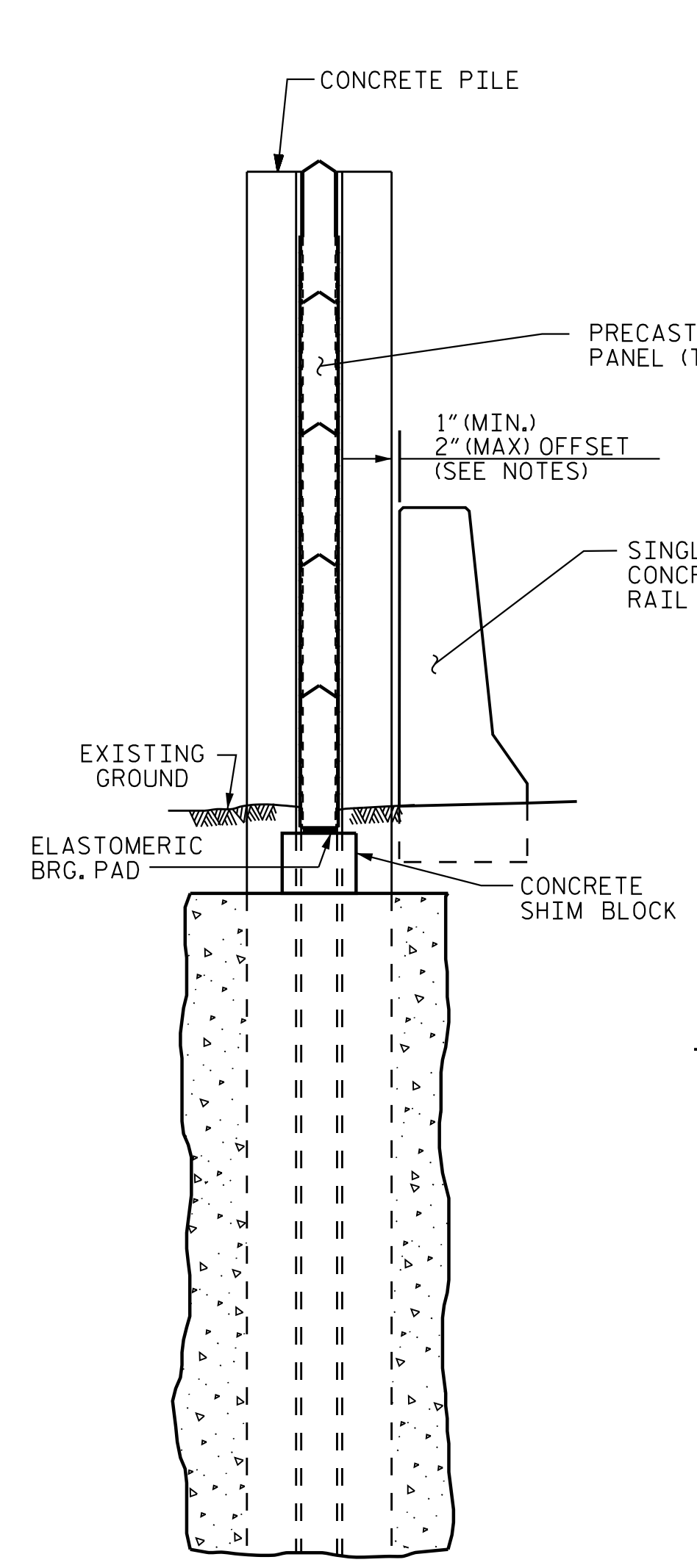
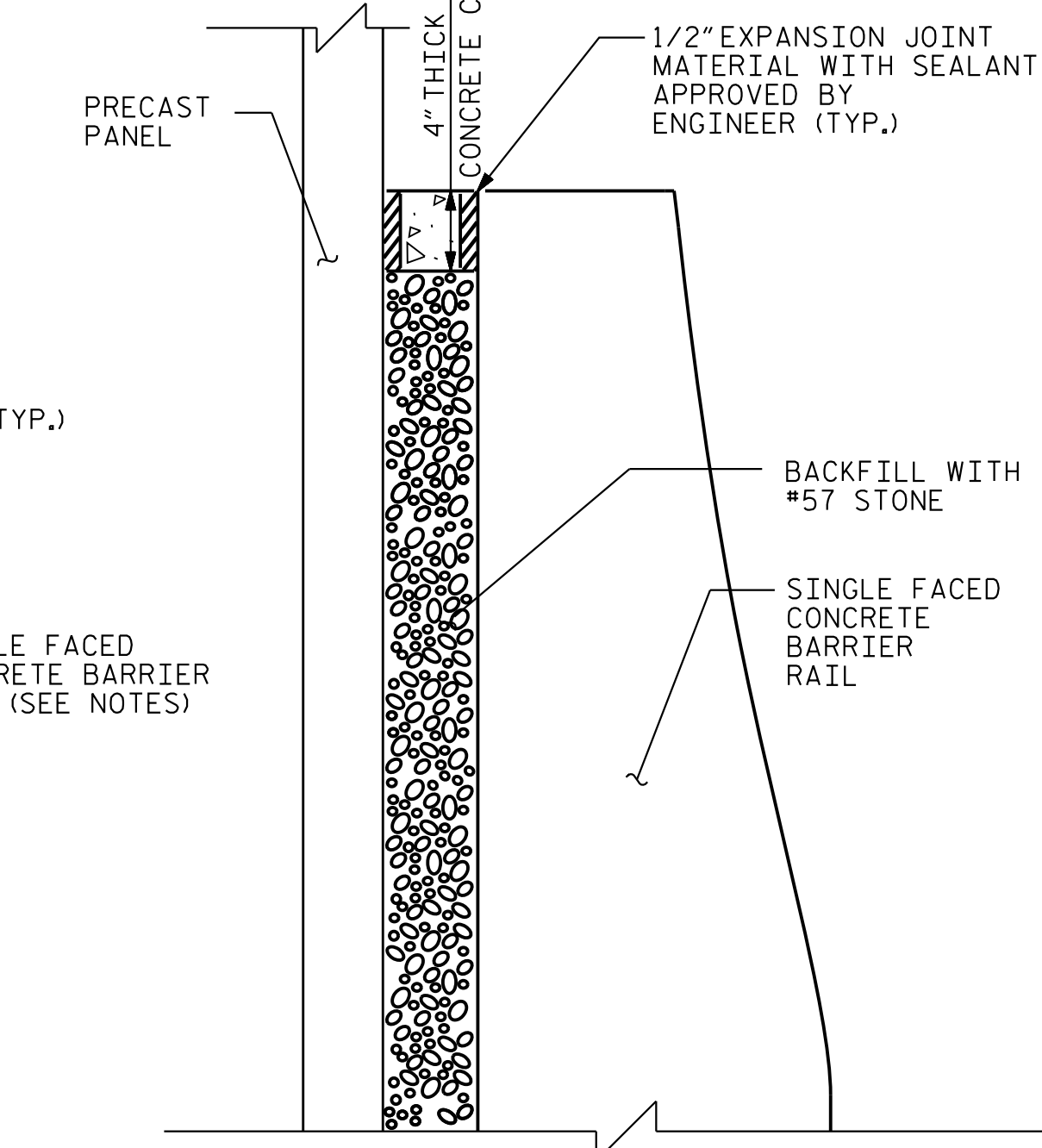


ELEVATION



SECTION A-A

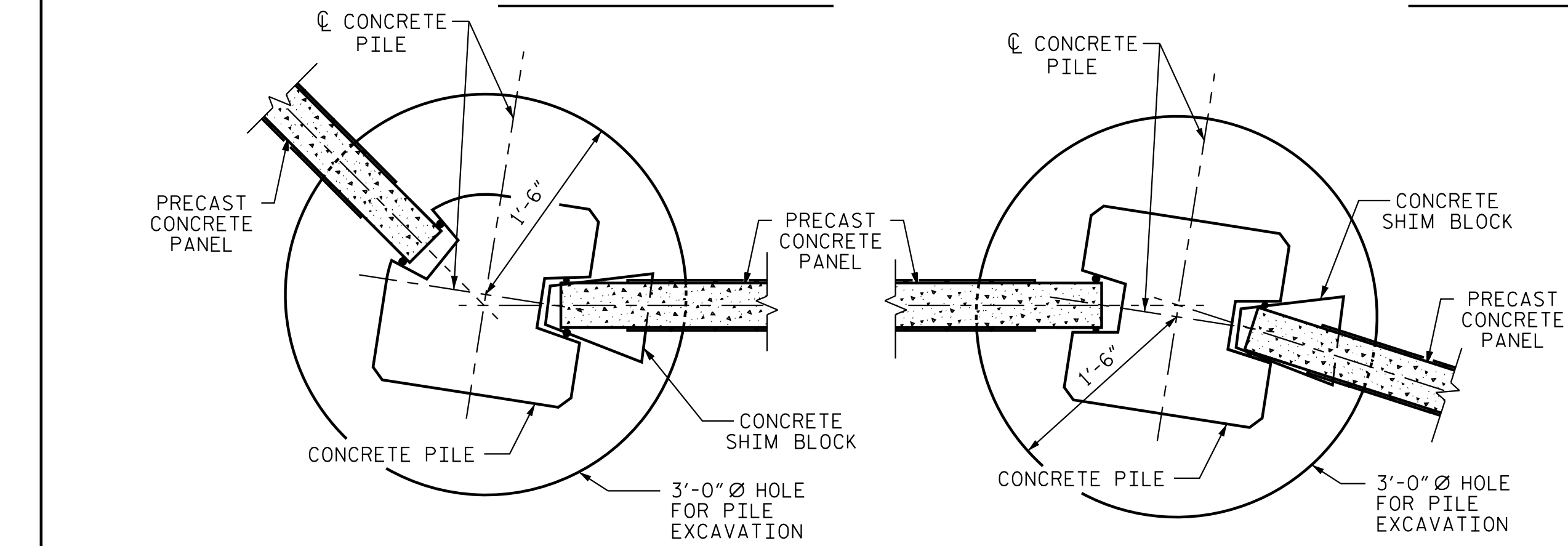


SOUND WALL BACKFILL DETAIL

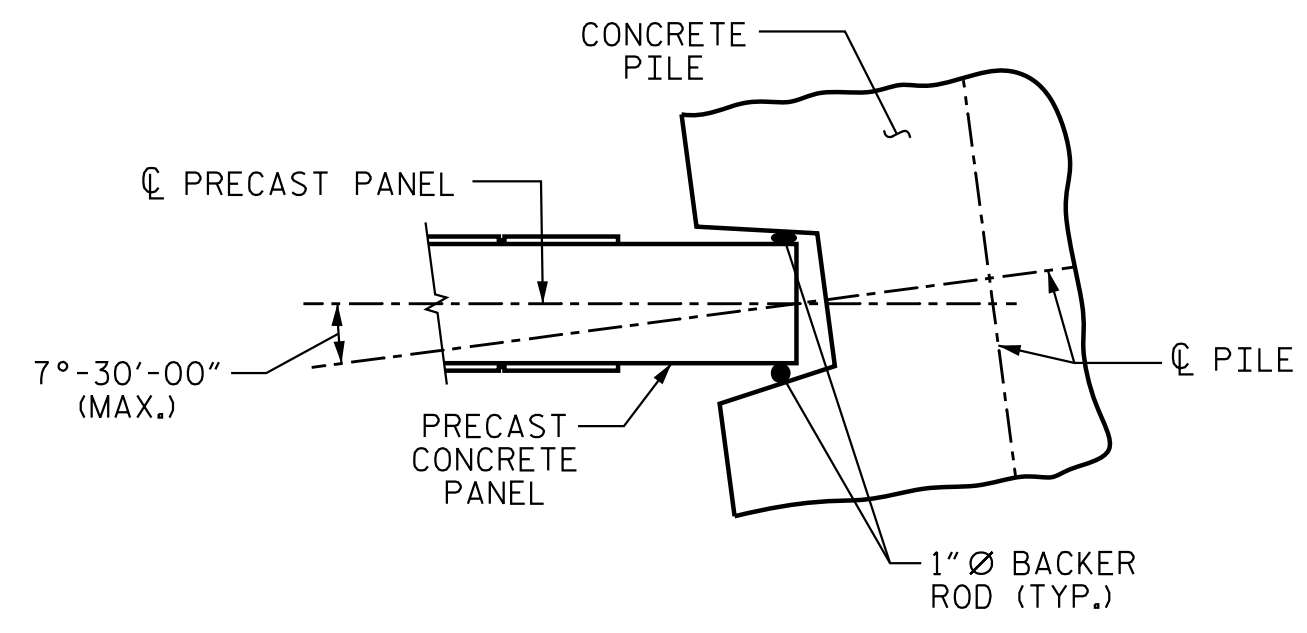
NOTES

- 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.
- 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 ADDITIONAL SOUND BARRIER WALL DETAILS, SEE ROADWAY DRAWINGS.
- SINGLE FACED CONCRETE BARRIER RAIL NOT SHOWN IN ELEVATION VIEW FOR CLARITY. FOR BACKFILL TREATMENT AT BARRIER RAIL, SEE "SOUND WALL BACKFILL DETAIL" AND SPECIAL PROVISIONS.
- FOR LIMITS OF THE SINGLE FACED CONCRETE BARRIER RAIL, SEE ROADWAY DRAWINGS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.

PILE REINFORCING STEEL							
EXPOSURE CATEGORY B DESIGN WIND PRESSURE = 20 PSF (0' < H ≤ 14'); 25 PSF (14' < H ≤ 25')							
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.
15'-0"	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4" CTS.
20'-0"	H ≤ 20'	4 - #9 EA. FACE	#3 @ 1'-4" CTS.	20'-0"	H ≤ 20'	3 - #10 SHORT FACE 4 - #10 LONG FACE	#3 @ 1'-4" CTS.
	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.
15'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 25'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4" CTS.
20'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	20'-0"	H ≤ 20'	3 - #10 SHORT FACE 4 - #10 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.				



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

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

BILL OF MATERIAL	
SOUND BARRIER WALL	16,487 S.F.
ARCHITECTURAL SURFACE TREATMENT	26,130 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	
ARCHITECTURAL SURFACE TREATMENT	
TEXTURE OPTION:	DRY STACK
STAIN OPTION:	FEDERAL COLOR 30450

PROJECT NO. R-2707E  
CLEVELAND COUNTY  
STATION: 935+69.92 -L-

SHEET 1 OF 4  
STATE OF NORTH CAROLINA  
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RALEIGH  
STANDARD  
SOUND BARRIER WALL



REVISIONS						SHEET NO. NW10A-1
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1			3			TOTAL SHEETS 4
2			4			

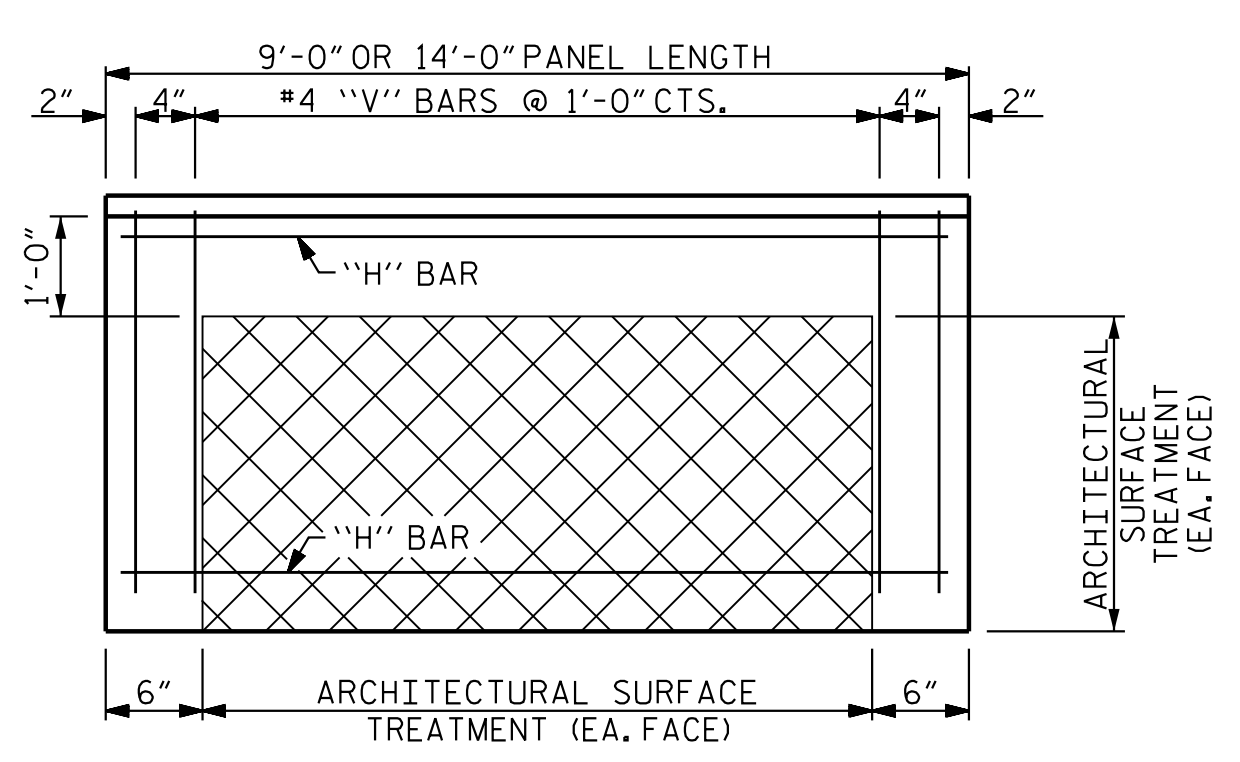
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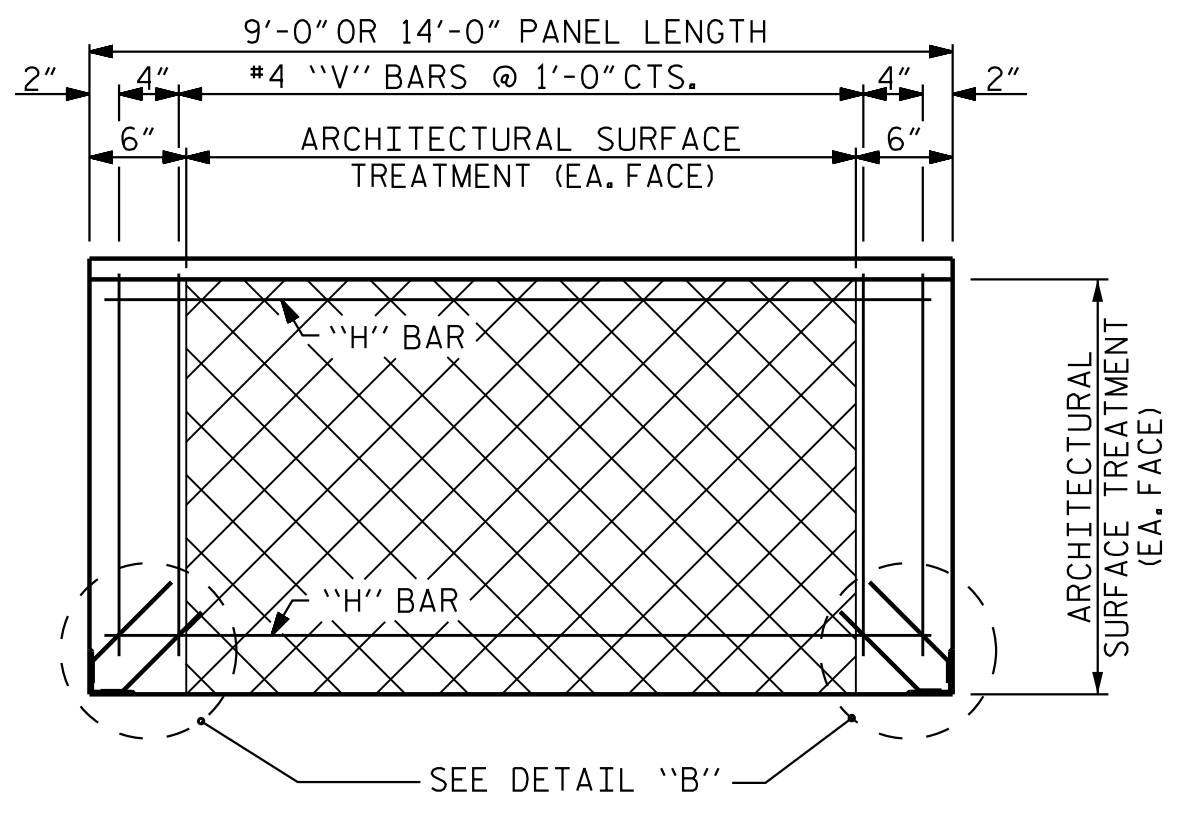
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CHECKED BY: S.S. POOLE DATE: 03/03/23  
DESIGN ENGINEER OF RECORD: S.S. POOLE DATE: 04/14/23

4/14/2023 jhagenbush





FRONT ELEVATION OF UPPER PRECAST PANEL



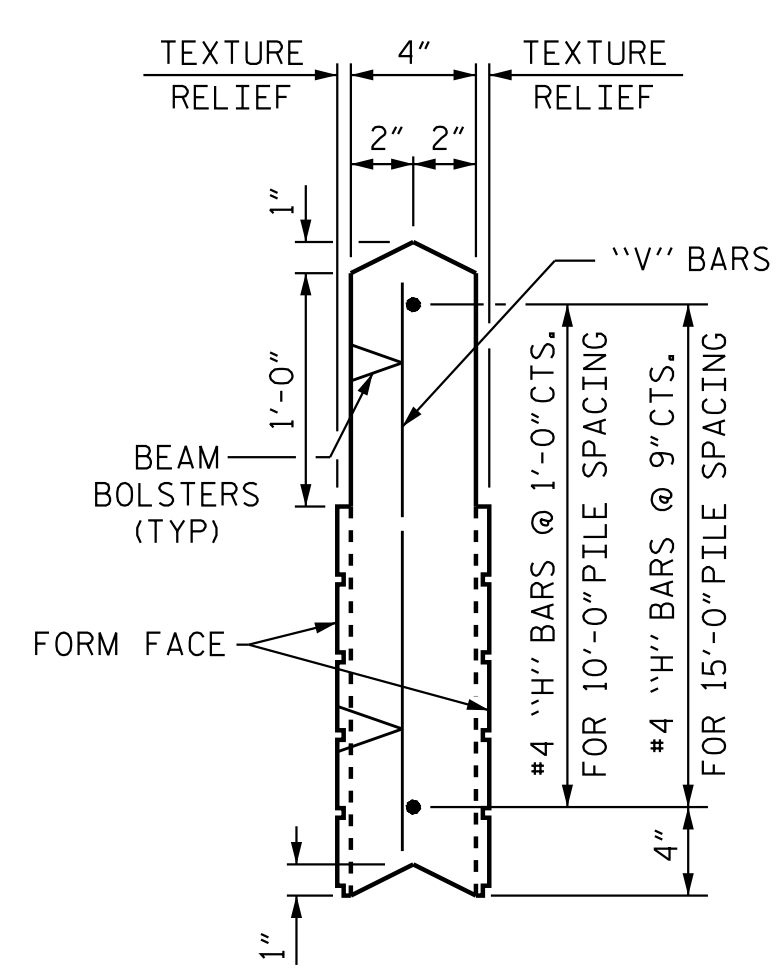
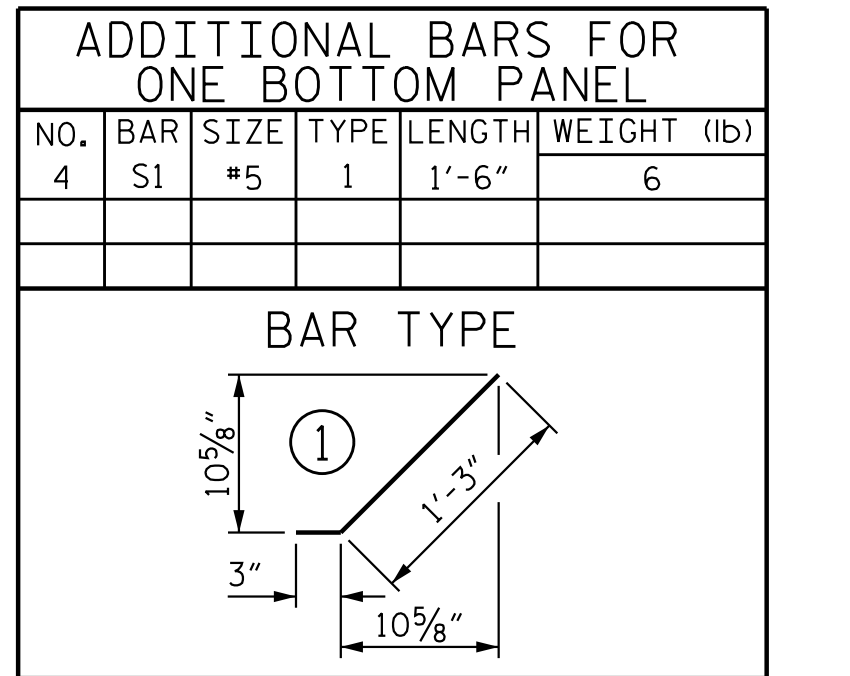
FRONT ELEVATION OF BOTTOM PRECAST PANEL

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

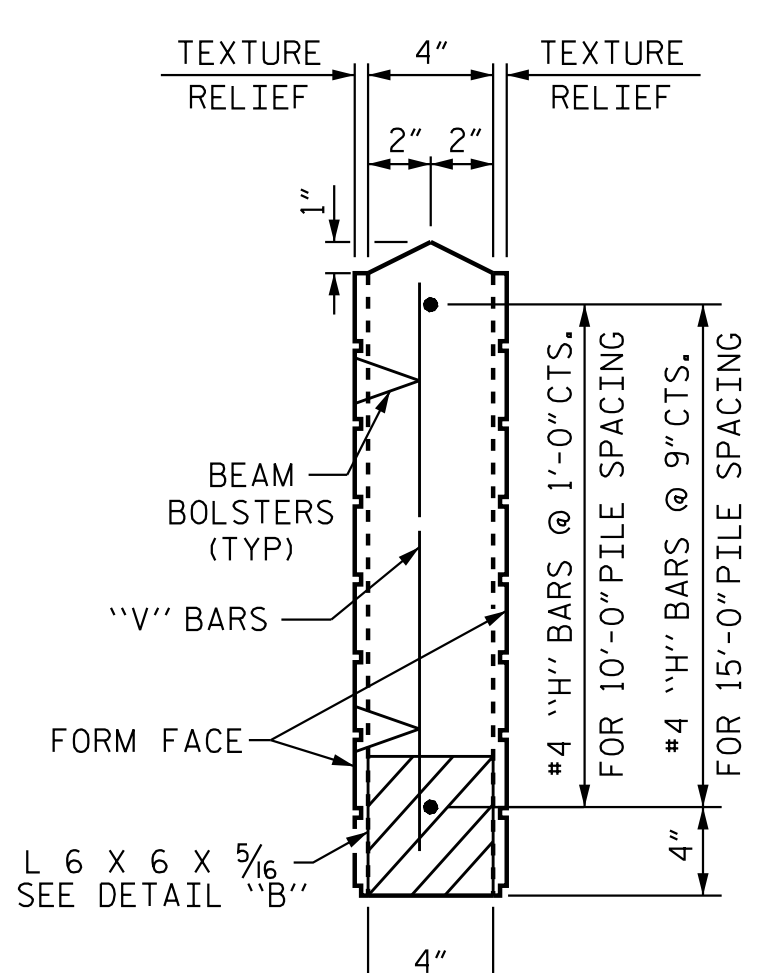
PANEL HEIGHT	CLASS AA CONCRETE C.Y.	BAR TYPES											
		HORIZONTAL						VERTICAL					
		NO.	BAR	SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR	SIZE	TYPE	LENGTH	WEIGHT (lb)
2'-0"	0.22	3	H1	#4	STR	8'-8"	17	11	V1	#4	STR	1'-8"	12
3'-0"	0.33	4	H2	#4	STR	8'-8"	23	11	V2	#4	STR	2'-8"	20
4'-0"	0.44	5	H3	#4	STR	8'-8"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

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

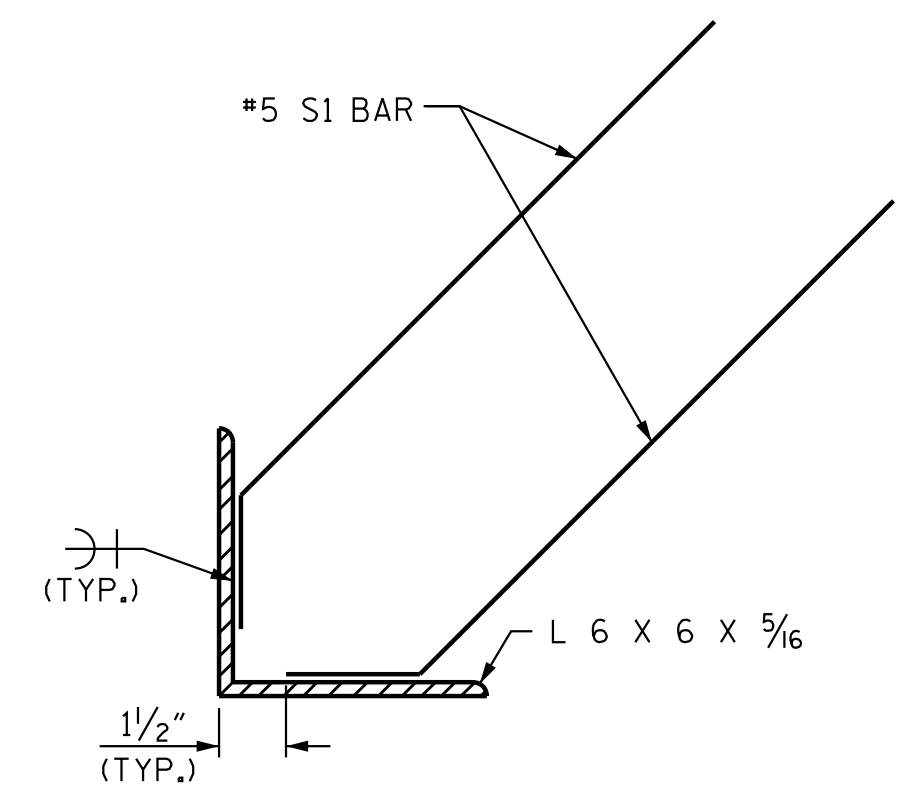
PANEL HEIGHT	CLASS AA CONCRETE C.Y.	BAR TYPES											
		HORIZONTAL						VERTICAL					
		NO.	BAR	SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR	SIZE	TYPE	LENGTH	WEIGHT (lb)
3'-0"	0.52	5	H1	#4	STR	13'-8"	46	16	V1	#4	STR	2'-8"	29
4'-0"	0.69	6	H2	#4	STR	13'-8"	55	16	V2	#4	STR	3'-8"	39
5'-0"	0.86	7	H3	#4	STR	13'-8"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



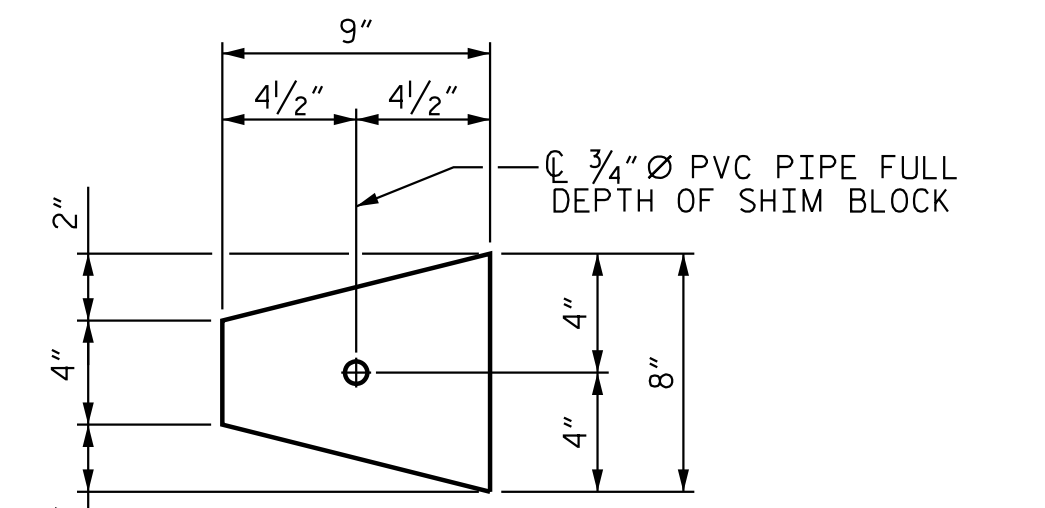
UPPER PANEL



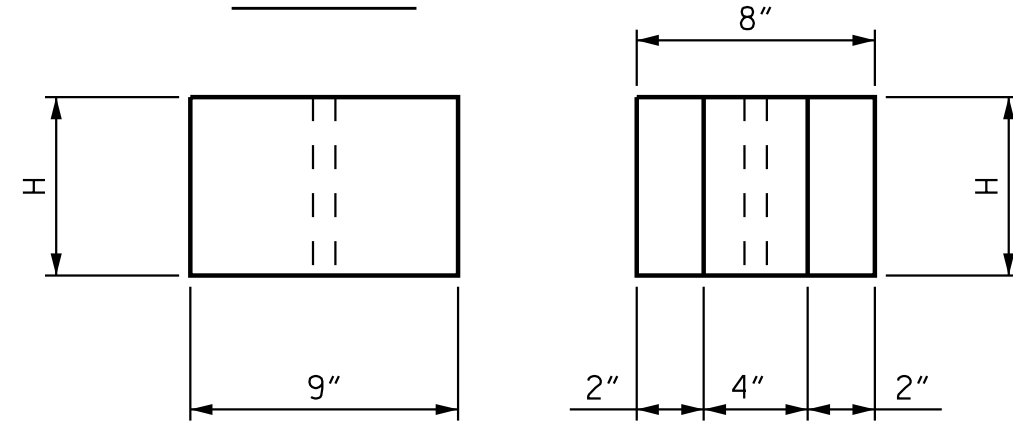
BOTTOM PANEL



DETAIL "B"



PLAN

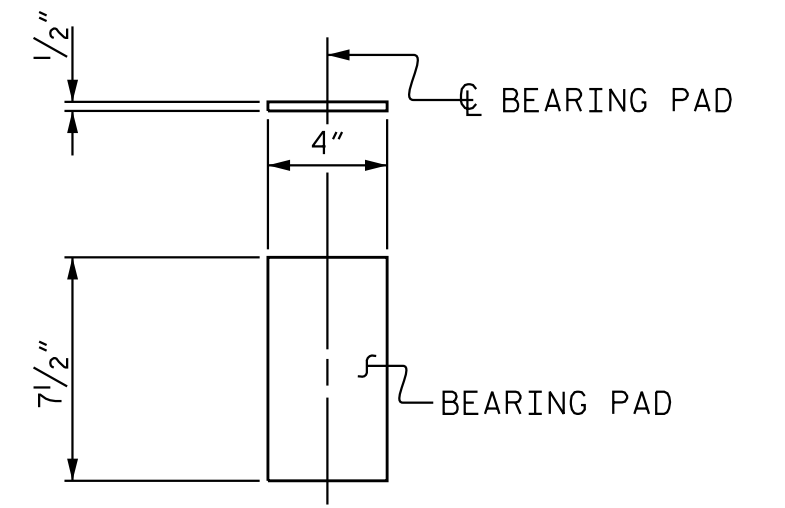


ELEVATION

END

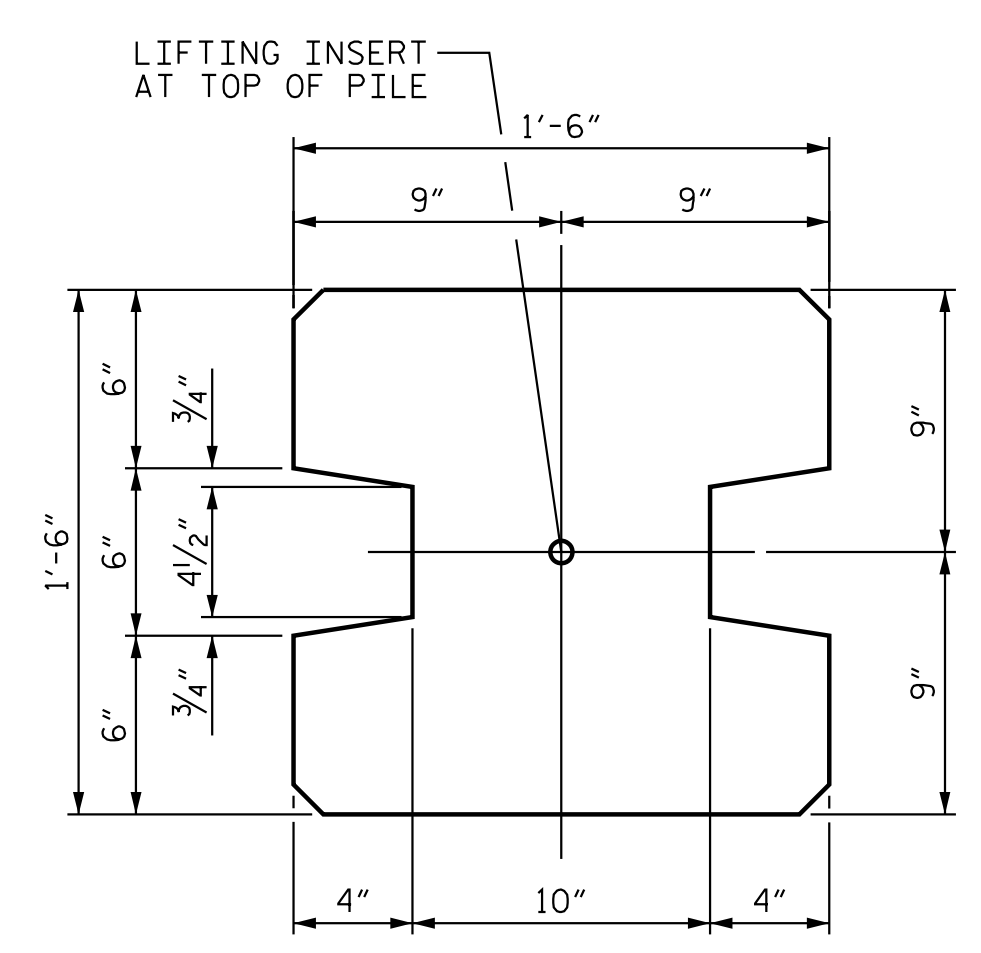
CONCRETE SHIM BLOCK

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

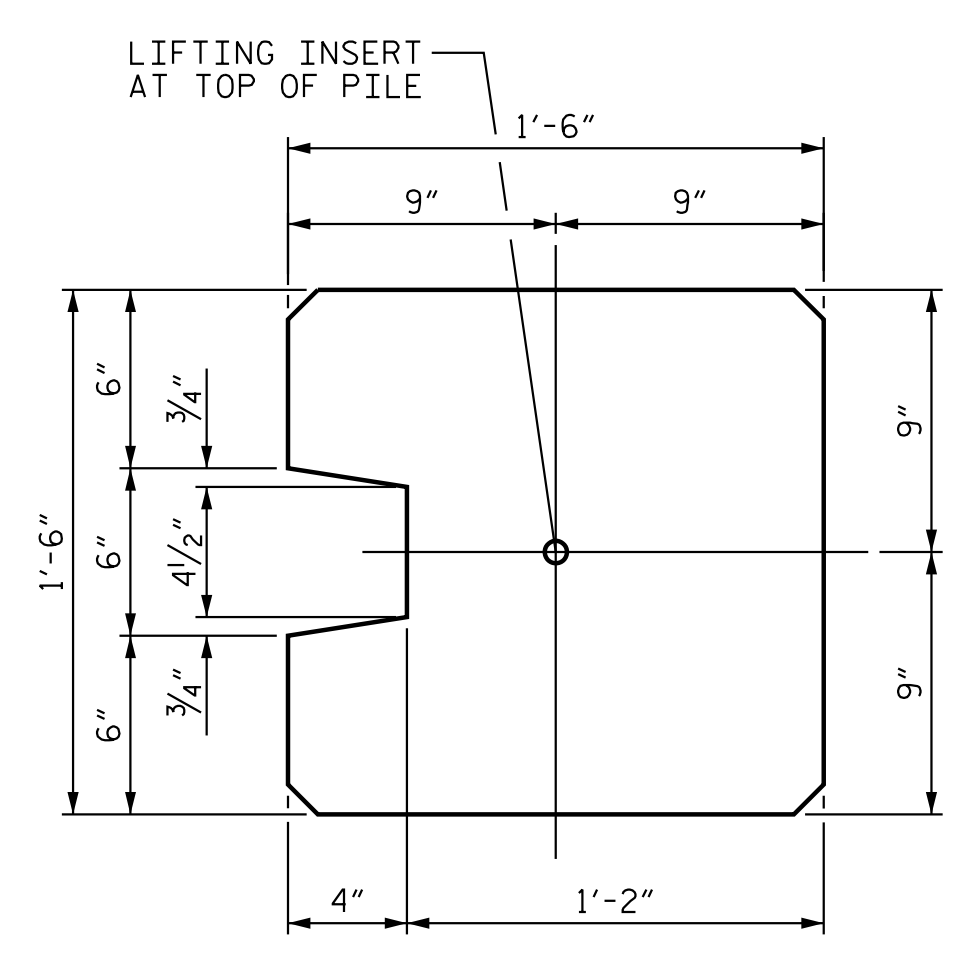


ELASTOMERIC BEARING DETAILS

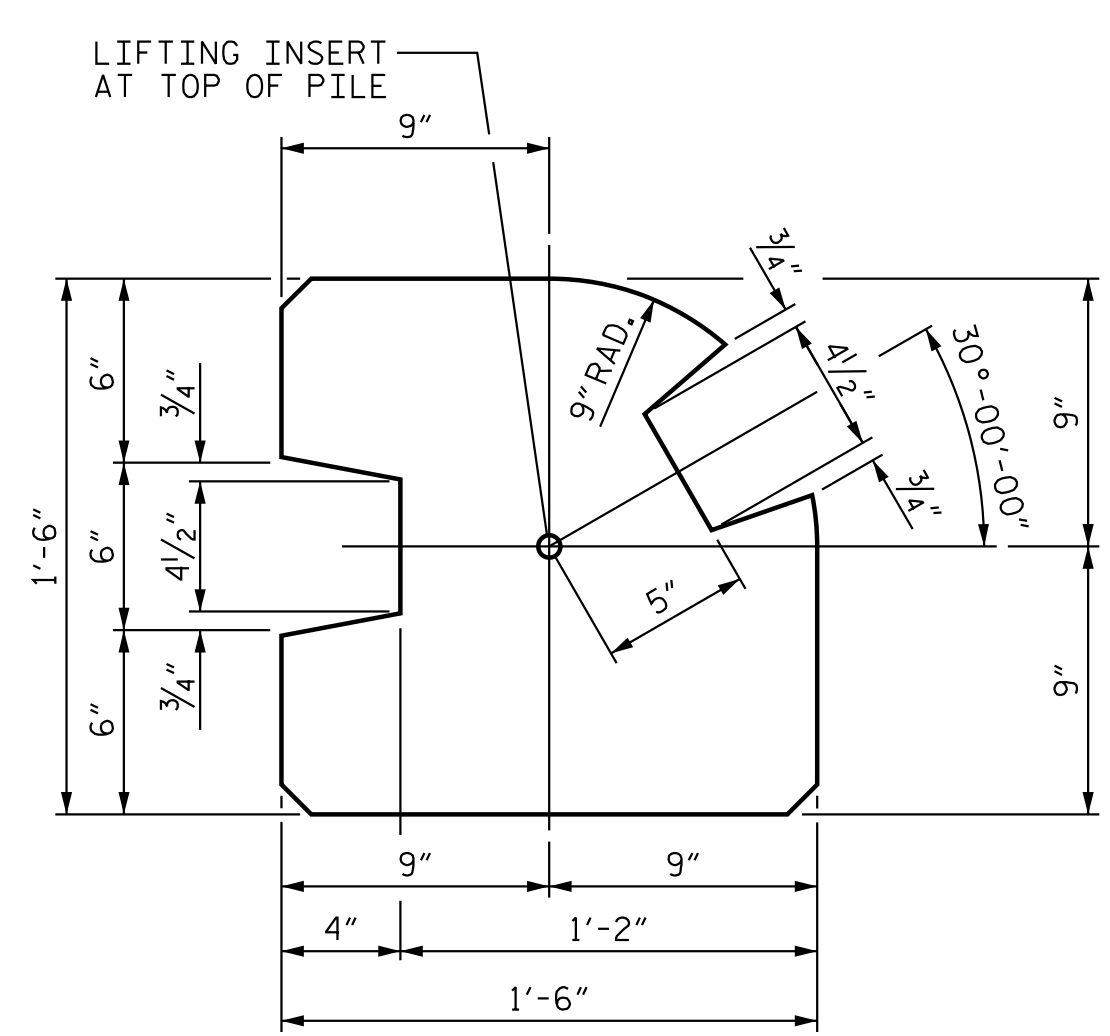
ELASTOMER IN BEARINGS SHALL BE 50 DUROMETER HARDNESS.



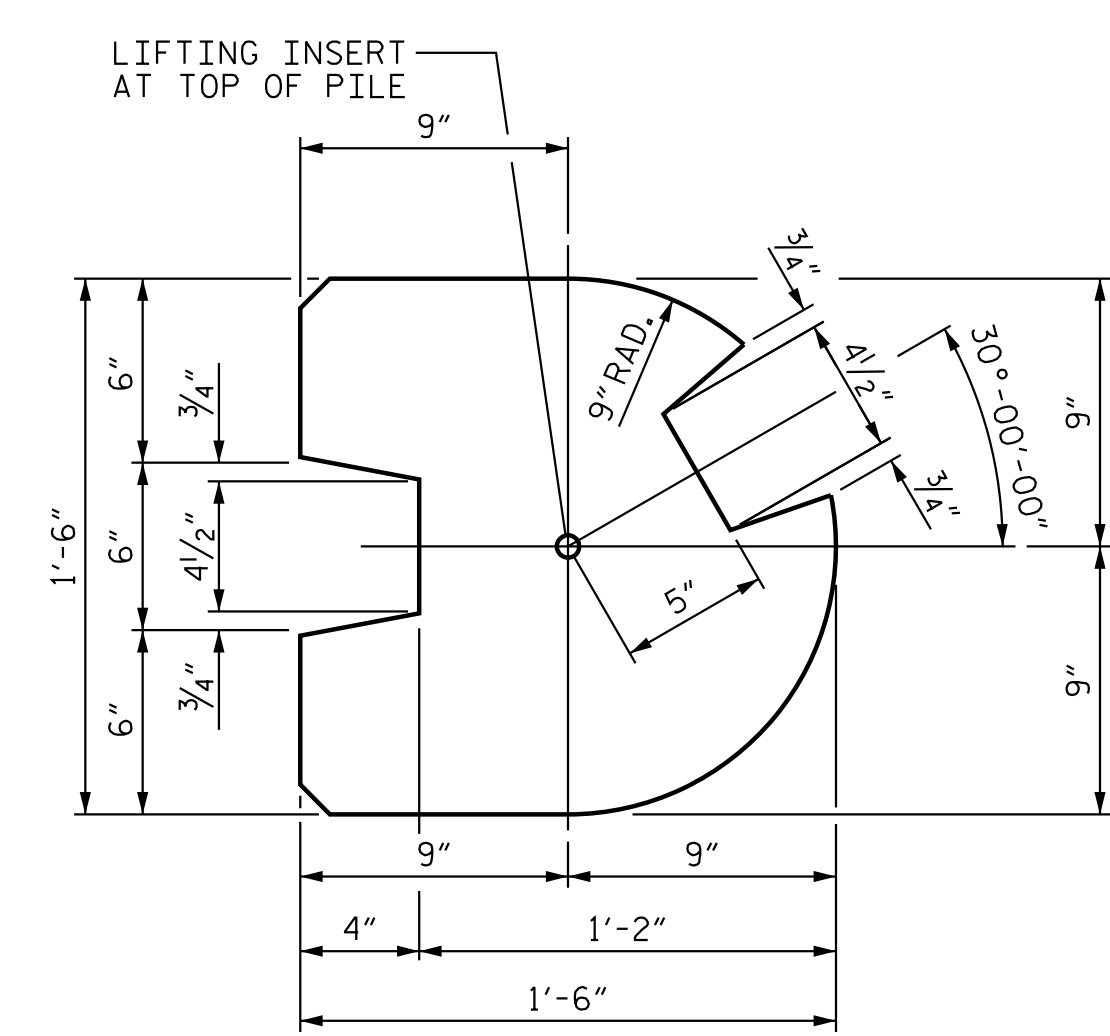
TYPE - I  
(AREA = 1.9444 SQ. FT.)



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")

PROJECT NO. R-2707E  
CLEVELAND COUNTY  
STATION: 935+69.92 -L-

SHEET 2 OF 4

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



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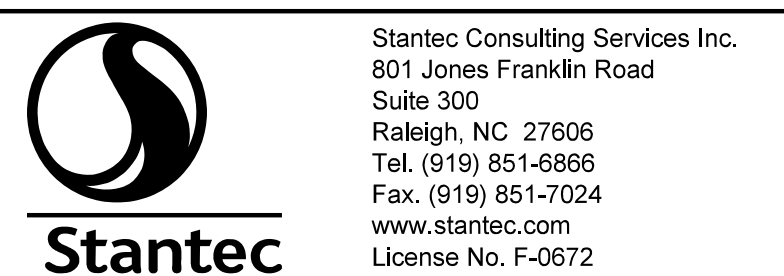
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STD. NO. SBW2

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4/14/2023

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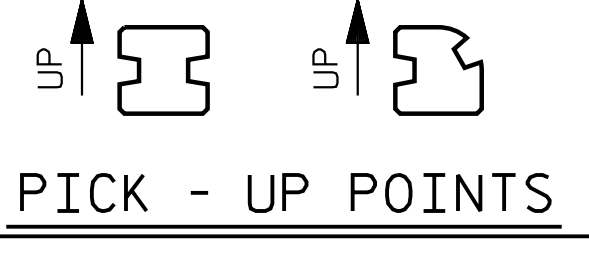
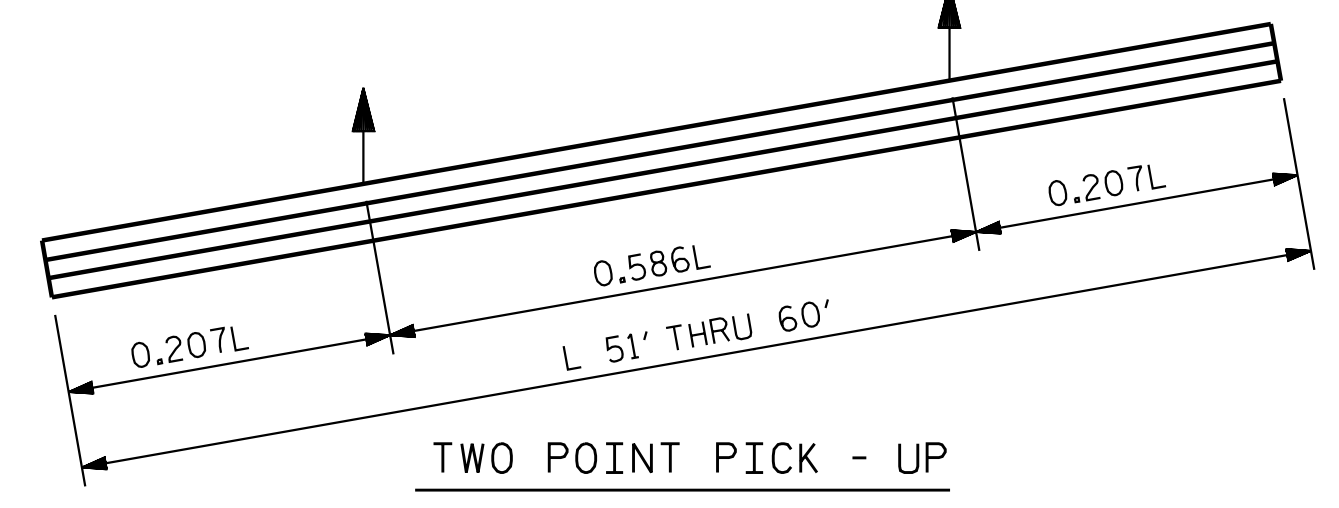
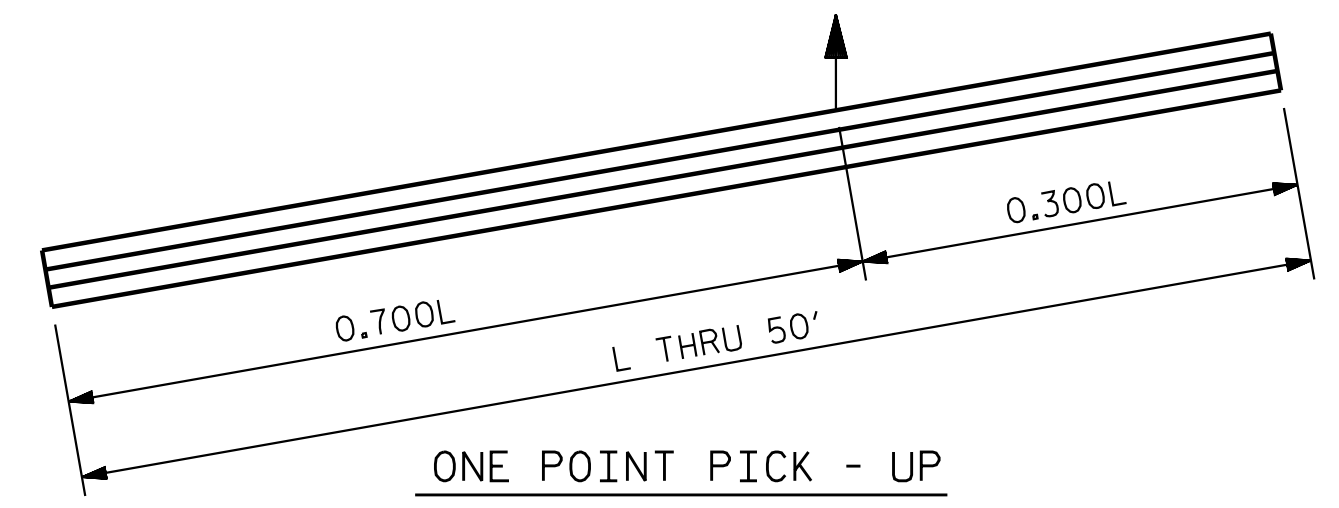
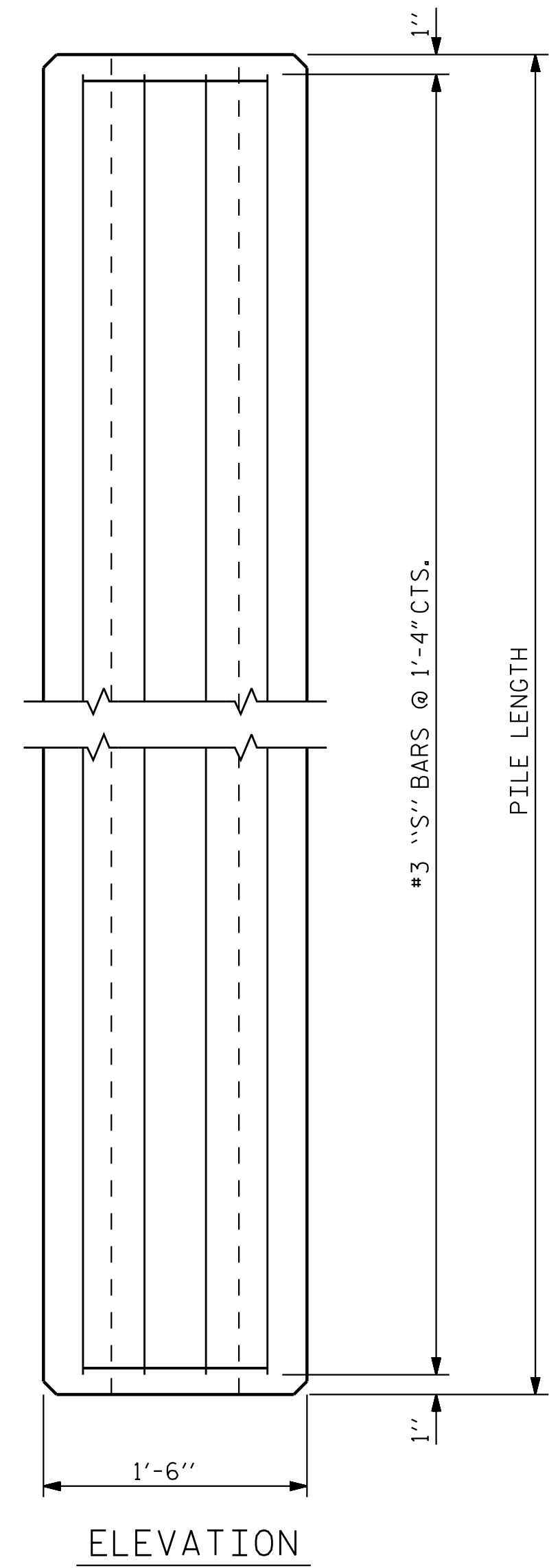


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DESIGN ENGINEER OF RECORD: S.S. POOLE DATE: 04/14/23

4/14/2023

4/14/2023



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.

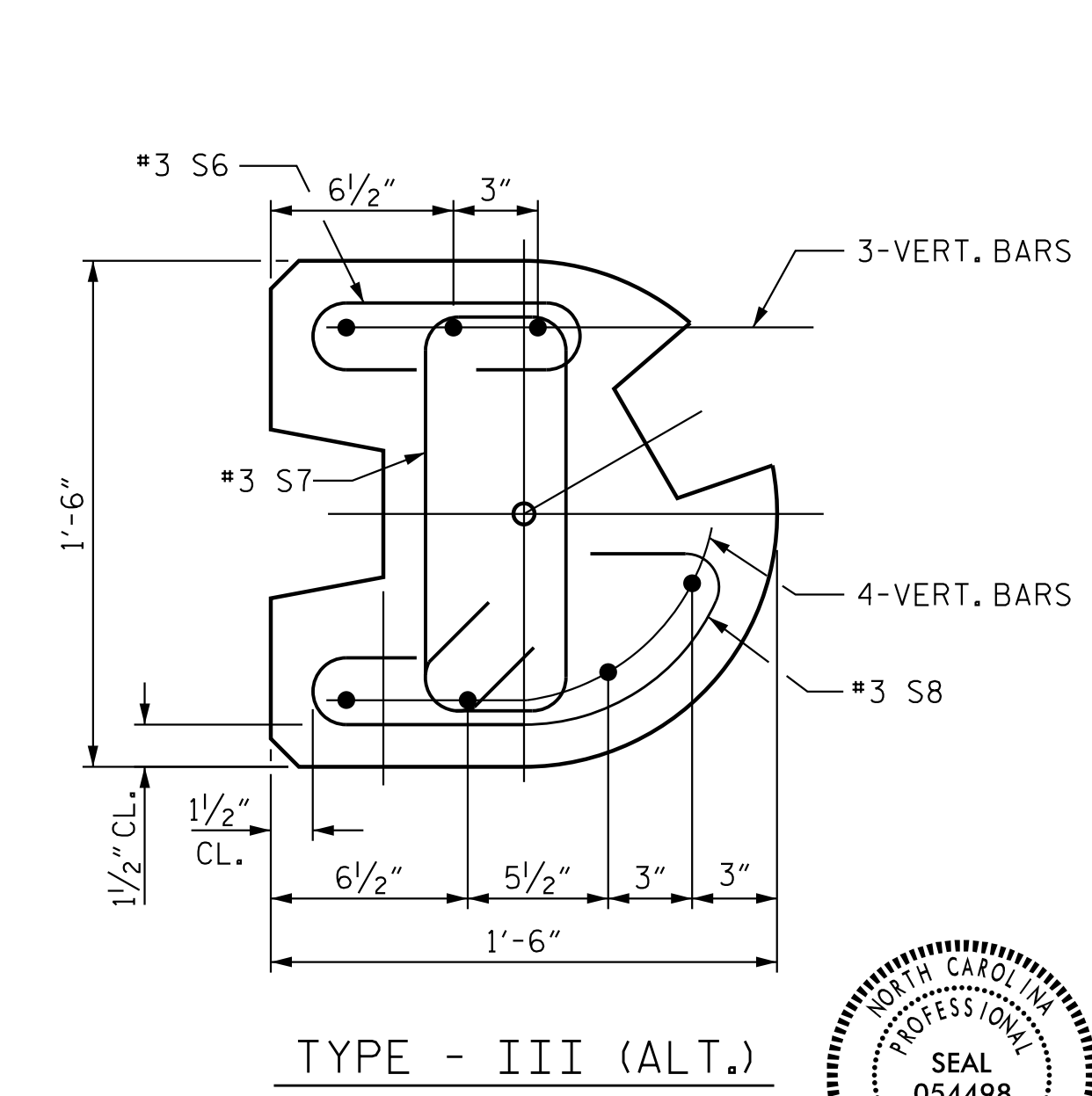
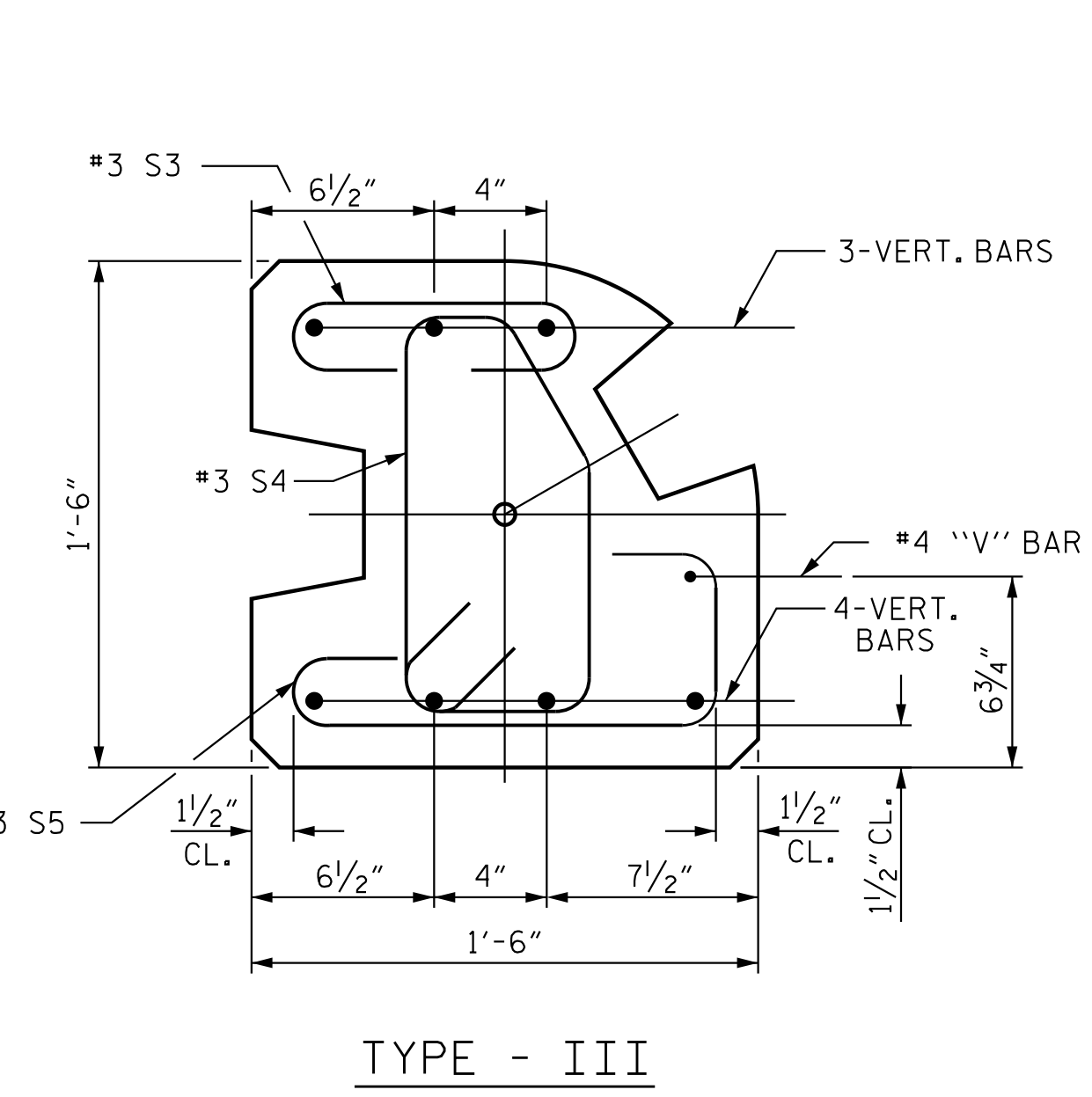
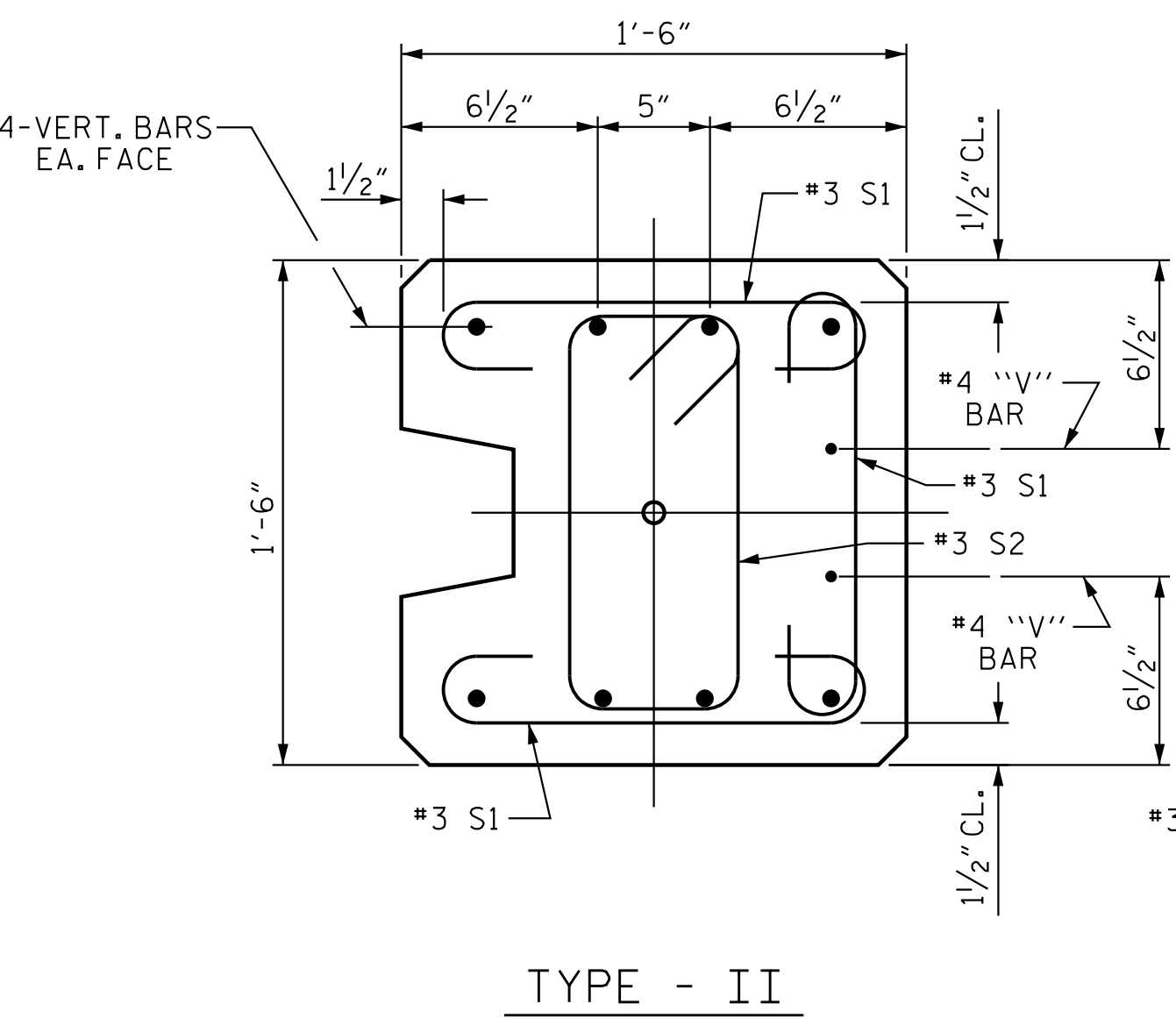
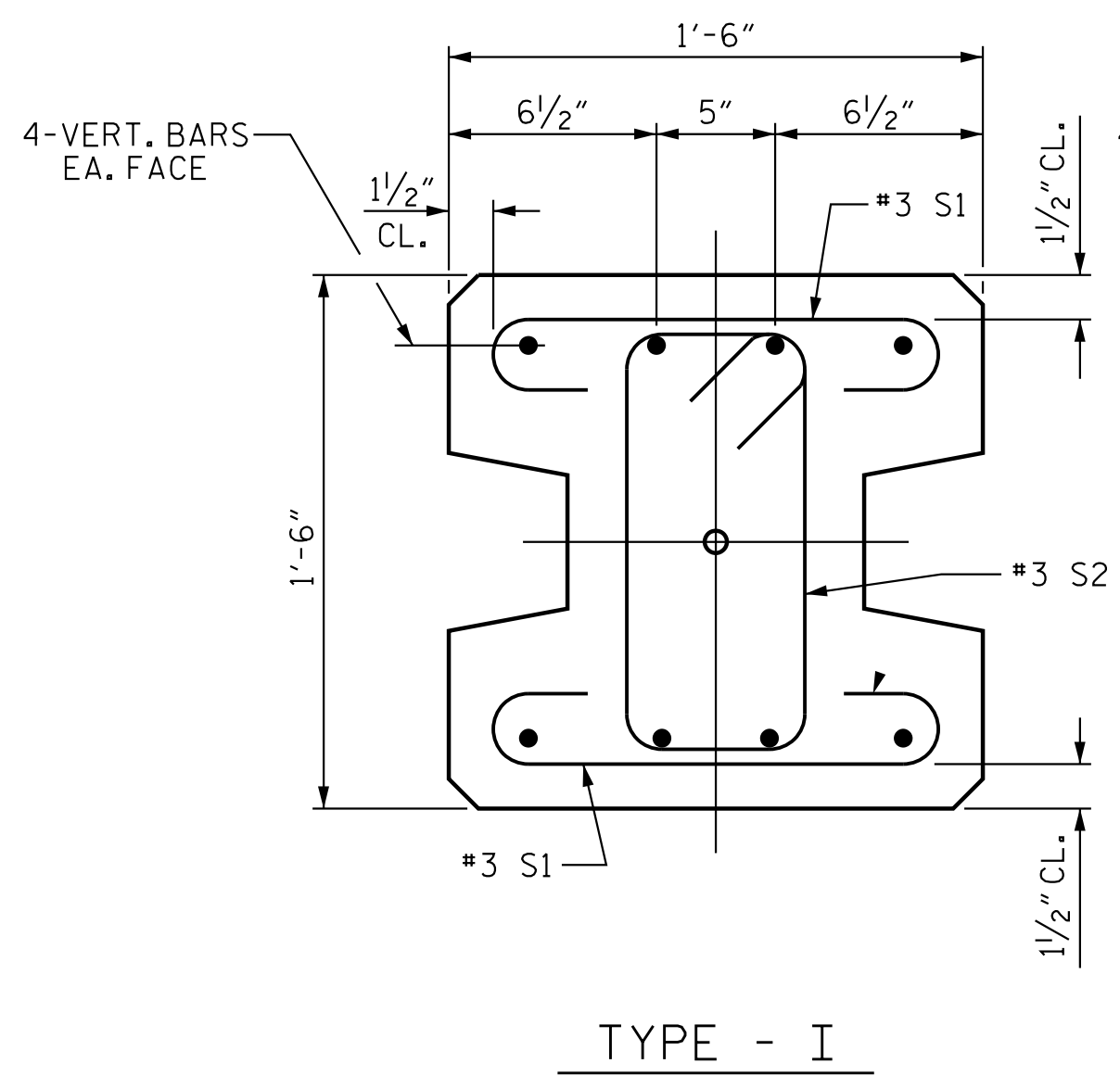
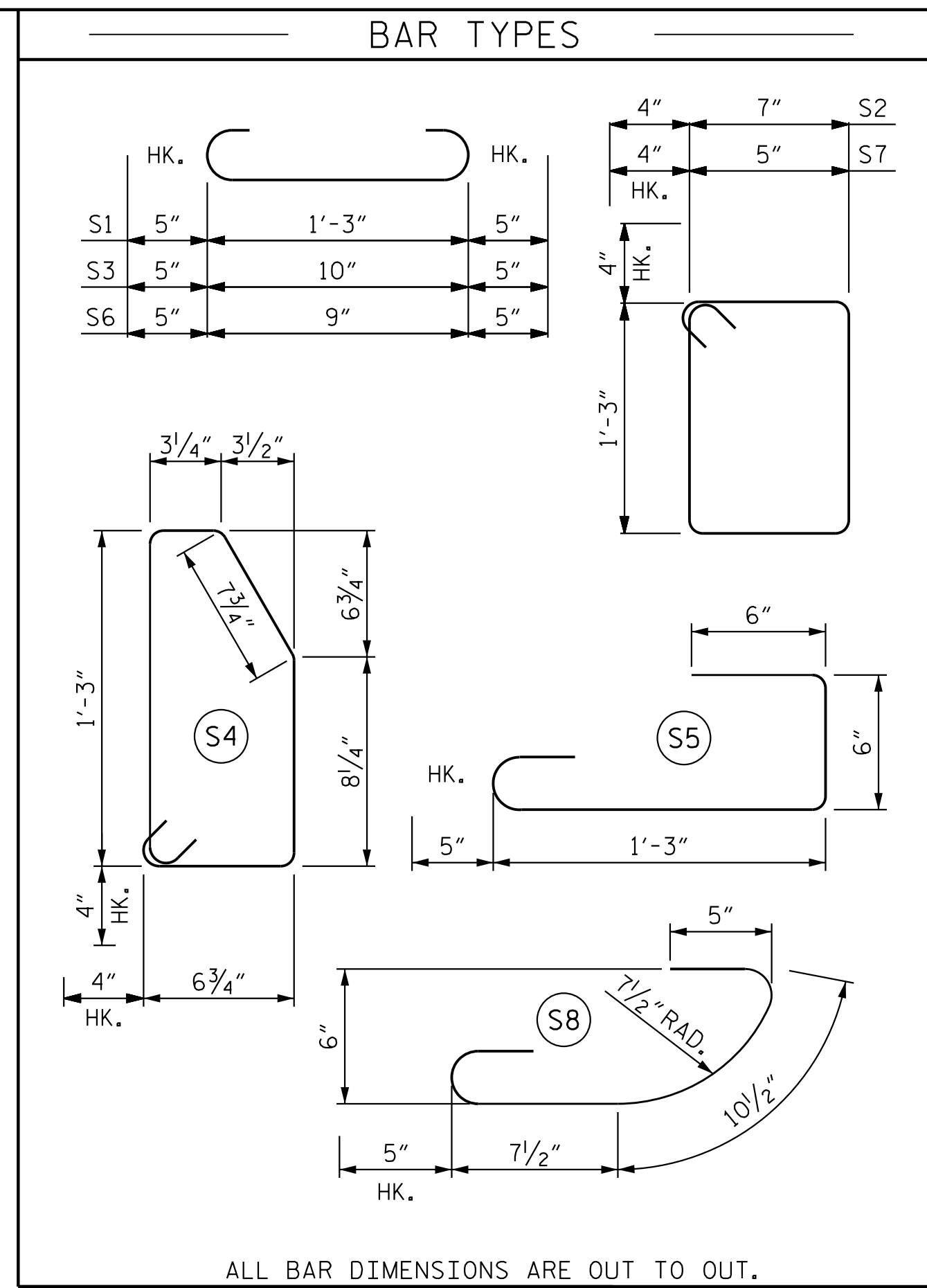
WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS TO BE INDICATED WITH A BLACK MARK 2" WIDE.

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

ALL CORNERS TO BE CHAMFERED 1".

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"



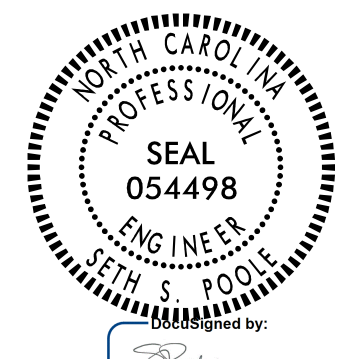
PILE DETAIL

FOR VERTICAL BAR PILE REINFORCING, SEE SHEET 1 OF 4

PROJECT NO. R-2707E  
 CLEVELAND COUNTY  
 STATION: 935+69.92 -L-

SHEET 3 OF 4

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



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SHEET NO. NW10A-3  
 TOTAL SHEETS 4

STD. NO. SBW3

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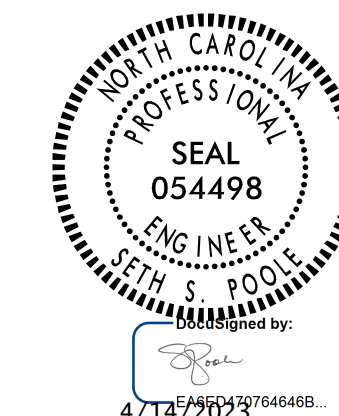
BEGIN WALL STATION (NW10A)	END WALL STATION (NW10A)	PILE EXCAVATION DEPTHS, "D" (FT)		
		PILE SPACING = 10 FT	PILE SPACING = 15 FT	PILE SPACING = 20 FT
10+00	14+95	6	7	8
14+95	17+80	6	6	7
17+80	20+80	6	7	8
20+80	23+20	6	7	8
23+20	23+95	6	7	7

### PILE EXCAVATION DEPTHS - SOUND BARRIER WALL 10A

1. BEGIN AND END WALL STATIONS ARE REFERENCED TO THE NW10A ALIGNMENT. SEE ROADWAY PLANS FOR ADDITIONAL INFORMATION.
2. STATIONS ARE TO THE ROADWAY FACE OF THE SOUND BARRIER WALL CONCRETE PILES.

PROJECT NO. R-2707E  
CLEVELAND COUNTY  
 STATION: 935+69.92 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 SOUND BARRIER WALL  
 PILE EXCAVATION  
 DEPTHS



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2			4			