

SAFETY  
INSTALLATION  
OPERATION  
MAINTENANCE



M A N U A L

# **BOLTED BIN**

## ***Instruction Manual***

**No. PC653900**  
**Revised 2011-07-18**

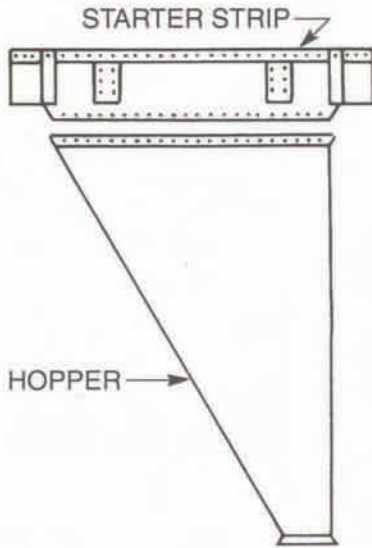
9575 N. 109<sup>th</sup> Ave.  
Omaha, Nebraska 68142  
(402) 330-1500  
**[www.intersystems.net](http://www.intersystems.net)**



## HOPPER STARTER STRIP ASSEMBLY

(For 45° Corners)

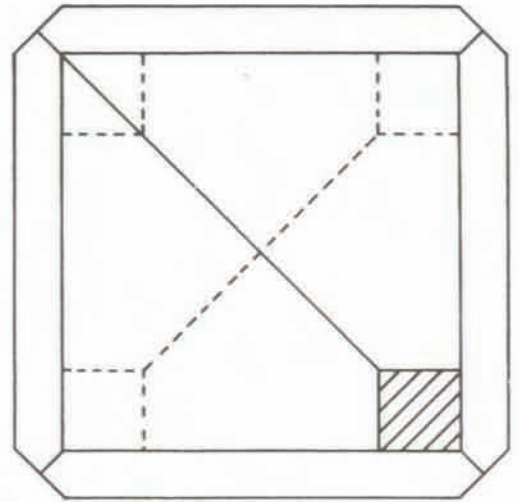
1



### SELECT HOPPER POSITION

You can choose any of the four corners of the bin for the discharge.

With the bin's unique design you can easily change hopper discharge position even after erection. This can be done by unbolting the hopper from the starter strip, relocating the discharge, and rebolting the hopper. The bolt holes in the hopper starter strip and hopper are jig welded for perfect alignment.



### BOLTING GUSSETS TO THE HOPPER STARTER STRIP

Turn the starter strip upside down and bolt on the supporting gussets. Insert two pins as illustrated in the photo to assure proper alignment. Then install two bolts as shown and tighten. Then remove the two pins and install the four remaining bolts. The round head of the bolt should be on the inside of the starter strip, with the nut mounted on the outside of the gusset.

### CAULKING THE HOPPER

Put caulking on the upper end of the hopper between the bolt holes and the outer edge.





The starter strip is connected to the hopper by putting the bottom end of the starter strip inside the upper end of the hopper. Use several pins in each of the two bottom corners to provide accurate hole alignment. In order to provide a proper working clearance for the mounting of the starter strip, it is advisable to place a 10" steel beam below the upper end of the hopper as shown on the photograph.



Then tip the upper end of the starter strip into the upper end of the hopper and bolt it in place. Always put the rounded end of the bolts on the inside of the hopper with the nuts on the outside.

## HOW TO LIFT HOPPER STARTER STRIP AND HOPPER BOTTOM



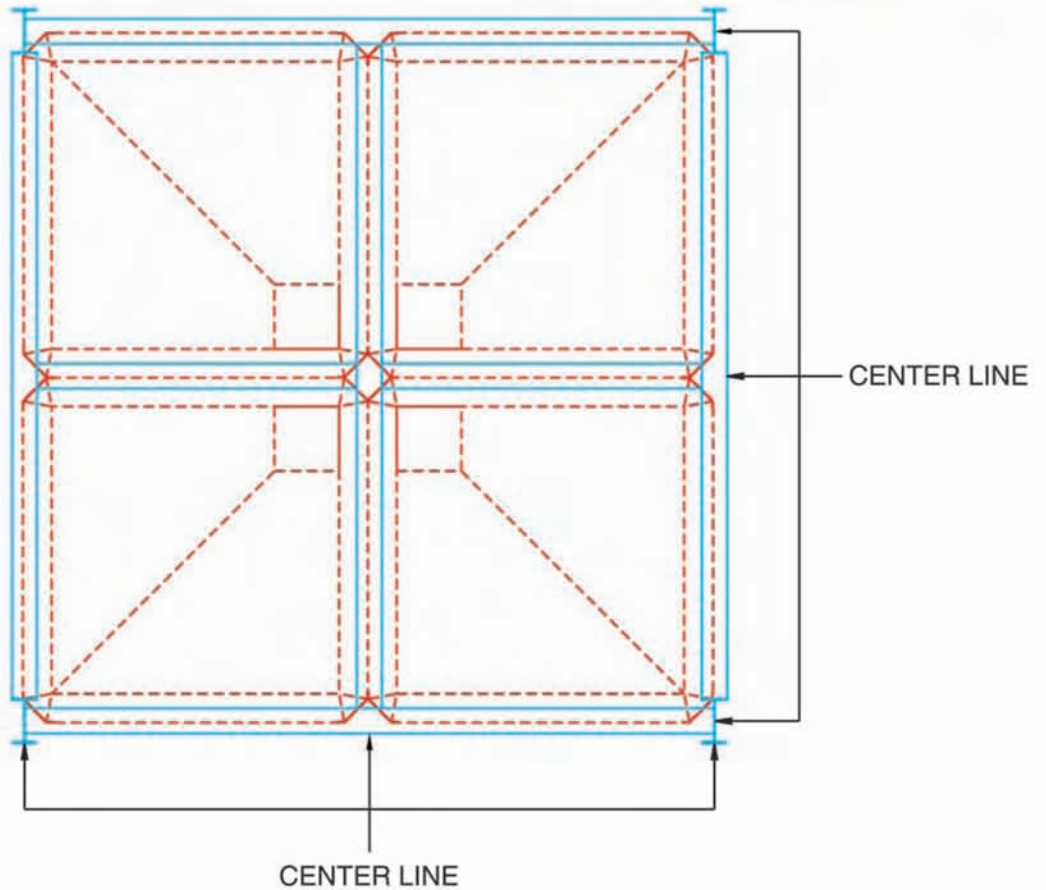
**WRONG WAY**



**RIGHT WAY**



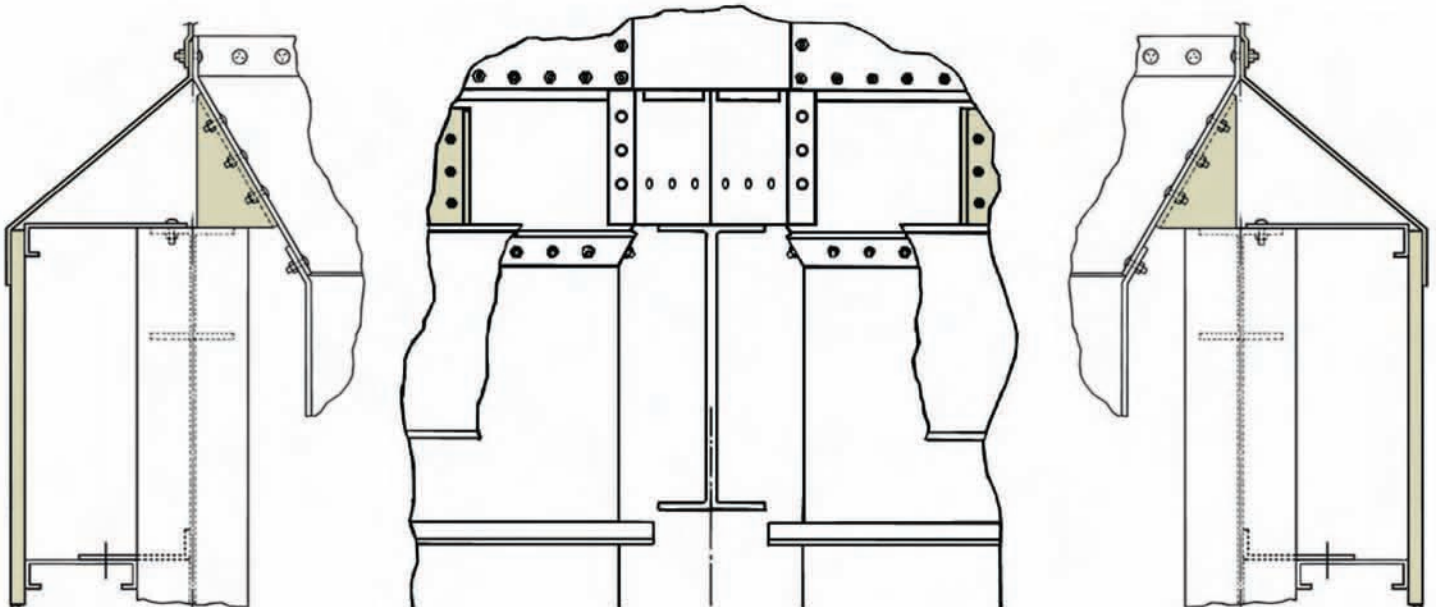
# HOPPER ALIGNMENT ON STRUCTURAL STEEL



After the structural steel has been assembled, it is very important to make sure that the tops of the beams, where the bins will be assembled, are both level and flat. After all of the structural steel has been leveled, it is advisable to mark

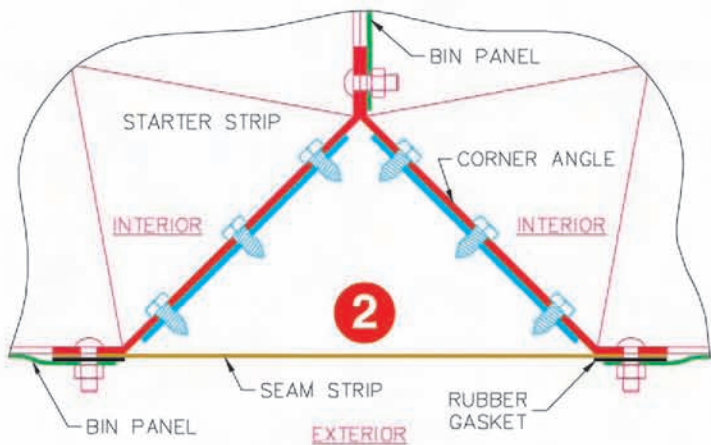
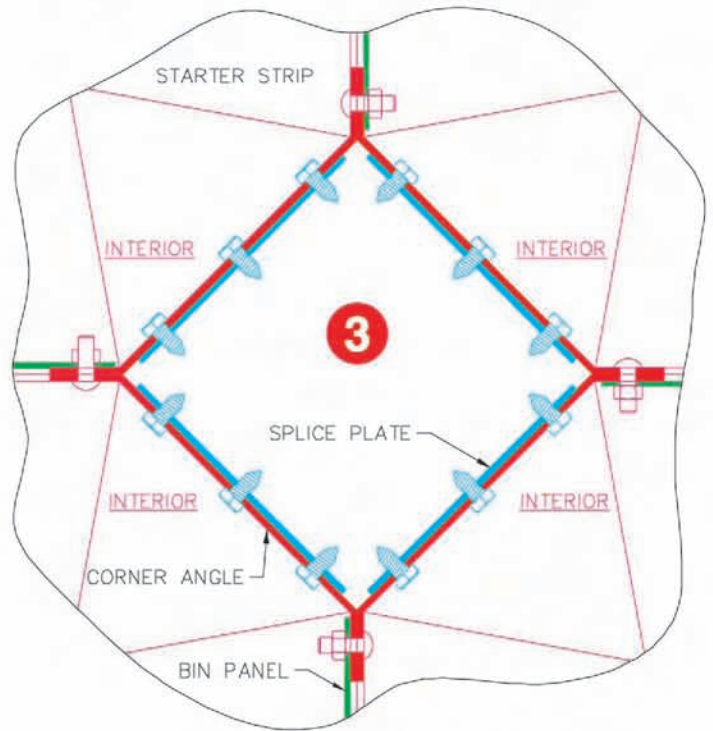
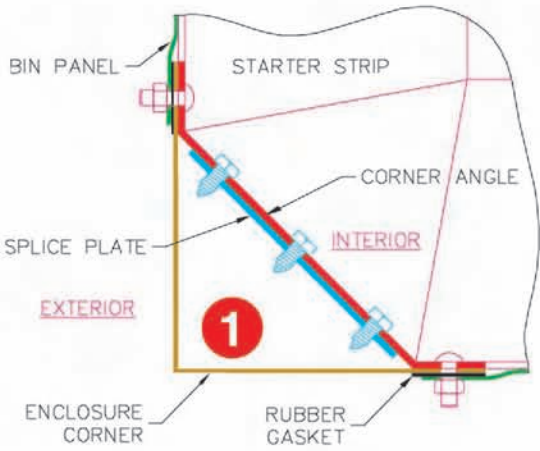
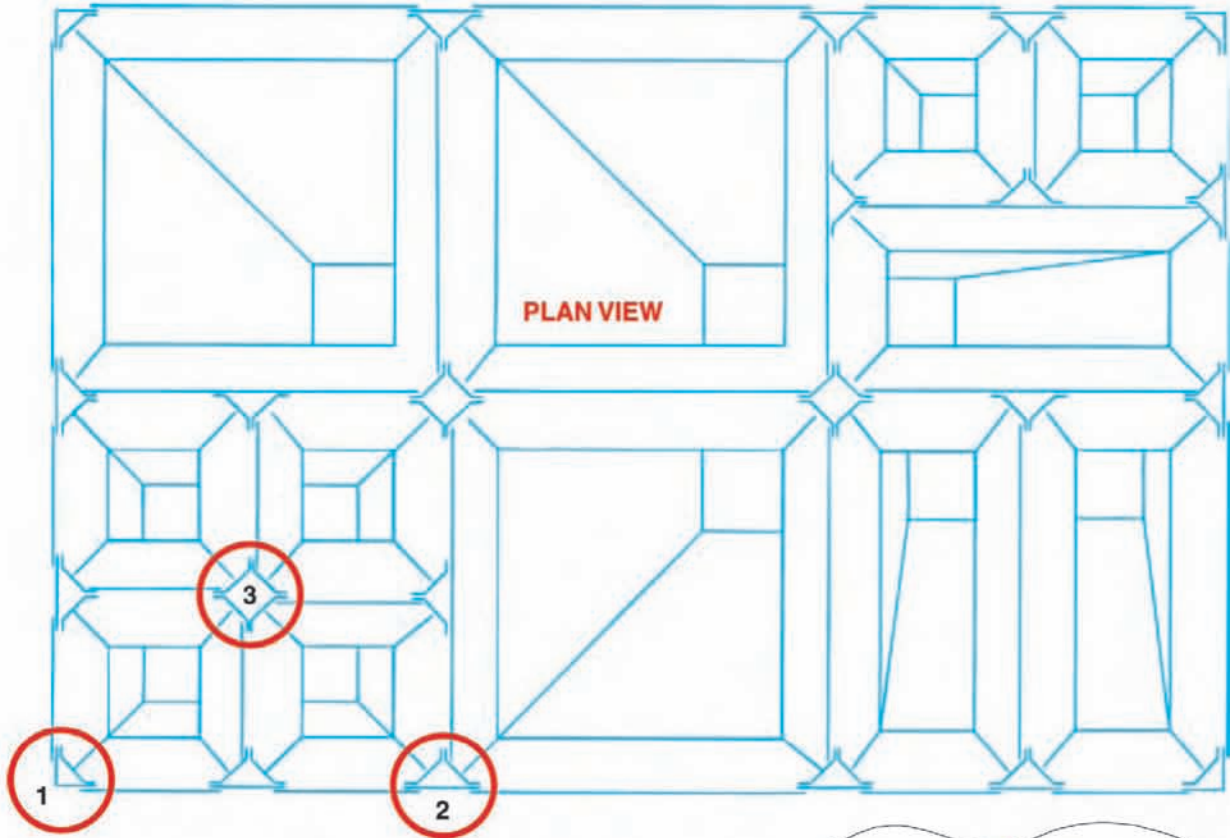
the centerlines of the beams. This can easily be done by using a chalk string. Due to the hopper gussets, horizontal beams must not have any flanges that are wider than 11”.

## HOPPER SIDE VIEW





# HOPPER STARTER STRIP & CORNER ANGLE ASSEMBLY



**COLOR CODE**

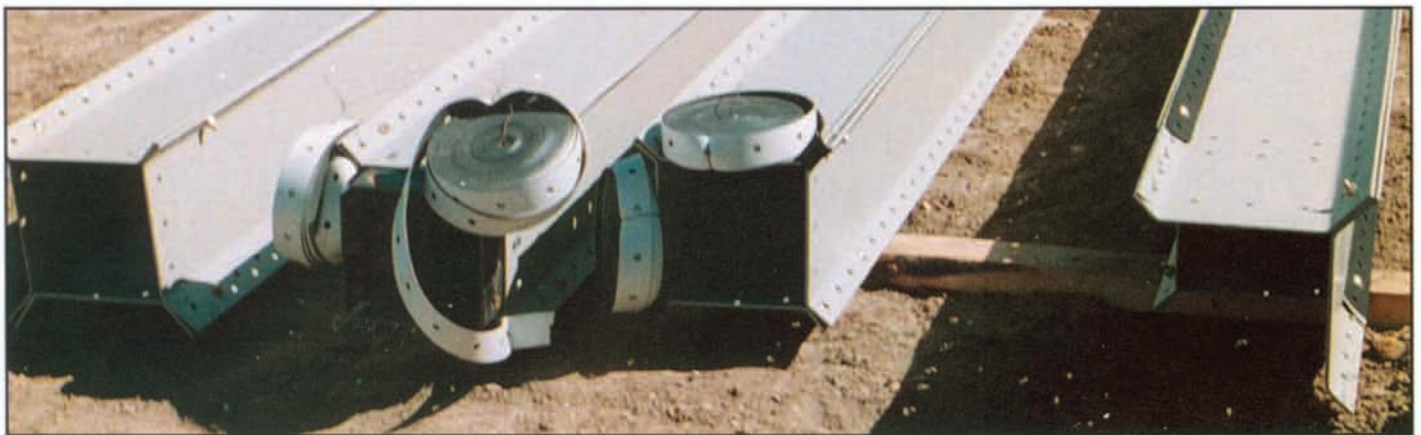
	HOPPER STARTER STRIP
	45° CORNER ANGLES
	BIN PANELS
	SPLICER PLATES
	ENCLOSURE PARTS
	RUBBER GASKET



Pre-assembling corner angle components on the ground is a useful way to speed erection. Splicer plates are included to connect the corner angles end to end. Self-tapping fasteners are provided to install the splicer plates. We recommend that bolts in the splicer plates remain somewhat loose until the corner angles are installed and connected to adjacent bin components.

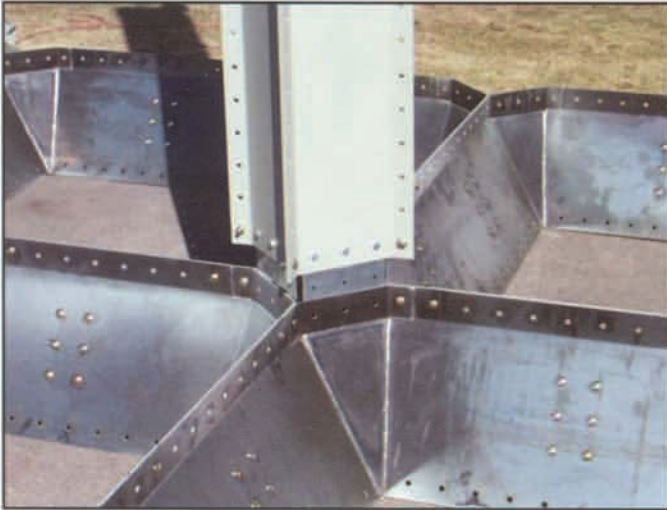


This picture shows some pre-assembly work of the corner angles. It is efficient to do this type of work on the ground on days when the weather prevents you from working up in the air.

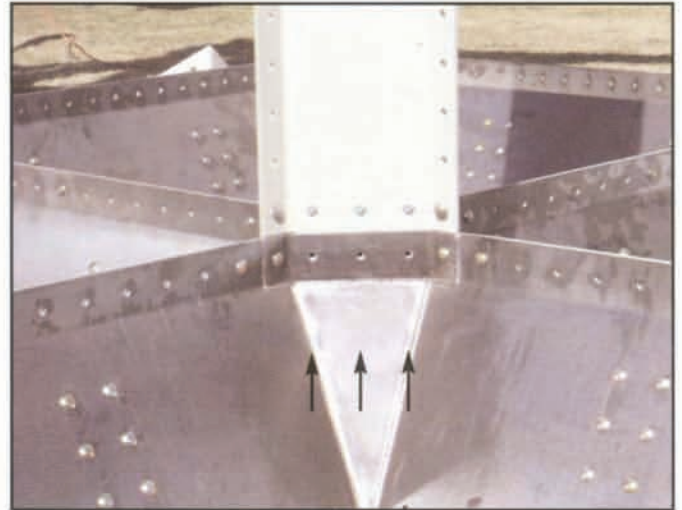


Please note that the corner angle rubber gasket has been added to the corner angle columns on the ground. This gasket has a self-adhesive back that can be applied directly to the corner angle. To prevent gaps in the gasket, we recommend that you do not cut this gasket in short

lengths. You can leave the unfinished roll connected to the top of the corner angle. The gasket can then be extended upward when the next section of corner angles are installed.



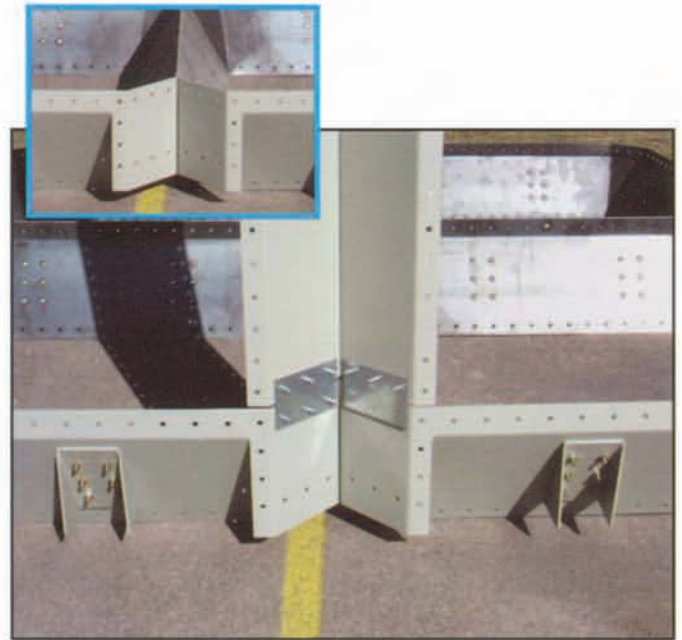
This photograph shows the first set of corner angles being installed on top of the starter strips.



After the corner angles are in position, install three more of the self-tapping bolts to hold the assembly into place.



Tightening of the three self-tapping bolts into the hopper starter strip.



These photographs show the starter strips before and after the installation of the corner angles.

Please notice the splicer plates with the self-tapping fasteners.



## BIN CORNER ANGLE ERECTION



This photograph shows the corner angle assemblies being quickly lifted into position.



Installation of an interior corner angle column.



On bin projects that require reinforced corners, extra exterior corner angles are included. These angles extend down to the structural steel as shown. It is always necessary to bolt every connection on the outer corner angles to prevent moisture penetration.



This photograph shows a typical outside corner angle assembly with the enclosure components installed. Please notice the way the rubber gasket has been connected to the top of the corner angles for the next extension.





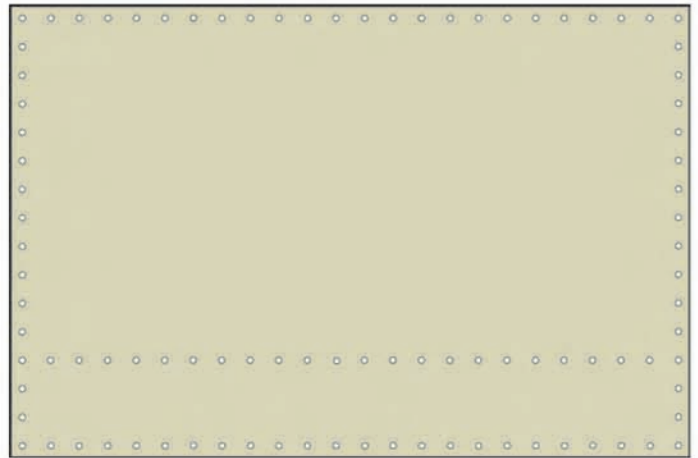
# BIN ERECTION PANEL DESIGNS

## STANDARD DESIGNS

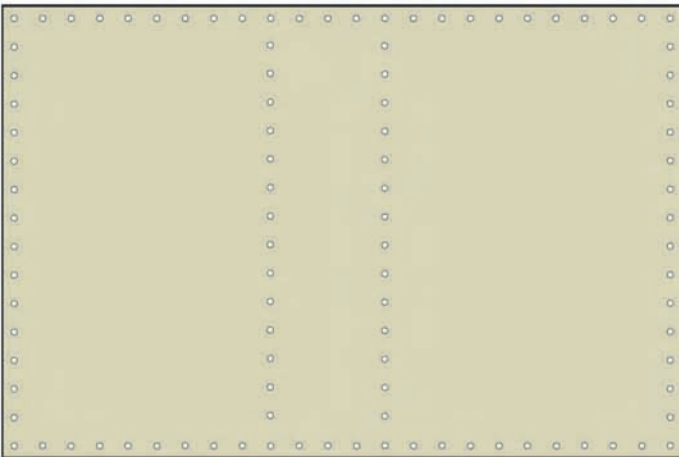
DESIGN - A



DESIGN - B



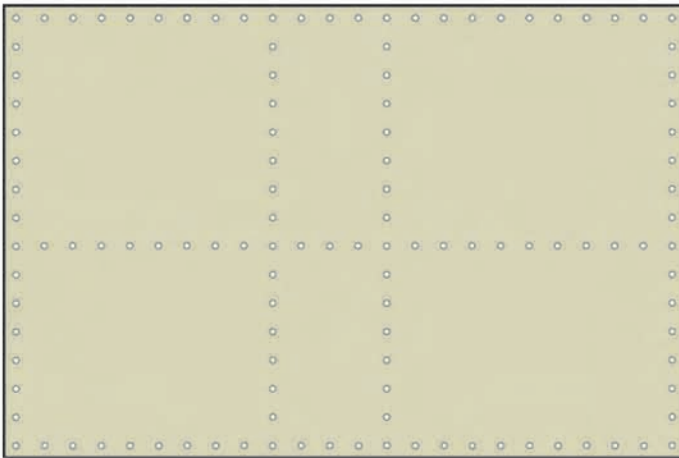
DESIGN - C



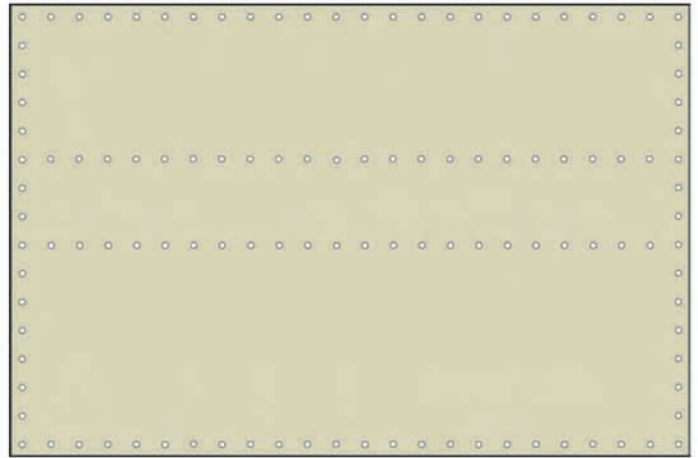
DESIGN - D



DESIGN - E



DESIGN - F

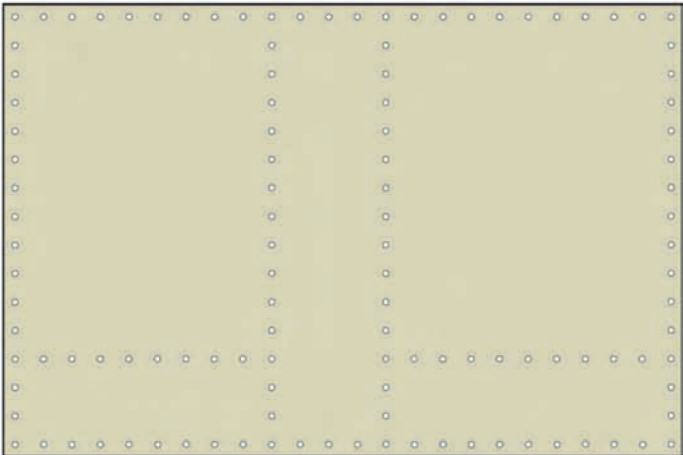


NOTE: NOT all the panel designs shown are necessarily used on any one bin project.

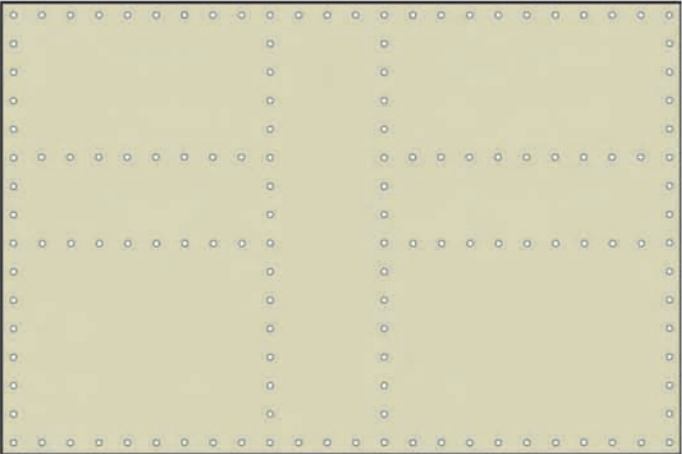
DESIGN - G



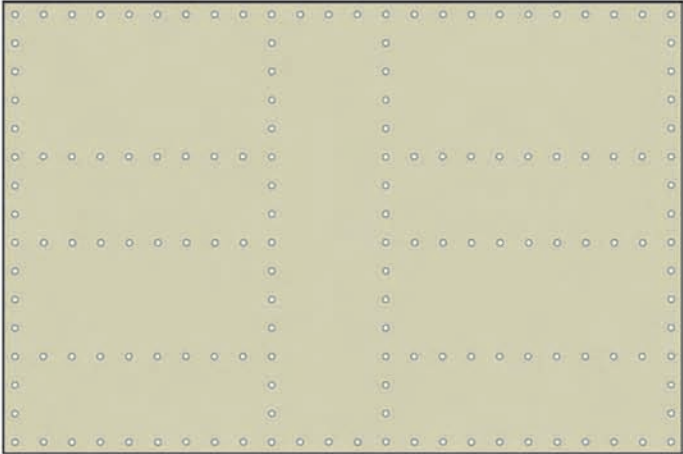
DESIGN - H



DESIGN - I



DESIGN - J



**SPECIAL DESIGN**

DESIGN -

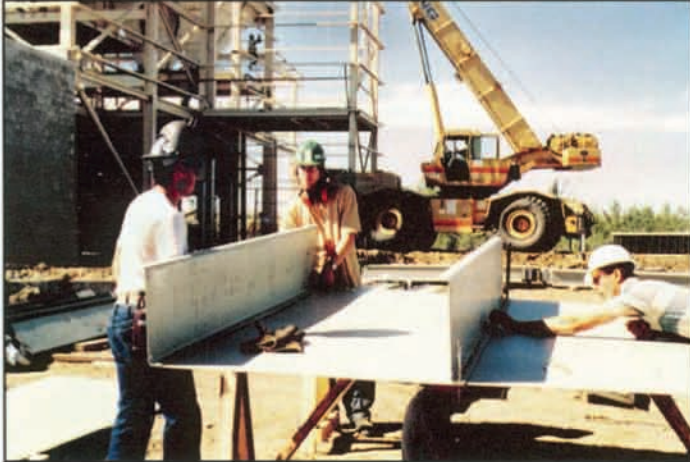


DESIGN -





GROUND LEVEL BIN WALL ASSEMBLY



Partially assembling bin wall components on the ground saves time and increases safety by reducing the amount of work that needs to be done high above the ground.



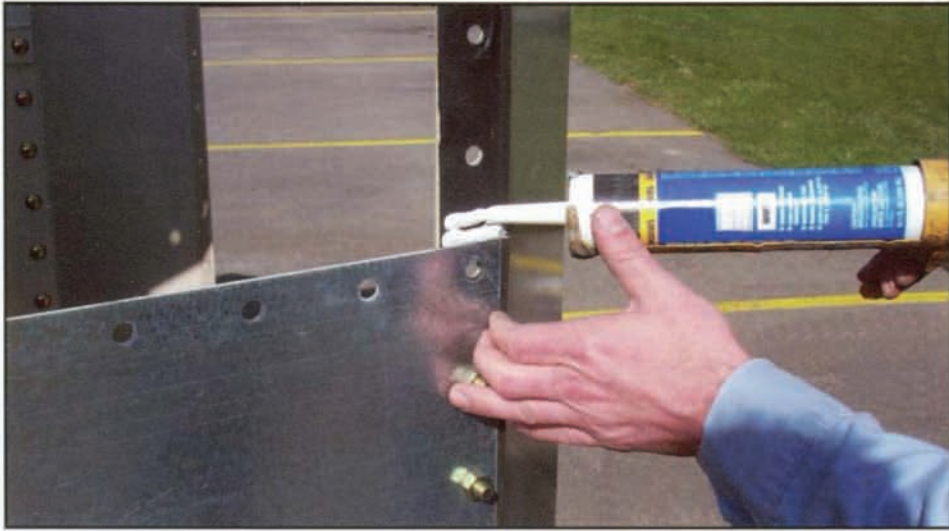
We recommend assembling two bin wall panels, along with their stiffeners, into one assembly. Assemblies of three or more panels can be difficult to control and is not recommended.



This photograph shows the assembly of two wall panels along with an interior type stiffener.

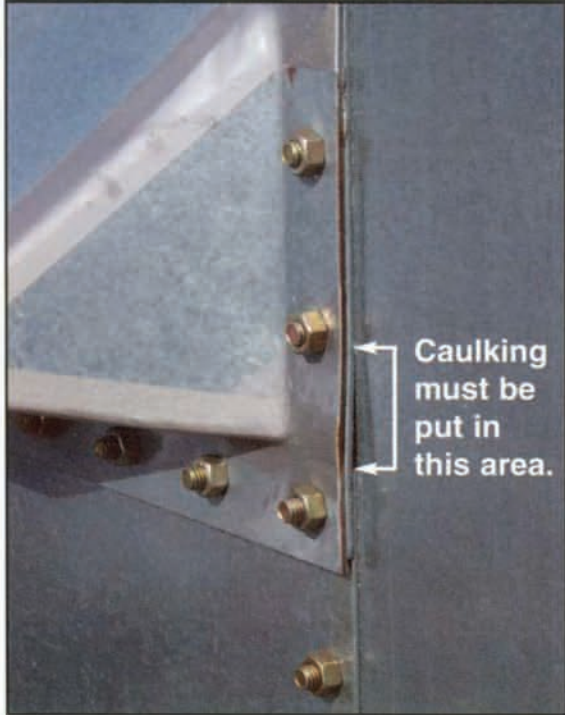


A large crane, along with a light duty hydraulic crane, would be the most efficient way to assembly a large bin structure as shown above. While the light crane is doing the ground assembly work, the larger crane can be lifting the pre-assembled panels into place.

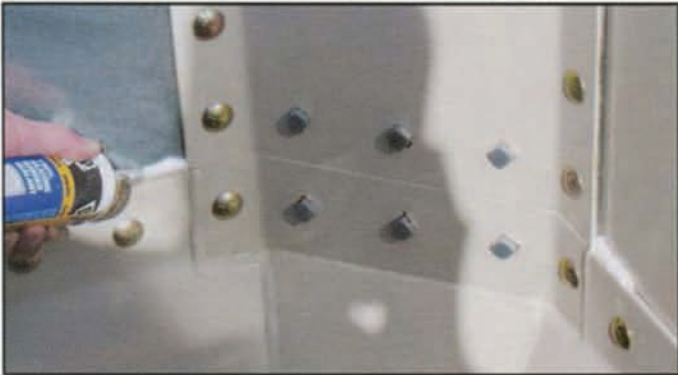


Caulking must be used to seal the small gap that is formed when an upper wall panel overlaps a lower wall panel.

**CONNECTION WITHOUT CAULKING**



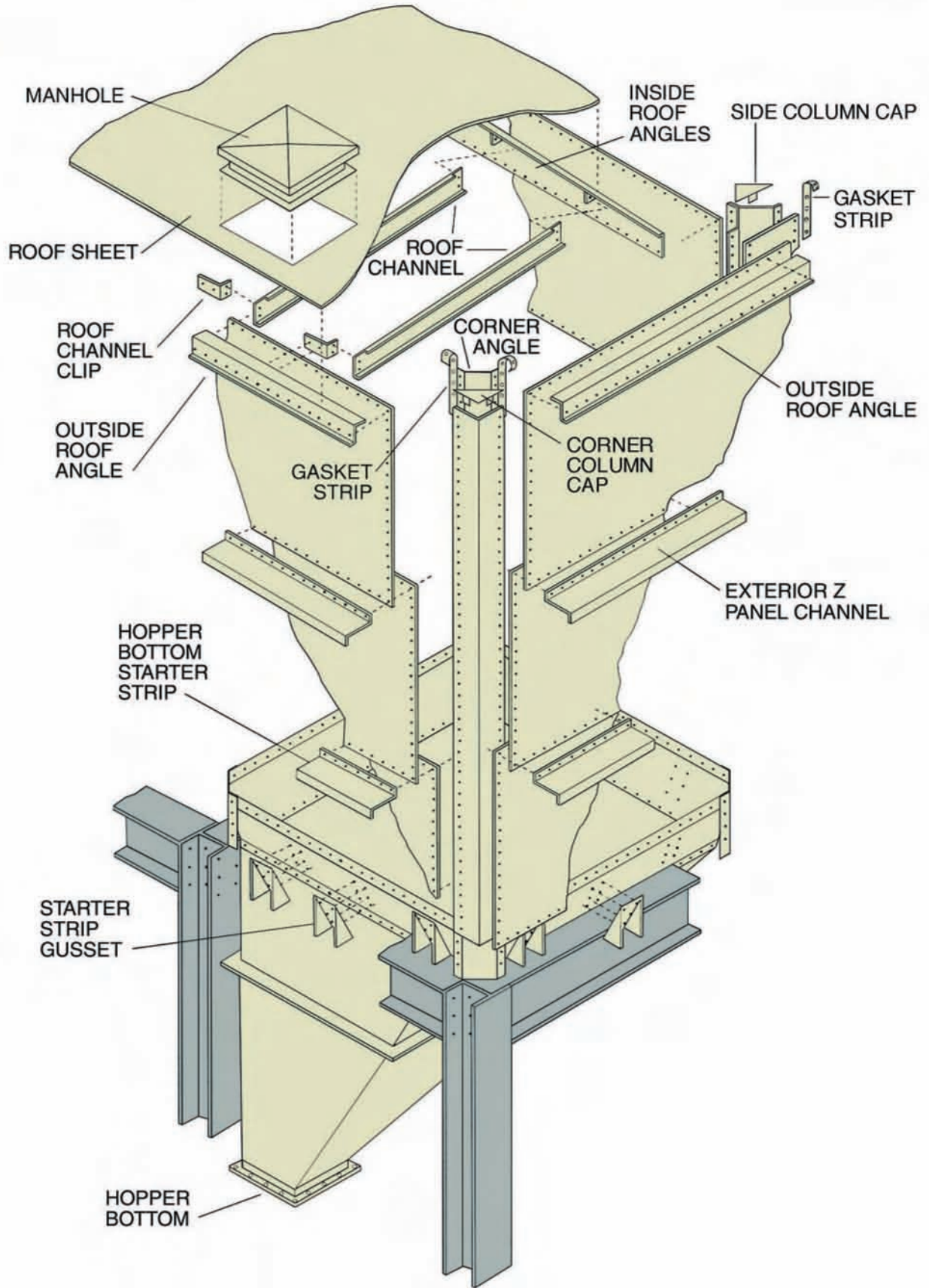
**CONNECTION WITH CAULKING**



**CAULKING THE STARTER STRIP CORNER**  
Put caulk in the small gap that forms in this area.

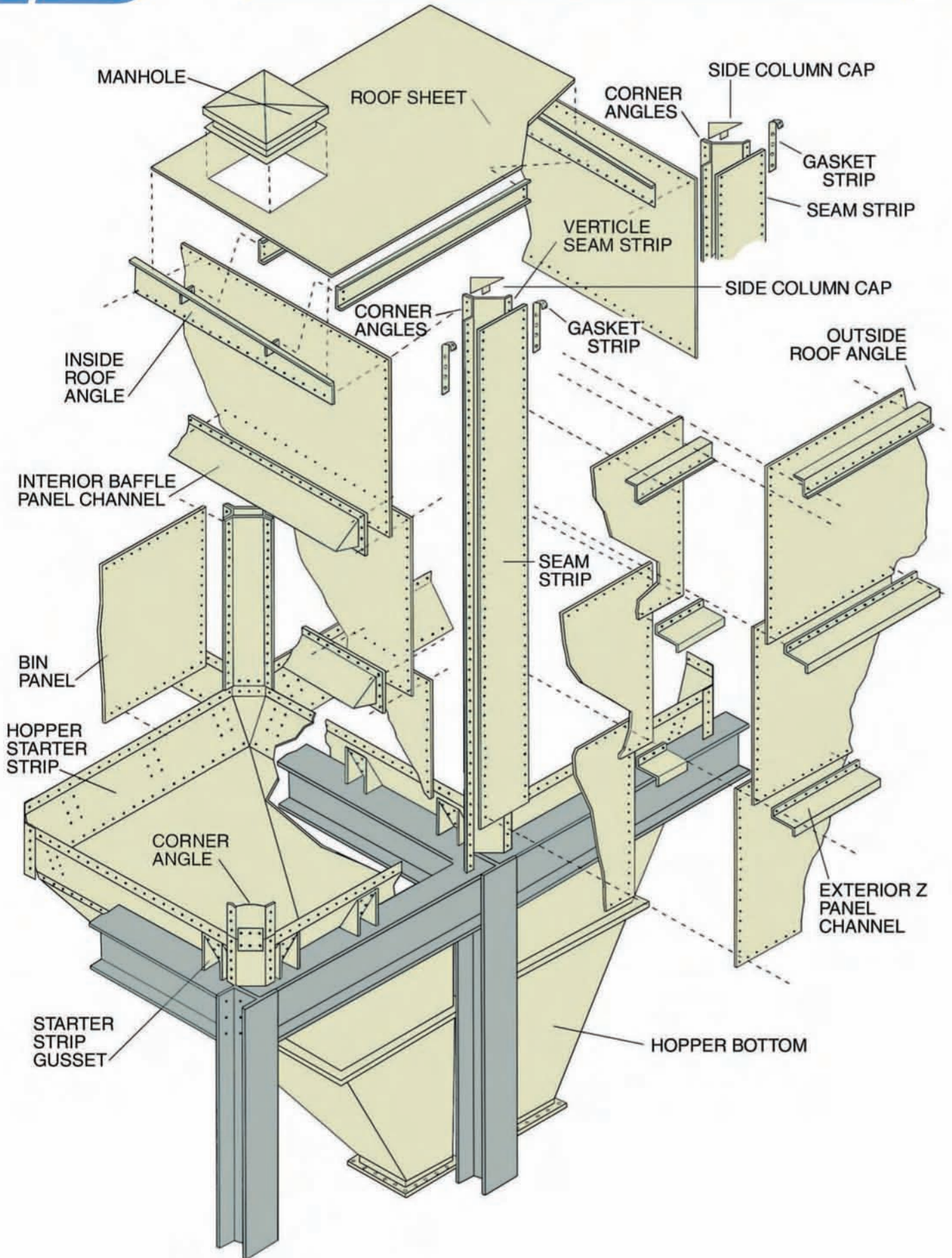


# OUTSIDE CORNER ASSEMBLY



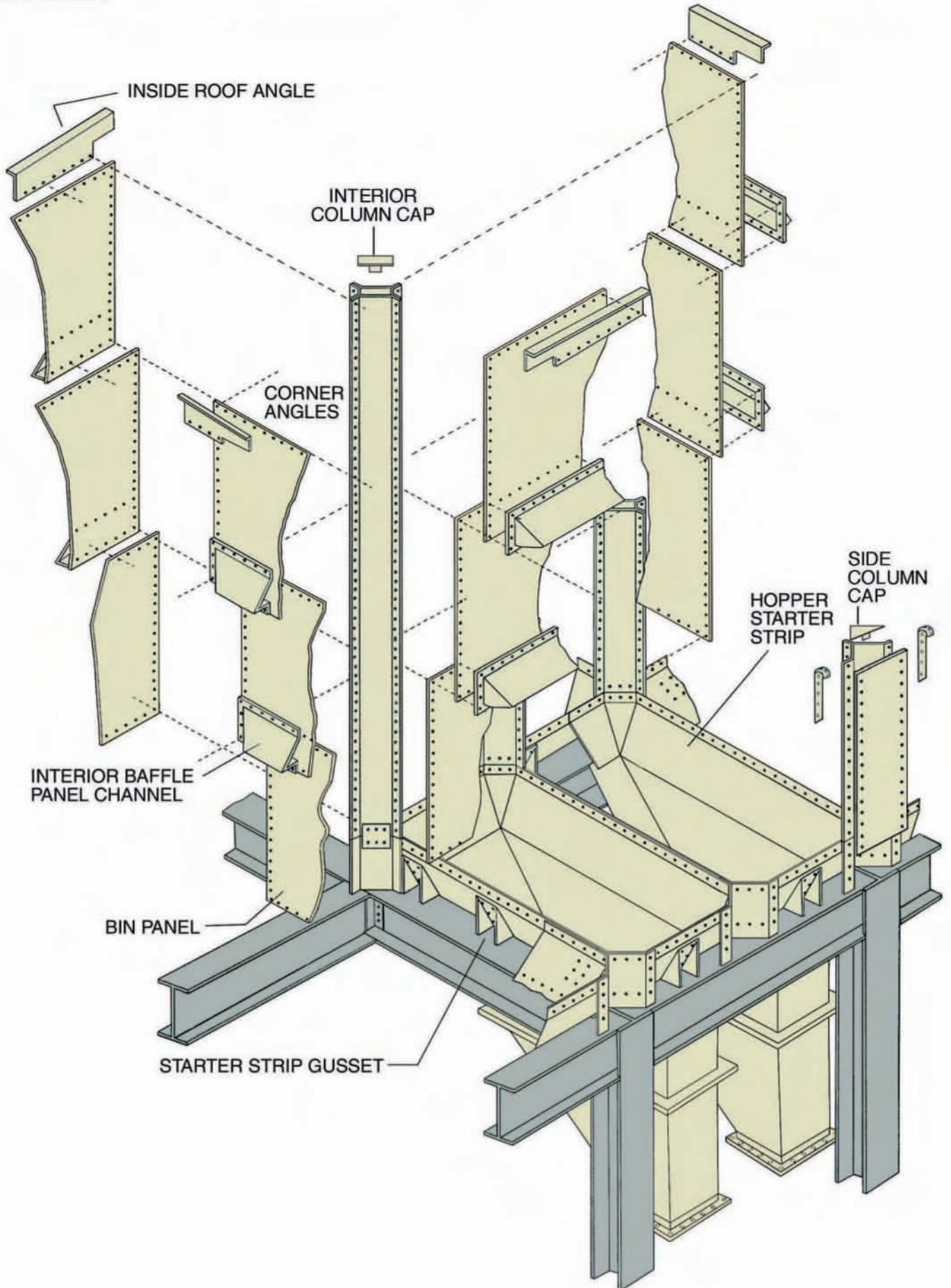


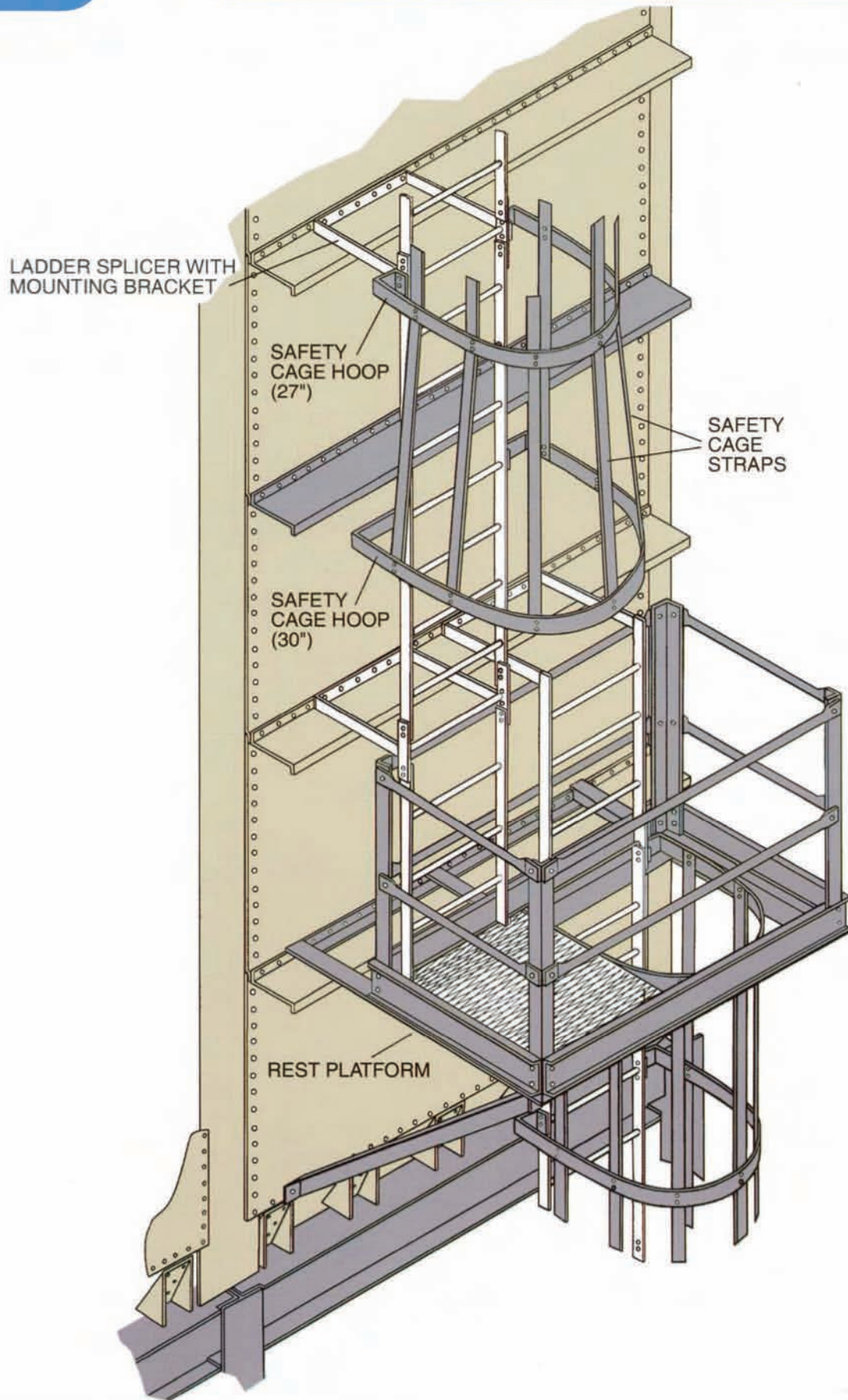
# TYPICAL SIDEWALL ASSEMBLY



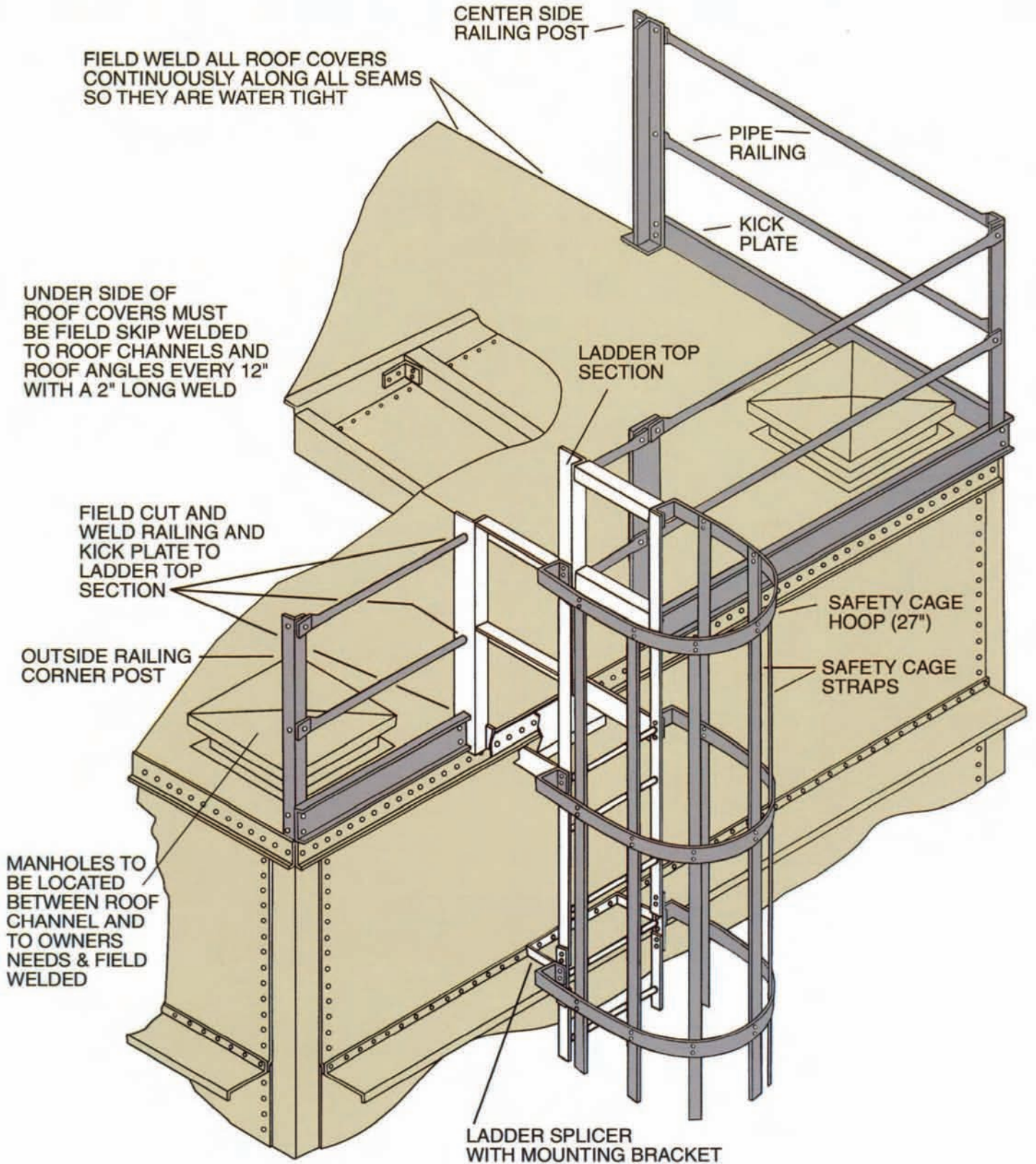


# INTERIOR BIN ASSEMBLY



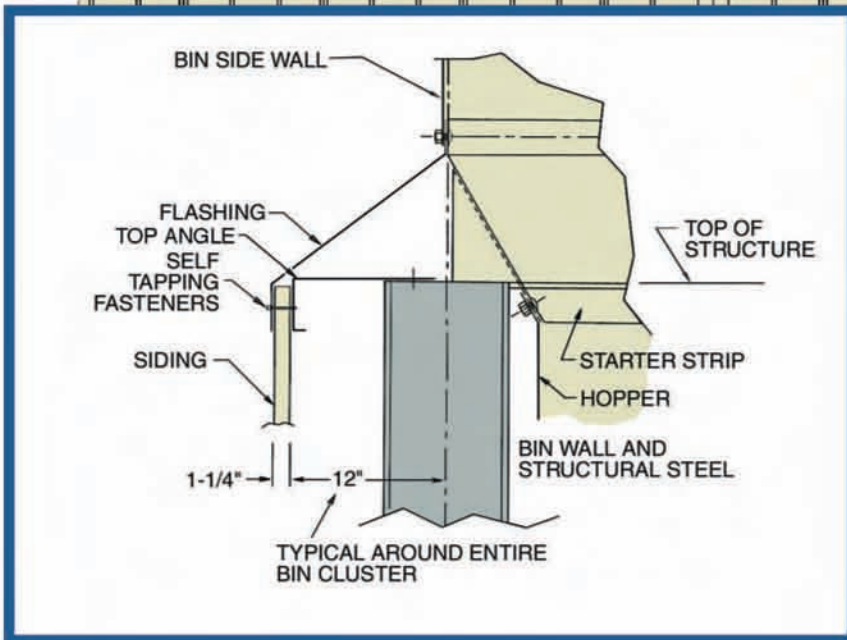
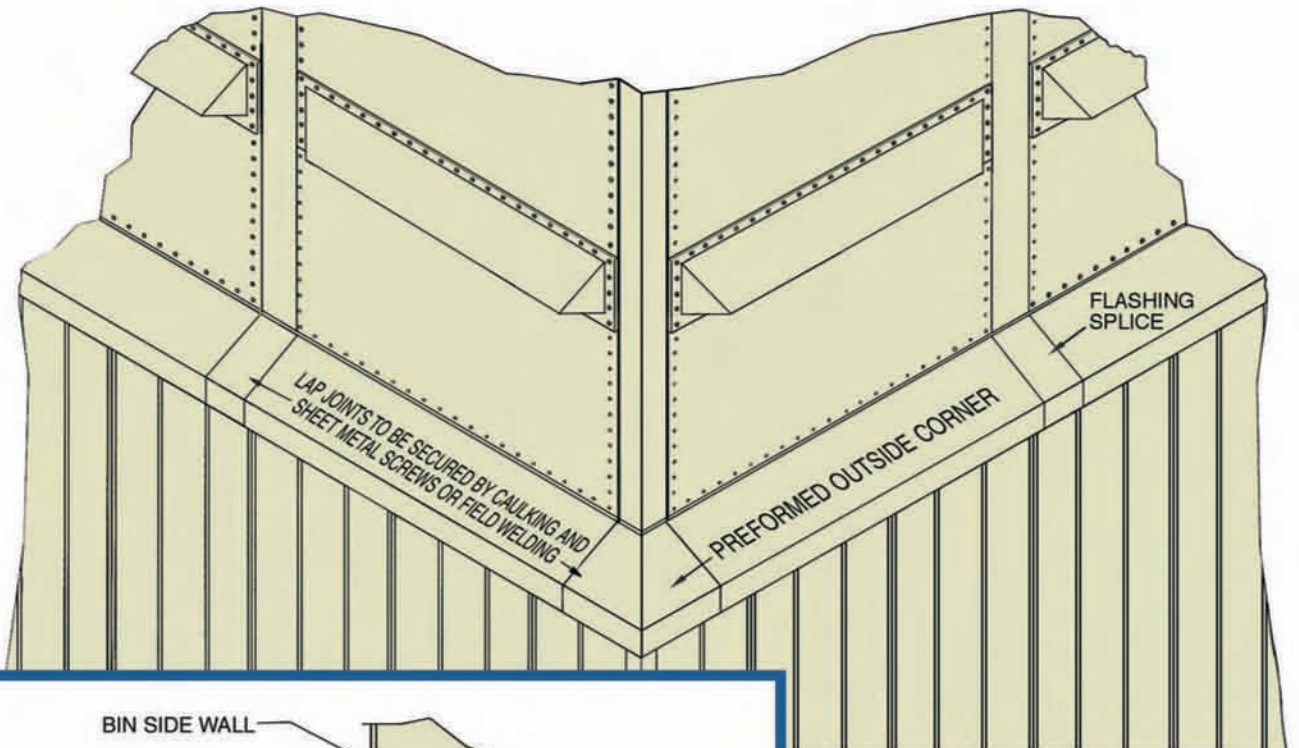








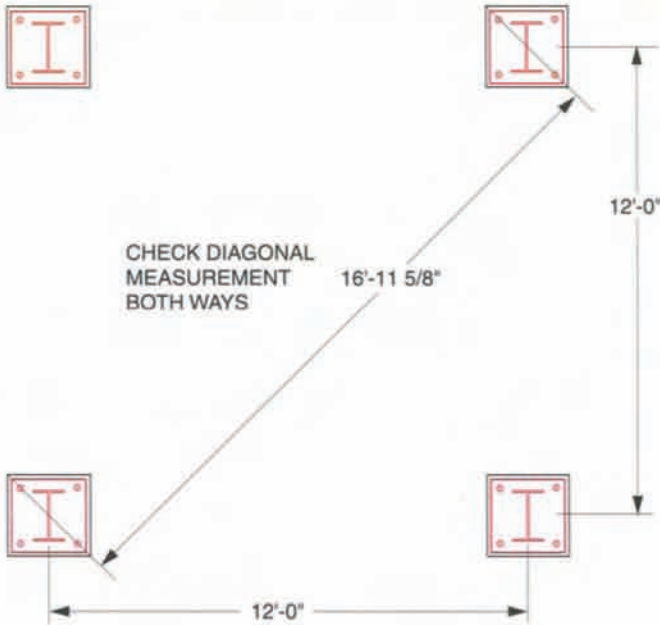
## BIN WALL FLASHING



### GENERAL INFORMATION

Wall girts and siding material for the structural steel can be provided on special request.

## 1 SET UP SURVEY BOARDS TO ESTABLISH COLUMN CENTERS

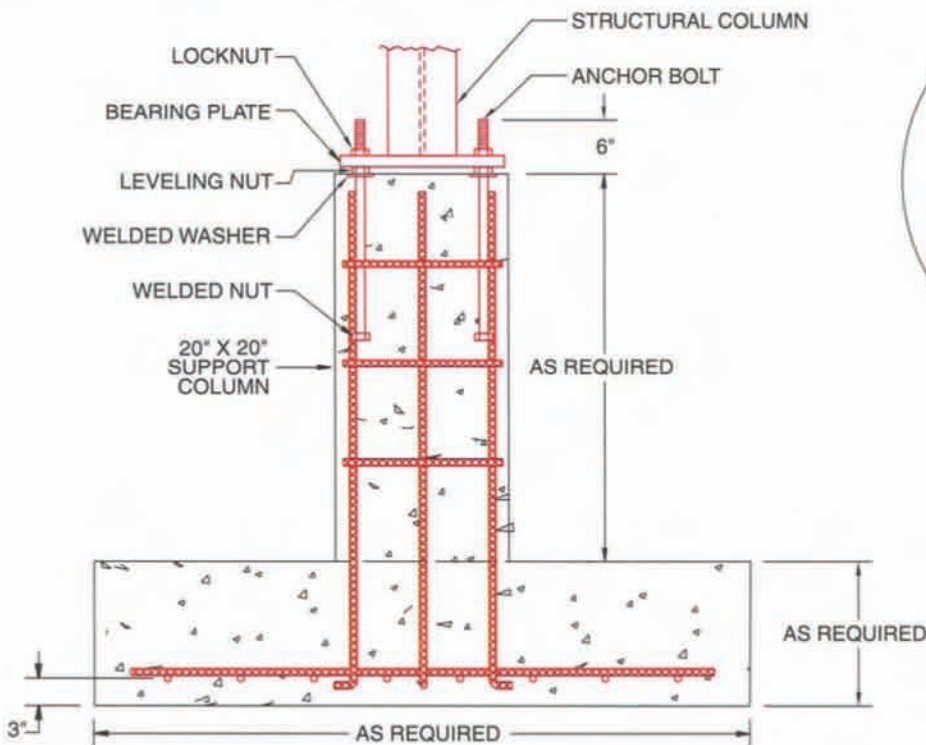
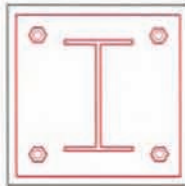


## 2 ANCHOR BOLT TEMPLATE

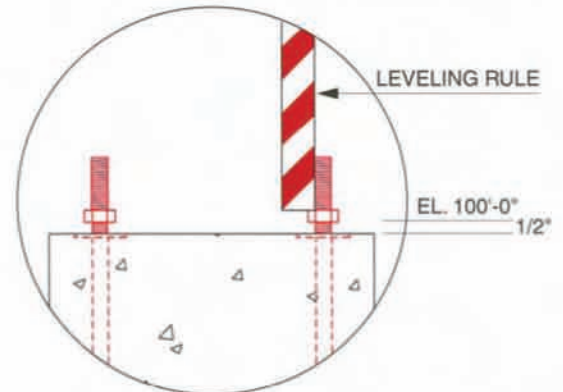
Make thick plywood templates that are 1" larger than the column base plates. Please refer to the structural prints for the size of each base plate, and the size and location of each anchor bolt. The holes drilled in the template should be no more than 1/32 of an inch larger than the anchor bolt. We recommend that you weld a washer where the anchor bolt threads end as shown in the photo. Then slide the bolts into the plywood pattern and hold them in place with a nut. This assembly accurately positions the anchor bolts in the concrete when the piers are poured. Please put cross hairs on each of the templates with which to properly align to the center of each of the columns. Then remove the plywood templates when concrete is hard.



## 3 TYPICAL CONCRETE PIER



## 4 STRUCTURAL COLUMNS LEVELING NUTS



After removing the plywood anchor bolt template, clean the threads of the anchor bolts with a wire brush and mount the leveling nuts onto the anchor bolts. The top of the leveling nuts should be at the finish grade elevation as shown on the foundation drawings. It is very important that the height of each leveling nut be leveled within +/- 1/16" in order to assure proper positioning of the columns. After the structural steel has been firmly bolted in place, you may then put grout between the top of the concrete pier and the bottom of the structural base plate.

**INSTALLING ERECTION PLATFORM**


This 4 point lifting sling is used to position work platform inside of the bin.

**INSTALLED ERECTION PLATFORM**


Before work begins, firmly anchor the platform as shown.

**CONNECTION CLOSE-UPS**


Each erection platform is supported with four metal clips which are attached to the tops of the wall panels. These erection clips can be permanently left inside of the bins.

Each of the four corners of the erection platform must have an eye bolt which is large enough to accept the lifting strap connector and the connector that attaches the erection platform to the erection clips on the bin walls.

The size of the erection platform should be approximately one foot smaller than the size of each individual bin.

**IMPORTANT NOTICE:**

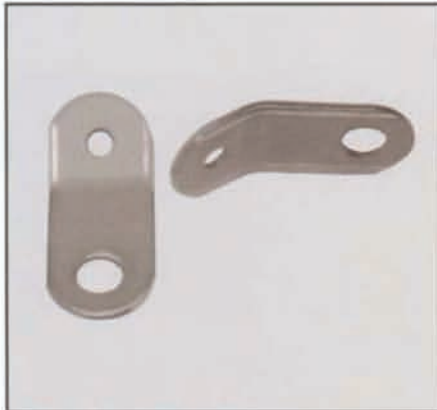
These installation procedures and devices are provided only as possible methods to assemble these Bin Systems. It is the contractor's sole responsibility to verify the suitability of these devices, to verify their safety, and to make sure that all devices and procedures comply with all applicable safety codes and regulations. Intersystems makes no claim as to the safety or for suitability of purpose of these procedures or devices.

**LIFTING SLINGS**

Straps for lifting erection platforms.

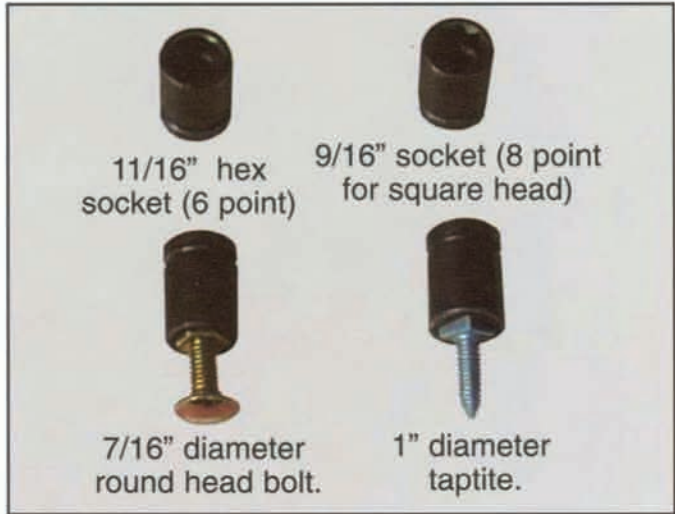
**ERECTION PLATFORM SUPPORT HARDWARE****LIFTING CLEAVISES**

Four lifting clevises with a minimum inner eye diameter of 2".

**ERECTION CLIPS****SELF LOCKING SNAP HOOKS****INSTALLING ERECTION PLATFORMS (SUPPLIED BY CONTRACTOR)**



Heavy duty electric impacted wrench



Bin fasteners and sockets



Hole alignment pins  
Top diameter 5/8"  
Point diameter. 5/16"  
Length 11"

Structural broad headed  
bull pin  
Top diameter 1-1/4"  
Point diameter 5/16"  
Length 13"

8" adjustable  
wrench

Adjustable head  
construction wrench  
Size 1-1/2"  
Length 15"

HARD HAT



FASTENER AND TOOL POUCH



SAFETY HARNESS

