

ELEVATION

SECTION A-A

PILE EXCAVATION DEPTHS "D"			
WALL # NW7B		FROM : STA. 10+00.00 -NW7B- TO : STA. 26+80.00 -NW7B-	
3'-0" Ø HOLE	PILE SPACING	WALL HEIGHT	
		H ≤ 15'	15' < H ≤ 20'
	10'-0"	11	-
15'-0"	11	-	-

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" OR 15'-0" SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.
- 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.

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.
	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE

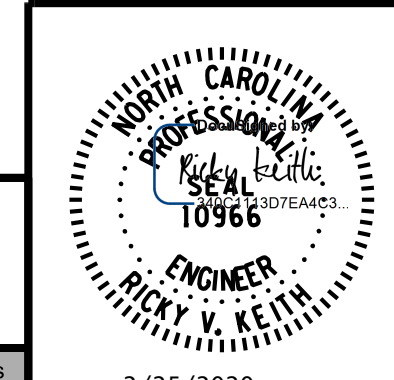
PILE TYPE II				PILE TYPE III ALT.			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 -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

BILL OF MATERIAL	
SOUND BARRIER WALL	20,100 S.F.
ARCHITECTURAL SURFACE TREATMENT	34,160 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	
ARCHITECTURAL SURFACE TREATMENT	
TEXTURE OPTION:	DRY STACK
STAIN OPTION:	FS-36521

PROJECT NO. R-2915E  
 ASHE COUNTY  
 STATION: 10+00.00 -NW7B-

SHEET 1 OF 3

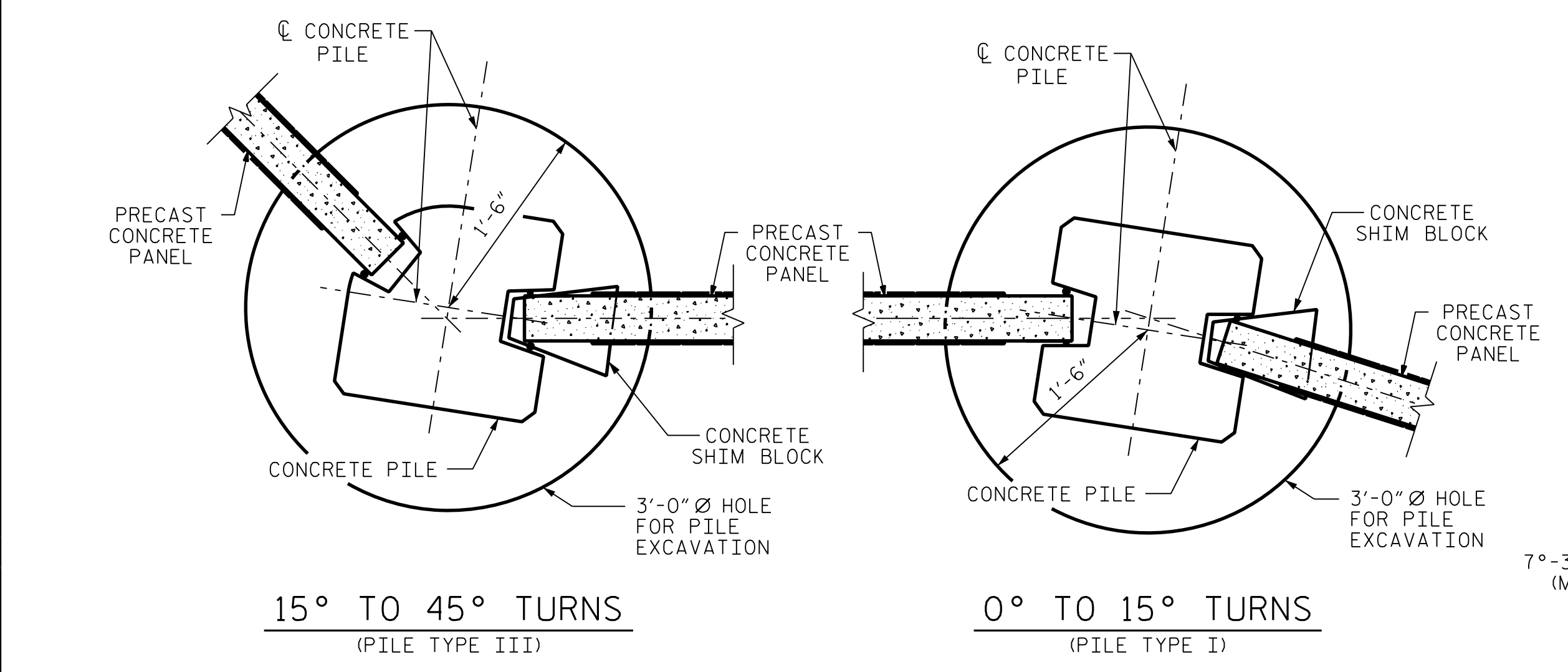
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 SOUND BARRIER WALL



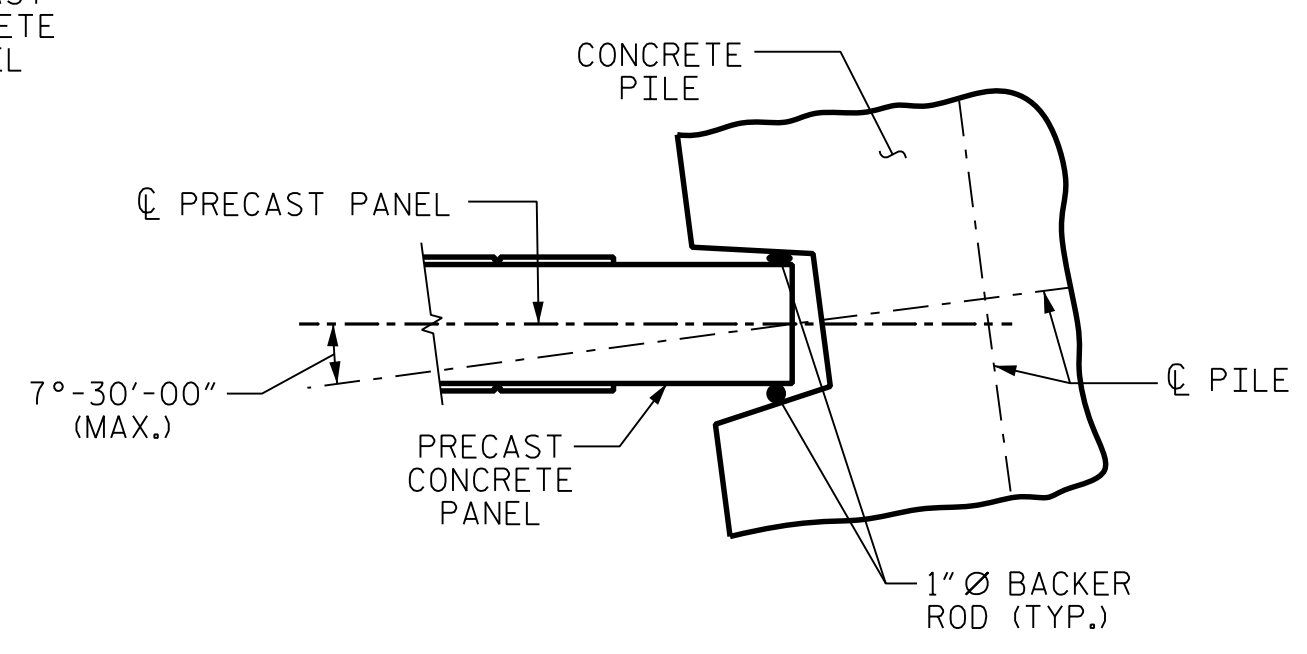
**RK&K**  
 P: (919) 878-9560  
 8601 Six Forks Road, Forum 1 Suite 700  
 Raleigh, North Carolina 27615 | NC License No. F-0112  
 Engineers | Construction Managers | Planners | Scientists  
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REVISIONS						SHEET NO. 1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 3
2			4			



TYPICAL WALL TURN DETAILS

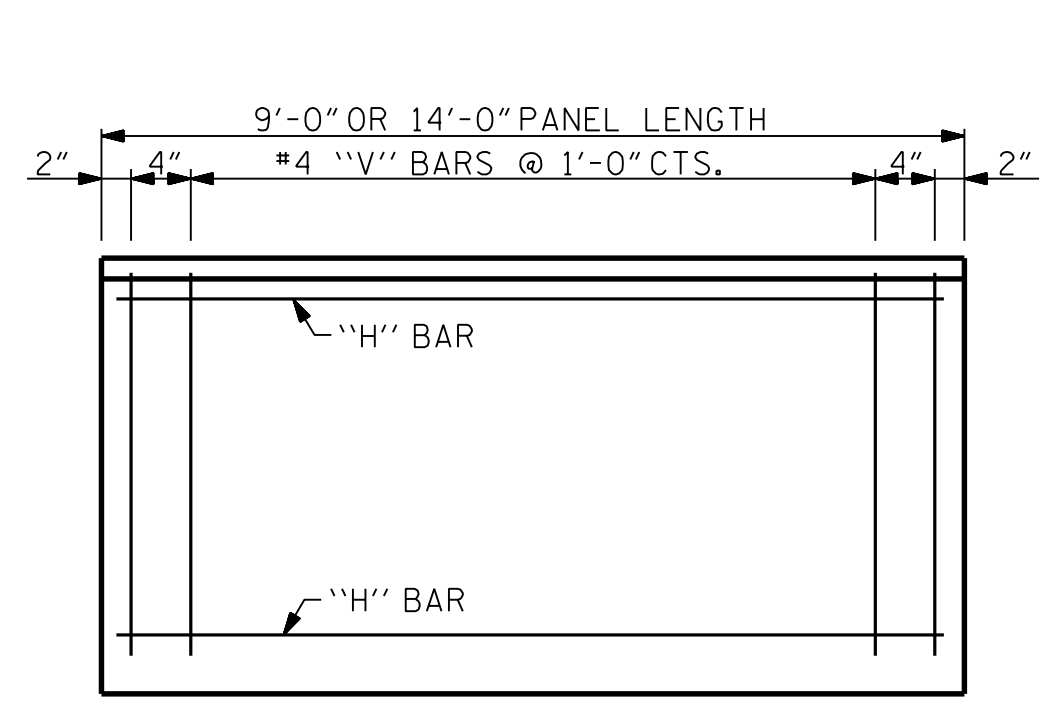


PILE ROTATION LIMIT FOR WALL TURN

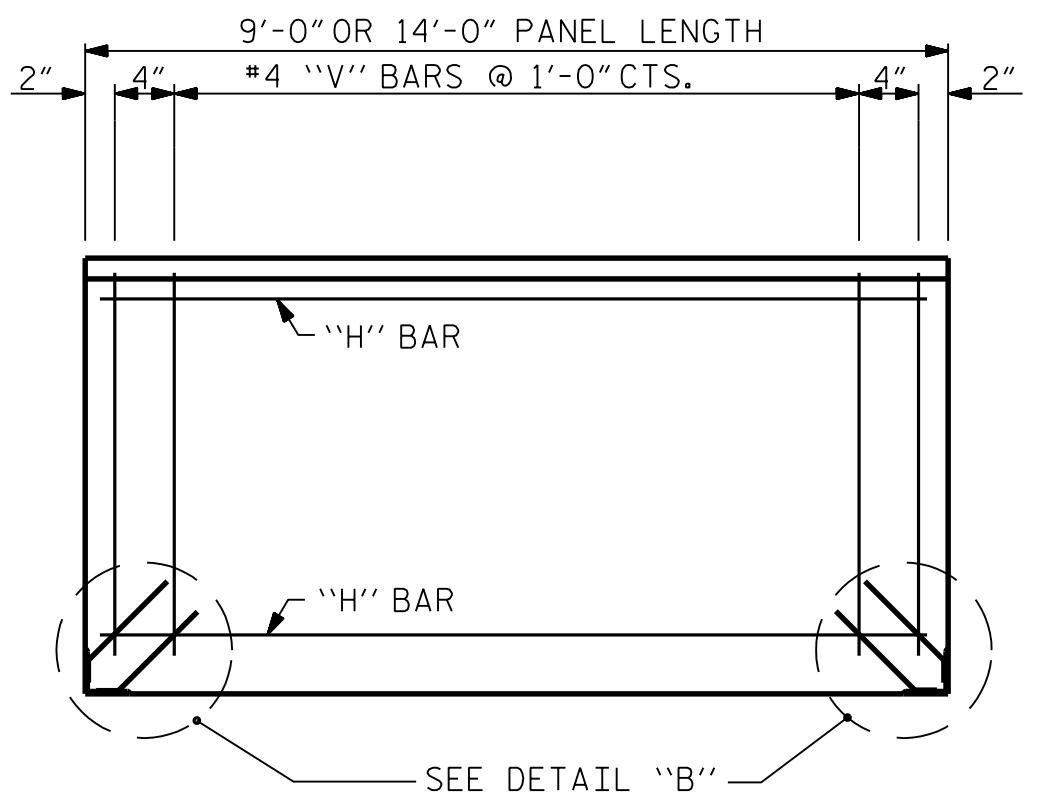
(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

DRAWN BY : D. G. ROBINSON DATE : JAN 2019  
 CHECKED BY : D. M. RAGAN DATE : JAN 2019  
 DESIGN ENGINEER OF RECORD : R. V. KEITH DATE : JAN 2019

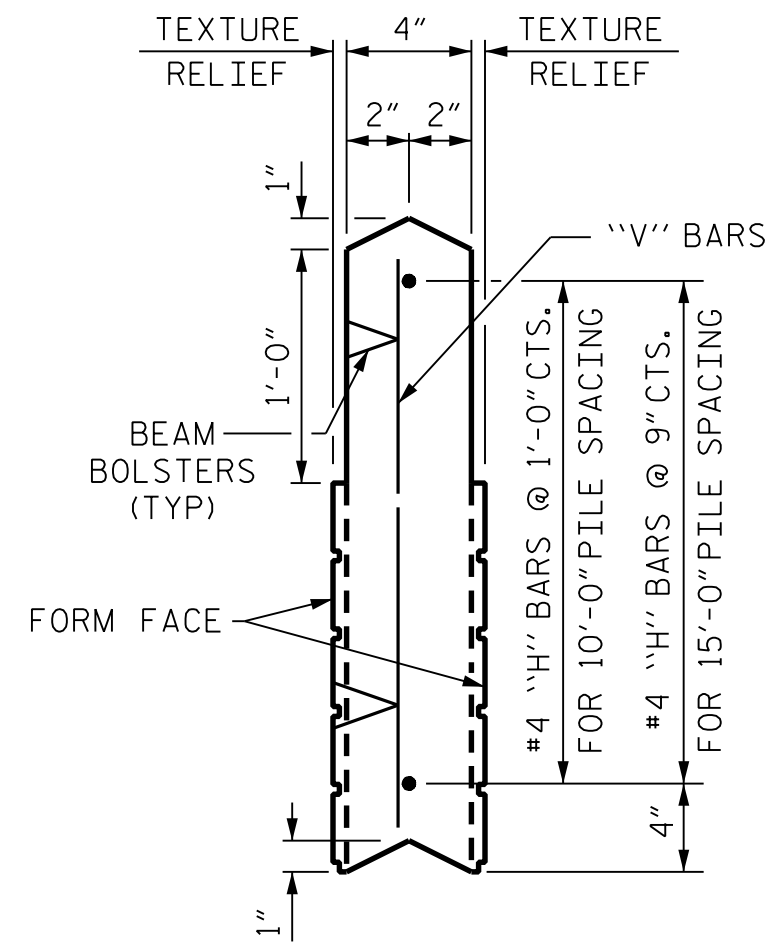
2/25/2020 R:\Structures\DON\NoiseWalls\R-2915E\_NoiseWall.1.dgn  
 drobinson



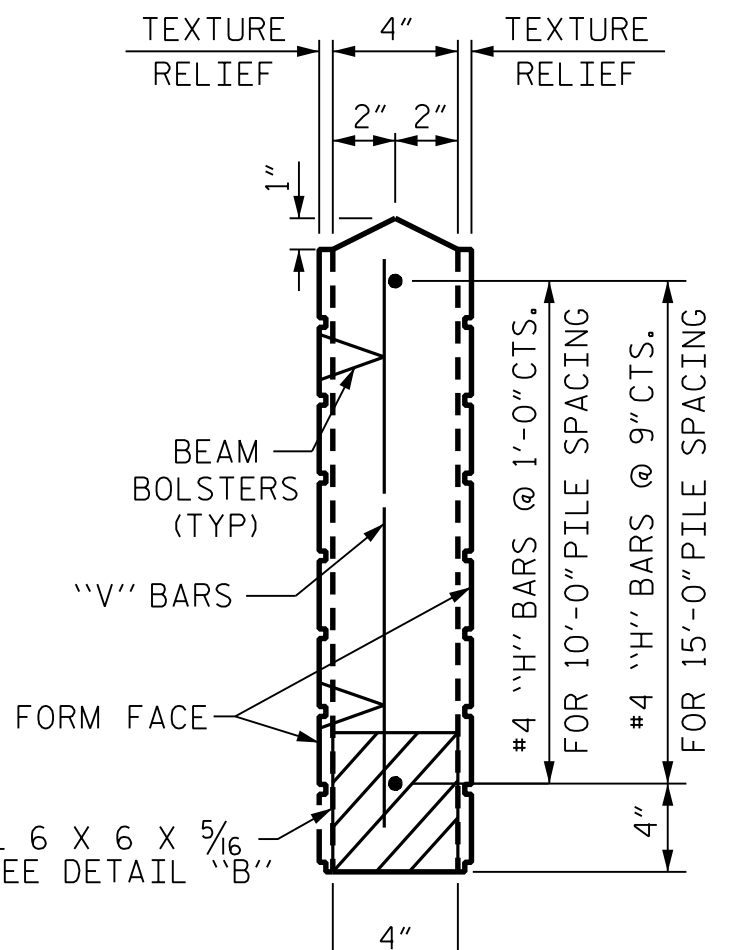
FRONT ELEVATION OF UPPER PRECAST PANEL



FRONT ELEVATION OF BOTTOM PRECAST PANEL

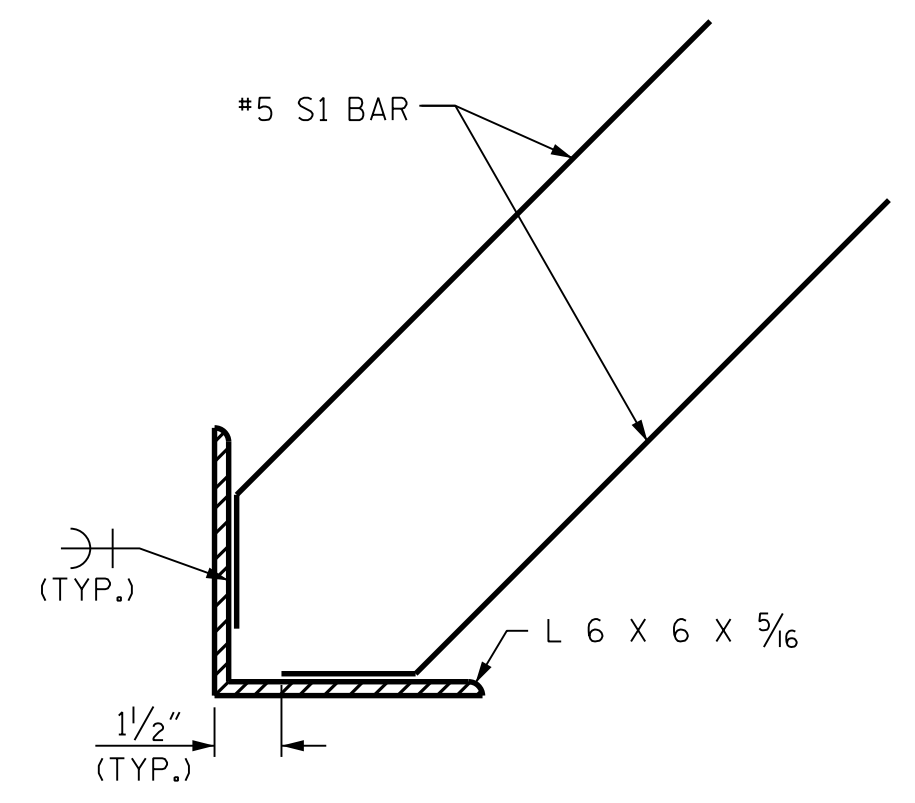


UPPER PANEL



BOTTOM PANEL

SECTION THROUGH PRECAST PANELS



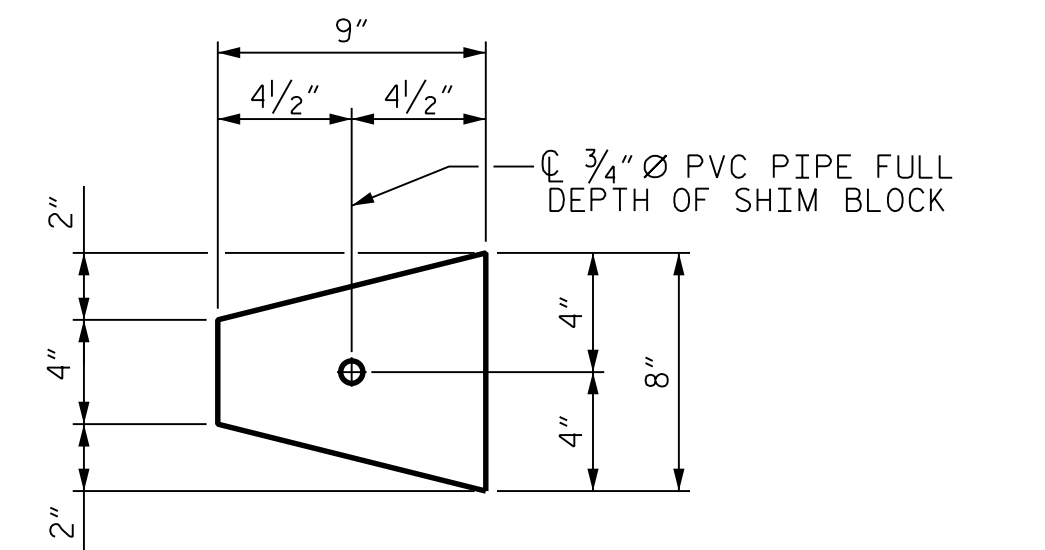
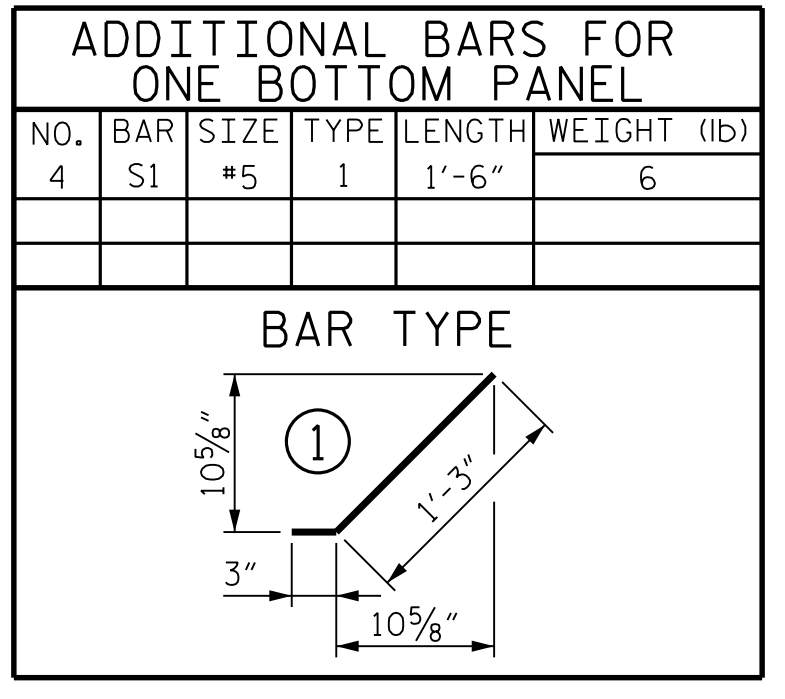
DETAIL "B"

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

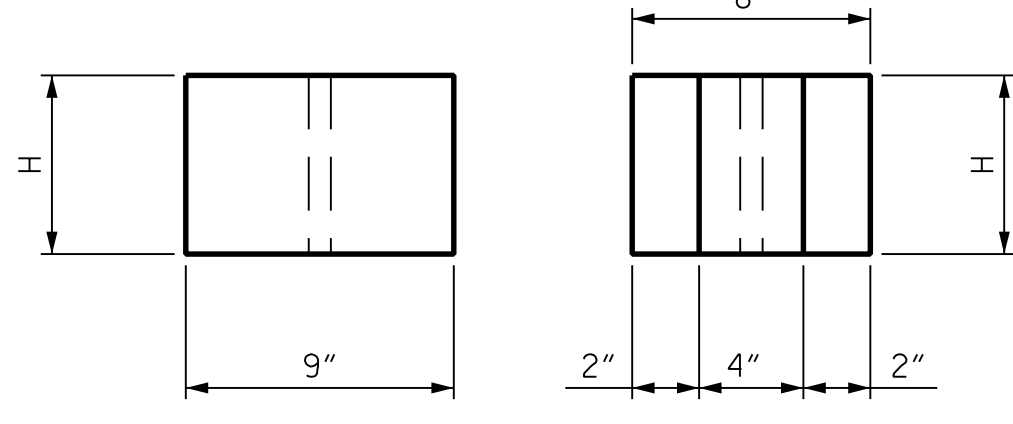
PANEL HEIGHT	CLASS AA CONCRETE	C.Y.	BAR TYPES											
			HORIZONTAL				VERTICAL							
			NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)		
2'-0"		0.22	3	H1	#4	STR	8'-8"	17	11	V1	#4	STR	1'-8"	12
3'-0"		0.33	4	H2	#4	STR	8'-8"	23	11	V2	#4	STR	2'-8"	20
4'-0"		0.44	5	H3	#4	STR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

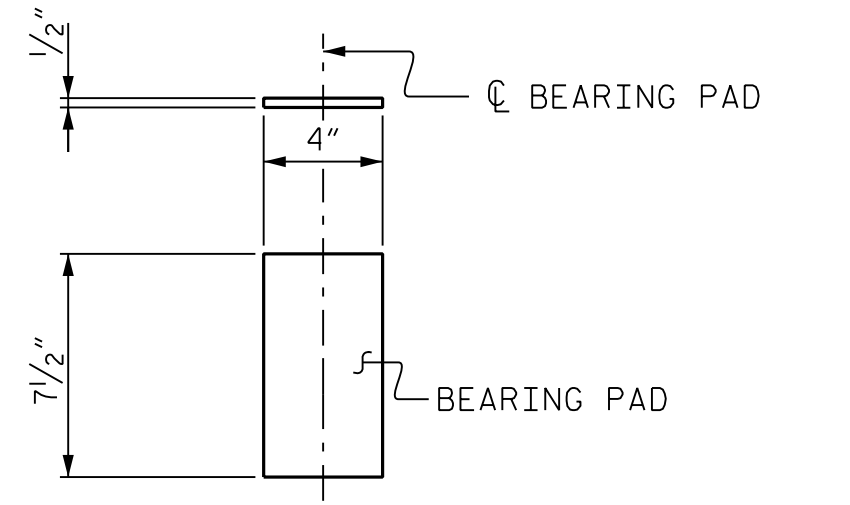


ELEVATION

END

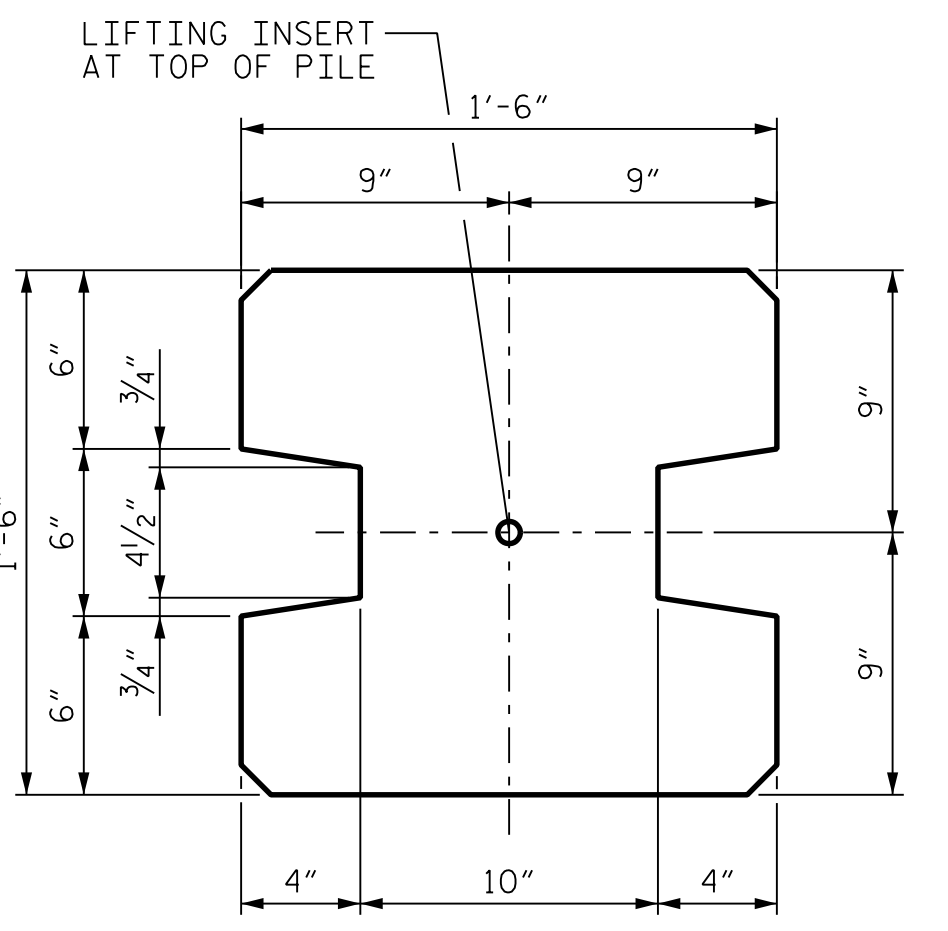
CONCRETE SHIM BLOCK

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

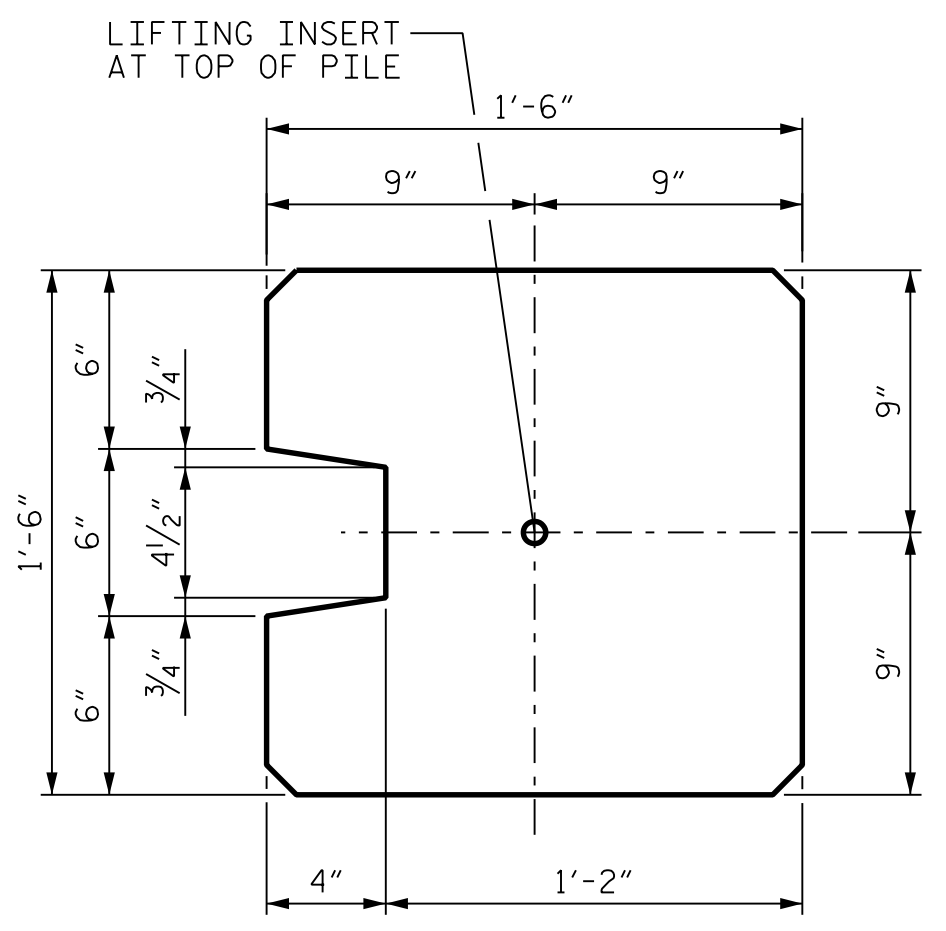


ELASTOMERIC BEARING DETAILS

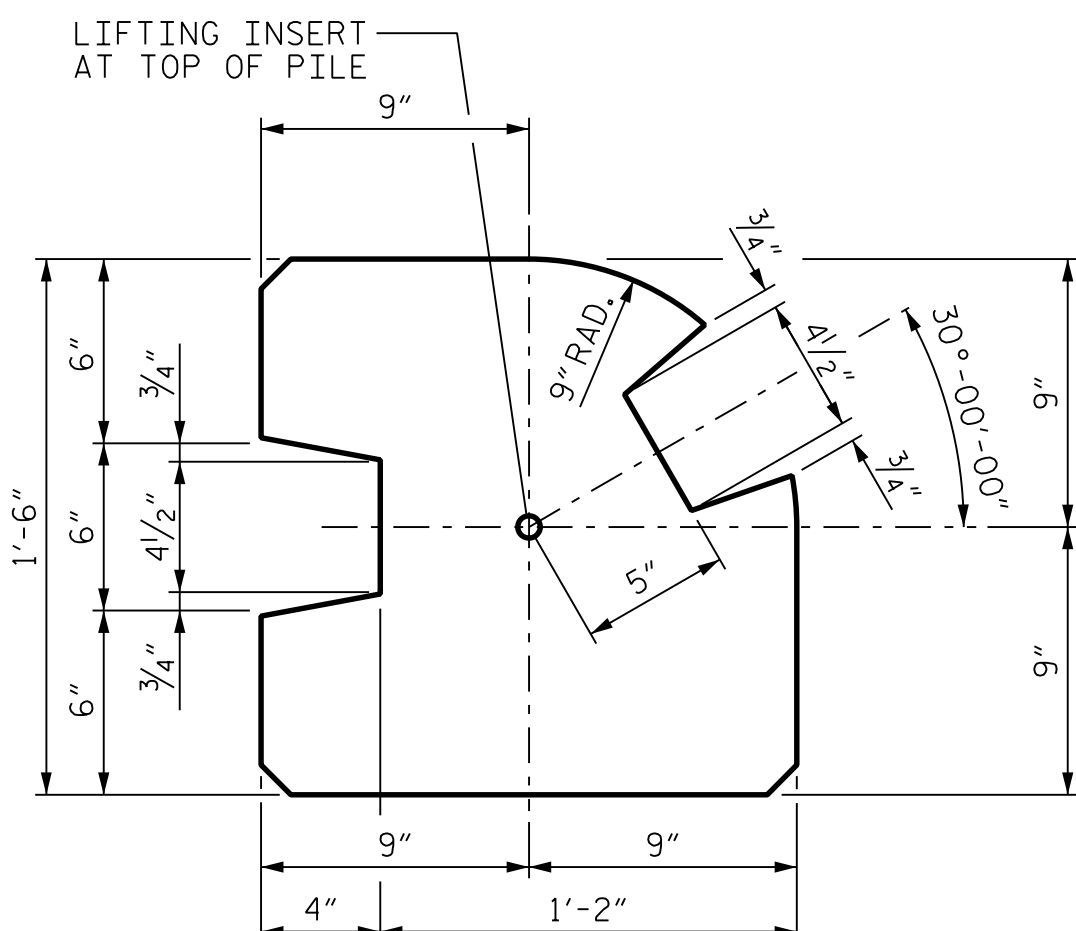
ELASTOMER IN BEARINGS SHALL BE 50 DUROMETER HARDNESS.



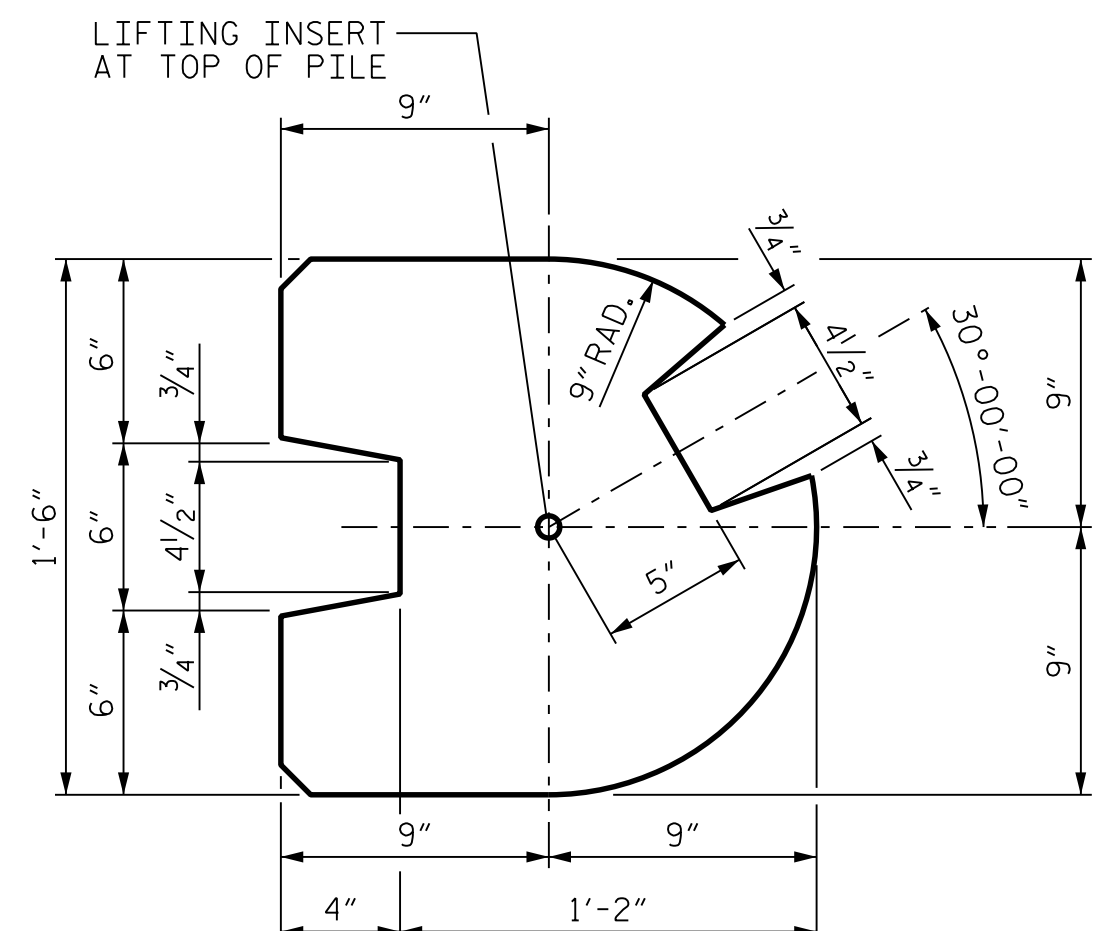
TYPE - I  
(AREA = 1.9444 SQ. FT.)



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



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



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

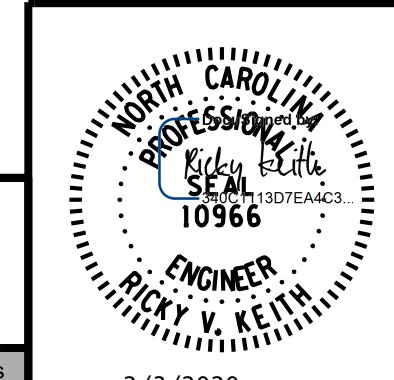
PILE DETAIL

(ALL CORNERS TO BE CHAMFERED 1")

PROJECT NO. R-2915E  
ASHE COUNTY  
STATION: 820+00.00 -L-

SHEET 2 OF 3

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



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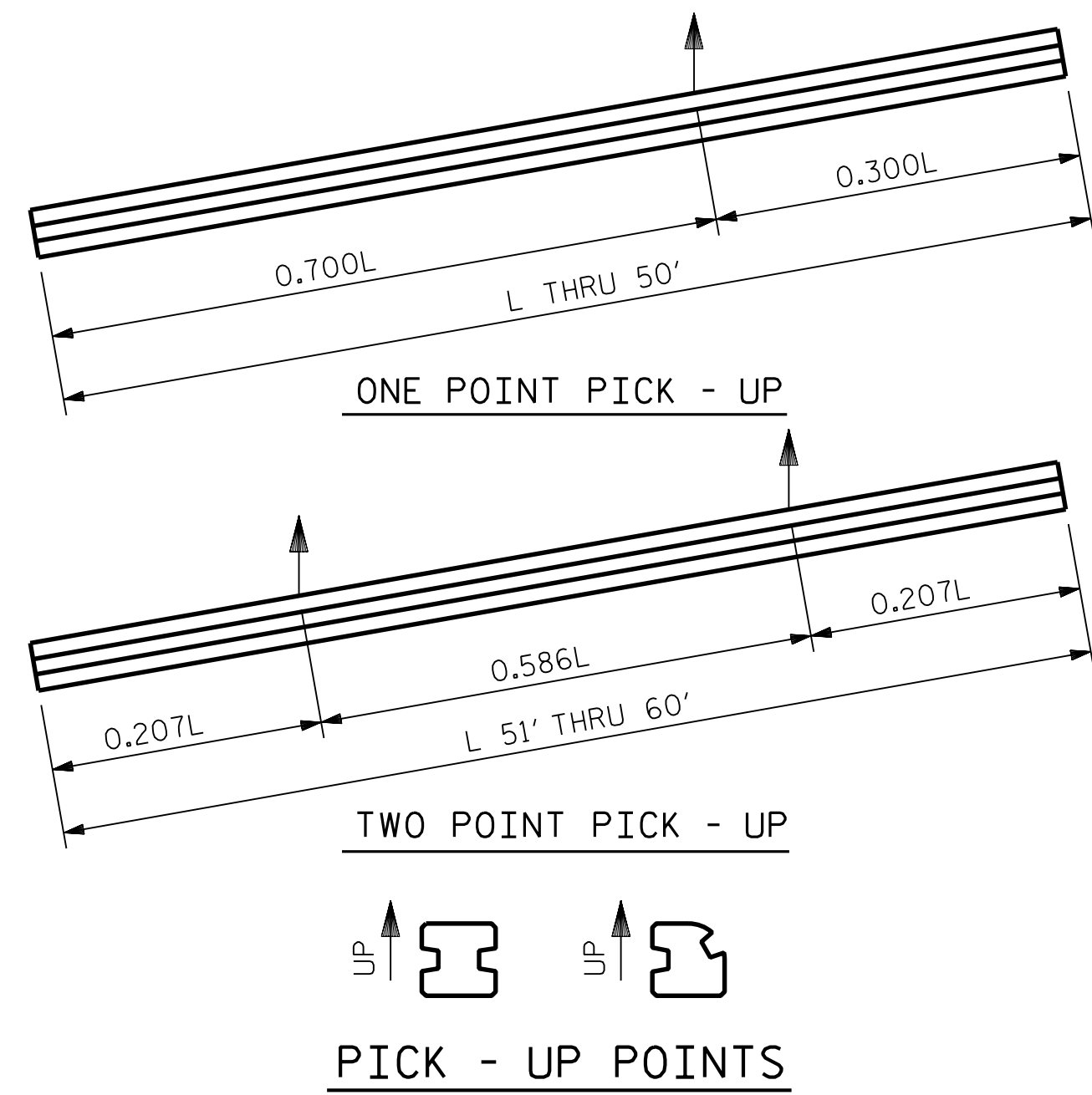
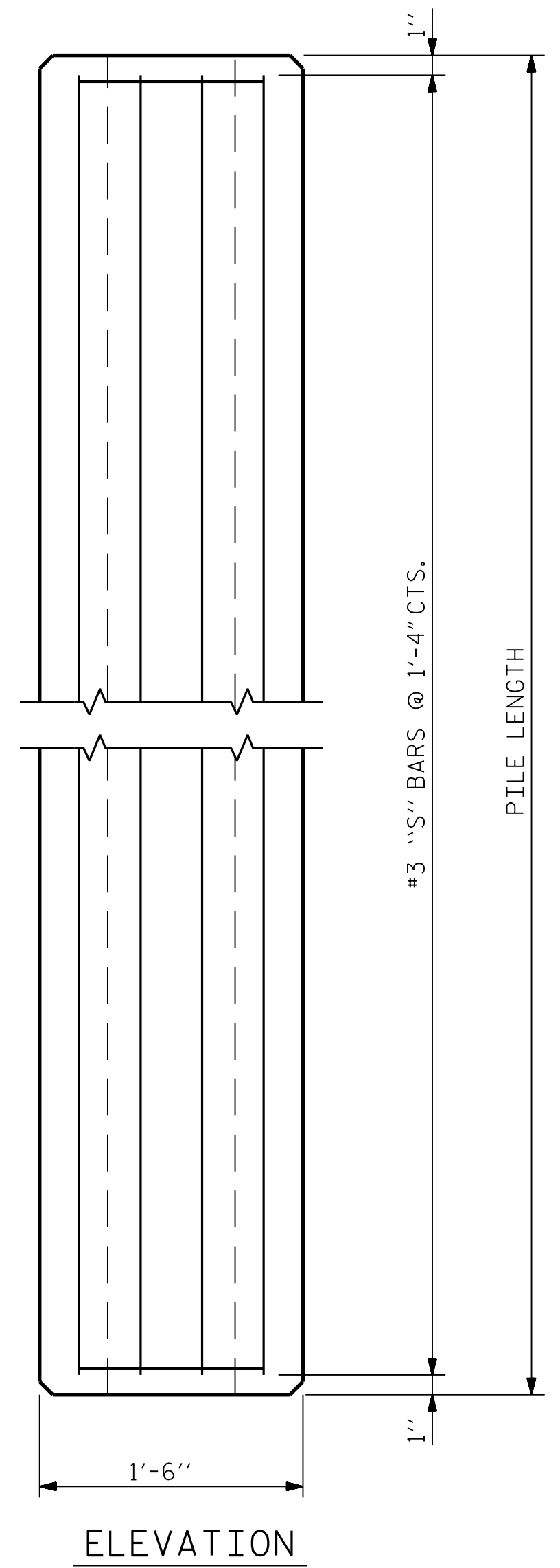
2/3/2020

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

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UNLESS ALL SIGNATURES COMPLETED

R:\Structures\DON\NoiseWalls\R-2915E\_NoiseWall\_2.dgn

1/27/2020  
DRAWN BY : D. G. ROBINSON DATE : JAN 2019  
CHECKED BY : A. L. STROUD DATE : JAN 2019  
DESIGN ENGINEER OF RECORD : R. V. KEITH DATE : JAN 2019



**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

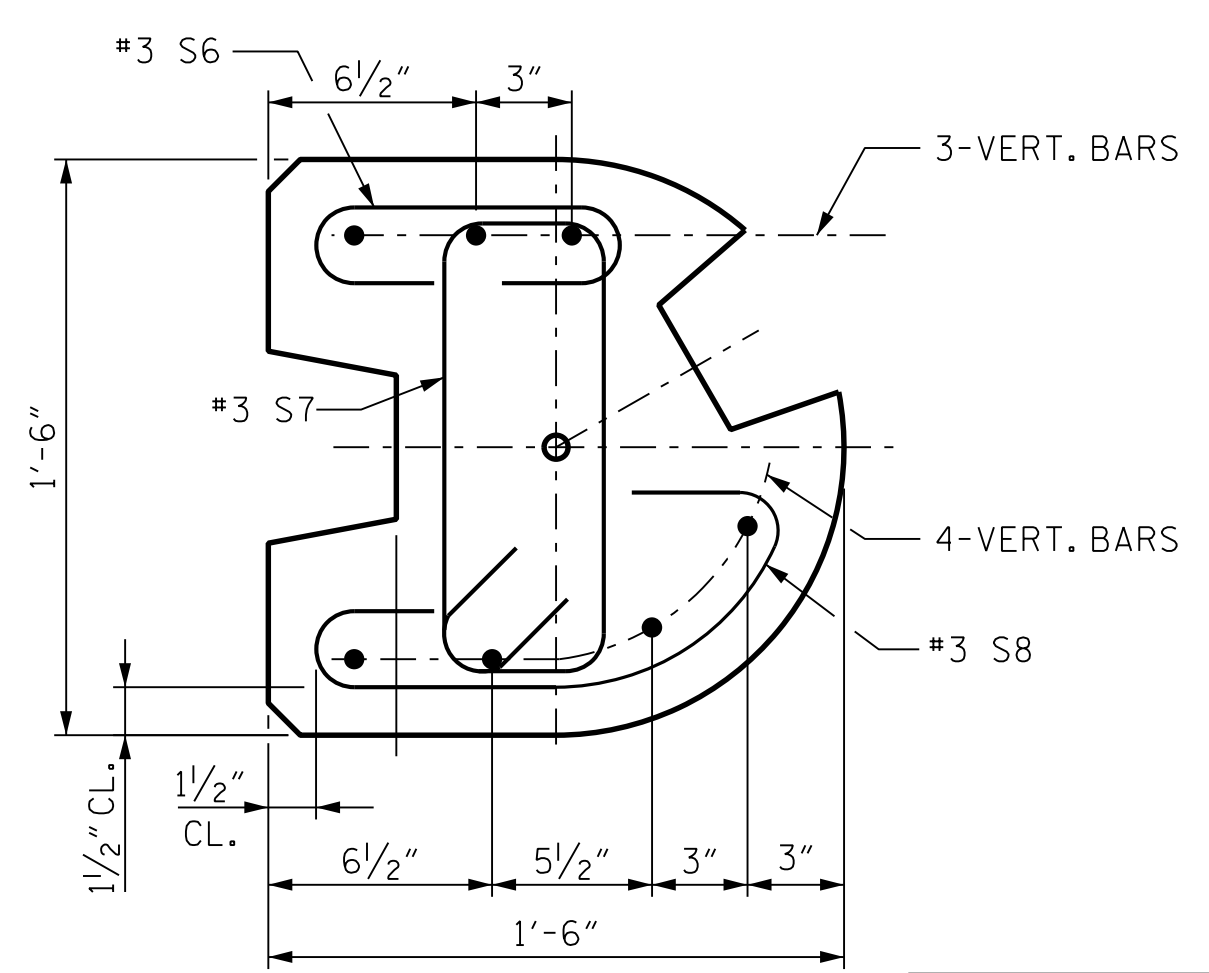
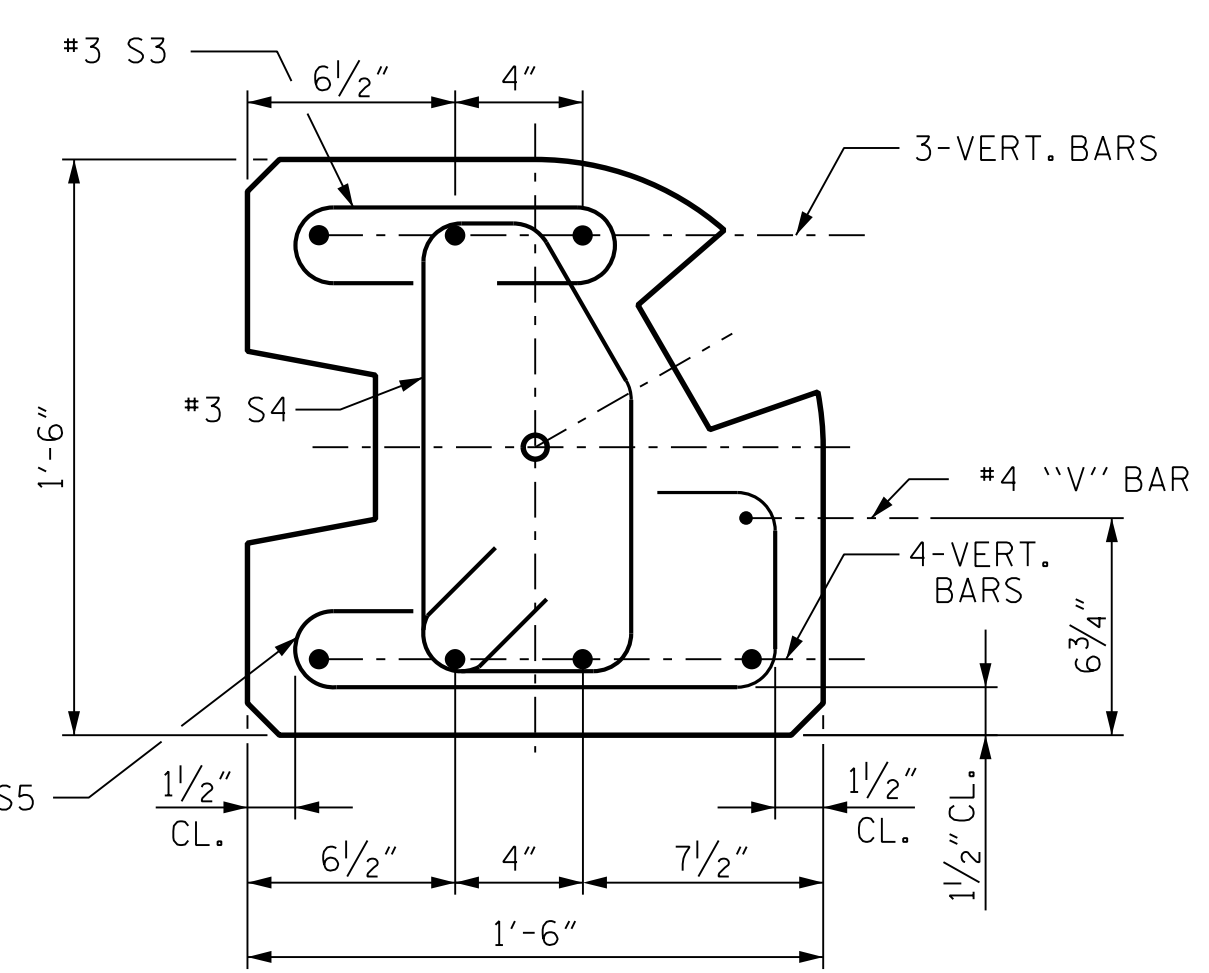
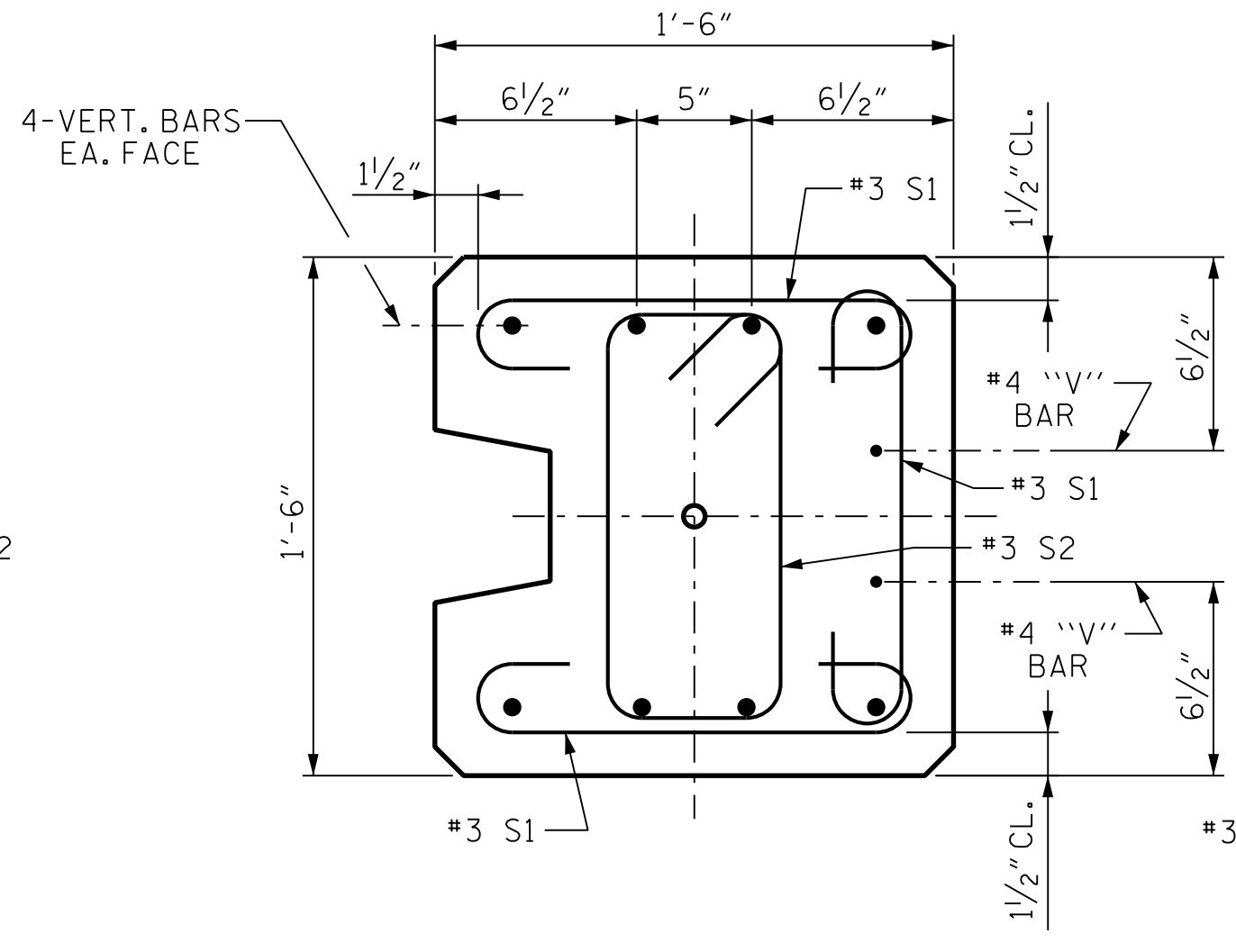
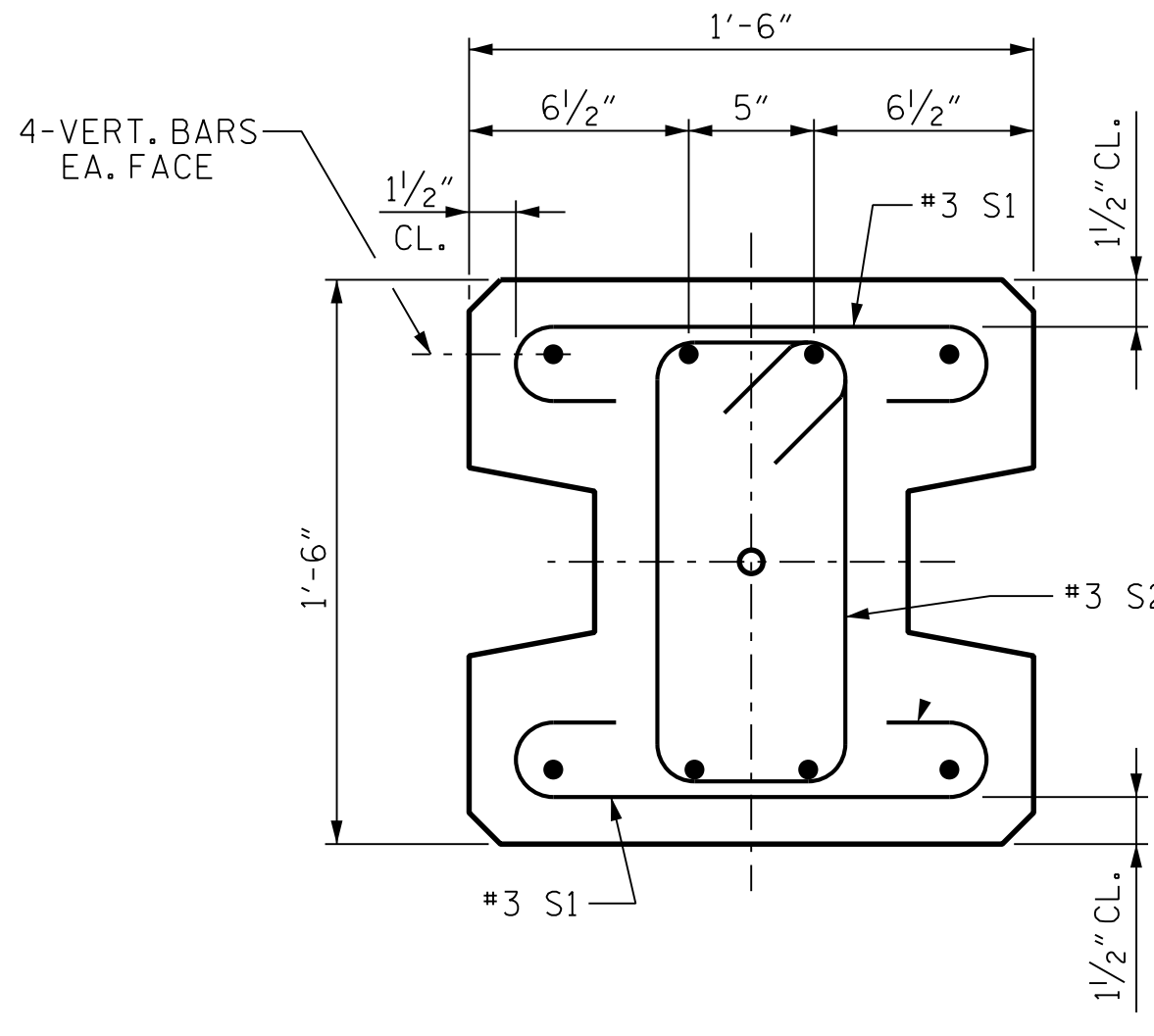
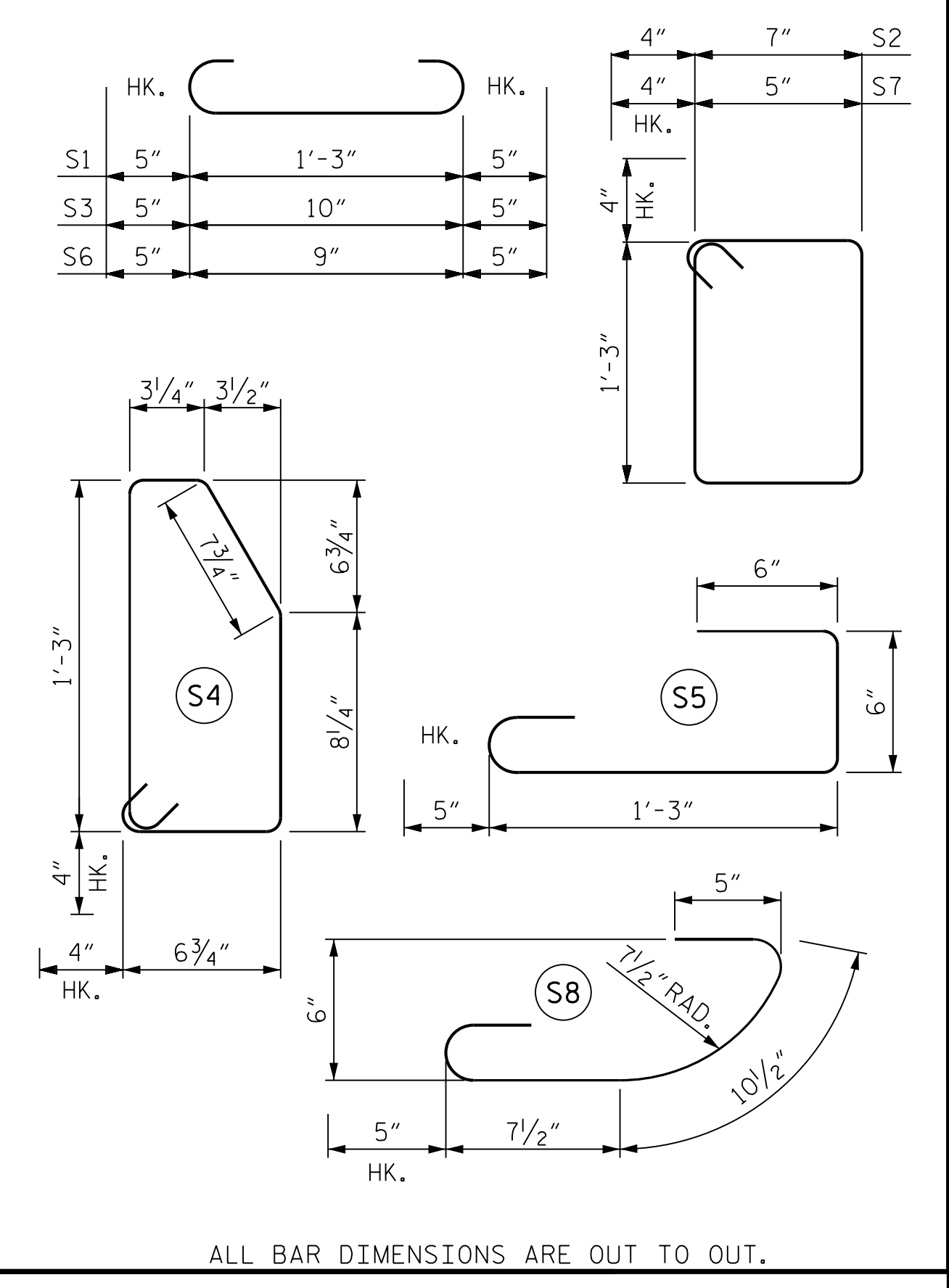
PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

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**



TYPE - I

TYPE - II

TYPE - III

TYPE - III (ALT.)

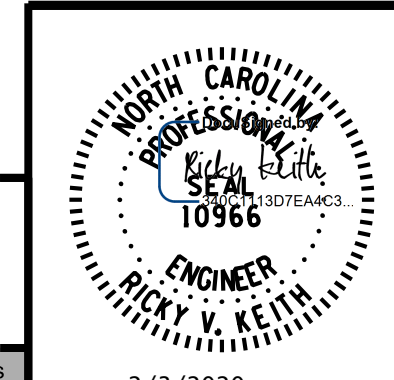
**PILE DETAIL**

FOR VERTICAL BAR PILE REINFORCING, SEE SHEET 1 OF 3

PROJECT NO. R-2915E  
ASHE COUNTY  
 STATION: 820+00.00 -L-

SHEET 3 OF 3

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



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

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DRAWN BY : D. G. ROBINSON DATE : JAN 2019  
 CHECKED BY : A. L. STROUD DATE : JAN 2019  
 DESIGN ENGINEER OF RECORD : R. V. KEITH DATE : JAN 2019