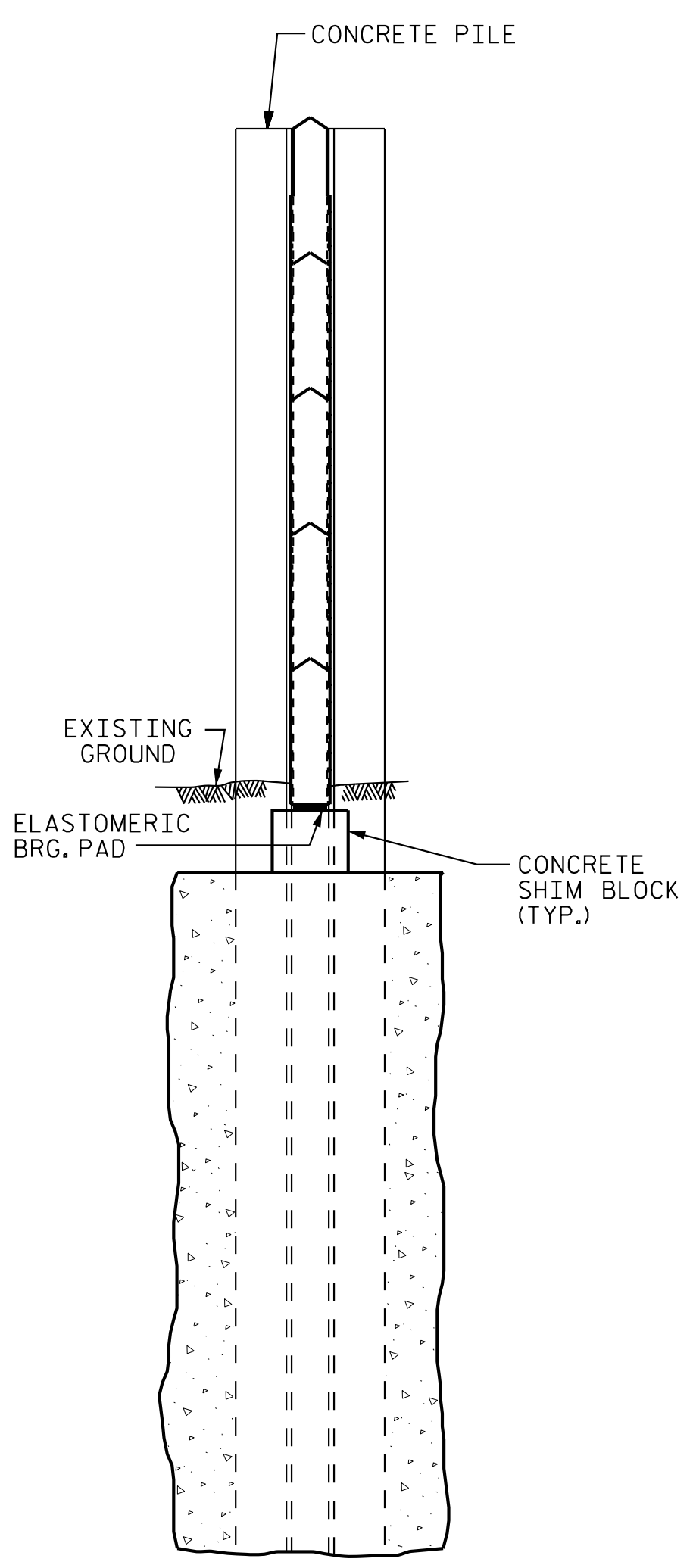


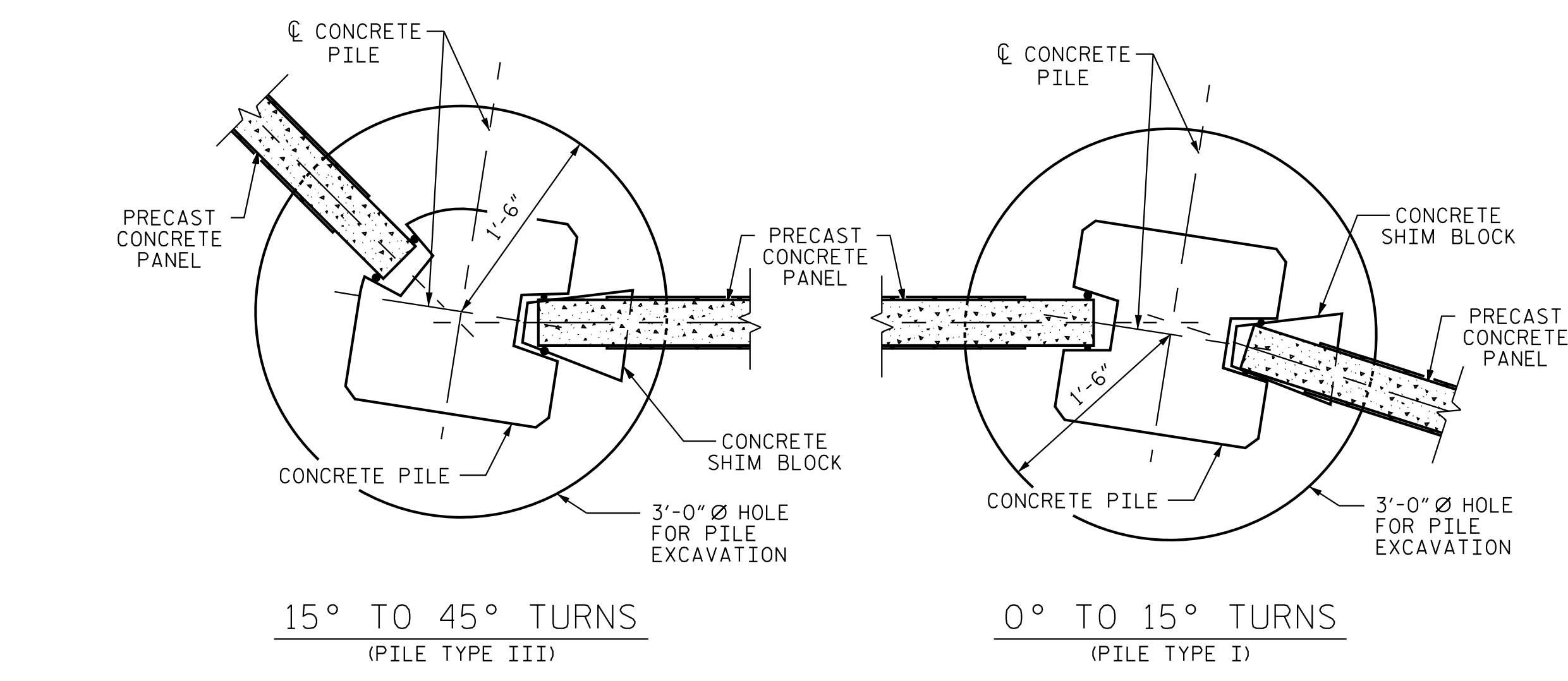
ELEVATION



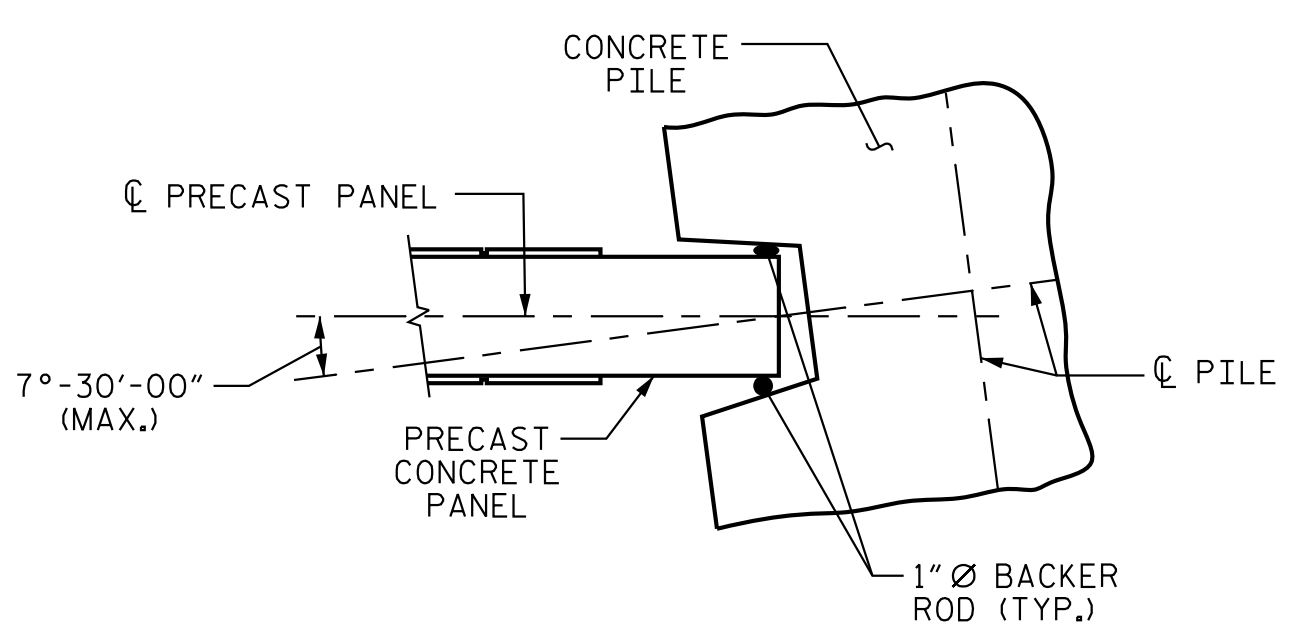
SECTION A-A

PILE EXCAVATION DEPTHS "D"					
WALL -NB1-		FROM : STA. 10+00.00 TO : STA. 19+75.00			
3'-0" Ø HOLE	PILE SPACING	WALL HEIGHT			
		H ≤ 15'	10'-0"	12'-0"	13'-0"
		15' < H ≤ 20'	11'-0"	13'-0"	16'-0"
		20' < H ≤ 25'	12'-0"	15'-0"	18'-0"

BILL OF MATERIAL	
SOUND BARRIER WALL	9,580 S.F.
ARCHITECTURAL SURFACE TREATMENT	16,101 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	
ARCHITECTURAL SURFACE TREATMENT	
TEXTURE OPTION:	STANDARD BRICK
STAIN OPTION:	30091



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

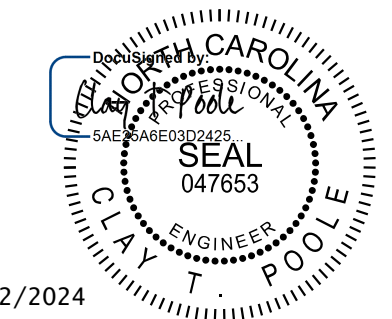
(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

PILE REINFORCING STEEL					
WIND EXPOSURE CATEGORY B, DESIGN WIND PRESSURE = 27 PSF					
		PILE TYPE I	PILE TYPE II	PILE TYPE III	PILE TYPE III ALT.
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	VERTICAL REINFORCING STEEL	VERTICAL REINFORCING STEEL	VERTICAL REINFORCING STEEL
10'-0"	H ≤ 20'	4 - #5 EA. FACE	4 - #5 EA. FACE	3 - #5 SHORT FACE 4 - #5 LONG FACE	3 - #5 SHORT FACE 4 - #5 LONG FACE
	20' < H ≤ 25'	4 - #6 EA. FACE	4 - #5 EA. FACE	3 - #7 SHORT FACE 4 - #7 LONG FACE	3 - #7 SHORT FACE 4 - #7 LONG FACE
	25' < H ≤ 30'	4 - #7 EA. FACE	4 - #7 EA. FACE	3 - #8 SHORT FACE 4 - #8 LONG FACE	3 - #8 SHORT FACE 4 - #8 LONG FACE
15'-0"	H ≤ 20'	4 - #6 EA. FACE	4 - #5 EA. FACE	3 - #6 SHORT FACE 4 - #6 LONG FACE	3 - #6 SHORT FACE 4 - #6 LONG FACE
	20' < H ≤ 25'	4 - #7 EA. FACE	4 - #7 EA. FACE	3 - #8 SHORT FACE 4 - #8 LONG FACE	3 - #8 SHORT FACE 4 - #8 LONG FACE
	25' < H ≤ 30'	4 - #8 EA. FACE	4 - #8 EA. FACE	3 - #10 SHORT FACE 4 - #10 LONG FACE	3 - #10 SHORT FACE 4 - #10 LONG FACE
20'-0"	H ≤ 20'	4 - #6 EA. FACE	4 - #6 EA. FACE	3 - #7 SHORT FACE 4 - #7 LONG FACE	3 - #7 SHORT FACE 4 - #7 LONG FACE
	20' < H ≤ 25'	4 - #8 EA. FACE	4 - #8 EA. FACE	3 - #9 SHORT FACE 4 - #9 LONG FACE	3 - #9 SHORT FACE 4 - #9 LONG FACE
	25' < H ≤ 30'	4 - #10 EA. FACE	4 - #10 EA. FACE	3 - #11 SHORT FACE 4 - #11 LONG FACE	3 - #11 SHORT FACE 4 - #11 LONG FACE

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 1000-3 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.
- FOR LAYOUT AND DETAILS OF #3 TIE BARS, SEE STD. SBW3.

PROJECT NO. U-4713A
MECKLENBURG COUNTY
STATION: 30+44.67 -L-
10+00.00 -NB1-
SHEET 1 OF 3



8/12/2024
Kimley»Horn
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Raleigh, NC 27601-1772
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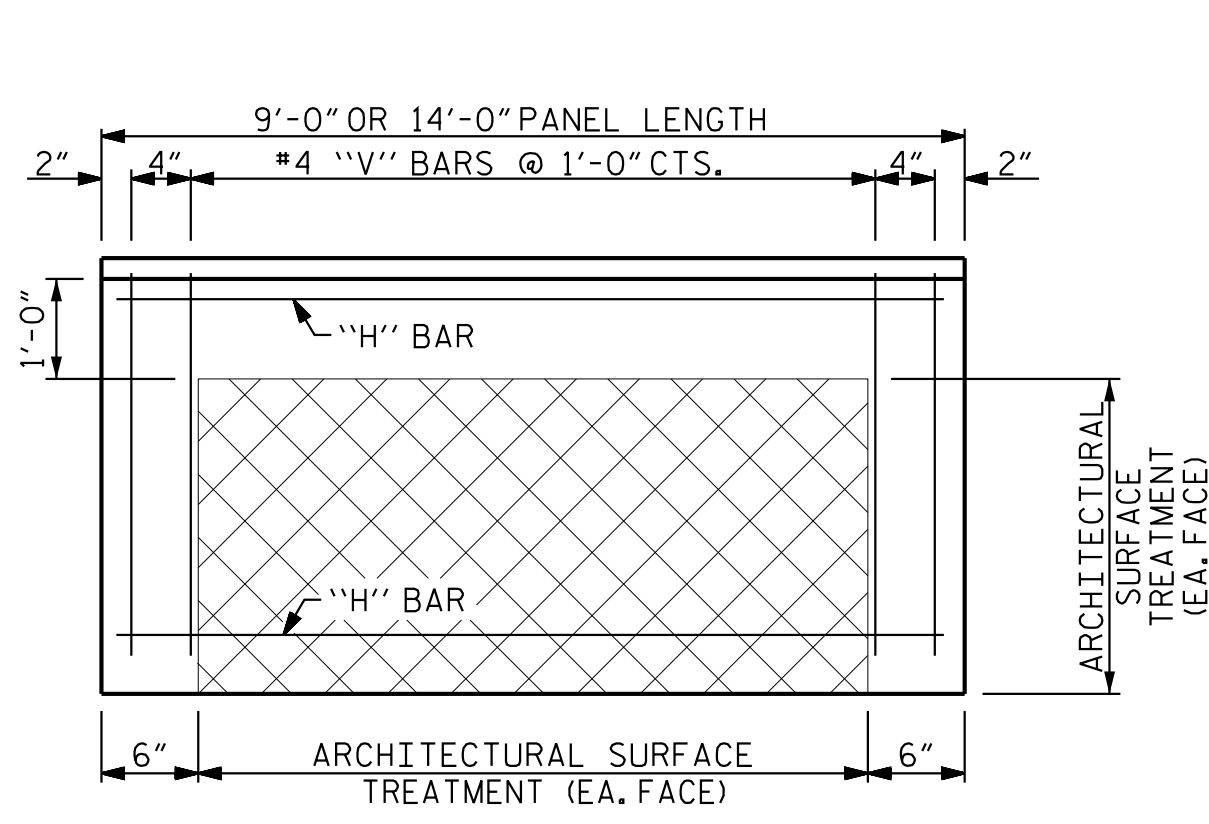
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD SOUND BARRIER WALL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. SBW-1
TOTAL SHEETS 3

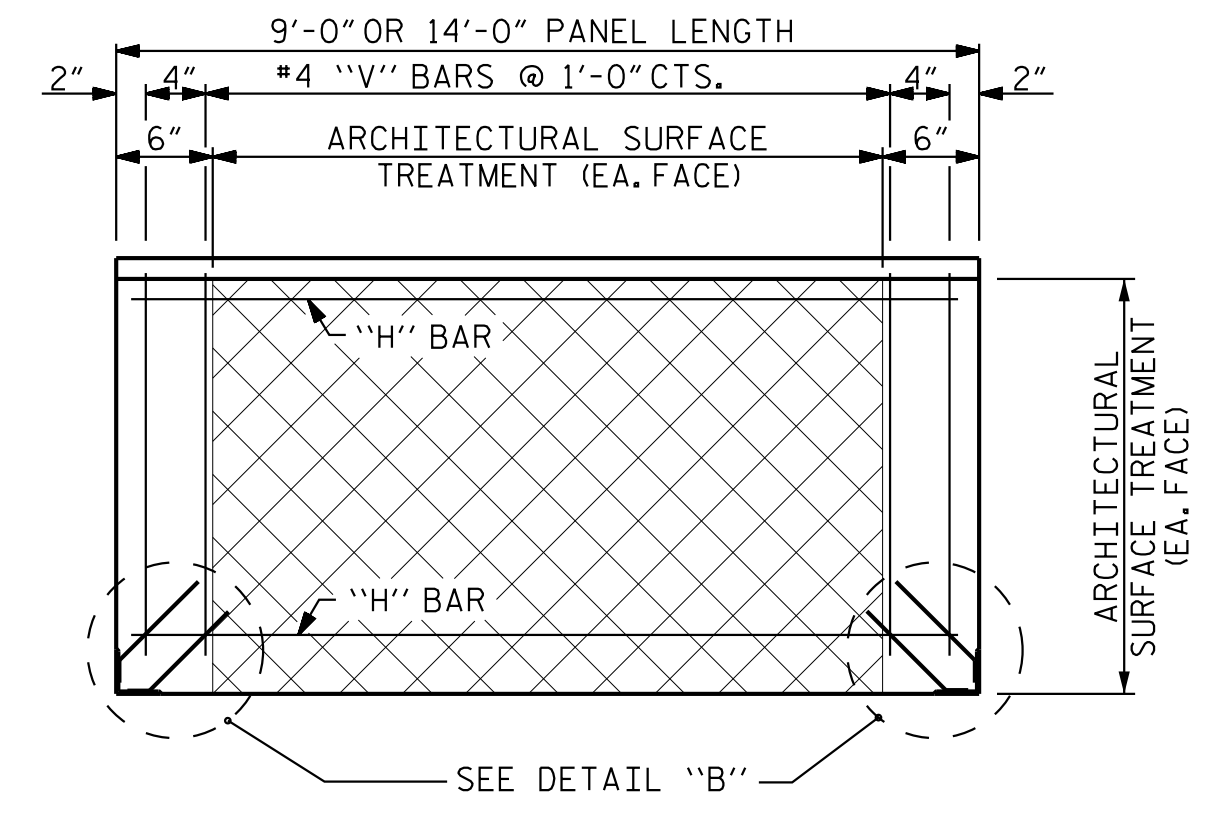
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UNLESS ALL SIGNATURES COMPLETED**

7/11/2024 K:\BIDI_Structures\Culver\NC\0103626 U-4713A Mecklenburg Road Extension\Coord\Drawn\B Main\U4713A_SML_SBW01.dgn

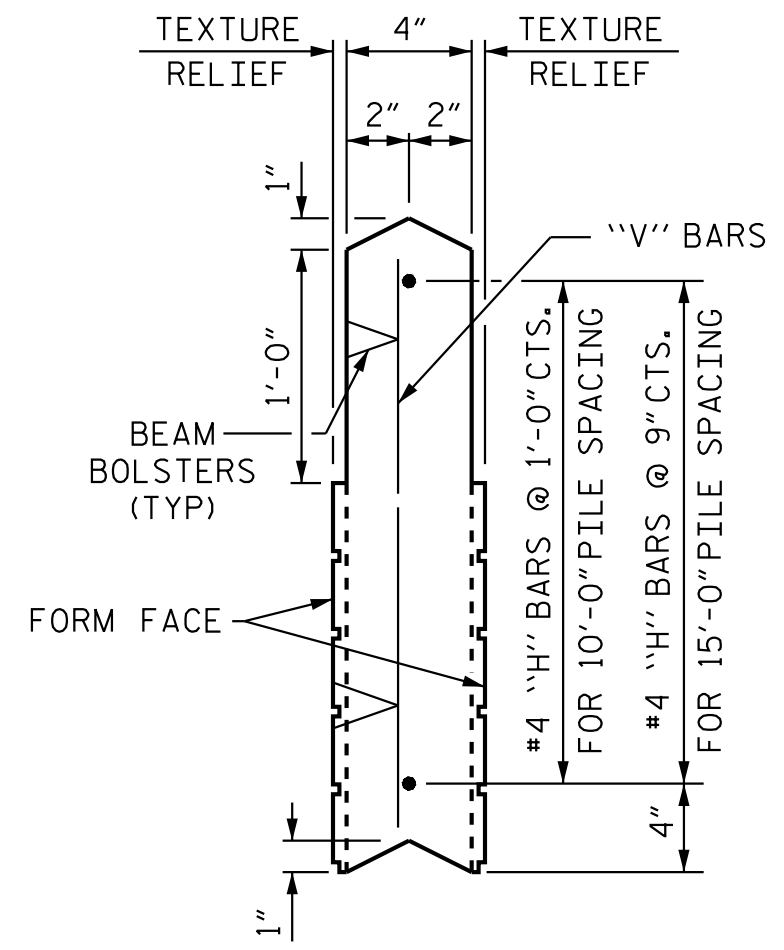
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CHECKED BY : C.T. POOLE	DATE : 05/2024
DRAWN BY : MAA 6/11	REV. 9/26/14 MAA/TMG
CHECKED BY : GM 6/11	REV. 10/17 MAA/THC
	REV. 5/18 MAA/THC



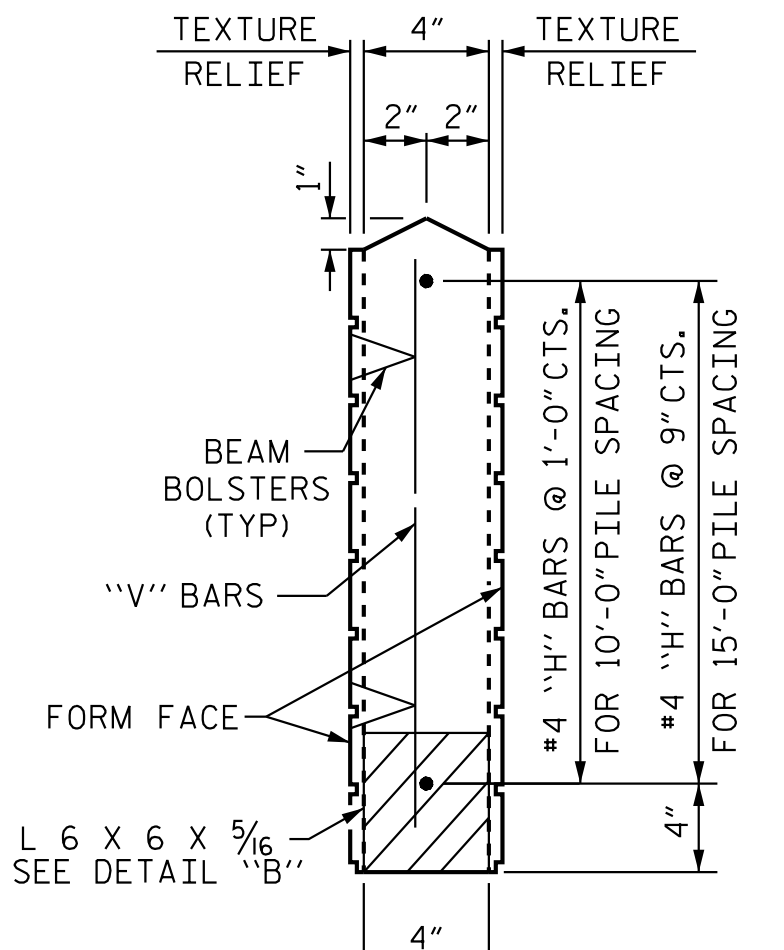
FRONT ELEVATION OF UPPER PRECAST PANEL



FRONT ELEVATION OF BOTTOM PRECAST PANEL

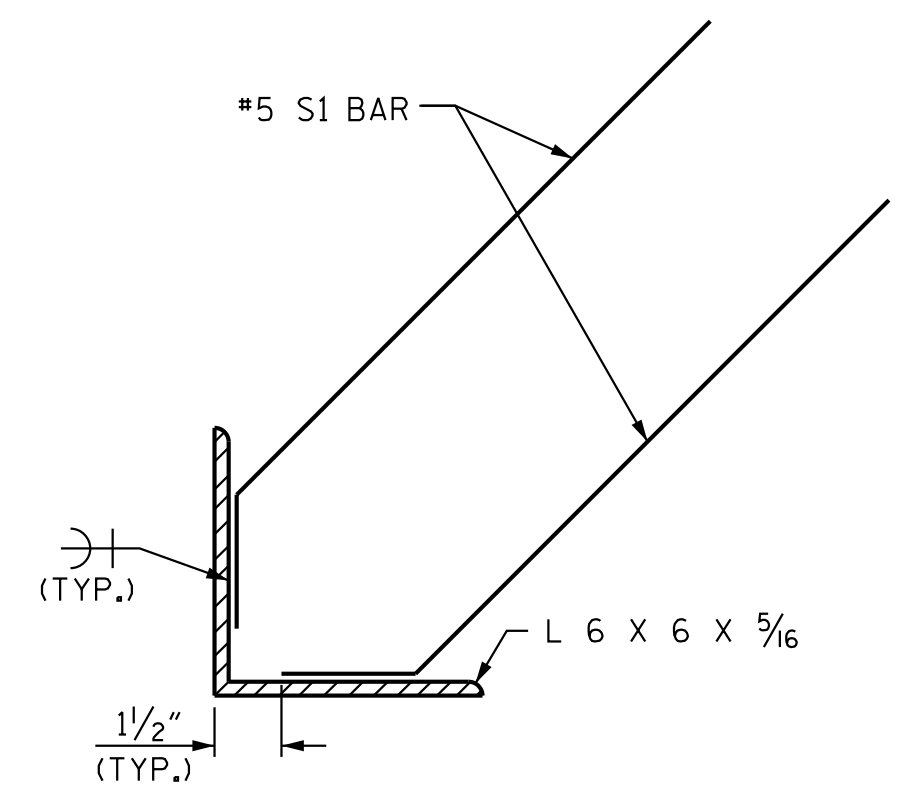


UPPER PANEL



BOTTOM PANEL

SECTION THROUGH PRECAST PANELS



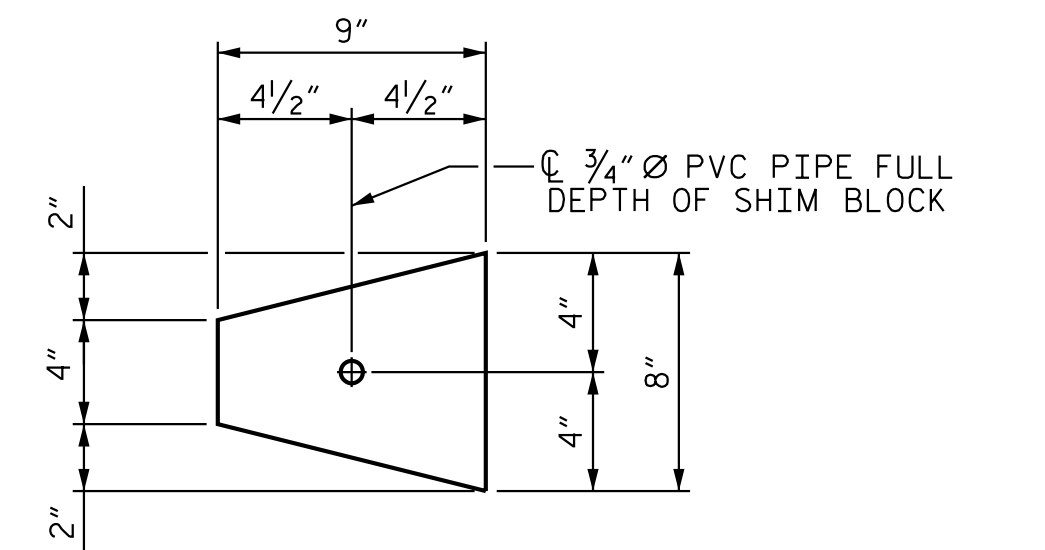
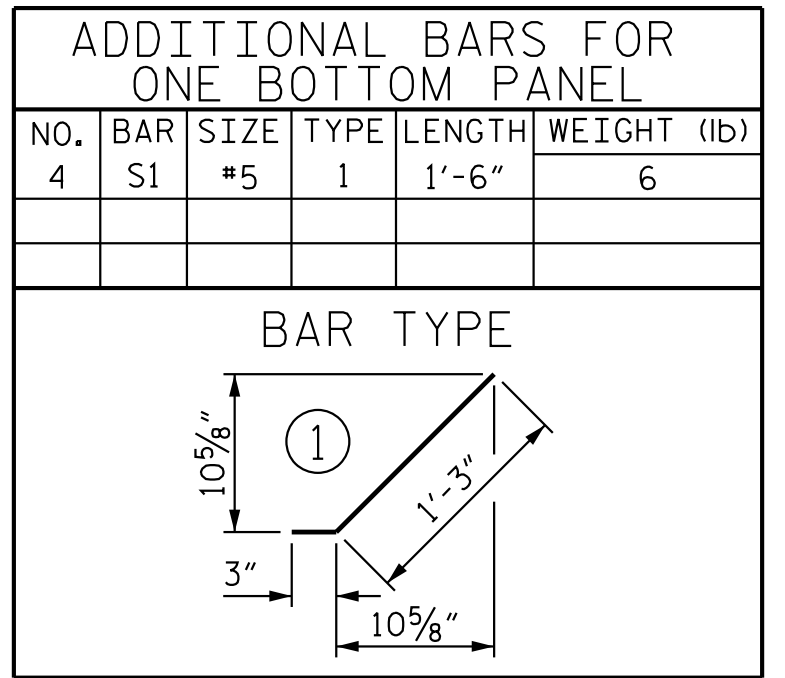
DETAIL "B"

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

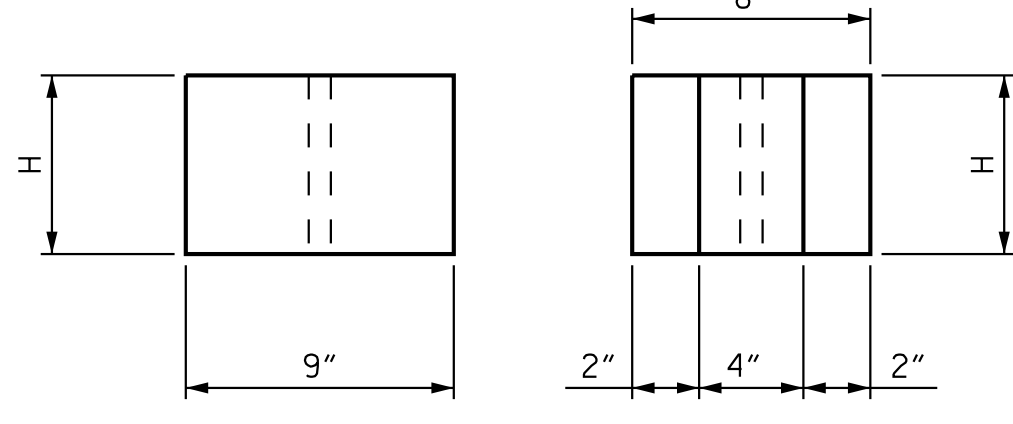
PANEL HEIGHT	CLASS AA CONCRETE	C.Y.	BAR TYPES											
			HORIZONTAL					VERTICAL						
			NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)		
2'-0"		0.22	3	H1	#4	STR	8'-8"	17	11	V1	#4	STR	1'-8"	12
3'-0"		0.33	4	H2	#4	STR	8'-8"	23	11	V2	#4	STR	2'-8"	20
4'-0"		0.44	5	H3	#4	STR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



PLAN

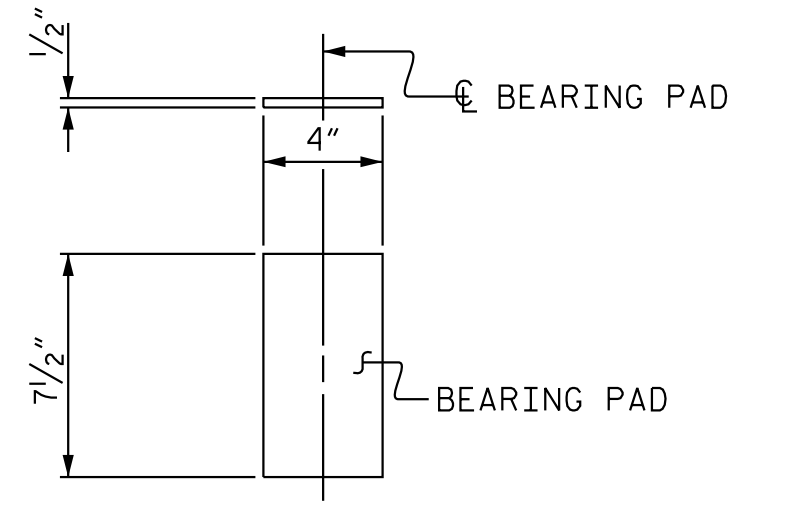


ELEVATION

END

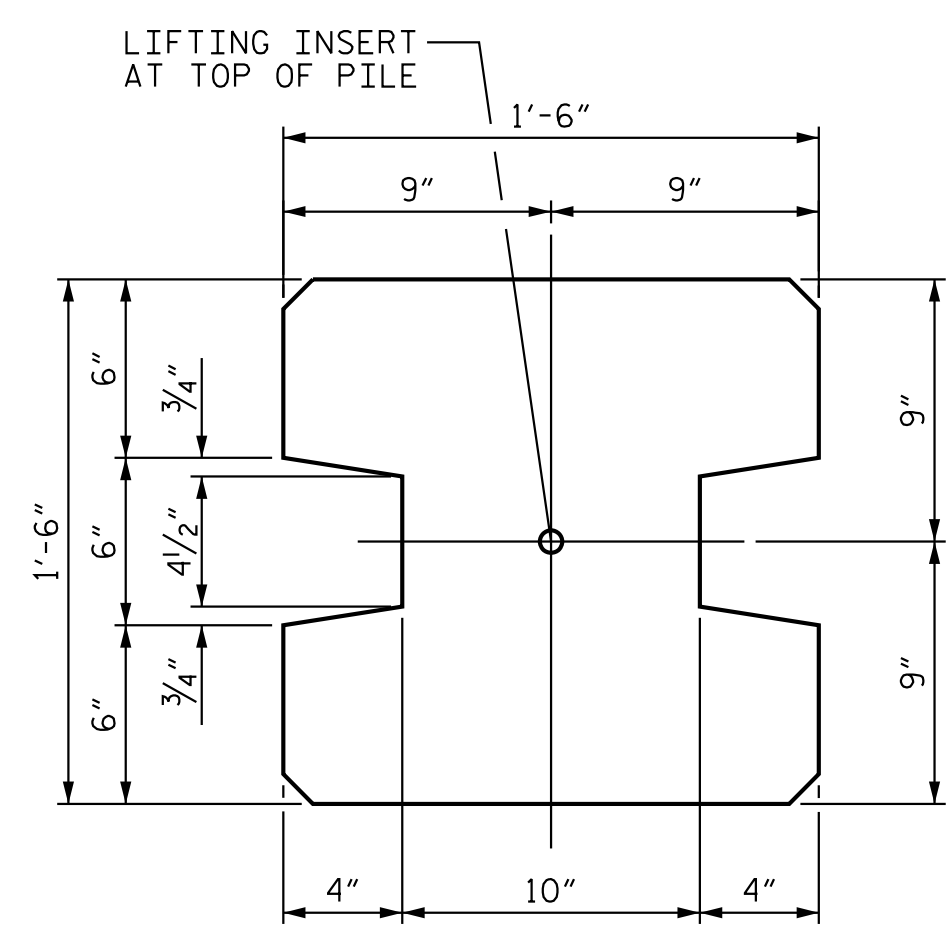
CONCRETE SHIM BLOCK

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

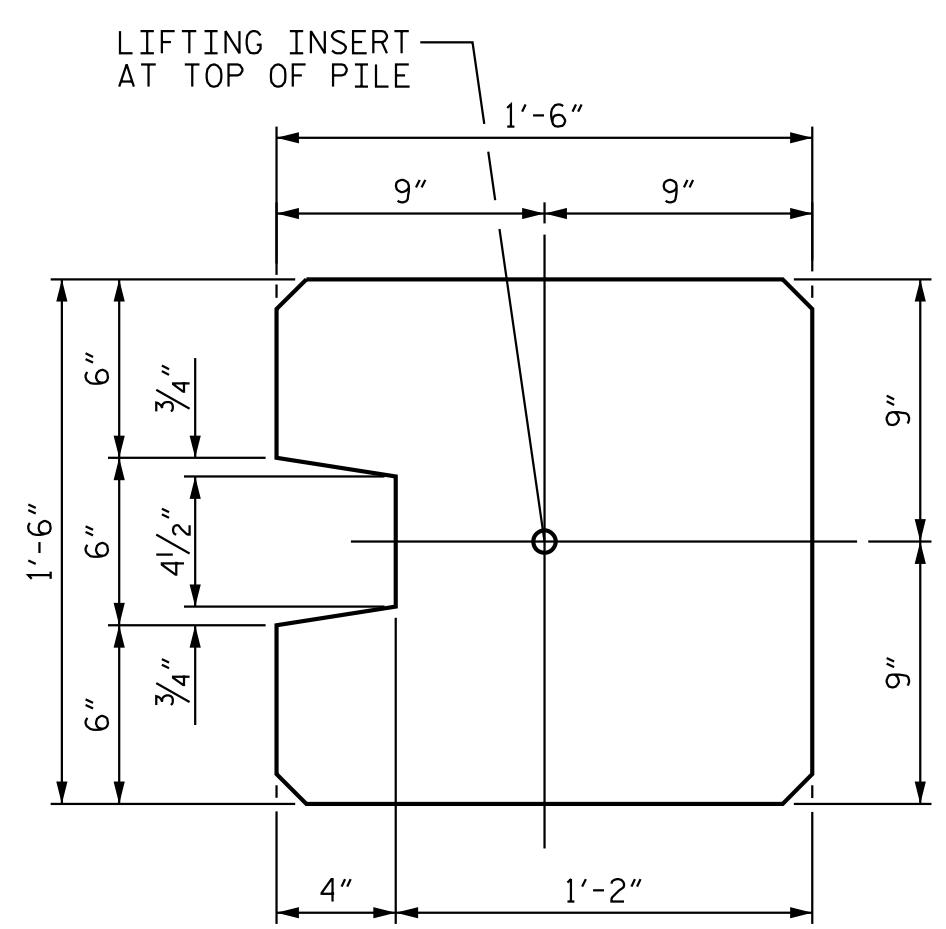


ELASTOMERIC BEARING DETAILS

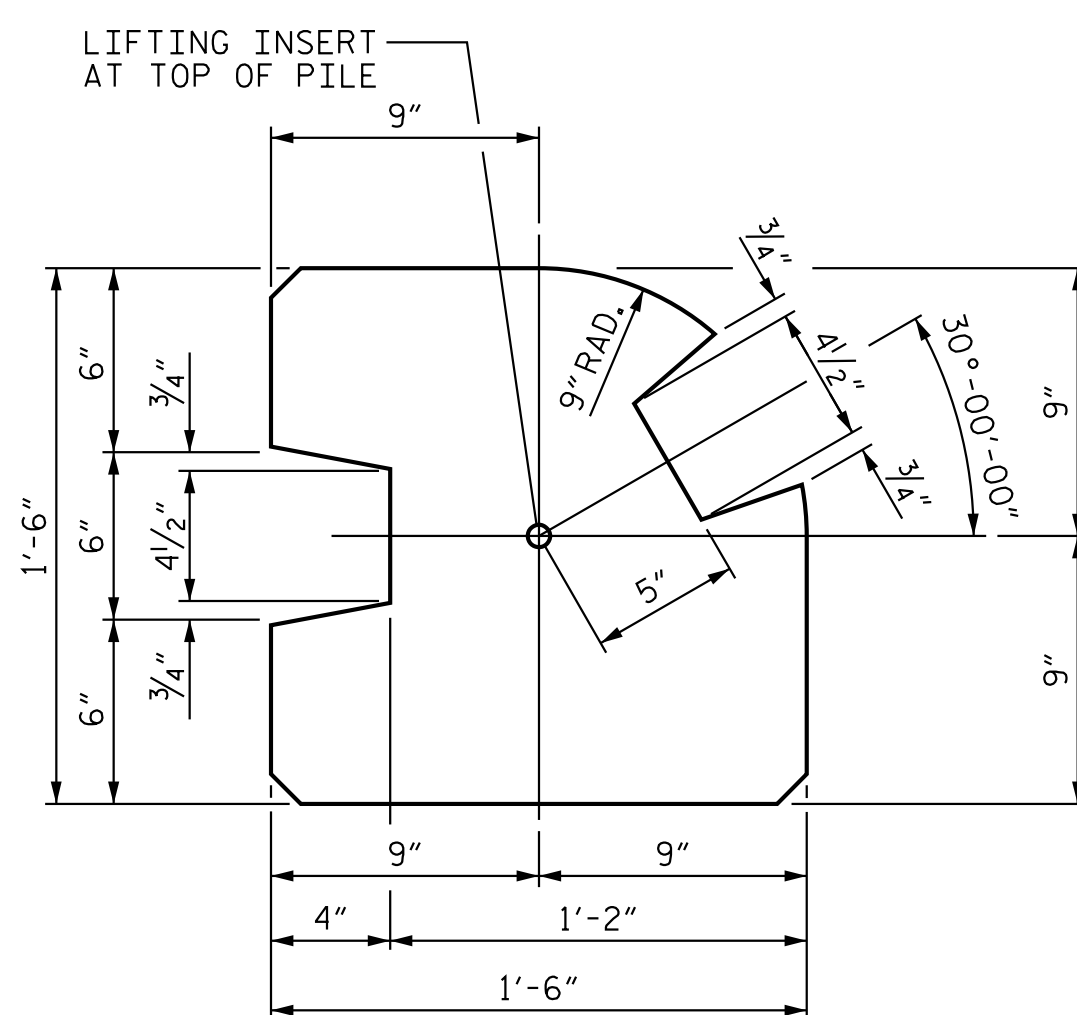
ELASTOMER IN BEARINGS SHALL BE 50 DUROMETER HARDNESS.



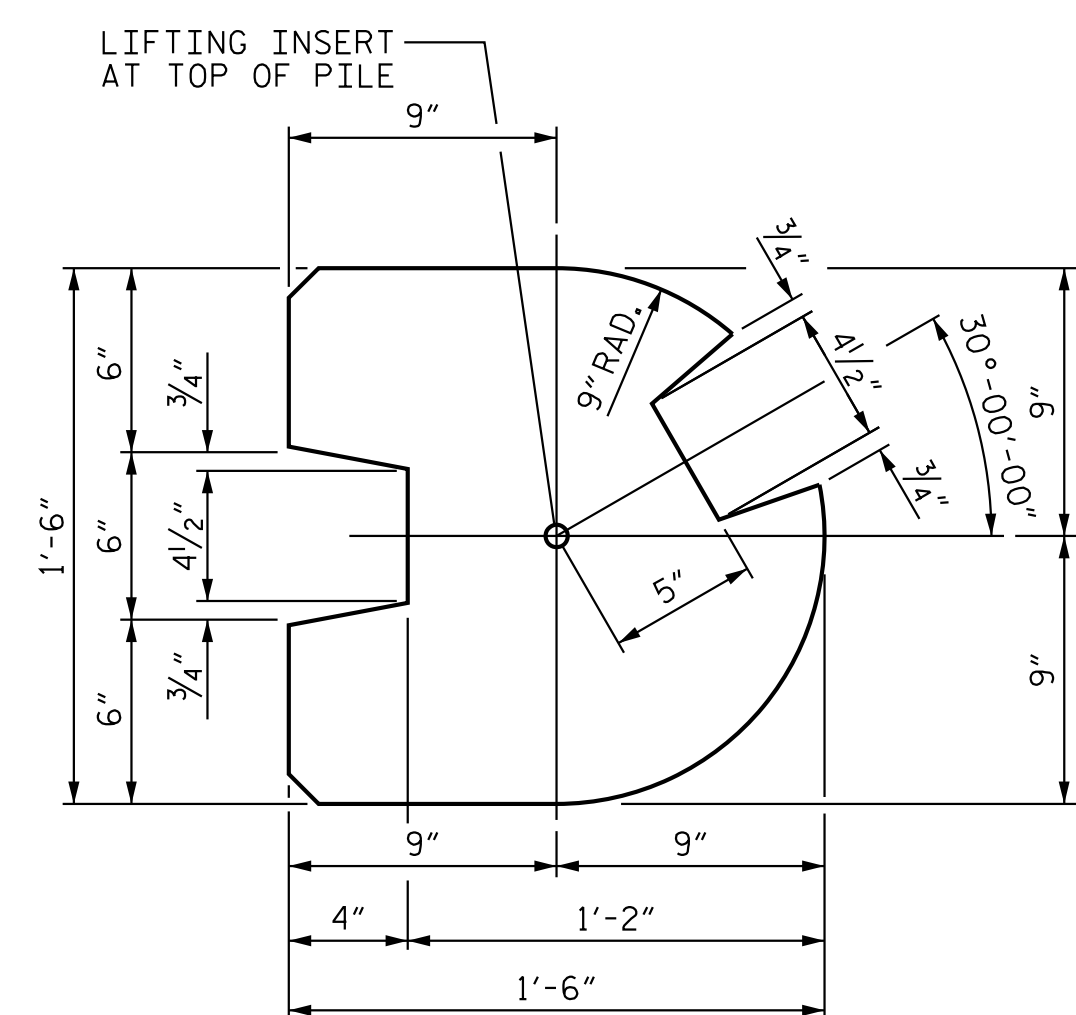
TYPE - I
(AREA = 1.9444 SQ. FT.)



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



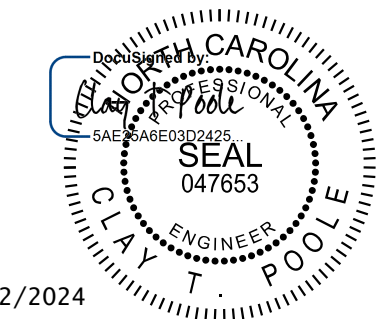
TYPE - III
(AREA = 1.8336 SQ. FT.)



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

PILE DETAIL

(ALL CORNERS TO BE CHAMFERED 1")



8/12/2024

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 Raleigh, NC 27601-1772
 Phone (919) 677-2000 NC LICENSE # F-0102

PROJECT NO. U-4713A
MECKLENBURG COUNTY
 STATION: 30+44.67 -L-
10+00.00 -NB1-
 SHEET 2 OF 3

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

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

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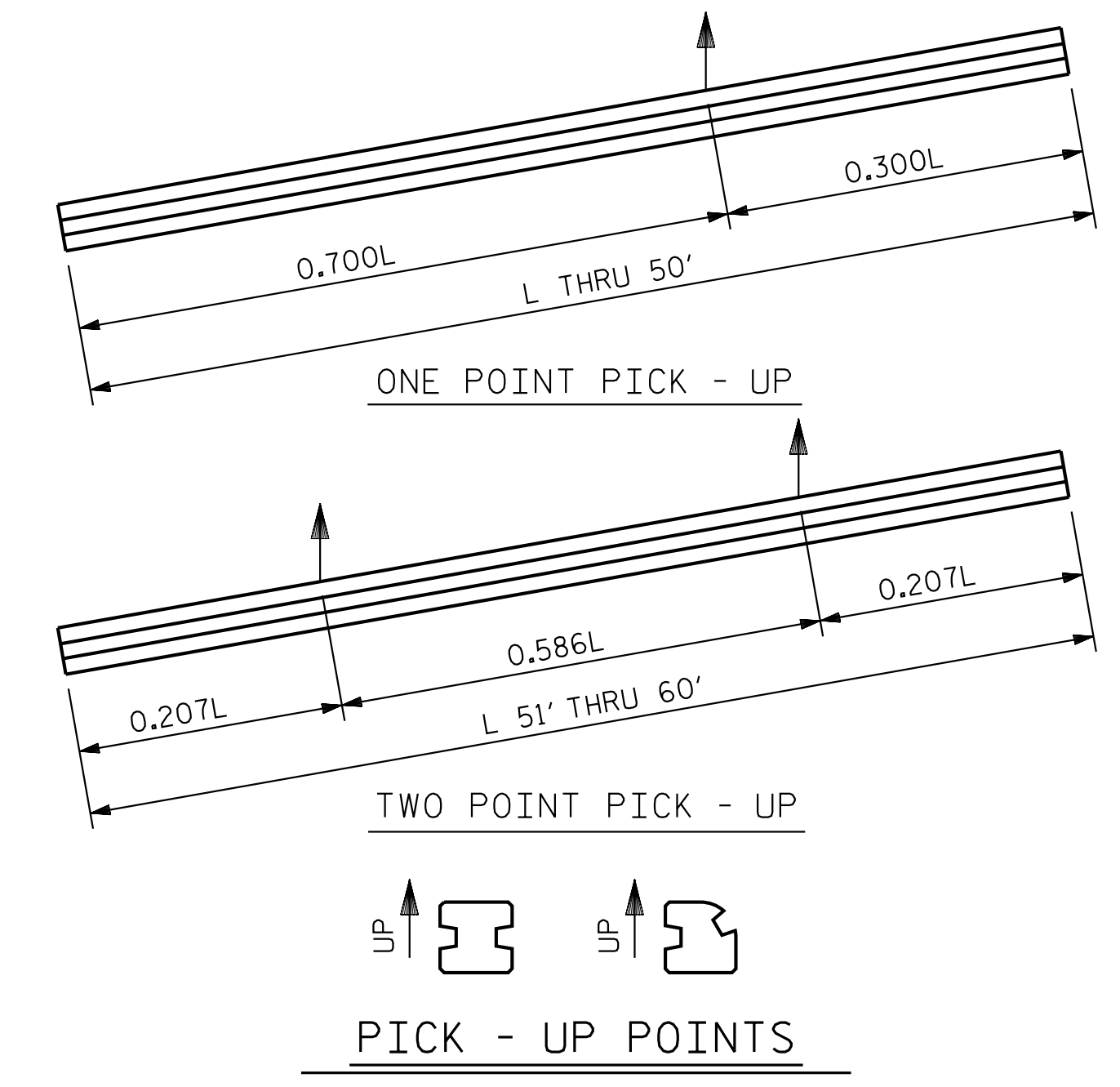
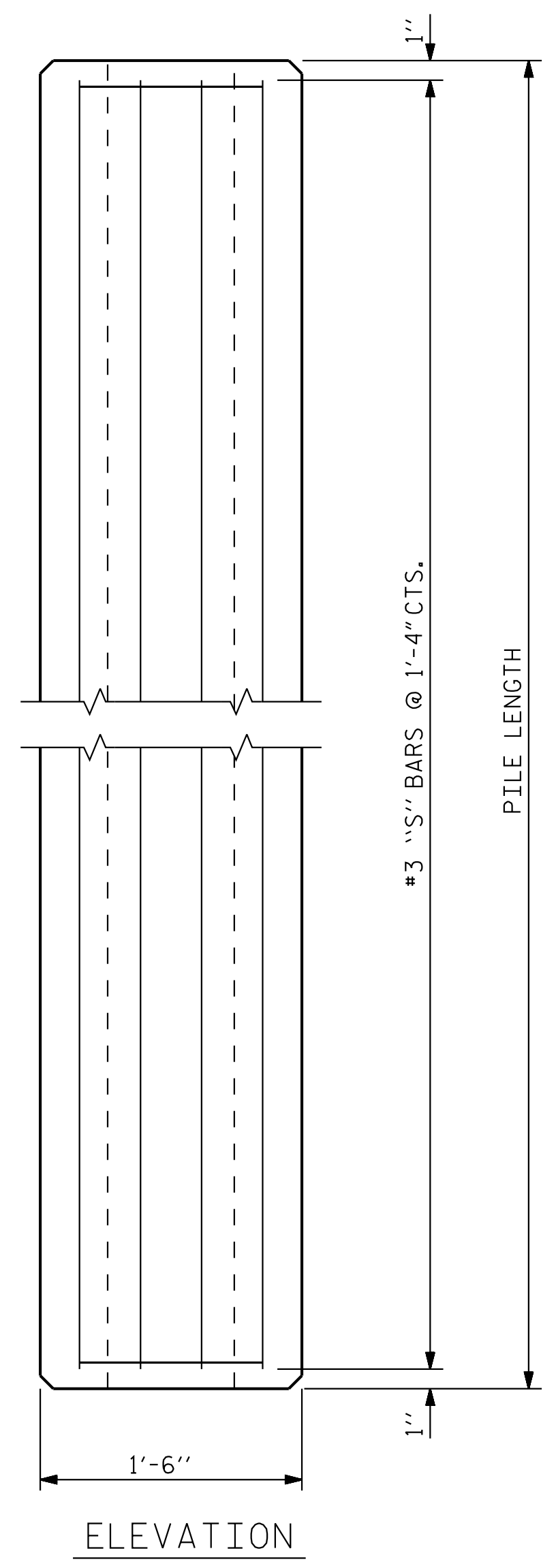
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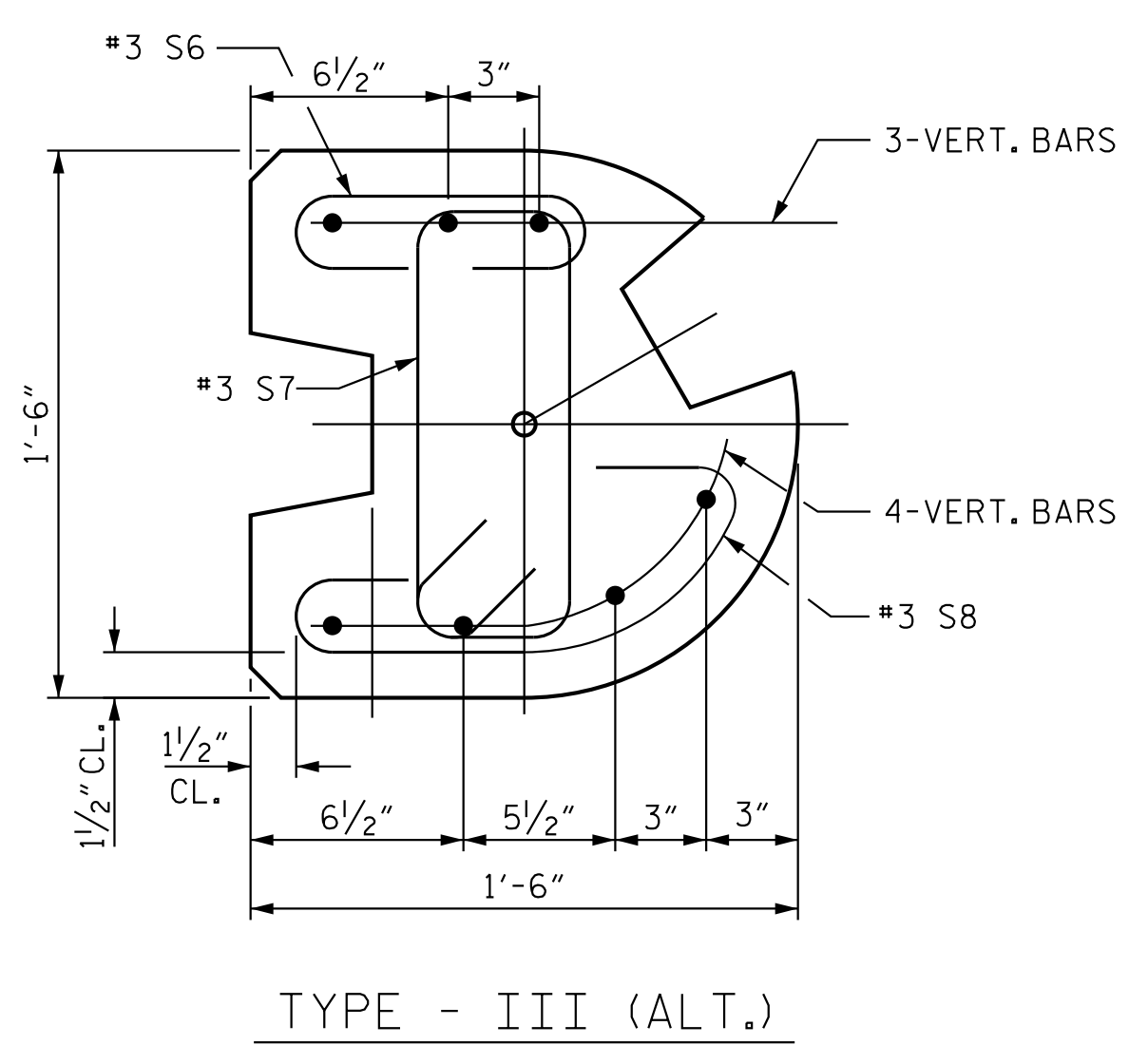
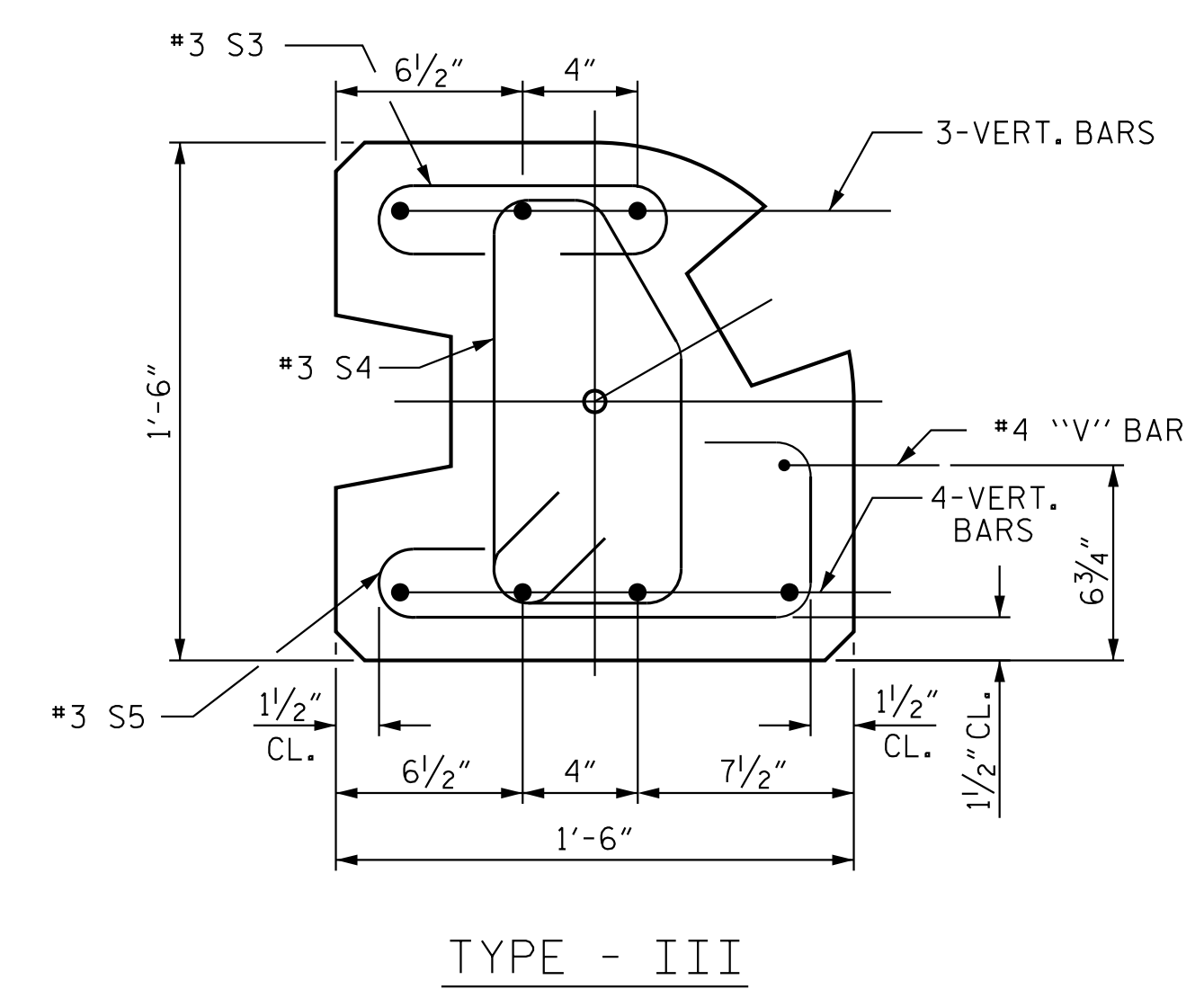
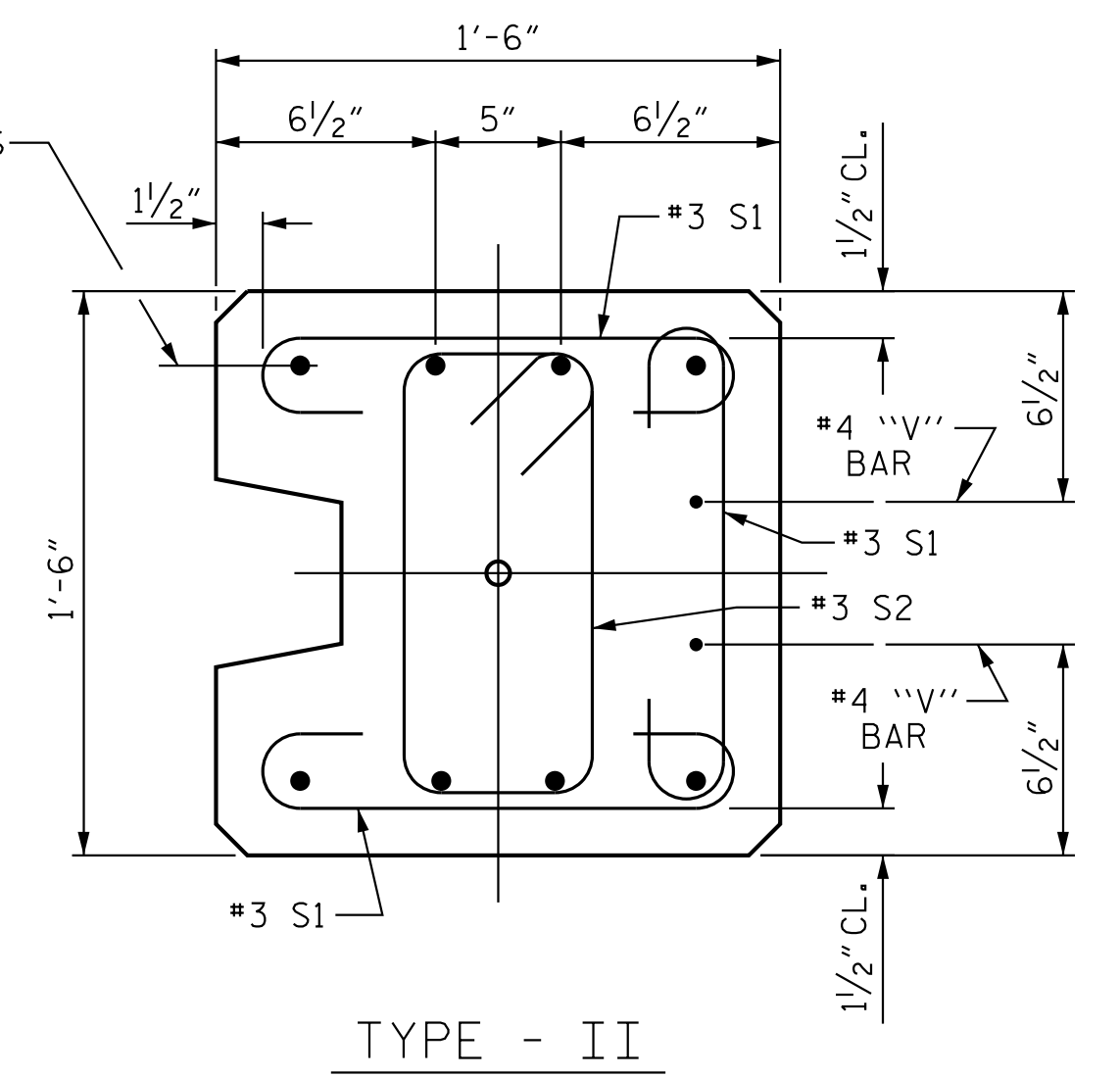
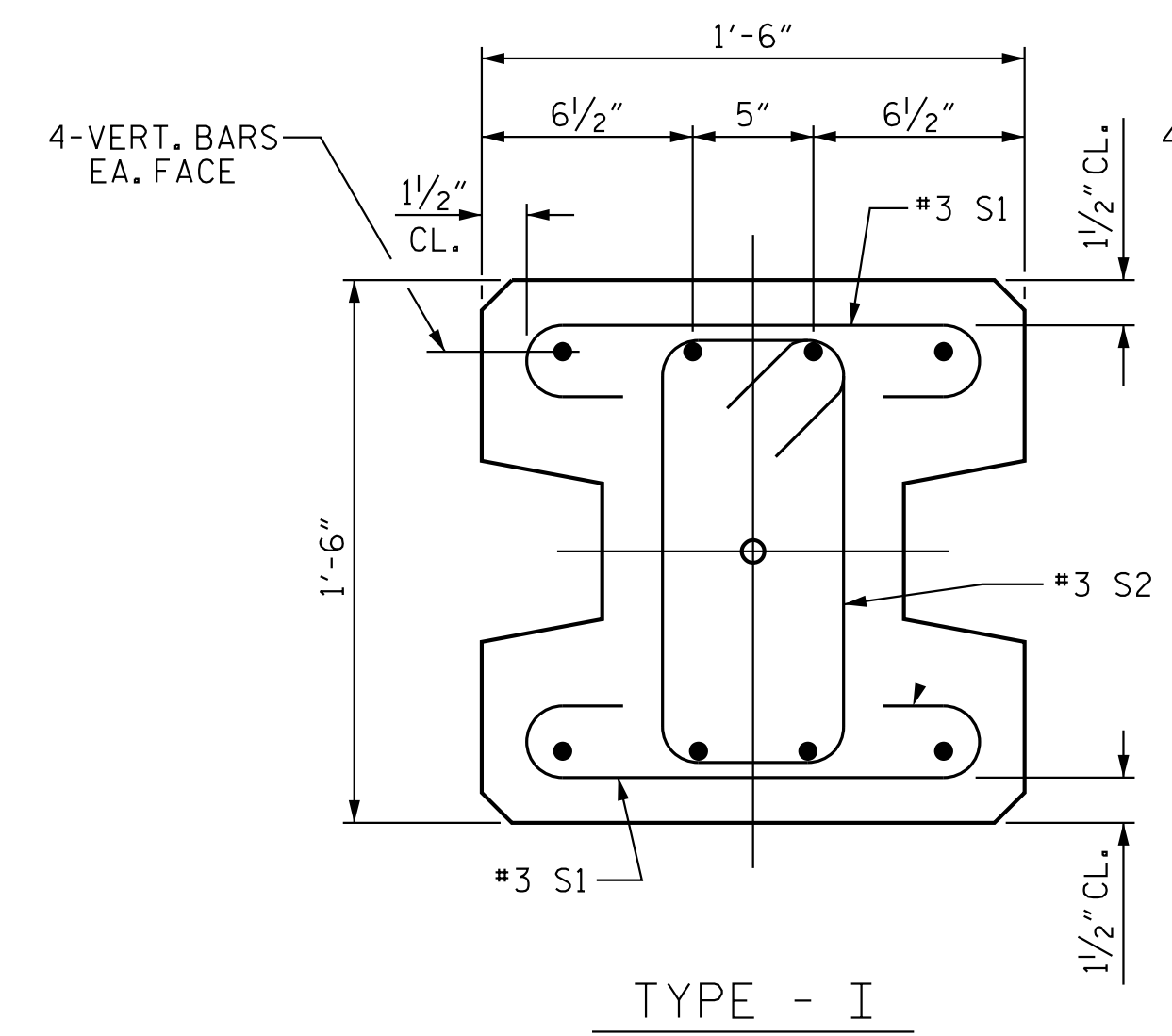
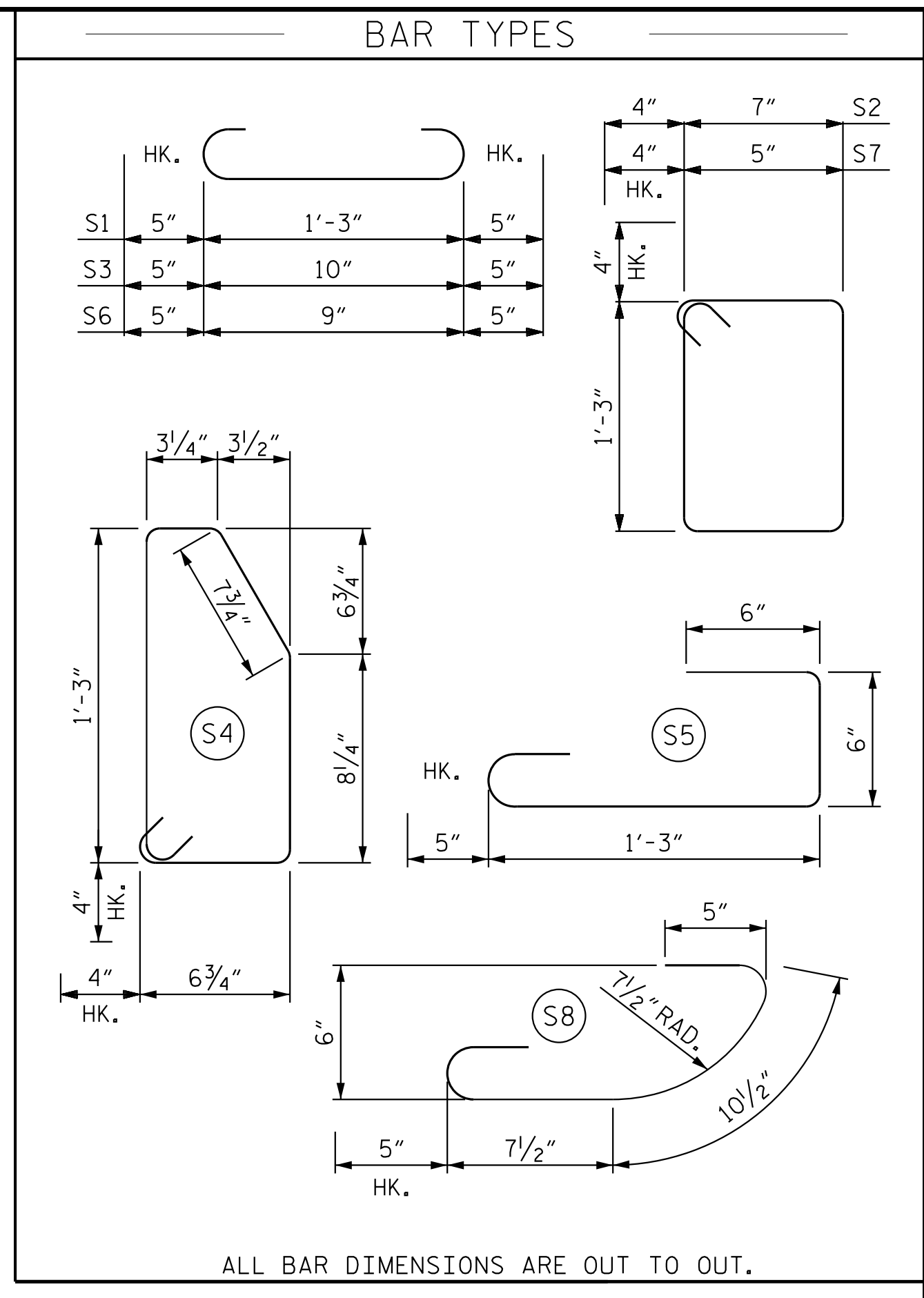
ASSEMBLED BY : D.D. LOWERY	DATE : 05/2024
CHECKED BY : C.T. POOLE	DATE : 05/2024
DRAWN BY : MAA 6/11	REV. 1/15/14 RWW/TMG
CHECKED BY : GM 6/11	REV. 10/17 MAA/THC
	REV. 5/18 MAA/THC

STD. NO. SBW2

K:\BIDI_Structures\Culver\NC\01036426 U-4713A McKee Road Extension\Coord\Drawn\B Main\U4713A_SML_SBW03.dgn



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"



PILE DETAIL

FOR VERTICAL BAR PILE REINFORCING, SEE SHEET 1 OF 3

NOTES

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

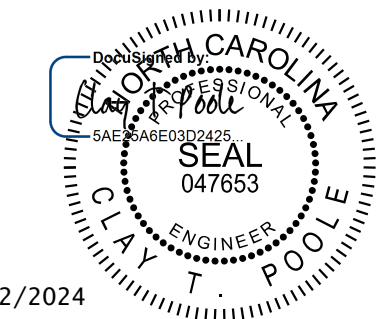
PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

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".

#3 @ 1'-4" CTS. TIES TO BE USED WITH ALL PILE TYPES.



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PROJECT NO. U-4713A
MECKLENBURG COUNTY
 STATION: 30+44.67 -L-
10+00.00 -NB1-
 SHEET 3 OF 3

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

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

ASSEMBLED BY : D.D. LOWERY	DATE : 05/2024
CHECKED BY : C.T. POOLE	DATE : 05/2024
DRAWN BY : MAA 6/11	REV. 1/15/14 RWW/TMG
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