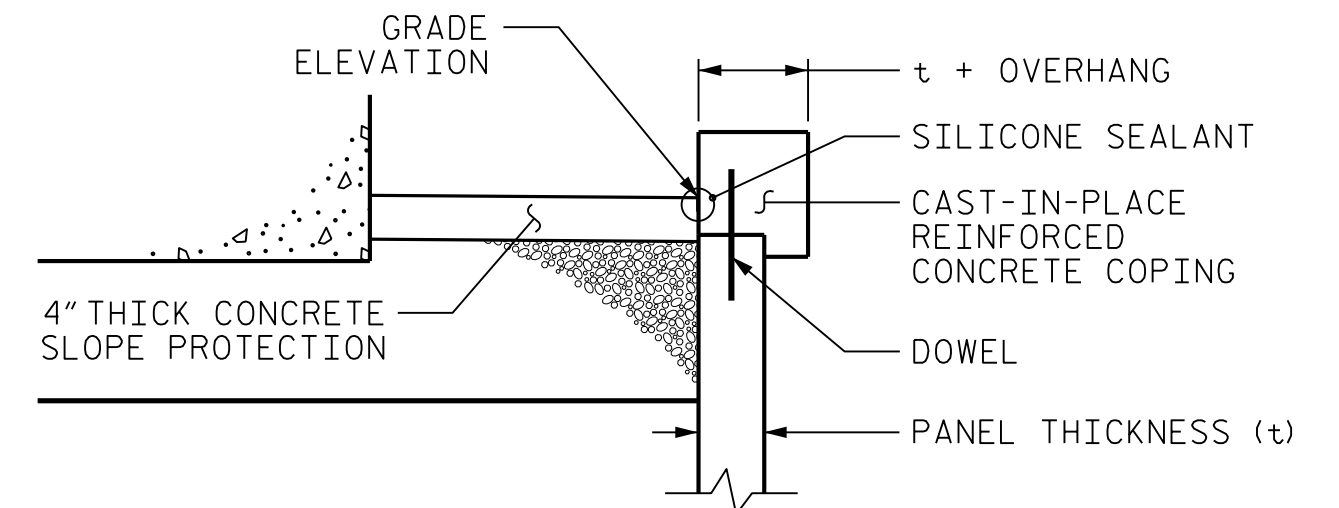
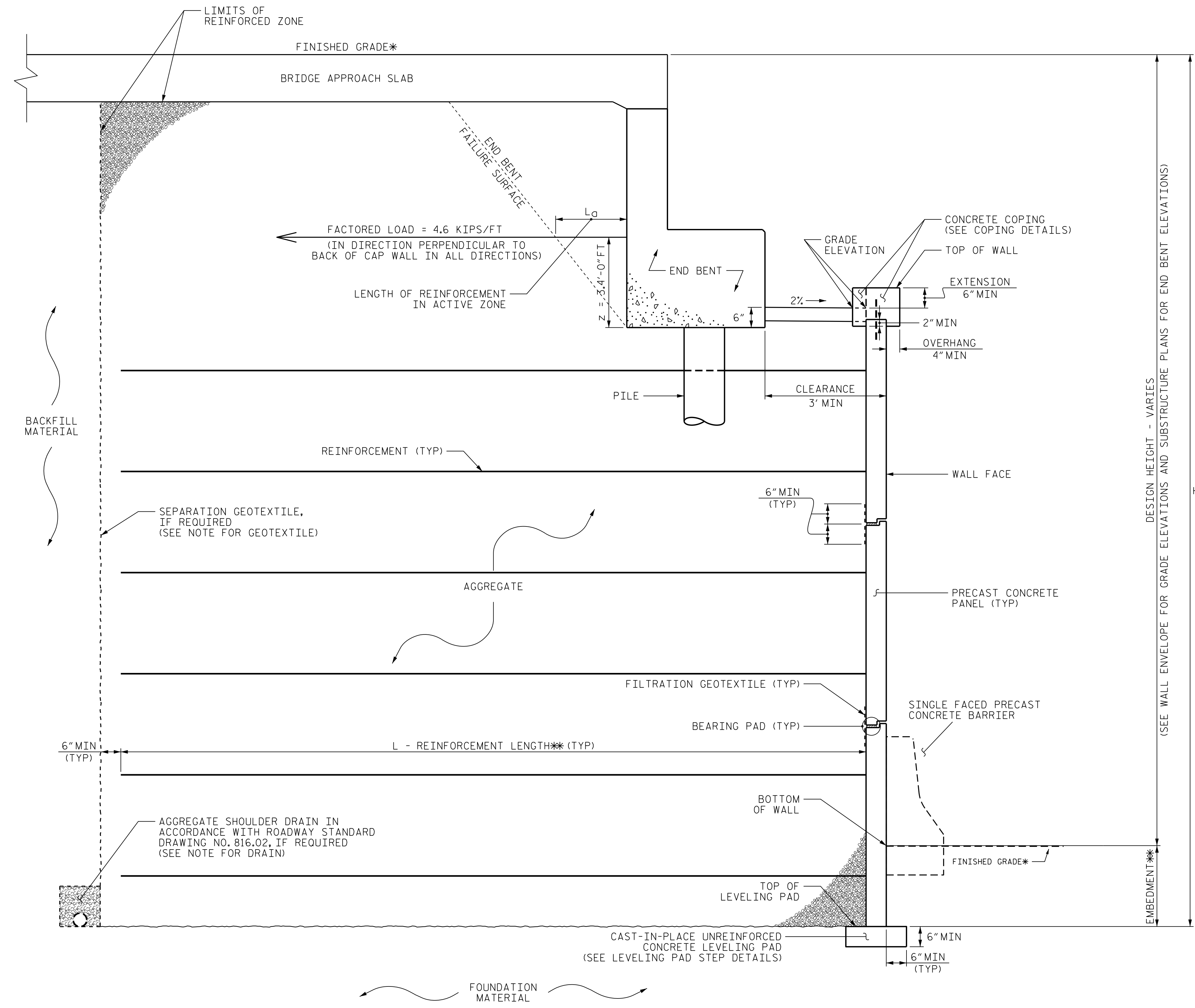
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

Mechanically Stabilized Earth (MSE)
 Retaining Wall #1, End Bent #1

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

SHEET NO. W-4

PREPARED BY: CGM	DATE: 9/2015
REVIEWED BY: BDK	DATE: 9/2015



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.

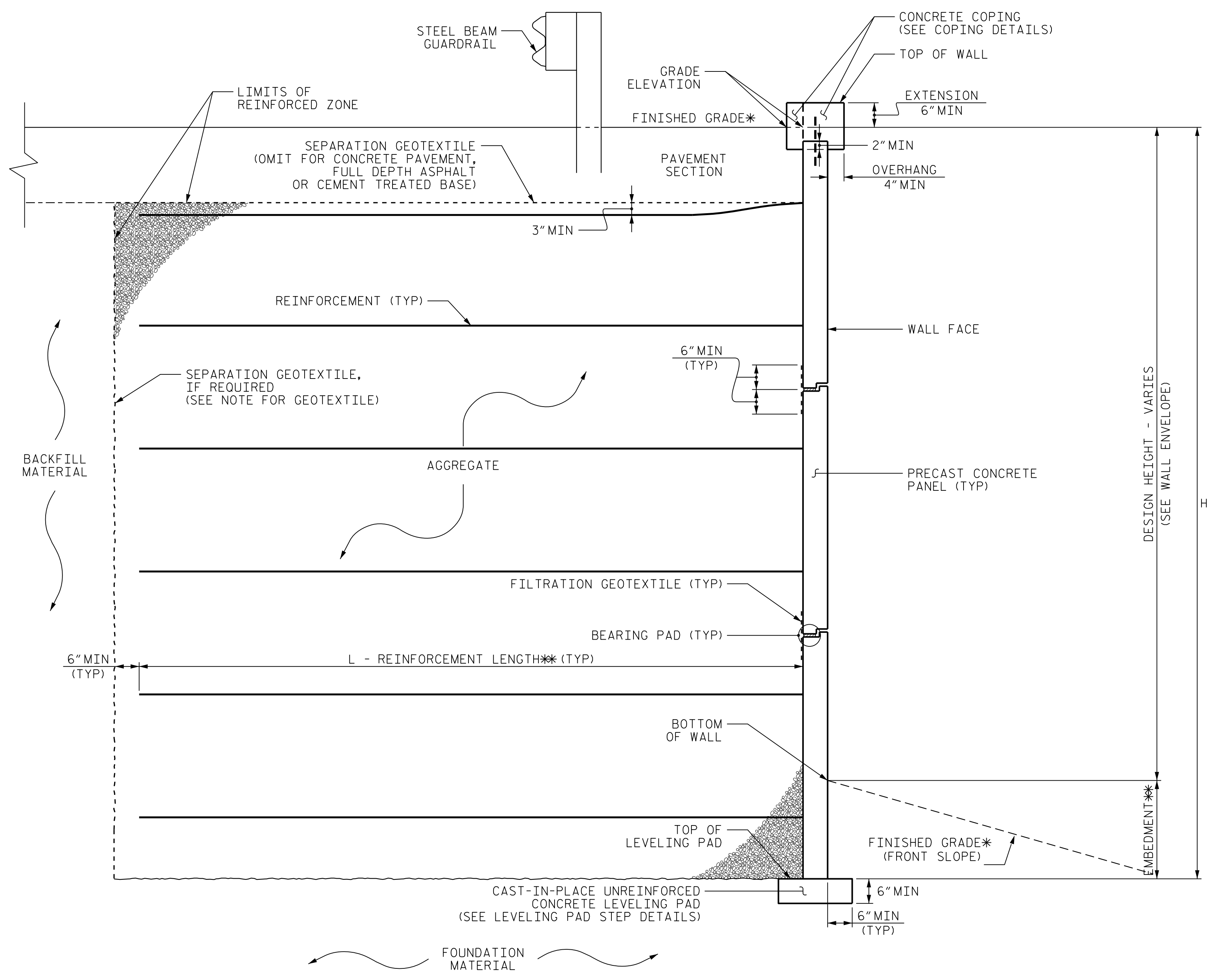
PROJECT NO.: R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L- POC= 24+31.67 -Y3- POC
 SHEET 5 OF 6

NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
GEOTECHNICAL
ENGINEERING UNIT

Mechanically Stabilized Earth (MSE) Retaining Wall #2, End Bent #2

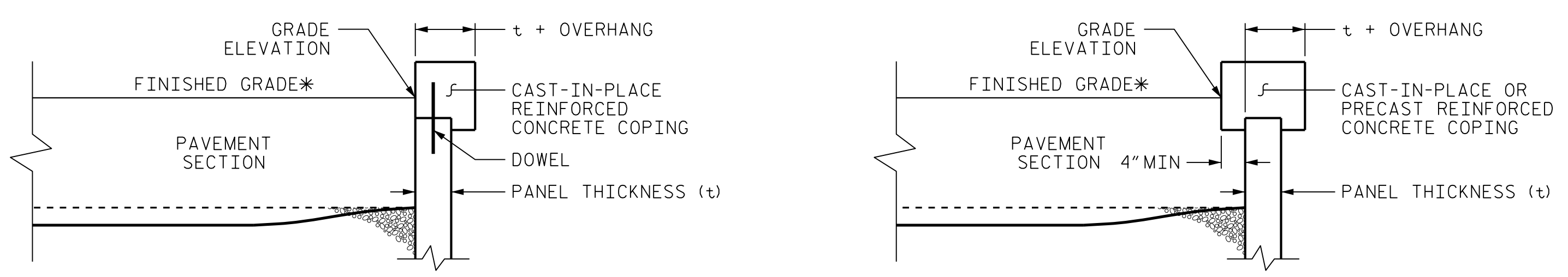
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			W-5
2			4			

PREPARED BY: CGM	DATE: 9/2015
REVIEWED BY: BDK	DATE: 9/2015



MSE 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.



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.

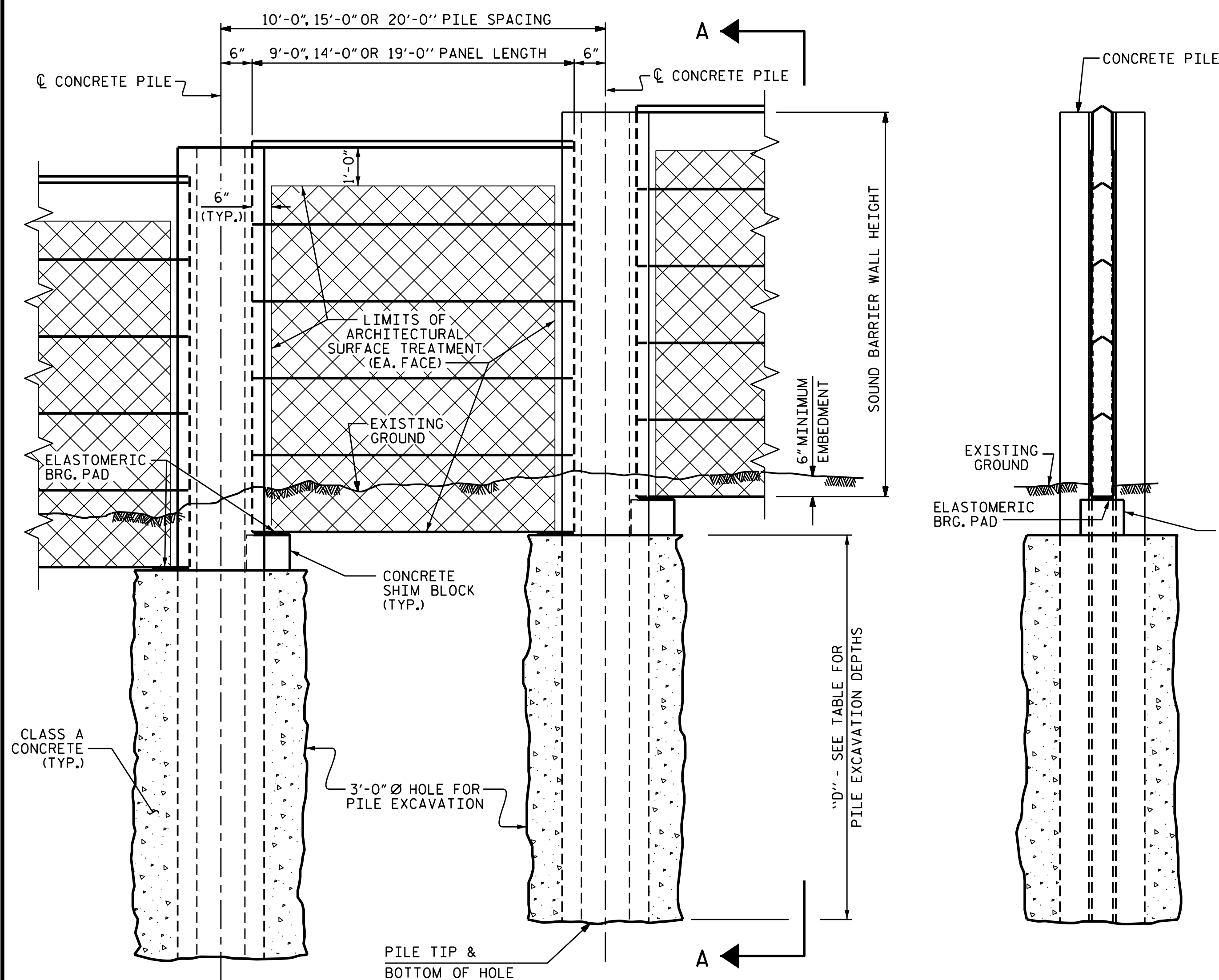
PROJECT NO.: R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L- POC= 24+31.67 -Y3- POC
 SHEET 6 OF 6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

Mechanically Stabilized Earth (MSE)
 Retaining Wall #1 and #2
 End Bent #1 and #2

REVISIONS						SHEET NO. W-6
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

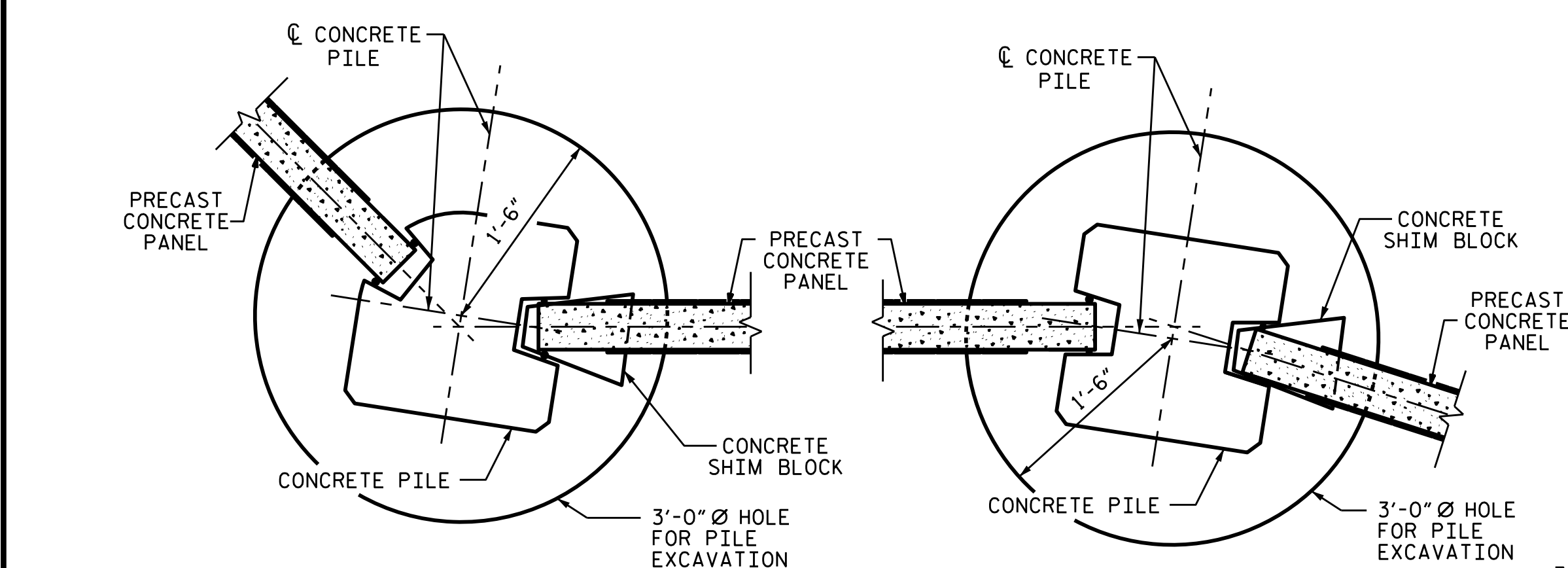


ELEVATION

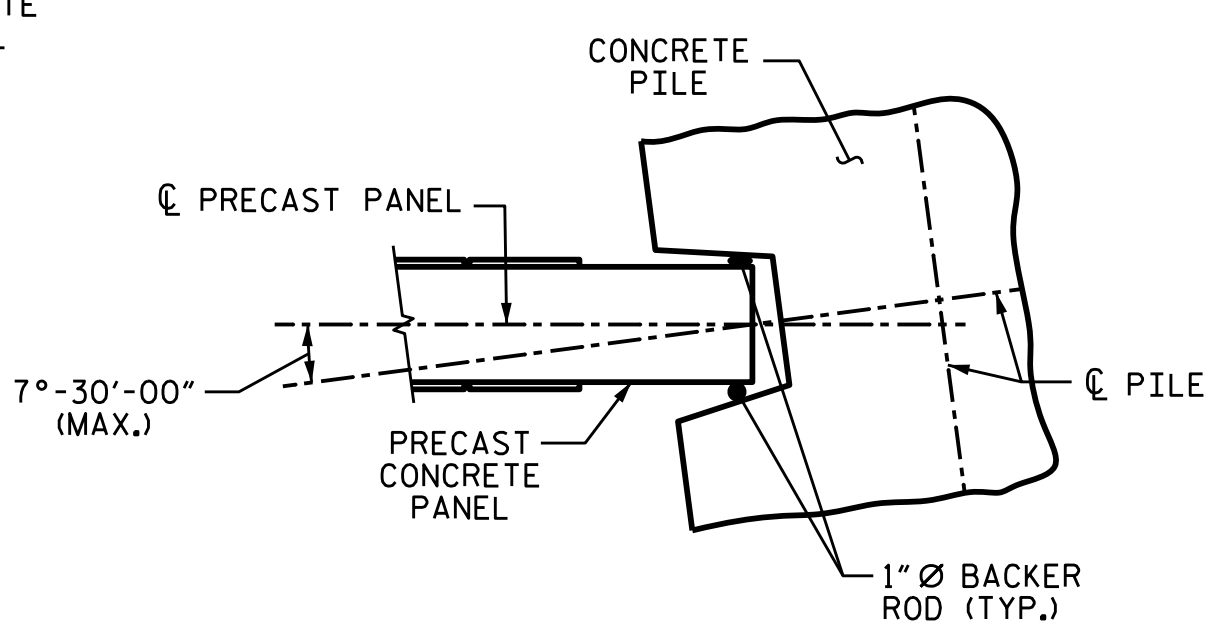
SECTION A-A

PILE EXCAVATION DEPTHS "D"				
WALL #1	FROM : STA. 144+36.88 -L-	TO : STA. 155+01.28 -L-		
3'-0" Ø HOLE	PILE SPACING	WALL HEIGHT		
		H ≤ 15'	15' < H ≤ 20'	20' < H ≤ 25'
	10'-0"	10'-0"	12'-0"	13'-0"
	15'-0"	11'-0"	13'-0"	16'-0"
20'-0"	12'-0"	15'-0"	18'-0"	

NOTE: FOR 30" DIA. HOLES, ADD 1 FT. TO D.



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

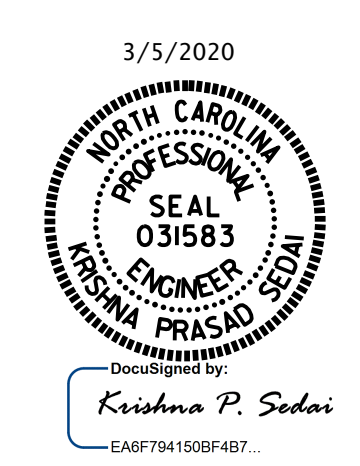
PILE REINFORCING STEEL DESIGN WIND PRESSURE = 40 PSF							
PILE TYPE I				PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE
	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.		20'-0"	H ≤ 20'	3 - #10 SHORT FACE 4 - #10 LONG FACE
20'-0"	H ≤ 20'	4 - #9 EA. FACE	#3 @ 1'-4" CTS.	20'-0"		H ≤ 20'	3 - #10 SHORT FACE 4 - #10 LONG FACE
	20' < H ≤ 25'	4 - #11 EA. FACE	#3 @ 1'-4" CTS.				
PILE TYPE II				PILE TYPE III ALT.			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 25'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE
	20' < H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.		20'-0"	H ≤ 20'	3 - #10 SHORT FACE 4 - #10 LONG FACE
20'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	20'-0"		H ≤ 20'	3 - #10 SHORT FACE 4 - #10 LONG FACE
	20' < H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.				

BILL OF MATERIAL	
SOUND BARRIER WALL	17,070 S.F.
ARCHITECTURAL SURFACE TREATMENT	0.0 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	
ARCHITECTURAL SURFACE TREATMENT	
TEXTURE OPTION:	NONE
STAIN OPTION:	NONE

NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
- CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.
- PROVIDE PANELS WITH A FLAT BOTTOM.
- VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.
- ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.
- USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, USE 10'-0", 15'-0", OR 20'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING. FOR 20'-0" PILE SPACING, PANELS DESIGNED AND MANUFACTURED BY A THIRD PARTY VENDOR SHALL BE USED.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.
- PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- SOUND BARRIER WALL FOUNDATIONS FOR SOUND BARRIER WALL NO. 1 LOCATED FROM STATION 144+36.88 -L- (RT) TO 155+01.28 -L- (RT) WILL INTERFERE WITH GEOGRID. SEE ROADWAY PLANS AND "REINFORCED SLOPE" DETAIL SHEET 26-1 FOR GEOGRID LOCATION AND LAYOUT.
- INSTALL PILE SLEEVES FOR SOUND BARRIER WALL FOUNDATIONS THAT CONFLICT WITH GEOGRID LOCATIONS. CONTRACTOR TO PROVIDE GEOGRID LAYOUT, PILE SLEEVE LAYOUT, AND SOUND BARRIER WALL CONSTRUCTION SEQUENCE TO ENGINEER FOR APPROVAL. FILL PILE SLEEVES WITH CLASS A CONCRETE.

PROJECT NO. R-3421B
RICHMOND COUNTY
 STATION: 140+97.00 -L-
 SHEET 1 OF 3

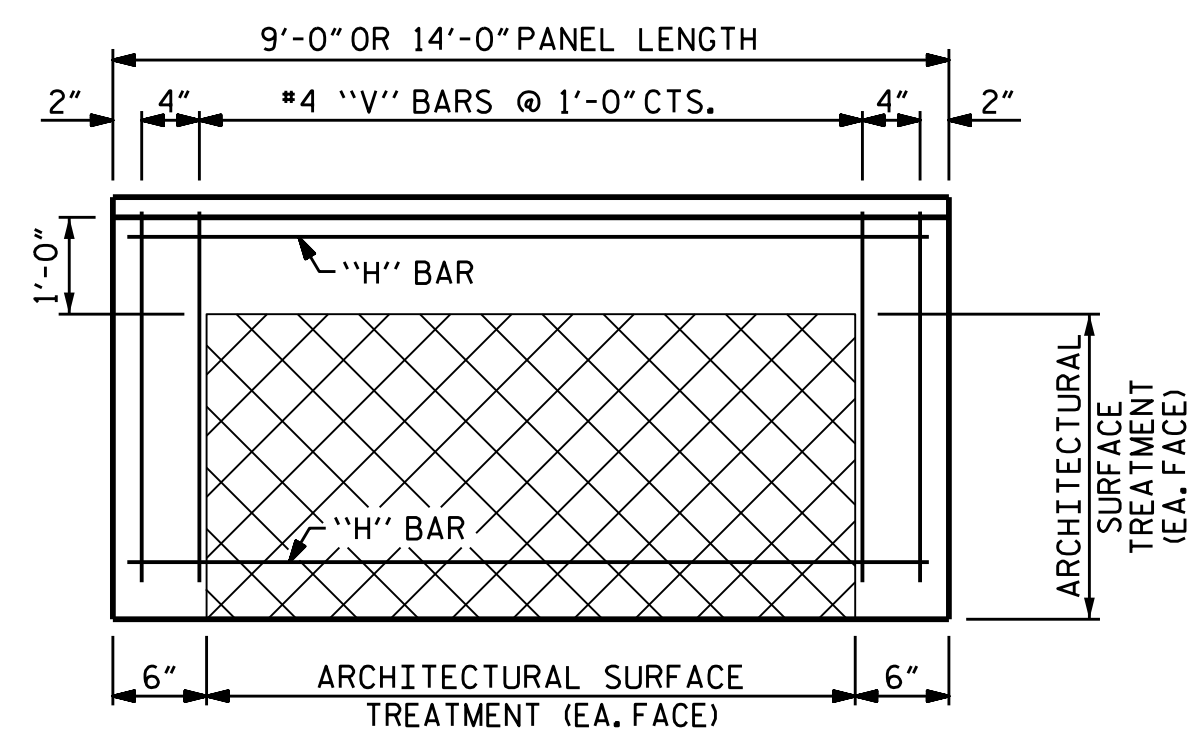


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SOUND BARRIER WALL
 -NW1-

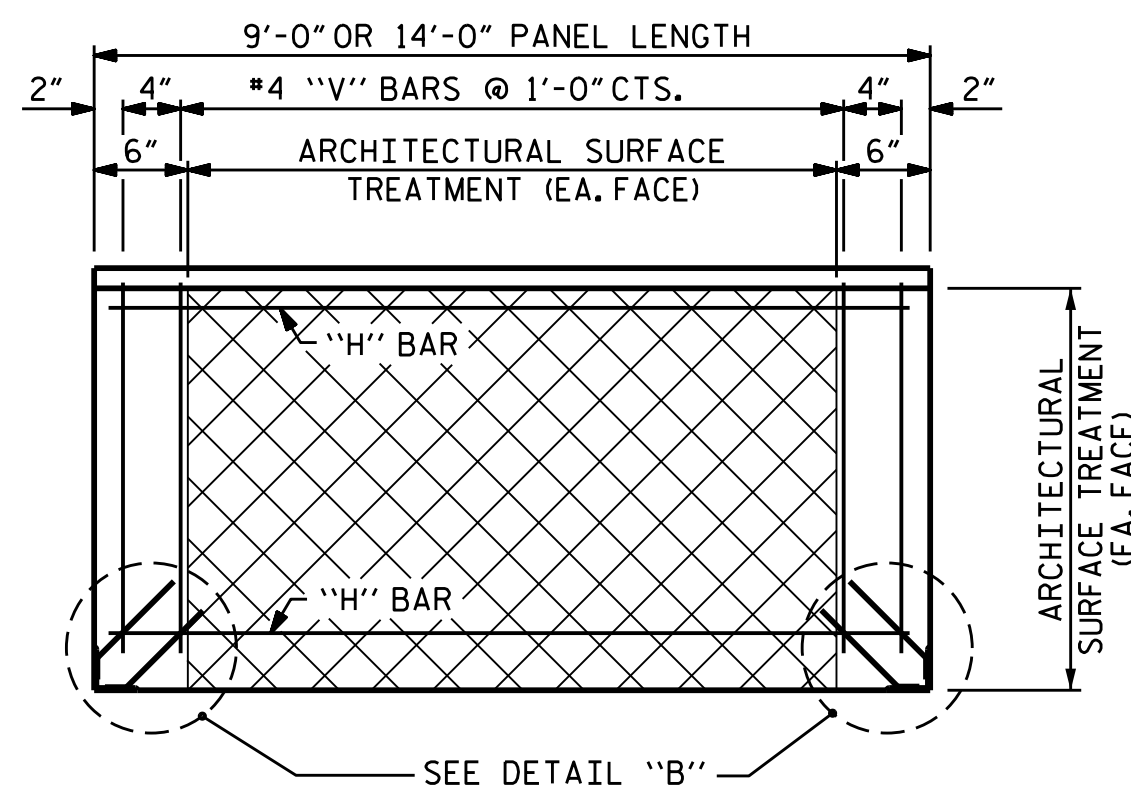
ASSEMBLED BY :	A. SORSENGIH	DATE :	2/2020
CHECKED BY :	K. PUROHIT	DATE :	2/2020
DRAWN BY :	MAA 6/11	REV. 9/26/14	MAA/TMG
CHECKED BY :	GM 6/11	REV. 10/17	MAA/THC
		REV. 5/18	MAA/THC

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS					SHEET NO. NW-1
NO.	BY:	DATE:	NO.	DATE:	
1			3		TOTAL SHEETS 3
2			4		



FRONT ELEVATION OF UPPER PRECAST PANEL



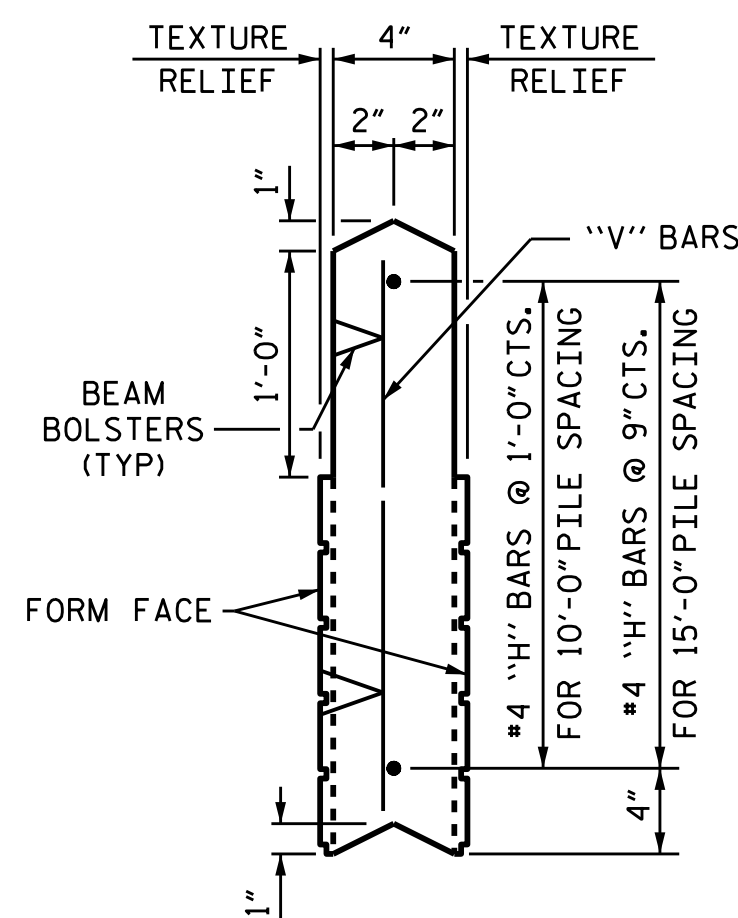
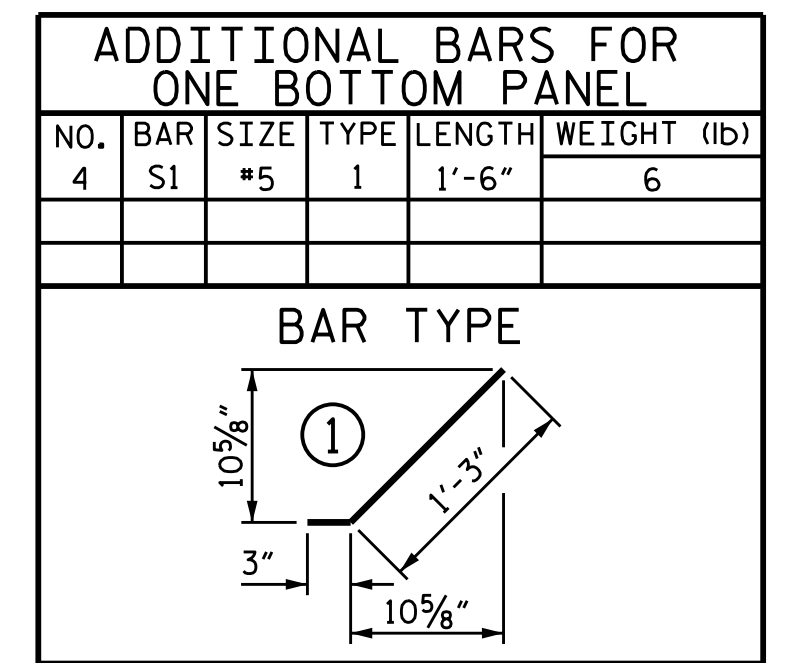
FRONT ELEVATION OF BOTTOM PRECAST PANEL

QUANTITIES FOR ONE PRECAST PANEL (FOR 10'-0" PILE SPACING)

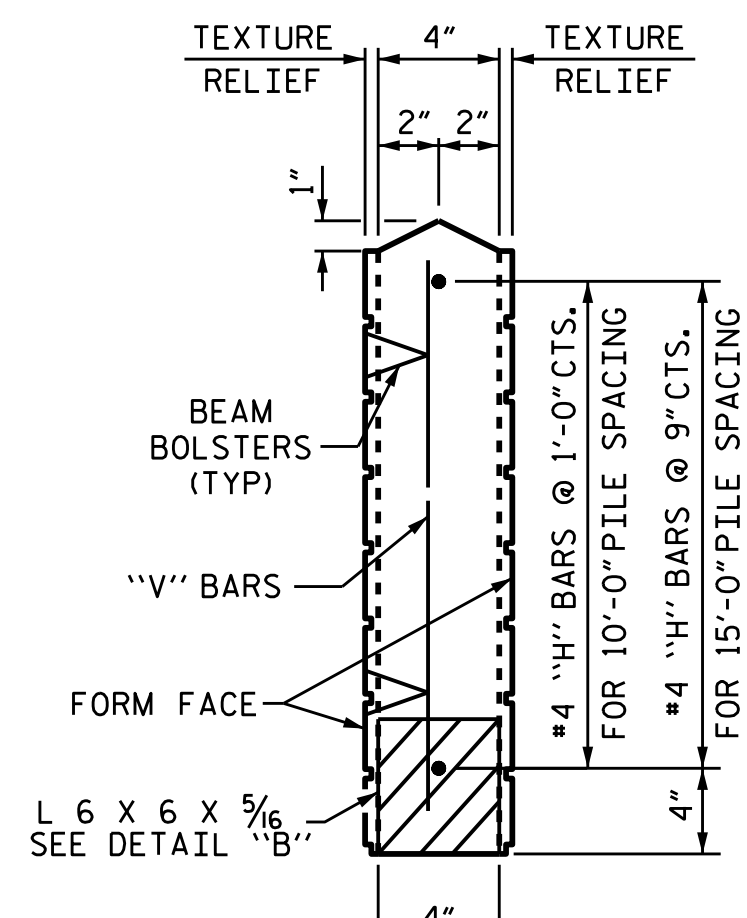
PANEL HEIGHT	CLASS AA CONCRETE C.Y.	BAR TYPES									
		HORIZONTAL				VERTICAL					
		NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)
2'-0"	0.22	3	H1 #4	STR	8'-8"	17	11	V1 #4	STR	1'-8"	12
3'-0"	0.33	4	H2 #4	STR	8'-8"	23	11	V2 #4	STR	2'-8"	20
4'-0"	0.44	5	H3 #4	STR	8'-8"	29	11	V3 #4	STR	3'-8"	27

QUANTITIES FOR ONE PRECAST PANEL (FOR 15'-0" PILE SPACING)

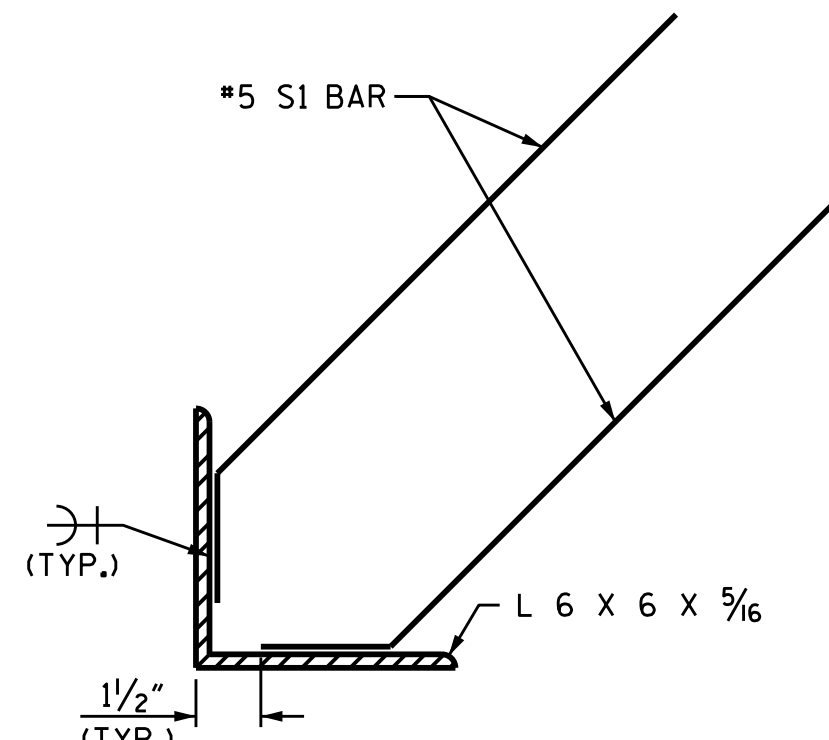
PANEL HEIGHT	CLASS AA CONCRETE C.Y.	BAR TYPES									
		HORIZONTAL				VERTICAL					
		NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)
3'-0"	0.52	5	H1 #4	STR	13'-8"	46	16	V1 #4	STR	2'-8"	29
4'-0"	0.69	6	H2 #4	STR	13'-8"	55	16	V2 #4	STR	3'-8"	39
5'-0"	0.86	7	H3 #4	STR	13'-8"	64	16	V3 #4	STR	4'-8"	50
6'-0"	1.04	8	H4 #4	STR	13'-8"	73	16	V4 #4	STR	5'-8"	61



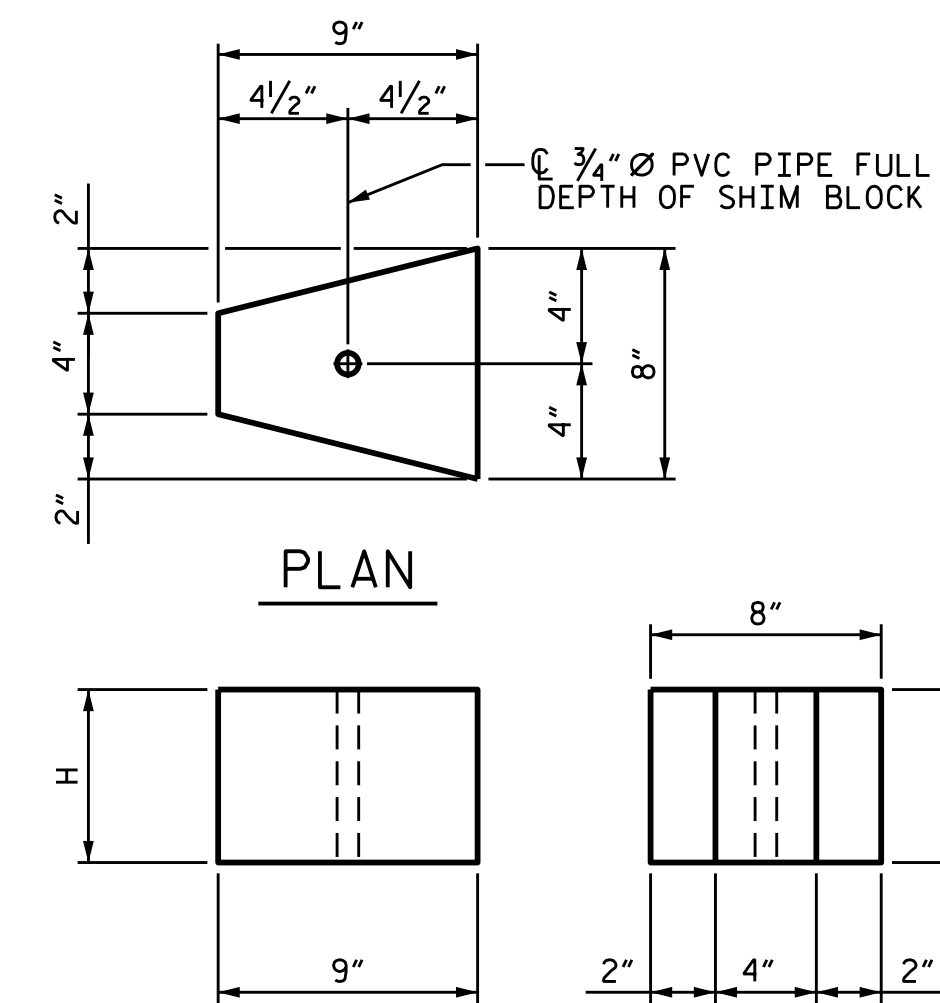
UPPER PANEL



BOTTOM PANEL



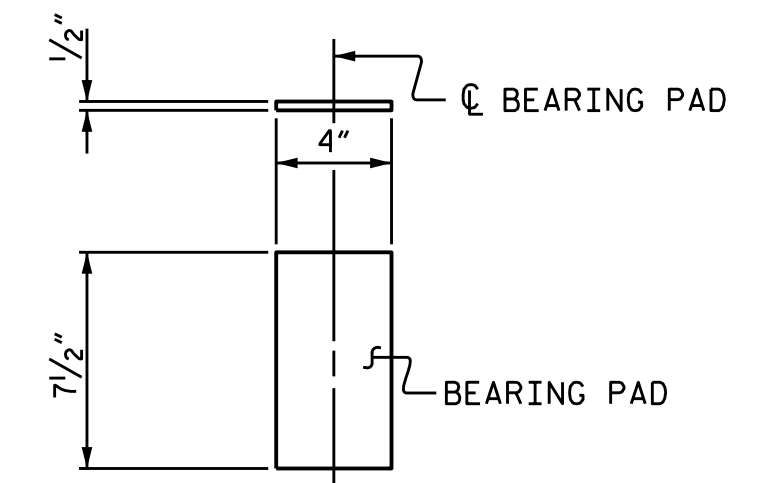
DETAIL "B"



ELEVATION END

CONCRETE SHIM BLOCK

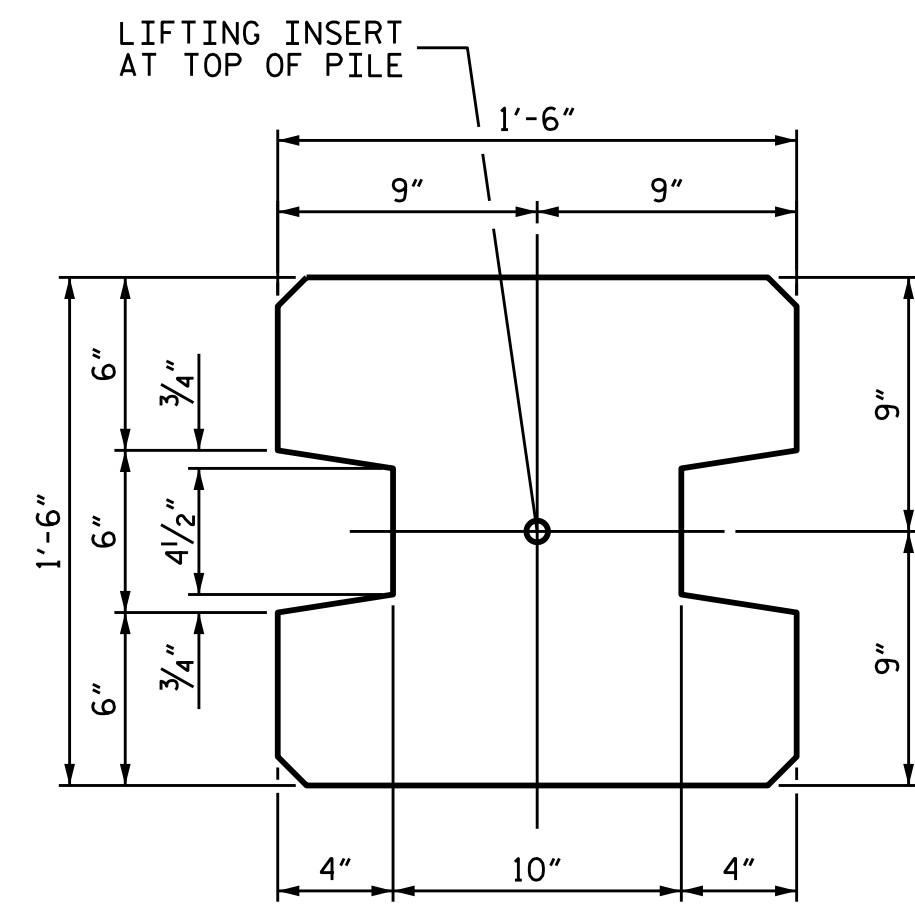
H = 3", 6" or 1'-0"



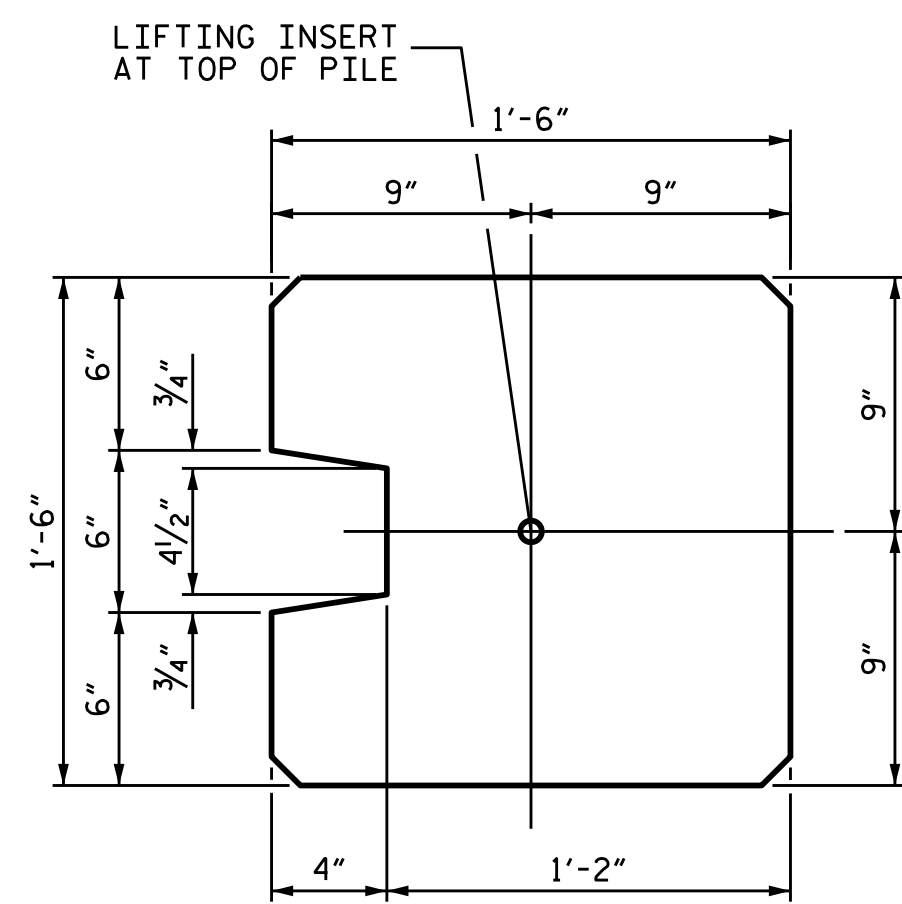
ELASTOMERIC BEARING DETAILS

ELASTOMER IN BEARINGS SHALL BE 50 DUROMETER HARDNESS.

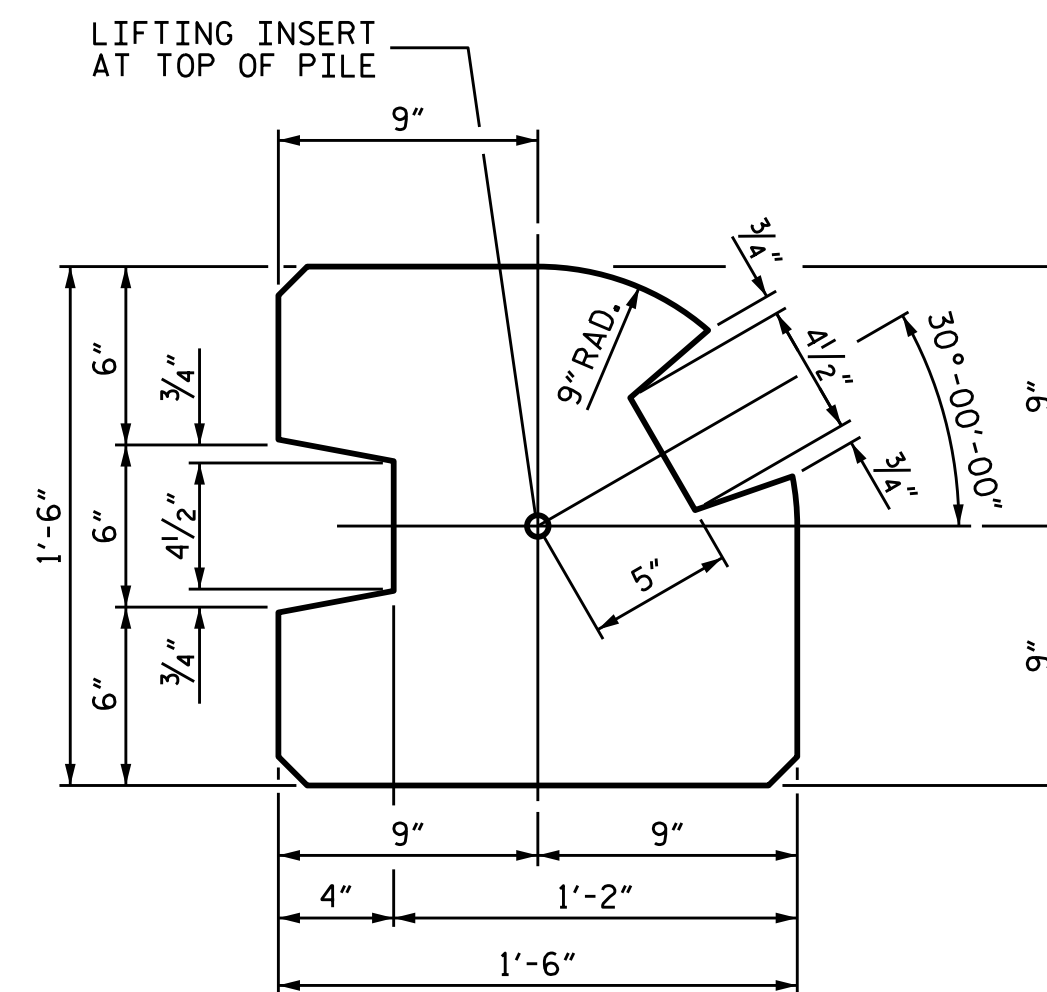
SECTION THROUGH PRECAST PANELS



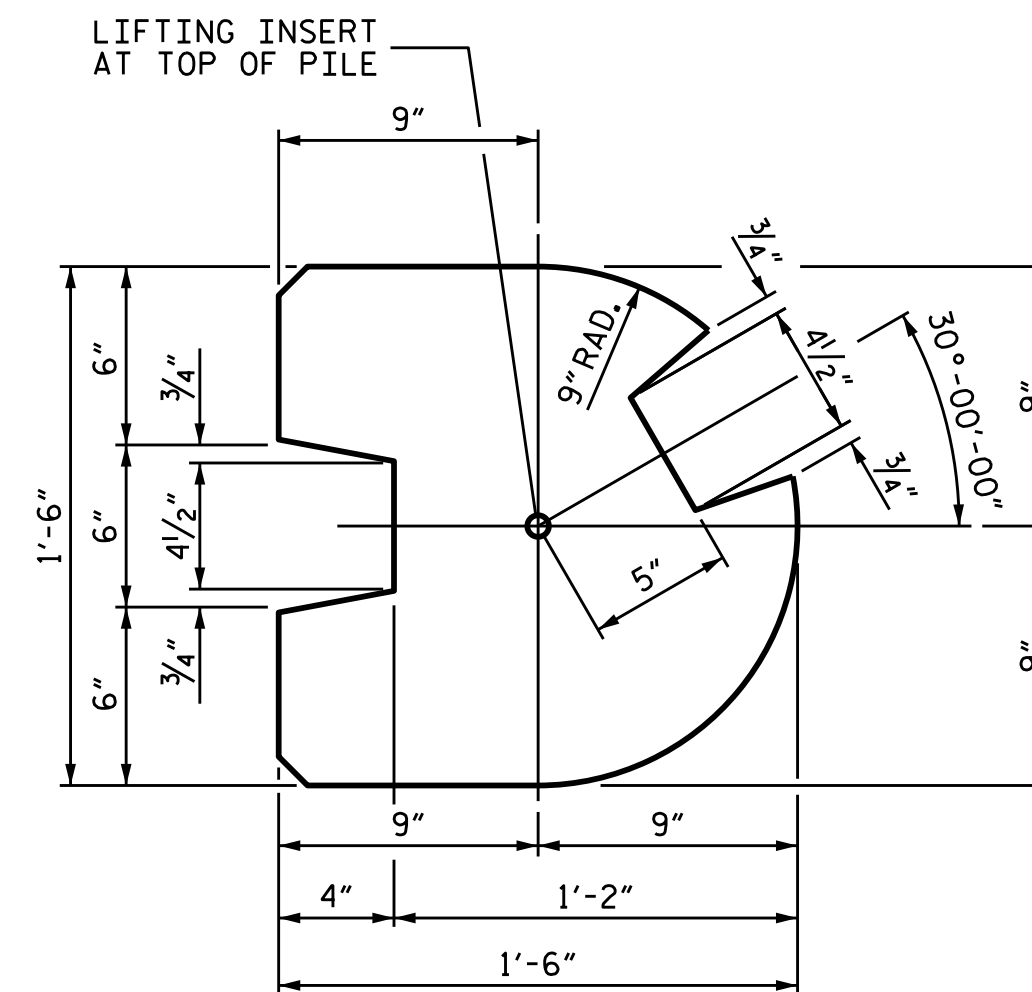
TYPE - I (AREA = 1.9444 SQ. FT.)



TYPE - II (AREA = 2.0903 SQ. FT.)



TYPE - III (AREA = 1.8336 SQ. FT.)



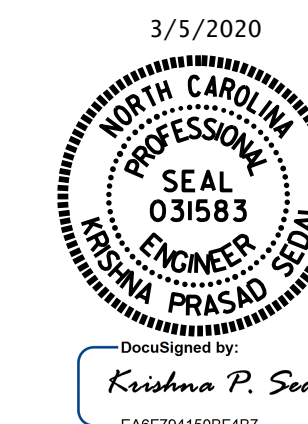
TYPE - III (ALT.) (AREA = 1.7163 SQ. FT.)

PILE DETAIL

(ALL CORNERS TO BE CHAMFERED 1")

ASSEMBLED BY :	A. SORSENGH	DATE :	2/2020
CHECKED BY :	K. PUROHIT	DATE :	2/2020
DRAWN BY :	MAA 6/11	REV. 1/15/14	RWW/TMG
CHECKED BY :	GM 6/11	REV. 10/17	MAA/THC
		REV. 5/18	MAA/THC

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PROJECT NO. R-3421B
 RICHMOND COUNTY
 STATION: 140+97.00 -L-

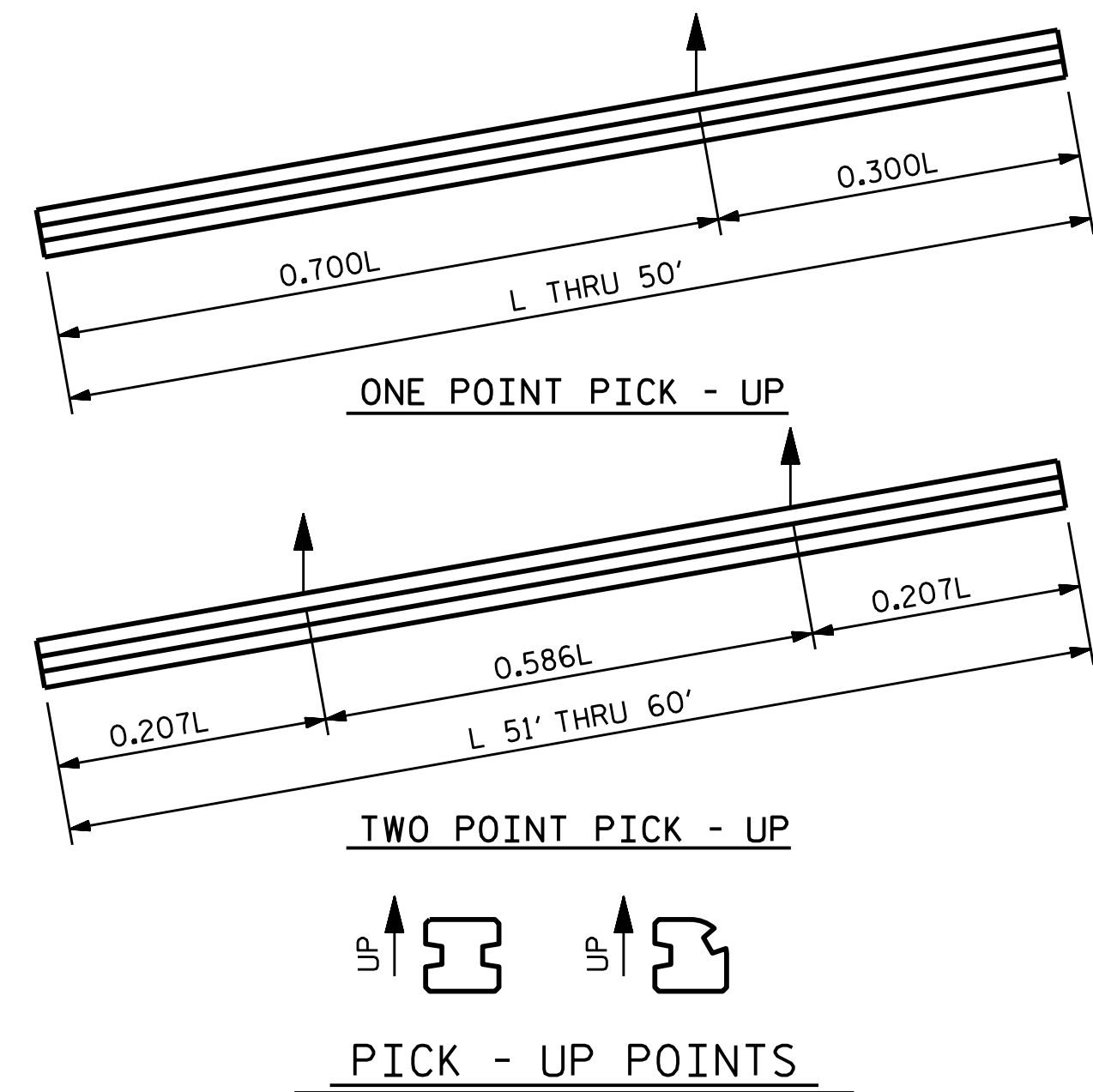
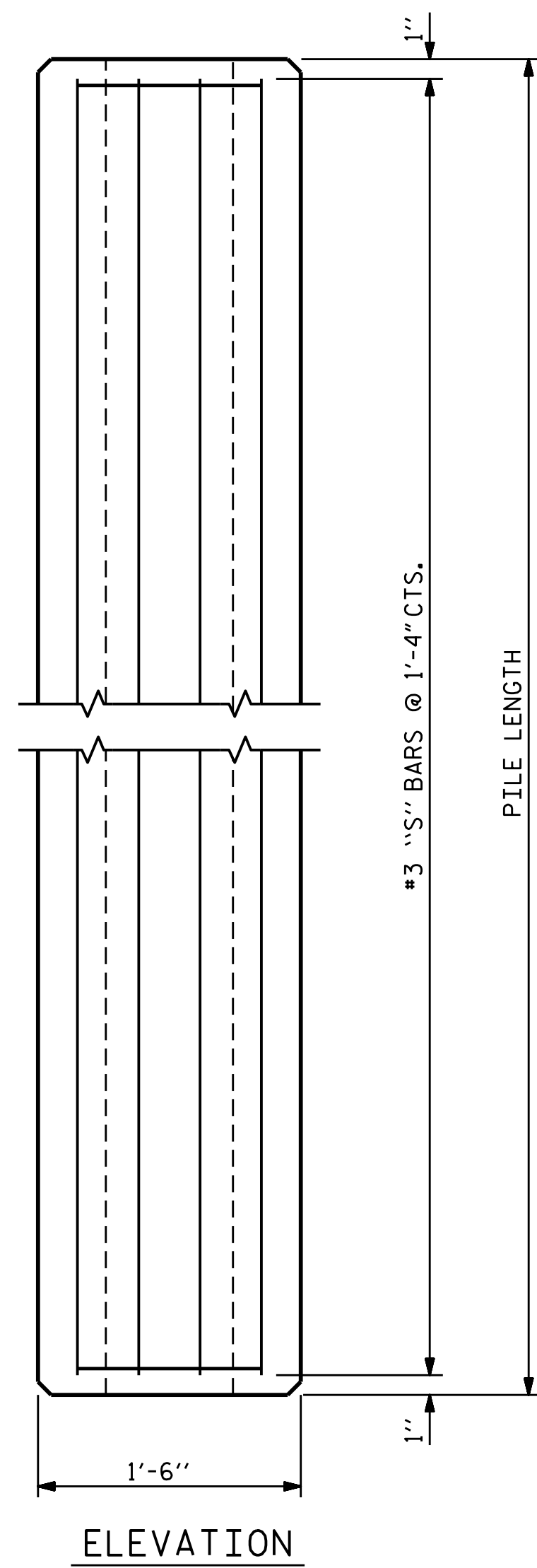
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SOUND BARRIER WALL
 DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS				SHEET NO.
NO.	BY:	DATE:		
1		3		NW-2
2		4		TOTAL SHEETS 3

STD. NO. SBW2



QUANTITIES FOR ONE PRECAST CONCRETE PILE

LENGTH	APPROX. PILE WT. TONS	ONE PICK-UP POINT		TWO PICK-UP POINT	
		0.300L	0.700L	0.207L	0.586L
10'-0"	1.56	3'-0"	7'-0"		
15'-0"	2.35	4'-6"	10'-6"		
20'-0"	3.14	6'-0"	14'-0"		
25'-0"	3.93	7'-6"	17'-6"		
30'-0"	4.70	9'-0"	21'-0"		
35'-0"	5.49	10'-6"	24'-6"		
40'-0"	6.28	12'-0"	28'-0"		
45'-0"	7.05	13'-6"	31'-6"		
50'-0"	7.84	15'-0"	35'-0"		
55'-0"	8.63			11'-4 1/2"	32'-3"
60'-0"	9.42			12'-5"	35'-2"

NOTES

CONCRETE DESIGN DATA : $f'_c = 5,000$ PSI

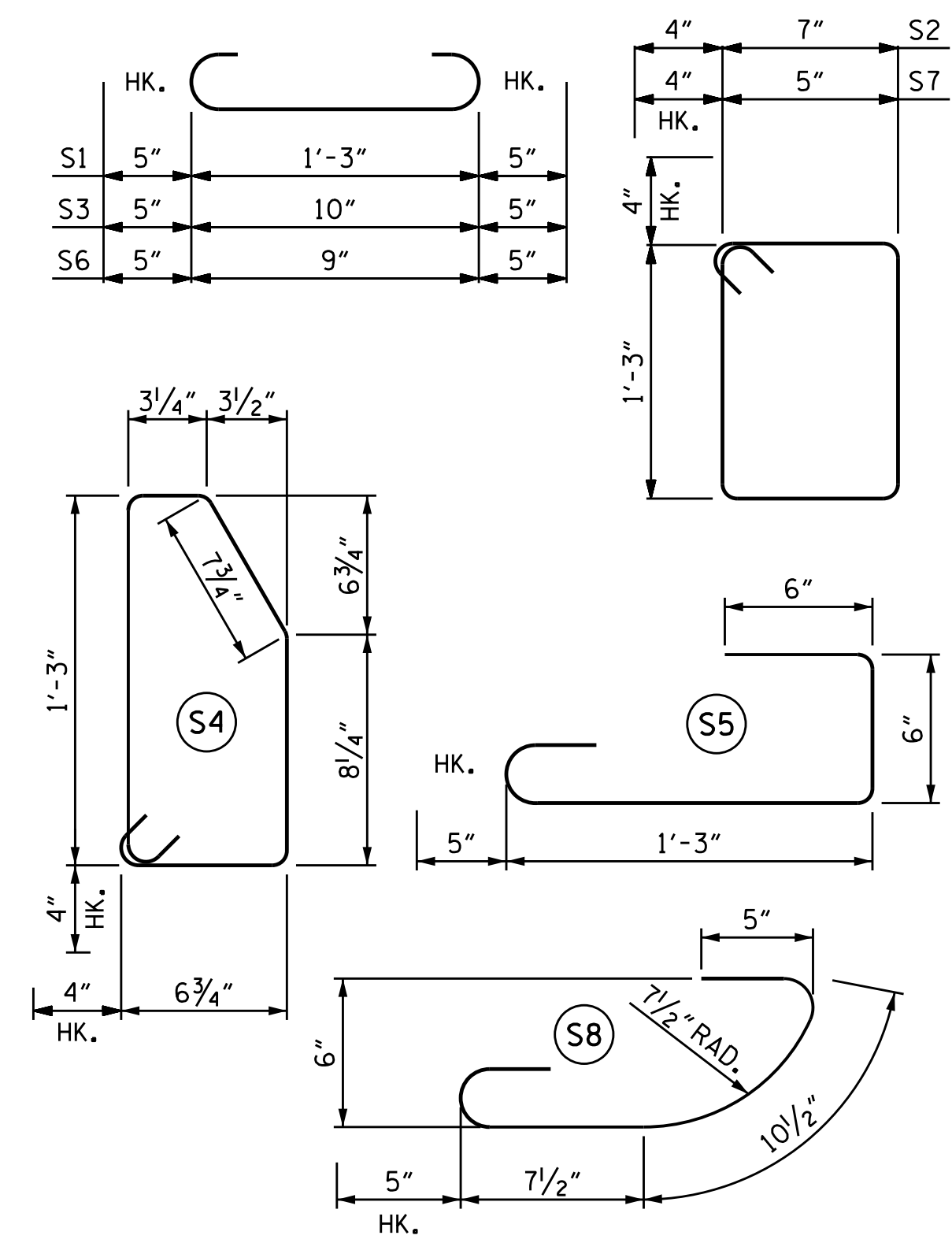
PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS TO BE INDICATED WITH A BLACK MARK 2" WIDE.

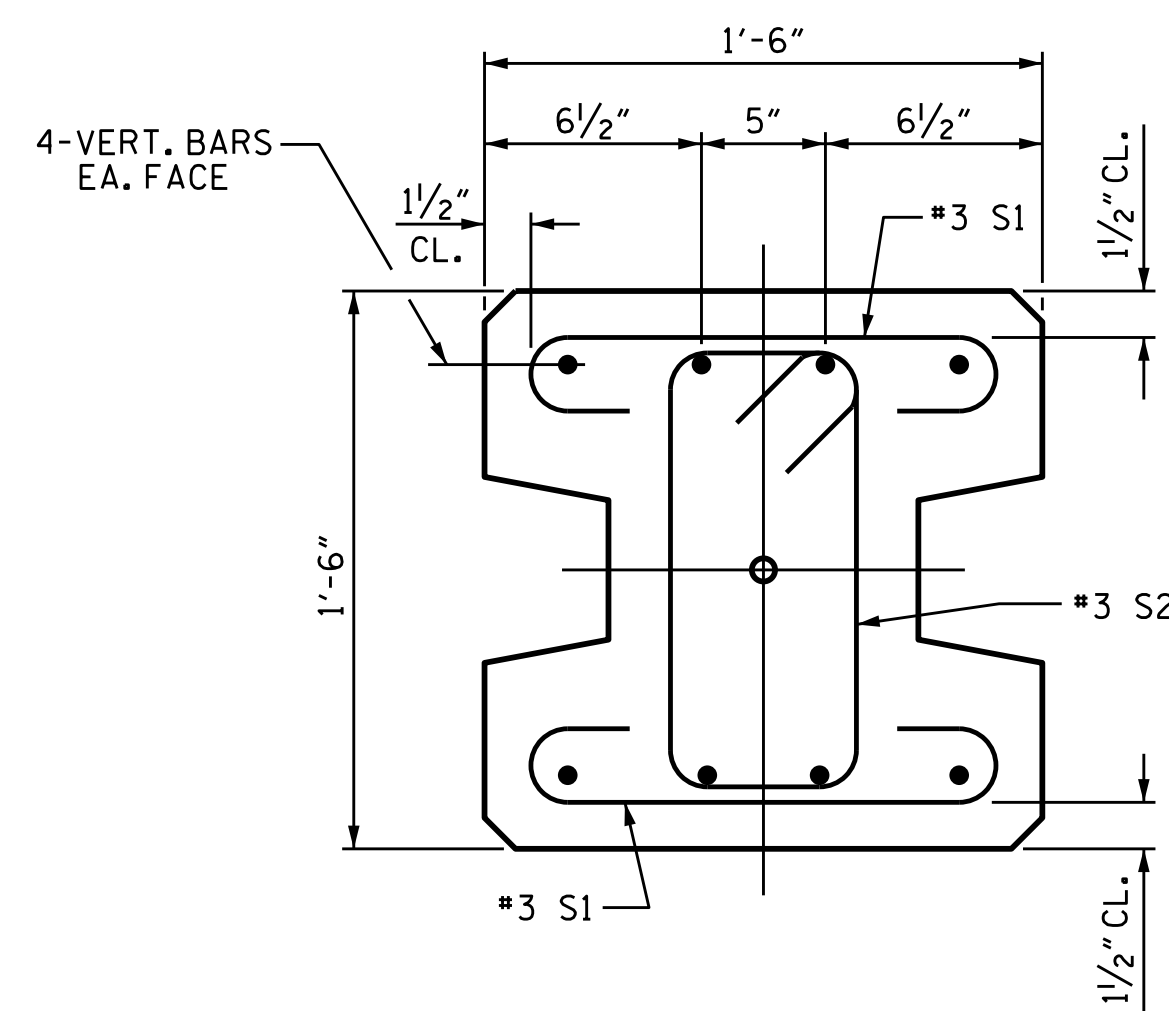
THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

ALL CORNERS TO BE CHAMFERED 1".

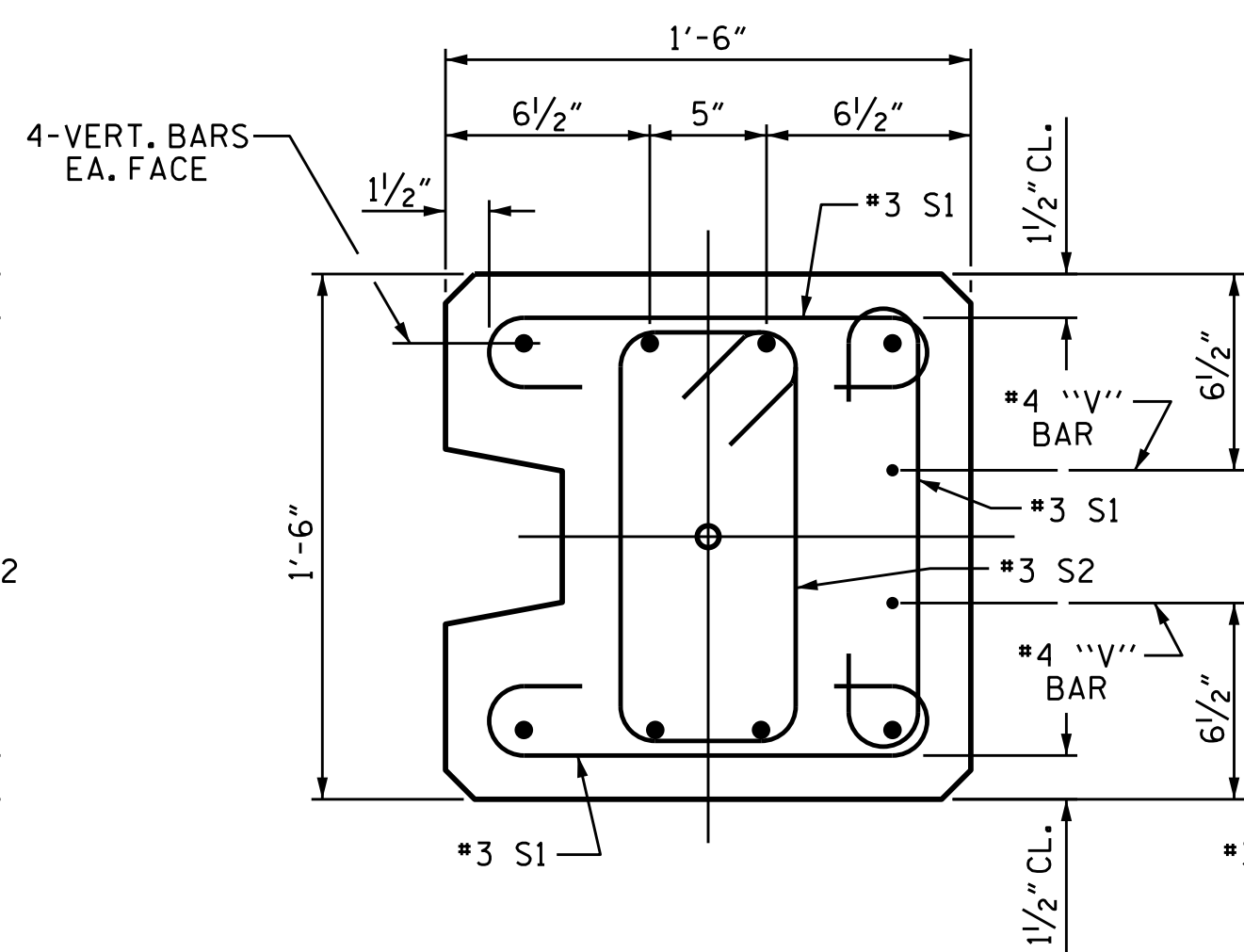
BAR TYPES



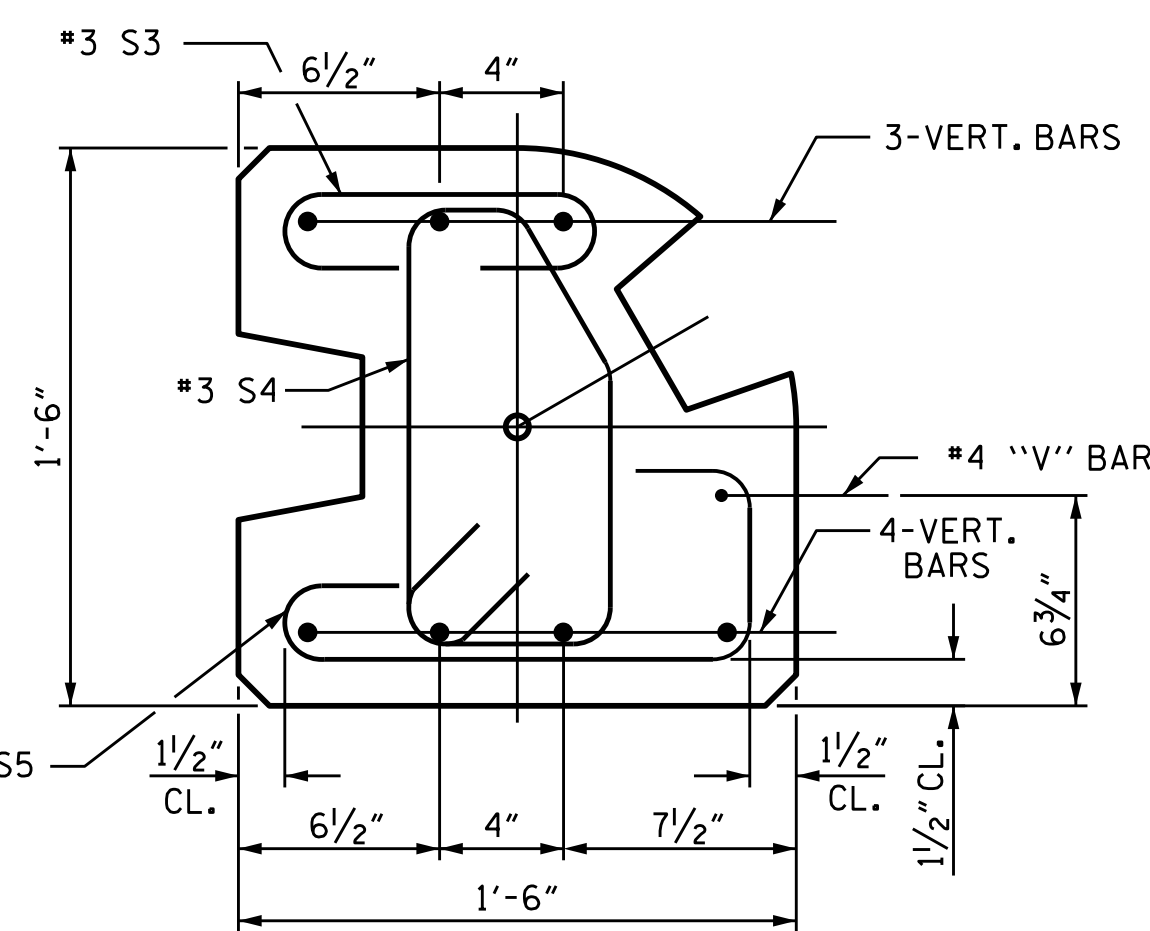
ALL BAR DIMENSIONS ARE OUT TO OUT.



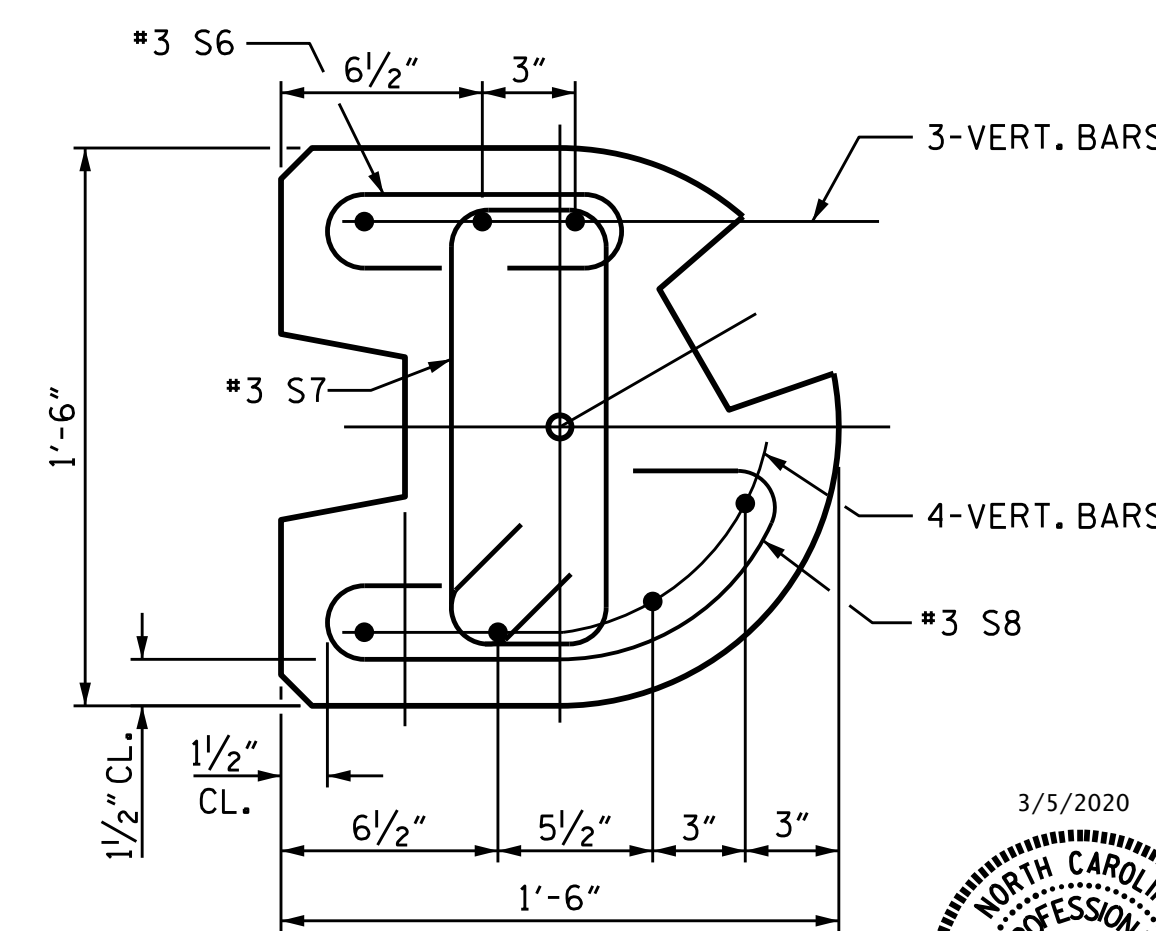
TYPE - I



TYPE - II



TYPE - III



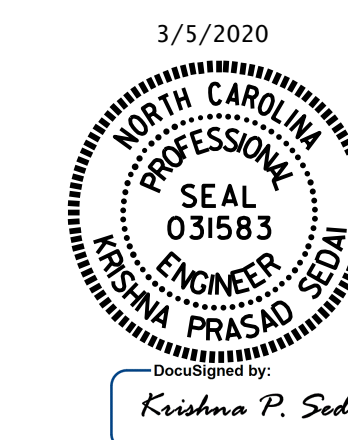
TYPE - III (ALT.)

PILE DETAIL

FOR VERTICAL BAR PILE REINFORCING, SEE SHEET 1 OF 3

PROJECT NO. R-3421B
RICHMOND COUNTY
 STATION: 140+97.00 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SOUND BARRIER WALL
 DETAILS

ASSEMBLED BY :	A. SORSENGINH	DATE :	2/2020
CHECKED BY :	K. PUROHIT	DATE :	2/2020
DRAWN BY :	MAA	6/11	REV. 1/15/14
CHECKED BY :	GM	6/11	REV. 12/17

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	NW-3
1			3			TOTAL SHEETS
2			4			3