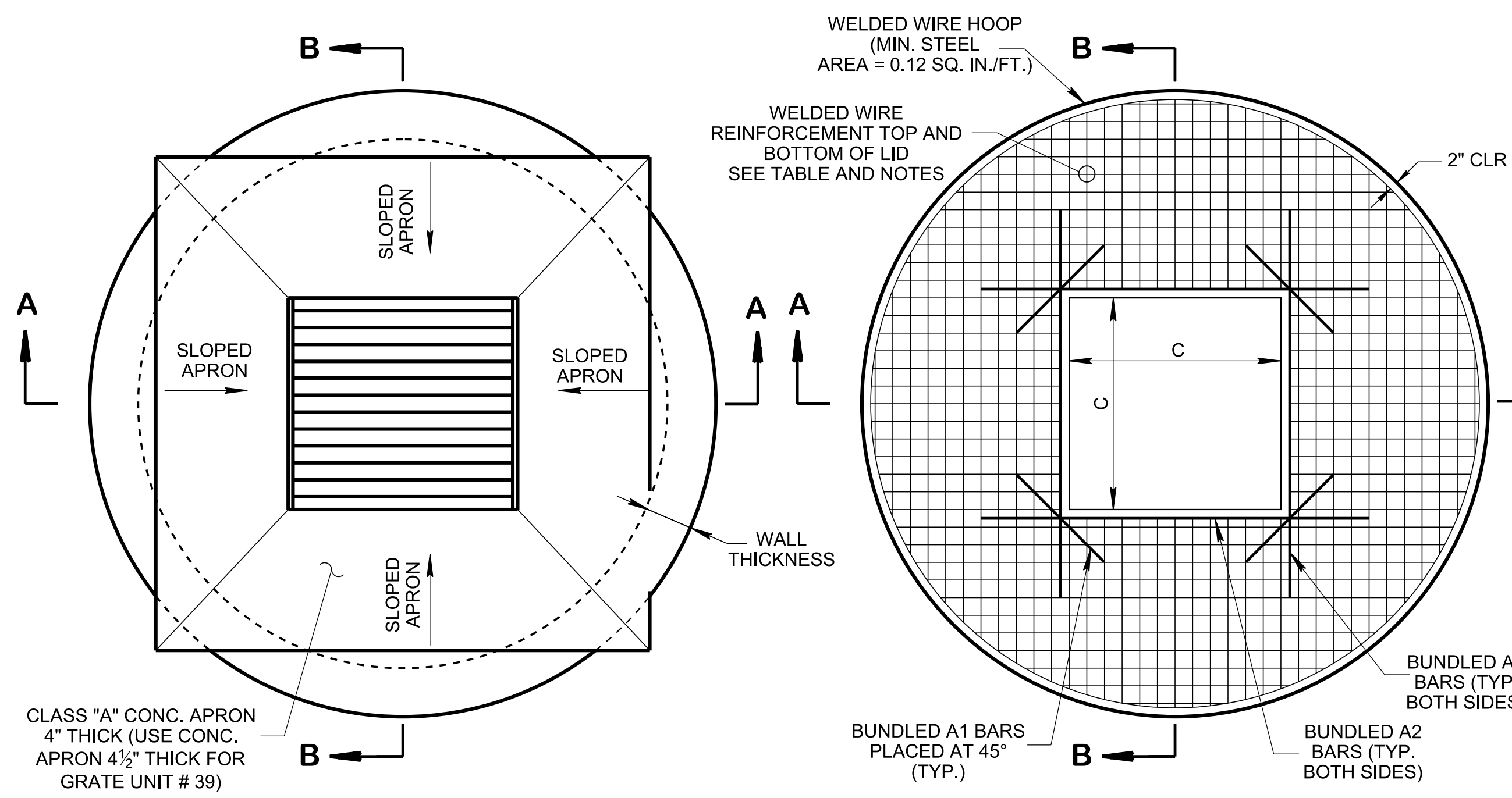
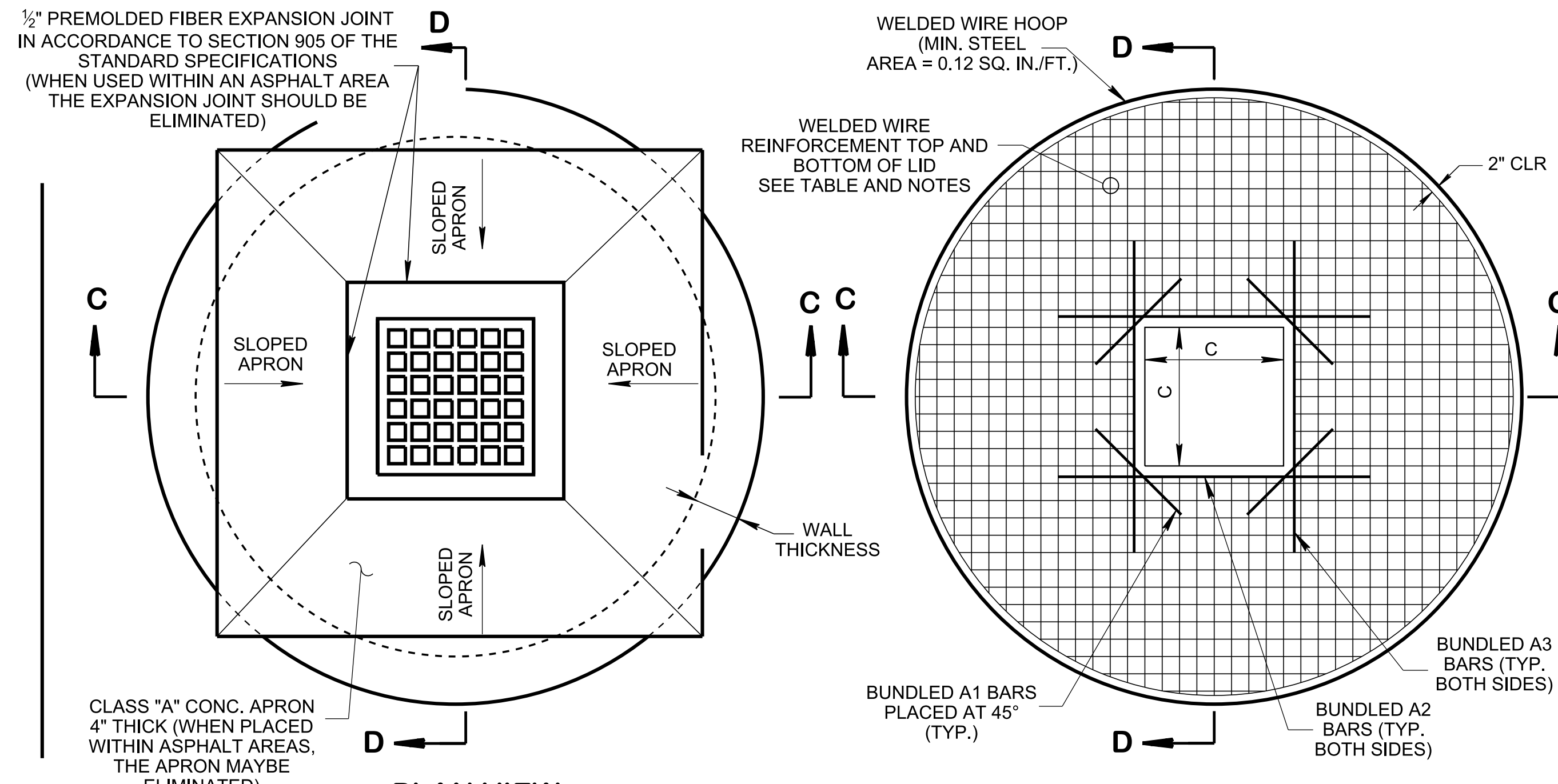


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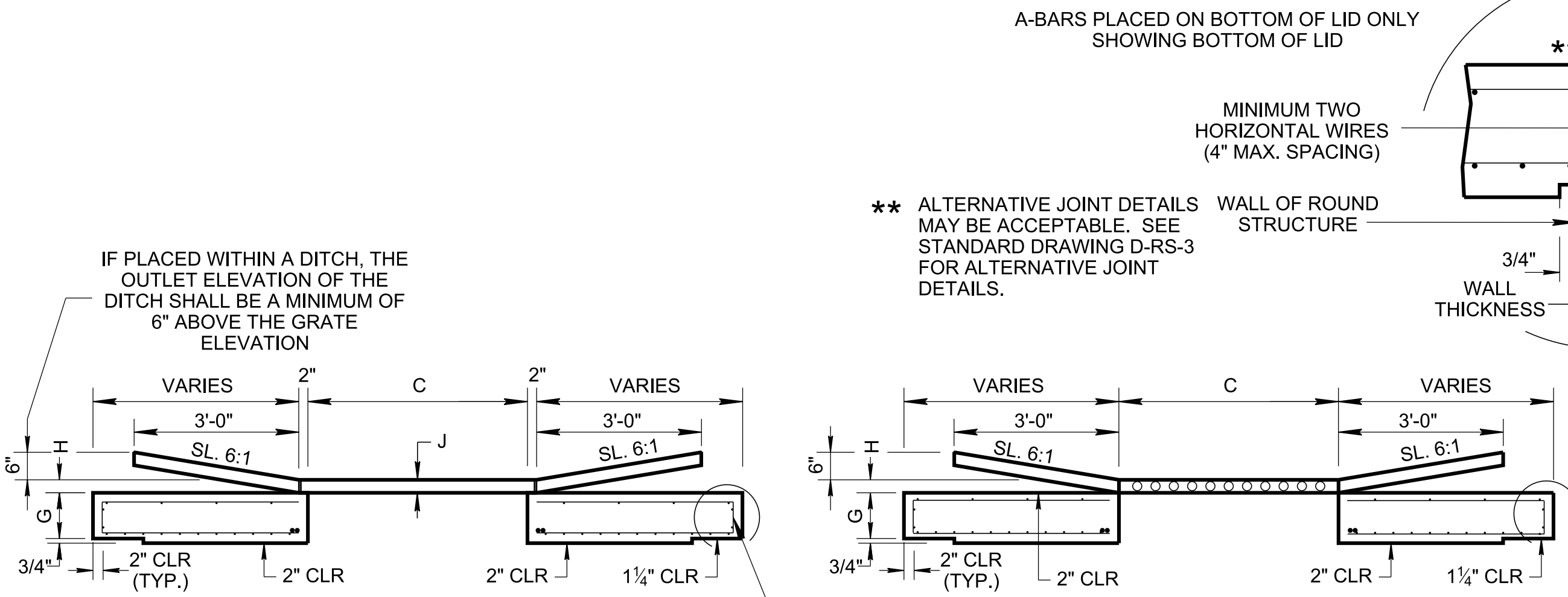


PLAN VIEW



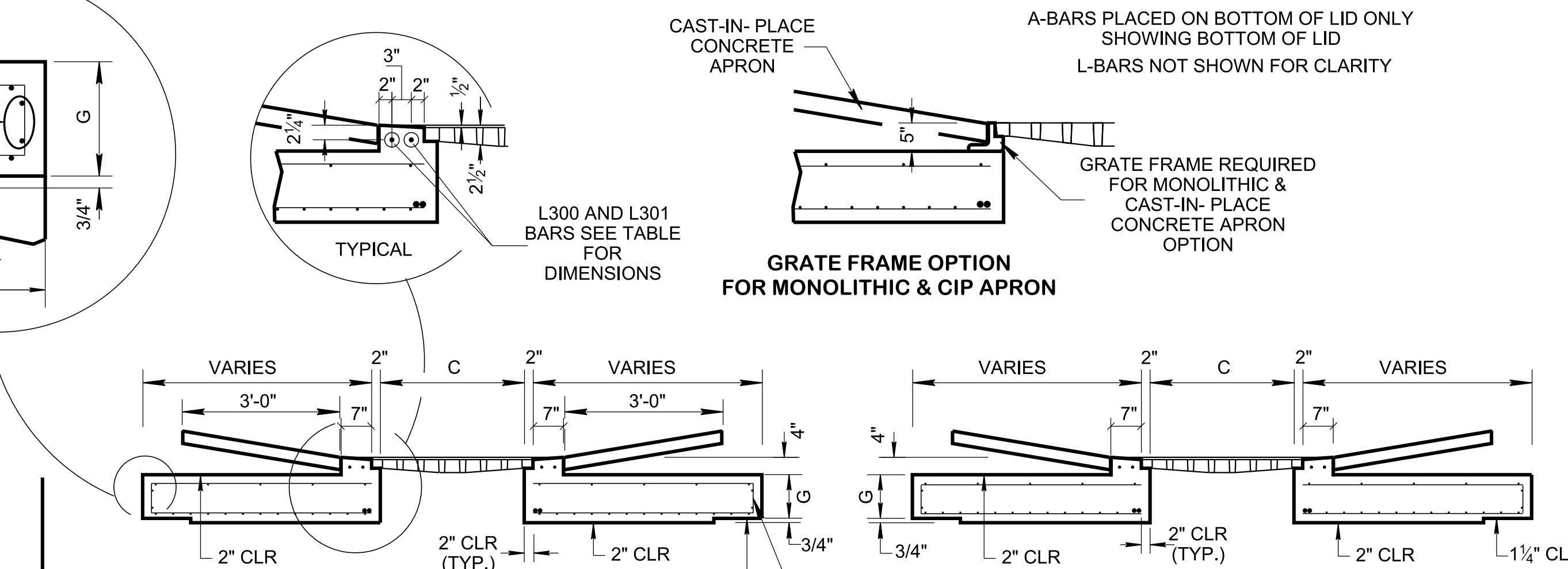
PLAN VIEW

LID REINFORCING



SECTION A-A

SECTION B-B



SECTION C-C

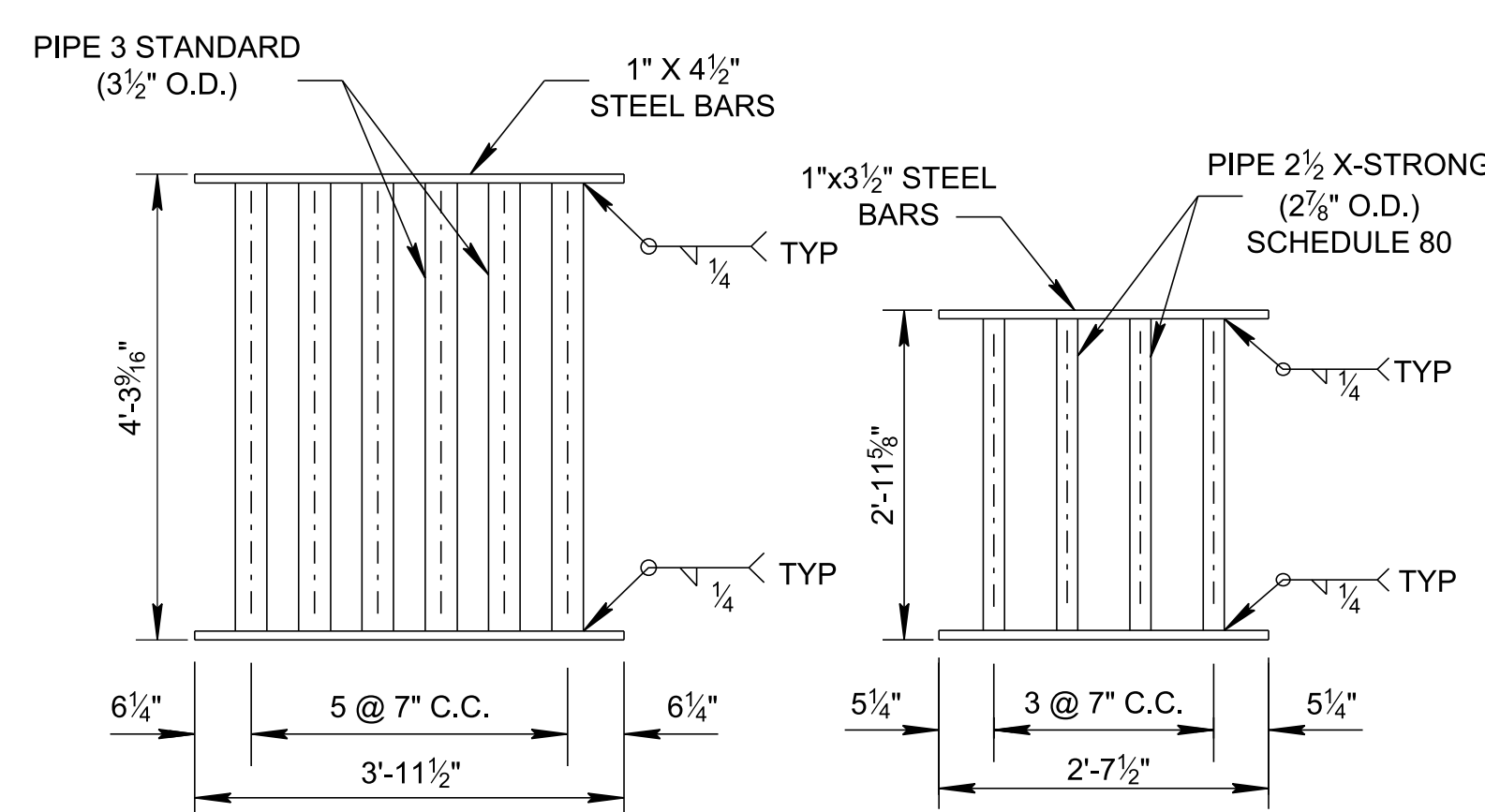
SECTION D-D

**SINGLE OPENING AREA DRAINS
USE WITH STRUCTURE NOS. 38RB AND 39RB**

(THESE AREA DRAINS SHOULD BE USED IN GRASS AREAS. MAY ALSO BE USED IN PAVED AREAS THAT ARE OUTSIDE OF THE TRAVEL LANES.)

**SINGLE OPENING AREA DRAINS
USE WITH STRUCTURE NO. 42RB ONLY**

(THIS AREA DRAIN MAY BE USED WITHIN PAVED AREAS. WHEN PLACED WITHIN ASPHALT AREAS, THE CONCRETE APRON MAY BE ELIMINATED AND REPLACED BY DEPRESSED PAVEMENT)



GRATE UNIT NO. 39

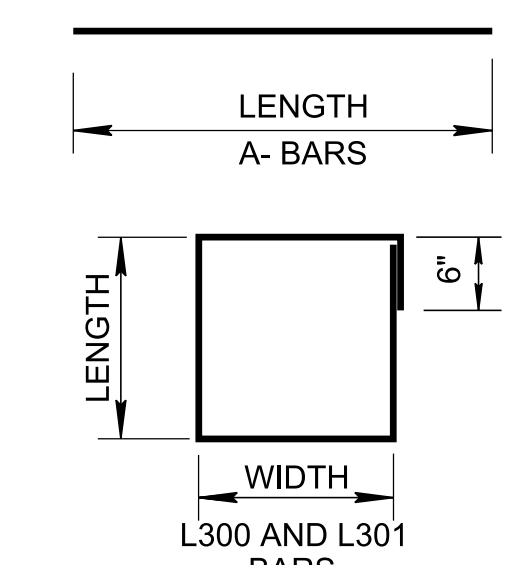
GRATE UNIT NO. 38

REFER TO STANDARD DRAWINGS D-RS-1 FOR ROUND STRUCTURES AND D-RL-1 FOR ROUND LIDS FOR GENERAL NOTES, ITEM NUMBERS AND DIMENSION INFORMATION.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

MATERIAL: STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 GRADE B OR ASTM A500 GRADE B AND ALL SHALL BE GALVANIZED.

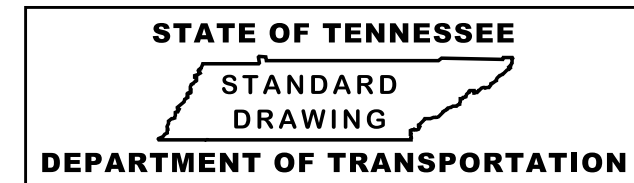
GRATE UNITS ARE STRUCTURALLY DESIGNED BASED ON HS20 LOADING.



BAR SHAPE LEGEND
SEE DIMENSIONS IN TABLE

ROUND STRUCTURE INSIDE DIA. (ID)	WALL THICKNESS	STRUCTURE NUMBER	LID DIA.	MIN. STEEL AREA FOR BOTT. MAT WELDED WIRE REINF. (IN ² /FT)	MIN. WELDED WIRE REINF. SPACING (4" MAX.) & SIZE	C	G	H	J	A-BAR SIZE	A1 BAR LENGTH	A2 BAR LENGTH	A3 BAR LENGTH	INTERIOR L300 BAR LENGTH & WIDTH	EXTERIOR L301 BAR LENGTH & WIDTH
60"	6"	38RB	6'-0"	0.20	4x4-D7xD7	2'-8"	10"	4"	3 1/2"	(2) #4	1'-10"	4'-9"	4'-9"		
	6"	42RB	6'-0"	0.20	4x4-D7xD7	2'-8"	10"	4"	2 1/2"	(2) #4	1'-10"	4'-9"	4'-9"	3'-4"	3'-10"
	7"	38RB	7'-2"	0.26	4x4-D9xD9	2'-8"	10"	4"	3 1/2"	(2) #4	1'-10"	5'-6"	5'-6"		
72"	7"	42RB	7'-2"	0.26	4x4-D9xD9	2'-8"	10"	4"	2 1/2"	(2) #4	1'-10"	5'-6"	5'-6"	3'-4"	3'-10"
	8"	38RB	8'-4"	0.33	4x4-D11xD11	2'-8"	10"	4"	3 1/2"	(2) #4	1'-10"	5'-6"	5'-6"		
	8"	42RB	8'-4"	0.33	4x4-D11xD11	2'-8"	10"	4"	2 1/2"	(2) #4	1'-10"	5'-6"	5'-6"	3'-4"	3'-10"
84"	8"	39RB	8'-4"	0.28	4x4-D10xD10	4'-0"	10"	4 1/2"	4 1/2"	(2) #4	1'-10"	6'-8"	6'-8"		
	9"	38RB	9'-6"	0.39	4x4-D13xD13	2'-8"	10"	4"	3 1/2"	(2) #4	1'-10"	5'-6"	5'-6"		
	9"	42RB	9'-6"	0.39	4x4-D13xD13	2'-8"	10"	4"	2 1/2"	(2) #4	1'-10"	5'-6"	5'-6"	3'-4"	3'-10"
96"	9"	39RB	9'-6"	0.32	4x4-D11xD11	4'-0"	11"	4 1/2"	4 1/2"	(2) #4	1'-10"	6'-10"	6'-10"		
	10"	38RB	10'-8"	0.44	4x4-D15xD15	2'-8"	10"	4"	3 1/2"	(2) #4	1'-10"	5'-6"	5'-6"		
	10"	42RB	10'-8"	0.44	4x4-D15xD15	2'-8"	10"	4"	2 1/2"	(2) #4	1'-10"	5'-6"	5'-6"	3'-4"	3'-10"
108"	10"	39RB	10'-8"	0.39	4x4-D13xD13	4'-0"	11"	4 1/2"	4 1/2"	(2) #4	1'-10"	6'-10"	6'-10"		
	11"	38RB	11'-10"	0.49	4x4-D17xD17	2'-8"	10"	4"	3 1/2"	(2) #5	2'-4"	6'-0"	6'-0"		
	11"	42RB	11'-10"	0.49	4x4-D17xD17	2'-8"	10"	4"	2 1/2"	(2) #5	2'-4"	6'-0"	6'-0"	3'-4"	3'-10"
120"	11"	38RB	11'-10"	0.47	4x4-D16xD16	4'-0"	11"	4 1/2"	4 1/2"	(2) #5	2'-4"	7'-4"	7'-4"		
	11"	42RB	11'-10"	0.47	4x4-D16xD16	4'-0"	11"	4 1/2"	4 1/2"	(2) #5	2'-4"	7'-4"	7'-4"		

BOTTOM MAT OF WELDED WIRE REINFORCEMENT (WWR) SHALL HAVE A MAXIMUM SPACING OF 4 INCHES IN EACH DIRECTION. IF REBAR IS USED, MAX. SPACING = 12" EACH DIRECTION. TOP MAT OF WWR SHALL HAVE A MINIMUM OF 0.12 SQ. INCH IN EACH DIRECTION. SPACING 4 MAX. (4 x 4 - D4 x D4).



**ROUND LID DETAILS
FOR SINGLE OPENING
AREA DRAIN**