Top Dry Autoflow Construction Manual 21',24', 33', 36'

PNEG-1276

Construction & Owner's Manual

7/30/2002

GSI

a division of

THE GSI GROUP

Table of Contents

SAFETY GUIDELINES

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting ***personal safety*** and ***preventing equipment problems***. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidlines.To help you recognize this information, we use the symbols that are defined below.
Please read the manual and pay attention to these sections. Failure to read this manual and it's safety instructions is a misuse of the equipment and may lead to serious injury or death.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION **CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTE **NOTE** indicates information about the equipment that you should pay special attention to.

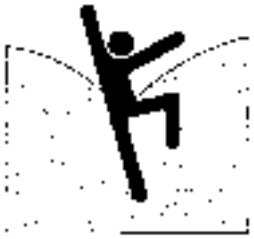
GSI DOES NOT WARRANT ANY ROOF DAMAGE CAUSED BY EXCESSIVE VACUUM OR INTERNAL PRESSURE FROM FANS OR OTHER AIR MOVING SYSTEMS. ADEQUATE VENTILATION AND/OR "MAKEUP AIR" DEVICES SHOULD BE PROVIDED FOR ALL POWERED AIR HANDLING SYSTEMS. GSI DOES NOT RECOMMEND THE USE OF DOWNWARD FLOW SYSTEMS (SUCTION). SEVERE ROOF DAMAGE CAN RESULT FROM ANY BLOCKAGE OF AIR PASSAGES. RUNNING FANS DURING HIGH HUMIDITY/COLD WEATHER CONDITIONS CAN CAUSE AIR EXHAUST OR INTAKE PORTS TO FREEZE.

ATTENTION: The decal shown below should be present on the inside of the door cover of the two ring, 24" porthole door cover and the roof manway cover.

Grain Systems
1004 East Illinois Street
Assumption, Il. 62510-0020
(217) 226-4421

DANGER

Rotating flighting can kill or dismember.



Flowing material can trap and suffocate.

Crusted material can collapse and suffocate.

Keep clear of all augers. DO NOT ENTER this bin!

If you must enter this bin:

1. Shut off and lock out all power.
2. Use safety harness and safety line.
3. Station another person outside the bin.
4. Avoid the center of the bin.
5. Wear proper breathing equipment or respirator.

Failure to heed these warnings will result in serious injury or death

ATTENTION: The decal shown below should be present on the outside of the door cover of the two ring, 24" porthole door cover and the roof manway cover.

Grain Systems
1004 East Illinois Street
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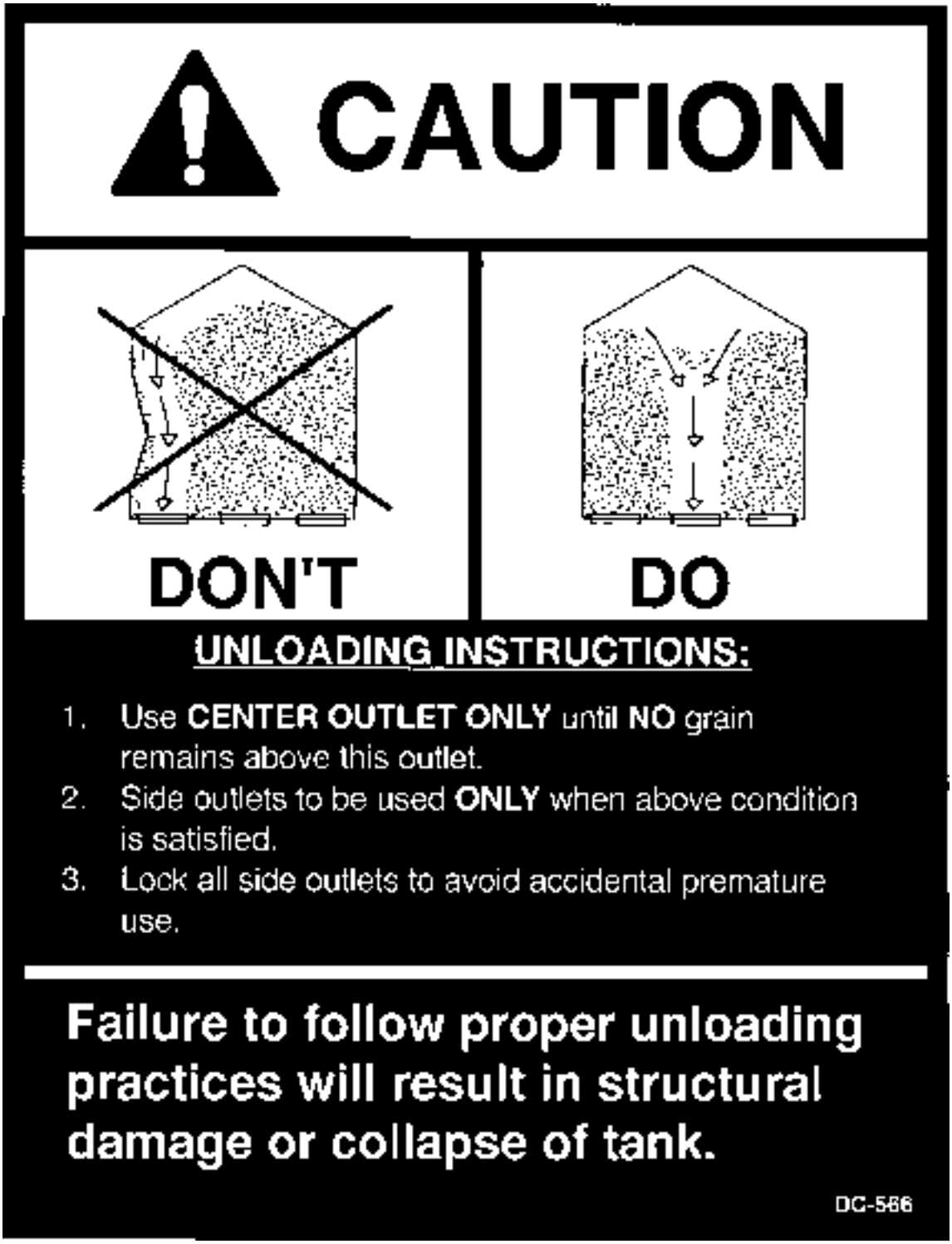


Foundation Requirements for Top Dry Bins (4.00" "Top Dry" BIN CORRUGATION)

1. REQUIREMENTS:

The following foundation recommendations are a revision to earlier manuals distributed by The GSI Group, Inc.

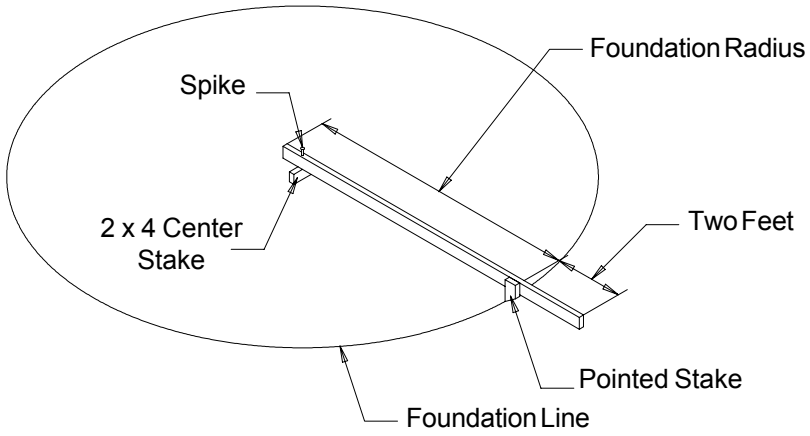
Note: There are changes in foundation dimensions from past publications. These dimensions are critical to the proper installation and function of each foundation.

2. SELECTING THE PROPER SITE:

The selected site should be level, firm, and free from underlying debris. The bin can be installed satisfactorily on slopes, but as the slope increases, additional labor and materials are required for the foundation. The concrete foundation surface must be level. If some fill is required, it should be watered and tamped thoroughly to prevent uneven settling from the weight of the bin. Naturally, the site must allow convenient access for easy loading and unloading, plus provide additional space for future units. Also consider the positioning of handling equipment, availability of electricity, and the placement of fans, heaters, and gas tanks.

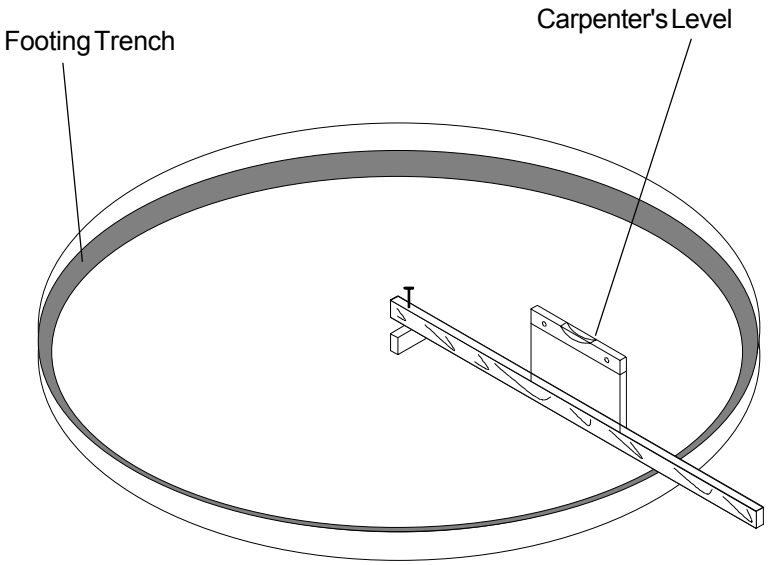
3. SCRIBE THE DIAMETER

Having determined the center of the site, drive a small 2 x 4 in the ground to mark the center point of the foundation. The top of the stake should be the same height as the finished foundation will be. U sing one large spike, nail a straight 2 x 4 (approximately 2 ft. longer than the radius of the bin) to the top of the center spike. The swiveling 2 x 4 will act as a compass, enabling you to scribe the correct diameter of your foundation and later locate the anchor and stiffener bolt locations. (Note: Making the 2 x 4 two feet longer than the radius allow the 2 x 4 to also be used as a leveling device and for pulling concrete).



4. PREPARE THE FOUNDATION FORMS

Having scribed the diameter of your foundation, proceed by digging the foundation's footing. This consist of a large circular trench dug inside the foundation line, (Refer to foundation details for
necessary information). Once the footing has been dug, you are ready to build the forms. It is important that your forms be rigid enough to hold its shape against the poured concrete. Also, the foundation must be flat. Sloped floors cannot be used in drying bins. A carpenter's level placed on top of your compass 2 x 4 will enable you to set the top of the forms to match the top of the center stake. Check the form work with a transit to insure a uniform elevation for the entire foundation. The foundation should be level within 1/8" on non-stiffened tanks and 1/4" on stiffened tanks at bin wall perimeter. Stiffened tanks must be shimmed level.

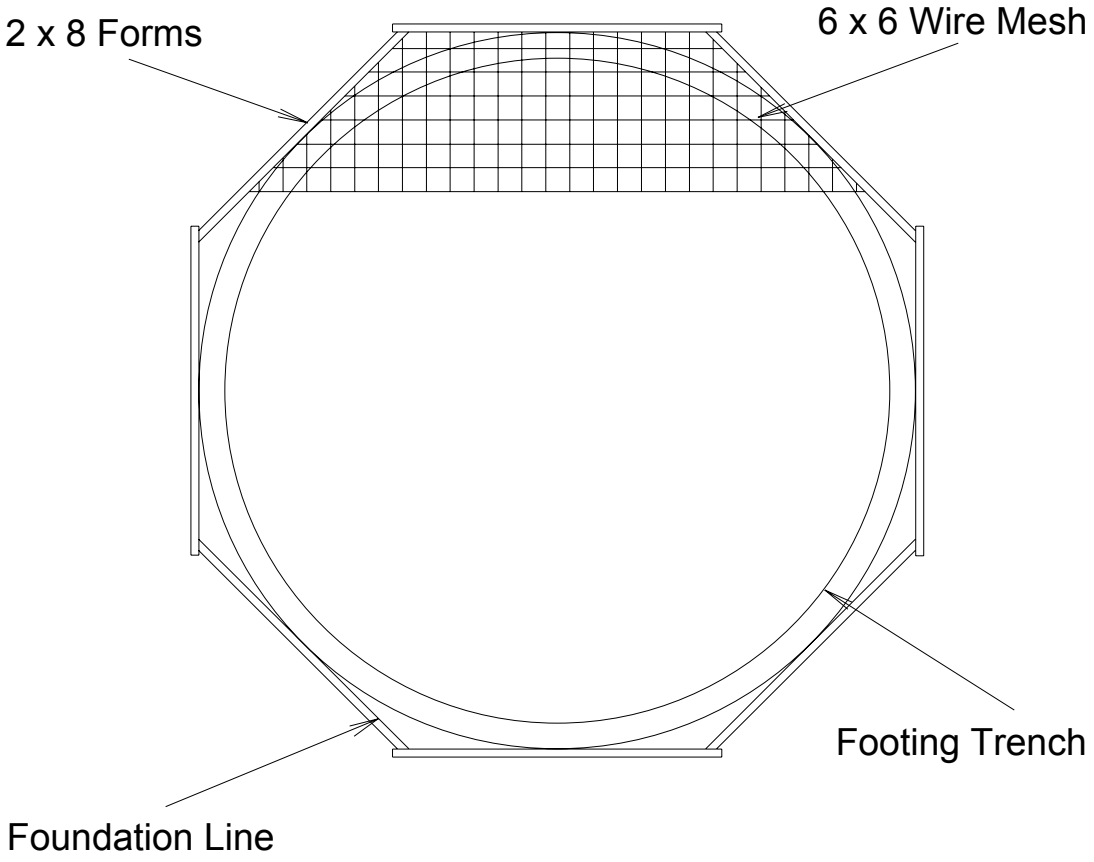


All foundation specifications shall be construed as recommendations only. Becauseof the many variable conditions in actual installation, The GSI Group, Inc. assumes no liability for results arising from the use of such recommendations.

(ALTERNATE FOUNDATION FORMS)

There are two styles of foundation forms commonly used. The first is the circular form shown on the previous page. The second style of foundation can be made of 2" x 8" boards set into a square with the corners blocked off to form an octagon. This eight sided form will approximate a circle and can also be constructed easily.

Second sytle of foundation



**** All concrete to have a minimum compressive strength of 3,000 psi @ 28 days.***

5. PLACE THE REINFORCEMENT

Once the forms and trench have been prepared, begin the placement of reinforcement rods at various levels in your foundation's footing. See the appropriate charts and drawings for your bin to determine requirements and positions of the reinforcement. The reinforcement rods offer their greatest strength when lapped properly and connected by wiring or welding. Next, place a minimum of 2" of compacted sand on the inside section of the foundation to provide a good base for the concrete and protect against rodents. The sand should then be covered with 4 mil polyethylene plastic which will act as a moisture barrier. Two layers of 6 x 6 wire mesh should then be added to the entire area of the foundation to complete your preparation of the bin's foundation.

INLINE CENTRIFUGAL FAN PAD

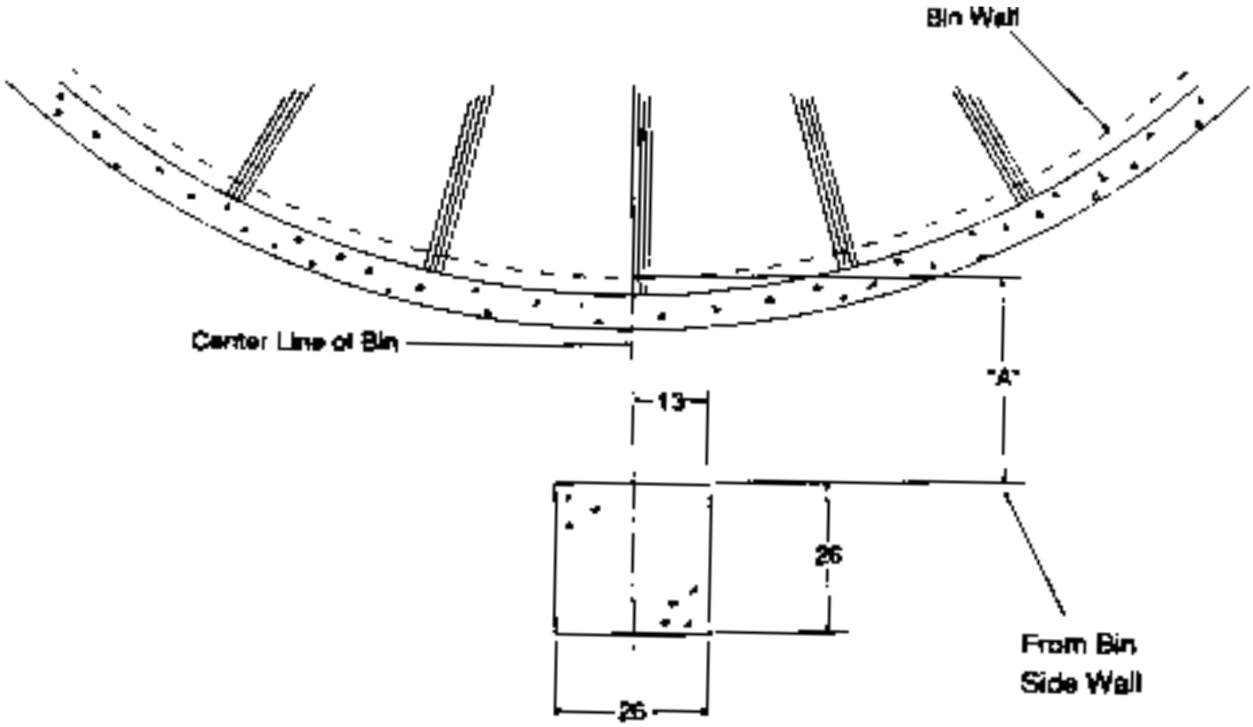
6. PLACEMENT OF THE FAN PAD: G.S.I TRANSITIONS / FANS ONLY.

If a fan is to be installed, refer to the following diagram to determine the concrete pad size.

The top of this pad should be level with the top of the bin's foundation.
Recommended pad thickness is 4" minimum.
Front of pad should be perpendicular to bin wall.
Pad for heater not required.

IMPORTANT!

FAN PAD AND FAN MUST BE LEVEL AND SMOOTH FOR PROPER OPERATION. VIBRATION PROBLEMS CAN RESULT FROM IMPROPER FAN LEVELING.



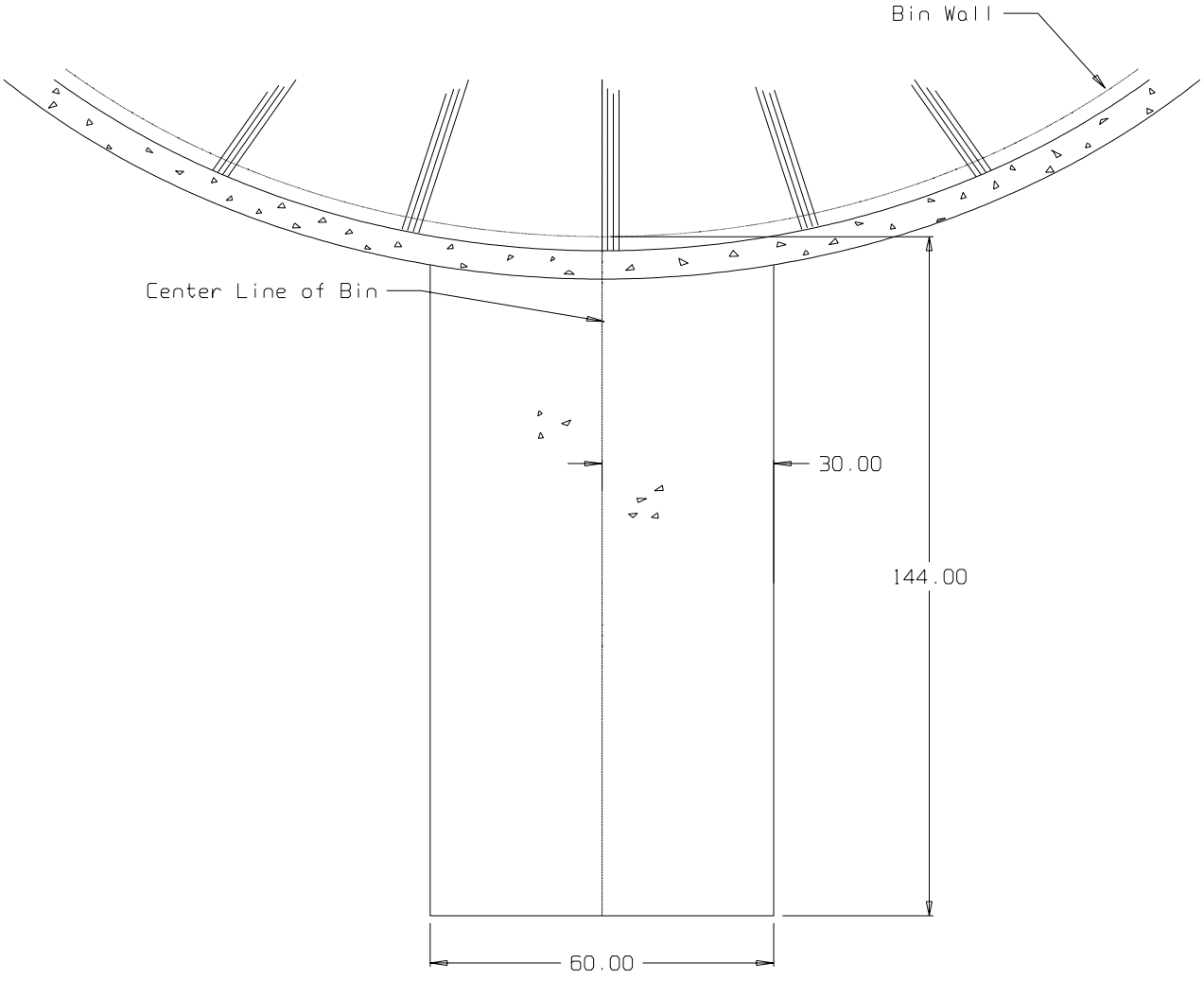
TR-4734
A=22" for fans without heaters

TR-7048
A=48" for fans without heaters

DUCT & DRYING FAN PAD
OPTIONAL

7. PLACEMENT OF THE DUCT FAN PAD: G.S.I TTOP DRY DUCT SYSTEM ONLY.

Refere to the following diagram to determine the duct pad size.
The top of this pad should be level with the top of the bin's foundation.
Recommended pad thickness is 4" minimum.
Front of pad should be perpendicular to bin wall.

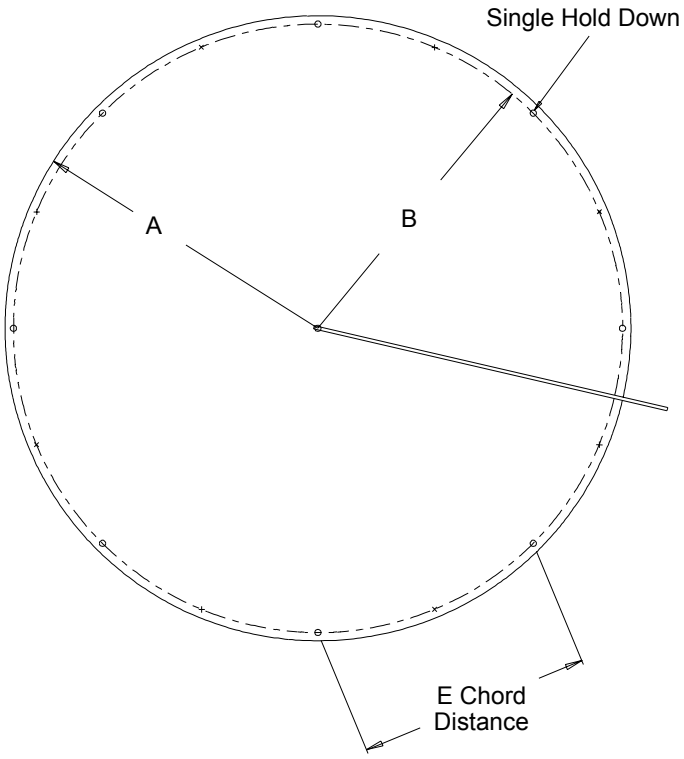


Anchor Bolt Placement

Having poured and leveled the concrete, use the center stake and straight 2 x 4 again to find the bolt circle radius for the outside hold down brackets. Select a starting point and stretch a premeasured chord along the imaginary circle formed by the bolt circle radius. Take into consideration the placement of these bolts so as not to interfere with the positions of bin doors and transitions. (Refer to the following chart for necessary radii and chord lengths.) Take your time and work carefully since accuracy is important.

NOTE: Top edge of slab where the bin wall sets must be held to within 1/8" of level.

Bin Dia	"B" Bolt Circle Radius	No. of Anchors	"E" Chord Distance
12'	6'-3.1/4"	8	4'-9.9/16"
15'	7'-9.1/8"	10	4'-9.9/16"
18'	9'-3.1/16"	12	4'-9.1/2"
21'	10'-8.15/16	14	4'-9.3/8"
24'	12'-2.7/8"	16	4'-9.5/16"
27'	13'-8.3/4"	18	4'-9.1/4"
30'	15'-2.11/16"	20	4'-9.1/8"
33'	16'-8.9/16"	22	4'-9.1/16"
36'	18'-2.1/2"	24	4'-9.1/16"
42'	21'-2.5/16"	28	4'-8.15/16"
48'	24'-2.1/8"	32	4'-8.7/8"
54'	27'-1.15/16"	36	4'-8.13/16"
60'	30'-1.3/4"	40	4'-8.3/4"



FROST FREE PAD
(TOPDRY BINS)

Notes:

1. Foundation site should be well drained and free of vegetation or debris.

2. Foundation design is based on a minimum soil bearing capacity of 3000 psf. If soil bearing capacity is in doubt, contact a local soil testing engineer.

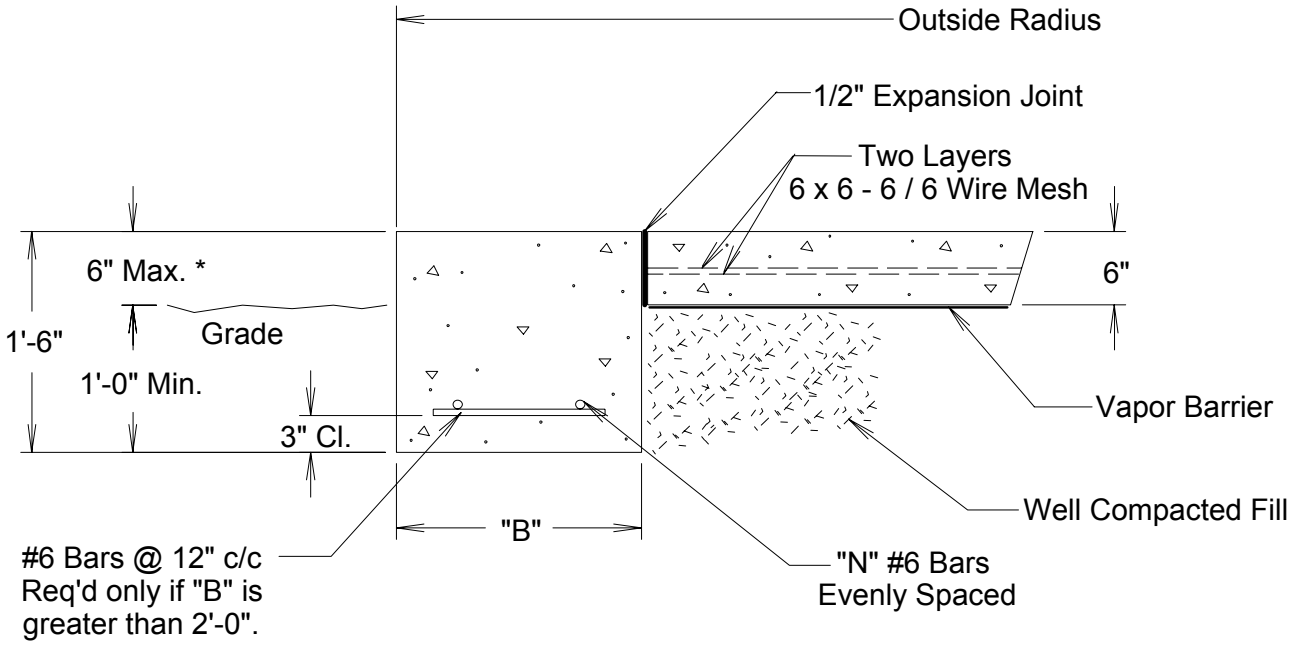
3. Concrete shall have a minimum compressive strength of 3000 psi at 28 days.

4. Requirements for reinforcement do not include overlap.

5. Lap all circumferential bars 35 bar diameters and stagger all laps in plan 3'-0".

6. All material used for backfill inside the ring wall should be clean, well graded, crushed stone of sand-gravel mixture. Backfill should be placed is 6" lifts and well compacted.

7. The optional #4 rebar grid can be substituted for the wire mesh in most cases. Place the #4 bars in the pad in an 18" x 18" grid.



* Contact GSI Engineering for heights greater than 6".

FROST FREE FOUNDATION
TOP DRY BINS

Diameter of Bin: 21'
Corrugation: 4.00"

Ring No.	B	N	OutSide Radius	Sq. Ft. Mesh 6x6 -6/6	Optional #4 18"x18"Grid(ft.)	Length #6 Bar (ft.)	Total Cu.Yds. Concrete
6	1 ft. 1 in.	2	11 ft. 3 in.	700	500	200	11
7,8	1 ft. 7 in.	2	11 ft. 3 in.	700	500	200	12

Diameter of Bin: 24'
Corrugation: 4.00"

Ring No.	B	N	Outside Radius	Sq. Ft. Mesh 6x6-6/6	Optional #4 18"x18" Grid (ft.)	Length #6 Bar (ft.)	Total Cu. Yds. Concrete
6	1 ft. 1 in.	2	12 ft. 9 in.	900	600	200	13
7,8	1 ft. 9 in.	2	12 ft. 9 in.	900	600	200	15
9,10	2 ft. 6 in.	3	13 ft. 2 in.	900	600	400	18

Diameter of Bin: 30'
Corrugation: 4.00"

Ring No.	B	N	Outside Radius	Sq. Ft. Mesh 6x6-6/6	Optional #4 18"x18" Grid (ft.)	Length #6 Bar (ft.)	Total Cu. Yds. Concrete
6	1 ft. 2 in.	2	15 ft. 9 in.	1400	900	200	19
7,8	1 ft. 10 in.	2	15 ft. 10 in.	1400	900	200	21
9,10	2 ft. 8 in.	3	16 ft. 1 in.	1400	900	500	25
11	3 ft. 8 in.	4	16 ft. 5 in.	1400	900	700	29

Diameter of Bin: 36'
Corrugation: 4.00"

Ring No.	B	N	Outside Radius	Sq. Ft. Mesh 6x6-6/6	Optional #4 18"x18" Grid (ft.)	Length #6 Bar (ft.)	Total Cu. Yds. Concrete
6	1 ft. 3 in.	2	18 ft. 9 in.	2000	1300	300	26
7,8	2 ft. 0 in.	2	18 ft. 11 in.	2000	1300	400	30
9,10	2 ft. 10 in.	3	19 ft. 0 in.	2000	1300	600	33
11,12	3 ft. 11 in.	4	19 ft. 6 in.	2000	1300	900	39

Hardware/Bolting Requirements

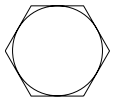
- Grade 2 bolts are designated with a plain head.

- Grade 5 bolts are designatedby 3 slash marks on the head.All 5/16" diameter bolts are to be Grade 5 or higher.

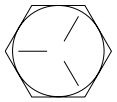
- Grade 8 bolts are designated by 6 slash marks on the head.

- Grade 8.2 bolts are designated by 6 slash marks on the head in a sunrisepattern. All 3/8" diameter bolts are to be Grade 8 or 8.2.

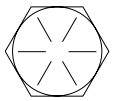
IMPORTANT: Do not tighten bolts to exceed the torque specifications listed below.



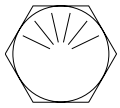
Grade 2



Grade 5



Grade 8

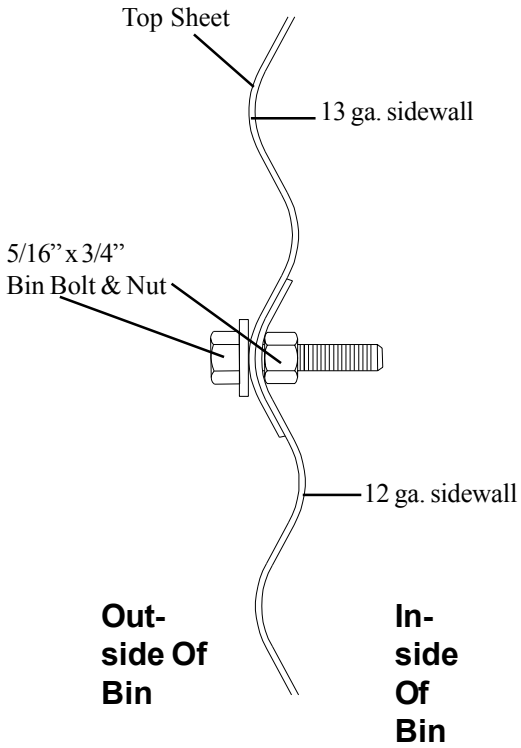


Grade 8.2

Important Hardware Usage

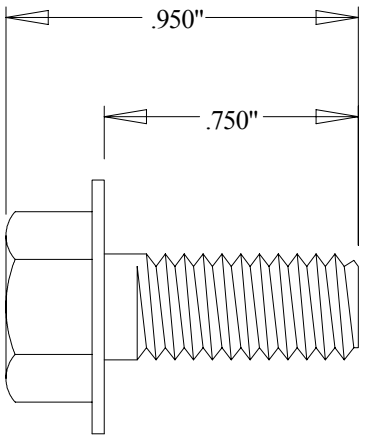
- 20 gauge through 15 gauge sidewall sheets, use 5/16” x 3/4” bolts and nuts. (S-275)
- 14 gauge and 13 gauge sidewall sheets, use 5/16” x 3/4” bolts and nuts. (S-275)
- Use 5/16” x 1 1/4” (S-277) for attaching floor flashing to the sidewall.

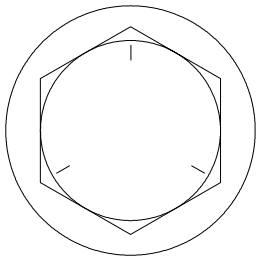
BOLT SIZE	TORQUE (ft. lb.) MINIMUM	MAXIMUM
5/16" - 18	15	20
3/8" - 16	35	42
7/16" - 14	65	72
1/2" - 13	95	105



CAUTION: UNDER NO CONDITION SHALL ANY OTHER BOLTS BE SUBSTITUTED FOR THOSE SUPPLIED BY GRAIN SYSTEMS, INC.

REFER TO TOP DRY TANK BOLTING REQUIREMENTS FOR COMPLETE BOLT USAGE





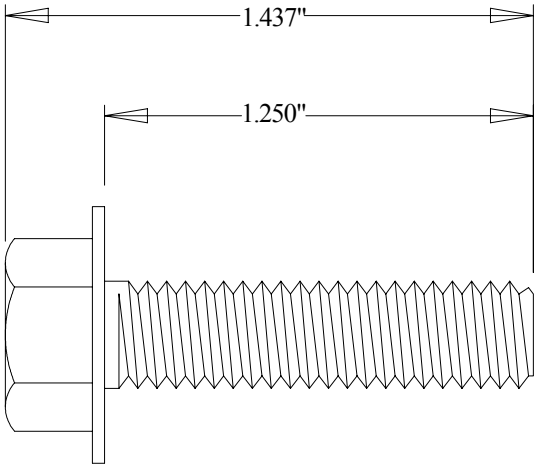
GRADE 5

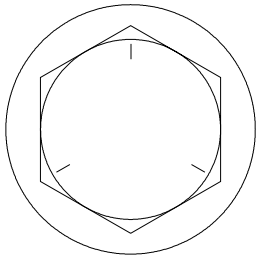
SIDE VIEW **TOP VIEW**

S-275

.3125" x .750" pre-assembled with a steel backed neoprene washer.

This bolt is used to connect horizontal and vertical seams for 13 gage and thinner sidewall sheets to each other, and to bolt the stiffeners to the sidewall sheets. It is also used in attaching roof panels to the top sidewall sheet and attaching roof panels and flashing to the center collar.





GRADE 5

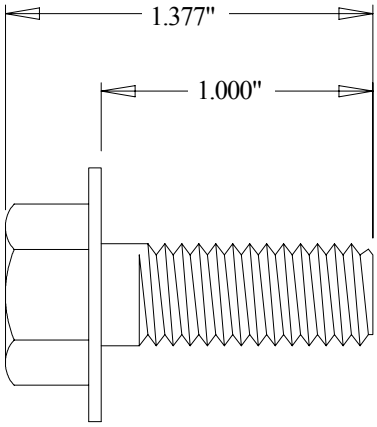
SIDE VIEW **TOP VIEW**

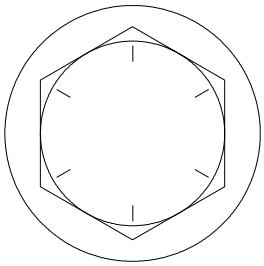
S-277

.3125" x 1.250" pre-assembled with a steel backed neoprene washer.

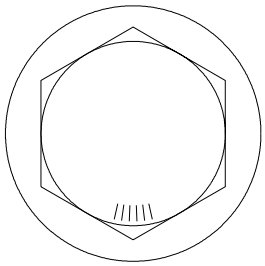
This bolt is primarily used to connect roof panels together where they overlap. It is also used at the bottom of the flat bottomed bins to attach the base angle to the sidewall sheet. A small number of these are provided for joints and FC-42076 splice plates for the stiffeners to sidewall connection.

REFER TO TOP DRY TANK BOLTING REQUIREMENTS FOR COMPLETE BOLT USAGE





GRADE 8



GRADE 8.2

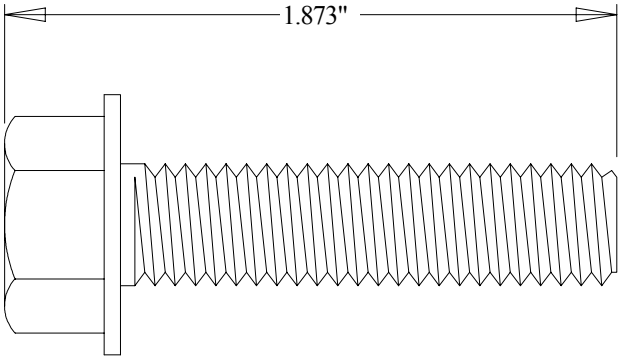
SIDE VIEW

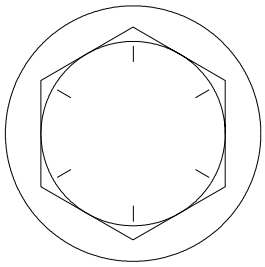
TOP VIEW

S-7927

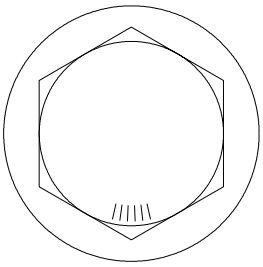
.375" x 1.000" hex flanged head **without** a plastic sealing washer.

This bolt is used to splice the stiffeners together on the flanges. A steel flat washer is used on the nut side of the connection. They are also used on "c" channel splices and mounting "c" channel to wall bracket.





GRADE 8



GRADE 8.2

SIDE VIEW

TOP VIEW

S-7928

.375" x 1.500" hex flanged head **without** a plastic sealing washer.

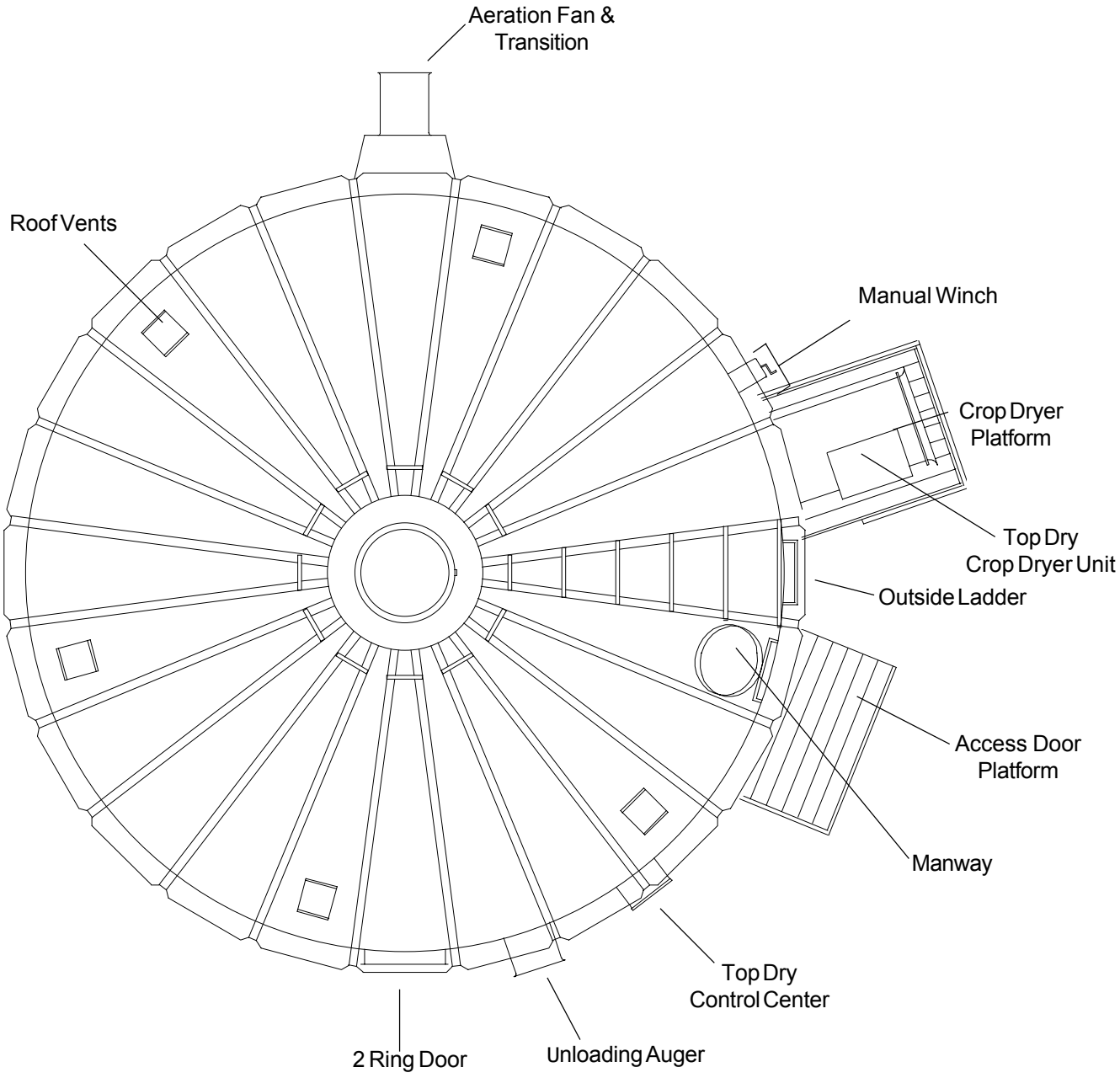
This bolt is used to attach the wall bracket to the sidewall and stiffener. A steel flat washer is used on the nut side of the connection.

Note: The only washers shipped loose with the bins are the steel flat washers. The 5/16" steel flat washer (S-845) is used where the base angle attaches to the sheet and some are used at the main eave clips. The 3/8" steel flat washers (S-248) are used at the stiffener splices and some are used in the roof rafter splices.

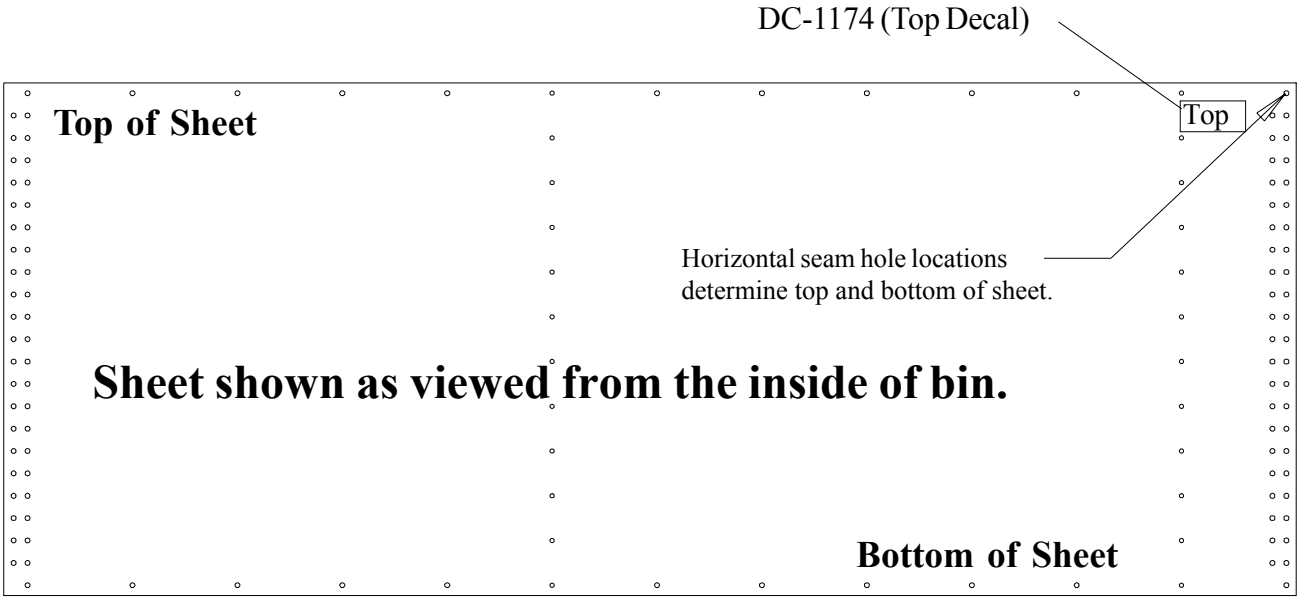
LOCATION OF ACCESSORIES

Below is a typical Top Dry bin layout showing suggested locations of Top Dry Accessories. When locating the manway be sure the outside ladder will not interfere with other accessories below. Roof vents should be spaced evenly around the roof. (Quantity will vary with individual systems.)

NOTE: The Top Dry system should be provided with a dependable equipment ground.



VERY IMPORTANT!



All 4.00" corrugated sidewall sheets must be placed correctly.

All 4.00" corrugated sidewall sheets have a top and bottom!

Failure to observe this will not allow the door to fit properly.

Carefully review the erection manual and place sidewall sheets as shown.

SIDEWALL GAUGES

TANK DIA. (FT.)	NUMBER OF RINGS OF SIDEWALL	Sidew all Base Ring	Sidew all Ring #2	Sidew all Ring #3	Sidew all Ring #4	Sidew all Ring #5	Sidew all Ring #6	Sidew all Ring #7	Sidew all Ring #8	Sidew all Ring #9	Sidew all Ring #10	Sidew all Ring #11
21	5	20ga	20ga	20ga	20ga	20ga						
21	6	20ga	20ga	20ga	20ga	20ga	20ga					
21	7	20ga	20ga	20ga	20ga	20ga	20ga	20ga				
21	8	18ga	20ga	20ga	20ga	20ga	20ga	20ga	20ga			
24	5	20ga	20ga	20ga	20ga	20ga						
24	6	20ga	20ga	20ga	20ga	20ga	20ga					
24	7	18ga	20ga	20ga	20ga	20ga	20ga	20ga				
24	8	18ga	18ga	20ga	20ga	20ga	20ga	20ga	20ga			
24	9	17ga	18ga	18ga	20ga	20ga	20ga	20ga	20ga	20ga		
24	10	17ga	17ga	18ga	18ga	18ga	20ga	20ga	20ga	20ga	20ga	
30	5	18ga	18ga	18ga	18ga	20ga						
30	6	18ga	18ga	18ga	18ga	18ga	20ga					
30	7	17ga	18ga	18ga	18ga	18ga	18ga	20ga				
30	8	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga			
30	9	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga		
30	10	16ga	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga	
30	11	16ga	17ga	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga
36	5	17ga	18ga	18ga	18ga	20ga						
36	6	17ga	18ga	18ga	18ga	18ga	20ga					
36	7	16ga	17ga	18ga	18ga	18ga	18ga	20ga				
36	8	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga			
36	9	16ga	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga		
36	10	15ga	16ga	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga	
36	11	14ga	15ga	15ga	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga

NOTE: Fan Entrance sheets and Plenum Access door sheets are located in the second ring from the top of the bin, just below the upper drying floor.

SIDEWALL ERERCTION INSTRUCTIONS

Before bolting the sidewall sheets together, check that you have the proper gauge steel for the first ring. The higher gauge numbers denote the thinner materials. (For example, 22 gauge material is thinner than 14 gauge.) In erecting most grain bins the thinnest material usually goes on top, therefore the first sidewall ring you assemble will be the top ring of your bin. Check the various gauges of your bin with the Color Code Chart and beging buildin accordingly REMEMBER.....Assemble the top ring first.

GAUGE	COLOR CODE
22	WHITE
20	RED
19	BLACK/YELLOW
18	ORANGE
17	PINK/LIGHT BLUE
16	BLUE
15	BROWN/RED
14	GREEN
13	YELLOW/BLUE
12	BLACK
11	PINK
10	LIGHT BLUE
9	BLUE/ORANGE
8	YELLOW

Once you have selected the proper gauge material, begin assembling all sidewall sheets in the following manner: Standing on the inside the bin, place the left panel to the inside with the right panel to the outside. (See Fig. A-A). **Check to see that the sidewall sheet is "Right Side up" reference page 28 for details.**

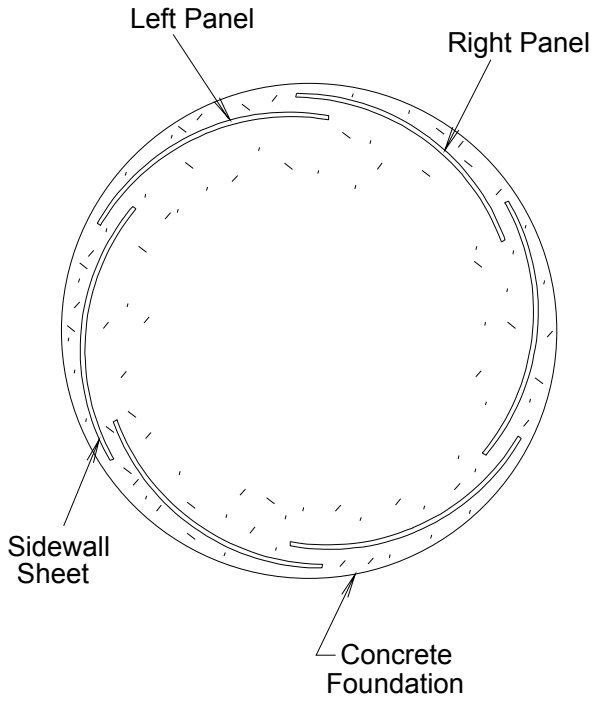
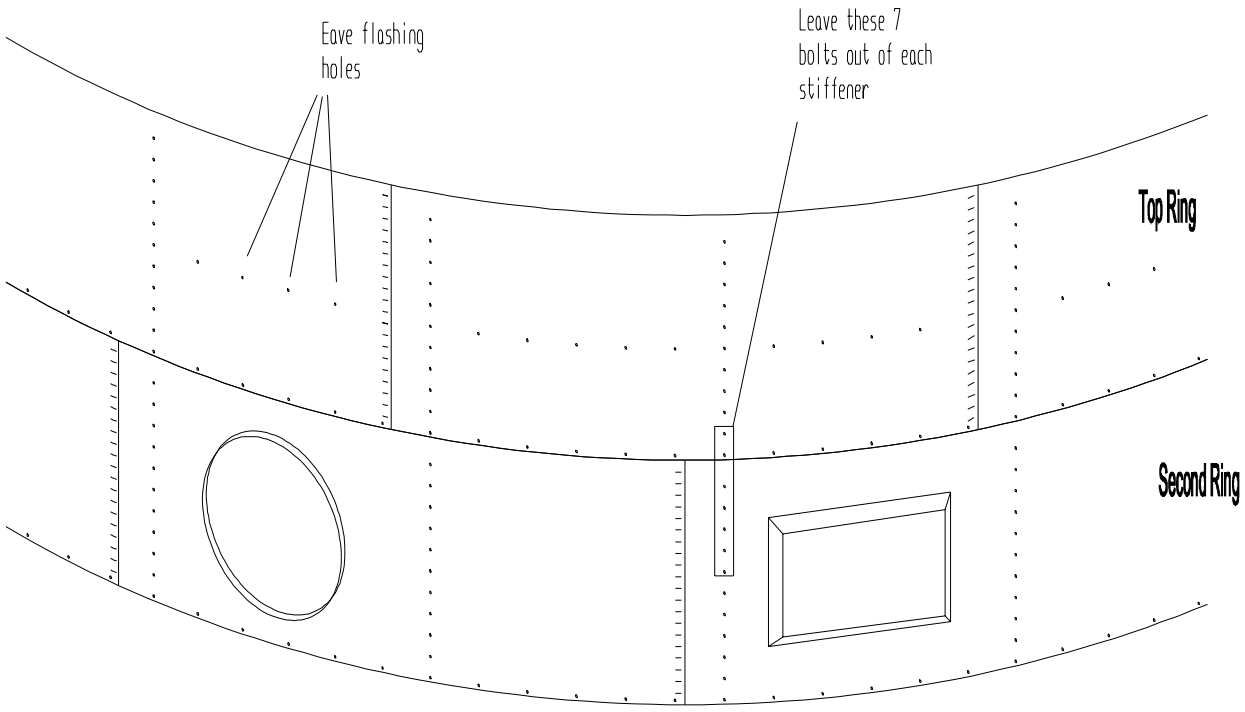


FIG. A-A

After assembling the **second ring**, lift the top ring sheets in place, add top stiffeners, build the Top Dry floor, then the roof.

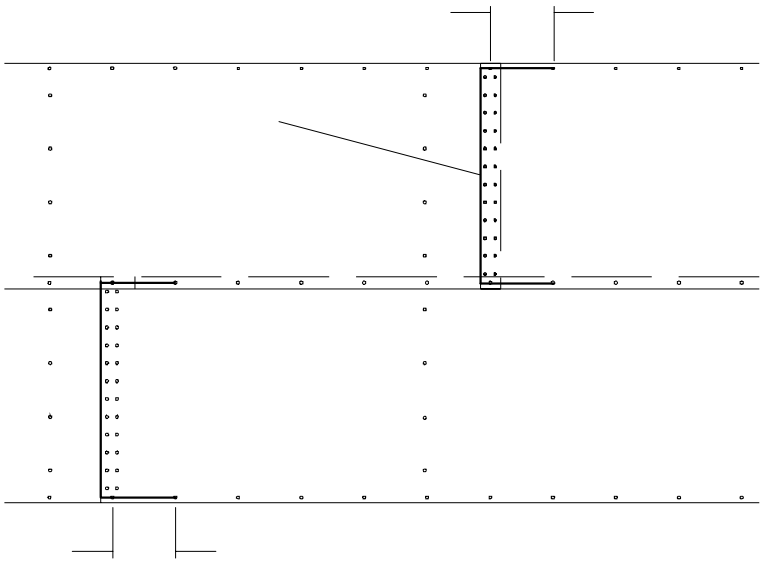
Note: The sidewall sheets used for the **top ring** are punched to accommodate the eave flashing bolts.

Note: The fan entrance sheet and access door are located in the second ring. Attach the top stiffeners, leaving out the (7) bolts indicated in Figure #15 at each stiffener location. Install the flashing bolts from the outside and tighten first nuton the inside of the bin.



CAULKING DETAIL

Note: The rope caulking is installed before each sheet is assembled. Apply rope caulking between the last vertical row of bolts and edge of outside sheet. There is sufficient caulking for all vertical seams on storage and drying bins. Wipe sheet clean where caulking is to be applied.

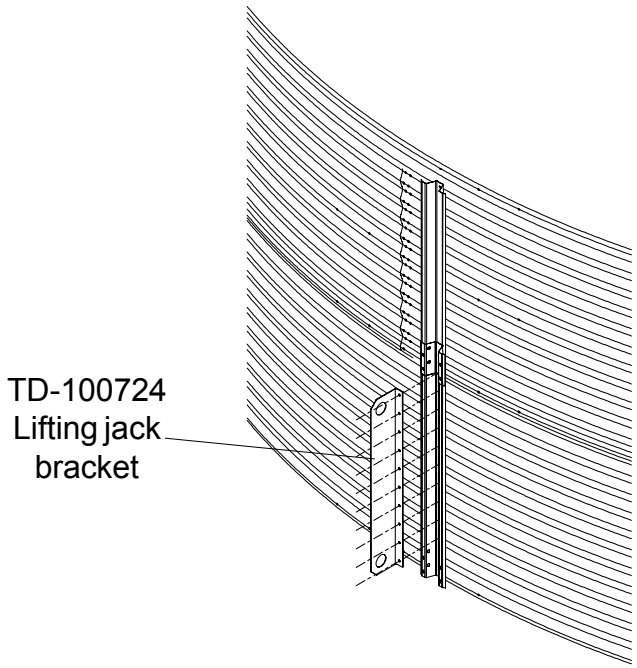


Standard Sidewall Sheets
As Viewed From Inside

Using correct size bin bolts throughout, begin assembling sidewall sheets end to end (overlapping the same way throughout) until the ring is completed. All body sheet bolts are to be installed with the bolt head and its neoprene washer to the outside, and the nut on the inside. Do not tighten bolts until all sheets are assembled and form a complete ring. Attach lifting brackets to stiffener bolt holes. These straps, coupled to the jacks will enable you to later elevate your bin. Now tighten the bolts in sequence, starting from the center and working to the edge in both directions. This permits the sidewall sheets to draw-up evenly. Complete one ring and stop. You are now ready to assemble the roof. Refer to the roof erection manual for roof assembly instructions located in roof hardware box.

LIFTING JACKS & BRACKETS

NOTE: The number of lifting jacks required is best determined by personal experience. Factors such as bin size, soil compaction, wind velocity, jack design, etc., are all to be considered when deciding how many to use. If in doubt, use one jack on every other stiffener. GSI recommends heavy duty jacks rated at 6,000 lbs. or more.

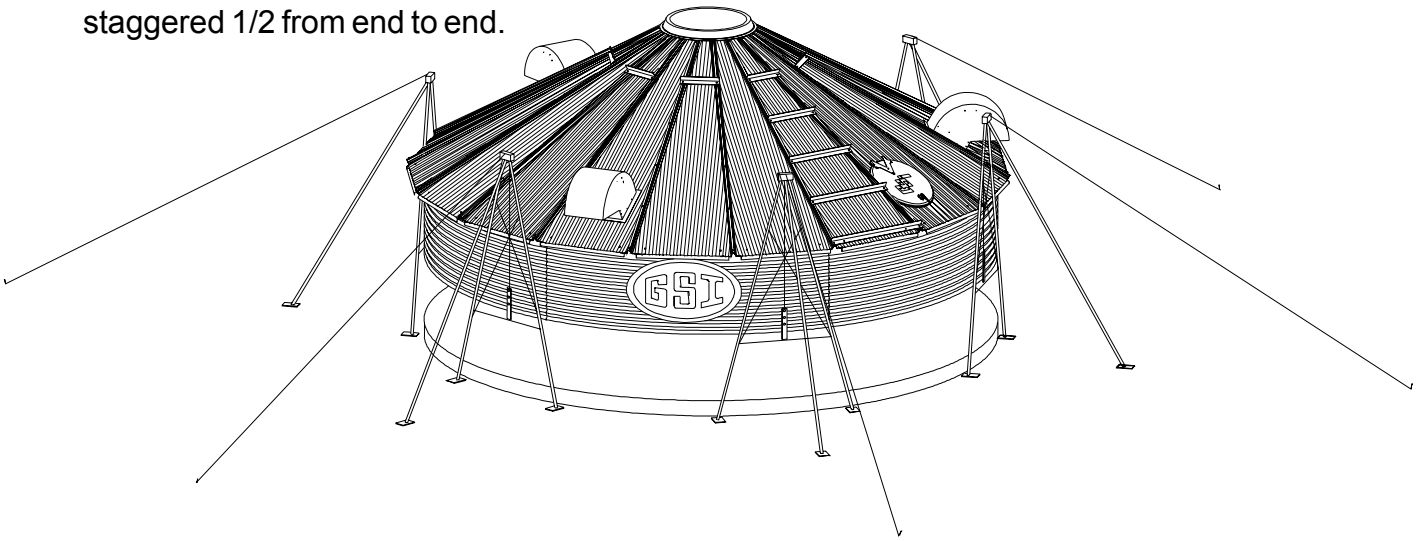


Lifting Jack Usage

Give some thought before starting your bin on location of door and other accessories. Proper placement of lifting jacks in relationship to anchor bolts could make a difference on odd or even ring bins. Walk-thru door is centered between two stiffener anchor bolts. The sidewall sheets are also staggered 1/2 from end to end.

WARNING!!

The number of lifting jacks required is best determined by personal experience. Factors such as bin size, soil compaction, wind velocity, jack design, etc. are all to be considered when deciding how many to use. If in doubt, use one jack on every vertical seam. Be sure to use Heavy Duty jacks for commercial installation.



Lifting brackets should be attached to the stiffeners. Normally you will need to attach to at least 4 bolts per stiffener. Anchor all jacks securely with metal stakes and cable. Now raise the bin just high enough to assemble the next ring. When lifting your bin, crank all jacks at an equal rate. This will prevent bowing previously assembled rings and make for easier hole alignment. To the inside of the first ring, bolt the next ring. Be sure to stagger the sheets and select the proper gauge material. Lower the bin on the foundation after assembling and tightening bolts on the new ring or rings. When installing Duct Work for the drying fans be sure to install it as you go up with the bin letting the duct set on the foundation before the bolts are tightened to assure proper alignment. Now rebolt the lifting straps to the lowest ring in place thus far. Continue ring additions until you are ready for door installation. You may want to leave sheets loose to make the attachment of the stiffeners easier.

NOTES:

- Add inside and outside ladders to binwalls as you continue to raise the bin.

STIFFENER GAUGES

NOMINAL DIA. OF SIDEWALL (Ft)	NUMBER OF RINGS OF SIDEWALL	Stiffener Base Ring	Stiffener Ring #2	Stiffener Ring #3	Stiffener Ring #4	Stiffener Ring #5	Stiffener Ring #6	Stiffener Ring #7	Stiffener Ring #8	Stiffener Ring #9	Stiffener Ring #10	Stiffener Ring #11
21	5		14ga	16ga	16ga	16ga						
21	6		14ga		16ga	16ga	16ga					
21	7		12ga		14ga	16ga	16ga	16ga				
21	8		12ga		14ga		16ga	16ga	16ga			
24	5		14ga	16ga	16ga	16ga						
24	6		12ga		14ga	16ga	16ga					
24	7		12ga		14ga	16ga	16ga	16ga				
24	8		12ga		14ga		12ga	16ga	16ga			
24	9		10ga		12ga		12ga	14ga	14ga	16ga		
24	10		8ga		10ga		12ga		14ga	16ga	16ga	
30	5		12ga	14ga	16ga	16ga						
30	6		12ga		14ga	16ga	16ga					
30	7		12ga		12ga	14ga	16ga	16ga				
30	8		10ga		12ga		14ga	16ga	16ga			
30	9		10ga		12ga		12ga	14ga	16ga	16ga		
30	10		8ga		10ga		12ga		14ga	16ga	16ga	
30	11		8ga		10ga		12ga		12ga	14ga	16ga	16ga
36	5		12ga	14ga	16ga	16ga						
36	6		12ga		12ga	14ga	16ga					
36	7		10ga		12ga	14ga	14ga	16ga				
36	8		10ga		12ga		12ga	14ga	16ga			
36	9		8ga		10ga		12ga	14ga	14ga	16ga		
36	10		8ga		10ga		12ga		12ga	14ga	16ga	
36	11		8ga		8ga		10ga		12ga	14ga	14ga	16ga

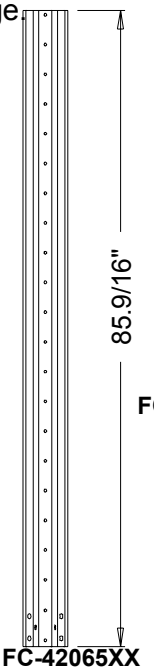
NOTE: All Top Dry Bin Stiffeners are mounted on the outside of the bin. See Stiffener instructions for stiffener joint details and stiffener to sidewall attachment.

OUTSIDE STIFFENERS

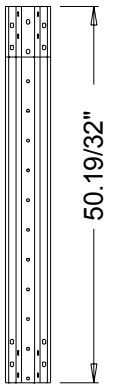
- The XX in the part numbers at the bottom will identify the Stiffener's gauge.

Example: FC-4205714 is a 2-Ring Standard Stiffener 14 Gauge

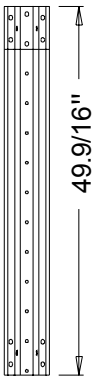
Stiffener Description	Part No.	Overall Length	Color Code
2-Ring 10 Ga. (Base)	FC-4207210	94 27/32"	White
2-Ring 12 Ga. (Base)	FC-4207212	94 27/32"	Black
2-Ring 14 Ga. (Base)	FC-4207214	94 27/32"	Green
2-Ring 16 Ga. (Base)	FC-4207216	93 13/16"	Blue
2-Ring 8 Ga. (Base)	FC-4207308	88 3/16"	Yellow
2-Ring 8 Ga.	FC-4206308	87 15/16"	Yellow
2-Ring 10 Ga. Trans.	FC-42062	94 19/32"	Purple
2-Ring 12 Ga.	FC-4205712	94 19/32"	Black
2-Ring 14 Ga.	FC-4205714	94 19/32"	Green
2-Ring 16 Ga.	FC-4207516	93 9/16"	Blue
2-Ring 18 Ga.	FC-4207518	93 9/16"	Orange
2-Ring 16 Ga. Top	FC-4206516	85 9/16"	Blue
2-Ring 18 Ga. Top	FC-4206518	85 9/16"	Orange
1-Ring 12 Ga.	FC-4205912	50 19/32"	Black
1-Ring 14 Ga.	FC-4205914	50 19/32"	Green
1-Ring 16 Ga.	FC-4207416	49 9/16"	Blue
1-Ring 18 Ga.	FC-4207418	49 9/16"	Orange
1-Ring Top 16 Ga.	FC-4206616	41 7/16"	Blue
1-Ring Top 18 Ga.	FC-4206618	41 7/16"	Orange
Splice	FC-42076	10 11/16"	---



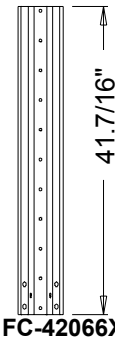
FC-42065XX
2 Ring Top
16 Ga.
18 Ga.



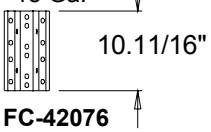
FC-42059XX
1 Ring
12 Ga.
14 Ga.



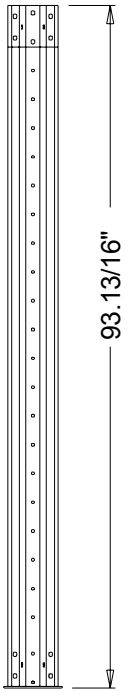
FC-42074XX
1 Ring
16 Ga.
18 Ga.



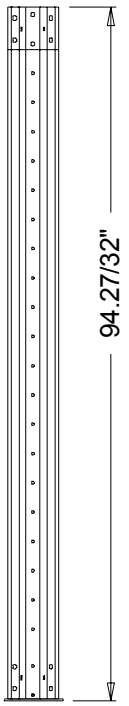
FC-42066XX
1 Ring Top
16 Ga.
18 Ga.



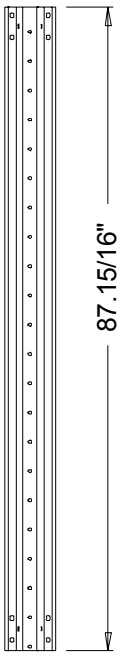
FC-42076
Splice
10 Ga.



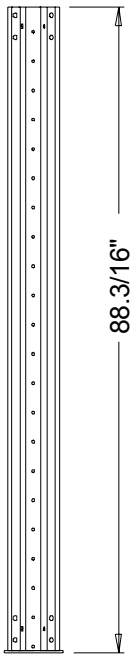
FC-4207216
2 Ring
16 Ga.
Base



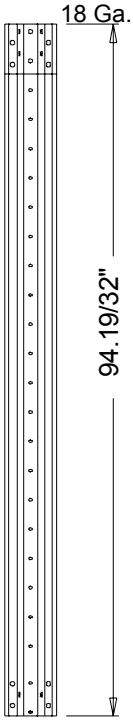
FC-42072XX
2 Ring
10 Ga.
12 Ga.
14 Ga.
Base



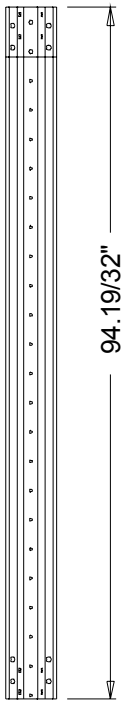
FC-4206308
2 Ring
8 Ga.



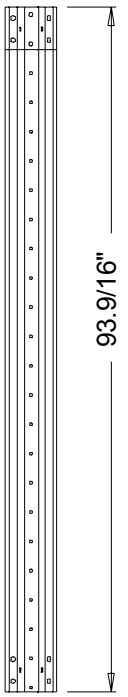
FC-42073
2 Ring
8 Ga.
Base



FC-42062
2 Ring
10 Ga.
Transitional



FC-42057XX
2 Ring
12 Ga.
14 Ga.

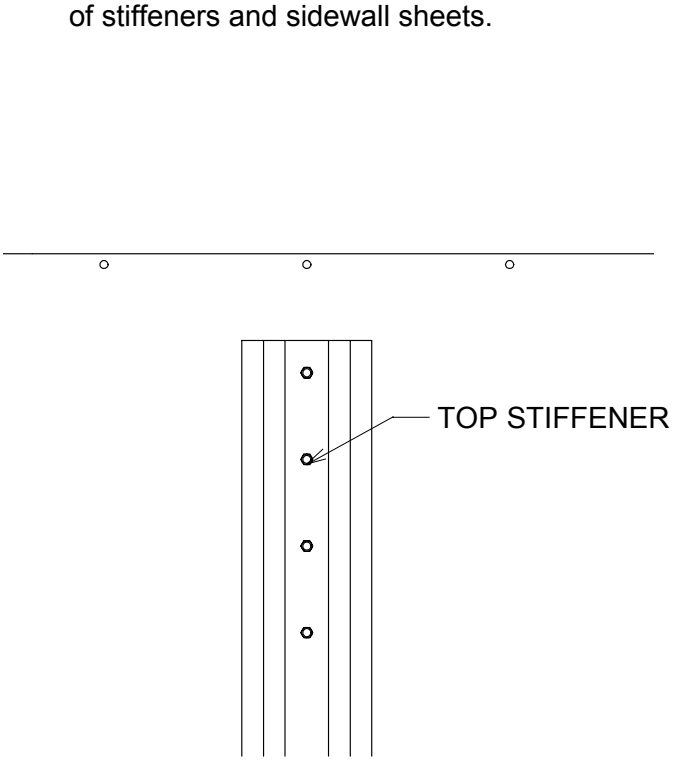


FC-42075XX
2 Ring
16 Ga.
18 Ga.

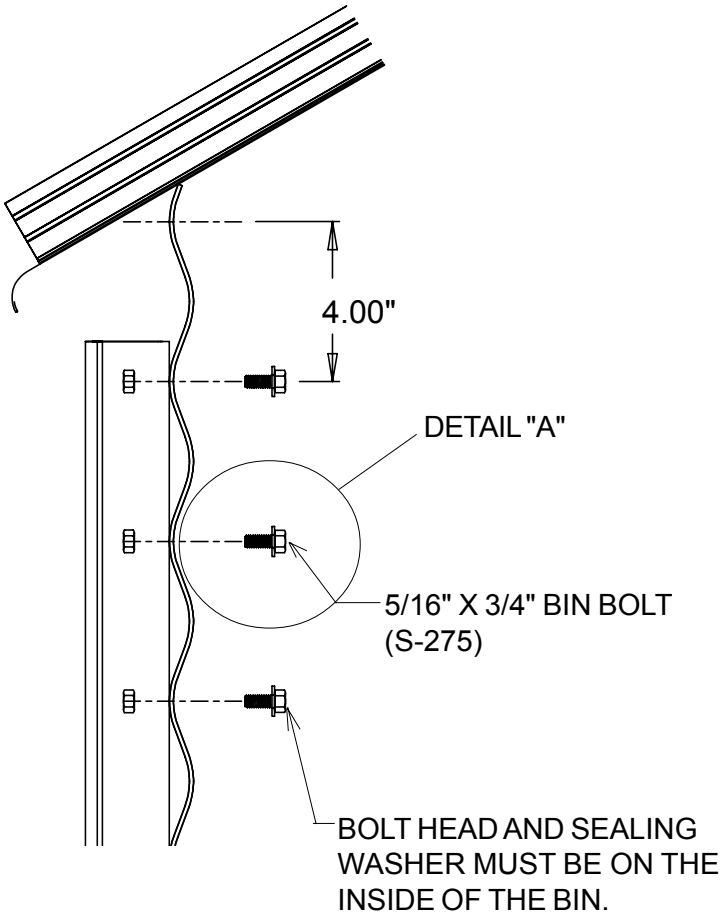
TOP STIFFENER STARTING LOCATION

Refer to Figure #10, for proper location of top stiffeners. On the overlap of the stiffeners, and on the splice, use 3/8" x 1" hex bolts, a washer on thee nut side connection. Refer to the stiffener layout, Figure #8, for stiffener usage.

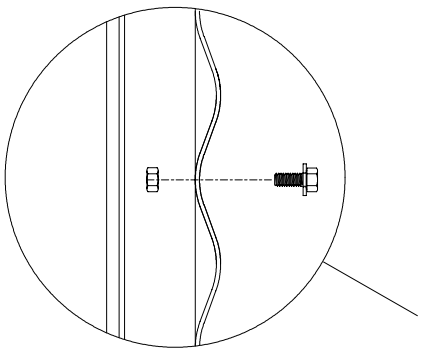
All stiffeners are outside the bin wall. Use 5/16" x 3/4" Grade 5 bin bolts with head and neoprene washer to the inside of the bin wall. Refer to proper charts and illustrations on the previous two pages for proper location of stiffeners and sidewall sheets.



FRONT VIEW



SIDE VIEW

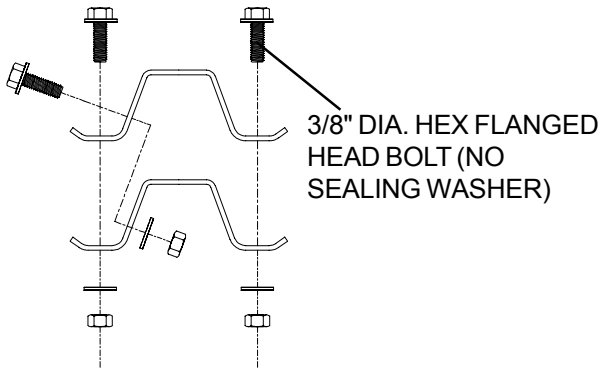


DETAIL "A"

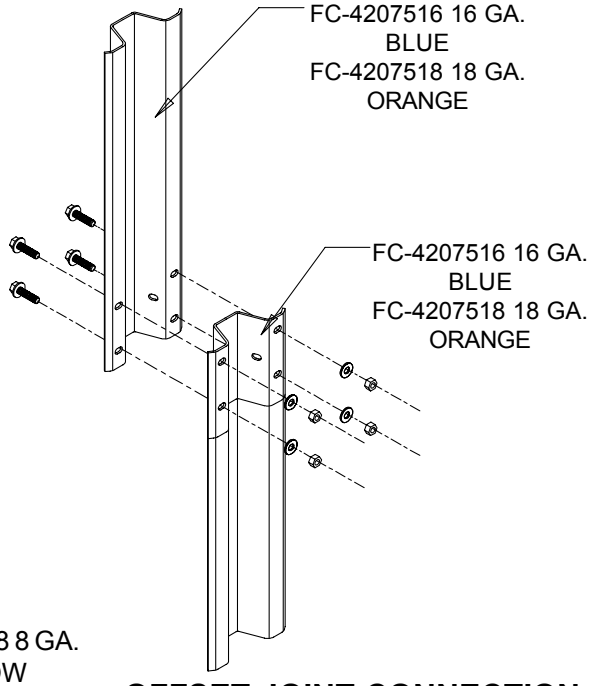
STIFFENER INSTALLATION & LOCATION

When installing bottom stiffeners, you may find that in some cases the stiffener with base plate attached will not rest on the foundation (due to unlevel concrete, etc.) Shim plates have been furnished and should be used to fill opening between base plate and concrete.

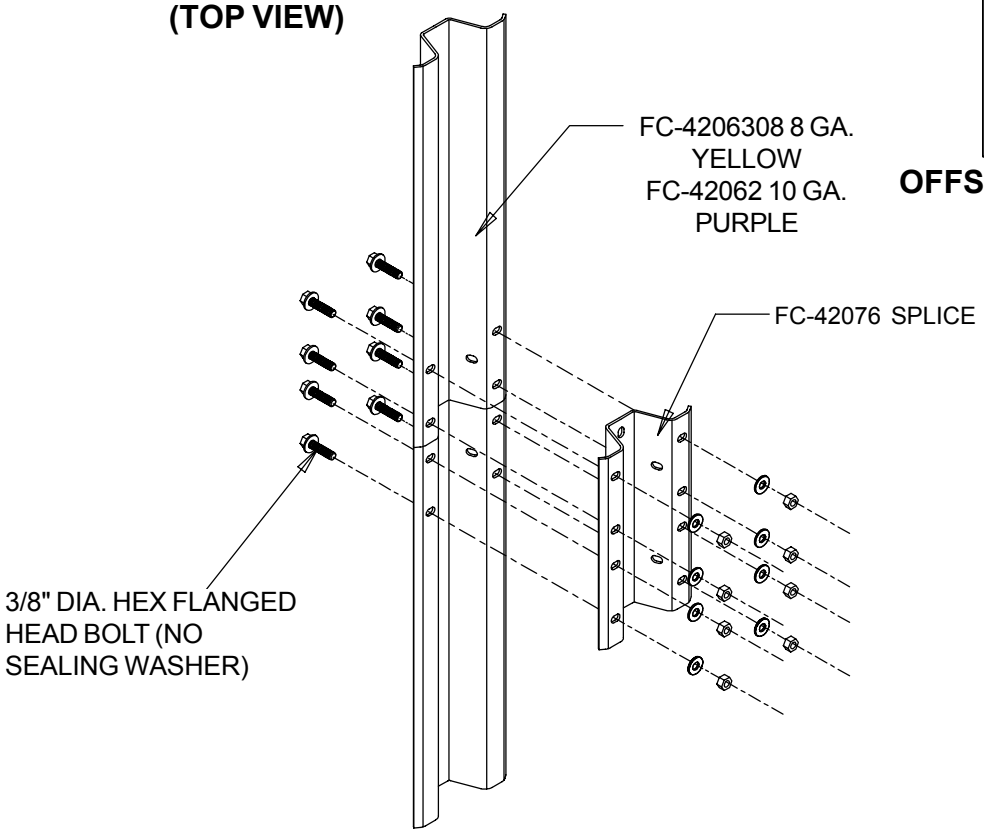
IMPORTANT: If shim plates are not used where required, the downward pressure of the stiffeners will not be transferred directly to the foundation, and bin failure could result.



SPLICE PLATE JOINT (TOP VIEW)



OFFSET JOINT CONNECTION DETAIL



BOLTING REQUIREMENTS

•

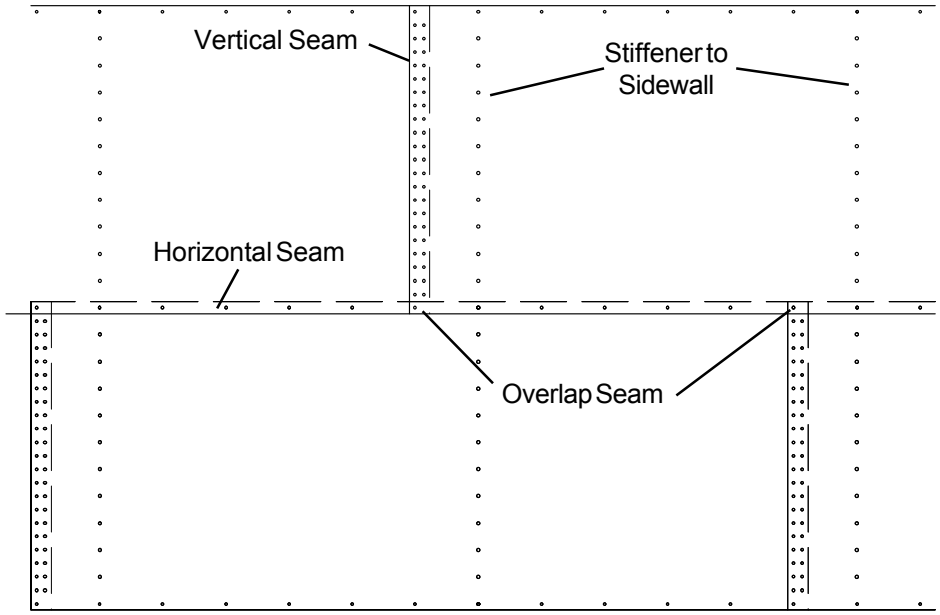
2 STIFFENERS PER SIDEWALL SHEET

Sidewall Gauge	Horizontal Seam	Vertical Seam	Stiffener To Sidewall	Overlap Seam
17 Thru 20	5/16" x 3/4" [10]	5/16" x 3/4" [42]	5/16" x 3/4" [20]	5/16" x 3/4" [2]

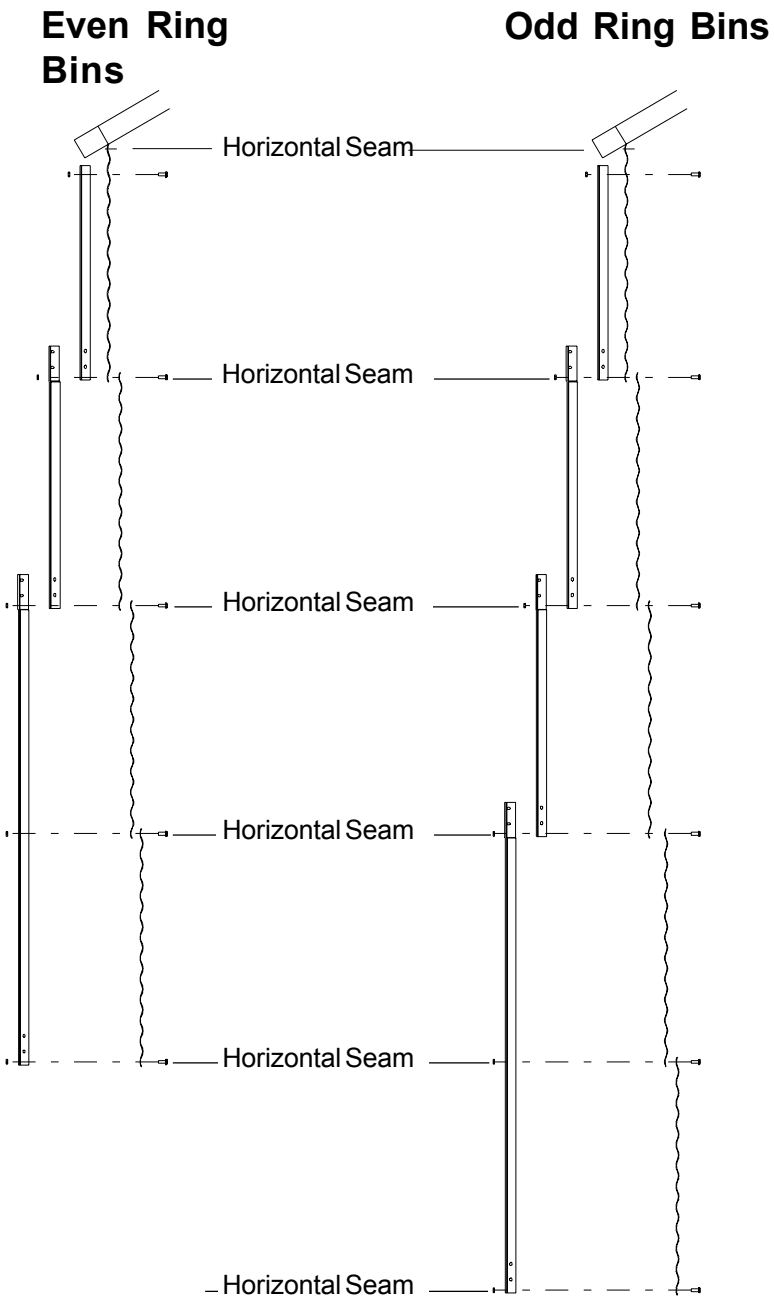
All bolts are standard bin bolts with neoprene washers. For horizontal and vertical seam bolts, the bolt head and neoprene washers are on the outside of the bin.

Note: For the splice plates FC-42076 use 5/16" x 1.1/4" bolts for the stiffener to sidewall connections.

Standard (17 Gauge Thru 20 Gauge) Sheet Bolting Detail
(Viewed from outside of the bin)



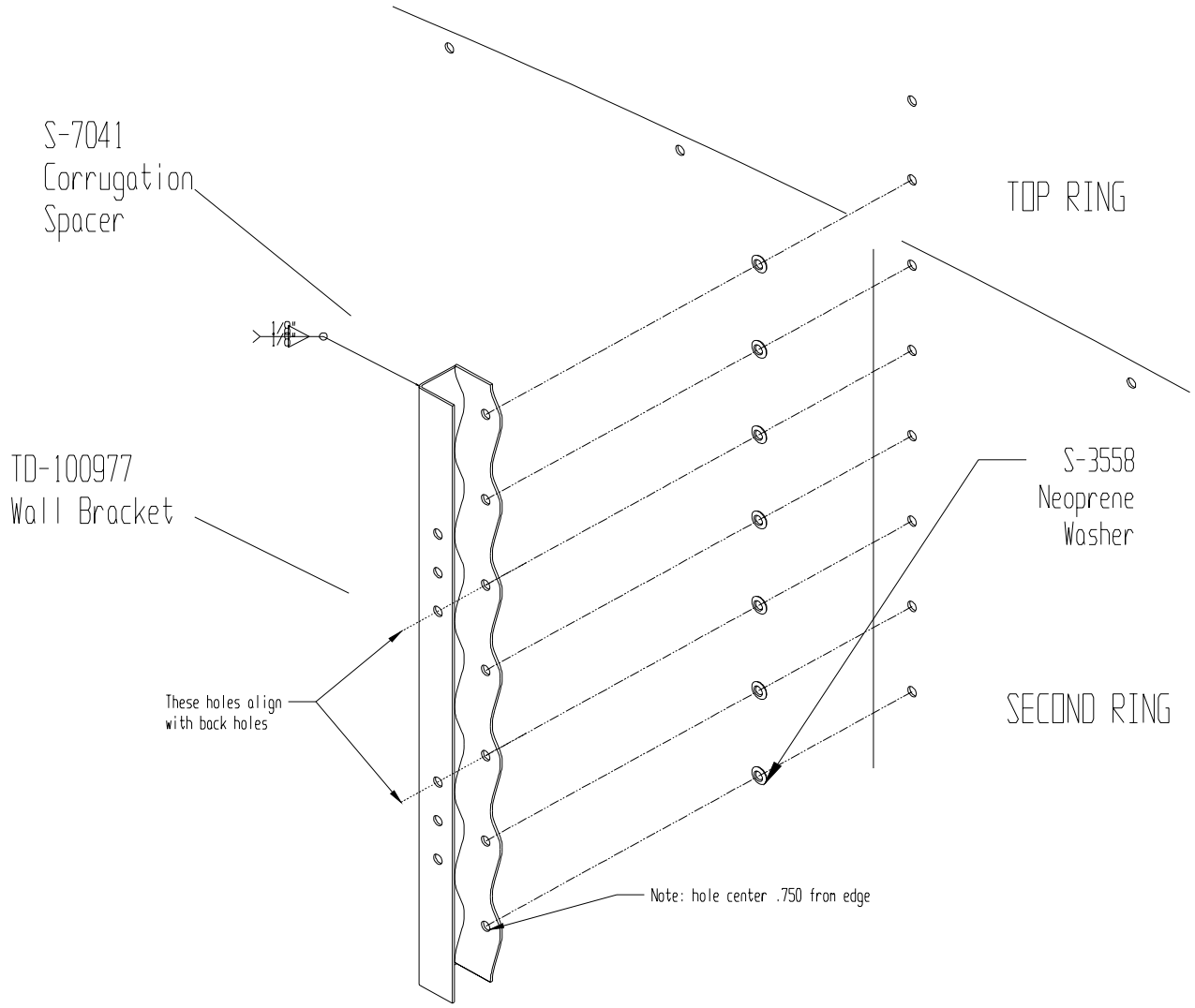
STIFFENER & SEAM LOCATIONS



2 stiffeners per sidewall sheet
Top Dry stiffener starting location -18' to 36'
4" corrugation stiffener only

STIFFENER TO C-CHANNEL BRACKET INSTALLATION

Install the stiffeners on the outside of the bin (as shown below) and the wall brackets on the inside of the bin. The wall brackets are to be positioned with the bracket's top hole matching the first hole up from the horizontal seam (not counting the horizontal seam). Bracket to sidewall connection using a 3/8" x 1.1/2" bolt (S-2086), head outside, with a neoprene washer (S-3558) against the wall on the inside.

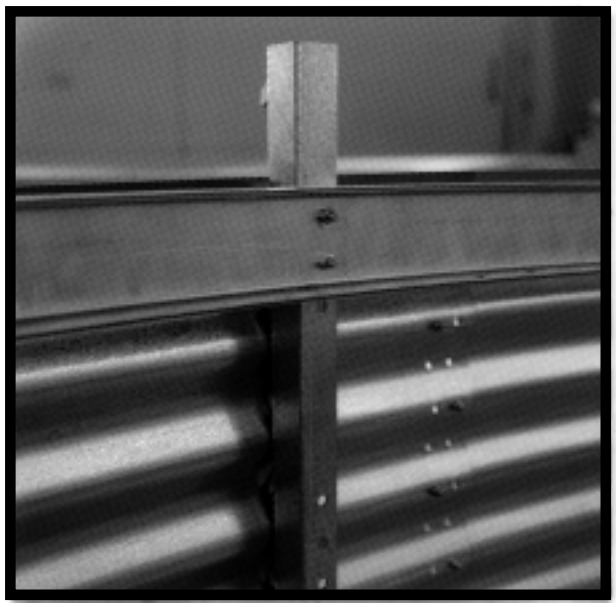


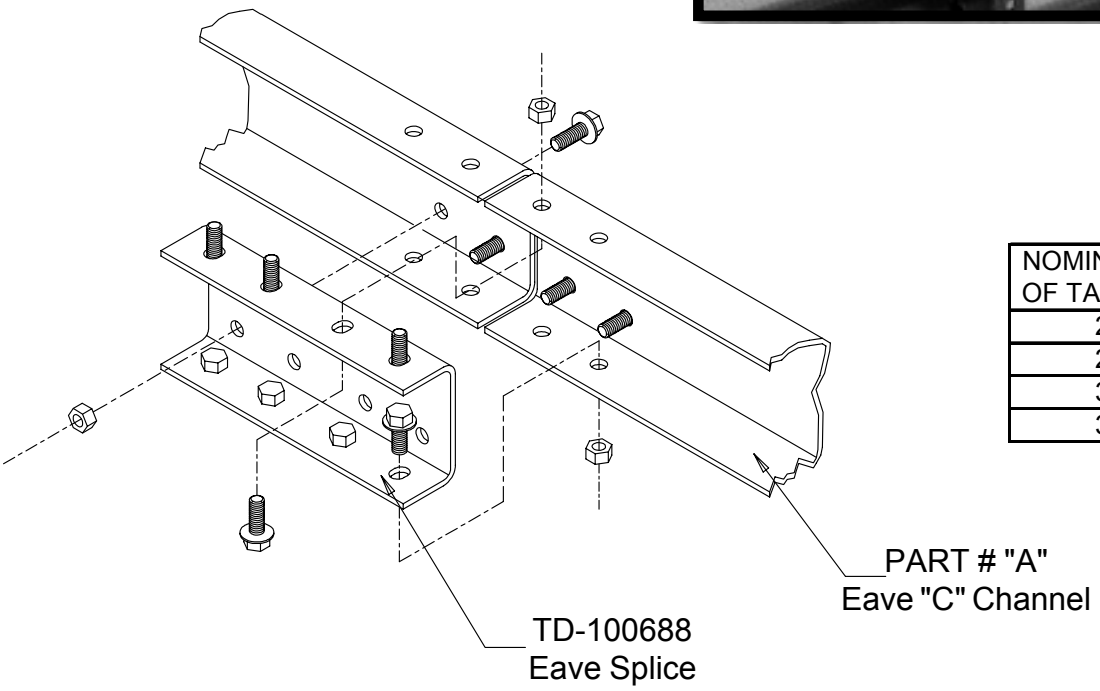
"C" CHANNEL INSTALLATION

Fasten the rolled "C" eave members to the wall brackets in the upper 2 holes of the top set of three (3) holes leaving the bolts loose.

Install the splice plates at the rolled "C" eave member seams using 3/8" x 1" flanged hex bolts and nuts. Tighten all bolts.

"C" Channel Attachment.

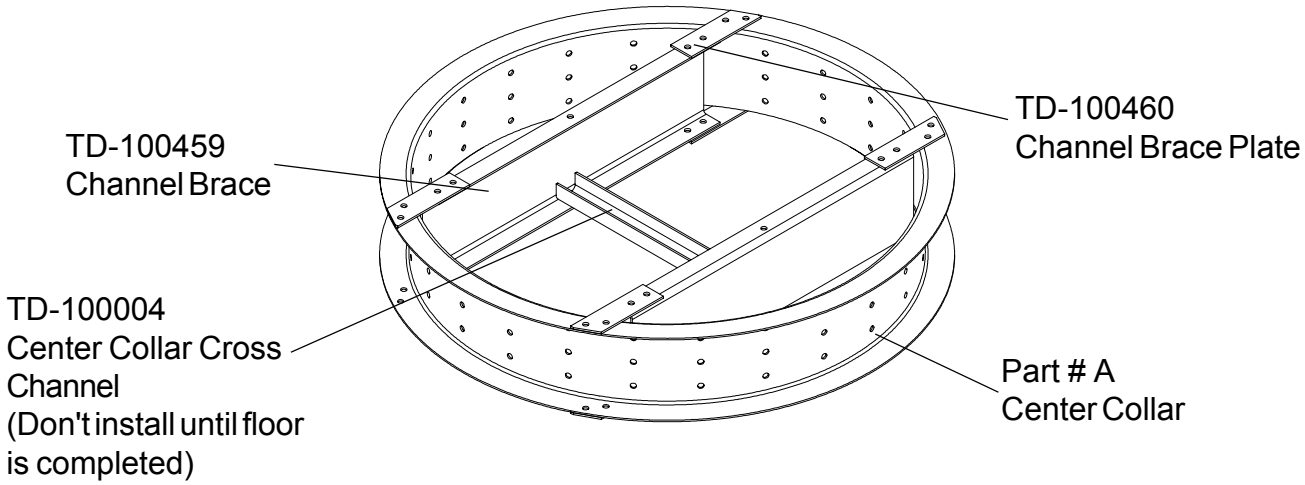




NOMINAL DIA. OF TANK (FT.)	PART "A" NUMBER
21'	TD-100772
24'	TD-100678
30'	TD-100643
36'	TD-100731

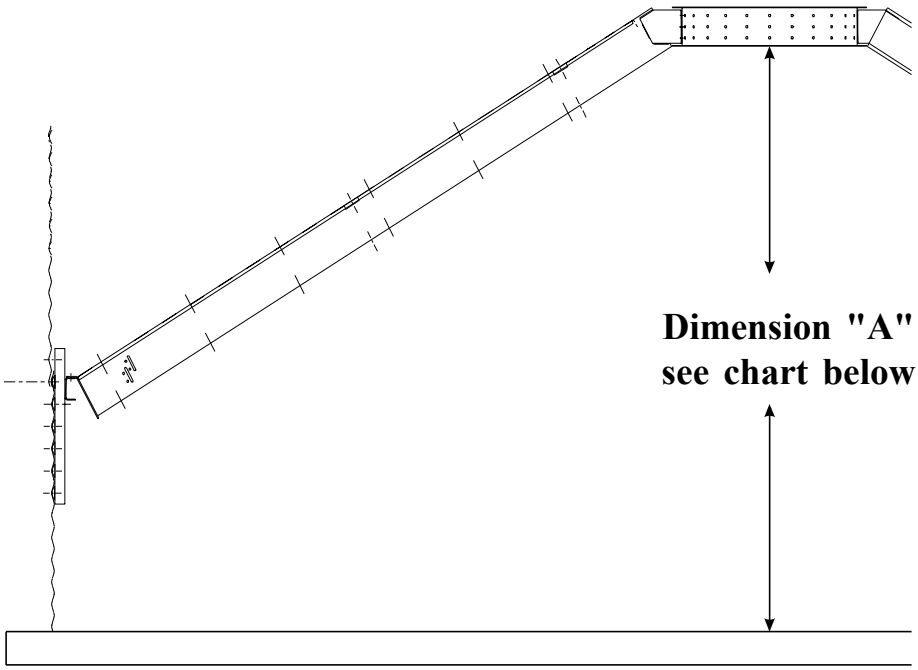
CENTER COLLAR ASSEMBLY

Add channel braces and brace plates to center collar as shown using 3/8" x 1" bolts and nuts. (Do not attach cross channel until floor is done.)



NOMINAL DIA. OF TANK (FT.)	PART "A" NUMBER
21'	TD-100631
24'	TD-100632
30'	TD-100634
36'	TD-100730

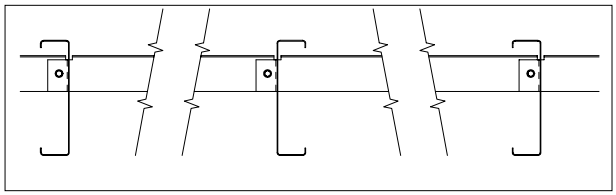
Position the center collar at the center of the bin and raise it to the required height per diameter of tank. Height is measured form the bottom of the center collar to the concrete.



NOMINAL DIA. OF TANK (FT.)	DIMESNION "A"
21'	8'-0.1/2"
24'	8'-9.1/2"
30'	10'-5.3/16"
36'	11'-8.3/4

RAFTER INSTALLATION & FLOOR SUPPORT ANGLE ATTACHMENT

When installing the rafters, set the lower clip end on the "C" eave member. Leave the bolts to the center collar and the eave member loose until all rafters are in place. Use 3/8" x 1" hex bolts and nuts to connect the center collar and eave member to three (3) rafters at 90 degrees to each other. These first three (3) rafters should all face the same direction. Every other rafter should alternate direction. **IMPORTANT:** There are left & right rafters. Be sure to alternate left, right, left, right, etc.. The floor sheet support purlins can now be installed using 5/16" x 3/4" bin bolts. There are two (2) different lengths of purlins to fit between the rafters. Insert the straight tab of the purlin through the upper slot in the left hand rafter when looking toward the bottom of the rafters. Bolt the bent end of the purlin to the right hand rafter in the upper two (2) holes. After inserting the next purlin tab, bolt the first purlin tab to the second purlin. Continue around the bin alternating lengths as the rafter facings did. Tighten all bolts.

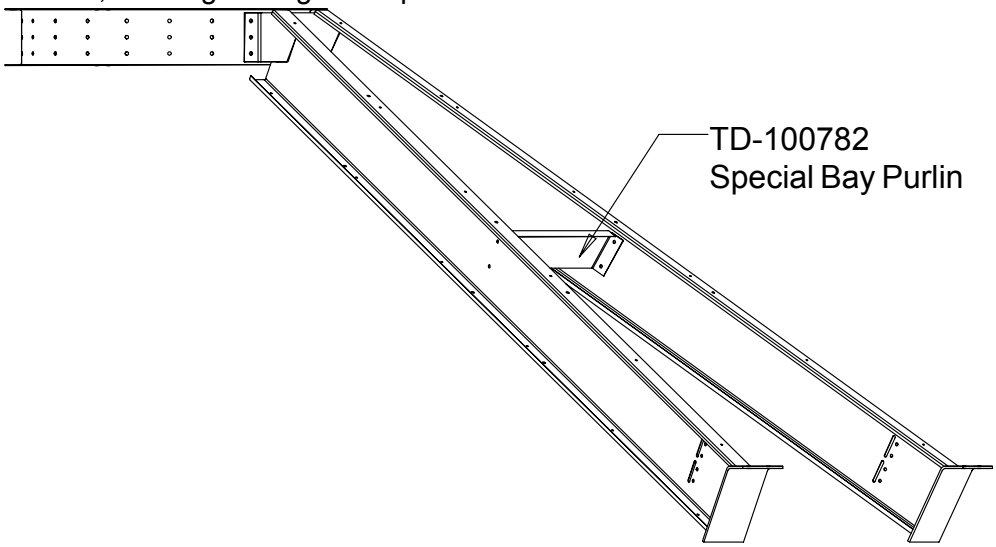


Floor Support Angle Assembly

NOMINAL DIA. OF TANK (FT.)	LONG SUPPORT	SHORT SUPPORT
21'	TD-100777	TD-100778
24'	TD-100720	TD-100721
30'	TD-100650	TD-100651
36'	TD-100740	TD-100741

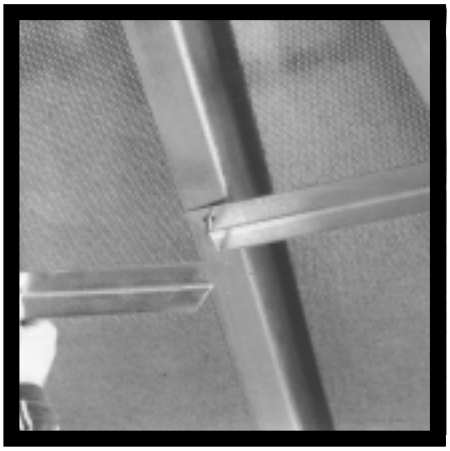
21' SPECIAL ANGLE PURLIN ASSEMBLY

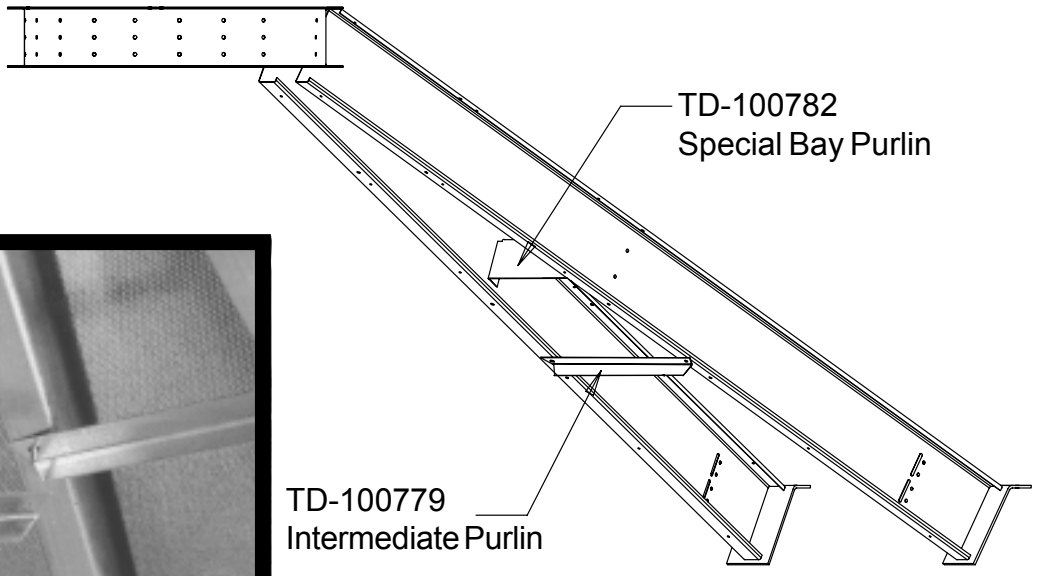
Where two rafters face the same direction use 5/16" x 3/4" bin bolts and nuts with the three bent edges facing toward the sidewall, the longest edge on top.



21' INTERMEDIATE PURLIN

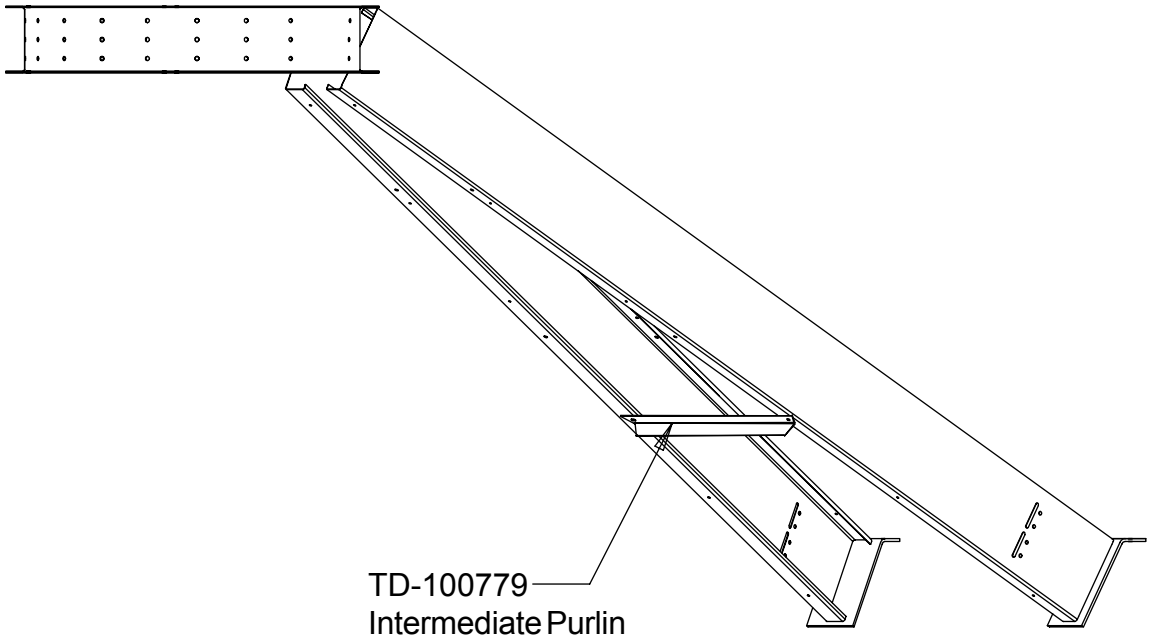
Bolt purlins to rafters (as shown in the photo) in the 4th hole counting up from the sidewall.

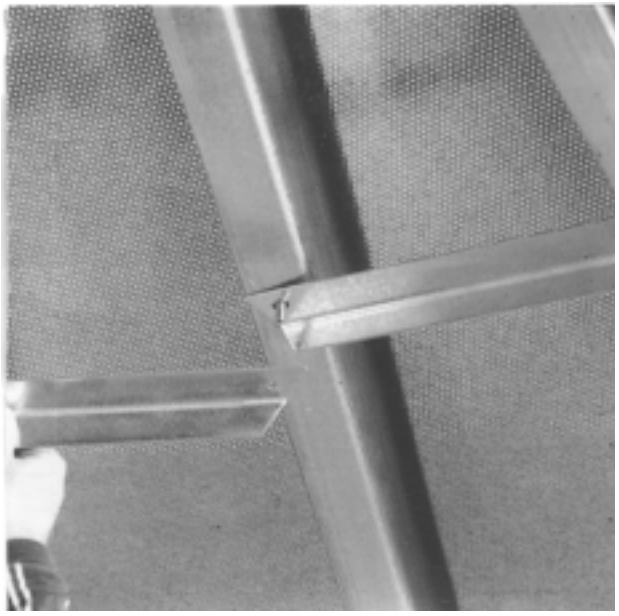




24' INTERMEDIATE PURLIN

Counting up from the lower end of the rafter, on the underneath side, the angle purlins bolt in the 3rd hole using 5/16" x 3/4" bin bolts. The angle is to be bolted to the underneath side of the rafters, joining rafter to rafter, with the angle interior angle facing the center of the bin. (as shown in the photo). Tighten all bolts.

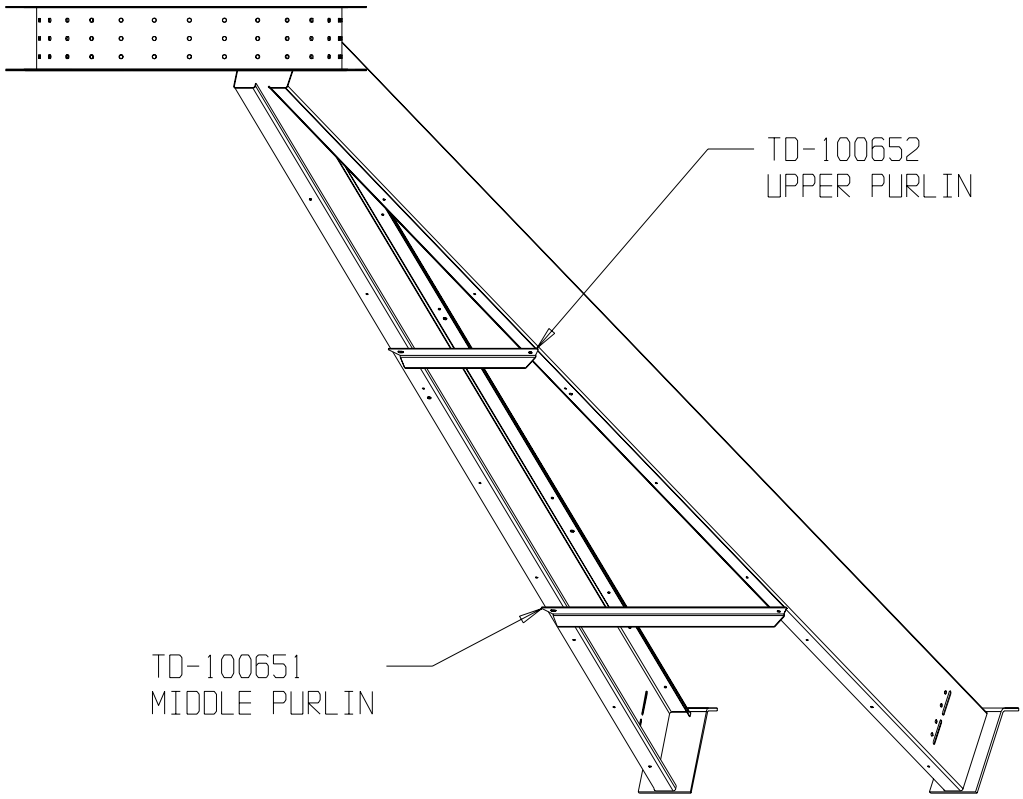


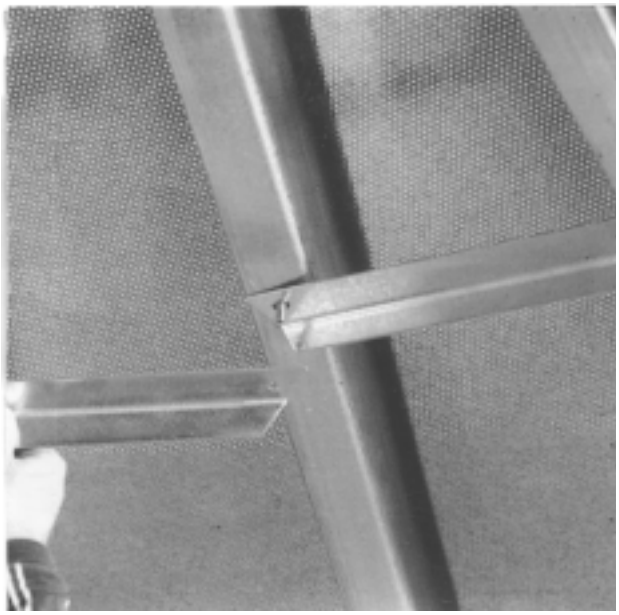


The angle is to be bolted on the underneath side of the rafters, joining rafter to rafter, with the angles interior angle facing the center of the bin.

30' INTERMIDIATE PURLIN

The upper purlins are bolted using 5/16" x 1-1/4" bolts in the 9th hole counting up from the sidewall. The middle pulins are bolted in the 4th hole counting up from the sidewall. Bolt purlins to rafters with interior angle facing the center of the bin as shown in the photo.

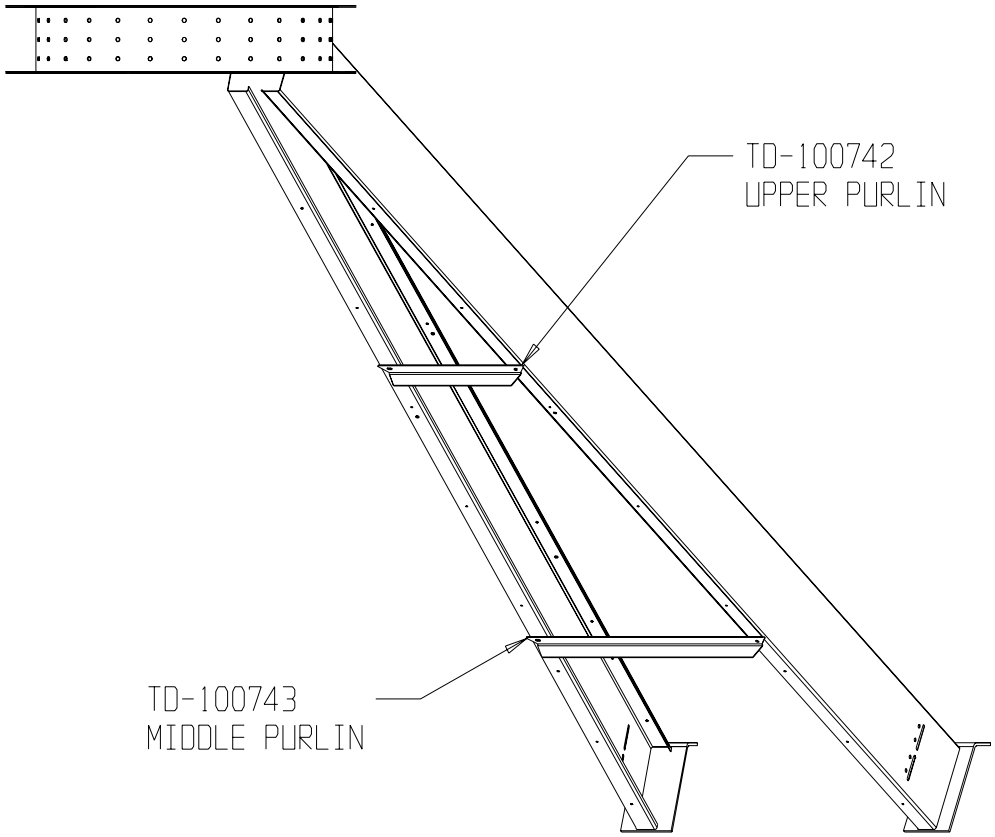




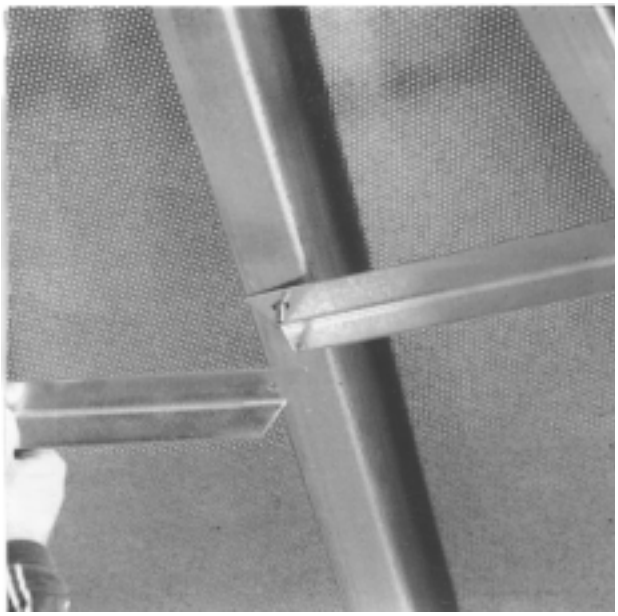
The angle is to be bolted on the underneath side of the rafters, joining rafter to rafter, with the angles interior angle facing the center of the bin.

36' INTERMIDIATE PURLIN

The upper purlins are bolted using 5/16" x 1-1/4" bolts in the 9th hole counting up from the sidewall. The middle pulins are bolted in the 4th hole counting up from the sidewall. Bolt purlins to rafters with interior angle facing the center of the bin as shown in the photo.

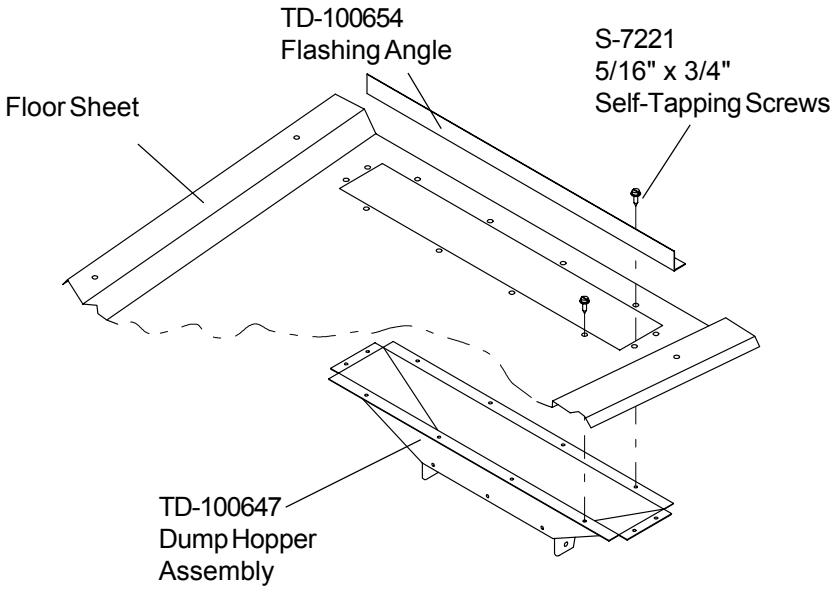


The angle is to be bolted on the underneath side of the rafters, joining rafter to rafter, with the angles interior angle facing the center of the bin.

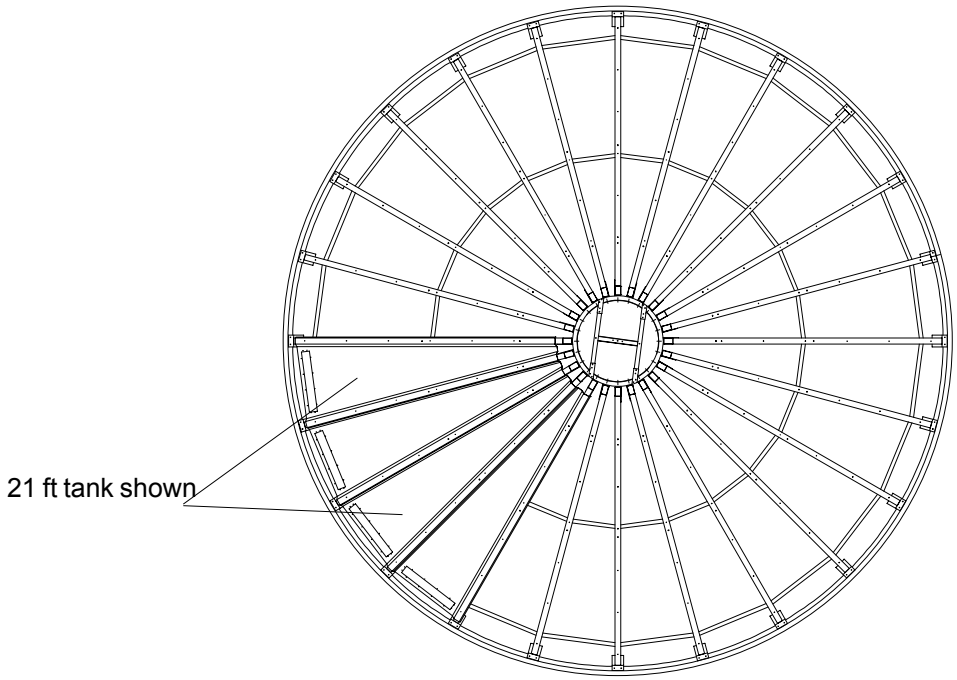


DUMP HOPPER INSTALLATION

Pre-assemble the dump hoppers, dump brackets, and flashing angles to the floor sheets. Place a dump hopper under the floor sheet and align it with the pre-punched large hole. Place a flashing angle on top of the sheet across the outer edge of the hopper entrance with the interior of the angle facing the sidewall. Screw down through the angle, sheet, and hopper with 5/16" x 3/4" self-tapping screws.



FLOOR SHEET INSTALLATION



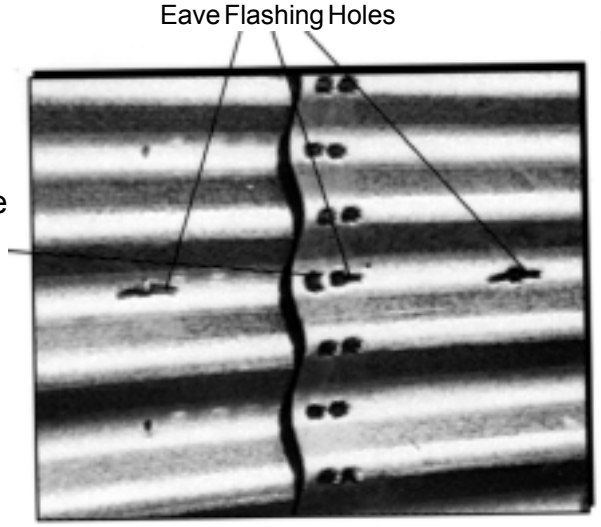
The assembled sheets can now be laced over the framework. as the sheets are placed and overlapped they are to be screwed down to the rafters using 5/16" x 3/4" self-tapping screws. There are certain holes in the sheets that should not be screwed down at this time to mount leveling band posts later. See chart below. all holes are counted from the sidewall sheet upto the center of the bin.

NOMINAL DIA. OF TANK (FT.)	NUMBER OF HOLES TO LEAVE EMPTY
21'	3RD, AND 8TH HOLES
24'	3RD, AND 8TH HOLES
30'	4TH, 7TH, AND 10TH HOLES
36'	3RD, 6TH, 10TH, AND 12TH HOLES

FLASHING BOLT INSTALLATION

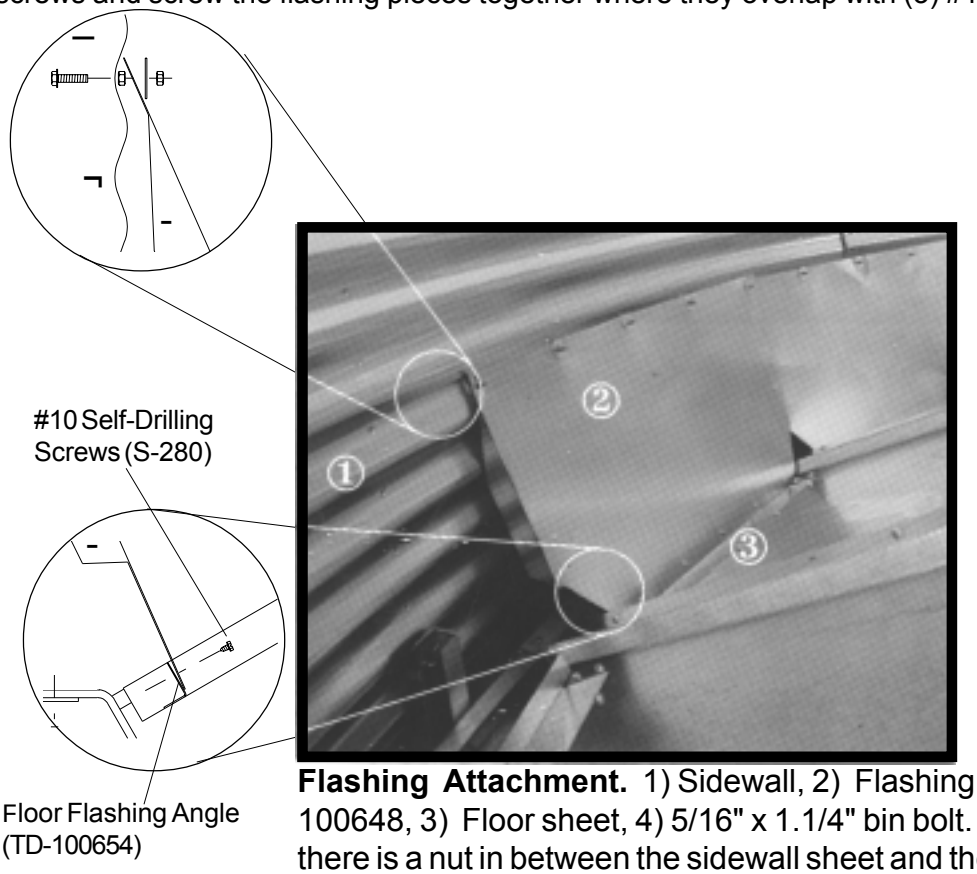
Install the eave flashing bolts (5/16" x 1.1/4") through the sidewall and tighten first nut. **Note at the vertical sidewall seams, one bolt is turned around to avoid interference with eave flashing (refer to photo)**.

Left bolt on the each vertical sidewall seam level with the eave flashing bolts (as viewed from inside the bin) is to be installed bolt in, nut out, as shown in the photo to the right.



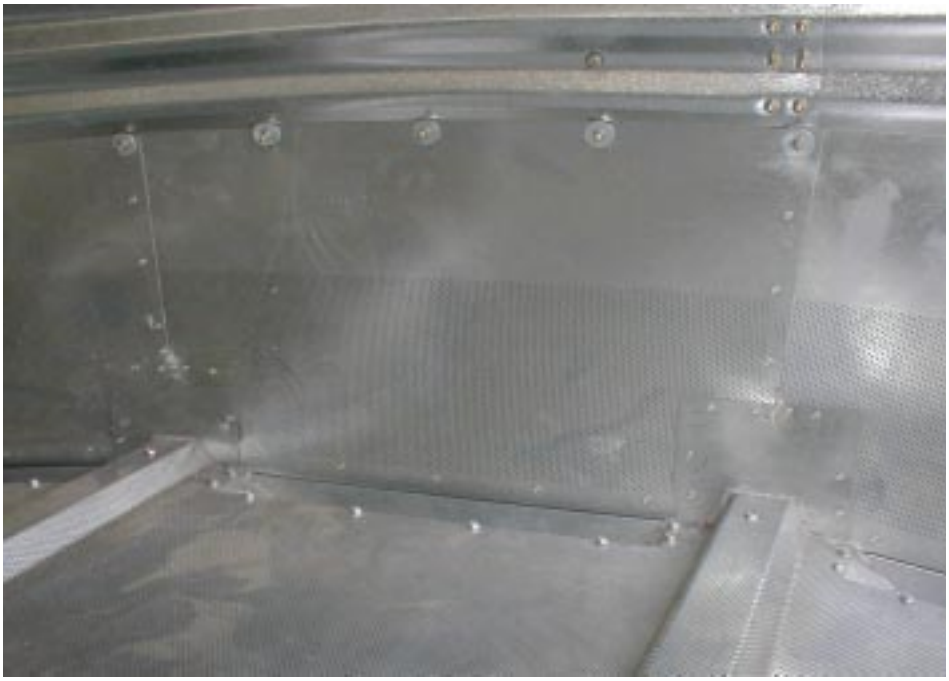
EAVE FLASHING INSTALLATION

Install the eave flashing centered on the floor sheet (1 per) with the bent edge towards the sidewall install a fender washer (S-3671) and nut. Screw the flashing to the flashing angle at the dump hopper opening with (5) #10 (S-280) screws and screw the flashing pieces together where they overlap with (3) #10 self drilling (S-280) screws.



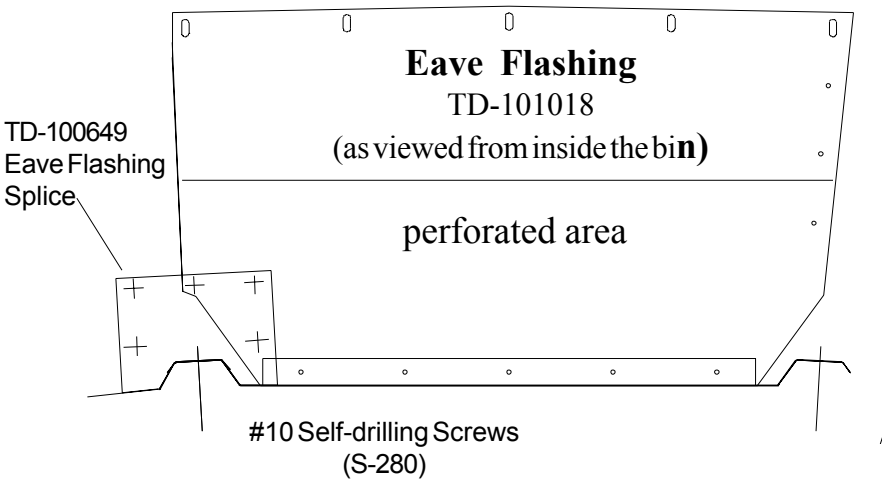
Flashing Attachment. 1) Sidewall, 2) Flashing TD-100648, 3) Floor sheet, 4) 5/16" x 1.1/4" bin bolt. Note that there is a nut in between the sidewall sheet and the flashing sheet.

EAVE FLASHING INSTALLATION



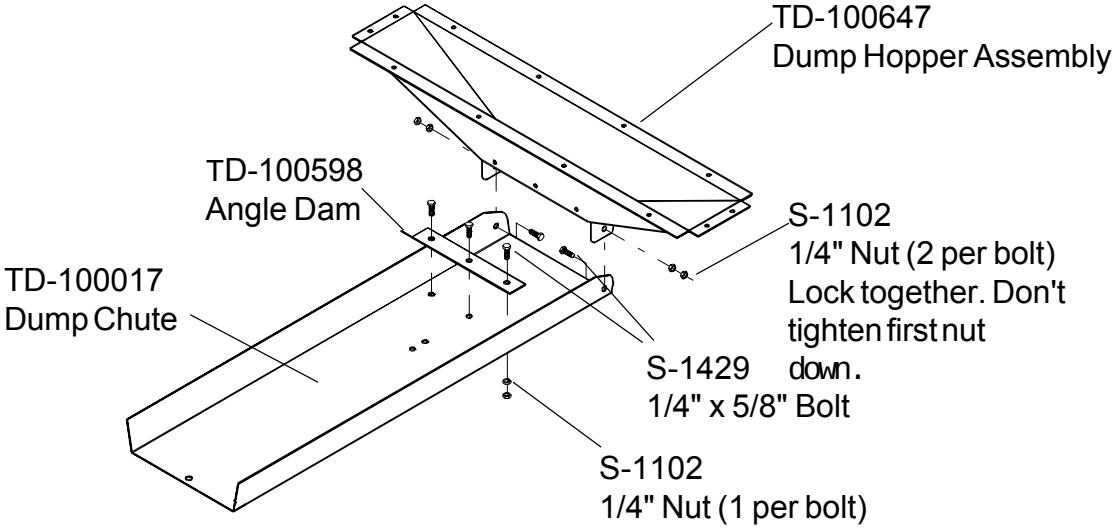
EAVE FLASHING SPLICE

The flashing splice pieces can now be attached to the eave flashing to seal around the rib of the floor sheet as shown with (S-280) #10 self-drilling screws.



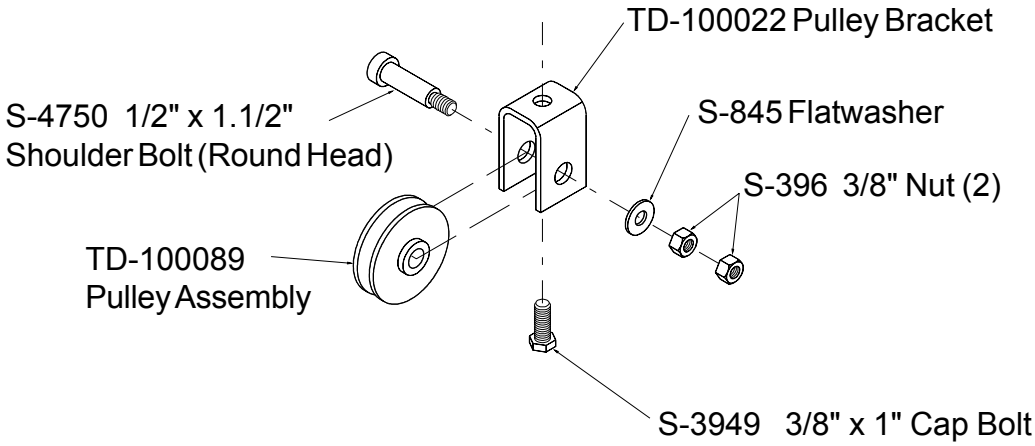
OUTER DUMP CHUTES

Bolt a TD-100598 angle dam to each dump chute using (3)1/4" x 5/8" bolts and nuts, as shown below. Use 1/4" x 5/8" bolts and double nuts to fasten dump chutes to hopper. **Do not tighten first nut down.** Lock second nut to first nut and **make sure chutes raise and lower FREELY!**

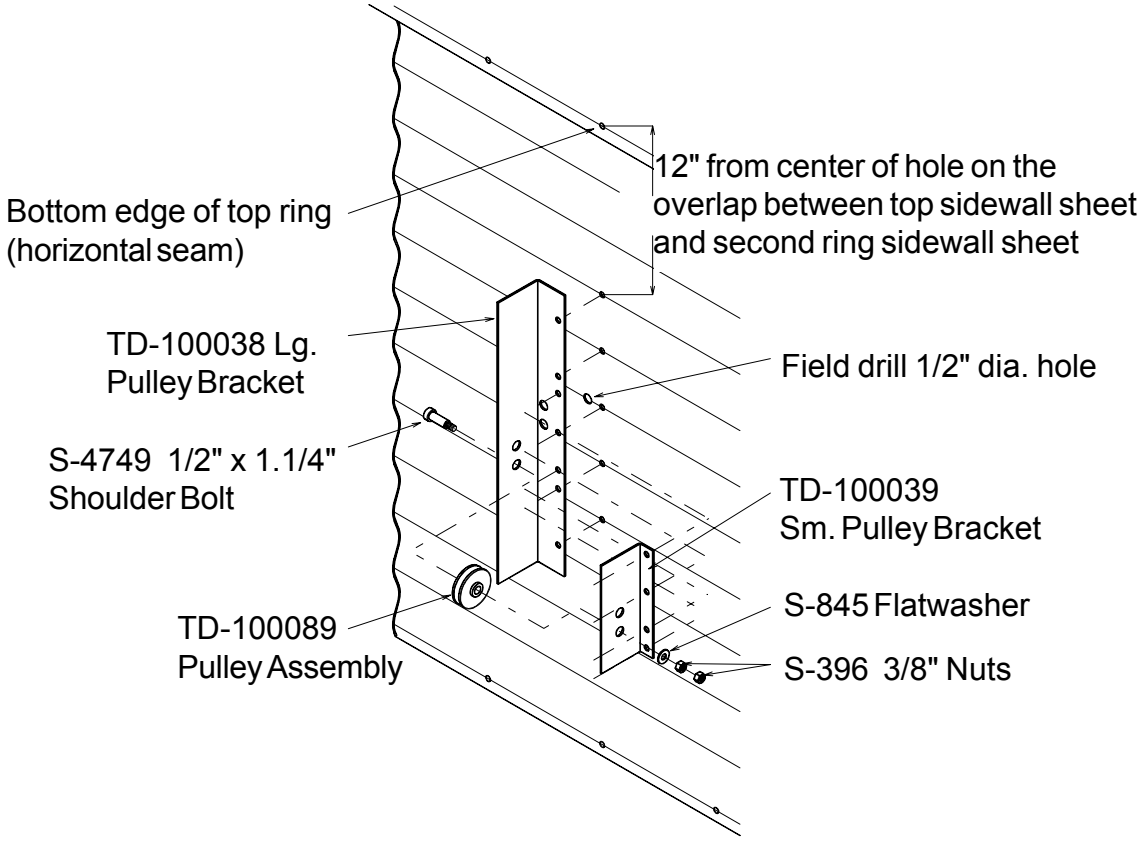


PULLEY ASSEMBLY

Position the pulley assembly to the cross angle in the middle of the center collar assembly. Use a 3/8" x 1" hex head cap bolt to fasten assembly to the cross angle. Position the pulley in the direction of the desired winch location on the sidewall.



Field drill (5) 3/8" diameter holes as shown at left. Attach the pulley assembly with 5/16" x 3/4" bolts with the neoprene on the inside of the bin.



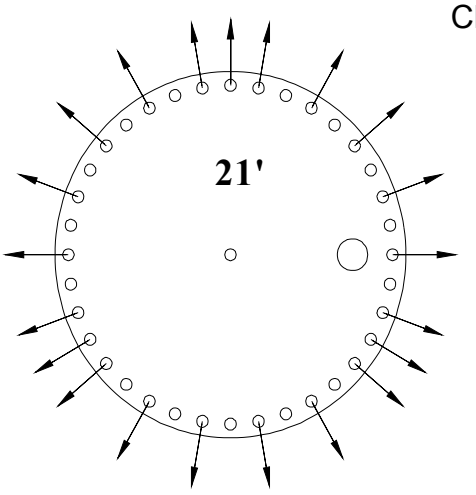
DUMP CHUTE CHAIN ASSEMBLY

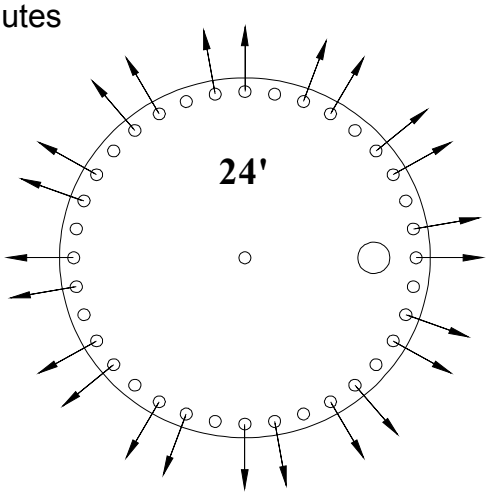
Attach all dump chute chains directly to the lift(TD-100801) plate as shown in diagram below.

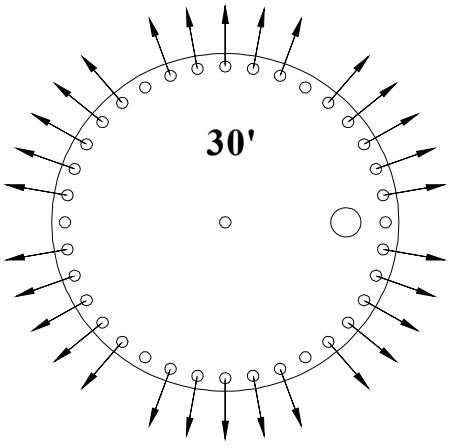
Install all chains using "S" hooks (S-4692) to attach the chains to the dump chutes and lift plates. Keep excess chain at the lift plate. Adjust the chains until the chutes are approximately level when the lift plate is in the closed (up) position. Once the chains are uniformly adjusted, crimp the "S" hooks closed. Check when attaching the "S" hook to the end link on a chain that the end has not been cut open. If this is found remove the end link or shift up and use the next link in chain. The lift plate should be approximately 12" down from the cross channel when the chutes are level.

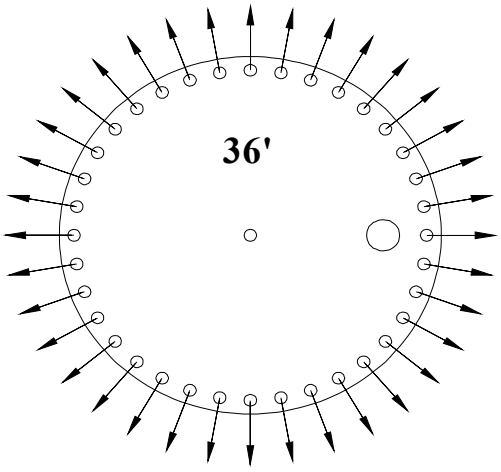
Crimp "S" hooks after final chute adjustment

Chain leading to outer chutes

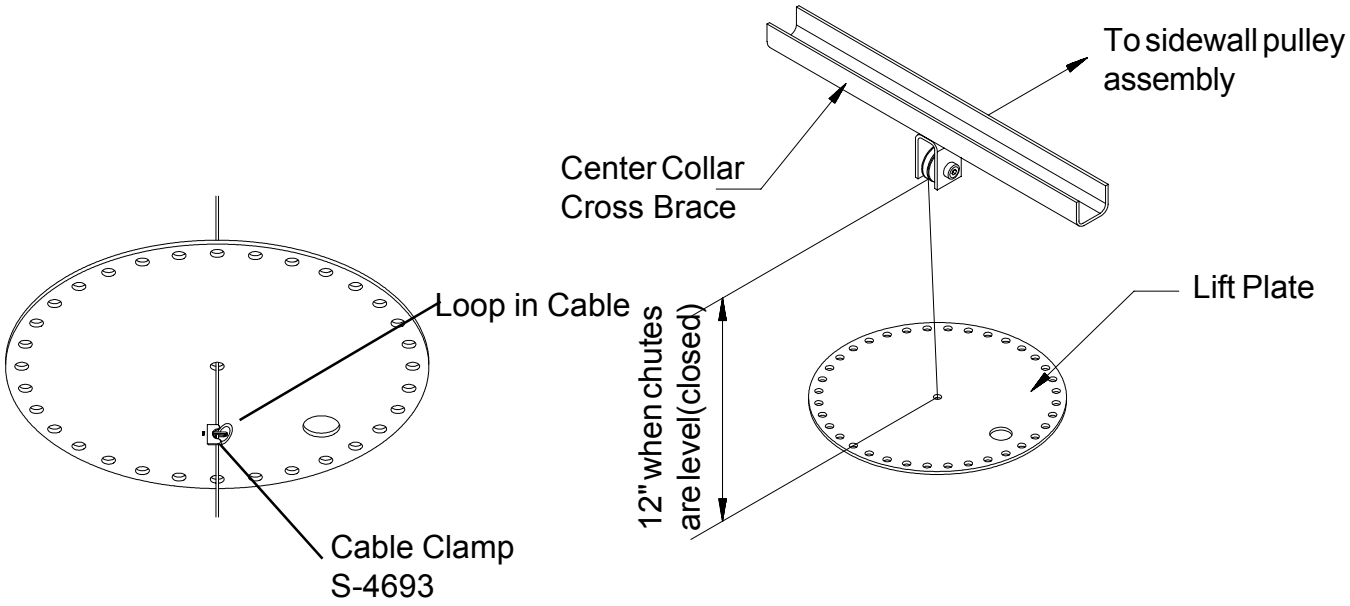








DUMP CHUTE CHAIN ASSEMBLY

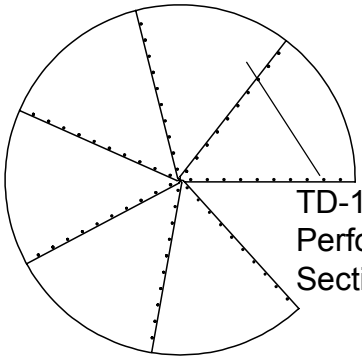


Chutes in closed position

CENTER CONE ASSEMBLY

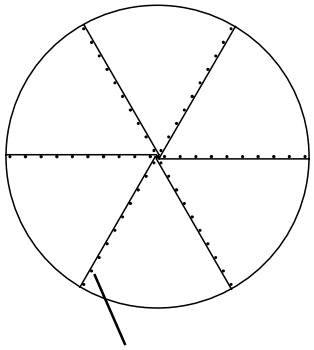
Bolt the sections together to form perforated cone as shown below. Use 1/4" x 5/8" bolts and nuts to attach sections together.

Flat Overhead View



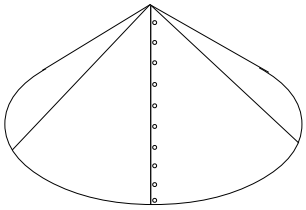
TD-100219
Perforated Cone
Section (6 Required)

Formed Overhead View



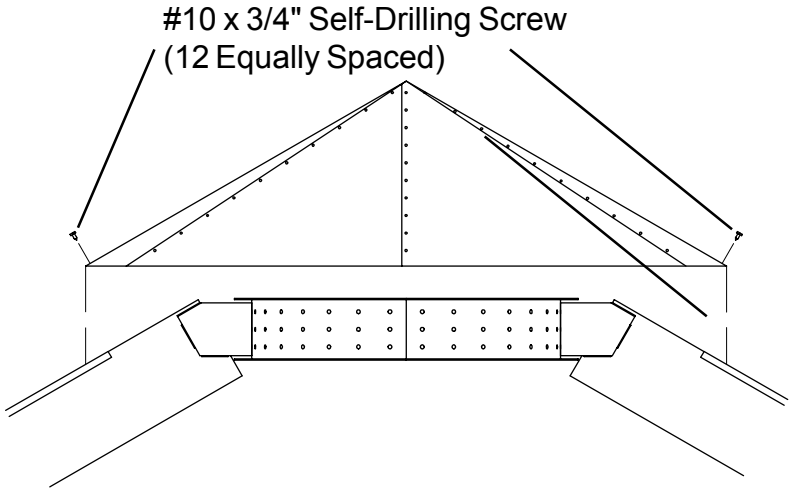
1/4" x 5/8" Bolts & Nuts

Side Formed View



CENTER CONE INSTALLATION

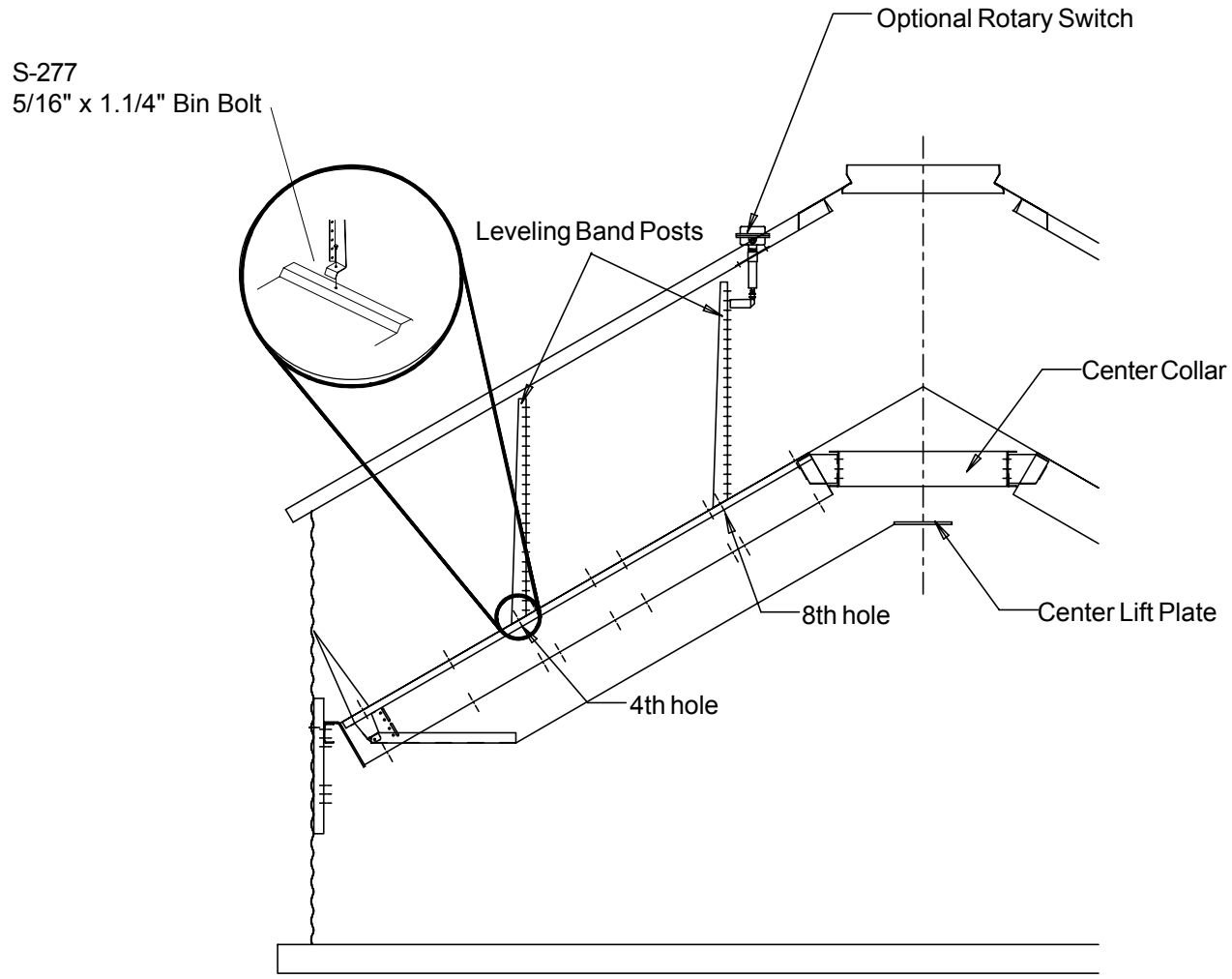
After chains have been adjusted, install cone over the center collar. Fasten Cone Assembly with (12) #10 x 3/4" self-drilling screws (S-280).



21'& 24' LEVELING BAND POST INSTALLATION

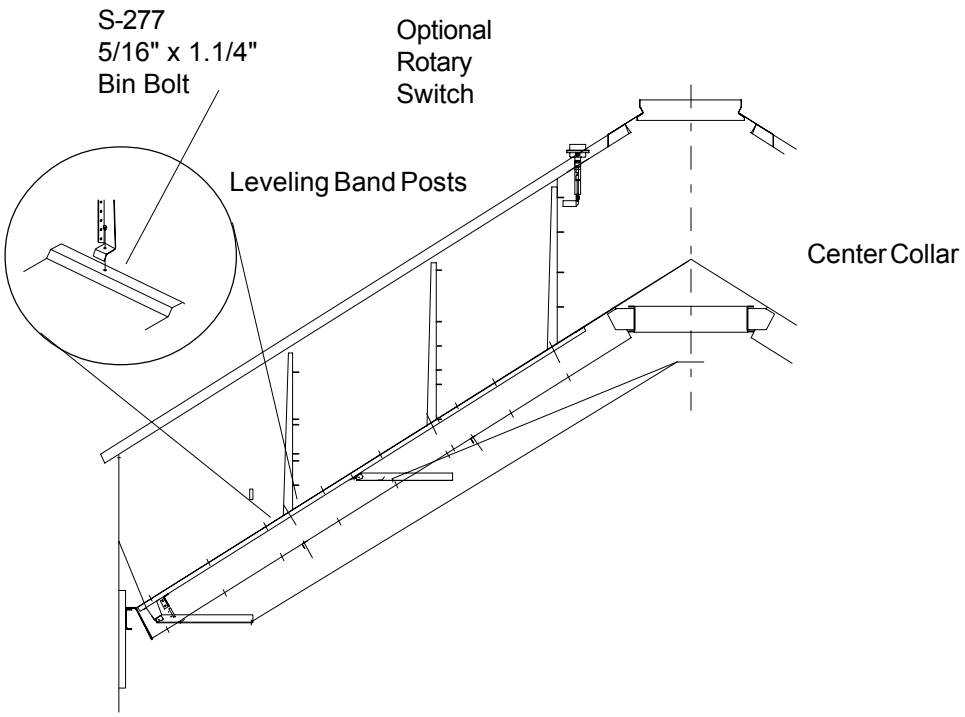
Install the leveling band posts on the floor as shown.

The third and eighth holes in the floor sheet indicate the location of the leveling band posts. Attach posts with 5/16" x 1.1/4" bin bolts (S-277). The third hole from the bottom of the sheet, there will be 7 posts (1 every third sheet, except the last bay will cover five sheets). In the eighth hole there will be 5 posts (1 every fourth sheet). After all of the posts have been installed fill the unused holes with 5/16" x 1.1/4" bin bolts.



30' LEVELING BAND POST INSTALLATION

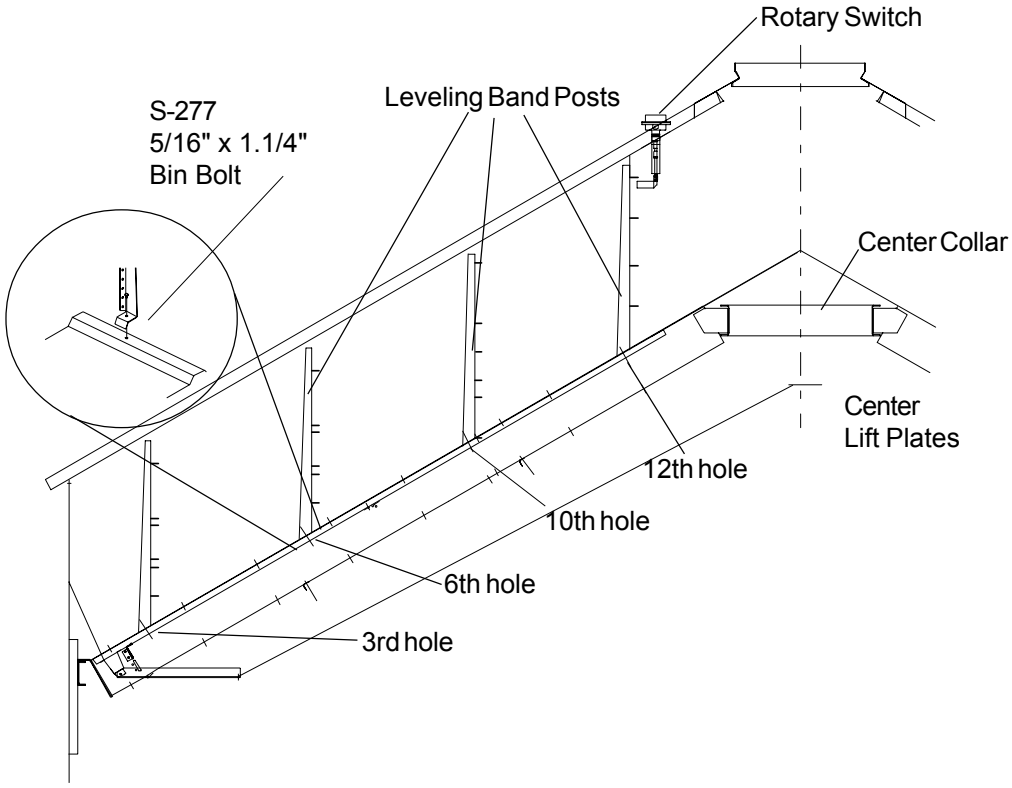
Install the leveling band posts on the floor as shown in Diagram.
The 4th, 7th and 10th holes in the floor sheets indicate the location of the leveling band posts. Attach with 5/16" x
1.1/4" bin bolts (S-277). In the 4th & 7th hole there will be 10 posts (1 at every 3rd sheet). In the 10th hole there will be 6 posts 1 every 5th.



36' LEVELING BAND POST INSTALLATION

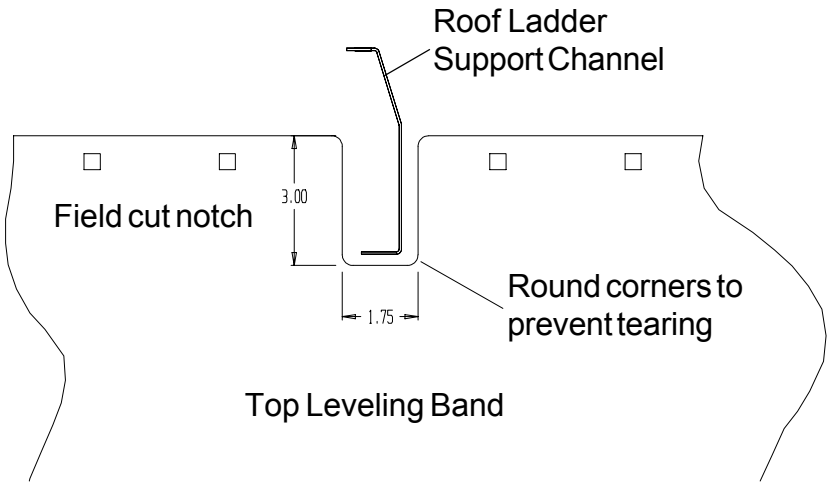
Install the leveling band posts on the floor as shown in Diagram.

The 3rd, 6th and 10th holes in the floor sheets indicate the location of the leveling band posts. Attach with 5/16" x 1.1/4" bin bolts (S-277). In the 3rd hole from the bottom of the floor sheets there will be 13 posts (12 at 1 every 2nd sheet and 1 at 3 sheets). In the 6th hole there will be 9 posts (1 at every 3rd sheet). In the 10th hole there will be 5 posts (3 at 1 every 5th sheet and 2 at 1 every 6th sheet).



LEVELING BAND INSTALLATION

Note: Field cut rounded notches in the outer leveling band(s) where the two roof support channels hang from the roof ribs.

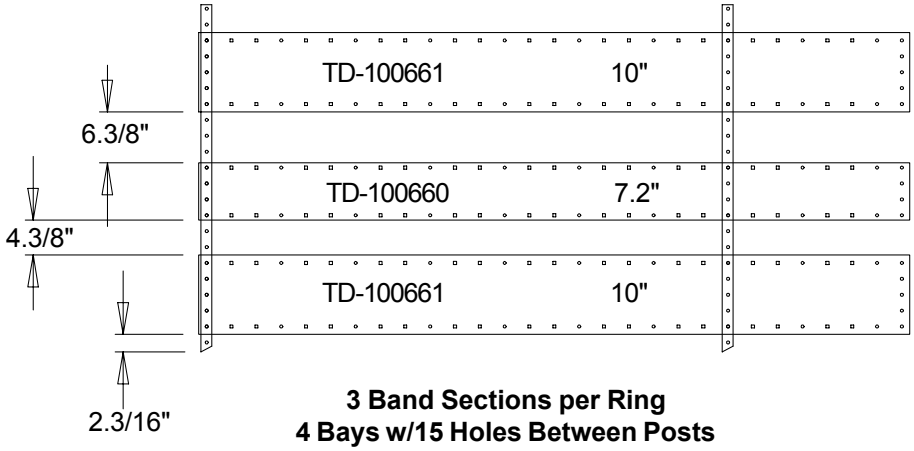


21' LEVELING BAND LOCATION

Position leveling bands as shown in the drawings below.

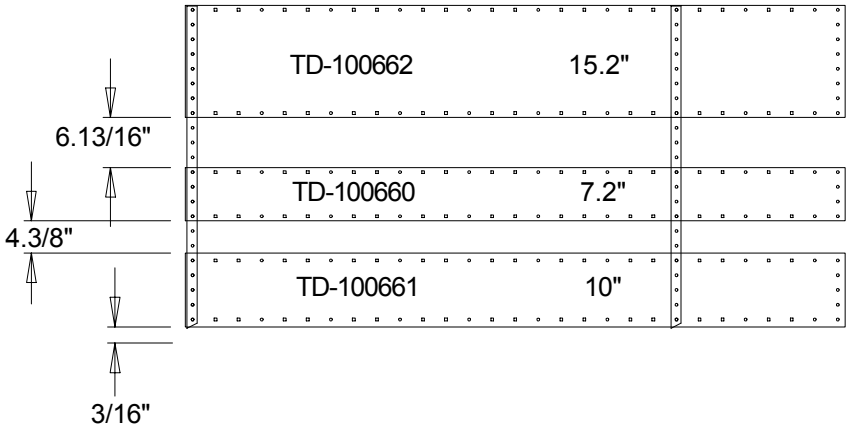
Use (2) 5/16" x 3/4" bin bolts to attach bands to posts. Also use 5/16" x 3/4" bin bolts to to join band sections. **Note that band sections connect to each other only at endmost holes until completing the circle where an overlap may occur**.

Inner Leveling Bands



3 Band Sections per Ring
4 Bays w/15 Holes Between Posts
and 1 Bay w/19 Holes Between Posts

Outer Leveling Bands



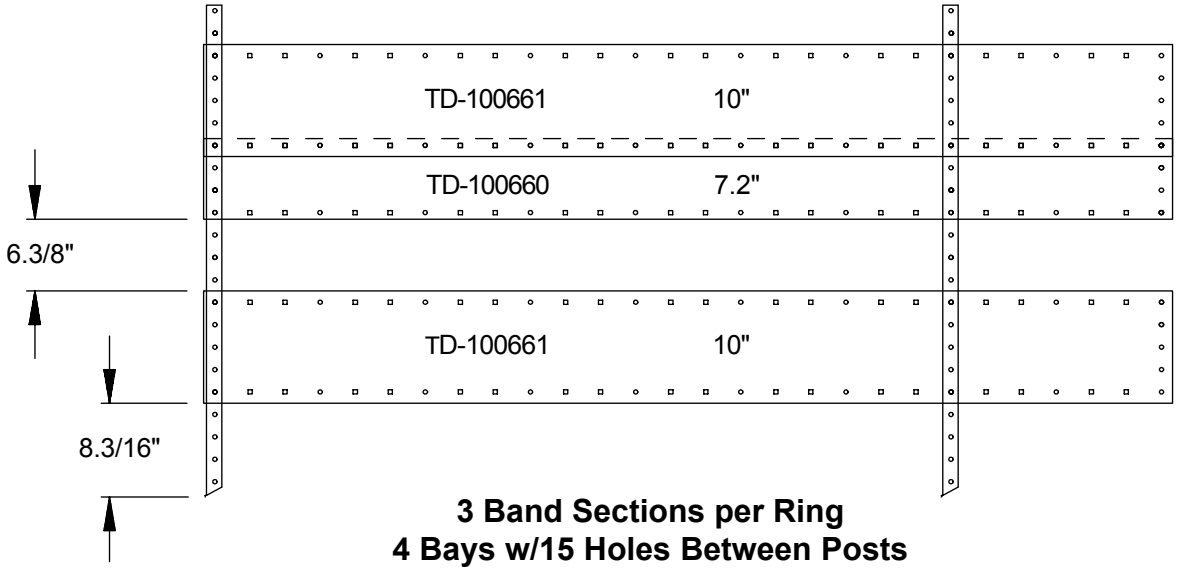
6 Band Sections per Ring
7 Bays w/23 Holes Between Posts

24' LEVELING BAND LOCATION

Position leveling bands as shown in the drawings below.

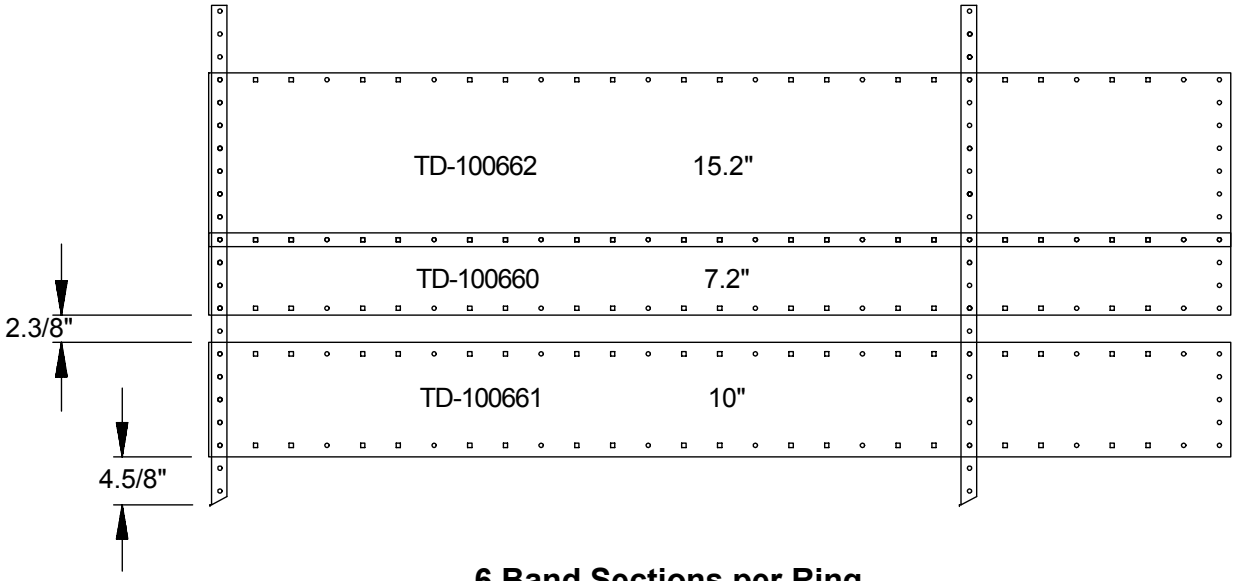
Use (2) 5/16" x 3/4" bin bolts to attach bands to posts. Also use 5/16" x 3/4" bin bolts to to join band sections. **Note that band sections connect to each other only at endmost holes until completing the circle where an overlap may occur**.

Inner Leveling Bands



3 Band Sections per Ring
4 Bays w/15 Holes Between Posts
and 1 Bay w/19 Holes Between Posts

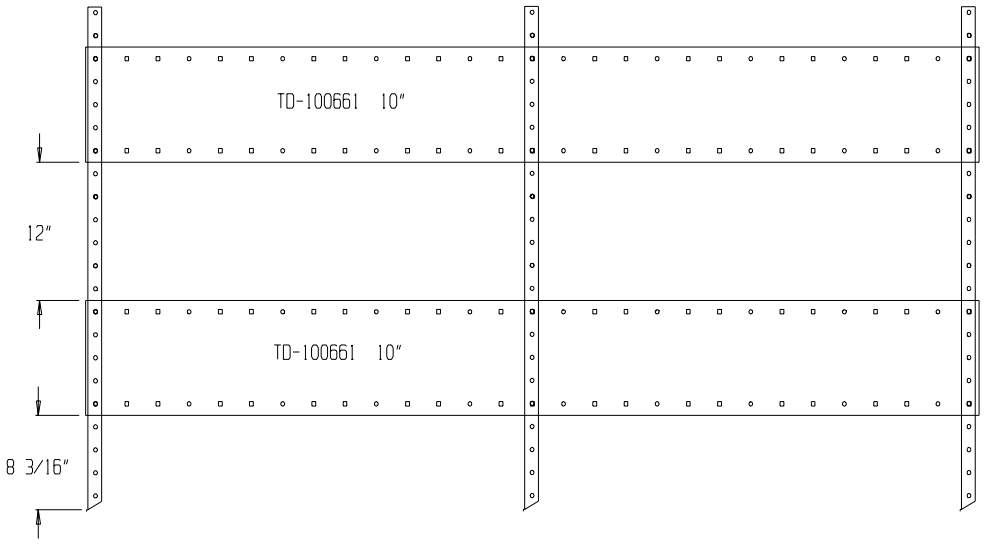
Outer Leveling Bands



6 Band Sections per Ring
7 Bays w/23 Holes Between Posts

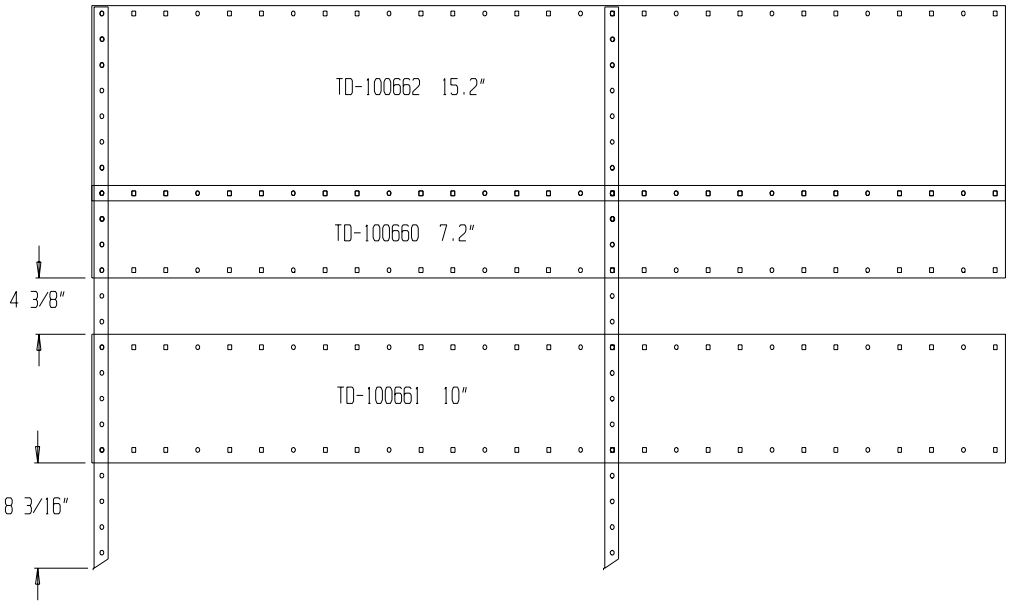
30' LEVELING BAND LOCATION

INNER LEVELING BANDS



2 BAND SECTIONS / RINGS- 6 BAYS W/13 HOLES BETWEEN POSTS

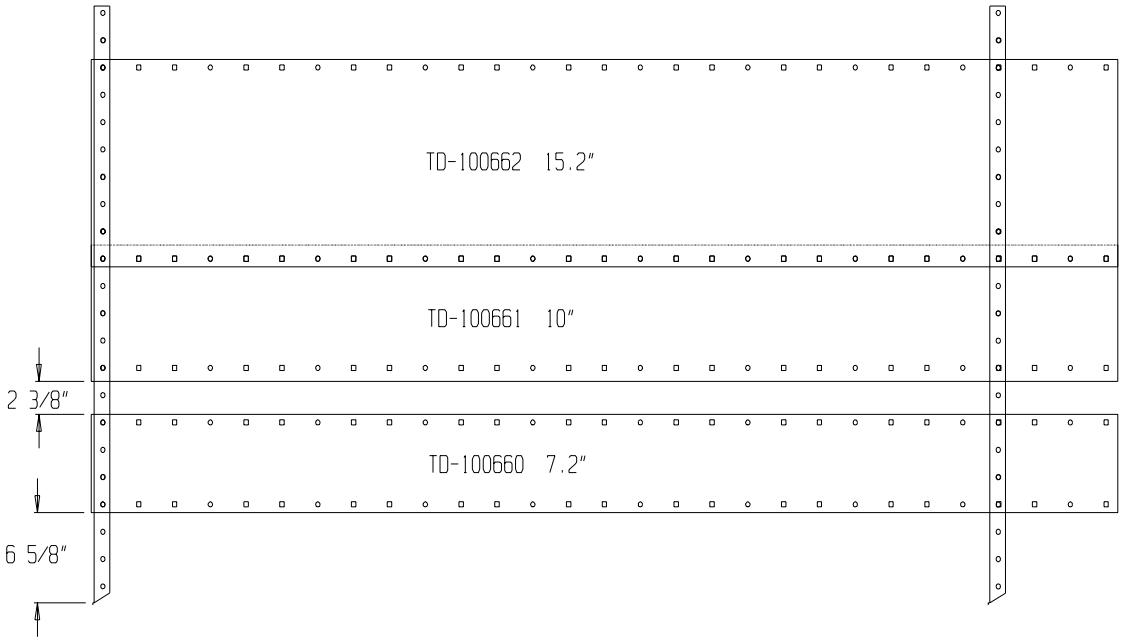
Middle Leveling Bands



6 BAND SECTIONS / RINGS- 10 BAYS W/15 HOLES BETWEEN POSTS

30' LEVELING BAND LOCATIONS

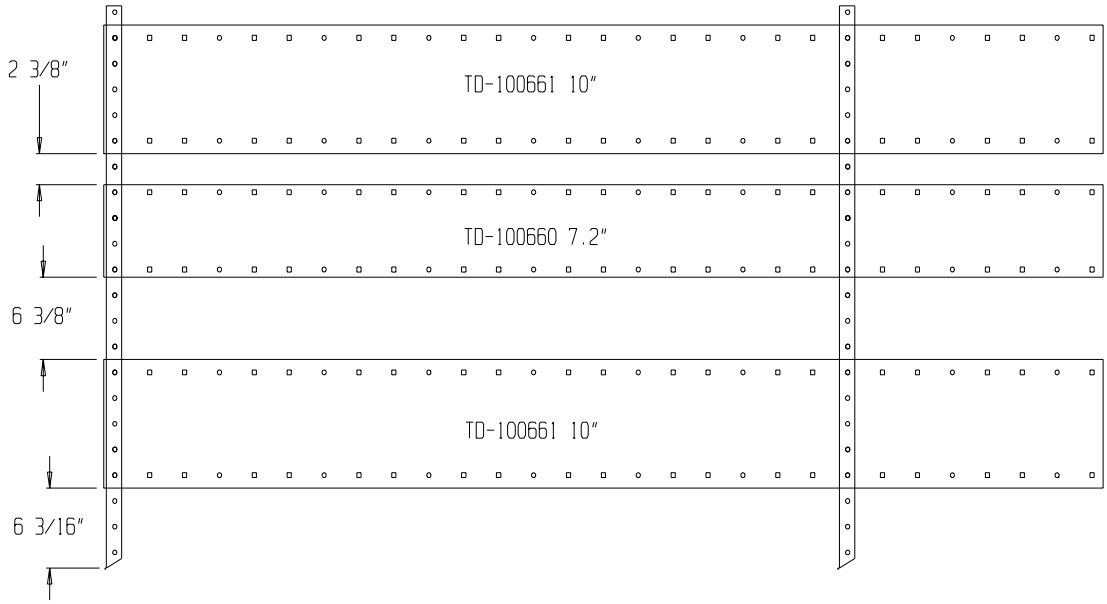
OUTER LEVELING BANDS



9 BAND SECTIONS / RING- 10 BAYS W / 24 HOLES BETWEEN POSTS

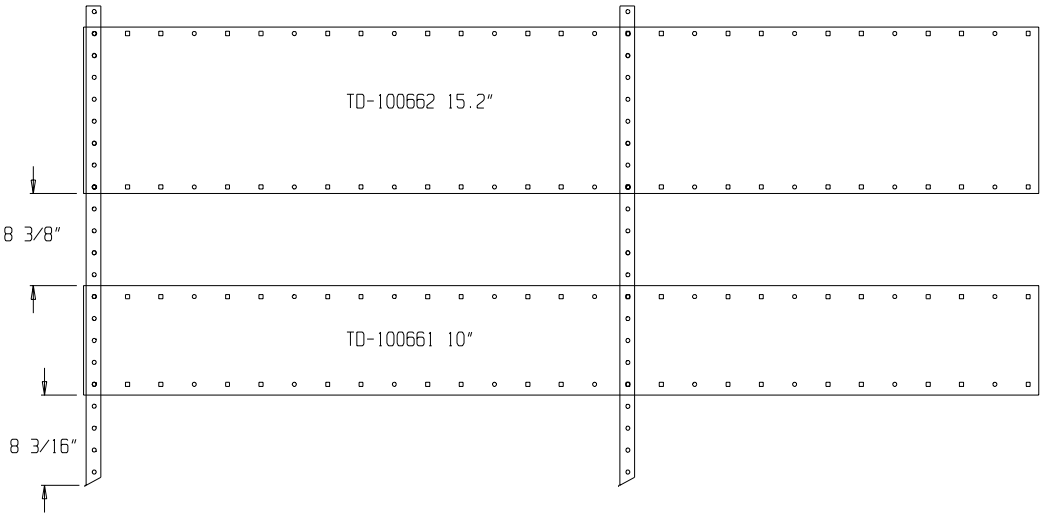
36' LEVELING BAND LOCATIONS

INNER LEVELING BANDS



5 BAND SECTIONS/RINGS- 6 BAYS W/20 HOLES BETWEEN POSTS

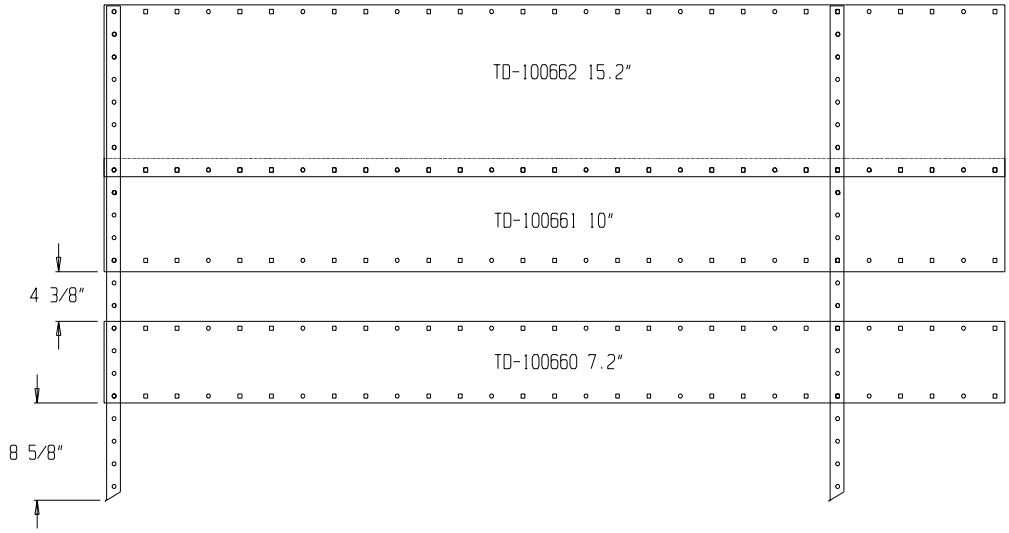
NO. 2 SET OF LEVELING BANDS



7 BAND SECTIONS/RINGS- 12 BAYS W/15 HOLES BETWEEN POSTS

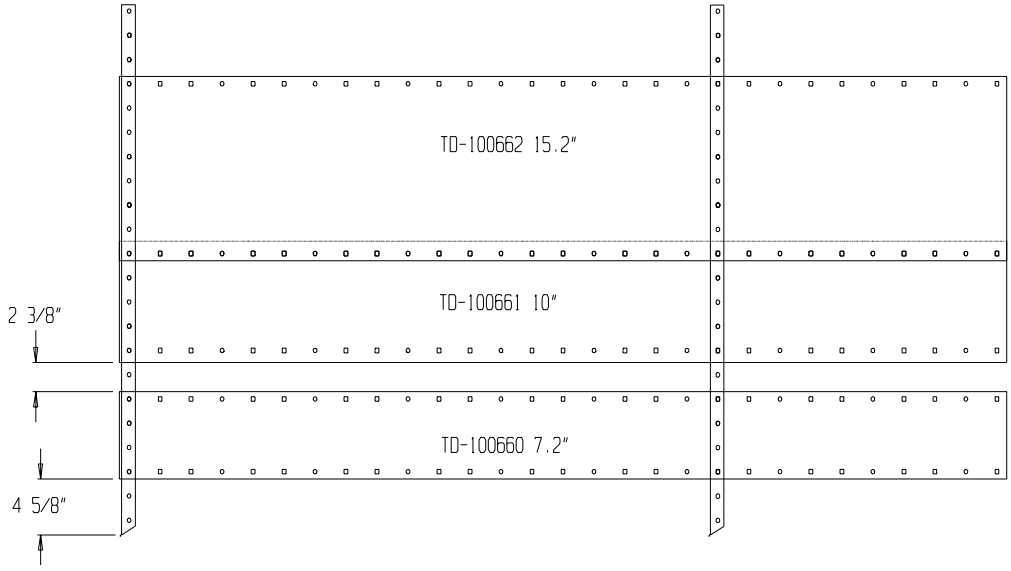
36' LEVELING BAND LOCATION

NO. 3 SET OF LEVELING BANDS



10 BAND SECTIONS/RINGS- 12 BAYS W/22 HOLES BETWEEN POSTS

NO. 4 SET OF LEVELING BANDS



13 BAND SECTIONS/RINGS- 18 BAYS W/18 HOLES BETWEEN POSTS

Auto-Vent Assembly & Installation Instructions

The following instructions are for assembling and installing the Auto-Vent. First, check the packing list to ensure all components have been shipped. The unit is easiest assembled in the **upside down position** as shown in the instructions. Roof vent location should be as shown on the following page.

Assembly

1. Take all parts out of the shipping box and check if all parts are present.

2. Turn one (1) roof vent housing (MIS-6778) upside down. (See Figure #1)

3. Insert 5/16" x 1.1/4" bin bolt with neoprene washer through hole in the side of roof vent. Place jamb nut onto the bolt and tighten. (See Figure #1)

4. Slide flap assembly (MIS-6777) onto bolt. The bolt should slide through hole in the flap assembly bracket. Install with curvature cupped upward and the brackets in the position as shown.

5. Insert 5/16" x 1.1/4" bin bolt with neoprene washer through the other side of the roof vent, through jamb nut and other flap assembly bracket. Tighten nut against vent housing side.

7. Place hold-down angle (MIS-4404) on the assembled roof vent. The wide end of the hold-down angle must face vent discharge. Once aligned, screw nine (9) #10 self-drilling (S-280) screws through the roof housing and into the holddown angle. (See Figure #2).

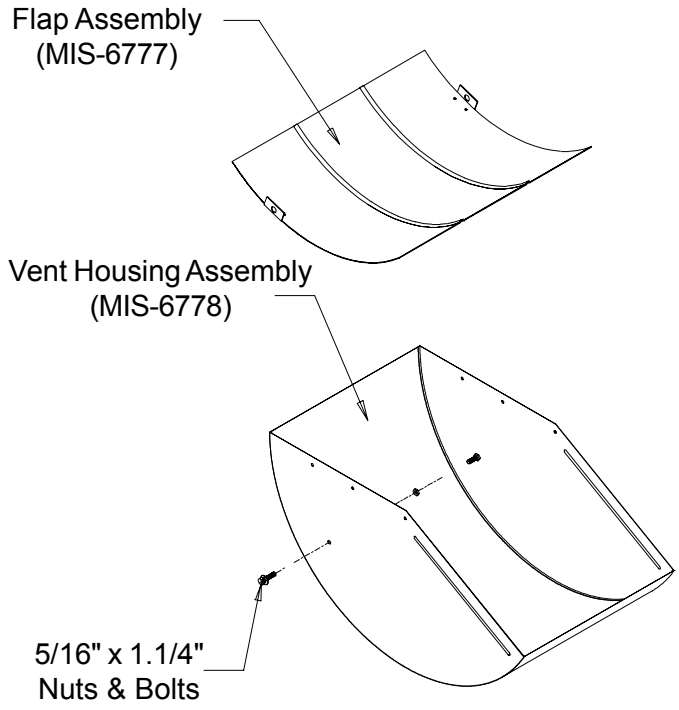


Figure #1

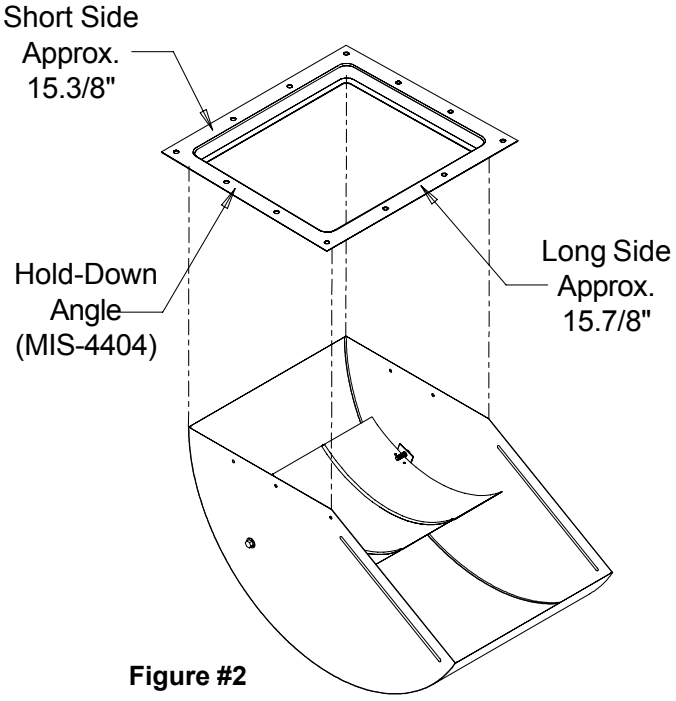


Figure #2

Auto-Vent Assembly & Installation Instructions

Installation

8. If the roof sheet does not have a prepunched hole for the roof vent, a hole must be cut. The cut hole should match the roof vent. The hole's inside edge should be approximately fifteen (15) inches from the eave. (See Figure #5)

9. Place the three (3) foam strips on roof sheet, as shown in Figure #4. Position roof vent over foam strips and bolt down using 5/16" x 3/4" bin bolts and nuts. (Note: See instructions below for lower two (2) bolts of vent).

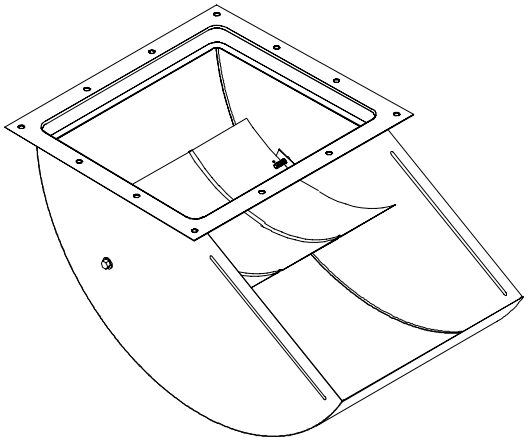


FIGURE #3

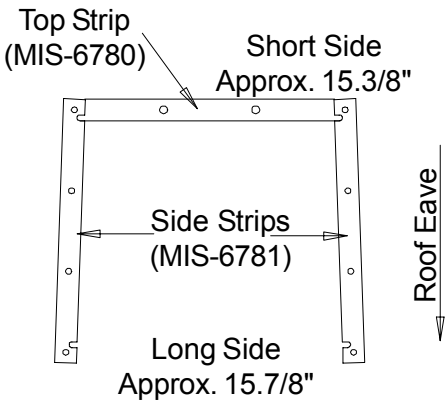


FIGURE #4

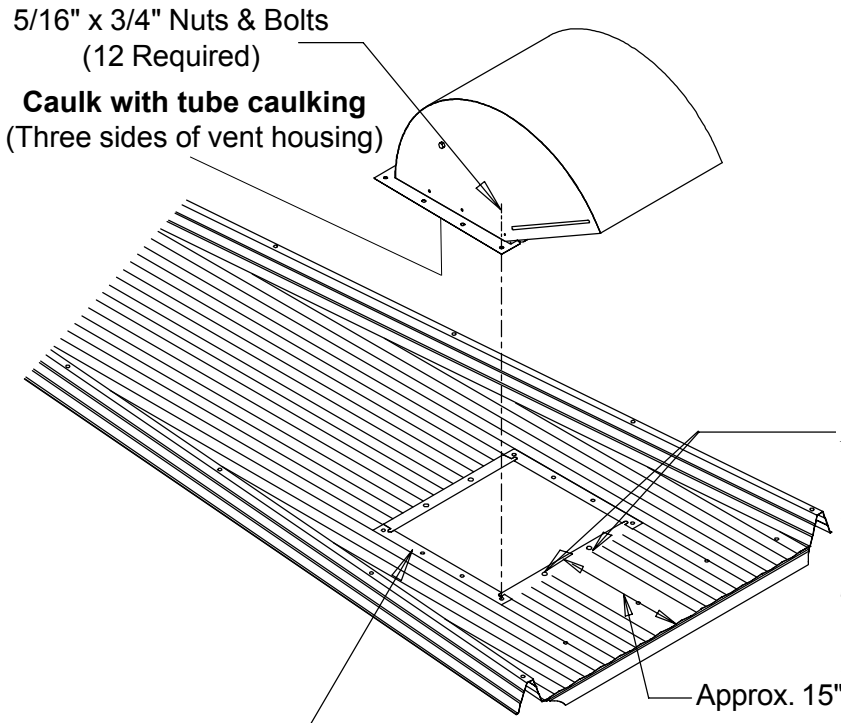
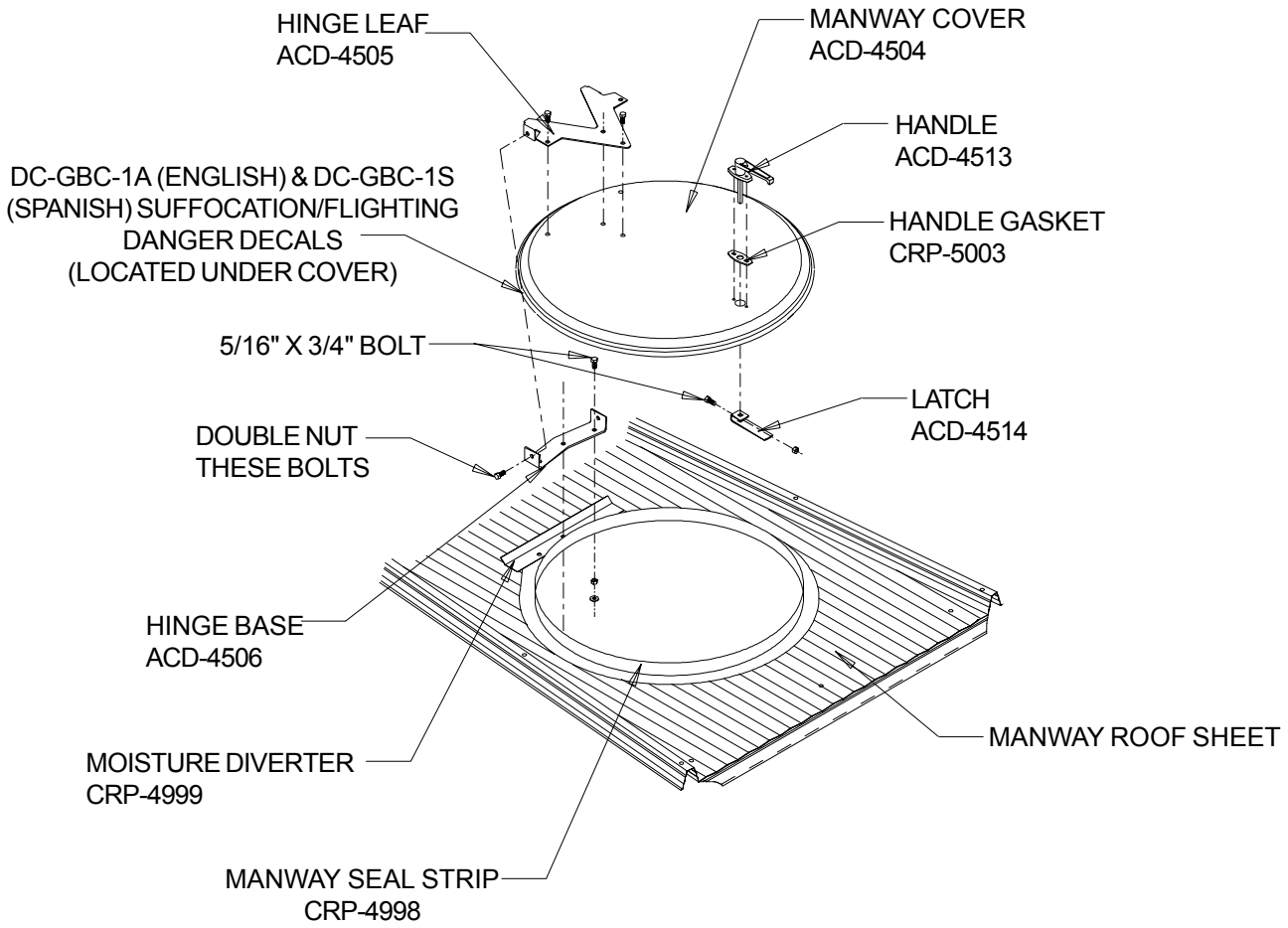


FIGURE #5

Manway Cover Assembly

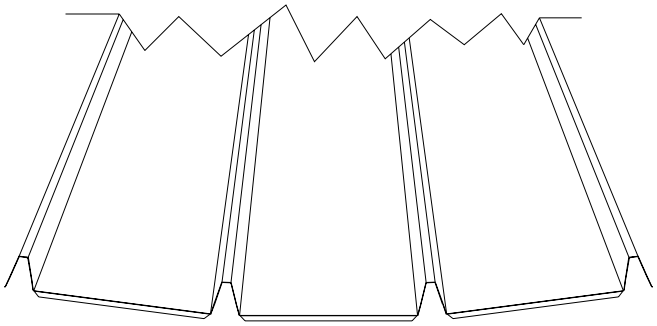


Apply caulking to underneath side of moisture diverter to seal between the corrugated roof sheet and diverter. Attach the moisture diverter and hinge base to manway roof sheet with 5/16" x 3/4" bolts and nuts. Place hinge leaf on manway cover and bolt both hinge parts together with 3/8" x 1" bolts and lock nuts. The handle is fastened on with two #10-24 x 5/8" long bolts and #10-24 lock nuts. Slip a 5/16" nut in the latch bar, thread on the shaft of handle, and adjust latch bar so it will catch the bottom side of the manway sheet. Snap the Manway Seal Strip to the manway seal.

TOP DRY ROOF ASSEMBLY

For best results in erecting the roof, install two roof panels in four places as shown in Diagram A. When these eight panels are in place, your peak assembly should be centered. Next, add two or three panels at a time to each section making certain to lap them the same way, until all panels are in place. Be sure the panels are bolted loosely. DO NOT TIGHTEN BOLTS UNTIL THE ROOF IS COMPLETELY ASSEMBLED. When applying the roof panels, take into consideration the placement of the manway for ease of access to and from the sidewall and roof ladders.

Fasten Roof Sheets To Eave Clips And Sidewall Sheets As You Assemble.



ROOF OVERLAY

NOTE: USE THE SAME OVERLAY PROCEDURE ON ALL ROOF SHEETS.

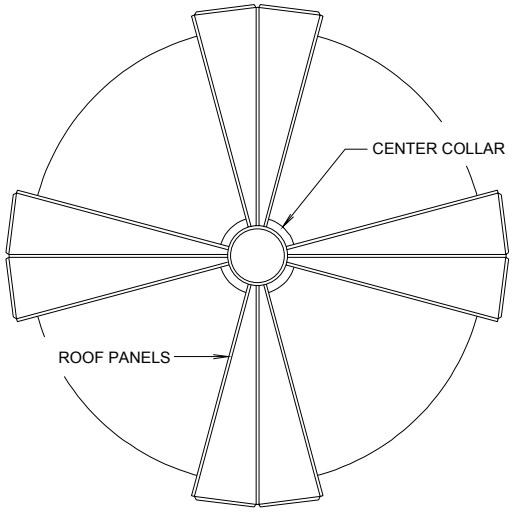


DIAGRAM A

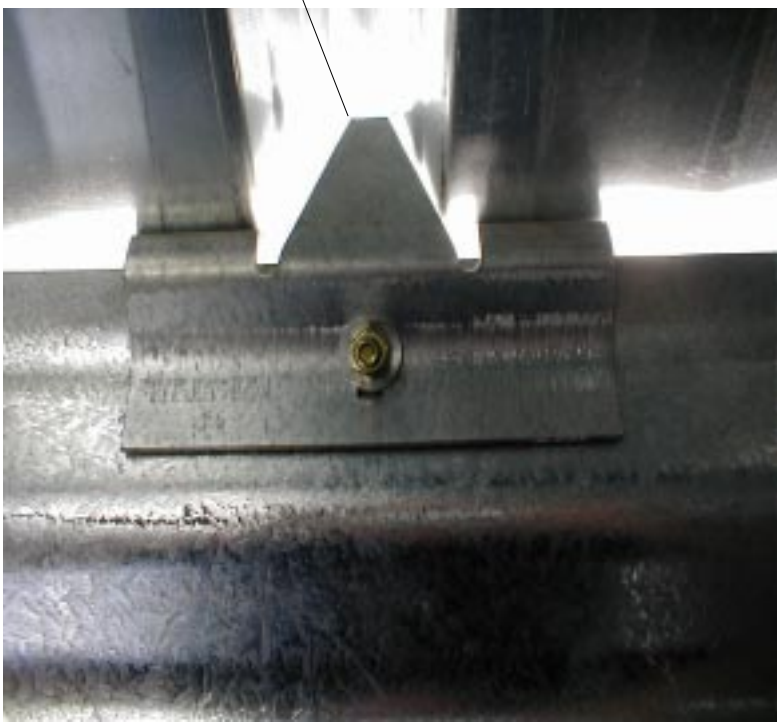
ROOF ASSEMBLY

SPECIAL INSTRUCTIONS

SEE ROOF INSTALLATION MANUAL LOCATED WITH ROOF HARDWARE PACKAGE.

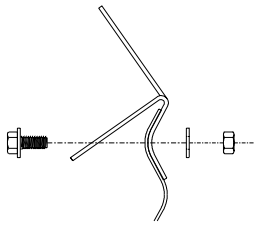
1. Do not use the Eave Clips that are located in the Roof Hardware Package. Use TD-101017 Eave clips for 21'-24' tanks, and TD-101074 Eave Clips for 30'-36' tanks. The Top Dry Eave Clips are located in the TDC-"Diameter"C Crate.
2. Locate eave clips so that a roof sheet will be centered over sidewall ladder.
3. Use TD-100274 Roof Brackets shipped in the Top Dry hardware rather than the brackets shipped in the roof hardware.

TD-101074
Small Eave Clip
TD-101017
Large Eave Clip



Roof Assembly For 21' Thru 24' Bins

NOTE: Be sure to install ladder rungs and safety steps as you assemble roof panels. When assembling such pieces as roof ladder rungs, remove the neoprene washer from bolt and place between the roof and the piece you are adding. This will insure a more protective seal against moisture.



TYPICAL ALL EAVE CLIPS
5/16" X 3/4" BIN BOLT, NUT AND WASHER

CENTER COLLAR
CRP-4609 (3) 21' ROOF - BLUE
CRP-4608 (3),24' ROOF - RED

5/16" X 3/4" BOLTS & NUTS

* Leave out top row of bolts along top edge of rib for collar flashing, to installed later.

APPLY A BEAD OF CAULKING AROUND THE CENTER COLLAR

5/16" X 1.1/4" BOLTS & NUTS

IMPORTANT:
START ROOF CHANNEL 2nd HOLE FROM THE BOTTOM OF ROOF RIB

TYPICAL ROOF DETAILS
ROOF CHANNELS,
2 REQUIRED UNDER ROOF LADDER RIBS. POSITION CHANNEL AS CLOSE TO EAVE AS POSSIBLE.
CRP-4693 21' & 24'
ROOF CHANNEL

ROOF STEP

TD-101074 EAVE CLIP

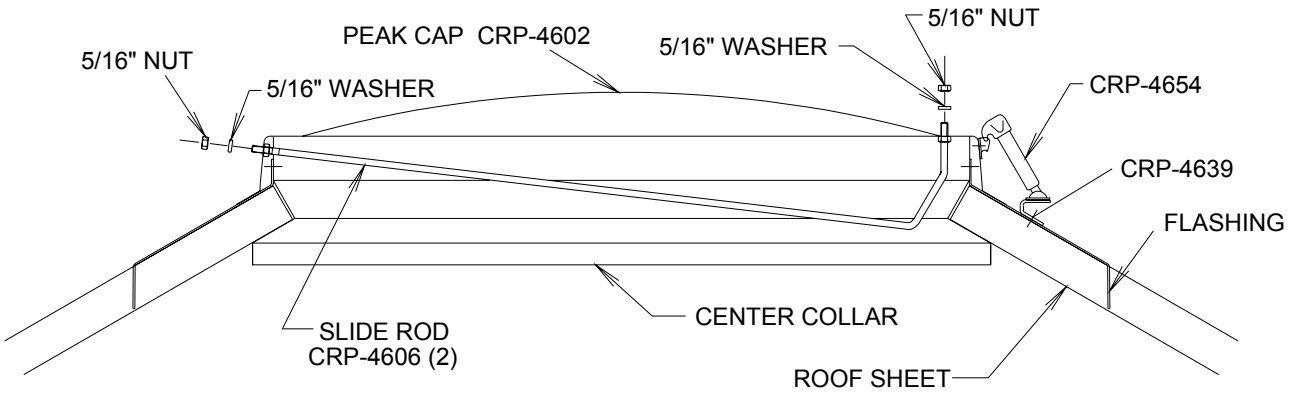
TD-100274
INTERMEDIATE EAVE CLIP

5/16" X 3/4" BOLTS & NUTS

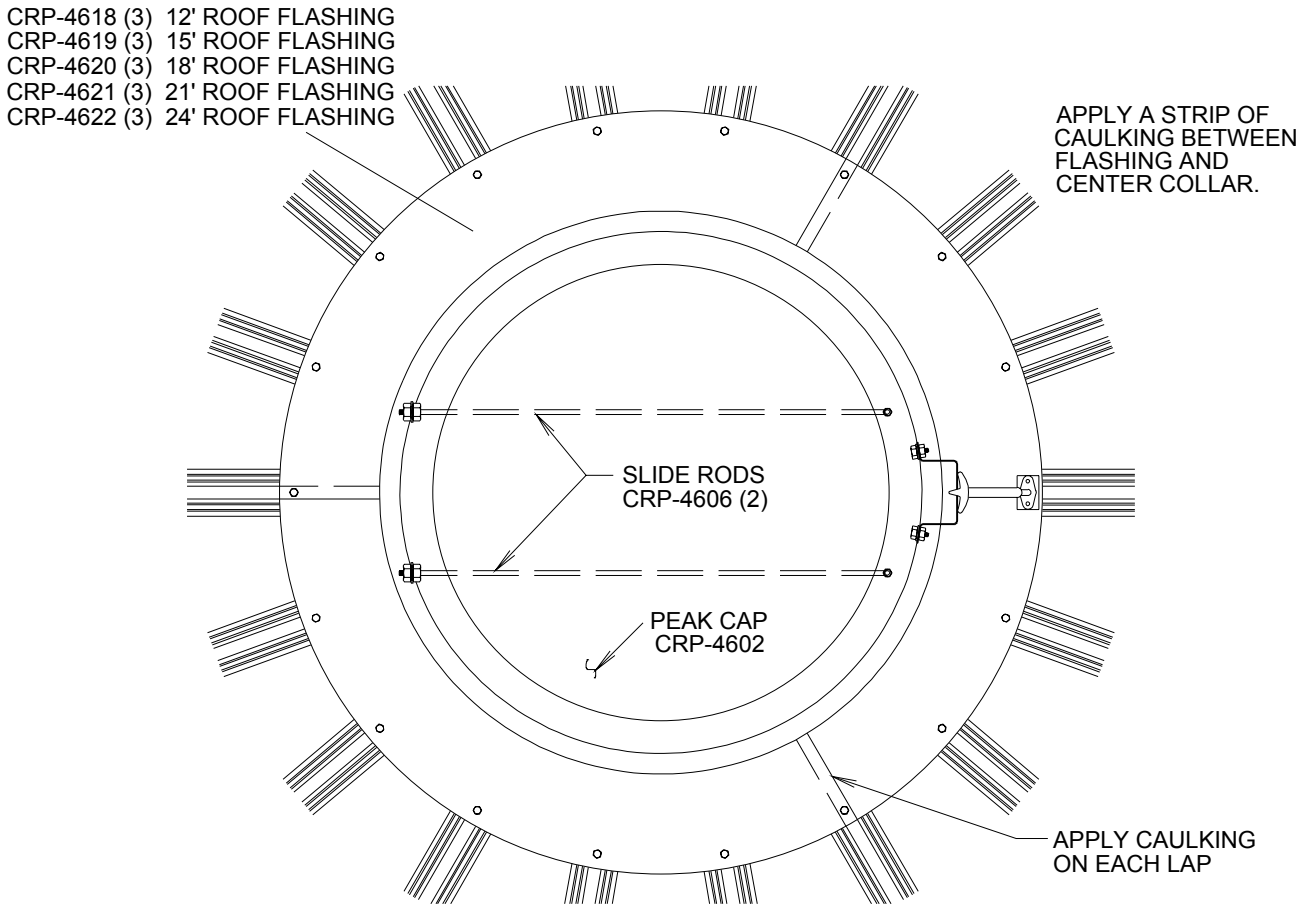
NOTE: Use Top Dry Intermediate Eave Clip, and Eave Clip located in TDC-(tank Dia.)C parts crate**.**

21" Thru 24' Roofs (Continuation)

To assemble slide rods and cover, insert straight end of slide rod through the center collar and thread one 5/16" nut all the way down on the rod, followed with a washer. Then place rod through the cover and put a washer and nut on the outside. **DO NOT TIGHTEN!** Put a nut on the bent end of the rod, followed with a washer. Insert rod through the cover, then place washer and nut on the outside. **TIGHTEN!** Adjust and tighten nuts on straight end of rod. After tightening, it may be necessary to spread the rods slightly to make them parallel. (Maintain 10" between rods.)



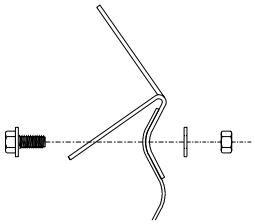
SECTION THRU CENTER COLLAR



TOP VIEW

Roof Assembly For 30' Bins

NOTE: Be sure to install ladder rungs and safety steps as you assemble roof panels. When assembling such pieces as roof ladder rungs, remove the neoprene washer from bolt and place between the roof and the piece you are adding. This will insure a more protective seal against moisture.



TYPICAL ALL EAVE CLIPS
5/16" X 3/4" BIN BOLT, NUT AND WASHER

CENTER COLLAR
CRP-4608 (3) 30' ROOF - RED

5/16" X 3/4" BOLTS & NUTS

* Leave out top row of bolts along top edge of rib for collar flashing, to installed later.

APPLY A BEAD OF CAULKING AROUND THE CENTER COLLAR

5/16" X 1.1/4" BOLTS & NUTS

IMPORTANT:
START ROOF CHANNEL 2nd HOLE FROM THE BOTTOM OF ROOF RIB

TYPICAL ROOF DETAILS
ROOF CHANNELS,
2 REQUIRED UNDER ROOF LADDER RIBS. POSITION CHANNEL AS CLOSE TO EAVE AS POSSIBLE.
CRP-4692 30'
ROOF CHANNEL

ROOF STEP

TD-101017 EAVE CLIP

TD-100274
INTERMEDIATE EAVE CLIP

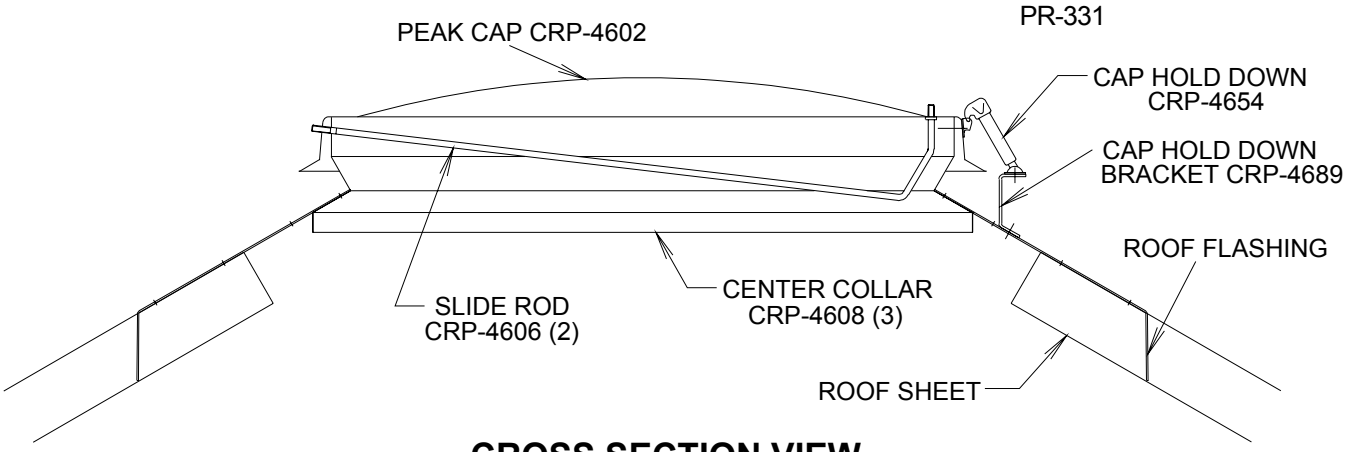
5/16" X 3/4" BOLTS & NUTS

NOTE: Use Top Dry Intermediate Eave Clip, and Eave Clip located in TDC-(tank Dia.)C parts crate**.**

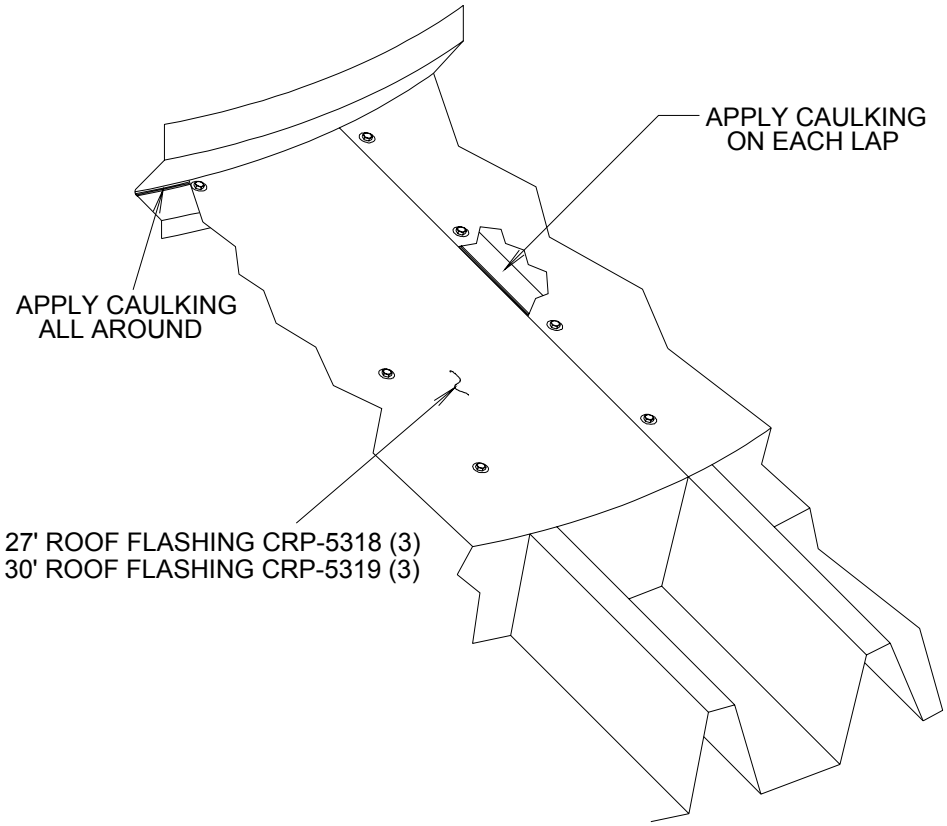
30' Roofs (Continuation)

NOTE: See previous pages for assembling the peak cap and slide rods

Prior to assembly of roof and center collar, you will need to position the flashing so the cap hold down is in line with roof ladder. Two holes per flashing section has been provided for the hold down bracket. Preassemble center collar and flashing pieces together before attaching roof panels to flashing. **TIGHTEN BOLTS, EXCEPT FOR THE 2 LOWER FLASHING SEAM BOLTS!**



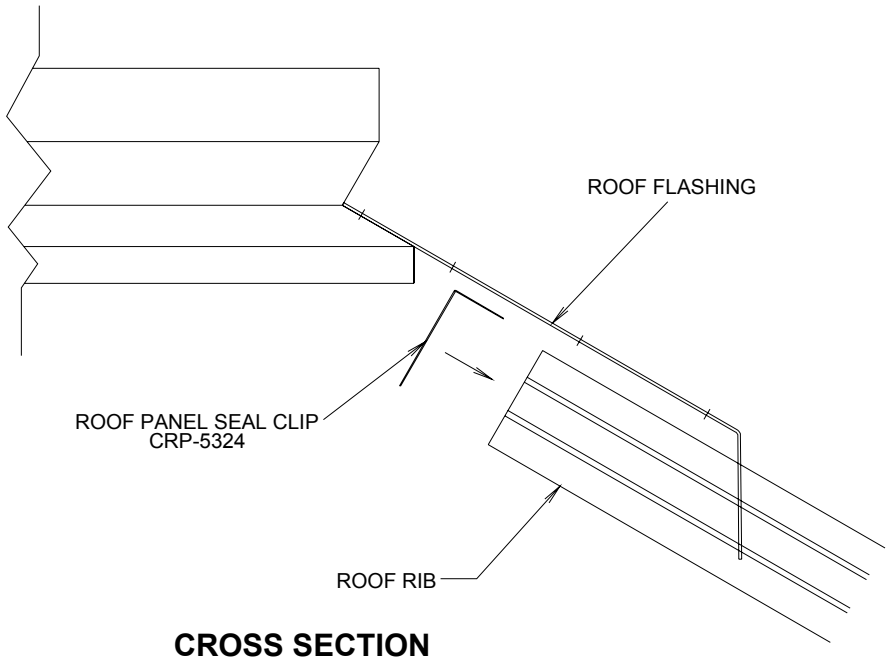
CROSS SECTION VIEW



FLASHING DETAIL

30' Roofs (Continuation)

After all roof panels have been attached to the roof flashing, slip the roof panel seal clip between the bottom surface of the flashing and the top of the roof ribs. Be sure to push the clip in as far as possible for the best seal. Tighten all bolts and nuts after clips are pushed in.

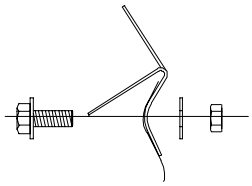


CROSS SECTION

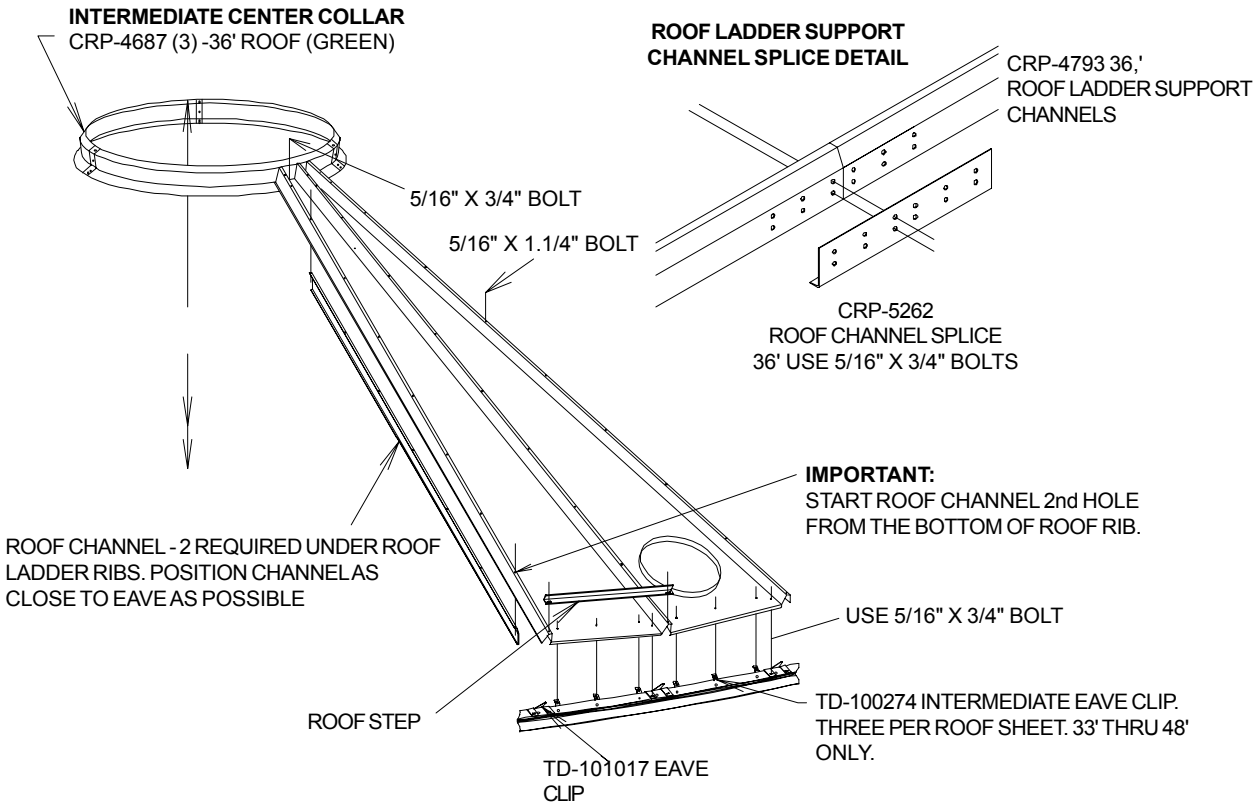
Roof Assembly For 36' Roofs

After assembling the lower center collar “Z” ring, build a roof center support to hold it in place at the proper height . Place eave clips inside the bin wall to maintain an opening around the top of the sidewall. This allows condensation, which normally collects on the underneath side of the roof panels, to flow freely to the outside of the bin, thus avoiding possible grain spoilage. Now you are ready to place the first group of roof sheets in place as shown in Diagram A, page 64. The eight panels will keep your peak assembly centered. Continue placing roof sheets (with a consistent lap pattern) at intervals around the bin to distribute the weight evenly. **DO NOT TIGHTEN BOLTS UNTIL THE ROOF IS COMPLETELY ASSEMBLED**. Once all roof sheets are in place and the bolts are tightened, the center ring and flashing assembly may be put on top of the panels. Place a flashing seam over a “Z” collar seam to insure correct alignment (Reference page 72). The peak cap and slide rods may then be put in place to finish the roof.

NOTE: BE SURE TO INSTALL LADDER RUNGS AND SAFETY STEPS AS YOU ASSEMBLE ROOF PANELS. WHEN ASSEMBLING SUCH PIECES AS ROOF LADDERS, REMOVE NEOPRENE WASHER FROM BOLT AND PLACE BETWEEN THE ROOF AND THE PIECE YOU ARE ADDING. THIS WILL INSURE A MORE PROTECTIVE SEAL AGAINST MOISTURE.

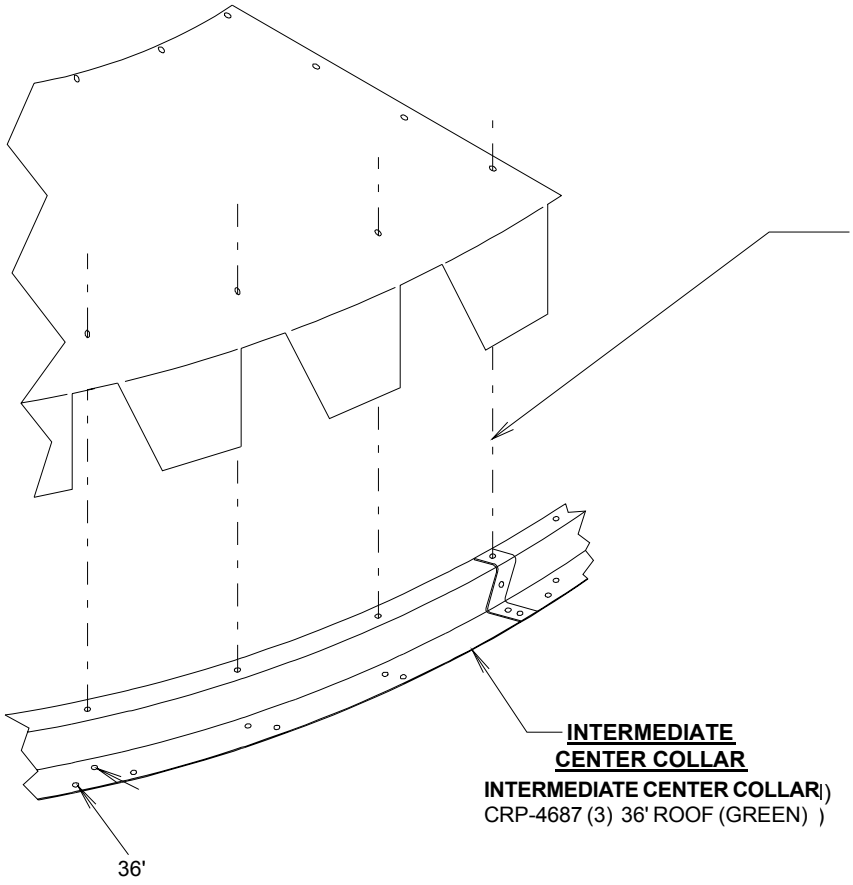


TYPICAL ALL EAVE CLIPS
5/16" X 3/4" BIN BOLT,
NUT AND WASHER



36' Roofs (Continuation)

IMPORTANT



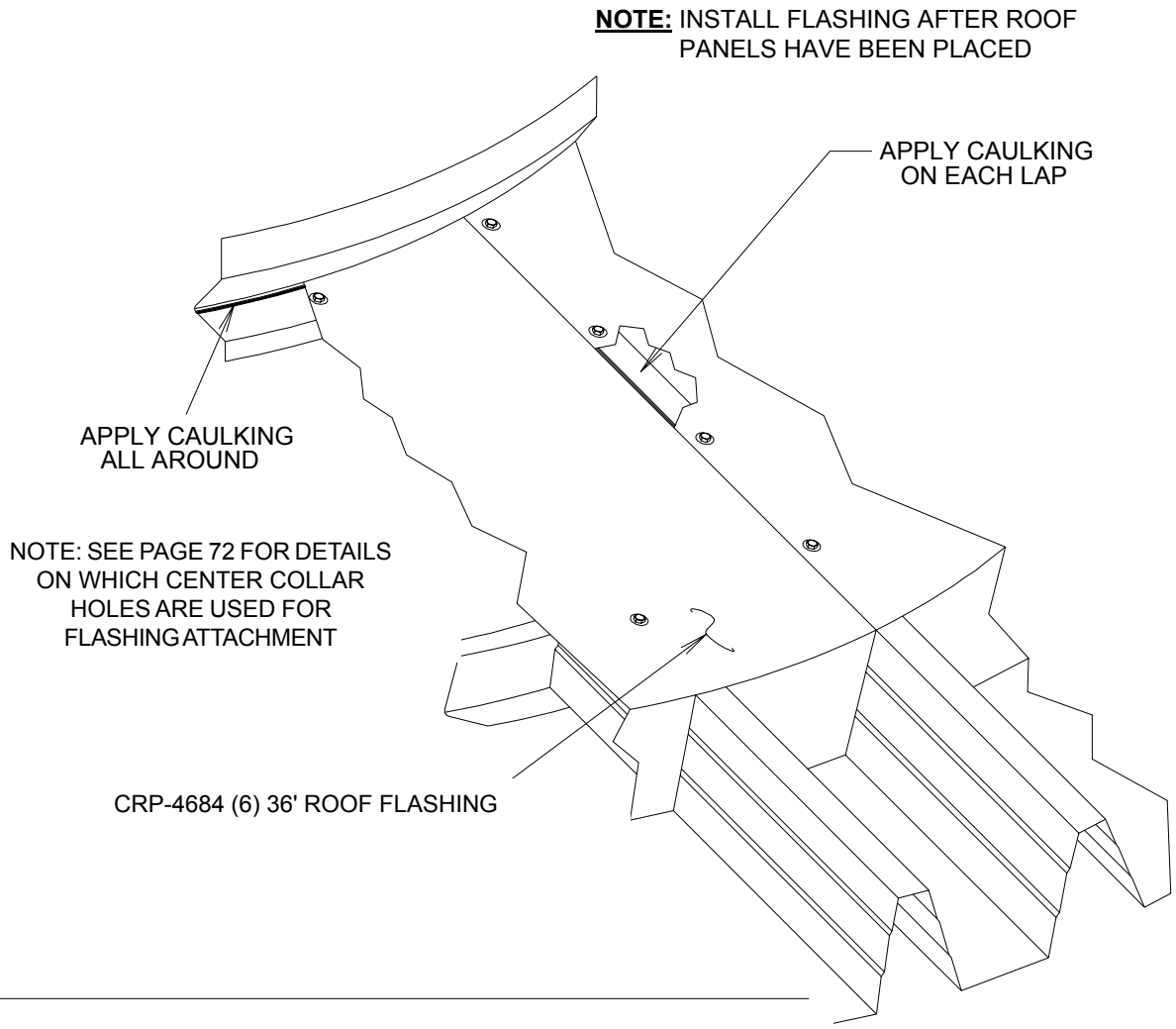
For proper center collar flashing assembly, you must start the flashing seam directly above the center "Z" collar seam.

Improper placement will result in holes and notches not aligned properly.

36' Roofs (Continuation)

NOTE: See previous pages for assembling the peak cap and slide rods.

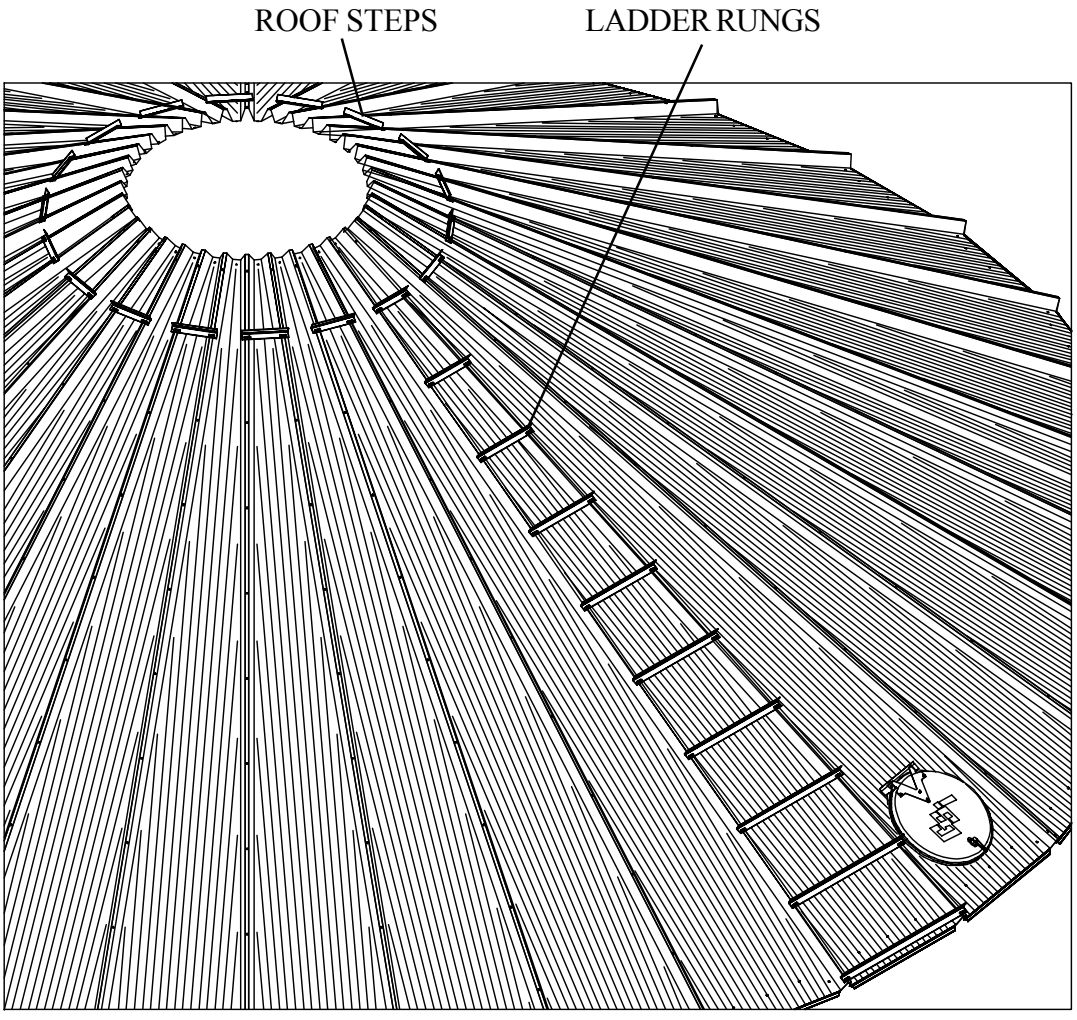
INTERMEDIATE CENTER COLLAR
CRP-4687 (3) 36' ROOF (GREEN)



Be sure to install ladder rungs and safety steps as you assemble roof panels (see drawing below). At this point you will have completed assembly of the roof. Do not tighten bolts yet. Optional equipment and accessories should now be installed.

NOTE: When assembling such pieces as roof ladder rungs, remove neoprene washer from bolt and place between the roof and the piece you are adding. This will insure a more protective seal against moisture.

IMPORTANT: Maximum weight to be supported and/or suspended from the roof is to be 2,500 pounds for 21' thru 36' (non-trussed) ONLY.



SAFETY RING INSTALLATION

To determine the location of the safety rings, start at the narrow or peak of the roof panel and count each hole separately. Having counted down the required distance, install the appropriate brackets. See chart below for proper location.

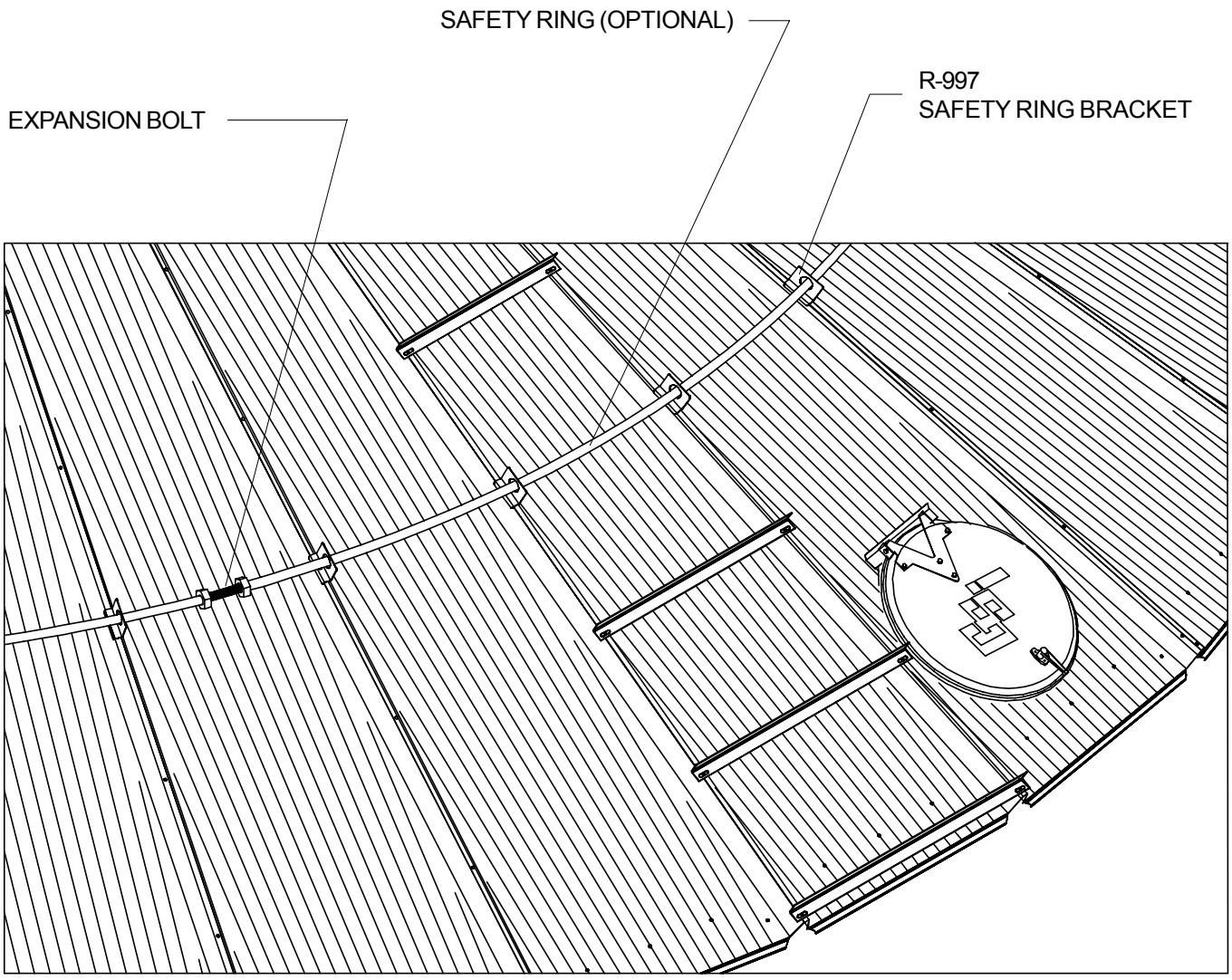
Expansion bolts should be fully contracted when assembling safety rings. When you have completely assembled both rings, (but before expanding) tighten all roof bolts including eave clip bolts. Now extend expansion bolts by running nut out on threads. This procedure should be continued evenly around the roof until the ring raises the roof to show a slight crown.

SAFETY SUGGESTION: It is possible for safety and bridging ring Expansion Bolts to become dislodged from the ring during high winds or when the inside pressure of your bin is too great. If one Expansion Bolt is dislodged, the entire ring will become useless. To remedy this situation, holes must be drilled through the safety ring and Expansion Bolts after the rings have been installed and expanded to the correct size. A cotter pin or bolt should then be inserted through each hole.

NOTE: *Welding of Expansion Nuts to the pipe and Expansion Bolt may be done as an option to drilling and pinning.*

21 FT - 36 FT. DIA. TANKS

BIN DIA.	SAFETY RING LOCATION FROM CENTER	SAFETY RING COLOR CODE	PART NUMBER	COMPLETE SAFETY RING	HARDWARE
21 FT.	5th HOLE	RED/WHITE	CRP-5363-24	CRP-4703	PLS-40227
24 FT.	5th HOLE	RED/WHITE	CRP-5363-24	CRP-4704	PLS-40228
30 FT.	8th HOLE	LIGHT BLUE	CRP-5363-30	CRP-4706	PLS-40230
36 FT.	7th HOLE	GOLD	CRP-5363-36	CRP-4719	PLS-40232

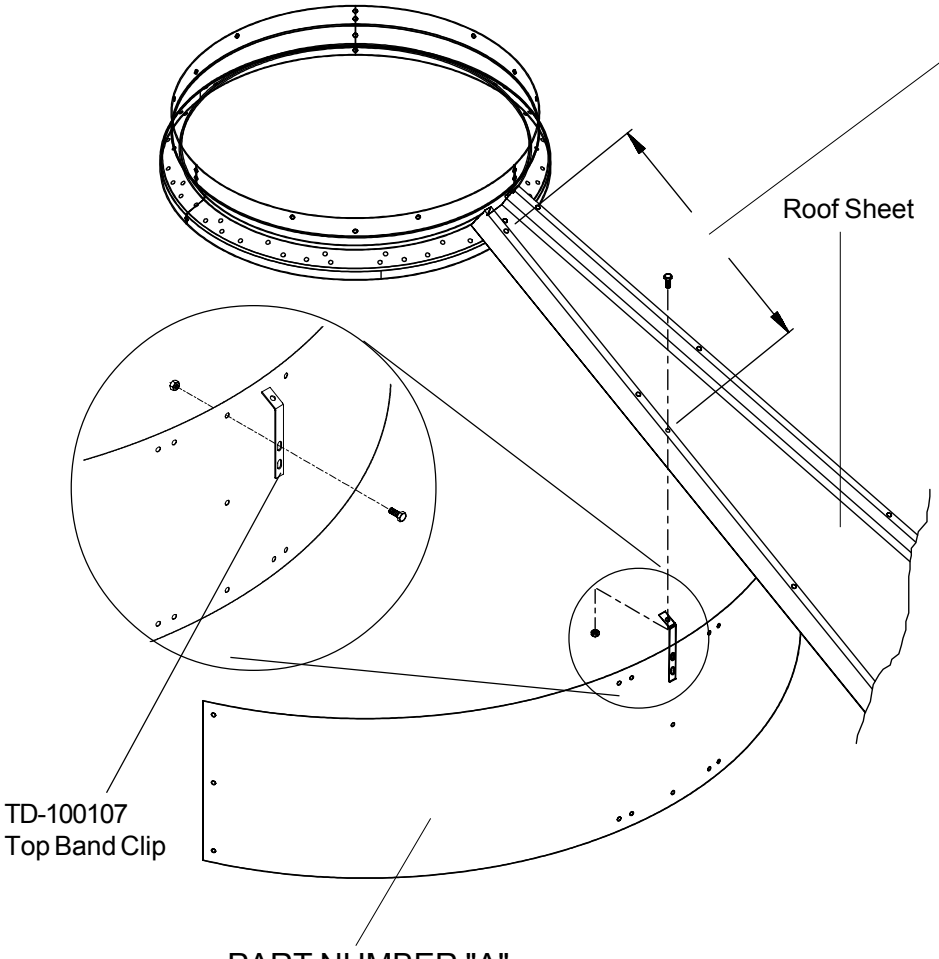


NOTE: Last safety ring/bridging ring pipe will need to be cut to length.

PERFORATED CENTER BAND

Drill 3/8" diameter holes equally spaced as shown in chart for top band clips. Attach clips using 5/16" x 3/4" bin bolts. Add perforated band sections. Note that these do not attach to the leveling bands but hang down on the inside of the top inner leveling band.

NOMINAL DIA. OF TANK (FT.)	NUMBER OF HOLES	DIMENSION
21'	6	25 1/4"
24'	6	25 1/4"
30'	6	22"
36'	12	34"

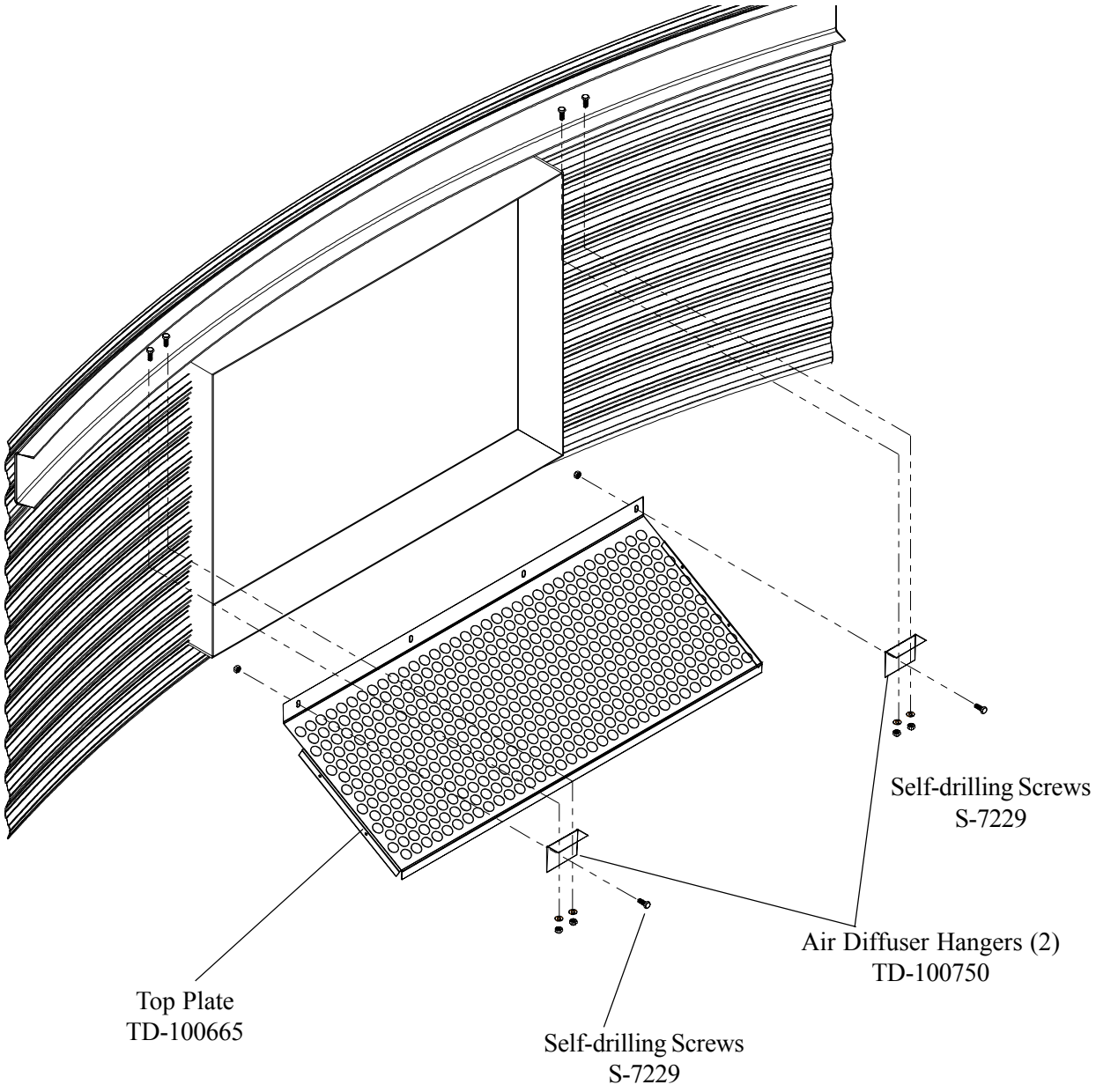


NOMINAL DIA. OF TANK (FT.)	PART NUMBER "A"	QUANTITY REQUIRED
21'	TD-100219	3
24'	TD-100219	3
30'	TD-100545	6
36'	TD-100726	6

42" FAN DIFFUSER INSTRUCTIONS & INSTALLATION

Bolt the long side of the hangers to the endmost slots of the top plate (TD-100665) as shown below.

Hold the top plate up under the bottom flange of the "C" channel in front of the fan opening. Mark and drill four 3/8" holes into bottom flange using diffuser hangers as a guide. Using 5/16" x 3/8" bolts and nuts bolt the top plate to the "C" channel.



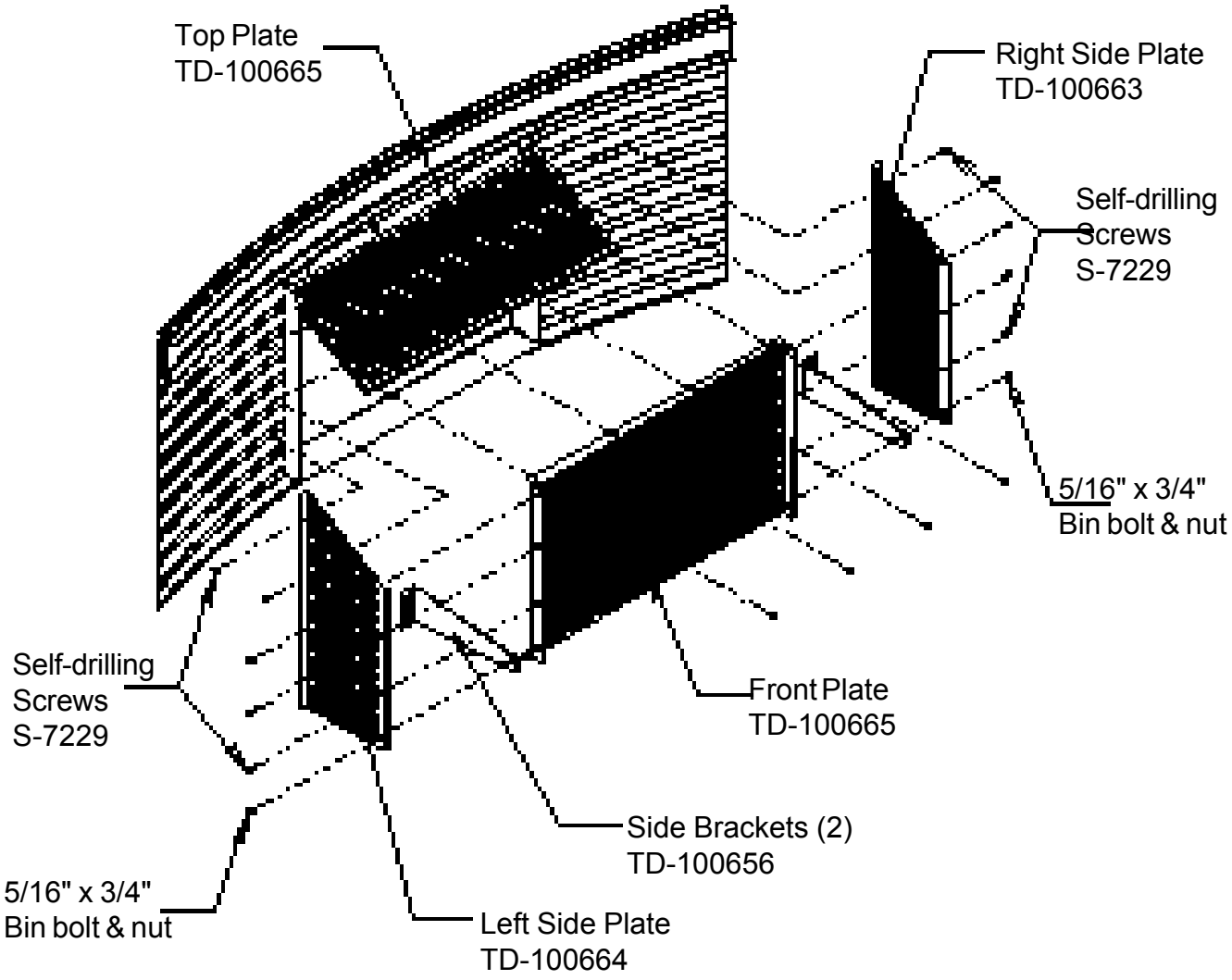
42" FAN DIFFUSER (CONT.)

Attach front plate to the top plate with four (4) 1/4" x 1" self-drilling screws.

Bolt the side brackets to the front plate slot with the angle outward. field drill two (2) holes (on inside corrugation hills) through the sidewall and install 5/16" x 3/4" bin bolts and nuts.

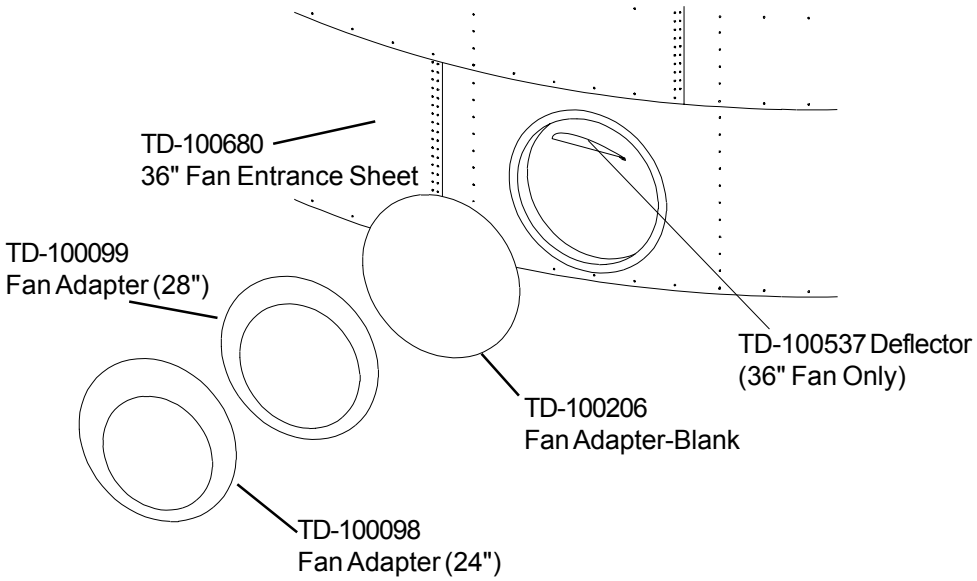
Position the side plates on each side with the angle outward and fasten in place using six (6) 1/4" x 1" self-drilling screws.

NOTE: The corner bolt will need to be removed through the side plate, side bracket and front plate.

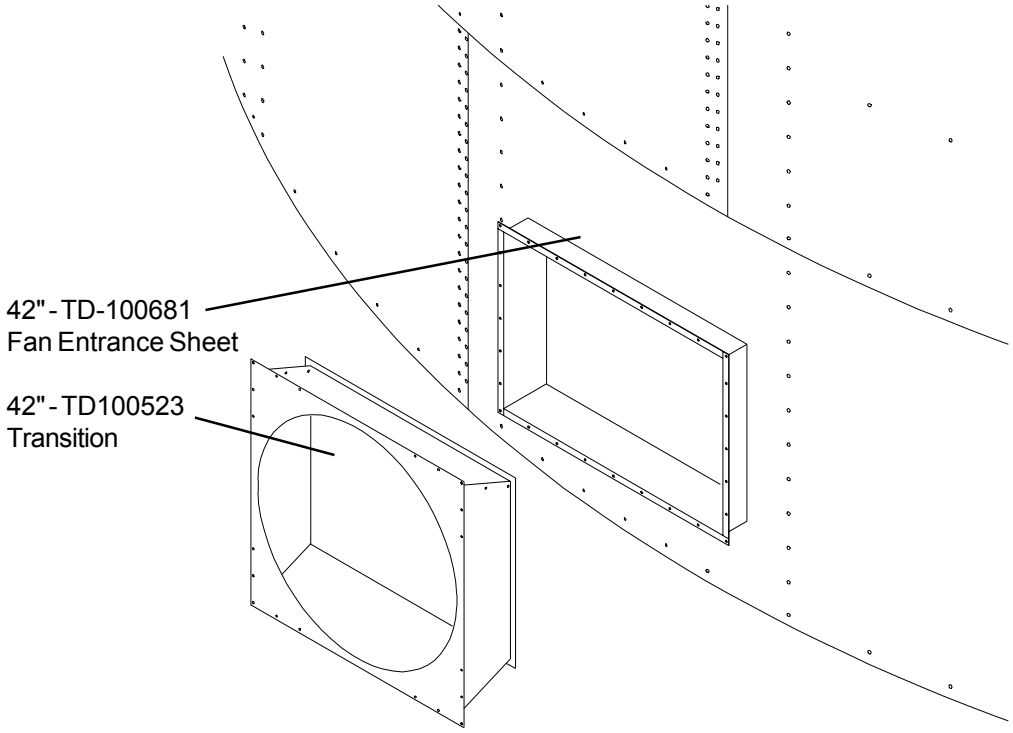


FAN ENTRANCE SHEETS

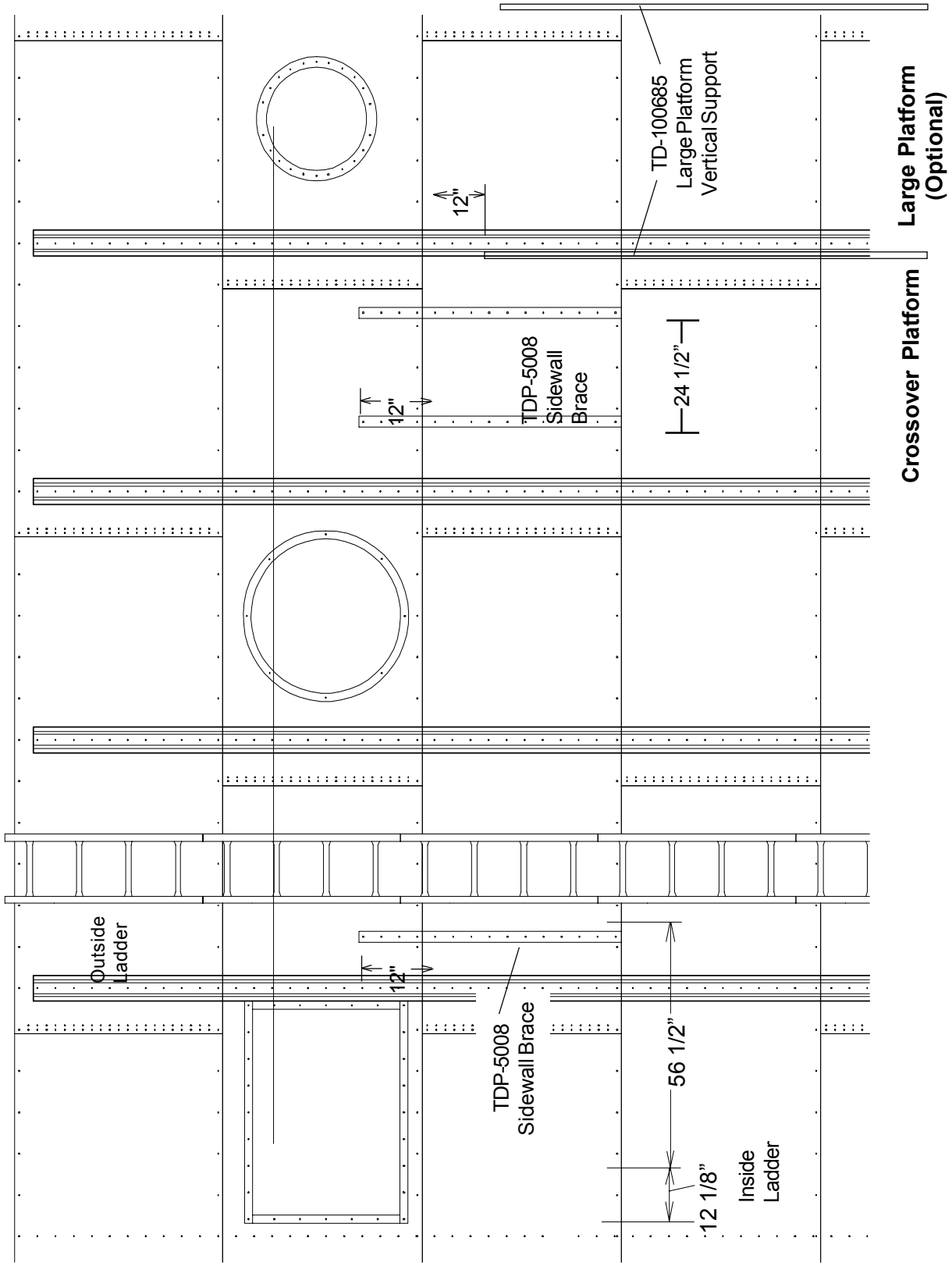
24" thru 36" Fans



42" Fans



Detailed Layout For Proper Location Of Platforms

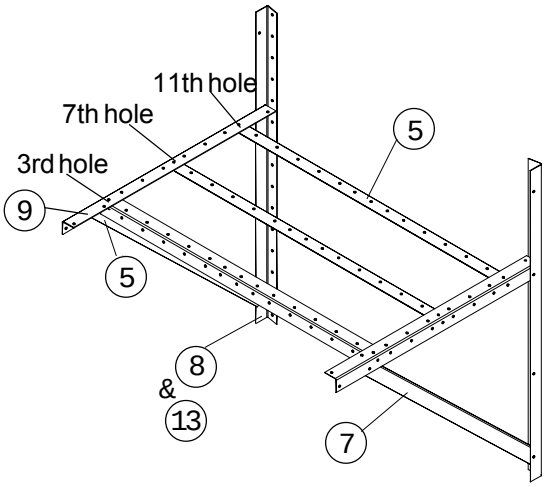


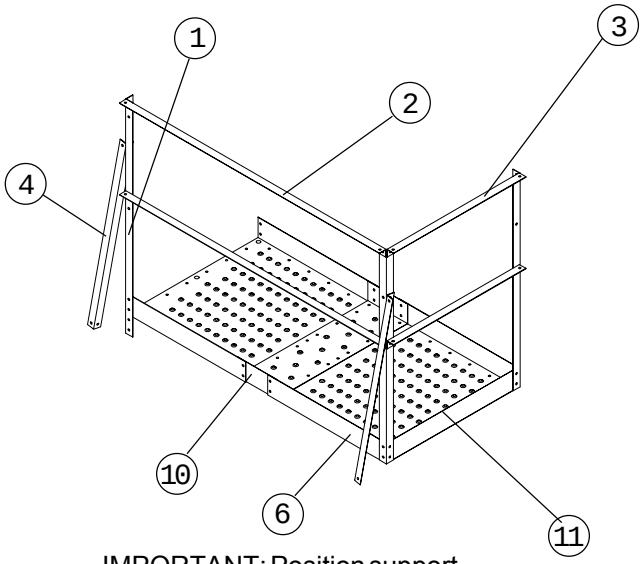
ACCESS DOOR PLATFORM
TDP-5012

Before assembly of any platform, read the entire instructions to assure proper placement and assembly.

Refer to Figure #46 for proper location of access door platform. Begin by assembling the access door platform support frame using 5/16" x 3/4" truss head bolts and nuts. When attaching platform vertical support to bin sidewall field drill (16) 3/8" diameter holes for each support spaced every 4". Be sure and use 5/16" x 3/4" bin bolt on vertical support to sidewall. Special attention should be taken when assembling the platform support that the support brace is placed correctly.

Now proceed to the platform floor. Align holes on platform floor with holes on platform support and bolt together using 5/16" x 3/4" truss head bolt and nuts. Next, assemble handrail posts, handrails, and handrail braces.





IMPORTANT: Position support as shown for proper fit.

Platform Support
TDP-5009

Key	Part No.	Description	Quantity	Weight
1	LS-371	Platform Vertical Angle 42"	3	11.38
2	TDP-5000	Handrail 59"	2	10.15
3	TDP-5002	Handrail 30"	2	10.15
4	TDP-5003	Handrail Brace 36.29/32"	2	6.34
5	TDP-5005	Floor Brace 58.1/2"	3	26.11
6	TDP-5006	Platform Floor 37.7/8"	2	38.23
7	TDP-5007	Support Brace 50.21/32"	2	15.08
8	TDP-5008	Sidewall Brace 58"	2	19.65
9	TDP-5009	Platform Support 43.1/2"	2	12.95
10	TDP-5010	Platform Floor Splice 37.1/2"	1	6.24
11	TDP-5011	Platform Toe Plate 29.3/4"	1	3.29
12	TDP-5014	Access Door Package Hardware	1	5.41
13	TDP-5008N	Sidewall Brace 2.66"	2	16.61

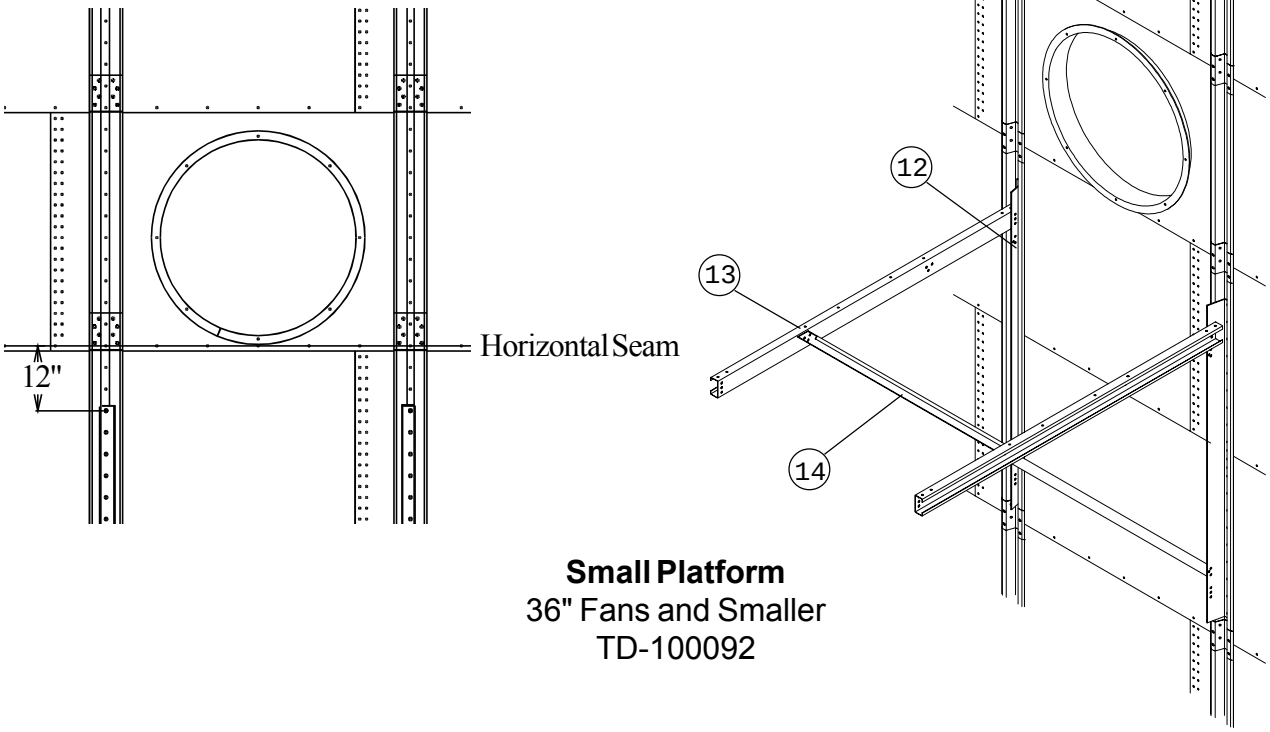
SMALL PLATFORM ASSEMBLY

For 36" Fans and Smaller or
with #1 fan when two 36" or smaller fans are installed

Before assembling any platform, read all of the instructions first to assure proper placement and assembly.

Refer to Figure #43 for proper location of small platform. Begin by assembling the small platform support frame using 3/8" x 1" bolts on all connections. Use 5/16" x 1.1/4" bin bolt to attach platform vertical supports to sidewall stiffeners.

Be sure and locate the 5/16" x 1.1/4" bolts from the inside of the bin to the outside. This will provide maximum weather protection.

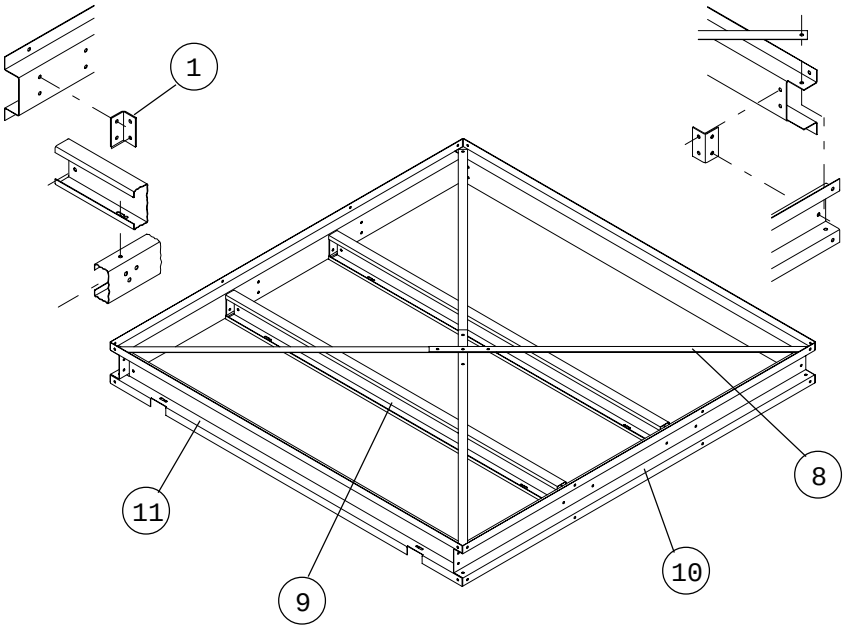


Small Platform
36" Fans and Smaller
TD-100092

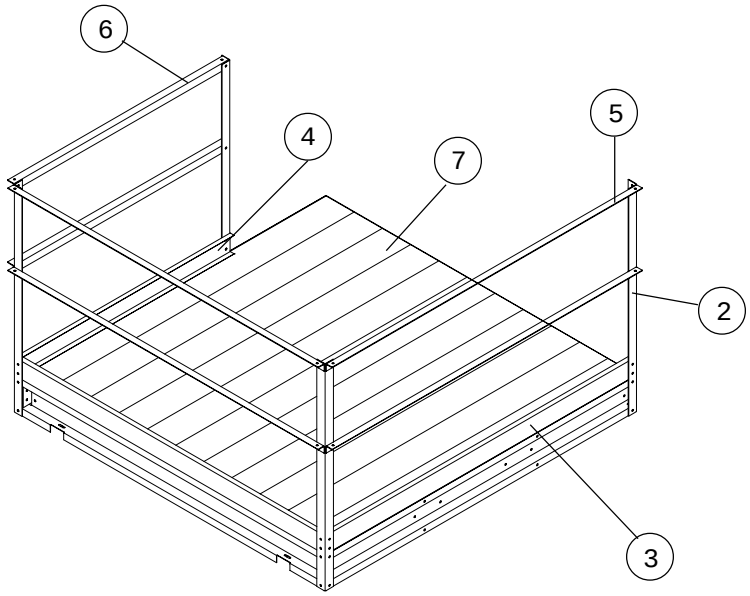
Key	Part No.	Description	Quantity	Weight
1	TD-100051	Channel Bracket	8	3.90
2	TD-100052	Handrail Post 49.3/4"	4	31.69
3	TD-100059	Long Toeboard 78.1/2"	2	10.96
4	TD-100060	Short Toeboard 54.1/2"	1	3.80
5	TD-100061	Long Handrail 78.1/2"	4	37.52
6	TD-100062	Short Handrail 54.1/2"	2	13.02
7	TD-100064	Floor Plank 78"	11	112.87
8	TD-100066	"X" Brace Strap 60"	4	7.26
9	TD-100067	Mid Channel Support 74"	2	32.73
10	TD-100070	Side Channel Support 78.1/2"	2	41.26
11	TD-100072	End Channel Support 78.1/2"	2	41.60
12	TD-100686	Vertical Support 70"	2	43.11
13	TD-100083	Support Channel 80.7/8"	2	32.98
14	TD-100084	Knee Brace 83.5/8"	2	23.67
15	TD-100090	Small Platform Hardware Package	1	8.96

SMALL PLATFORM ASSEMBLY

(CONT.)
36" Fans and Smaller
TD-100092



Position the vertical support to the existing sidewall stiffeners as shown in Figure #46 and double nut with 5/16" nuts.



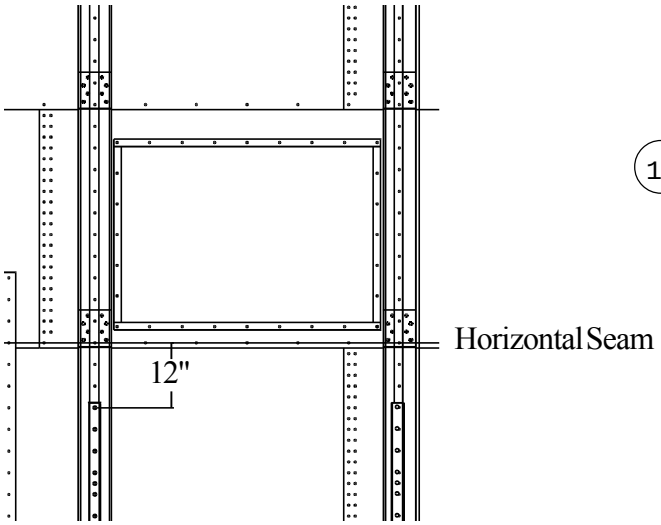
When bolting stiffener to sidewall at locations where platform supports are to be attached, use (25) 5/16" x 1.1/4" bin bolts, heads to inside. Start 12 inches below horizontal seam of second and third rings from top. See Figure #46.

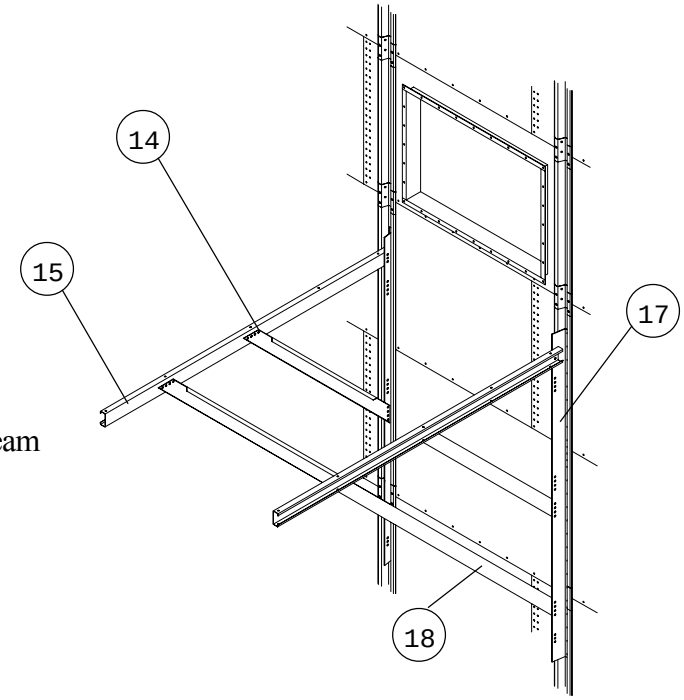
LARGE PLATFORM ASSEMBLY

For 42" Fan

Before assembly of any platform, read the entire instructions to assure proper placement and assembly.

Refer to Figure #43 for proper location of large platform. Begin by assembling the large platform support frame using 7/16" x 1" bolts on all connections. Use 5/16" x 1.1/4" bin bolt to attach the platform vertical supports to the sidewall stiffeners. Be sure and place the 5/16" x 1.1/4" bolts from the inside of the bin to the outside. This will provide maximum weather protection.



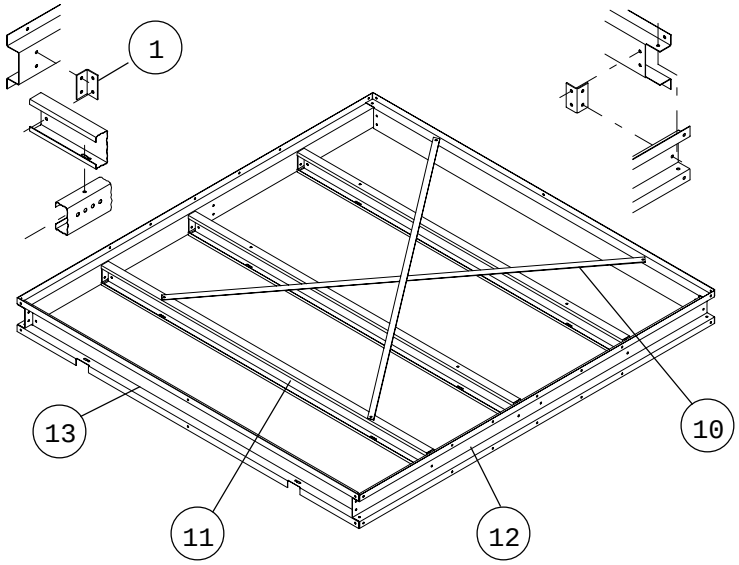


Key	Part No.	Description	Quantity	Weight
1	TD-100051	Channel Bracket	10	4.87
2	TD-100052	Handrail Post 49.3/4"	7	55.47
3	TD-100053	Toeboard 71.1/2"	1	4.99
4	TD-100054	Toeboard 92"	1	6.42
5	TD-100055	Toeboard 95.1/2"	1	6.67
6	TD-100056	Handrail 71.1/2"	2	17.07
7	TD-100057	Handrail 92"	2	22.98
8	TD-100058	Handrail 95.1/2"	2	22.81
9	TD-100063	Floor Plank 95.1/2"	13	163.35
10	TD-100065	"X" Brace Strap 94.5/16"	2	8.75
11	TD-100068	Mid Channel Support 88"	3	58.37
12	TD-100069	Side Channel Support 96"	2	50.46
13	TD-100071	End Channel Support 92.1/2"	2	49.15
14	TD-100085	Short Knee Brace 72.9/32"	2	54.51
15	TD-100086	Support Channel 98.3/8"	2	53.08
16	TD-100087	Long Knee Brace 114"	2	85.98
17	TD-100685	Vertical Support 94"	2	63.64
18	TD-100091	Large Platform Hardware Package	1	14.35

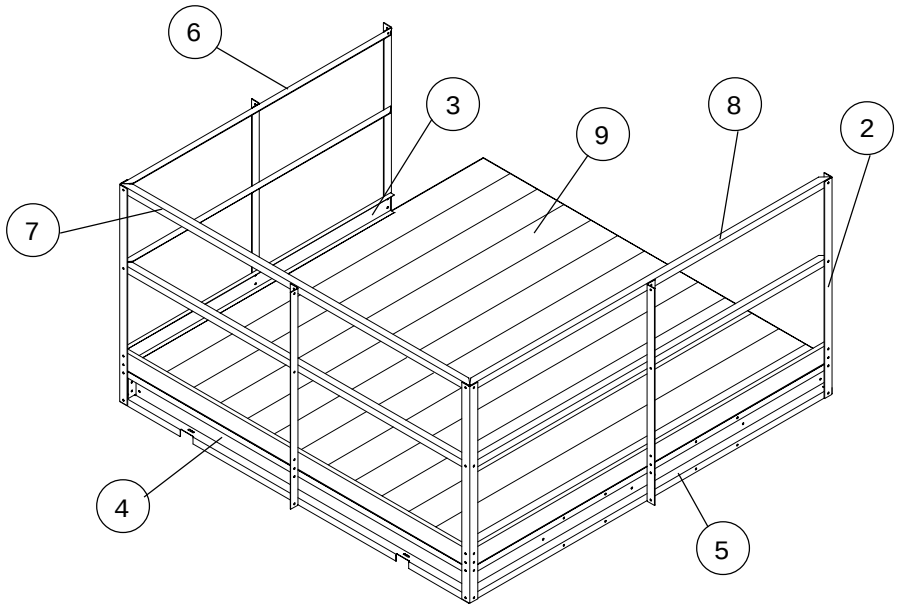
LARGE PLATFORM ASSEMBLY

(CONT.)

(FOR 1 FAN SYSTEMS OR #2 FAN ON 2 FAN SYSTEMS)



Position the vertical support to the existing sidewall stiffeners as shown in Figure #46 and double nut with 5/16" nuts.



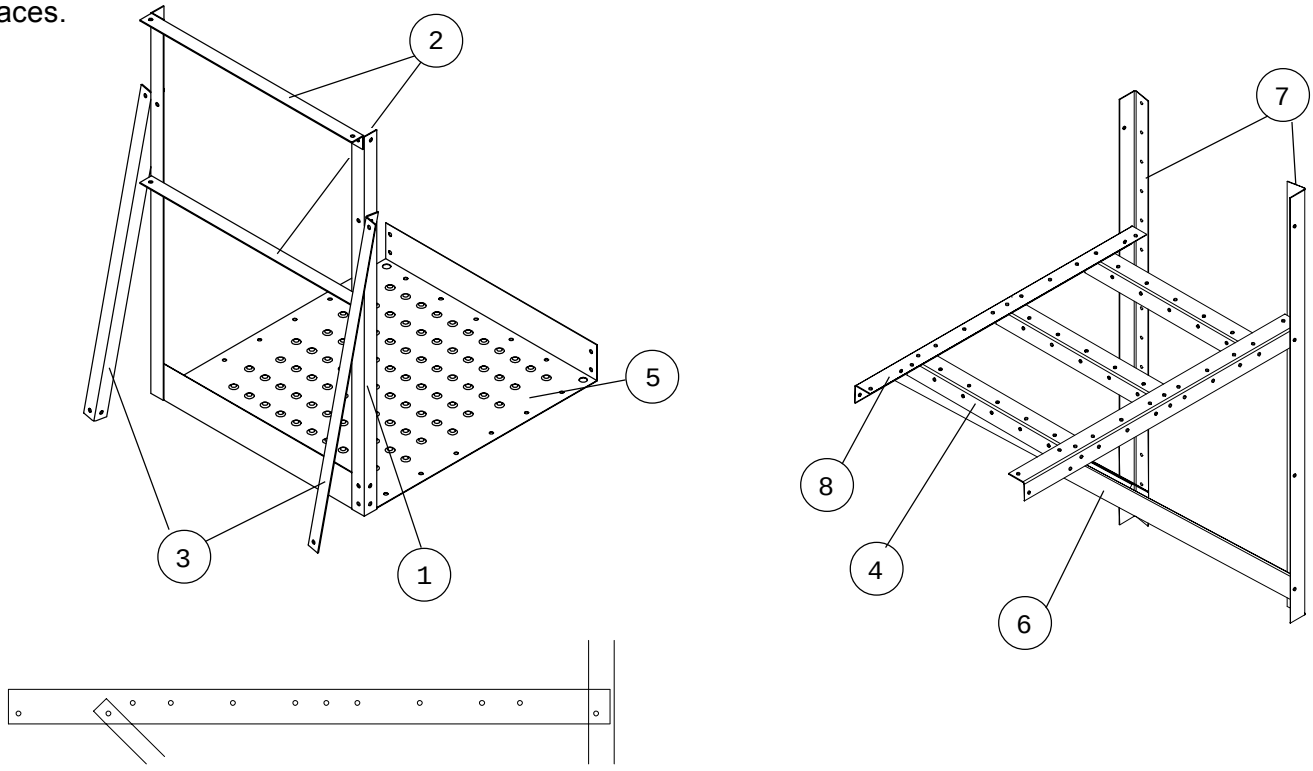
When bolting stiffener to sidewall at locations where platform supports are to be attached, use (25) 5/16" x 1.1/4" bin bolts, heads to inside. Start 12 inches below horizontal seam of second and third rings from top. See Figure #46.

CROSS OVER PLATFORM ASSEMBLY (For use with stairs)
TDP-5013

Before assembly of any platform, read the entire instructions to assure proper placement and assembly.

Refer to Figure #46 for proper location of cross over platform. Begin by assembling the cross over platform support frame using 5/16" x 3/4" truss head bolts and nuts. When attaching platform vertical support to bin sidewall field drill (16) 3/8" diameter holes for each support spaced every 4". Be sure and use 5/16" x 3/4" bin bolt on vertical support to sidewall. Special attention should be taken when assembling the platform support that the support brace is placed correctly.

Now proceed to the platform floor. Align holes on platform floor with holes on platform support and bolt together using 5/16" x 3/4" truss head bolt and nuts. Next, assemble handrail posts, handrails, and handrail braces.



Key	Part No.	Description	Quantity	Weight
1	LS-371	Platform Vertical Angle	2	7.59
2	TDP-5001	Handrail 27"	2	4.63
3	TDP-5003	Handrail Brace 36.29/32"	2	6.34
4	TDP-5004	Short Floor Brace 26.1/2"	3	11.85
5	TDP-5006	Platform Floor 37.7/8"	1	19.11
6	TDP-5007	Support Brace 50.21/32"	2	15.08
7	TDP-5008	Sidewall Brace 58"	2	19.65
8	TDP-5009	Platform Support 43.1/2"	2	12.95
	TDP-5015	Cross Over Plat. Hdw. Pack.	1	3.95

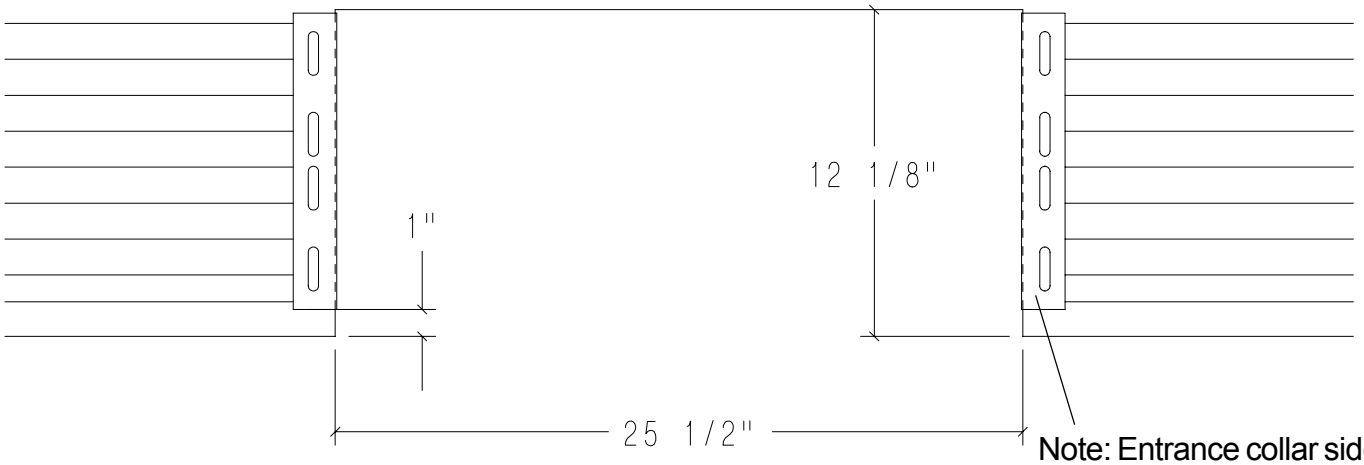
TRANSITION INSTALLATION (TR-4734)

BEFORE CUTTING THE OPENING CHECK THAT TR-4734 IS THE TRANSITION THAT WAS ORDERED.

When installing the GSI aeration transition, it will be necessary to field cut a hole into the bottom sidewall ring (usually straight across from the unload auger). Refer to diagram for proper dimensions of cutout. The base angle will also need to be cut at entrance collar cutout. Take note of the diagram showing the 1" dimension from bottom of entrance collar side bracket to concrete. This is important for proper fit of transition.

NOTE: Entrance collar side bracket must be bolted on the inside of the bin sidewall.

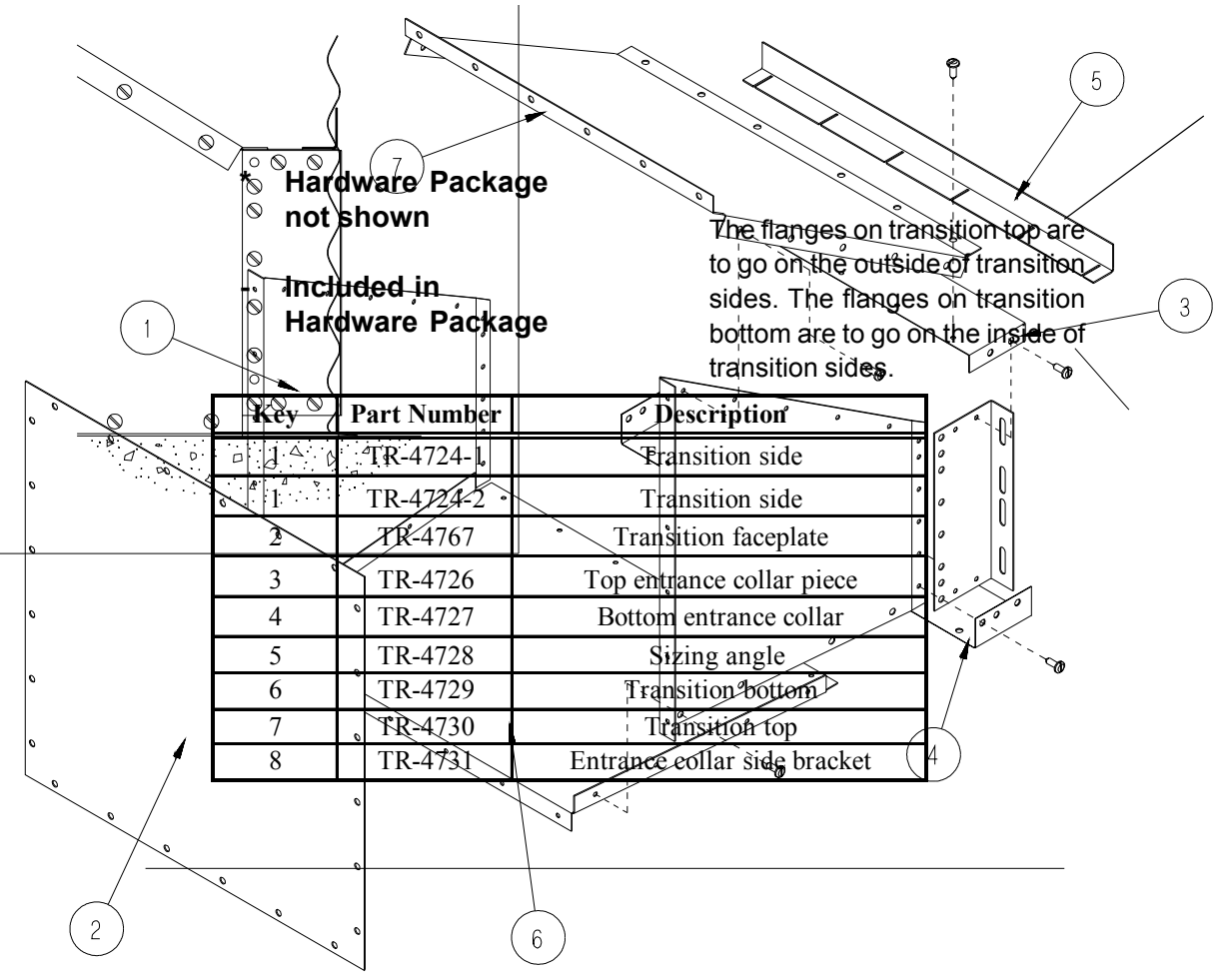
AS VIEWED FROM INSIDE BIN



Note: Entrance collar side bracket (TR-4731) flange must be installed to the inside of the bin sidewall.

Part No.	Description	Quantity
S-275	5/16" - 18 3/4" Bin Bolt Grade 5	125
S-280	#10 - 16 x 5/8" Self Drill Screw	10
S-3651	Tube Caulk - Gray Butyl #506-15	1
S-396	5/16" - 18 Hex Nut Grade 2	125
S-7264	Spec Neoprene Seal Strip W/ADH	10 Ft

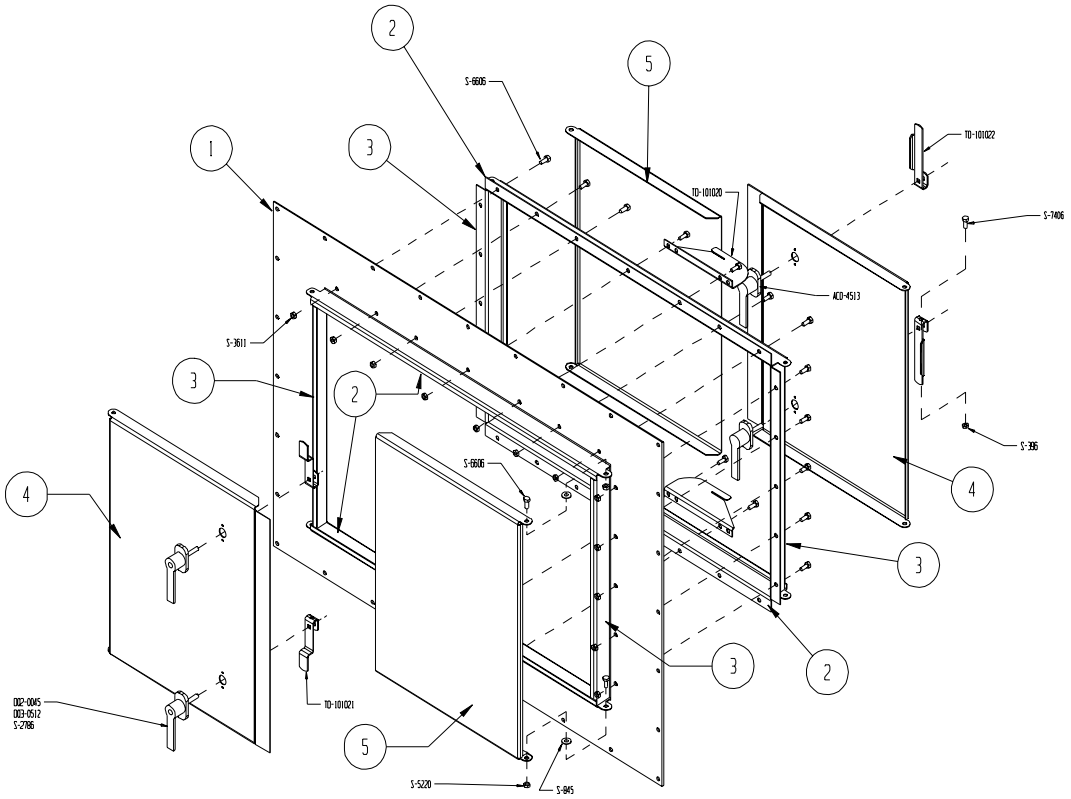
TRANSITION ASSEMBLY (TR-4734)



Key	Part Number	Description
1	TR-4724-1	Transition side
1	TR-4724-2	Transition side
2	TR-4767	Transition faceplate
3	TR-4726	Top entrance collar piece
4	TR-4727	Bottom entrance collar
5	TR-4728	Sizing angle
6	TR-4729	Transition bottom
7	TR-4730	Transition top
8	TR-4731	Entrance collar side bracket

Top Dry Access Door Assembly (TD-100996)

1. Assemble the Z-Frames (TD-100991 & TD-100992) and then attach the Frames (TD-100991 & TD-100992), to the inside of the Access Door Plate (TD-100990). ***NOTE: The first set of Z-Frames comes pre-assembled to the Access Door Plate.***
2. Now attach the top and bottom Rear Door Catches (TD-101020) to the back of the Z-Frames. Referring to the layout, position the Catches with the left-hand most hole aligned with the center hole of the Access Door Plate.
3. Using washers to center the doors over the opening, attach the Top Access Door (TD-100993) and the Inside Access Door (TD-100994) to the Z-Frames. Utilize the lockwashers to secure the bolts to the doors. Do **not** overly tighten the lockwashers. This allows the doors to move freely.
4. Now attach the handles (D02-0045 & D03-0512) to the doors. ***NOTE: The locking handles along with the hardware labeled "out," go to the outside doors. The rear handles have their own hardware package.***
5. With the nut and bolt supplied, attach the appropriate latches to the handles and lock them. (Refer to diagram). Adjust front latches (TD-101021) to catch the inside lip of the front Z-Frames. Adjust rear latches (TD-101022) to fit the slot in the top and bottom catches attached to the rear Z-Frames.
6. Attach the assembled access door to the access door panel (TD-101025).

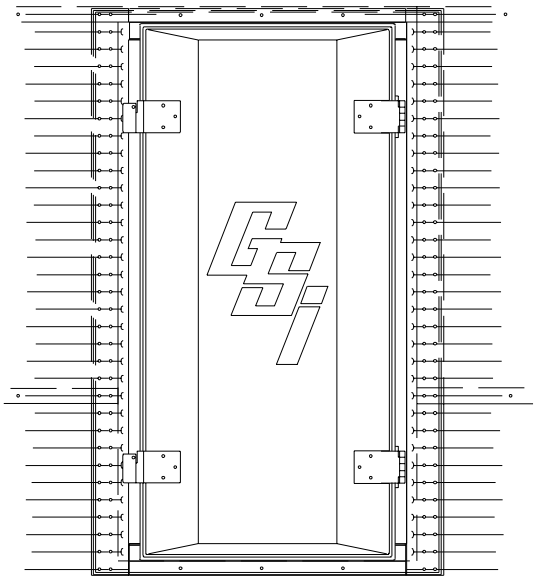


Key	Part #	Description	Qty.
1	TD-100990	Access Door Plate	1
2	TD-100991	Access Top/Bottom Z-Frames	4
3	TD-100992	Access Door Side Z-Frames	4
4	TD-100993	Top Access Door	2
5	TD-100994	Inside Access Door	2
x	TD-101020	Rear Door Catches	2
x	TD-101021	Outside Door Latches	2
x	TD-101020	Inside Door Latches	2
x	D03-0512	Lockable Handle	2
x	D02-0045	Gasket for Lockable Handle	2
x	ACD-4513	Access Door Handle w/Gasket	2

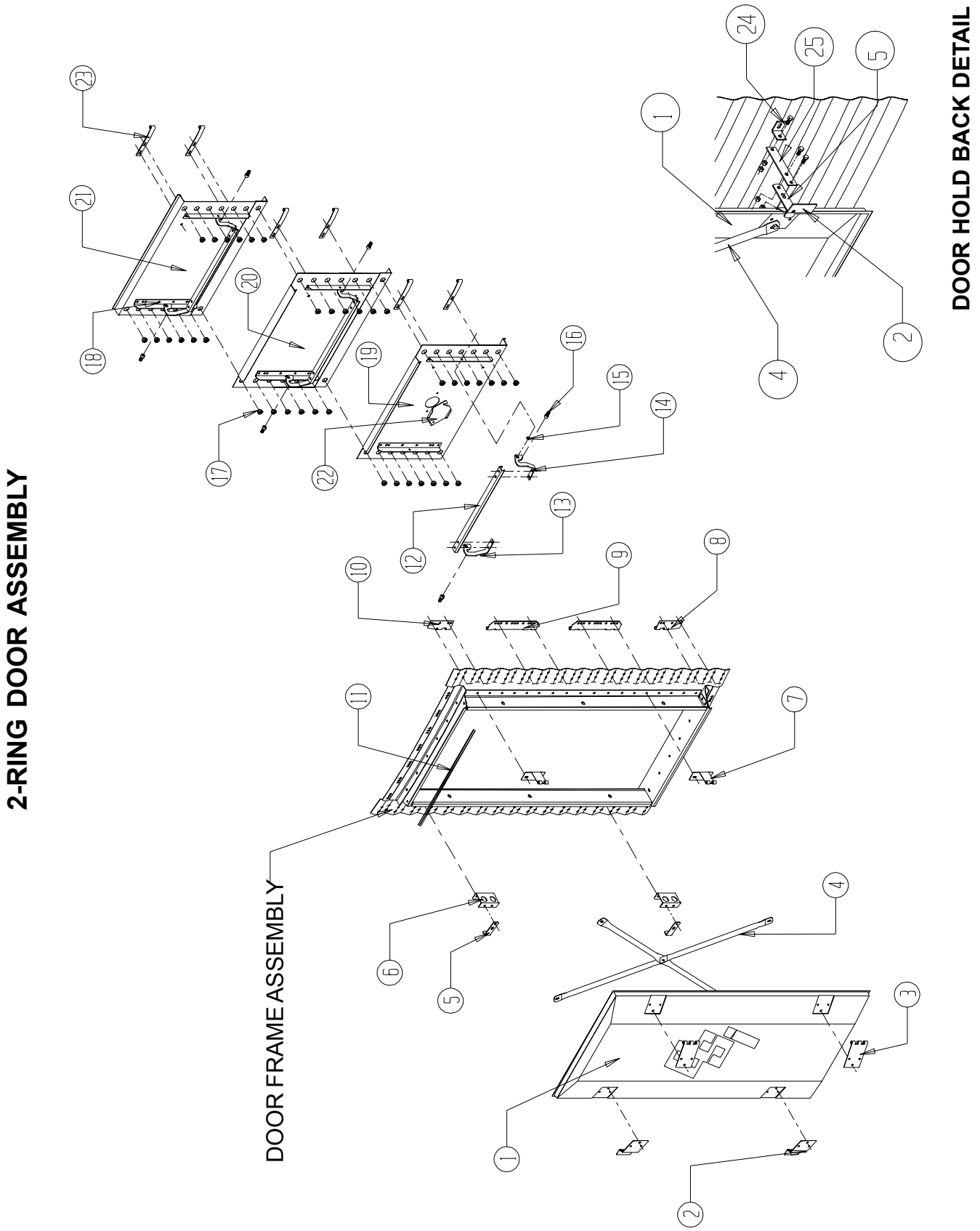
TWO RING DOOR INSTALLATION & ACCESSORIES

Before starting to install, be sure the correct door has been received.

4.00" Bin Corrugation
WD-6133 21' Bins



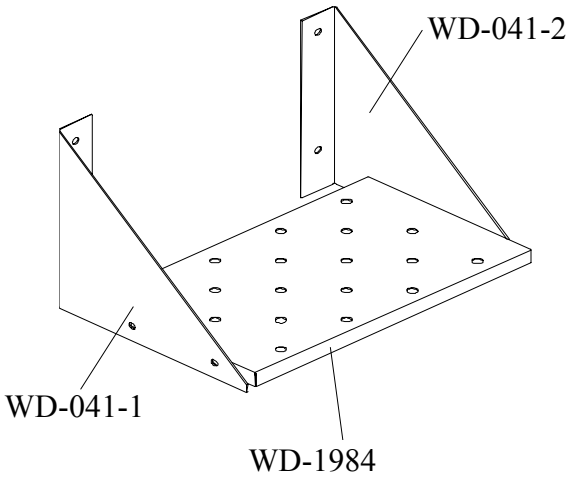
1.) Remove inner door panels, and outer door cover. Apply double row of rope caulk along door flanges, noting how door and bin sheets lap. The top of the door frame goes to the inside of the sidewall and the bottom of the door frame goes to the outside of the sidewall sheet. With inner door panels and outer door cover removed set door frame into opening. **Insert a bolt at the (4) corners of door frame and sidewall, do not tighten until completing step #2.**
2.) Reinstall inner door panels at original locations. Close latch bars to lock panels in place. Be sure that panels are fully seated over all bearing pins. Install inner panel hinge assemblies per illustration instructions with hinges. **Note: do not distort door frame with use of alignment or drift punches - if necessary, drill or ream holes to insert bolts in door frame. Now tighten frame bolts starting at center and working toward top and bottom on each side.**
3.) Keep inner panels latched and loosen all bearing pin bolts. Retighten all bearing pin bolts. This makesloading on pins uniform for easier operation of panels.
4.) If some latch bars are loose or require excessive force to lock, loosen hex socket capscrews and adjust in or out until latch bars operate smoothly. Check that the panels are fully seated over all bearing pins.
5.) Re-install outer cover. Adjust outer door hinges and latches as required.
6.) Assemble door hold back as shown on next page. Open door cover until it approaches the bin wall. Hook retaining bracket over lower latch mount and position the door hold back against bin wall in a valley. Drilla 3/8" hole through the bin wall and bolt the door hold back to the bin.


2-RING DOOR ASSEMBLY
DOOR HOLD BACK DETAIL
DOOR FRAME ASSEMBLY

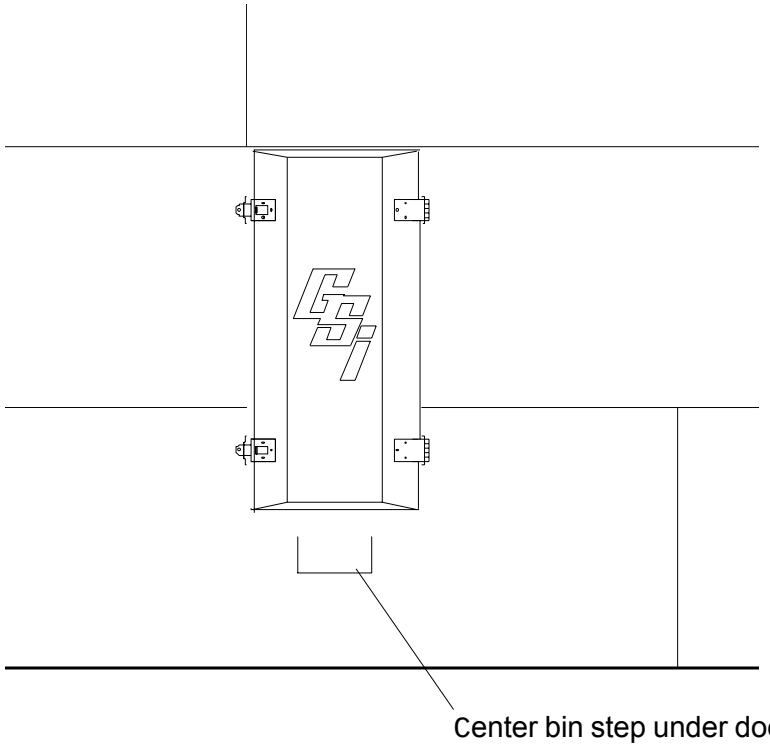
PARTS LIST FOR 2-RING DOORS

KEY	DESCRIPTION	PART NUMBER 12'-27' BIN DIA. 4.00" CORR.	PART NUMBER 30'-60' BIN DIA. 4.00" CORR.	QUANTITY 12'-27' BIN DIAMETER	QUANTITY 30'-60' BIN DIAMETER
1	OUTER DOOR COVER	WD-039	WD-039	1	1
2	OUTER COVER LATCH BRACKET	WD-2854	WD-2854	2	2
3	OUTER COVER HINGE BRACKET	WD-225	WD-225	2	2
4	DOOR COVER BRACE SECTION	WD-035	WD-035	4	4
5	DOOR RETAINER	WD-033	WD-033	3	3
6	OUTER COVER LATCH MOUNT BASE	WD-6124	WD-6124	2	2
7	OUTER COVER HINGE BASE	WD-6066	WD-6066	2	2
8	BOTTOM INNER DOOR HINGE	WD-6055	WD-6055	1	1
9	MIDDLE INNER DOOR HINGE	WD-6056	WD-6056	2	2
10	TOP INNER DOOR HINGE	WD-6054	WD-6054	1	1
11	RUBBER TRIM SEAL STRIP	S-4380	S-4380	2.1/4 FT.	2.1/4 FT.
12	LATCH BAR	WD-6039	WD-6039	3	3
13	INNER PANEL LATCH - RIGHT HAND	WD-6037	WD-6037	3	3
14	INNER PANEL LATCH - LEFT HAND	WD-6038	WD-6038	3	3
15	1/2" X 1" HEX SOCKET CAPSCREW	S-7160	S-7160	6	6
16	LATCH BUSHING	WD-6040	WD-6040	6	6
17	LONG BEARING PIN	WD-6079	WD-6079	38	38
18	INNER PANEL REINFORCING ANGLE	WD-6125	WD-6125	6	6
19	BOTTOM INNER DOOR PANEL	WD-6128	WD-6128	1	1
20	MIDDLE INNER DOOR PANEL	WD-6127	WD-6127	1	1
21	TOP INNER DOOR PANEL	WD-6126	WD-6126	1	1
22	BOTTOM INNER DOOR PORT HOLE COVER	WD-6028	WD-6028	1	1
23	INNER DOOR HINGE STRAP	WD-6053	WD-6053	6	6
24	DOOR HOLD BACK BRACKET	WD-1302	WD-1302	1	1
25	DOOR HOLD BACK EXTENSION	WD-6110	WD-6110	1	1

OPTIONAL BIN STEP ASSEMBLY
WD-042

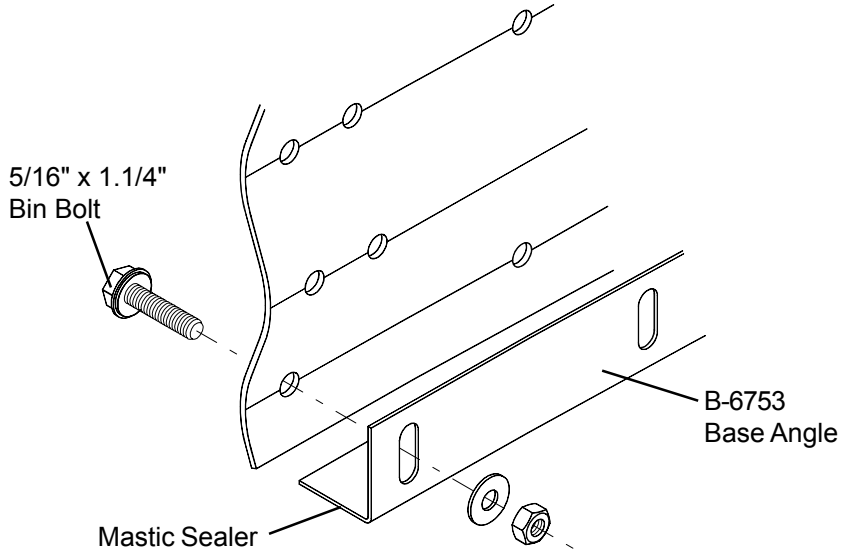


Field drill holes in sidewall
sheet on ridge of corrugation.

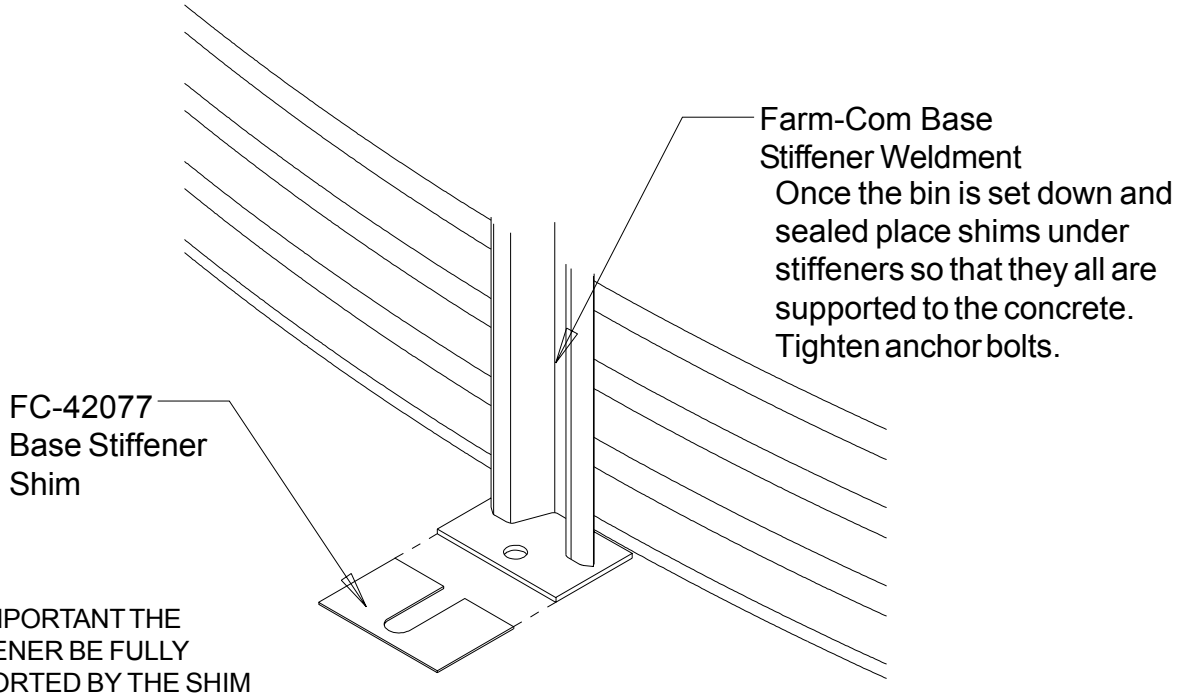


BASE ANGLE

Once the door frame has been placed and secured, continue adding necessary sidewall ring(s). To the lower edge of the bottom ring, attach the base angle ring. Before lowering the bin, apply mastic sealer to the entire underneath side of the base angle. (See below.) Next, lower the bin onto the foundation and check for an adequate seal.



BASE STIFFENER SHIM



IT IS IMPORTANT THE STIFFENER BE FULLY SUPPORTED BY THE SHIM PLATE(S) (FC-42077) TO FILL ANY GAP BETWEEN BASE PLATE AND CONCRETE.

Figure #63

WARRANTY

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