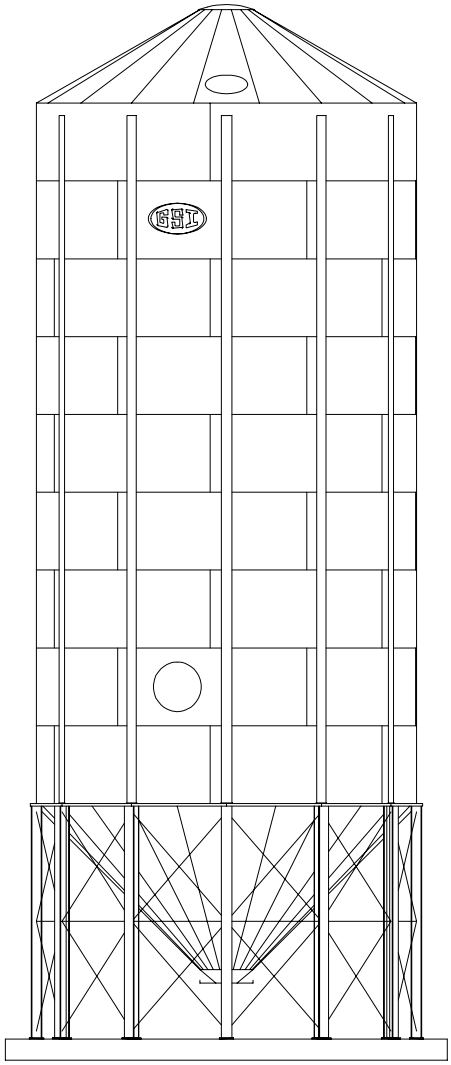
PNEG-xxx

24' EDIBLE BEAN TOP DRY



GRAIN SYSTEMS, INC. Assumption, IL 62510 USA 217-226-4421

TABLE OF CONTENTS
COMMERCIAL HOPPER TANK

General Safety Statements

The GSI Group Inc's Principal concern is your safety and the safety of others associated with grain handling equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist and inform all personnel associated with, or in the area of the equipment. Safety precautions may be required from the personnel. Avoid any alteration to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

SAFETY ALERT SYMBOL

The symbol shown is used to call your attention to instructions concerning your personal safety. Watch for this symbol; as it points out important safety precautions. It means "ATTENTION," WARNING," "CAUTION," and "DANGER." Read the message that follows and be cautious to the possibility of personal injury or death.

The GSI Group Inc. recommends that you contact your local power company and have a representative review your installation so your wiring will be compatible with their system and so that you will have adequate power supplied to your unit.

BE ALERT! Danger!

Personnel operating or working around electrical equipment should read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

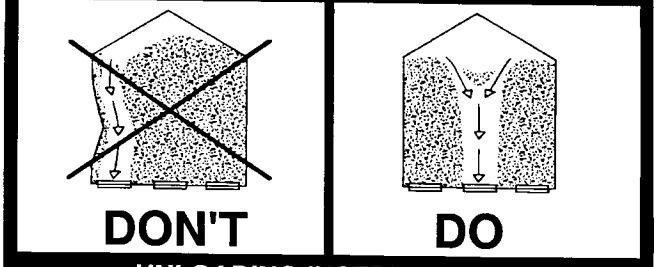
This product is intended for the use of only. Any other use is a misuse of the product!

This product has sharp edges! These sharp edges may cause serious injury. To avoid injury handle sharp edges with caution and use proper protective clothing and equipment at all times.

The safety pages that follow are to show you the safety decals necessary. If a decal has been damaged or is missing contact The GSI Group, Inc. for a free replacement.

The GSI Group, Inc.
1004 E. Illinois St.
Assumption, IL 62510
phone: 217-226-4421

⚠ CAUTION



DON'T DO

UNLOADING INSTRUCTIONS:

1. Use **CENTER OUTLET ONLY** until **NO** grain remains above this outlet.
2. Side outlets to be used **ONLY** when above condition is satisfied.
3. Lock all side outlets to avoid accidental premature use.

Failure to follow proper unloading practices will result in structural damage or collapse of tank.

DC-566

⚠ 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

DC-552

Power Supply

An adequate power supply and proper wiring are important factors for maximum performance and long life of the dryer. Electrical service must be adequate enough to prevent low voltage damage to motors and control circuits (see Electrical Load Information). **In 220V 1 phase and 220V 3 phase systems, a separate neutral wire is required for the 120V heater circuit, and should be connected to terminal #1 in the master heater. Do not run in conduit with motor power lines.**

Transformer and Wiring Voltage Drop

It is necessary to know the distance from the unit to the available transformer, and the horsepower of your fan unit. Advise the service representative of your local power supplier that an additional load will be placed on the line. Each fan motor should be wired through a fused or circuit breaker disconnect switch. Check on KVA rating of transformers, considering total horsepower load. The power supply wiring, main switch equipment and transformers must provide adequate motor starting and operating voltage. Voltage drop during motor starting should not exceed 14% of normal voltage, and after motor is running at full speed it should be within 8% of normal voltage. Check Electrical Load Information for HP ratings and maximum amp loads to properly size wire and fusing elements. Standard electrical safety practices and codes should be used. (Refer to National Electrical Code Standard Handbook by National Fire Protection Association).

Machine to Earth Grounding

It is very important that a *Machine To Earth Ground Rod* be installed at the fan. This is true even if there is a ground at the pole 15 feet away. Place the ground rod that comes standard, within 8 feet of the dryer and attach it to the dryer control panel with at least a #6 solid, bare, copper ground wire and the clamp provided. The grounding rod located at the power pole will not provide adequate grounding for the dryer. The proper grounding will provide additional safety in case of any short and will ensure long life of all circuit boards, and the ignition system. The ground rod must be in accordance with local requirements.

Proper Installation of Ground Rod

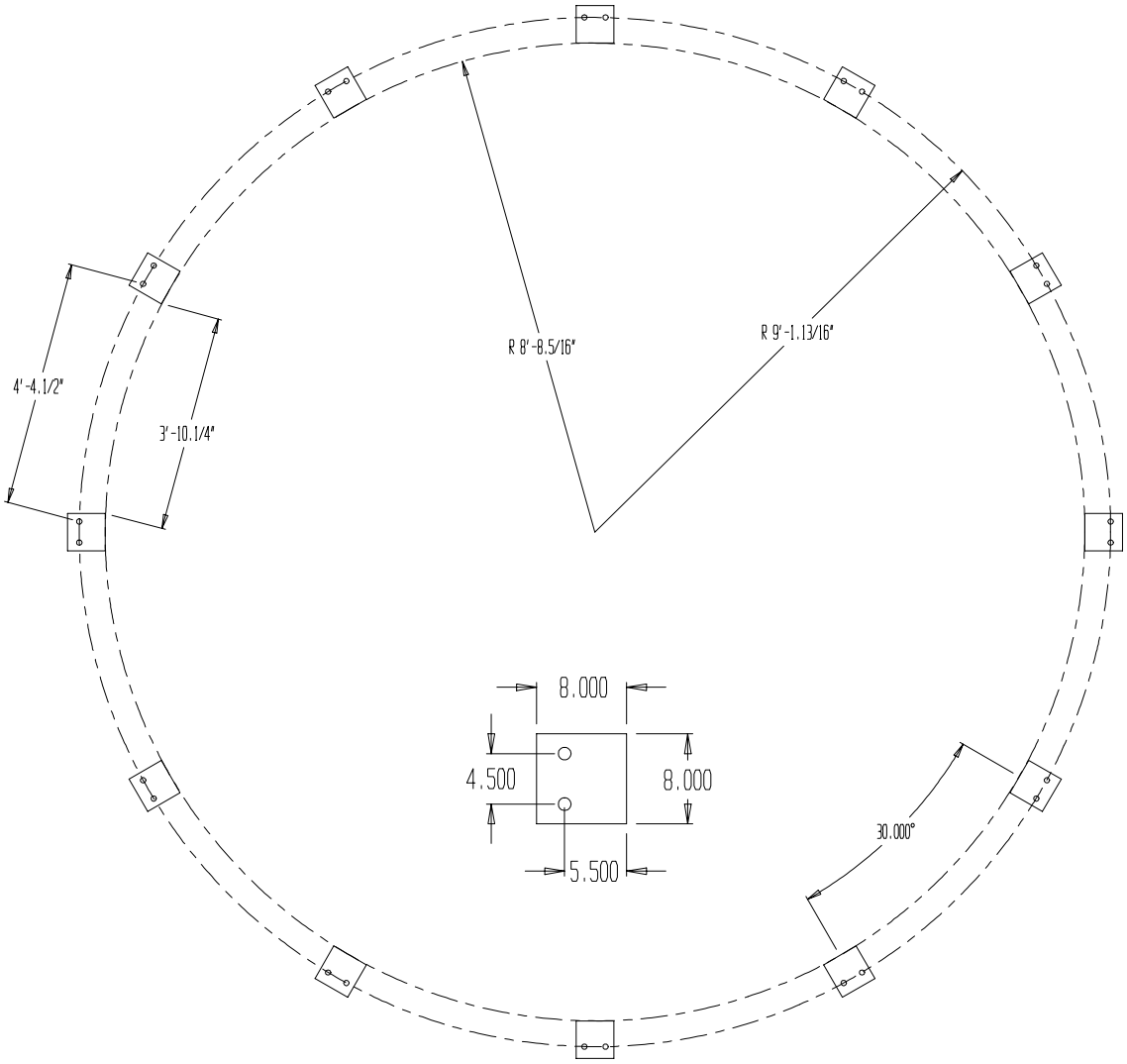
It is not recommended that the rod be driven into dry ground.

Follow these instructions for proper installation:

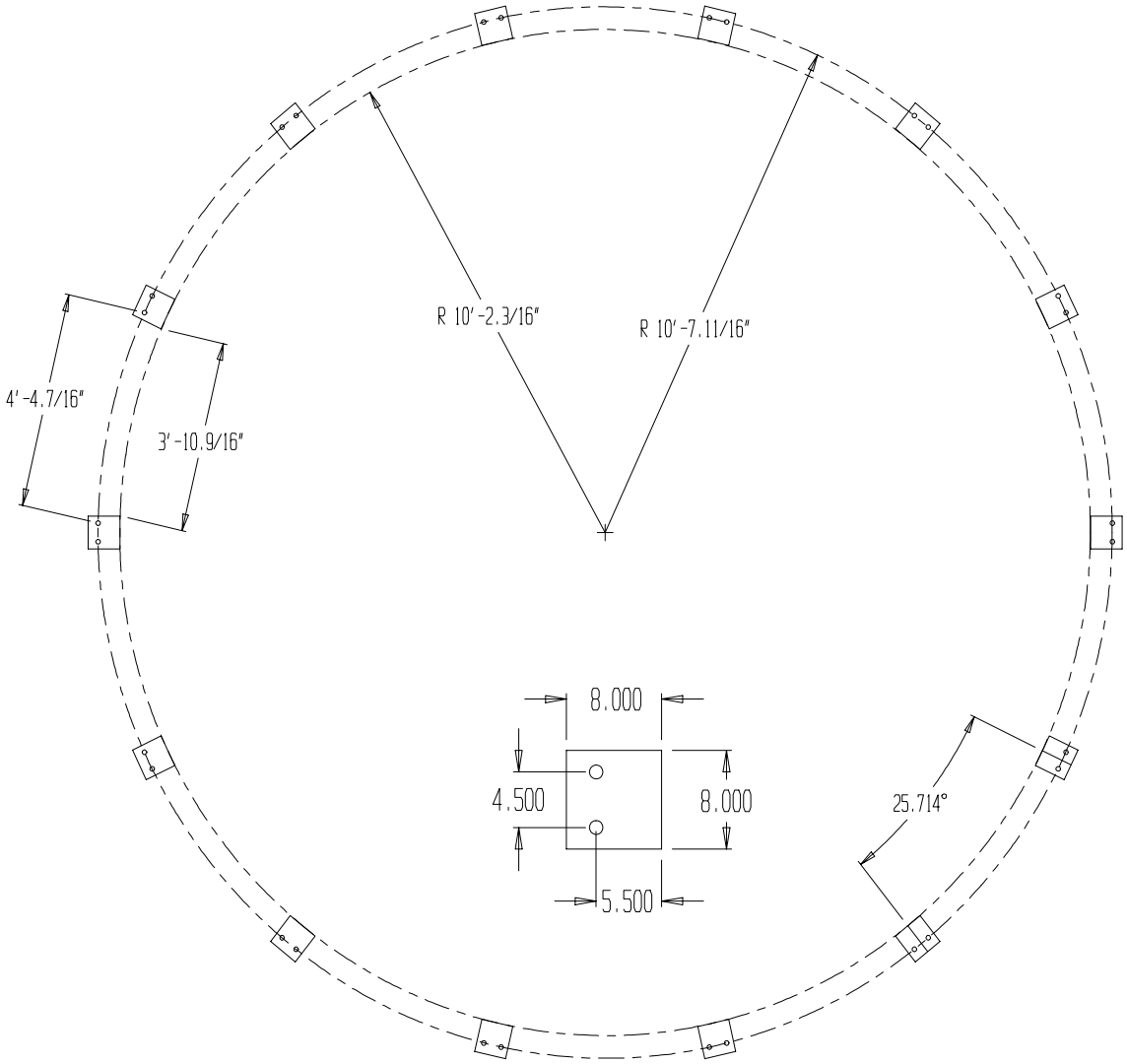
1. Dig a hole large enough to hold 1 to 2 gallons of water.
2. Fill hole with water.
3. Insert rod through water and jab it into the ground.
4. Continue jabbing the rod up and down. The water will work its way down the hole, making it possible to work the rod completely into the ground. This method of installing the rod gives a good conductive bond with the surrounding soil.
5. Connect the bare, copper ground wire to the rod with the proper ground rod clamp. See Figure 8.
6. Connect the bare copper ground wire to the fan control boxes with a grounding lug.
7. Ground wire must not have any breaks or splices.

Dig a hole large enough to hold 1 or 2 gallons of water. Work the ground rod into the earth until it is completely in the ground.

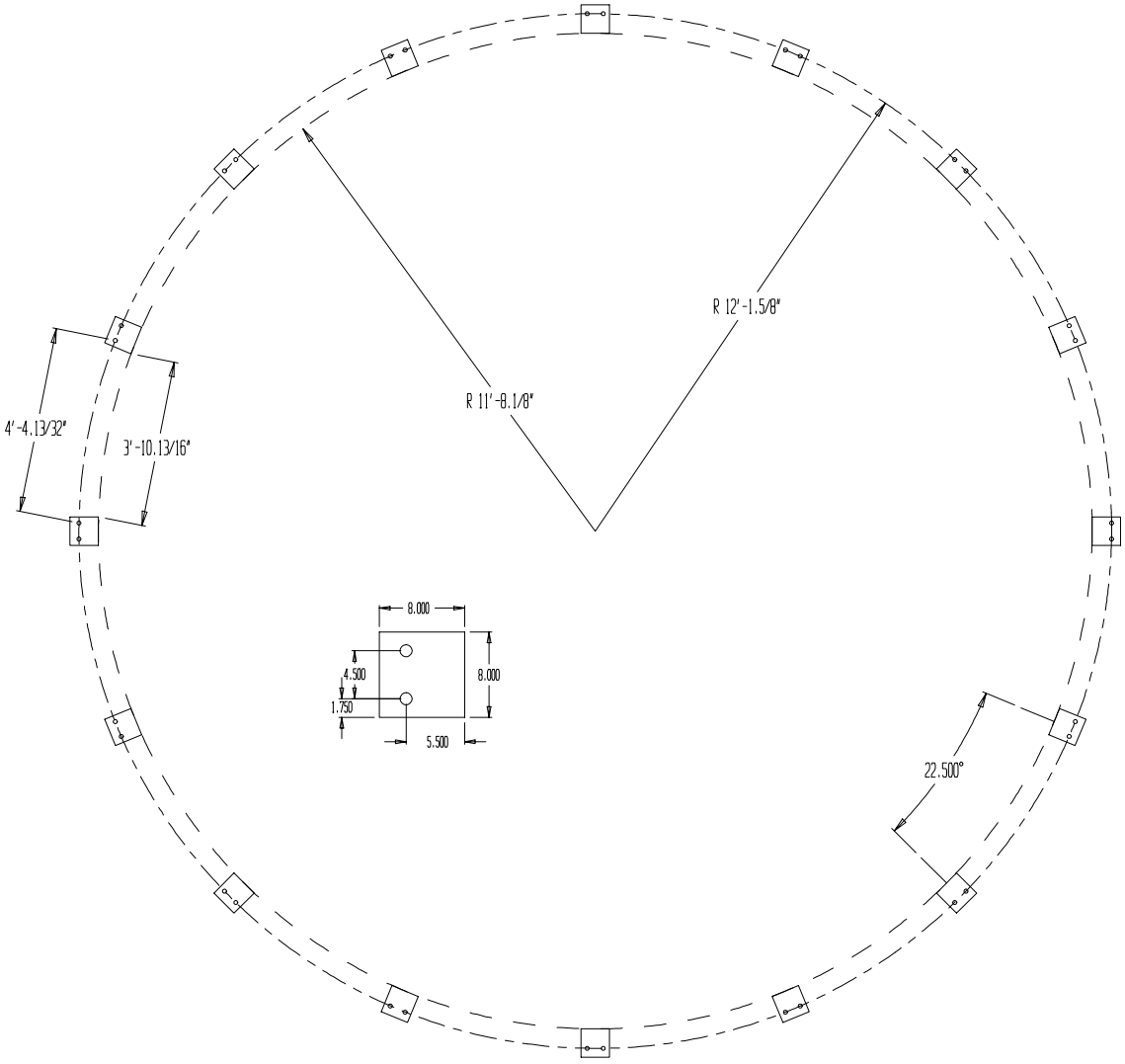
18' Diameter Farm Commercial Hopper Tank Base Plate Layout



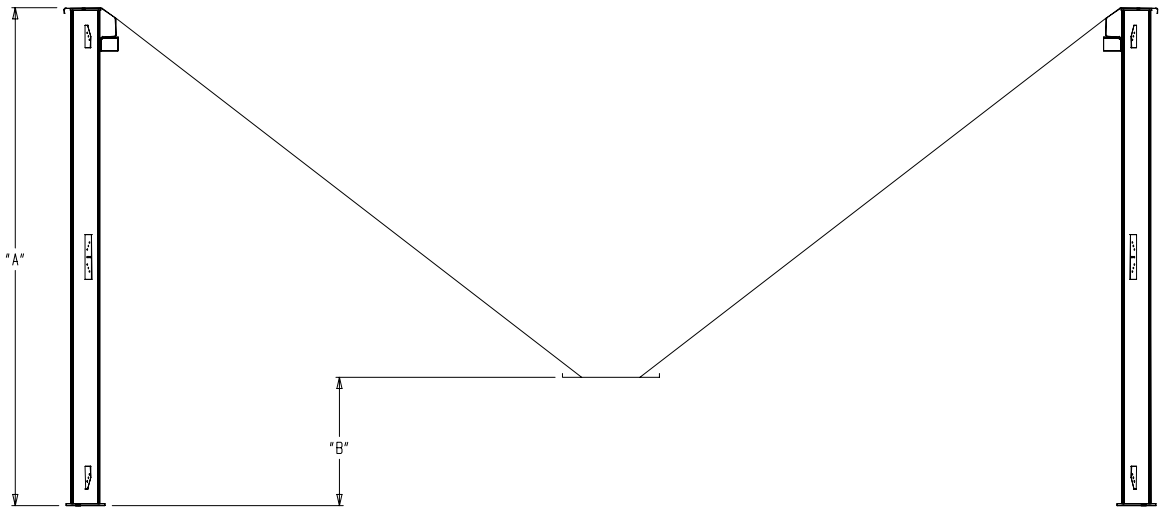
21' Diameter Farm Commercial Hopper Tank Base Plate Layout



24' Diameter Farm Commercial Hopper Tank Base Plate Layout



FCHT SUBSTRUCTURE PART LISTS			
TANK SIZE	18'-45DEGREE	21'-45DEGREE	24'-45DEGREE
COLOR CODE	GOLD & WHITE	GOLD & BROWN	GOLD & LIGHT BLUE
COLUMN WELDMENT	LCHT-0030 (12)	LCHT-0043 (14)	LCHT-0006 (16)
COMPRESSION ELEMENT	LCHT-0031 (12)	LCHT-0044 (14)	LCHT-0007 (16)
COMPRESSION SPLICE**	LCHT-0032 (12)	LCHT-0045 (14)	LCHT-0008 (16)
HOPPER COLLAR	LCHT-0037 (1)	LCHT-0050 (1)	LCHT-0026 (1)
HORIZONTAL BRACE	LCHT-0011 (24)	LCHT-0011 (28)	LCHT-0011 (32)
DIAGONAL BRACE	LCHT-0033 (48)	LCHT-0046 (56)	LCHT-0010 (64)
RIGHT HOPPER PANEL	LCHT-0034 (12)	LCHT-0047 (14)	LCHT-0012 (16)
LEFT HOPPER PANEL	LCHT-0035 (12)	LCHT-0048 (14)	LCHT-0013 (16)
SUPPORT HARDWARE	LCHT-0018 (1)	LCHT-0020 (1)	LCHT-0022 (1)
BASE ANGLE SHIM**	LCHT-0014(12)	LCHT-0014(14)	LCHT-0014(16)
COLUMN SHIM PLATE**	LCHT-0015(60)	LCHT-0015(70)	LCHT-0015(80)
** INDICATES COMPONENTS THAT WILL BE FOUND IN THE SUPPORT HARDWARE			



TANK SIZE	HOPPER	"A" DIMENSION		"B" DIMENSION	
DIAMETER	SLOPE	FEET	METERS	INCHES	MILLIMETERS
18"	45	11'-1.3/16"	3.383	34"	864
21'	45	12'-5.3/16	3.789	32"	813
24'	45'	13'-4.15/16	4.088	31"	787

Hopper Section Assembly 15'-24' (4.57M-7.32M) Diameter Hopper Tanks

Before placing the support columns on the anchor bolts, use a transit and surveyors rod to locate high and low areas in the concrete. To assure level alignment for the support columns, use the proper supplied shim or shims between the concrete and base plate. After leveling is completed, place the support columns over the anchor bolts, on the shims, and loosely fasten with nuts and washers (not furnished). Refer to Figure #1.

NOTE:

18' (5.49 M) diameter hopper tanks have 12 columns.
21' (6.40 M) diameter hopper tanks have 14 columns.
24' (7.32 M) diameter hopper tanks have 16 columns.

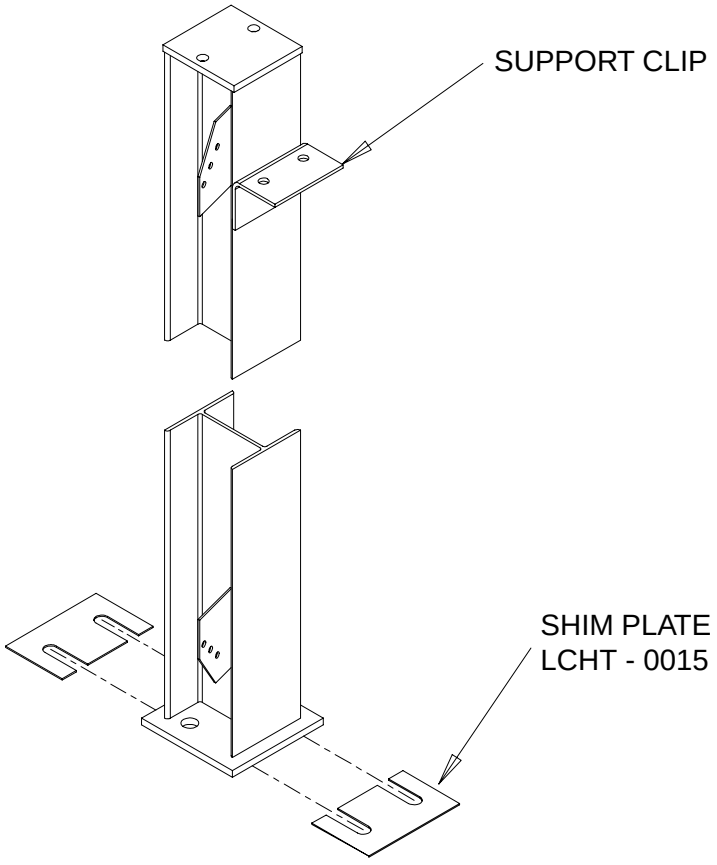


Figure 1

Hopper Support System Layout

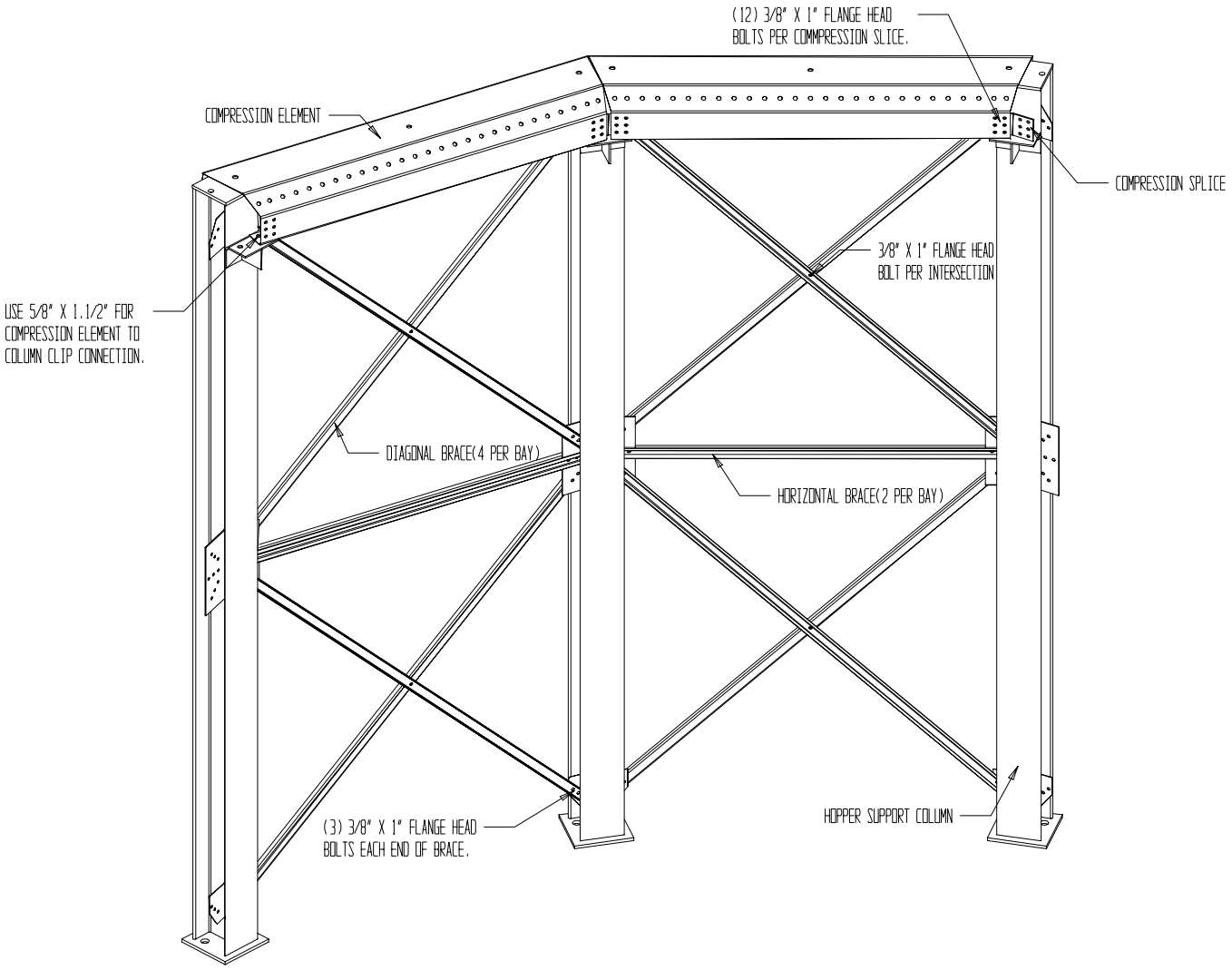


Figure 2

Connect hopper support column bracing as depicted in figure 2. Use 3/8" x1" hex flange head bolts for all bracing connections. The horizontal brace consist of 2 formed channels placed back to back. Connect diagonal braces at their intersection with one 3/8" x 1" hex flange head bolt. The compression elements can be placed on the top of the column while the bracing is being installed. To ease construction pre-install a compression splice on the end of each compression element (3/8" x 1" hex flange head bolts). Compression elements are connected to column supports clips with a 5/8" x 1.1/2" hex bolt at each end. The compression element can be connected to column top plate at this time for alignment, however this bolt will have to be removed before the tank is set on the hopper support structure. Connect adjacent compression elements with compression splices.

Begin assembling the hopper bottom by attaching a right and left pair or pairs of hopper panels to the compression angle ring (5/8" x 1 1/2" Hex head bolts) and discharge collar (3/8" x 1" hex flange head bolts) at four opposing points (Refer to figure #3). The left and right hopper panels can be assembled (3/8" x 1" hex flange head bolts) prior to attachment to the compression ring. Caulking is required on the vertical seams of the lapped hopper panels (Refer to detail A). Complete assembly by positioning pairs of right and left hopper panels while moving around in one direction and lapping all sheets in the same way (Refer to detail B). Do not tighten bolts until all hopper panels are attached to each other, the compression ring , and discharge collar. When ready to tighten, start at the bottom of the hopper and tighten all bolts. This will include hopper panels bolts, hopper collar bolts, compression ring bolts, compression splice bolts, column bracing bolts, and anchor bolts.

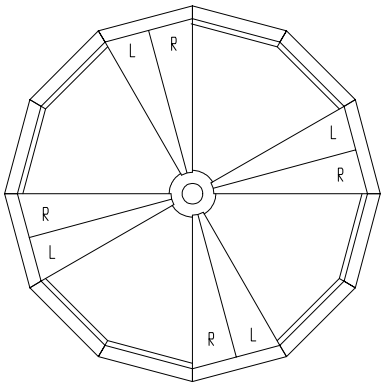


Figure 3
HOPPER PANEL AND DISCHARGE COLLAR ASSEMBLY

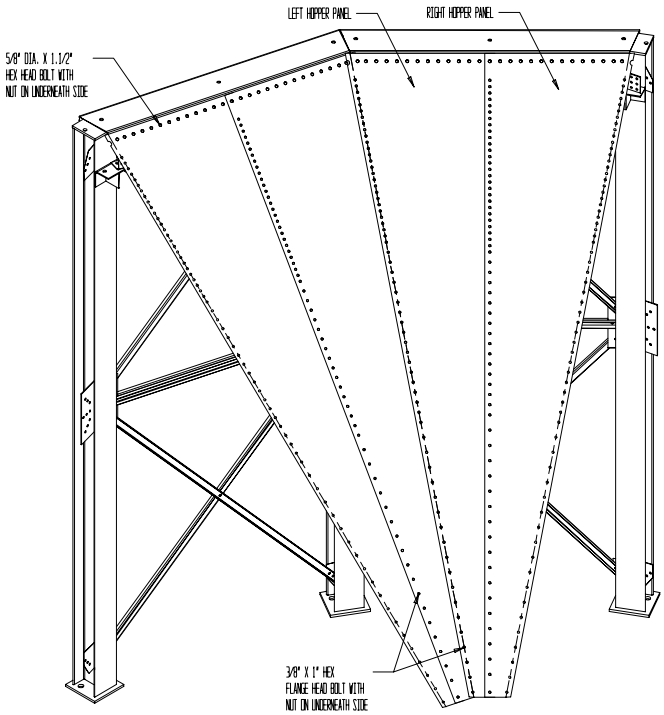
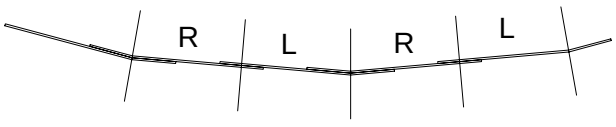
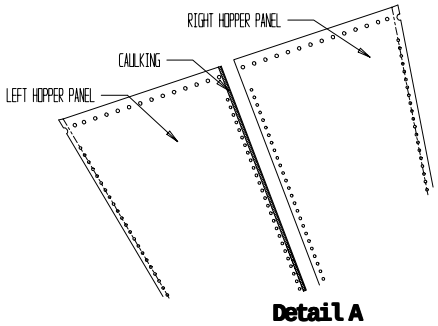


Figure 4
HOPPER PANEL DETAIL

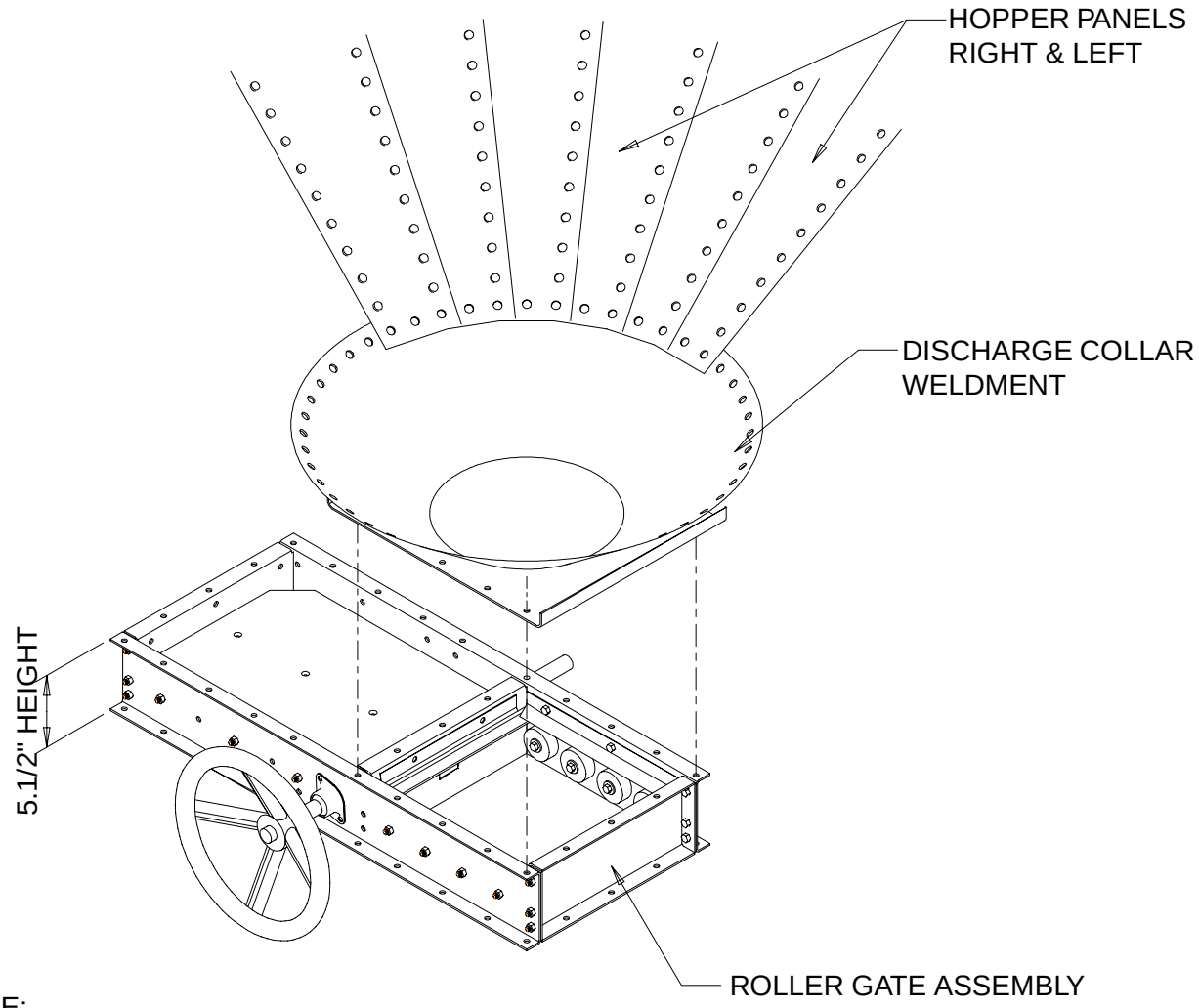


Detail B
LAP DETAIL
(VIEWED FROM INSIDE OF BIN)



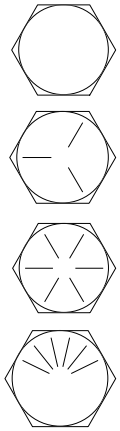
Detail A
CAULKING DETAIL

If a rack and pinion gate is purchased, install as shown in Figure #5 using 5/16" x 3/4" hardware.



NOTE:
TOP EXTENSION PLATE MAY HAVE TO BE LOOSENED PRIOR TO DISCHARGE COLLAR CONNECTION.

Figure 5
HOPPER DISCHARGE COLLAR TO ROLLER GATE



Hardware/Bolting Requirements

NOTE: Grade 2 bolts are designated with a plain head.

NOTE: Grade 5 bolts are designated by 3 slash marks on the head.
All 5/16" diameter bolts are to be Grade 5 or higher.

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

NOTE: Grade 8.2 bolts are designated by 6 slash marks on the head in a sunrise pattern.
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.

	TORQUE (ft. lb.)	
BOLT SIZE	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.

Important hardware usage - 20 gauge - 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.

Bolting Requirements

New Style F-C Stiffener Hardware

Splice connections Are Figured For The Top Of The Stiffener Splices.

		Per Splice		
18ga., 16 ga.		6	S-7927	3/8" X 1" Hex Flanged
	Splice Bolting	6	S-845	5/16" Washer
		6	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(22) S-275 Per Sheet]	Stiffener To Sidewall	22	S-275	5/16" x 3/4" Bin Bolt
[(22) S-396 Per Sheet]	Bolting	22	S-396	5/16" Hex Nuts
		Per Splice		
14ga.		8	S-7927	3/8" X 1" Hex Flanged
	Splice Bolting	8	S-845	5/16" Washer
		8	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(22) S-275 Per Sheet]	Stiffener To Sidewall	22	S-275	5/16" x 3/4" Bin Bolt
[(22) S-396 Per Sheet]	Bolting	22	S-396	5/16" Hex Nuts
		Per Splice		
12ga.		8	S-7927	3/8" X 1" Hex Flanged
	Splice Bolting	8	S-845	5/16" Washer
		8	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(22) S-275 Per Sheet]	Stiffener To Sidewall	20	S-275	5/16" x 3/4" Bin Bolt
[(2) S-277 Per Sheet]	Bolting	2	S-277	5/16" x 1.1/4" Bin Bolt
[(22) S-396 Per Sheet]		22	S-396	5/16" Hex Nuts

TRANSITIONALS

Splice connections Are Figured For The Top Of The Stiffener Splices.

		Per Splice		
12ga. To 10ga.		8	S-7927	3/8" X 1" Hex Flanged
	Splice Bolting	8	S-845	5/16" Washer
		8	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(20) S-275 Per Sheet]	Stiffener To Sidewall	20	S-275	5/16" x 3/4" Bin Bolt
[(2) S-277 Per Sheet]	Bolting	2	S-277	5/16" x 1.1/4" Bin Bolt
[(22) S-396 Per Sheet]		22	S-396	5/16" Hex Nuts
		Per Splice		
10ga. Transitional To 8ga.		12	S-7927	3/8" X 1" Hex Flanged
8ga To 8ga.	Splice Bolting	12	S-845	5/16" Washer
		12	S-456	3/8" Hex Nuts
Add (1) FC-42076 Per Connection		Per Sheet		
[(18) S-275 Per Sheet]	Stiffener To Sidewall	18	S-275	5/16" x 3/4" Bin Bolt
[(4) S-277 Per Sheet]	Bolting	4	S-277	5/16" x 1.1/4" Bin Bolt
[(4) S-277 Per Sheet]		22	S-396	5/16" Hex Nuts

New Style F-C Sidewall Hardware**

Refer To Stiffener Sheets For Stiffener To Sidewall Hardware Usage.

20ga. To 15 ga.	56	S-275	5/16" x 3/4" Bin Bolt
	24	S-396	5/16" Hex Nuts
	7	S-4458	Caulking (24' Roll)
14 ga. To 13 ga.	68	S-275	5/16" x 3/4" Bin Bolt
	68	S-396	5/16" Hex Nuts
	7	S-4458	Caulking (24' Roll)

****FOR STIFFENER TO SIDEWALL QUANTITIES SEE STIFFENER HARDWARE**

ROOF HARDWARE (inserted in sidewall hardware)

	BIN DIAMETER					
HARDWARE	12'	15'	18'	21'	24'	27'
S-275 5/16" x 3/4" Bin Bolt	150	175	175	175	175	200
S-277 5/16" x 1.1/4" Bin Bolt	125	150	200	250	300	400
S-396 5/16" Hex Nut	275	325	375	425	475	600
S-4458 Roll Caulking	2	2	2	2	2	2
S-845 5/16" Washer	50	75	75	75	100	100

	BIN DIAMETER					
HARDWARE	30'	33'	36'	42'	45' FARM	48' FARM
S-275 5/16" x 3/4" Bin Bolt	200	337	337	337	337	350
S-277 5/16" x 1.1/4" Bin Bolt	450	700	775	1050	1275	1275
S-396 5/16" Hex Nut	650	1037	1112	1387	1612	1650
S-4458 Roll Caulking	2	2	2	2	2	2
S-455 3/8" x 1" Bin Bolt					150	150
S-456 3/8" Hex Nuts					150	150
S-845 5/16" Washer	125	200	200	225	225	275
SWS-4212 Wind Ring Coupler					20	22

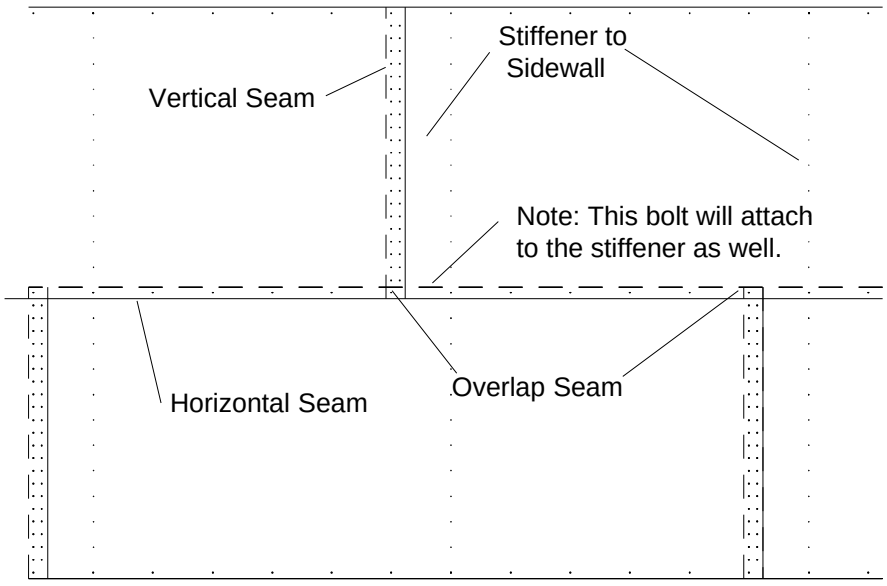
Bolt Requirements
2 Stiffeners Per Sidewall Sheet

Sidewall Gauge	Horizontal Seam	Vertical Seam	Stiffener To Sidewall	Overlap Seam
15 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]
13 Thru 14	5/16" x 3/4" [22]	5/16" x 3/4" [42]	5/16" x 3/4" [20]	5/16" x 3/4" [2]

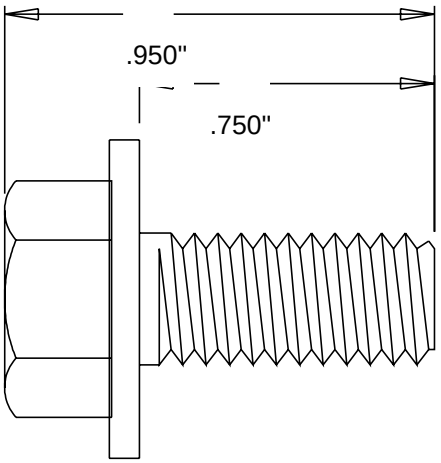
All bolts are standard bin bolts with neoprene washers. For horizontal and vertical seam bolts, the bolt head and neoprene washers are on the outside of the bin.

* Note: For the splice plates FC-42076 and 12 gauge and thicker stiffener overlaps use 5/16" x 1.1/4" bolts for the stiffener to sidewall connections.

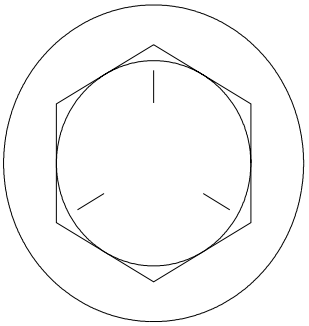
Standard Sheet Bolting Detail
(Viewed from outside of the bin)



Refer to Farm-Com Tank Bolting Requirements for Complete Bolt Usage



Side view

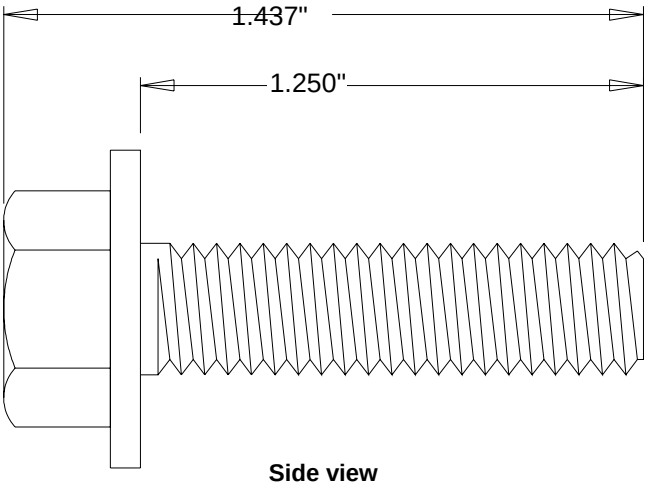


Grade 5 Top view

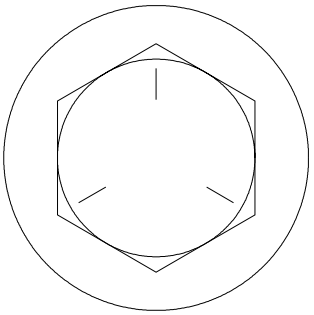
S-275

.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.



Side view



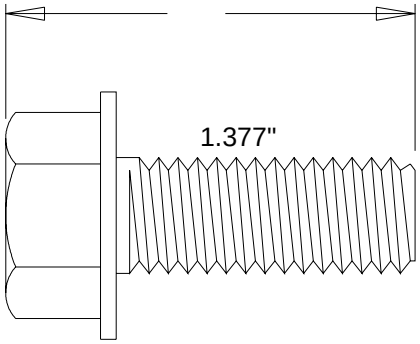
Grade 5 Top view

S-277

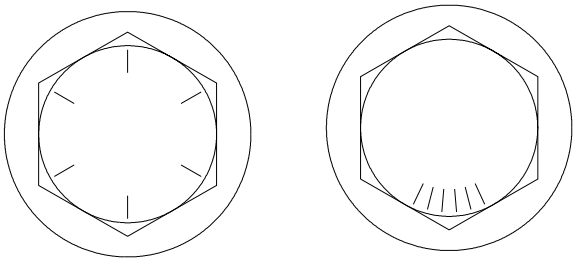
3125" x 1.250" pre-assembled with a steel backed neoprene washer.

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 Farm-Com Tank Bolting Requirements for Complete Bolt Usage



Side view



Grade 8 Grade 8.2

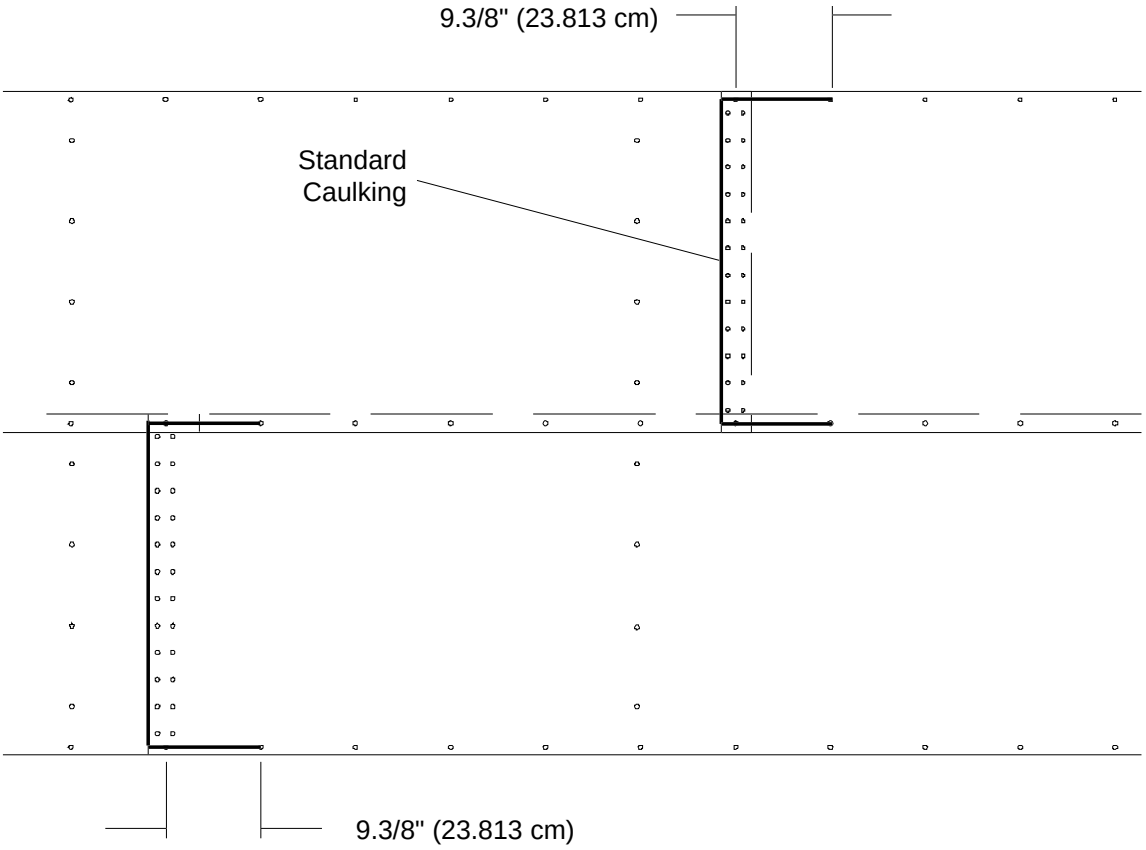
Top view

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 the roof rafter splices for commercial roof systems.

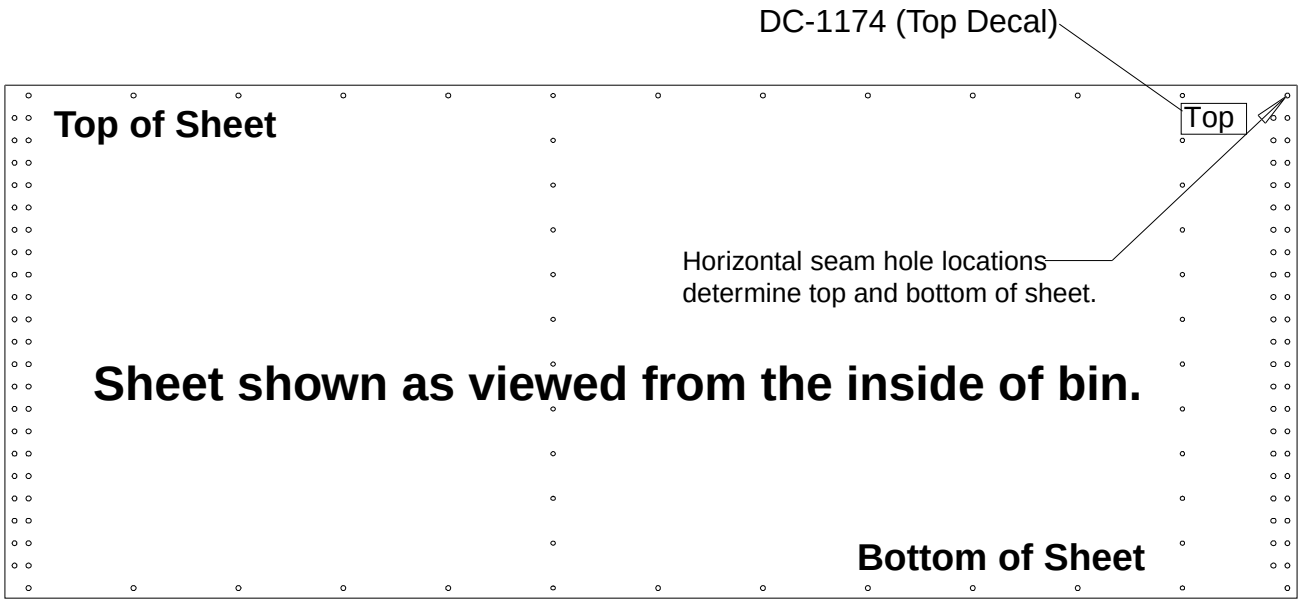
Caulking Detail



Standard Sidewall Sheets As Viewed From Inside

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.

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 Erection 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 begin building 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 24 for details.

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.

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.

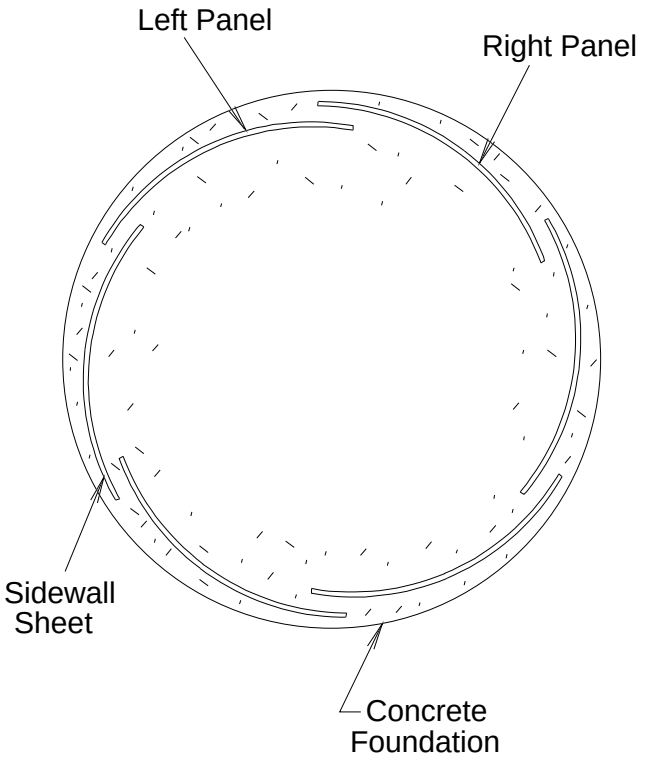
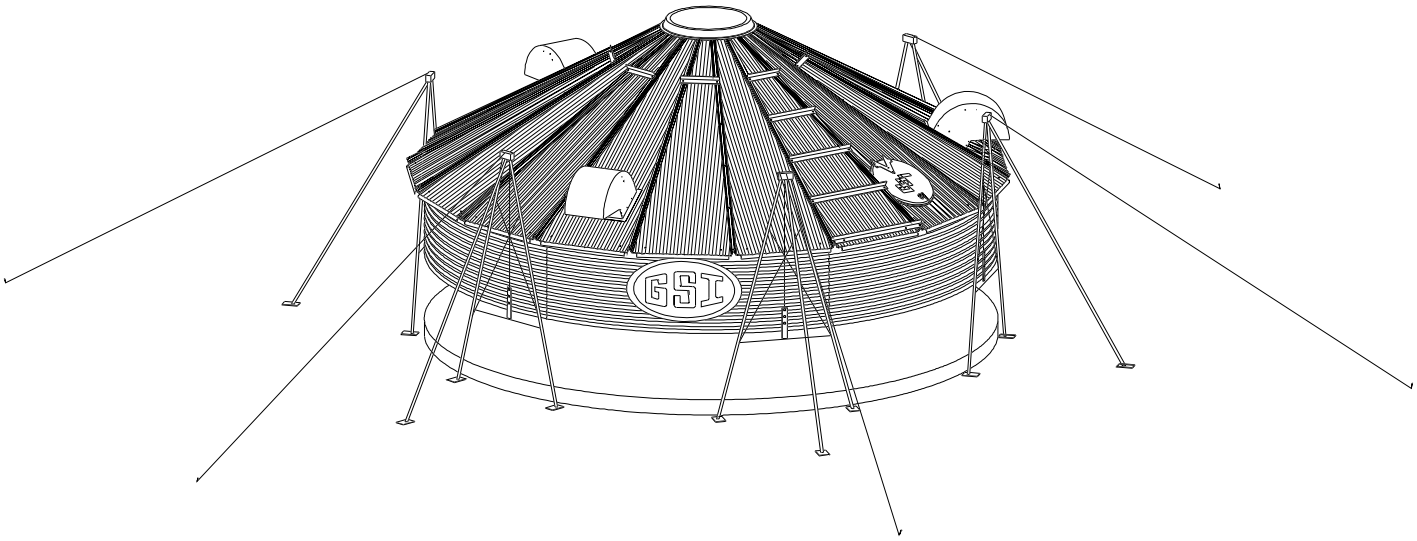


FIG. A-A

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.



NOTES:

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

- 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 (one per sheet). Be sure to use Heavy Duty jacks for commercial installations.

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. 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.

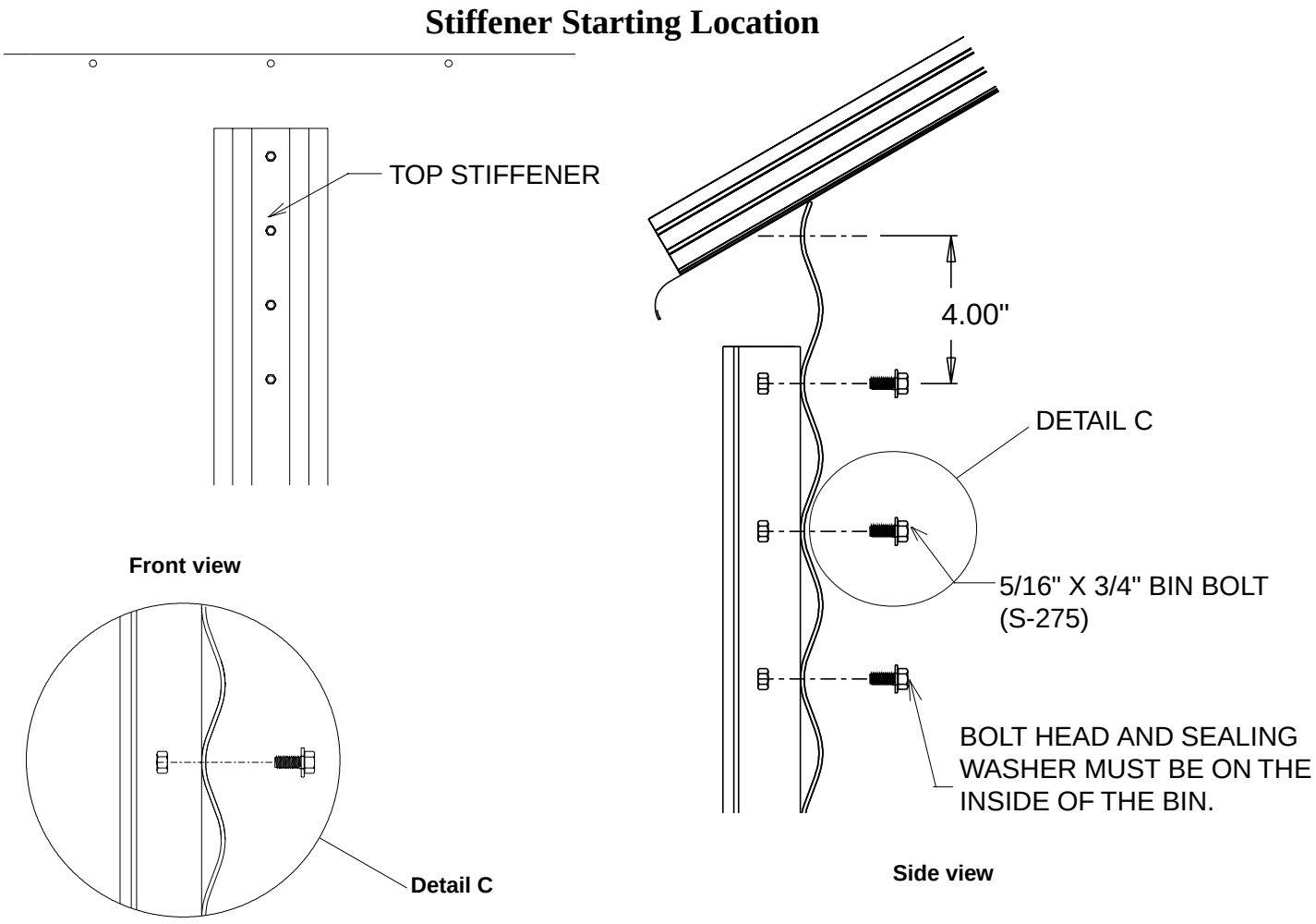


Figure 6

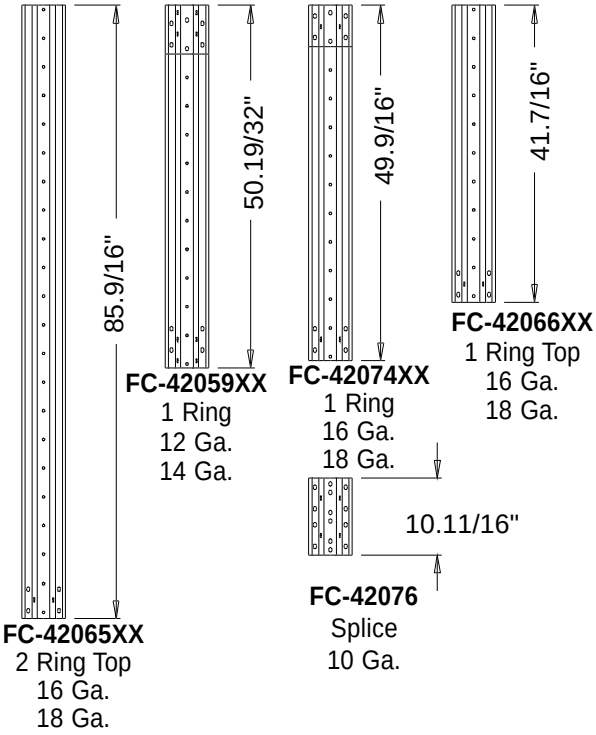
Note: All bins do not use a top stiffener reference the gage chart to determine if your bin is stiffened to the eave. Bins with grain recirculating devices, fast dry/grain flow units or any stirring device with three or more down augers must be stiffened all the way to the eave.

All stiffeners are to be installed on the exterior of the bin. Be sure and use 5/16" x 3/4" Grade 5 Bin Bolt with neoprene washer with the bolt head and washer on the inside of the grain bin. Refer to proper spread chart for proper location of stiffeners and sidewall sheets.

Farm-Com Stiffeners

Farm-Com stiffeners will have an identifying part number stamped on the part. * 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"	---



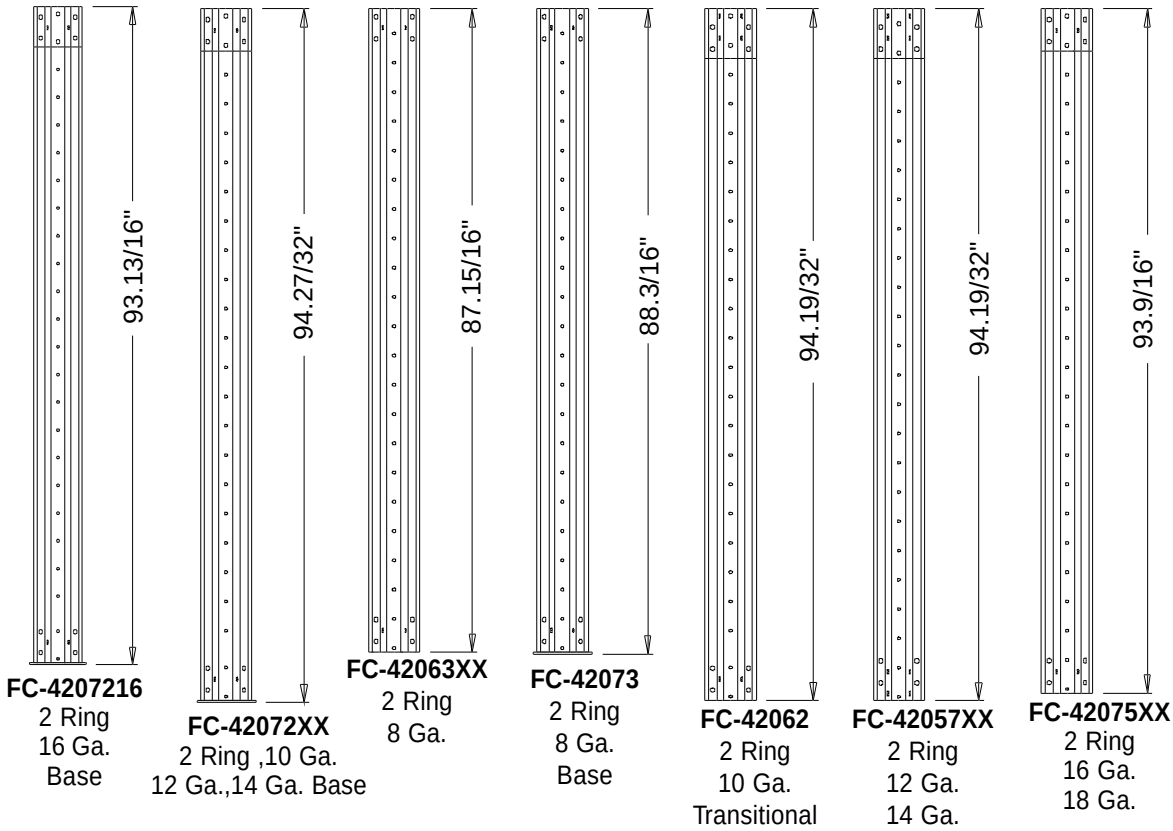
FC-42065XX
2 Ring Top
16 Ga.
18 Ga.

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-42063XX
2 Ring
8 Ga.

FC-42073
2 Ring
8 Ga.
Base

FC-42062
2 Ring
10 Ga.
Transitional

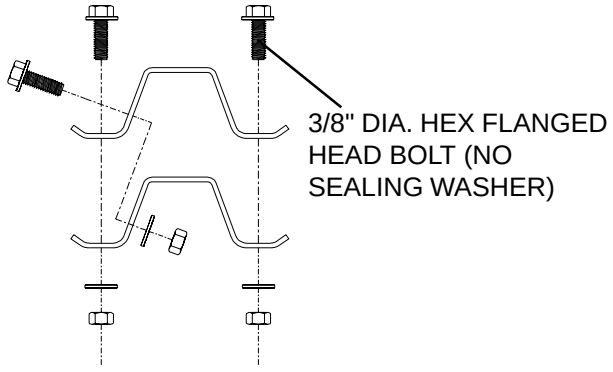
FC-42057XX
2 Ring
12 Ga.
14 Ga.

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

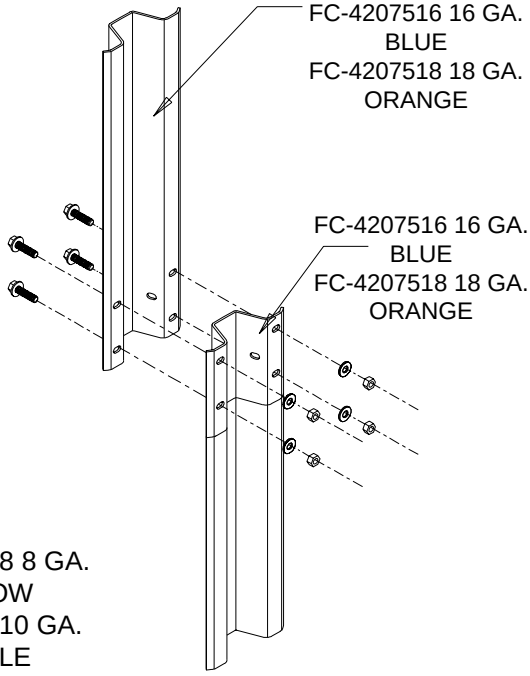
4.00" Corrugation Farm-Com Stiffener Splice Details

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.

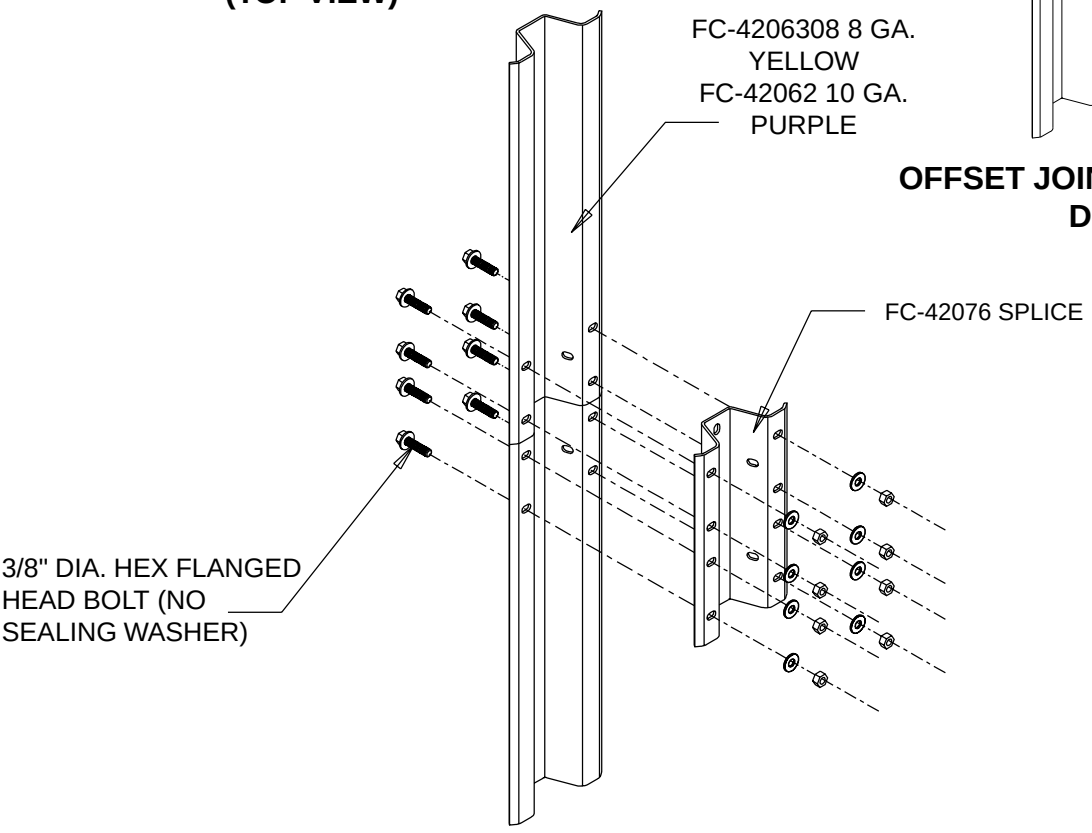
IMPORTANT: If shim plates are not used where required, the downward pressure of the stiffeners will not be transferred directly to the foundation, and bin failure could result.



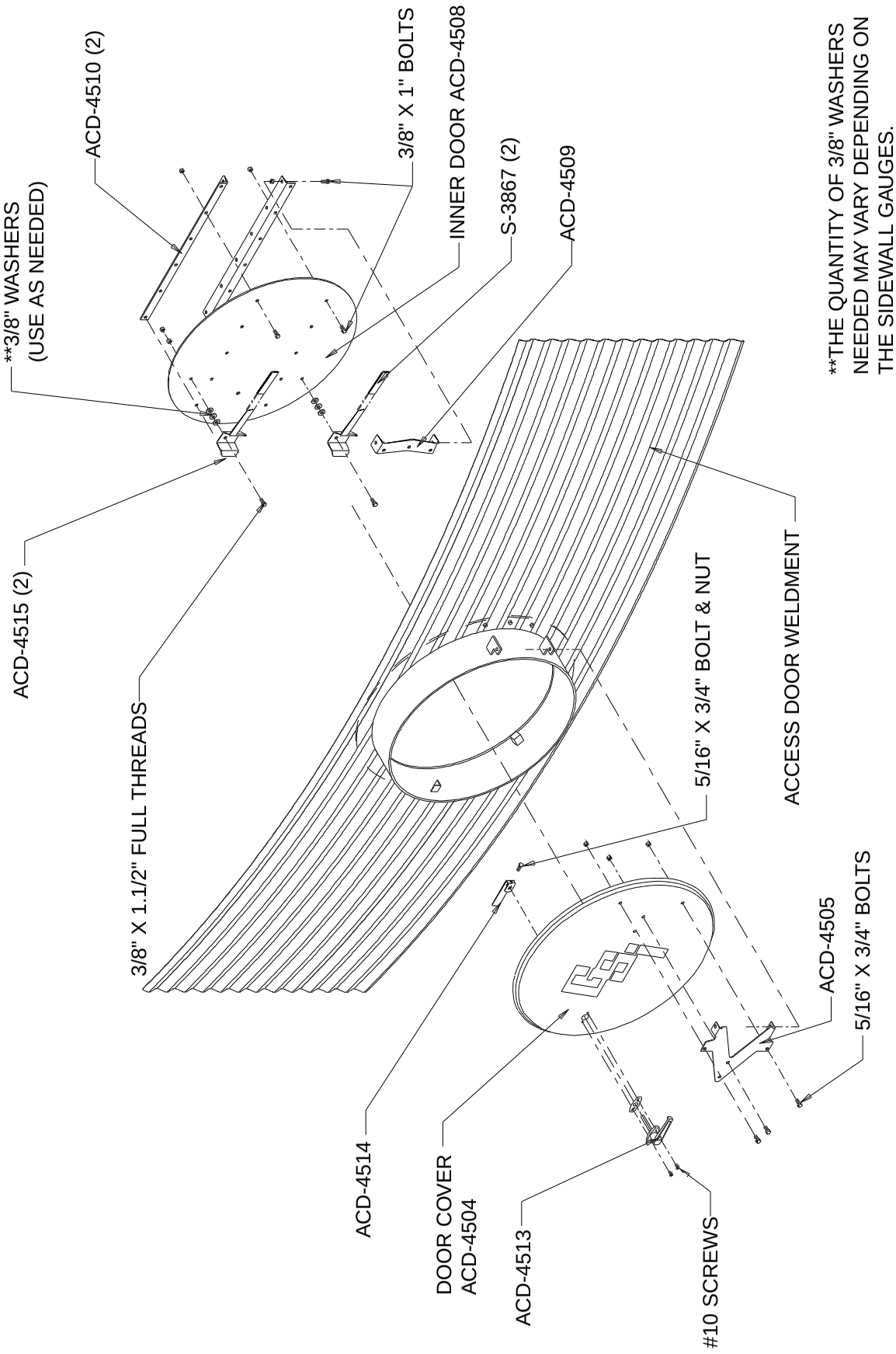
SPLICE PLATE JOINT (TOP VIEW)



OFFSET JOINT CONNECTION DETAIL

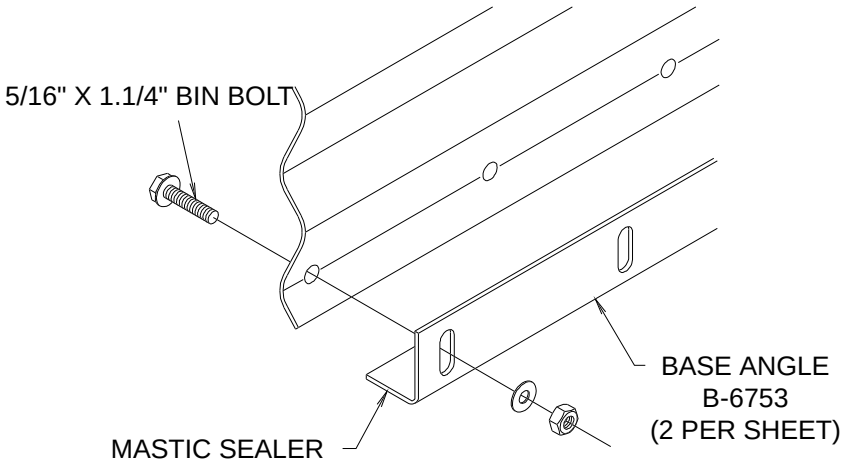


Access Door Weldment Assembly to be Located in Second Ring from Bottom



Base Angle INstallation

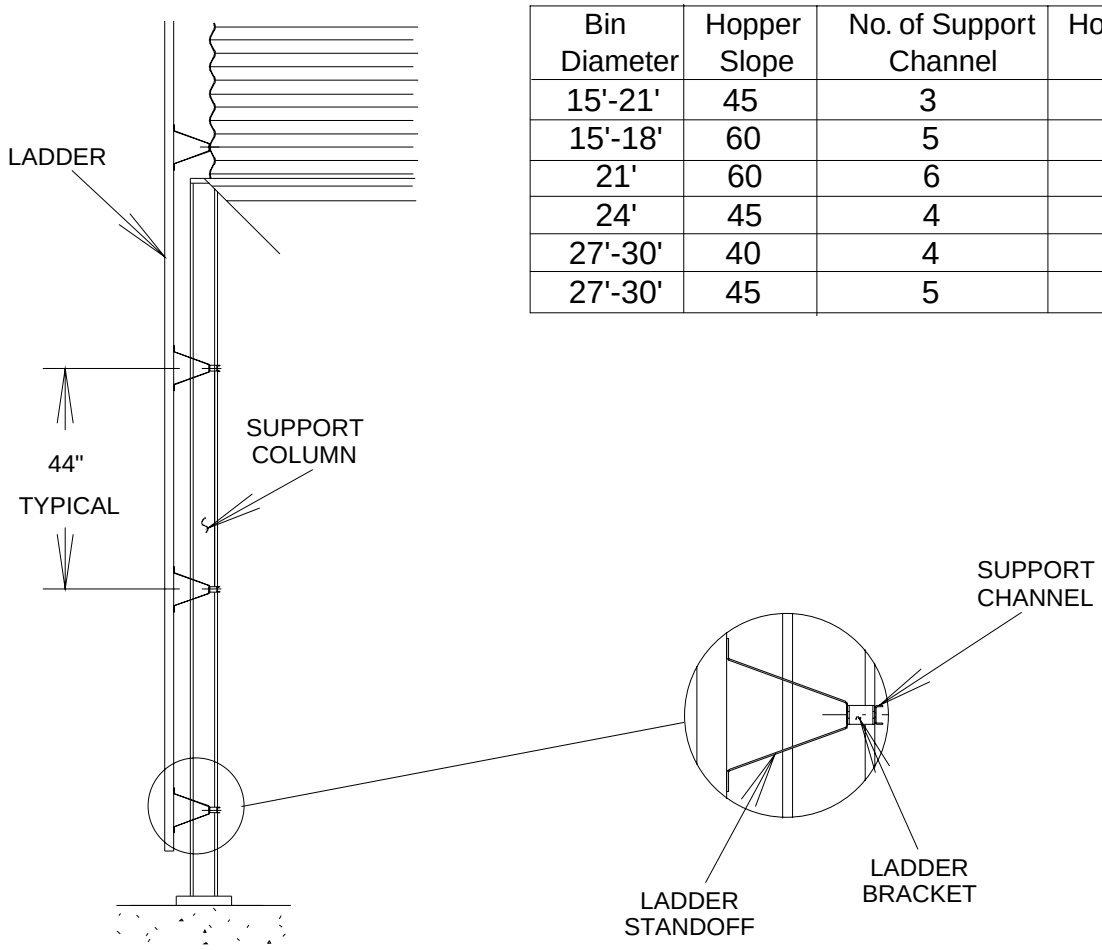
Once the door frame has been placed and secured, continue adding necessary sidewall ring(s). To the lower edge of the final bottom ring, attach the base angle ring. The base angle should be left loose enough to allow the sheet to move down and settle when the jacks are removed. The base angle should then be tightened. 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.

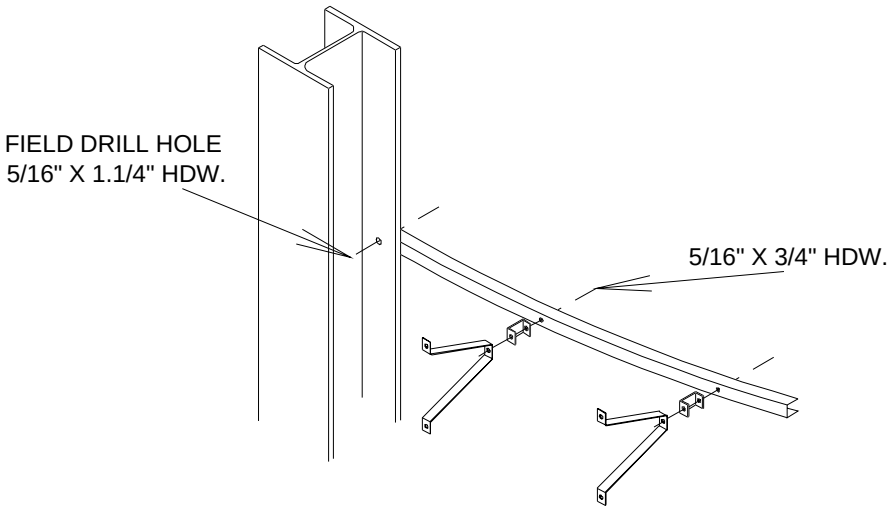


Note: The base angle will obstruct the two smaller holes in the base plate of the bottom stiffener. The base angle must be notched in these locations to allow the tank to be bolted to the hopper structure.

Hopper Ladder Supports

Bin Diameter	Hopper Slope	No. of Support Channel	Hopper Ladder Brackets
15'-21'	45	3	6
15'-18'	60	5	10
21'	60	6	12
24'	45	4	8
27'-30'	40	4	8
27'-30'	45	5	10





LADDER SUPPORT DETAIL

Hoist Instructions

Recommendations for hoisting completed tank onto hopper bottom structure. (ALL PARTS MENTIONED IN THIS SECTION ARE NOT FURNISHED)

A crane is normally used to lift the tank and place it on top of the substructure. Technique of Hoisting of the complete tank on the hopper structure is in large part based on personal experience, equipment and manpower. The following recommendations are intended as a guideline only.

1. Before lifting the tank the following should be checked:

   a. The columns and substructure should be checked for levelness and verified plumb and leveled if necessary.

   b. Final ladder and safety cage and door locations should be determined and clearance at these locations verified.

   c. Proper provisions should be made for safe working platforms around the top of the sub structure.

2. Lifting technique are largely influenced by personal experience and equipment capacity however general recommendations as follow:

   a. Lifting brackets should be attached to the stiffeners. At least one bracket per sidewall sheet should be used. These would typically be attached in the third ring from the bottom of the tank. Brackets should attach to a minimum of four (4) bolts through the stiffener. Attach cables to the lift brackets and to the crane hook, which has been lowered through the center ring opening. Cables should be sized to handle the entire weight of the bin. Make all lift cables of equal length before the bin is lifted. Reference Figure #7 & #8.

   b. To prevent distortion of the assembled tank a "spider" or horizontal bracing is recommended. A suggested method of this is illustrated in the following details. This may be done by using a center "hub" and pipe. The center hub would typically be made of 6" schedule 40 pipe with 3" x 3" x 3/8" angle welded to it and the pipe bolt ing to the hub. The second smaller pipe would bolt to the lifting brackets attached to the stiffeners (Reference Figure #9). Typical number of horizontal member that would be used are:

Recommended minimum number of lift brackets

Diameter	No. of Brackets
12'	4
15'	5
18'	6
21'	7
24'	8
27'	9
30'	10

Recommended number of horizontal braces

Diameter	No. of Braces
21'	3
27'	3
12'	4
24'	4
15'	5
30'	5

   c. Use of temporary bracing across the peak collar may be needed to guide the cable. This should be made easily removable.

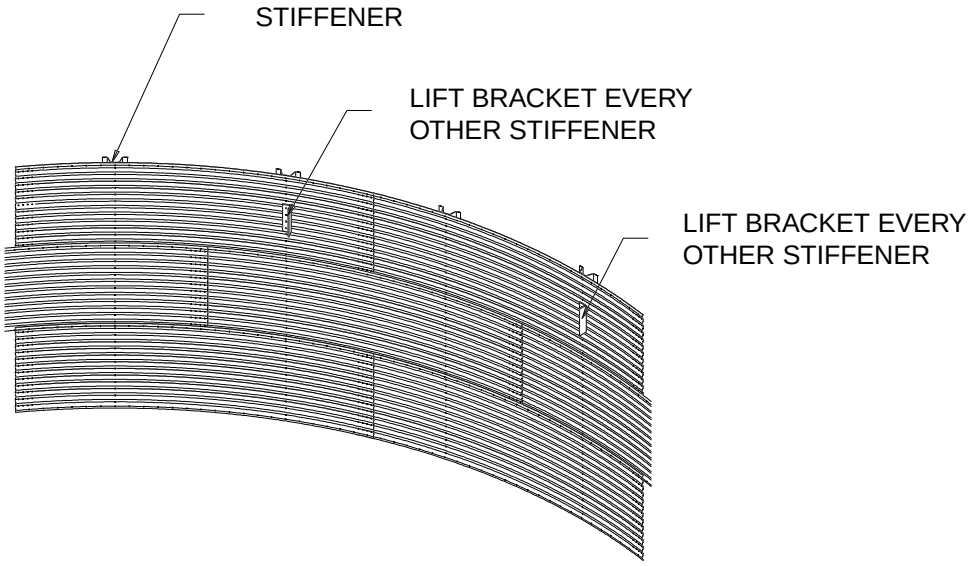


Figure 7

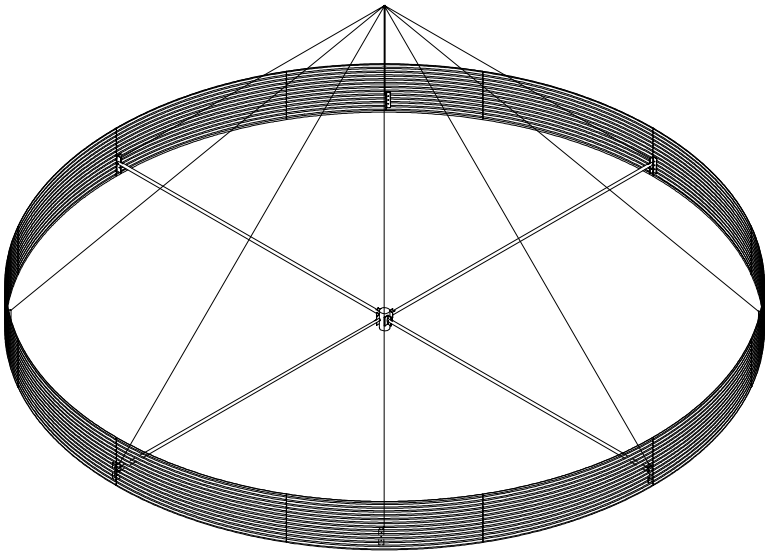


Figure 8

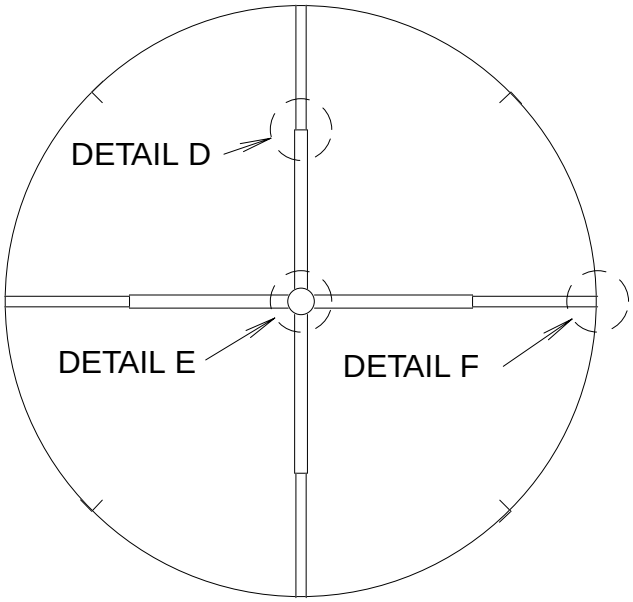
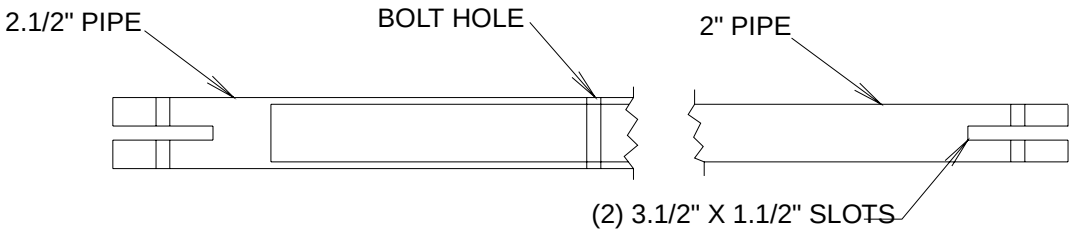
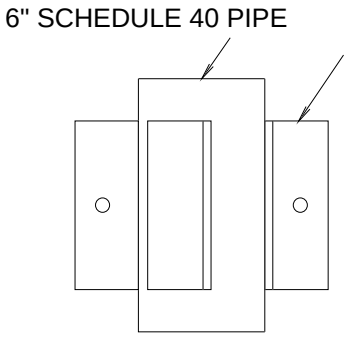


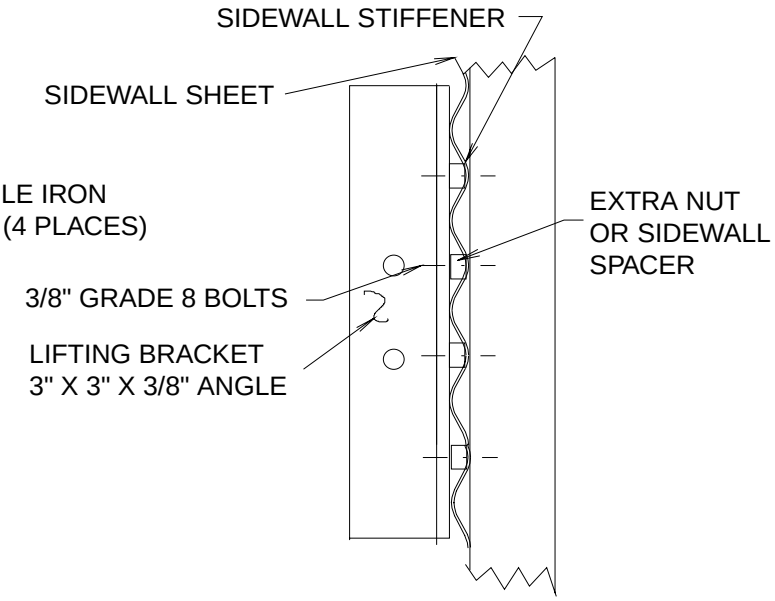
FIGURE #9



DETAIL D



DETAIL E
HUB ASSEMBLY



DETAIL F
SIDEWALL SUPPORT ANGLE

Tank On Support Solumns

3. Before setting tank on hopper structure, make sure poly base sealer has been applied to bottom lip of tank base angle. Set tank on hopper compression ring and align the holes in stiffener base plates with the holes in the compression ring. Bolt stiffener base plate, compression ring, and support column top plate with two 5/8" x 2.3/4" hex head bolt per stiff ener. Shim all stiffener base plates with a base angle shim plate. Column / stiffener shims can be used to shim stiffener base plates when needed. Align 4" bin hold down with hole in center of compression element and attach with 5/8" x 1.1/2" hex head bolt. Field drill six 3/8" dia. holes in tank sidewall to match pattern in bin hold down. Bolt sidewall to hold with 5/ 16" dia. bin bolt. (Reference figure #10).

4. After tank is secured remove the spider or horizontal bracing.

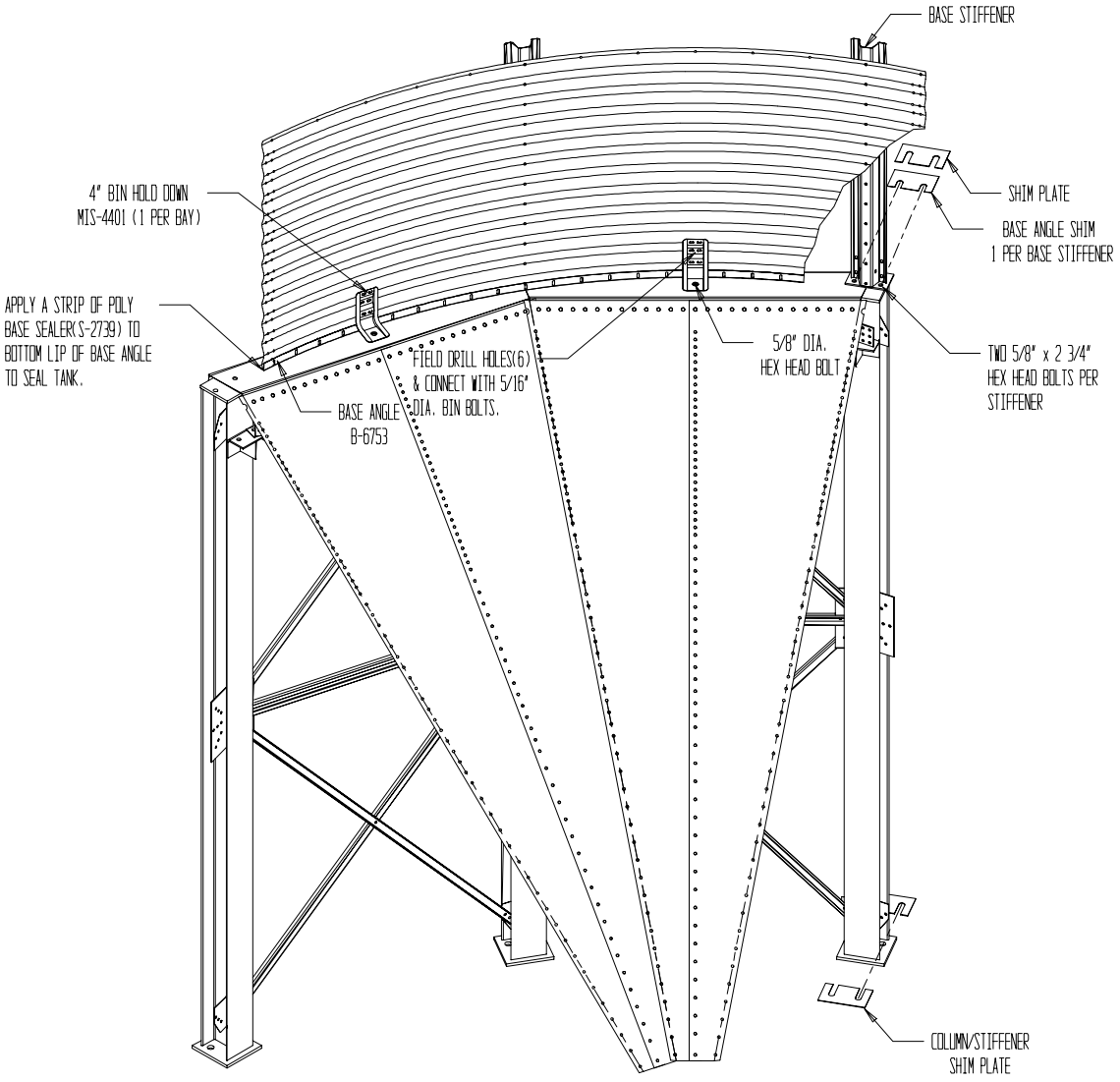


Figure 10

Outside Stiffener Hardware

Splice connections Are Figured For The Top Of The Stiffener Splices.

18ga., 16 ga.		Per Splice		
	Splice Bolting	6	S-7927	3/8" X 1" Hex Flanged
		6	S-845	5/16" Washer
		6	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(22) S-275 Per Sheet]	Stiffener To Sidewall	22	S-275	5/16" x 3/4" Bin Bolt
[(22) S-396 Per Sheet]	Bolting	22	S-396	5/16" Hex Nuts
14ga.		Per Splice		
	Splice Bolting	8	S-7927	3/8" X 1" Hex Flanged
		8	S-845	5/16" Washer
		8	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(22) S-275 Per Sheet]	Stiffener To Sidewall	22	S-275	5/16" x 3/4" Bin Bolt
[(22) S-396 Per Sheet]	Bolting	22	S-396	5/16" Hex Nuts
12ga.		Per Splice		
	Splice Bolting	8	S-7927	3/8" X 1" Hex Flanged
		8	S-845	5/16" Washer
		8	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(22) S-275 Per Sheet]	Stiffener To Sidewall	20	S-275	5/16" x 3/4" Bin Bolt
[(2) S-277 Per Sheet]	Bolting	2	S-277	5/16" x 1.1/4" Bin Bolt
[(22) S-396 Per Sheet]		22	S-396	5/16" Hex Nuts

TRANSITIONALS

Splice connections Are Figured For The Top Of The Stiffener Splices.

12ga. To 10ga.		Per Splice		
	Splice Bolting	8	S-7927	3/8" X 1" Hex Flanged
		8	S-845	5/16" Washer
		8	S-456	3/8" Hex Nuts
(2 Stiffeners per Sheet)		Per Sheet		
[(20) S-275 Per Sheet]	Stiffener To Sidewall	20	S-275	5/16" x 3/4" Bin Bolt
[(2) S-277 Per Sheet]	Bolting	2	S-277	5/16" x 1.1/4" Bin Bolt
[(22) S-396 Per Sheet]		22	S-396	5/16" Hex Nuts
10ga. Transitional To 8ga.		Per Splice		
8ga To 8ga.	Splice Bolting	12	S-7927	3/8" X 1" Hex Flanged
		12	S-845	5/16" Washer
		12	S-456	3/8" Hex Nuts
Add (1) FC-42076 Per Connection		Per Sheet		
[(18) S-275 Per Sheet]	Stiffener To Sidewall	18	S-275	5/16" x 3/4" Bin Bolt
[(4) S-277 Per Sheet]	Bolting	4	S-277	5/16" x 1.1/4" Bin Bolt
[(4) S-277 Per Sheet]		22	S-396	5/16" Hex Nuts

Sidewall Hardware

Refer To Stiffener Sheets For Stiffener To Sidewall Hardware Usage.

20ga. To 15 ga.	56	S-275	5/16" x 3/4" Bin Bolt
	56	S-396	5/16" Hex Nuts
	7 ft.	S-4458	Caulking (24' Roll)
14 ga. To 13 ga.	68	S-275	5/16" x 3/4" Bin Bolt
	68	S-396	5/16" Hex Nuts
	7 ft.	S-4458	Caulking (24' Roll)

ROOF HARDWARE (inserted in sidewall hardware)

	BIN DIAMETER					
HARDWARE	18'	21'	24'	27'	30'	36'
S-275 5/16" x 3/4" Bin Bolt	175	175	175	200	200	337
S-277 5/16" x 1.1/4" Bin Bolt	200	250	300	400	450	775
S-396 5/16" Hex Nut	375	425	475	600	650	1112
S-4458 Roll Caulking	2	2	2	2	2	2
S-845 5/16" Washer	75	75	100	100	125	200

Location of Accessories

Note: The Top Dry System should be provided with a dependable equipment ground. (See page 00).

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).

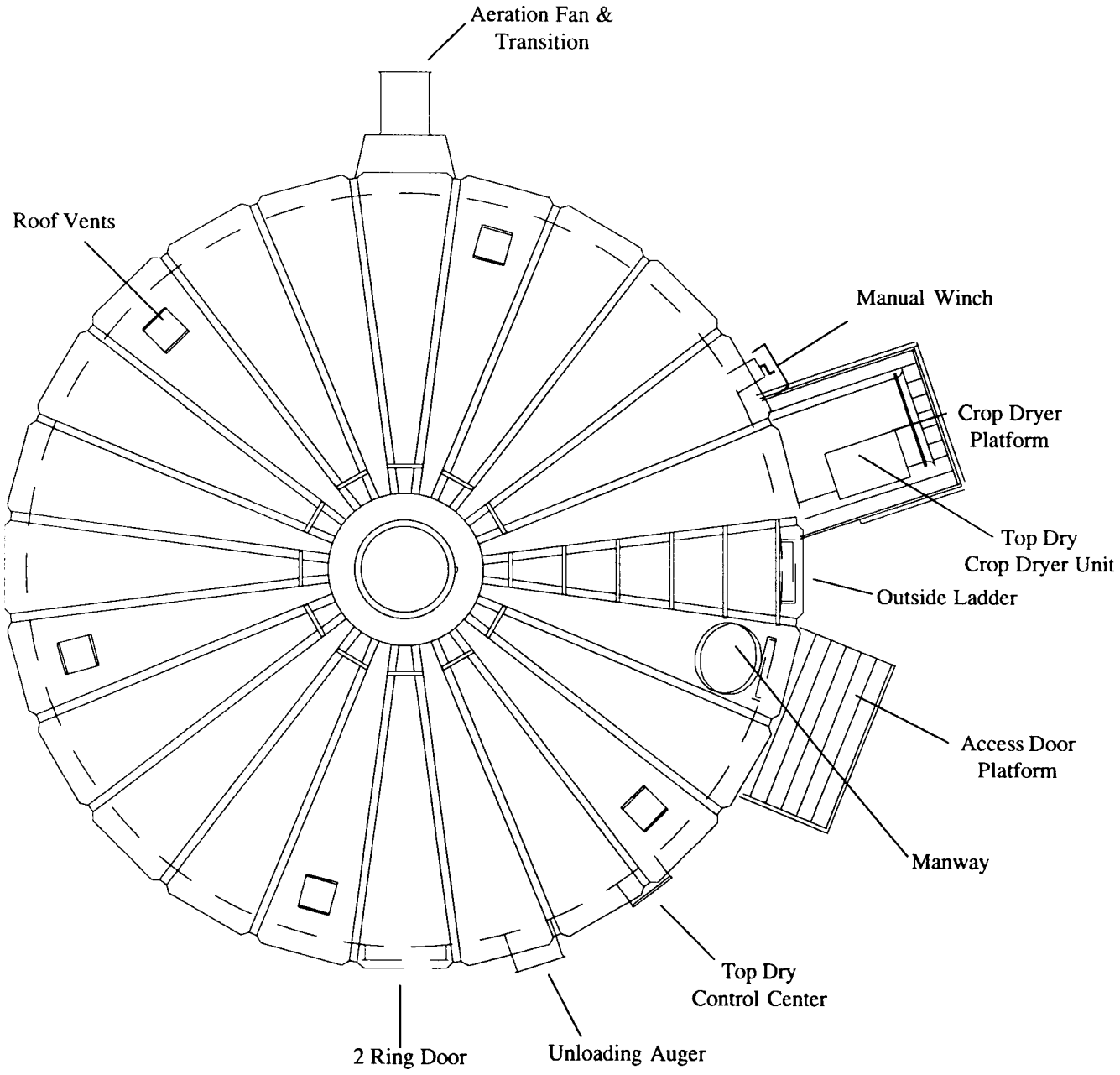


Figure 11

Location of Accessories

Door locations are shown by the underlined sidewall gauges. Actual gauge of the access door sheet located just below the Top Dry floor is in parentheses.

Top Dry Bin	Sidewall Gauges										
TDMS24-5	20	20	20	20	20	(16)					
TDMS24-6	20	20	20	20	20	20	(16)				
TDMS24-7	18	20	20	20	20	20	20	(16)			
TDMS24-8	18	18	20	20	20	20	20	20	(16)		
TDMS24-9	17	18	18	20	20	20	20	20	20	(16)	
TDMS24-10	17	17	18	18	18	20	20	20	20	20	(16)

24' Stiffener Layout

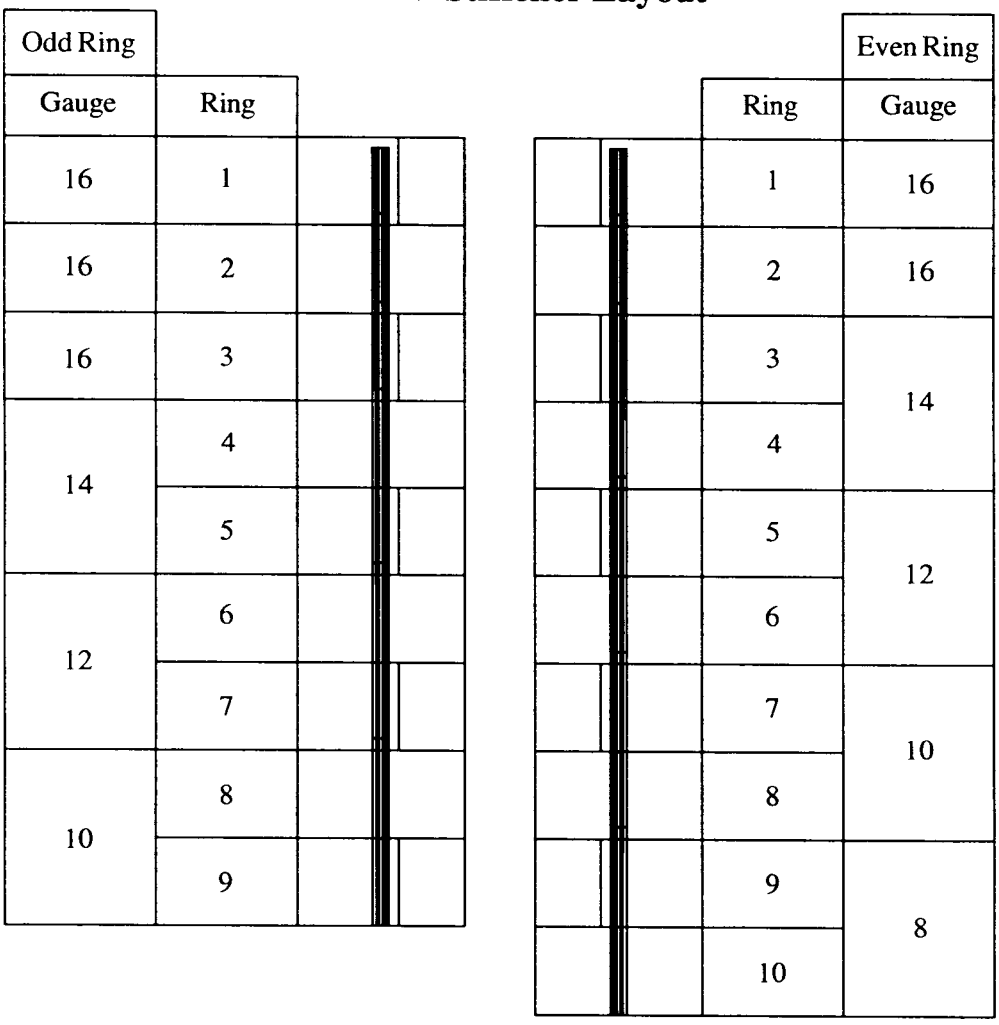


Figure 12

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.

Stiffener & Seam Locations

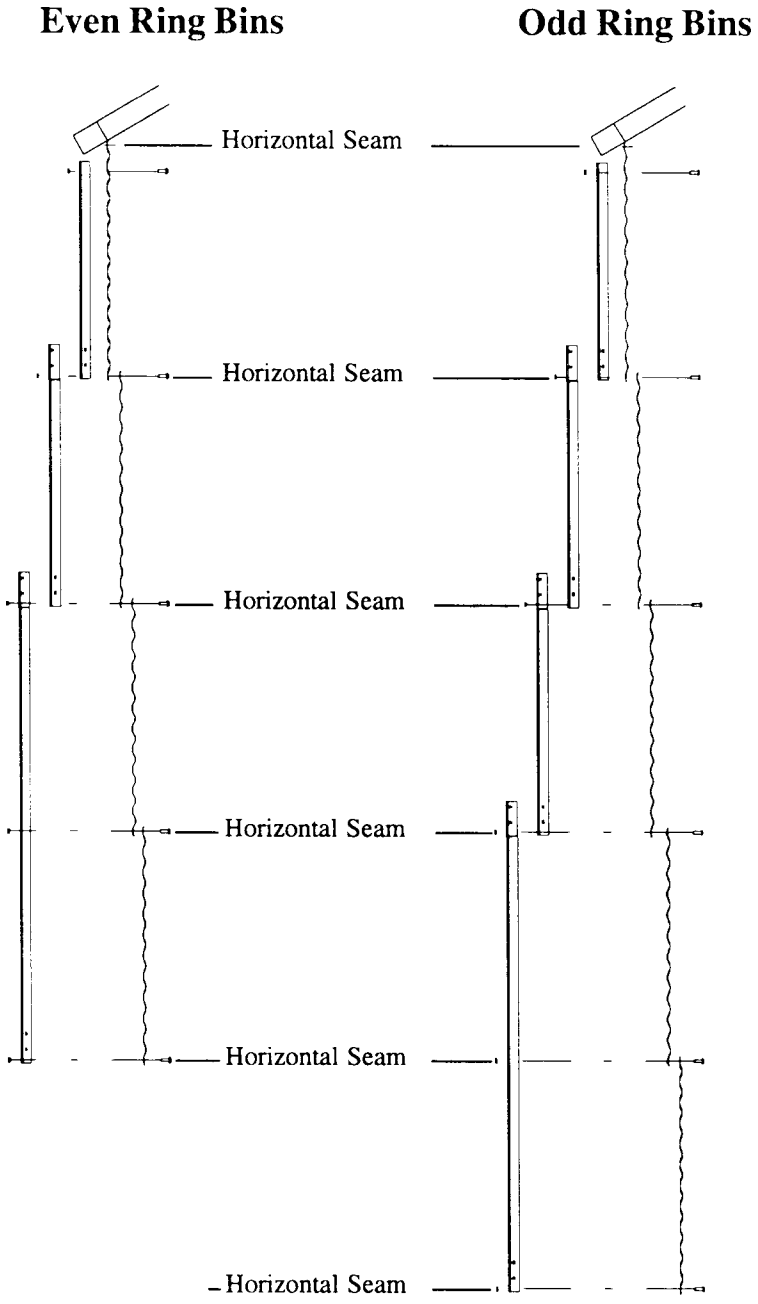


Figure 13

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

Sidewall Construction Instructions

Using correct size bin bolts throughout, begin assembling sidewall sheets end to end (overlapping the same way throughout) until the ring is complete, 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 tightem bolts until all sheets are assembled and form a complete ring. Tighten the bolts in sequence, starting from the center and work to the edge in both directions. This permits the sidewall sheets to draw-up evenly.

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 dorr are located in the second ring. Attach the top stiffeners, leaving out the (7) bolts indicated in Figure 13 at each stiffener location. Install the flashing bolts from the outside.

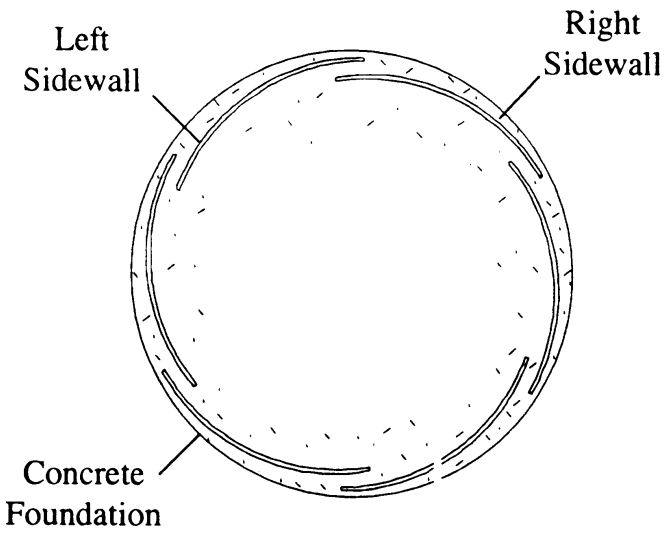


Figure 14

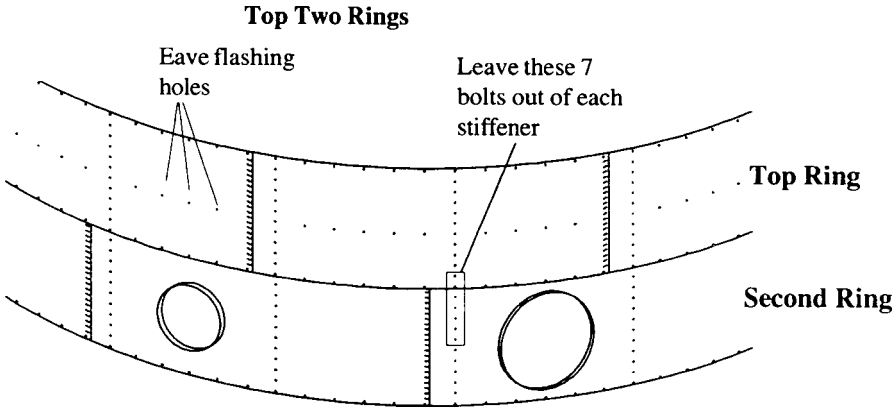


Figure 15

Stiffener & Bracket Locations

Install the stiffeners on the outside of the bin (as shown in Figure 00) 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-7928), head outside, with a neoprene washer (S-3558) against the wall on the inside, and a corrugation spacer (S-7041).

Note: It may be necessary to ream out sidewall holes with a drill and 3.8" bit for easier installation.

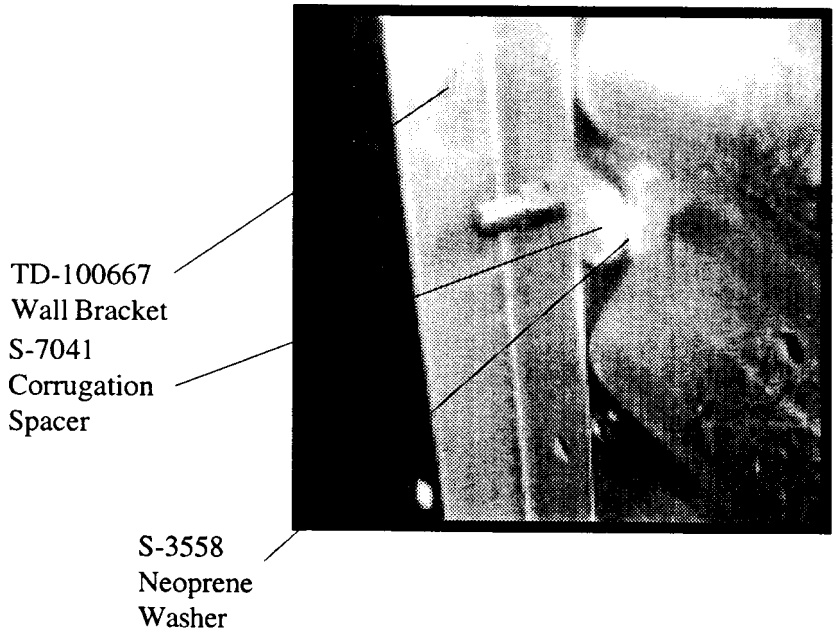


Figure 16

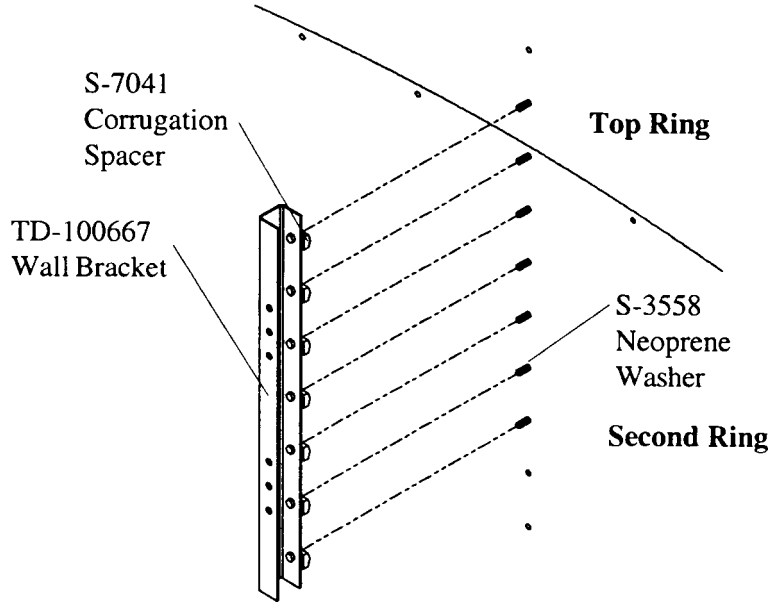


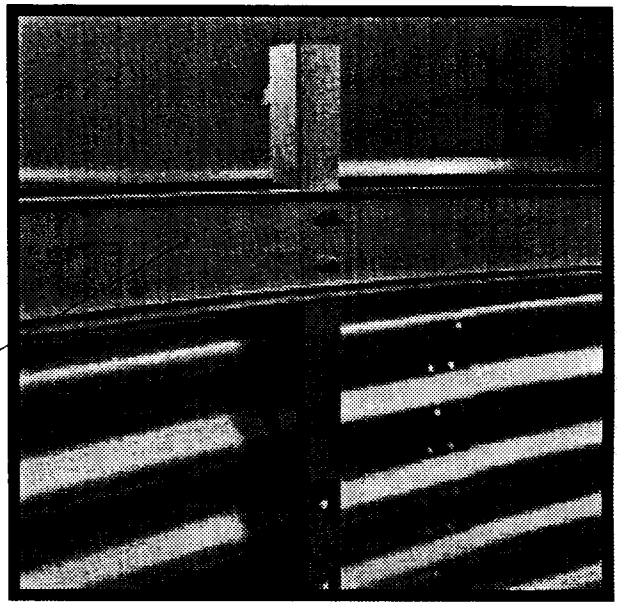
Figure 17

"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) holles leaving the bolts loose.

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

"C" Channel Attachment.



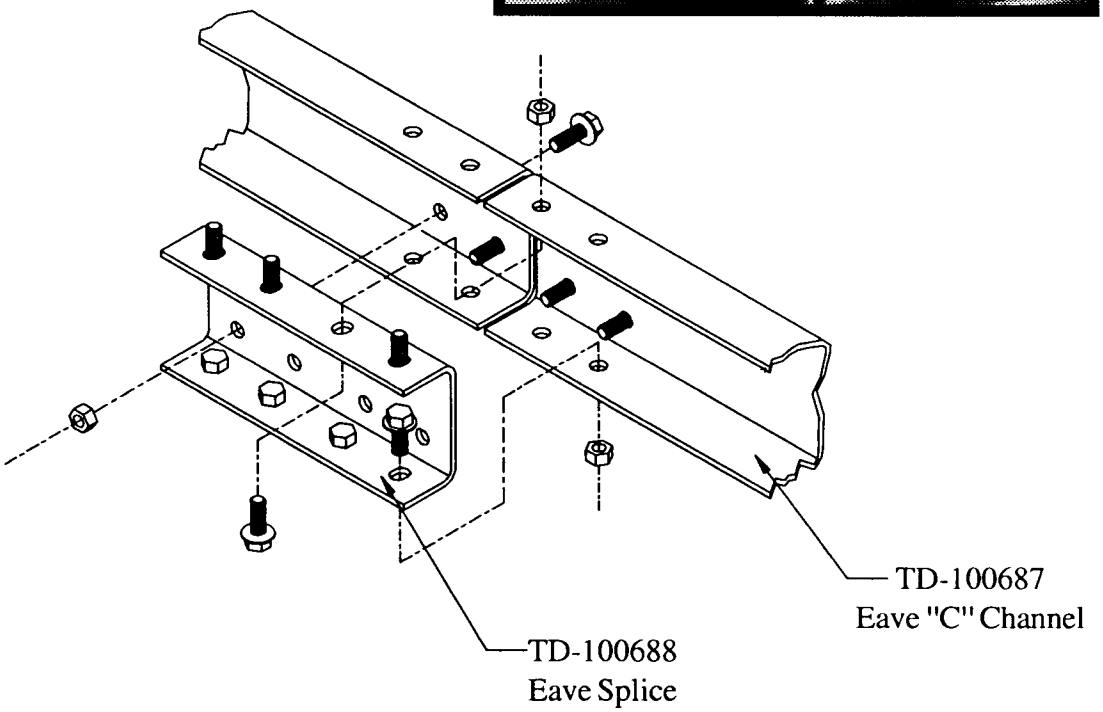


Figure 18

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).

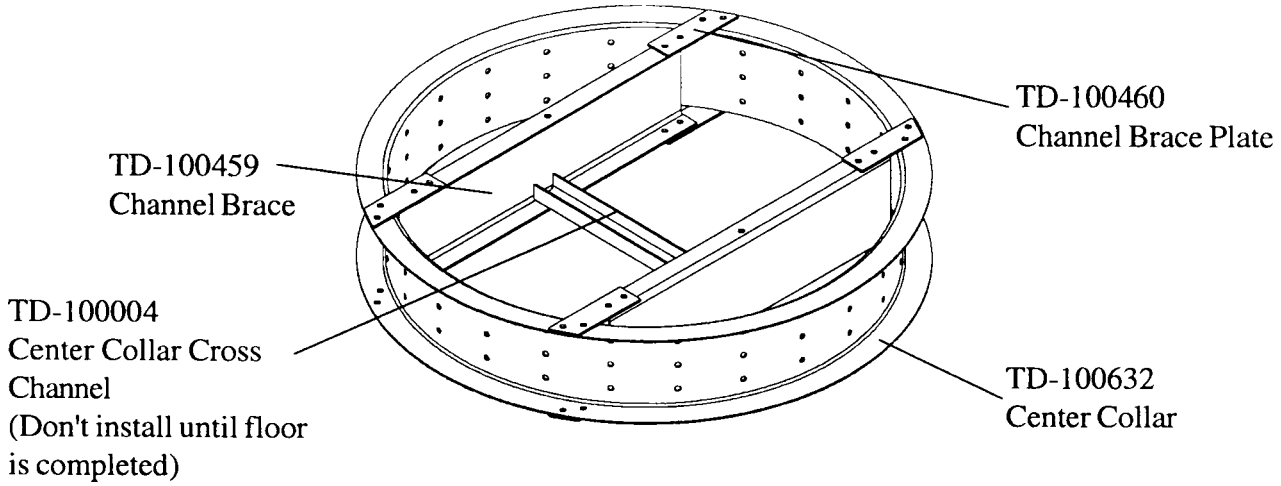


Figure 19

Position the center collar at the center of the bin and raise it to approximately 8'-9.1/2" measuring from the bottom edge of the collar to the concrete.

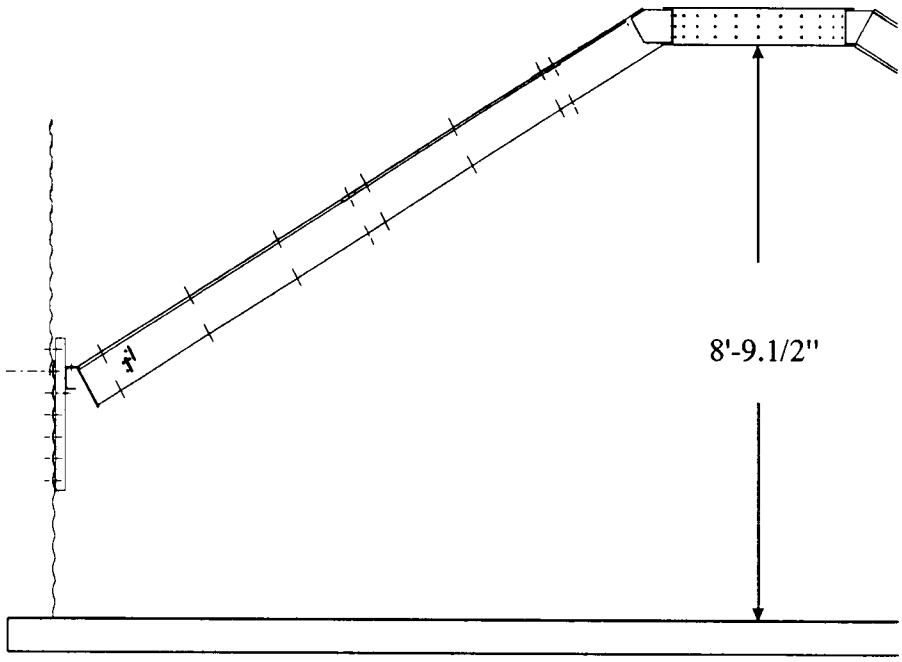
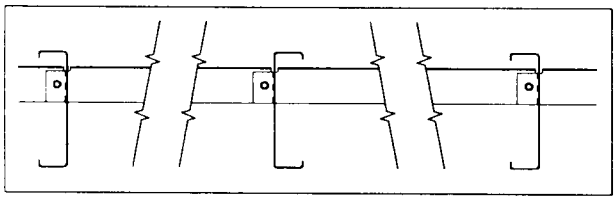


Figure 20

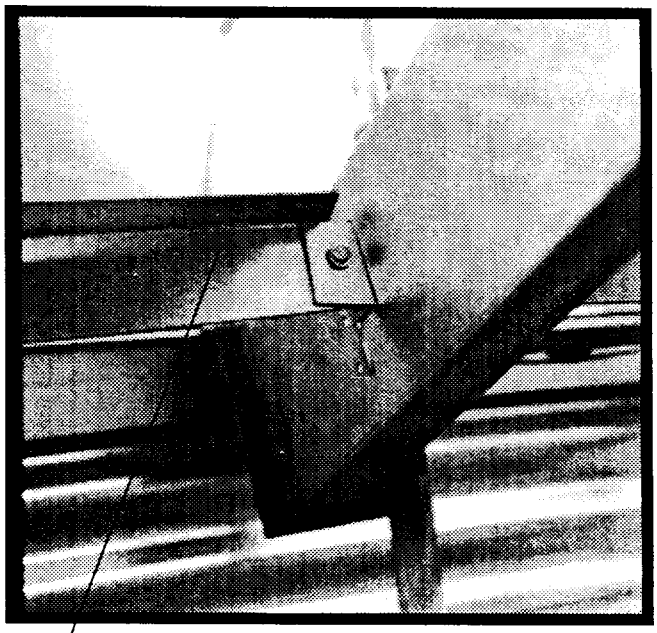
Rafter Installation & Floor Support Angle Attachment

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 with three (3) rafters at 120 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.



Looking toward the sidewall



Floor Support Angle Assembly

TD-100720 Long
TD-100721 Short

Figure 21

Angle Purlins

Counting up from the lower end of the rafter, on the underneath side, the angle purlins bolt in the 3d hole using 5/16" x 1.1/4" bin bolts. The angle is to be bolted to the underneath side of the rafters, joining rafter to rafter, with the angles interior angle facing the center of the bin (as shown below). Tighten all bolts.

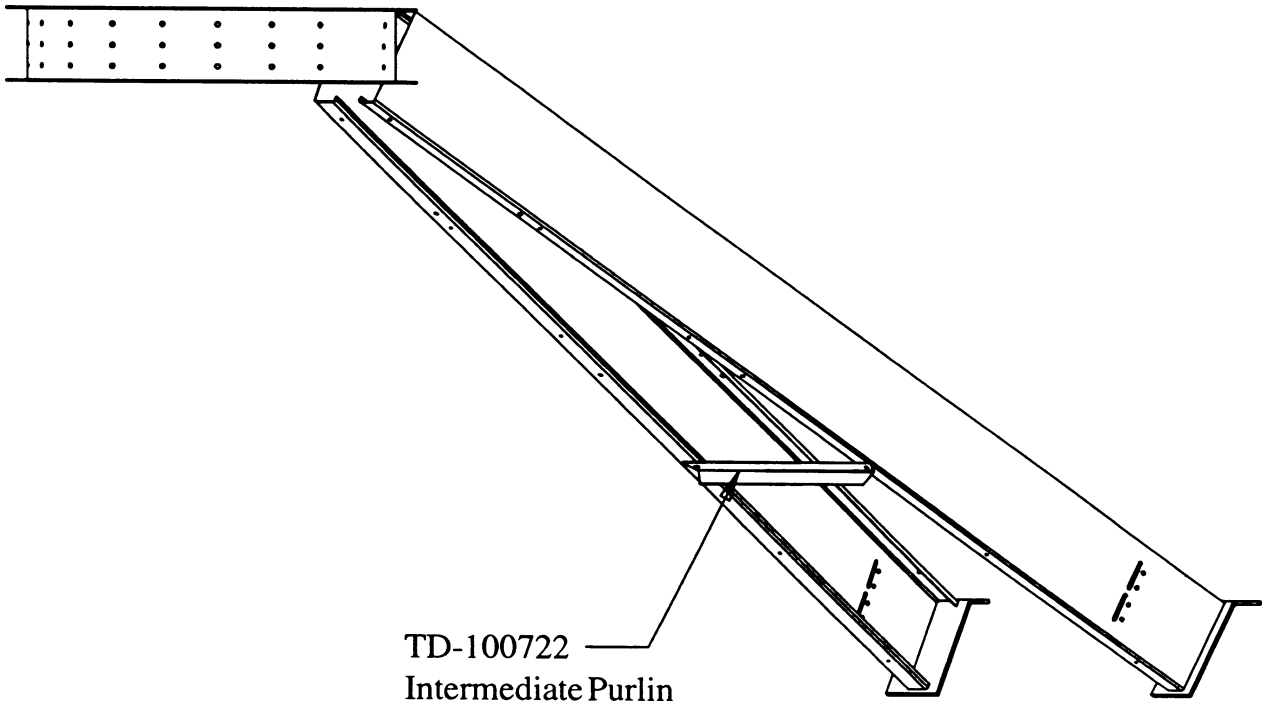


Figure 22

Dump Hopper Installation

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

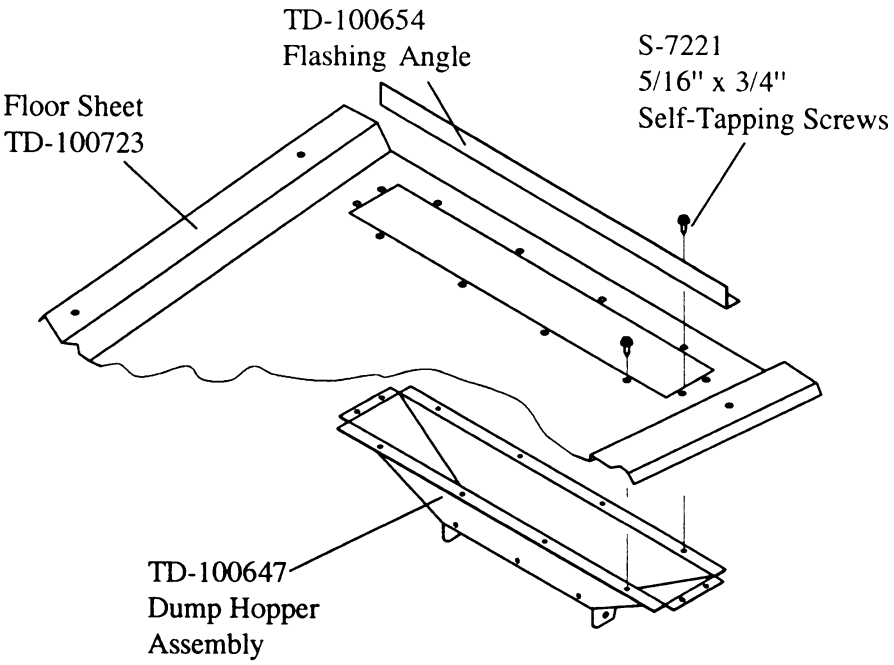


Figure 23

Floor Sheet Installation

Now the assembled sheets can be placed over the rafter framework. As the sheets are placed and overlapped they are to be acrewed down to the rafters using 5/16" x 3/4" self-tapping screws, leaving the fourth and eight holes empty.

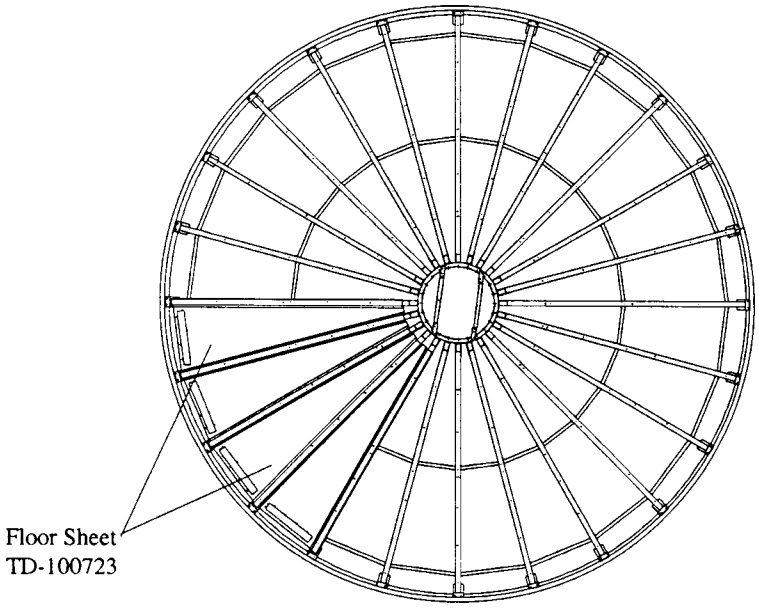


Figure 24

Leveling Band Post Installation

Install the leveling band posts on the floor as shown.

The fourth and eight 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 fourth and eight holes from the bottom of the sheet, there will be 8 posts (1 every third sheet). In the eight hole there will be 4 posts (1 every 6th sheet). After all of the posts have been installed fill the unused holes 5/16" x 1.1/4" bin bolts.

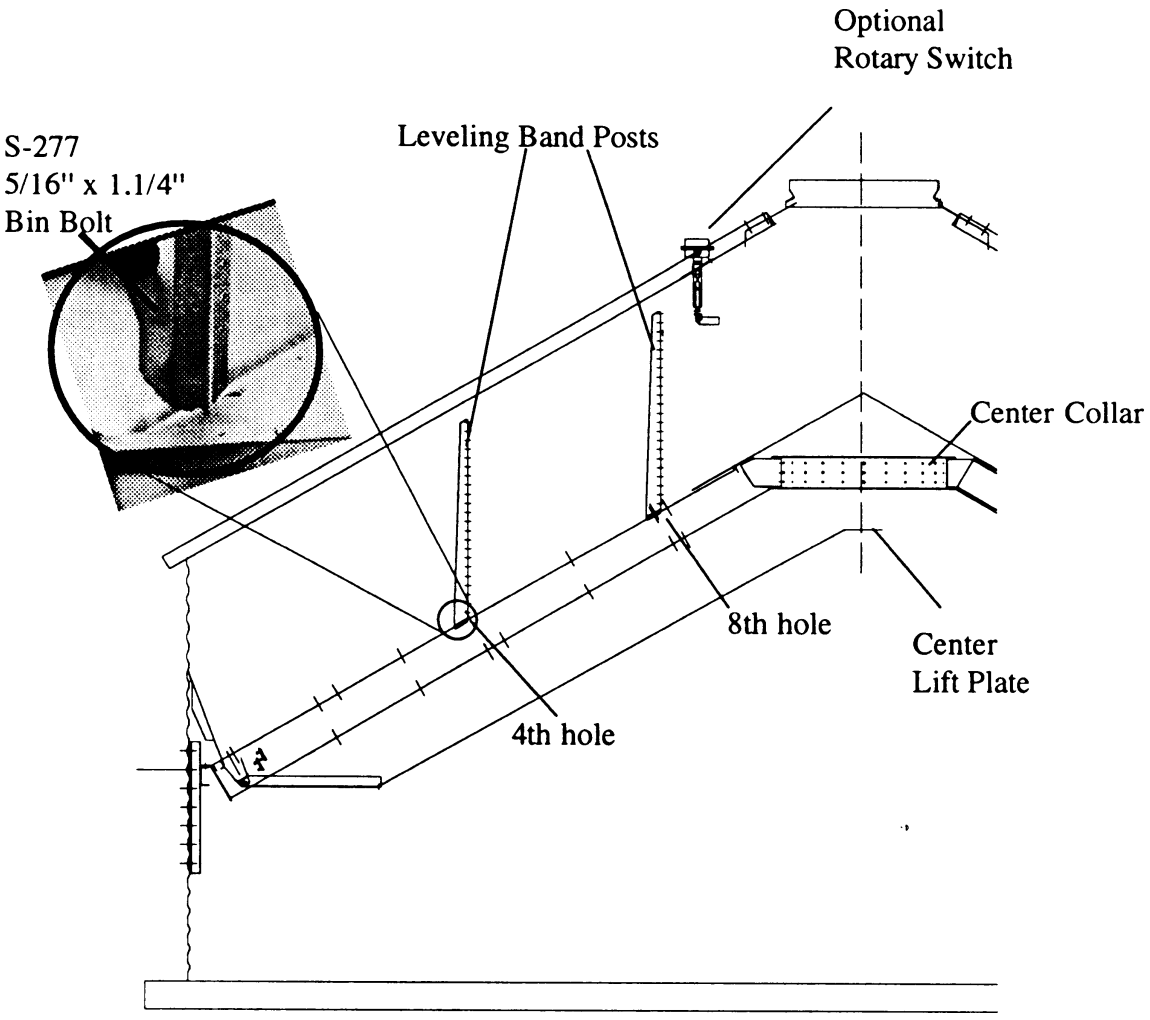


Figure 25

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 avod 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.

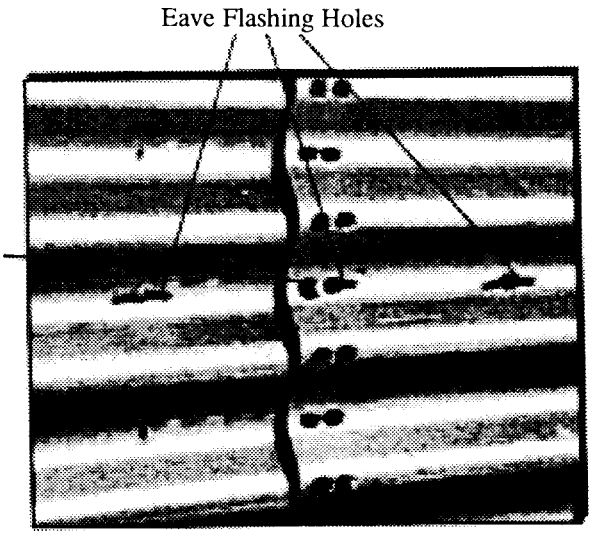


Figure 26

Eave Flashing Installation

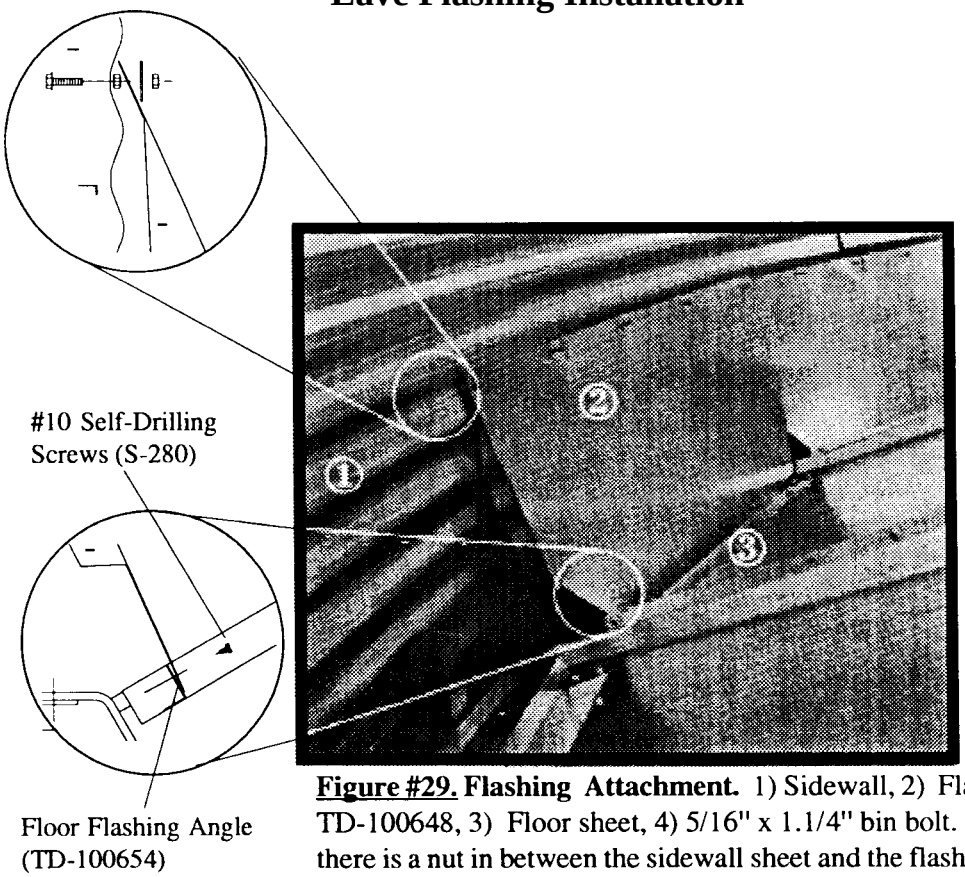


Figure #29. Flashing Attachment. 1) Sidewall, 2) Flashing TD-100648, 3) Floor sheet, 4) 5/16" x 1.1/4" bin bolt. Note that there is a nut in between the sidewall sheet and the flashing sheet.

Figure 27

Flashing Splice Installation

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. The flashing splice is a break apart piece. Attach the center piece in the center so that it rests on top of the floor sheet rib. Break off the side pieces and place them such that they seal against the sides of the ribs and attach each side piece with two screws. Make sure there are no gaps in the flashing.

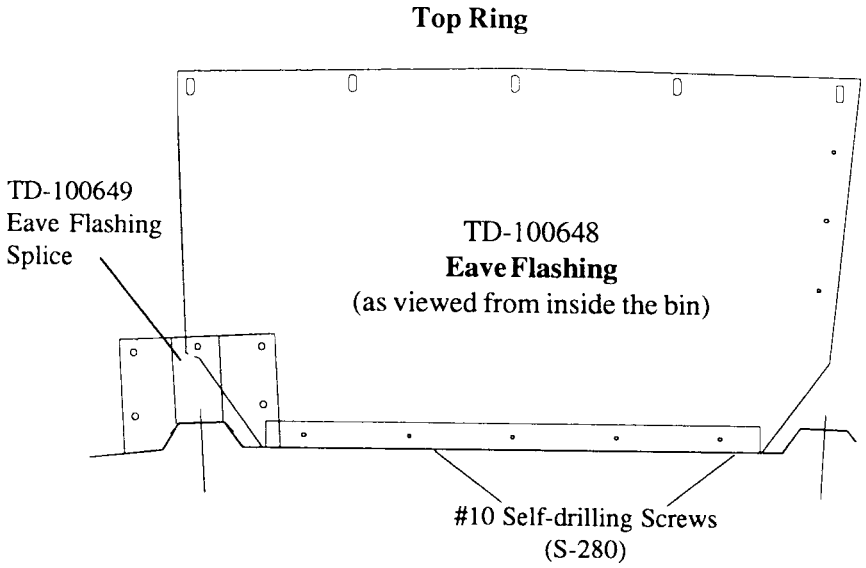


Figure 27

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.

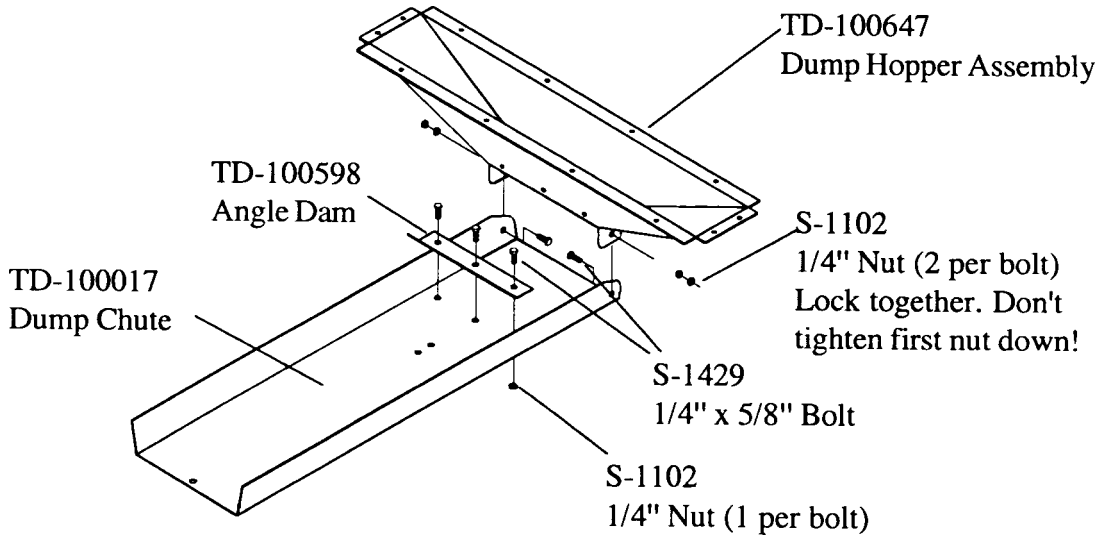


Figure 28

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.

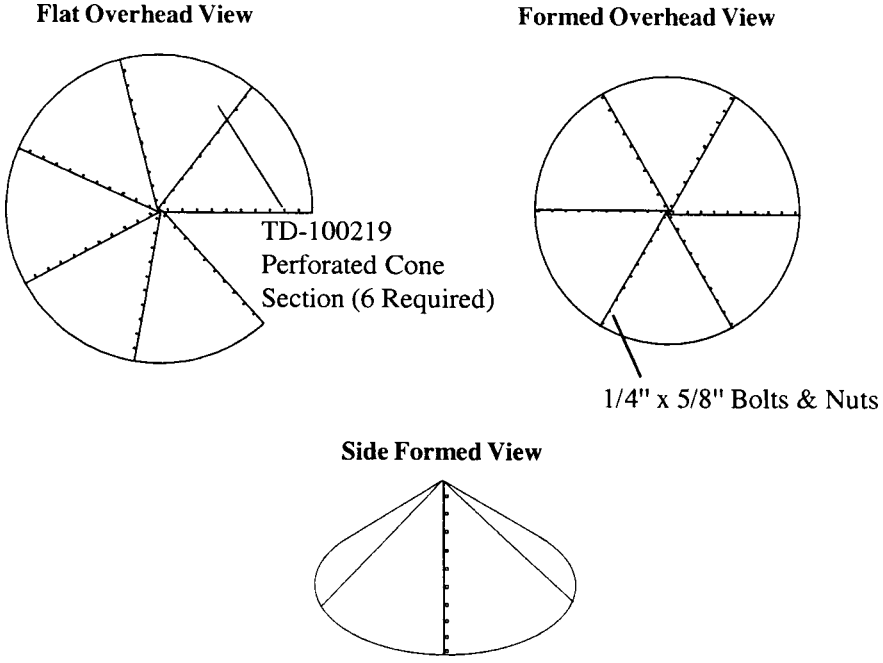


Figure 29

Center Cone Installation

Install cone over the center collar. Fasten cone assembly with (12) #10 x 3/4" self-drilling screws (S-280).

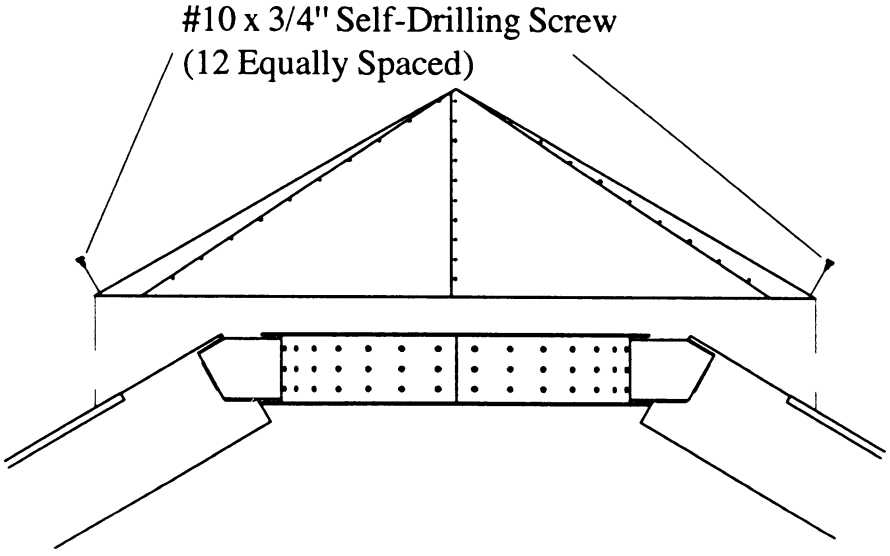


Figure 30

Roof Assembly Instructions

It is now time to assemble the roof. The roof is assembled according to the instructions in the roof hardware box, with the following exceptions:

1. Locate eave clips so that a roof sheet will be centered over sidewall ladder.
2. Four eave clip shims per eave clip must be installed.
3. Use TD-100274 roof brackets shipped in the Top Dry hardware rather than the brackets shipped in the roof hardware.

Eave Clip Assembly

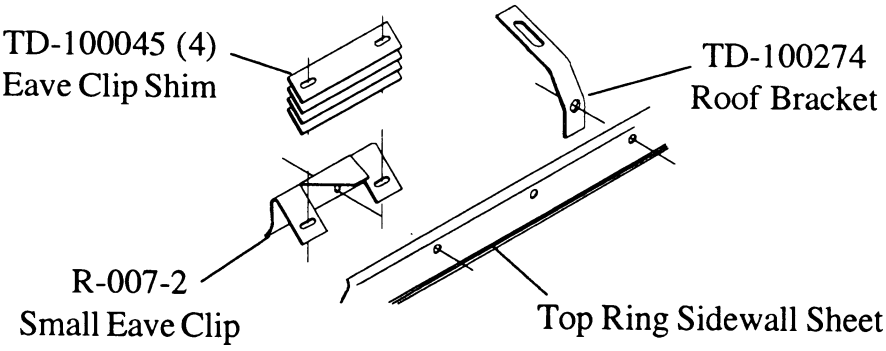


Figure 31

Leveling Band Location

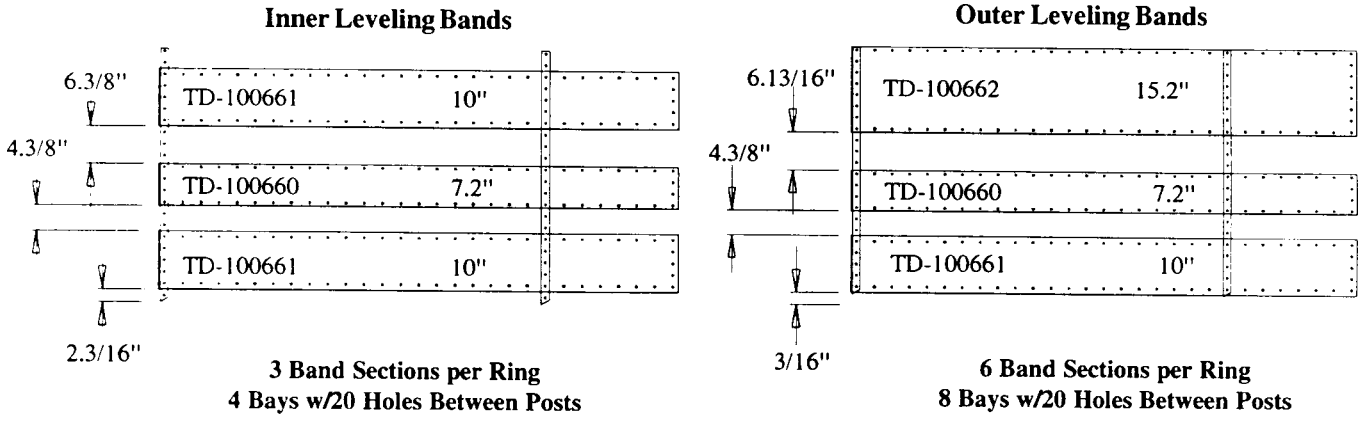


Figure 32

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 join band sections. Band sections connect to each other only at endmost holes until completing the circle where an overlap may occur.

Pulley Assembly

Finish assembling the center collar by adding the cross channel. Position the pulley assembly to the cross channel in the middle of the center collar assembly. Use a 3/8" x 1" hex head cap bolt to fastem assembly to the cross channel. 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.

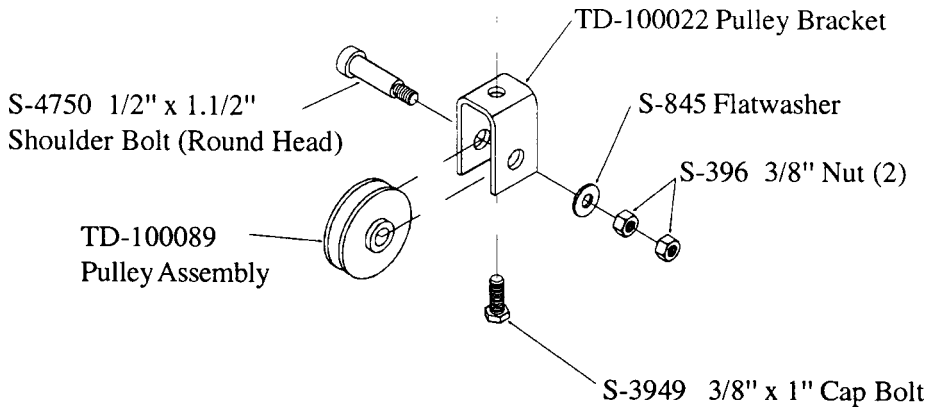


Figure 32

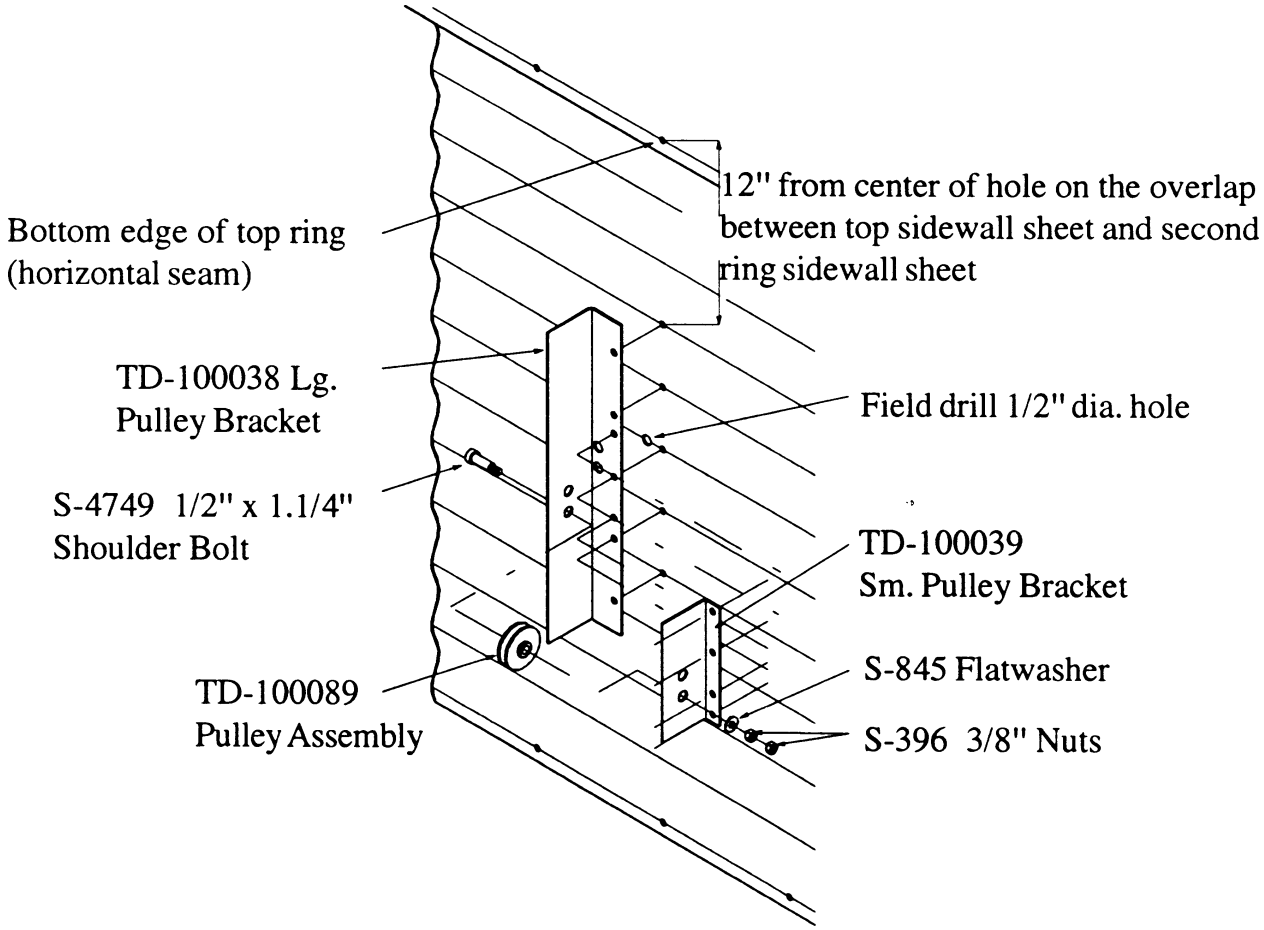


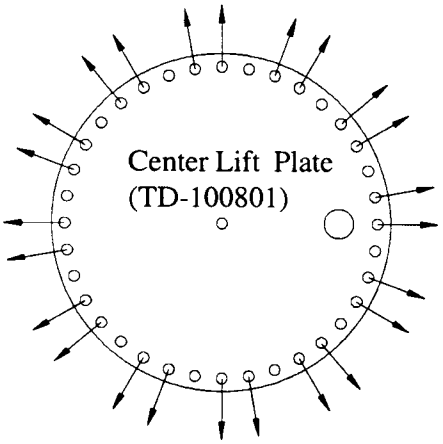
Figure 33

Dump Chute Chain Assembly

Attach all 24 dump chute chains directly to the lift plate as shown in diagram below.

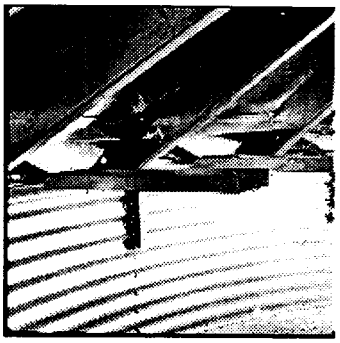
Install all chains using "S" hooks (S-4692) to attach the chains to the dump chutes and lift plates. Keep excess chain at the lift plate. Adjust the chains until the chutes are approximately level when the lift plate is in the closed (up) position.

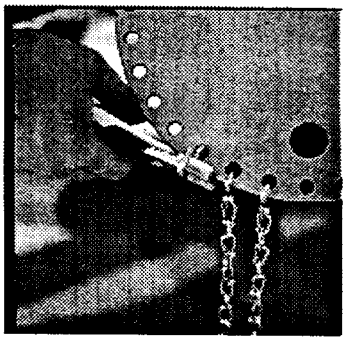
Once the chains are uniformly adjusted, crimp the "S" hooks closed. Check when attaching the "S" hook to the end link on a chain that the end has not been cut open. If this is found remove the end link or shift up and use the next link in chain. The lift plate should be approximately 12" from the cross channel when the chutes are level.



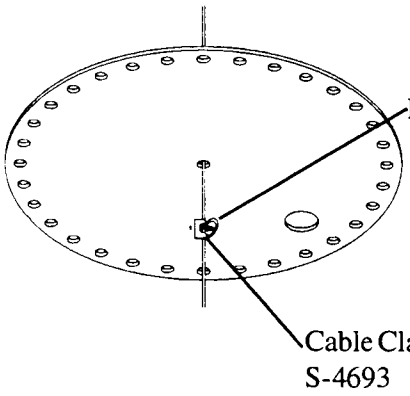
Chain leading to outer chutes
(120") Adjust length as required
TD-100199

Chutes in closed position





Crimp "S" hooks after final chute adjustment



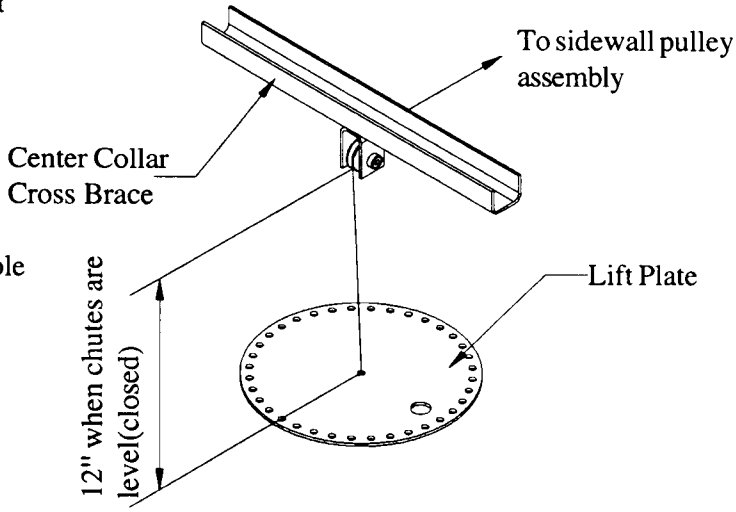


Figure 34

Winch Assembly

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

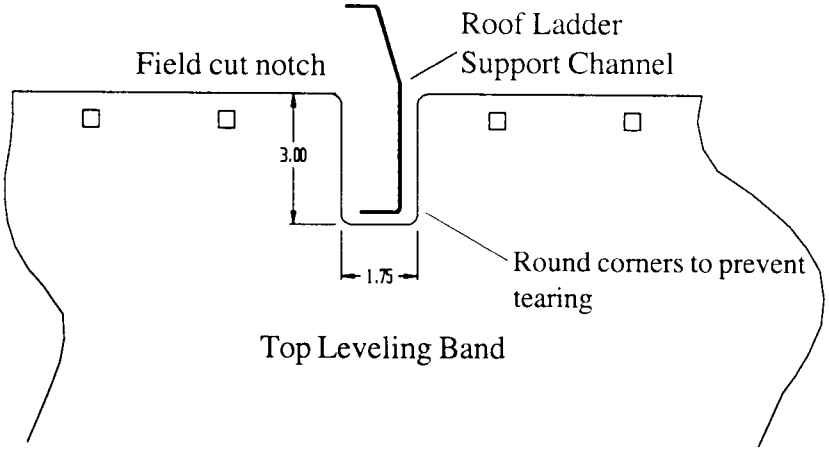


Figure 34

Complete erection of bin. Install winch as shown using 5/16" x 3/4" bin bolts to attach to the sidewall. The cable clamlps from either side of the pulley on the cross channel should be removed and the dump chutes pulled tightly shut. Check for the uniformity of the chains on the cump chutes and readjust if needed. The downward travel of the chutes must be limited to prevent damage on new Top Dry bins. This can be done after the bin is complete and the cable stop bracket and clamp is set to indicate when the dump chutes are fully closed. Open the chutes until the cable clamp is about 30" above the cable stop bracket. Attach another cable clamp just below the small outside pulley bracket making sure it is tight.

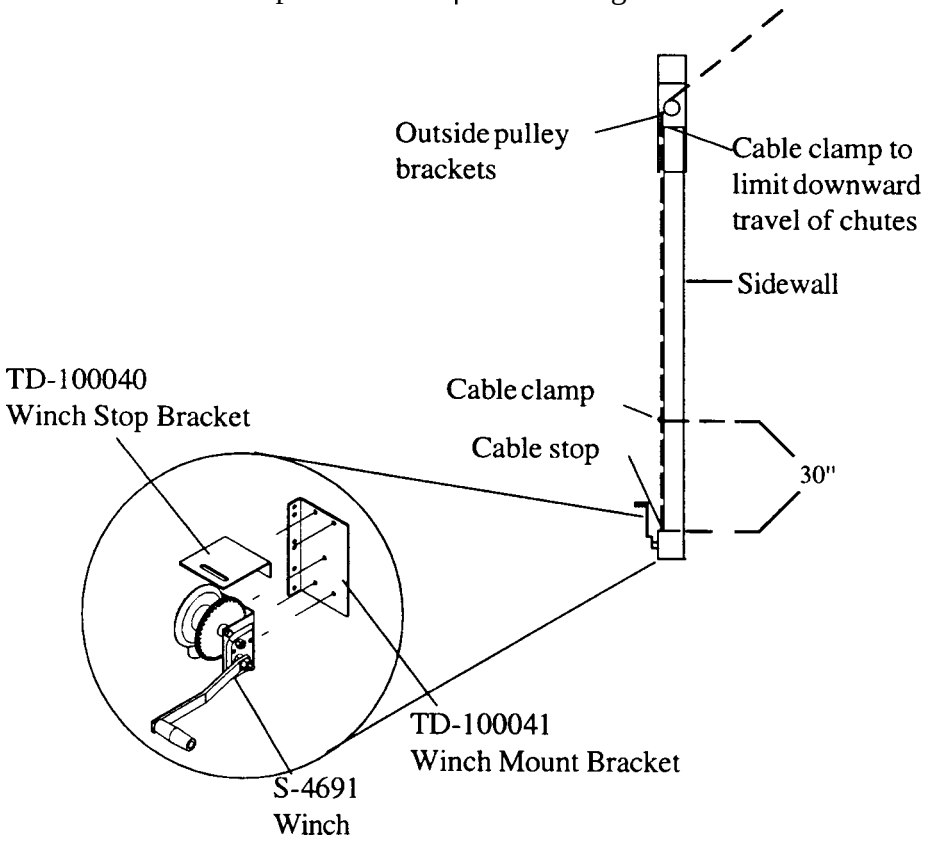


Figure 35

Fan Entrance Sheets

24" thru 36" Fans

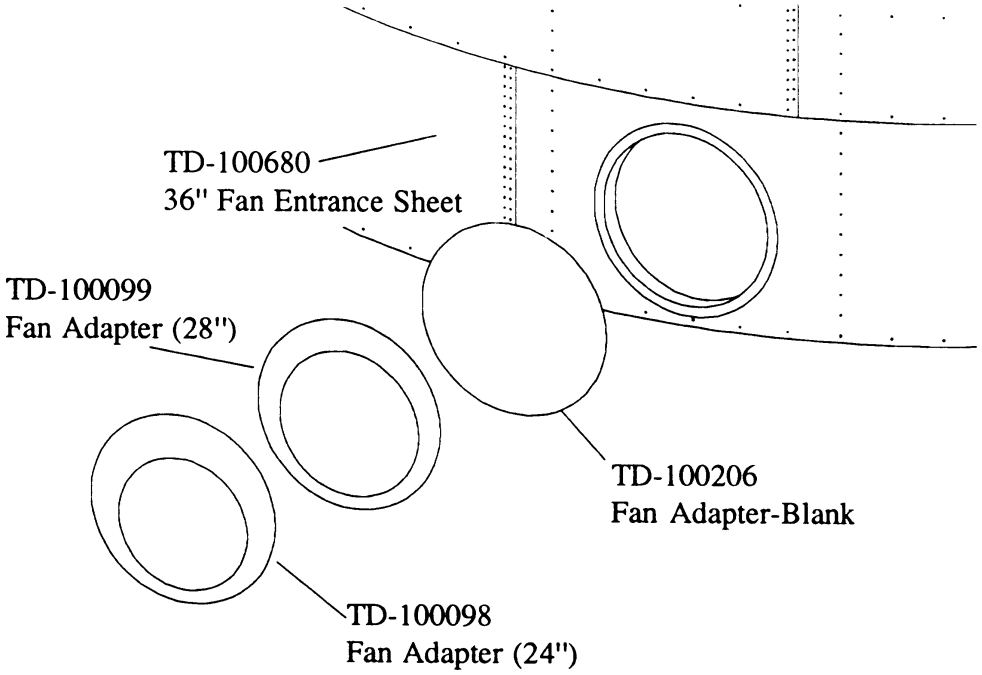


Figure 36

42" Fans

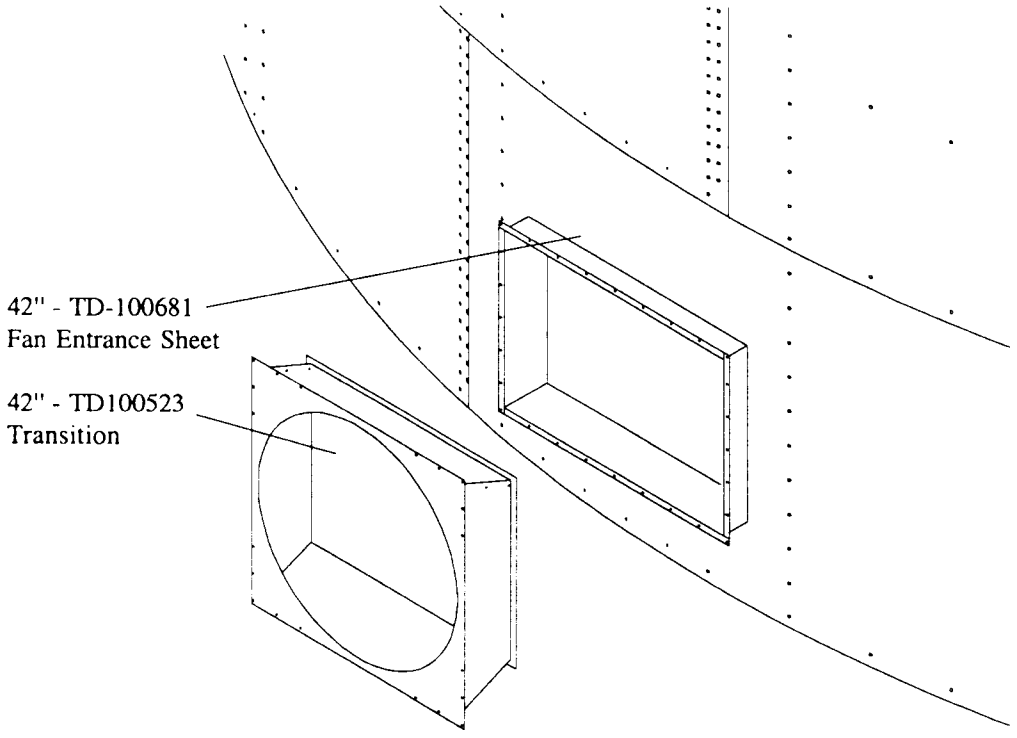


Figure 37

Lifting Jacks & Brackets

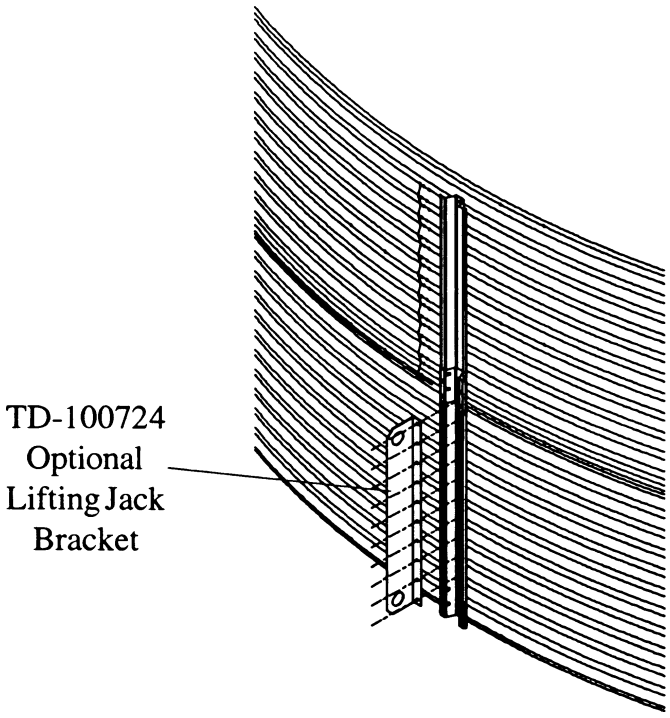


Figure 38

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.

Rember to attach lifting brackets to the stiffeners. A special optional lifting bracket is available from GSI.

Anchor all jacks securely and raise the bin just high enough to assemble the next ring. When lifting your bin, raise all jacks at an equal rate. This will prevent the bowing of previously assembled rings and make for easier hole alignment. Bolt the next ring to the inside of the second ring. Be sure to stagger the sheets and select the proper gauge material. Lower the bin on the foundation after assembling and tightening the bolts on the new ring. Now rebolt the lifting straps, continue ring additions until you are ready for door installation.

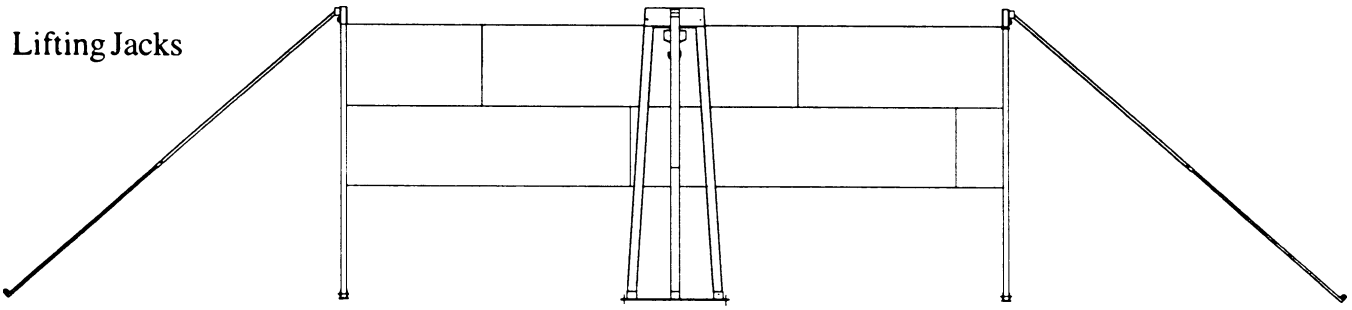


Figure 39

Detailed Layout for Proper Location of Platform

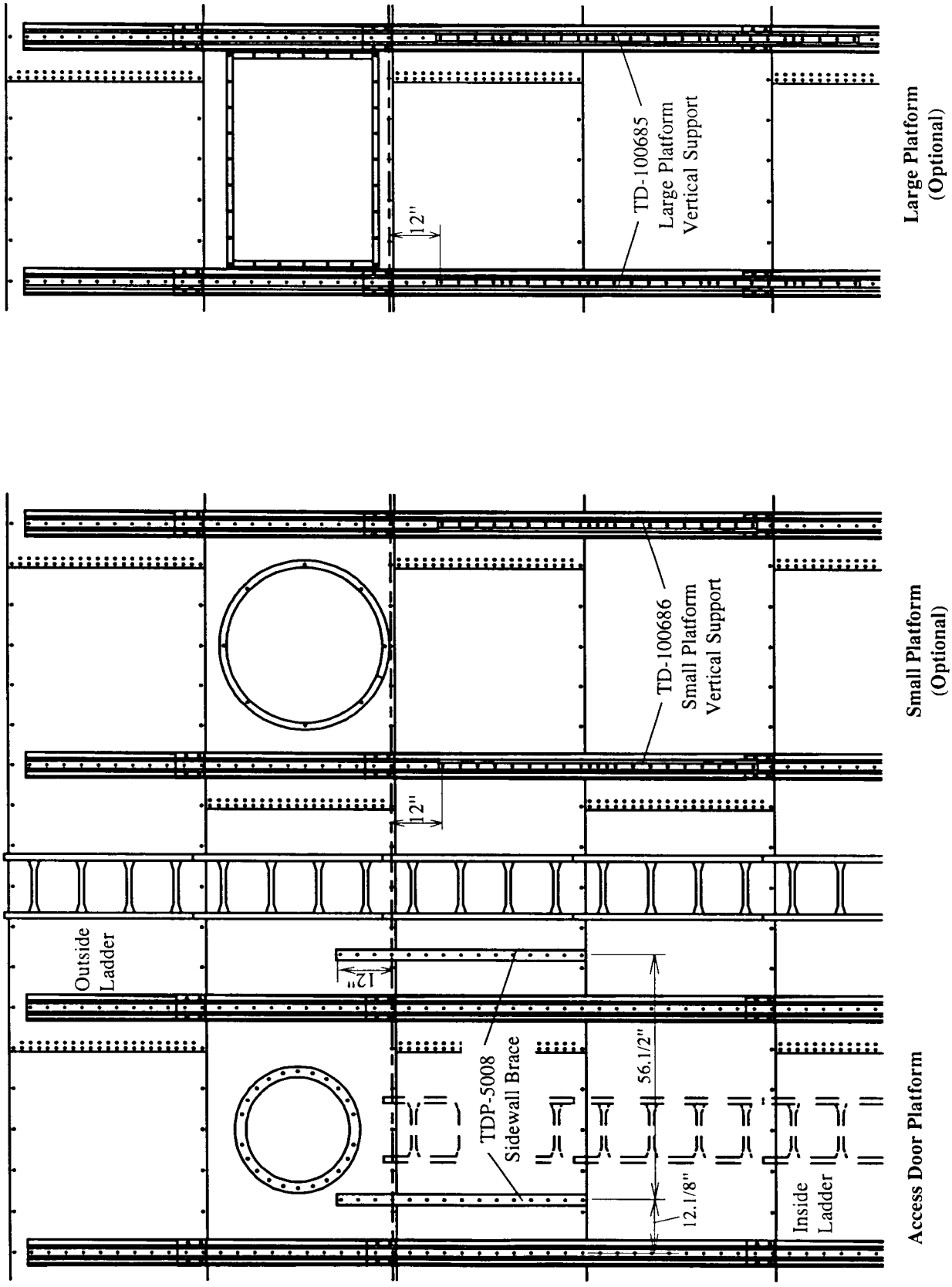


Figure 40

Access Door Platform

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

Refer to Figure 00 for proper location of access dorr platform. Begin by assembling the access dorr 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. Nex, assemble handrail posts, handrail and handrail braces.

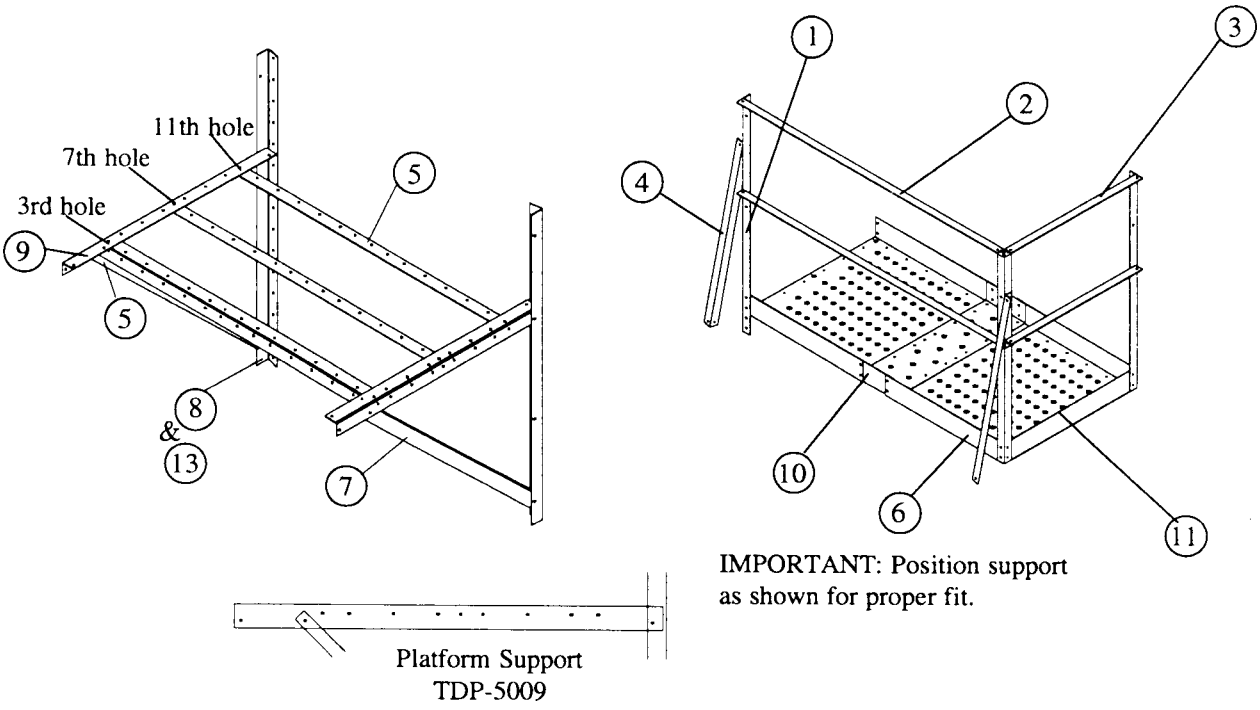


Figure 40

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

Large Platform Assembly

For 42" Fan

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

Refer to Figure 00 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.

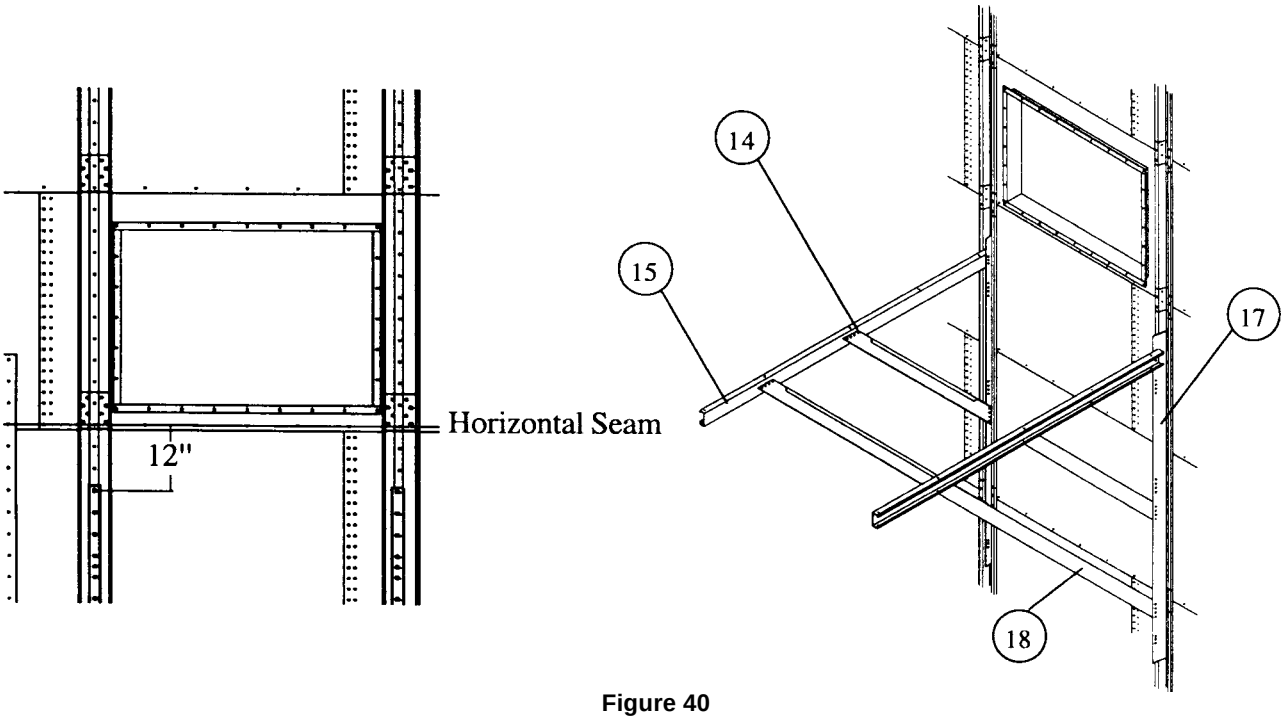
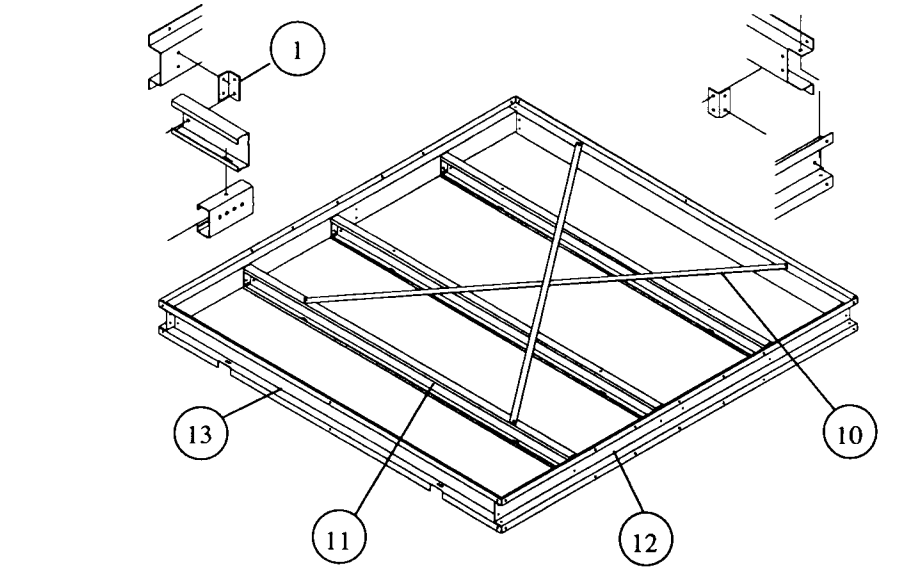


Figure 40

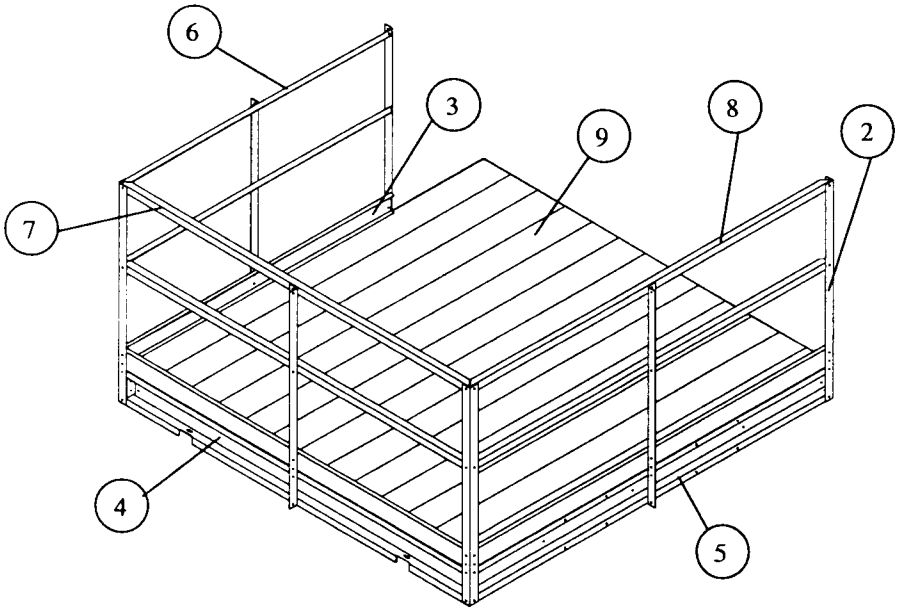
Key	Part No.	Description	Quantity	Weight
1	TD-100051	Channel Bracket	10	4.87
2	TD-100052	Handrail Post 49.3/4"	7	55.47
3	TD-100053	Toeboard 71.1/2"	1	4.99
4	TD-100054	Toeboard 92"	1	6.42
5	TD-100055	Toeboard 95.1/2"	1	6.67
6	TD-100056	Handrail 71.1/2"	2	17.07
7	TD-100057	Handrail 92"	2	22.98
8	TD-100058	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

For 1 Fan System or #2 Fan on 2 Fan System



Position the vertical support to the existing sidewall stiffeners as shown in Figure 00 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 00.

Figure 40

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 00 for proper location of cross over platform. Begin by assembling the cross oner 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 braaces.

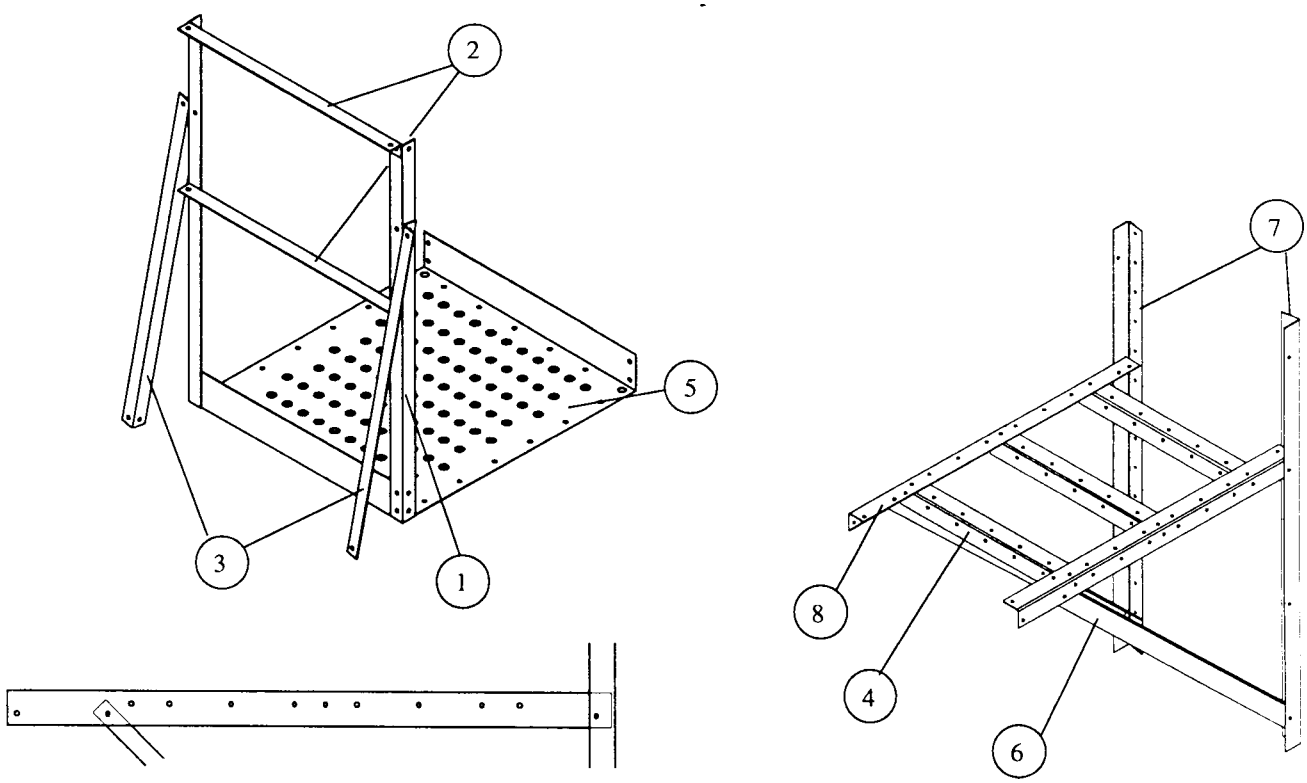


Figure 40

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

Perforated Center Band

Drill (6) 3/8" diameter holes equally spaced as shown above 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.

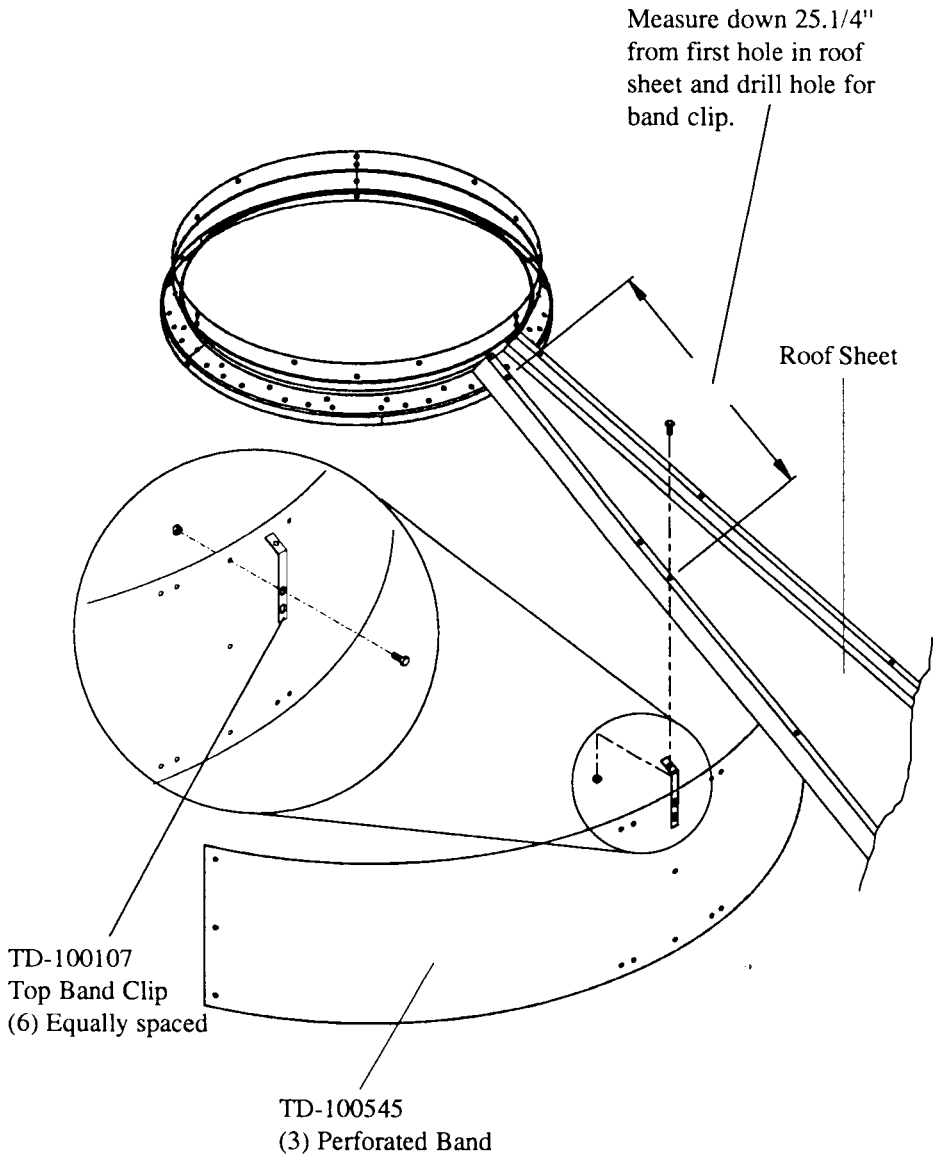


Figure 40

Optional Rotary Switch Roof Locations

Overhead view of optional rotary switch location

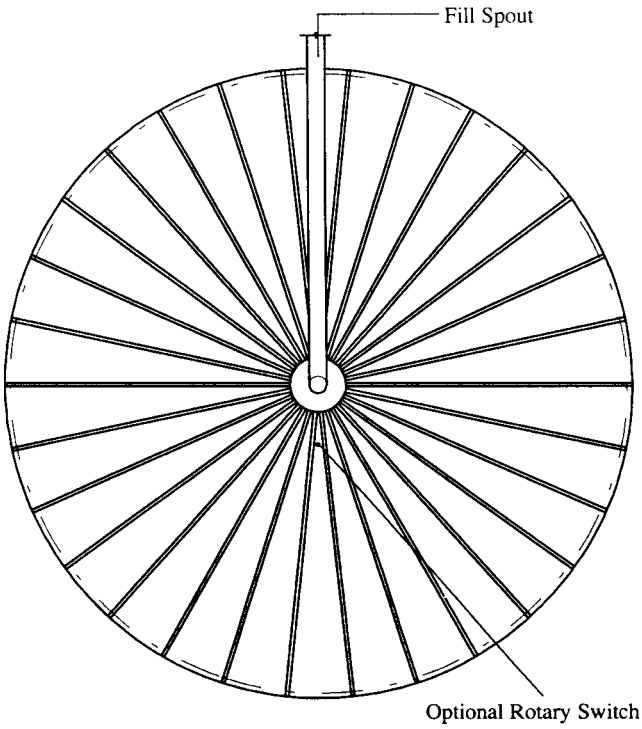
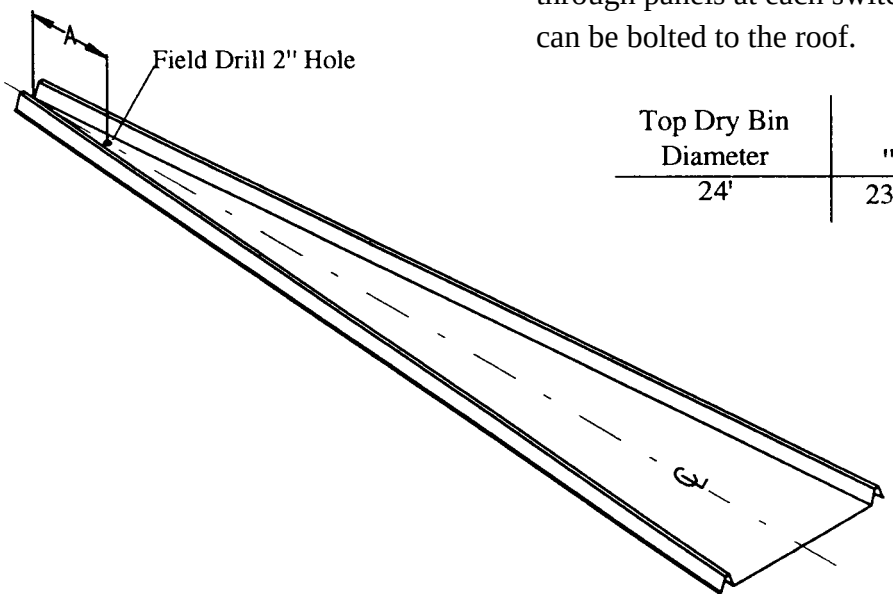


Figure 40

Rotary Switch Panel Locations

Drill 2" diameter holes through roof panels at locations shown on previous page. Use a mounting plate as a patern and drill (4) 3/8" holes through panels at each switch location so the plate can be bolted to the roof.



Top Dry Bin Diameter	"A"
24'	23.50"

Figure 40

Optional Installation of Roof Mounted Level Switch

Drill 2" diameter holes through roof panels at locations shown of previous page. Use a mounting plate as a pattern and drill (4) 3/8" holes through roof panels at each switch location so the plate can be bolted to the roof.

Attach flex-coupling to the power-pak and install roll pin. Apply teflon tape or pipe sealant (not included) to power-pak pipe threads and thread power-pak into mounting plate coupling. Conduit opening in power-pak should be at right angles to roof rib or face toward eave.

Caulk underside of mounting plate above and both sides of 2" hole. Bolt to roof panel.

Overflow Level Switch TAF-6103

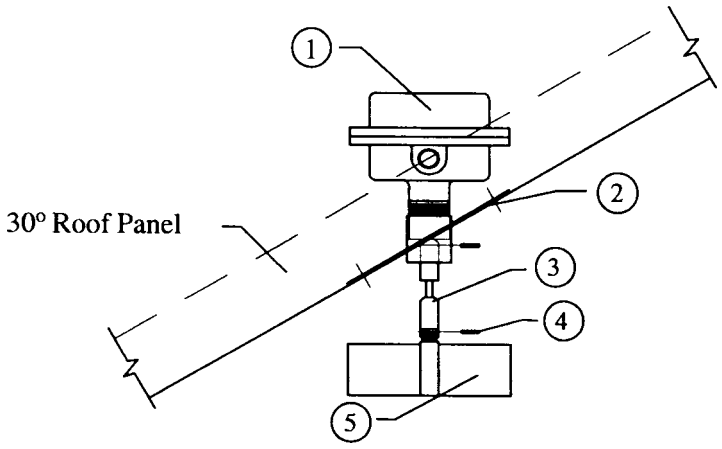


Figure 40

Key	Part No.	Description	Quantity	Weight
1	TD-100076	Rotary Switch Power-Pak	1	3.50
2	TD-100627	Roof Mount Coupling Weldment	1	2.14
3	TD-100075	Flex-Coupling	1	0.50
4	S-7241	1/8" x 1.1/4" Cotter Pin	2	0.02
5	TAF-6086	3-Vane Paddle	1	0.75
*	TAF-6097	Hardware Package	1	0.98
--	PNEG-300	Rotary Switch Instructions	1	0.04
--	S-275	5/16" - 18 x 3/4" Bin Bolt	6	0.16
--	S-3651	Tube Seal	1	0.74
--	S-396	5/16" - 18 Hex Nut	6	0.06
--	S-7241	1/8" x 1.1/4" Cotter Pin	2	0.02

*Hardware package not shown

--Included in Hardware package

Optional Installation of Wall-Mounted Rotary Switches

IMPORTANT! Wall mounted switch must be located at least 3' below the fan opening.

Drill 2" diameter hole through wall 3' below the upper fan and heating units(s). If bin is 2.66" corrugation, hole should be centered on outside hill. If bin is 4.00" corrugation, hole should be centered on outside valley.

Position mount plate (from inside), mark and drill 3/8" holes. Caulk coupling abundantly, where it passes through the wall. Add foam weather strip around top and sides of plate then bolt to bin wall. Caulk coupling to wall from outside. Attach flex coupling to power-pak. Add teflon tape or pipe (sealant not included) to power-pak pipe threads and thread into coupling. Conduit opening should be horizontal or down. Add one vane paddle.

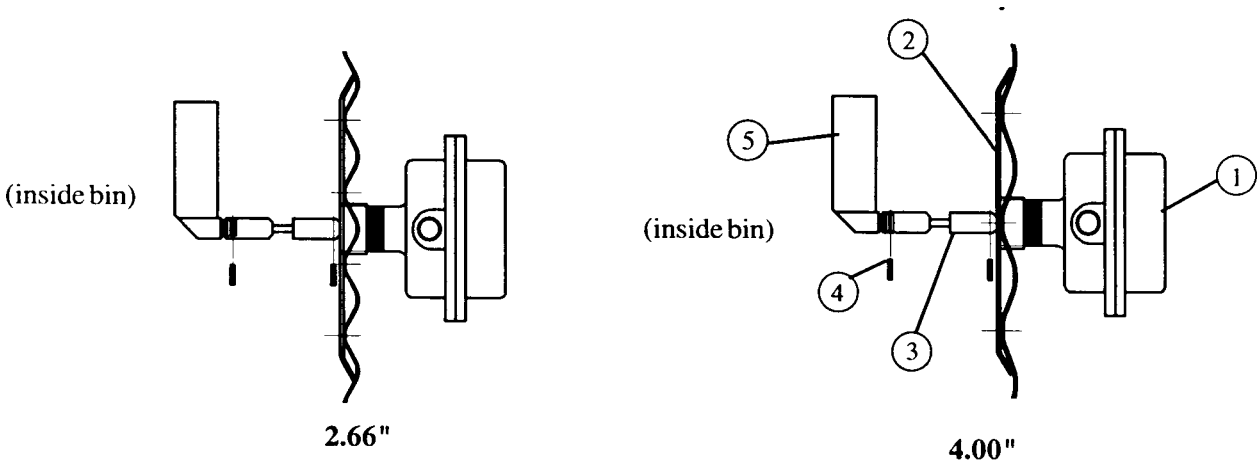


Figure 40

a division of

THE GSI GROUP

1004 E. Illinois St., Box 20
Assumption, IL 62510-0020
phone: 217-226-4421
fax: 217-226-4420

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