

20' Dura-Lok Plank and Support Manual

Owner's Manual



PNEG-2319

Version: 2.0

Date: 11-24-20



PNEG-2319

All information, illustrations, photos, and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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1. Introduction

READ THIS MANUAL carefully to learn how to properly use and install equipment. Failure to do so could result in personal injury or equipment damage.

INSPECT the shipment immediately upon arrival. The customer is responsible for ensuring that all quantities are correct. The customer should report and note any damage or shortage on the bill of lading to justify their claim to the transport company.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your equipment and should be easily accessible when needed.

This warranty provides you the assurance that the company will back its products when defects appear within the warranty period. In some circumstances, the company also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the factory specifications, the warranty will become void and field improvements may be denied.

Safety Guidelines

Safety guidelines are general-to-specific safety rules that must be followed at all times. This manual is written to help you understand safe operating procedures and problems that can be encountered by the operator and other personnel when using this equipment. Read and save these instructions.

As owner or operator, you are responsible for understanding the requirements, hazards, and precautions that exist and to inform others as required. Unqualified persons must stay out of the work area at all times.

Alterations must not be made to the equipment. Alterations can produce dangerous situations resulting in **SERIOUS INJURY** or **DEATH**.

This equipment must be installed in accordance with the current installation codes and applicable regulations, which must be carefully followed in all cases. Authorities having jurisdiction must be consulted before installations are made.

When necessary, you must consider the installation location relative to electrical, fuel and water utilities.

Personnel operating or working around equipment must 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.

ST-0001-4

Cautionary Symbols Definitions

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.



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



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in minor or moderate injury.**



This symbol is used to address practices not related to personal injury.



This symbol indicates a general hazard.



This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

Safety Cautions

Use Personal Protective Equipment

- Use appropriate personal protective equipment:

Eye Protection



Respiratory Protection



Foot Protection



Hearing Protection



Head Protection



Fall Protection



Hand Protection



- Wear clothing appropriate to the job.
- Remove all jewelry.
- Tie long hair up and back.

ST-0004-1

Follow Safety Instructions

- Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.
- Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.
- If you do not understand any part of this manual or need assistance, contact your dealer.



ST-0002-1

2. Safety

Maintain Equipment and Work Area

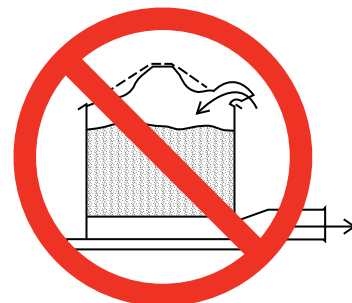
- Understand service procedures before doing work. Keep area clean and dry.
- Never service equipment while it is operating. Keep hands, feet, and clothing away from moving parts.
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.



ST-0003-1

Prevent Roof Damage Due to Vacuum Pressure

- Roof damage can result from excessive vacuum or internal pressure from fans or other air moving systems. The manufacturer does not warrant this type of roof damage.
- Adequate ventilation or “makeup air” devices must be provided for all powered air handling systems.
- The manufacturer does not recommend the use of downward flow systems (suction).
- Severe roof damage can result from any blockage of air passages.
- Operating fans during high humidity or cold weather conditions can cause air exhaust or intake ports to freeze.



ST-0028-2

Sharp Edge Hazard

- This product has sharp edges, which can cause serious injury.
- To avoid injury, handle sharp edges with caution and always use proper protective clothing and equipment.



ST-0036-2

Safety Sign-Off Sheet

Below is a sign-off sheet that can be used to verify that all personnel have read and understood the safety instructions. This sign-off sheet is provided for your convenience and personal record keeping.

[illegible]

ST-0007

3. Decals

The safety decals on your equipment are safety indicators which must be carefully read and understood by all personnel involved in the installation, operation, service and maintenance of the equipment.


To replace a damaged or missing decal, contact us to receive a free replacement.



GSI Decals

1004 E. Illinois St.

Assumption, IL. 62510

Phone: 1-217-226-4421

Location	Decal #	Decals	Description
Located next to aeration system.	DC-969	<div><p>Excessive vacuum (or pressure) may damage roof. Use positive aeration system. Make sure all roof vents are open and unobstructed. Start roof fans when supply fans are started. Do not operate when conditions exist that may cause roof vent icing.</p><p>GSI Group, Inc. 217-226-4421 DC-969</p></div>	Caution Vacuum Pressure

Location	Decal #	Decals	Description
On bin door covers	DC-GBC-1A		Warning Keep Clear of Augers
On bin door covers	DC-GBC-2A		Warning Unload Instructions

Fan Placement Diagram

For uniform air flow, place the fans in relation to the unloading tube as shown in [Figure 4A](#). Floor planks should be perpendicular to the unloading tube.

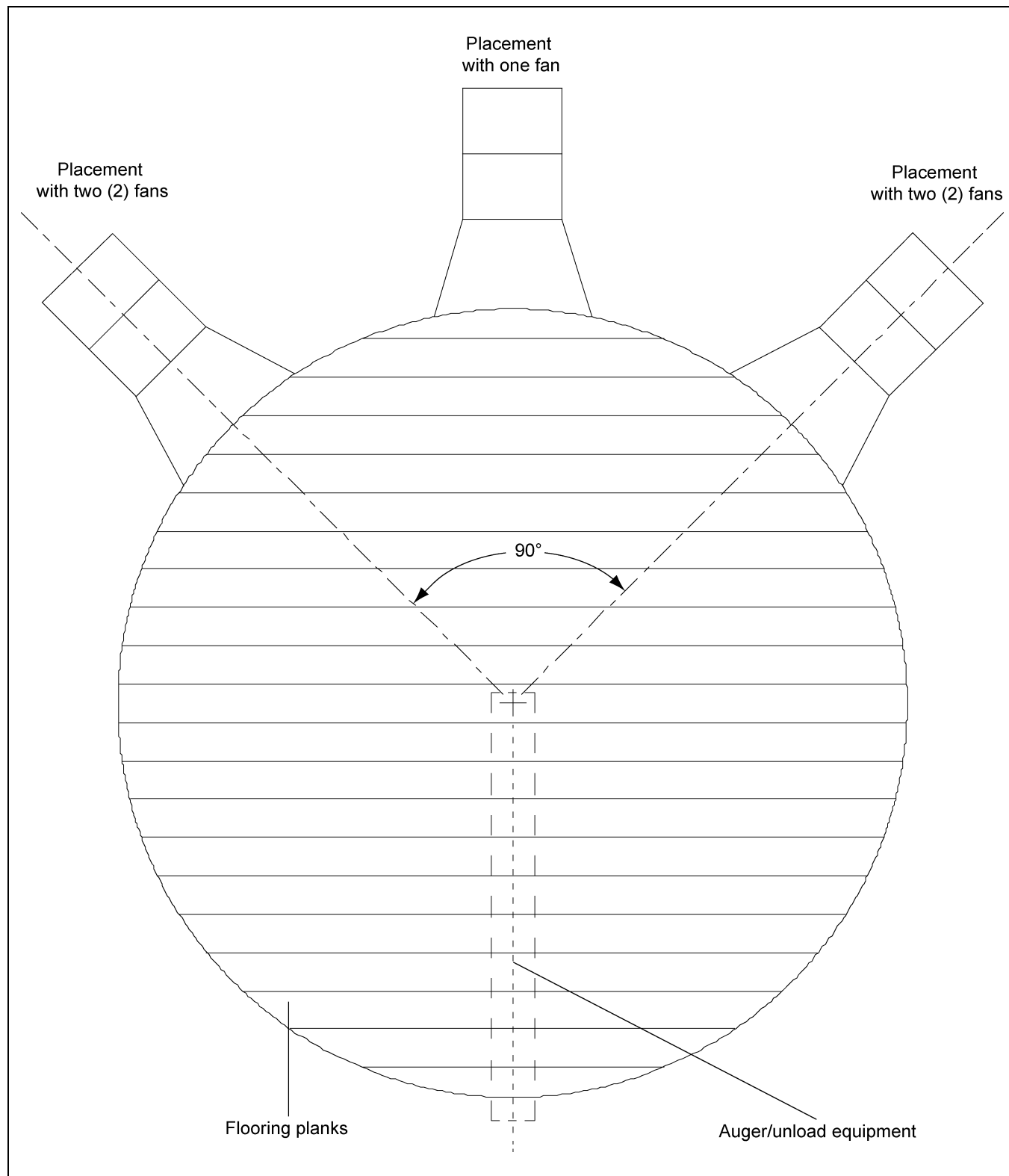


Figure 4A

Tie Bar Detail

1. Locate the tie bars between the rails. (Spaced evenly throughout the system.)

NOTE: Tie bars are to be placed at the end of monorail, at each splice and in the middle of the rail if it is over 16' long. (Not necessarily evenly spaced.) Rail spacing details [on Page 23](#), detail tie bar placements in each layout.

2. A single #10 x 5/8" self-drilling screws may be used to fasten the tie bars at each end to the rails as necessary. (See [Figure 4B](#).)

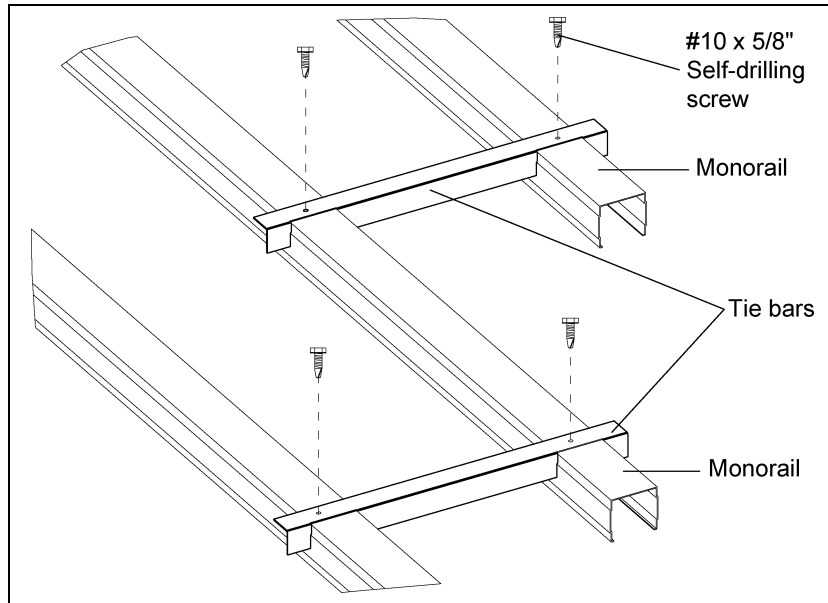


Figure 4B Tie Bar Detail

3. Tie bars should overlap and connect each rail to the next rail. Tie bars should be located along each side of a rail splice and around the perimeter of the bin, no more than 6" from the end of the rail. (See [Figure 4C](#).)

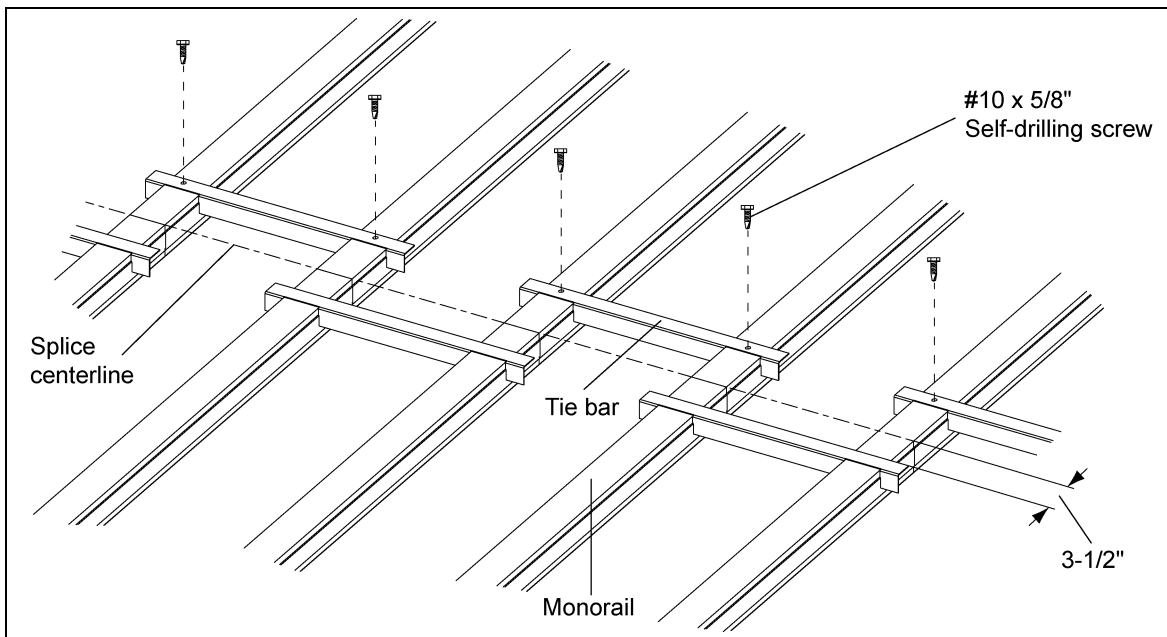


Figure 4C Tie Bar Dimension Detail

4. Monorail Installation

Tie Strap Detail

1. Tie straps should be used when a tie bar cannot be used to connect rails together due to special spacing of monorail. Tie strap should be connected to all three rails using self-drilling screws. *(See Figure 4D.)*
2. Tie straps are to be located in the same places as a tie bar would be used.

NOTE: *Some tie straps will be used to support center well and intermediate well assembly.*
(See Figure 5D on Page 21 and Figure 5E on Page 22.)

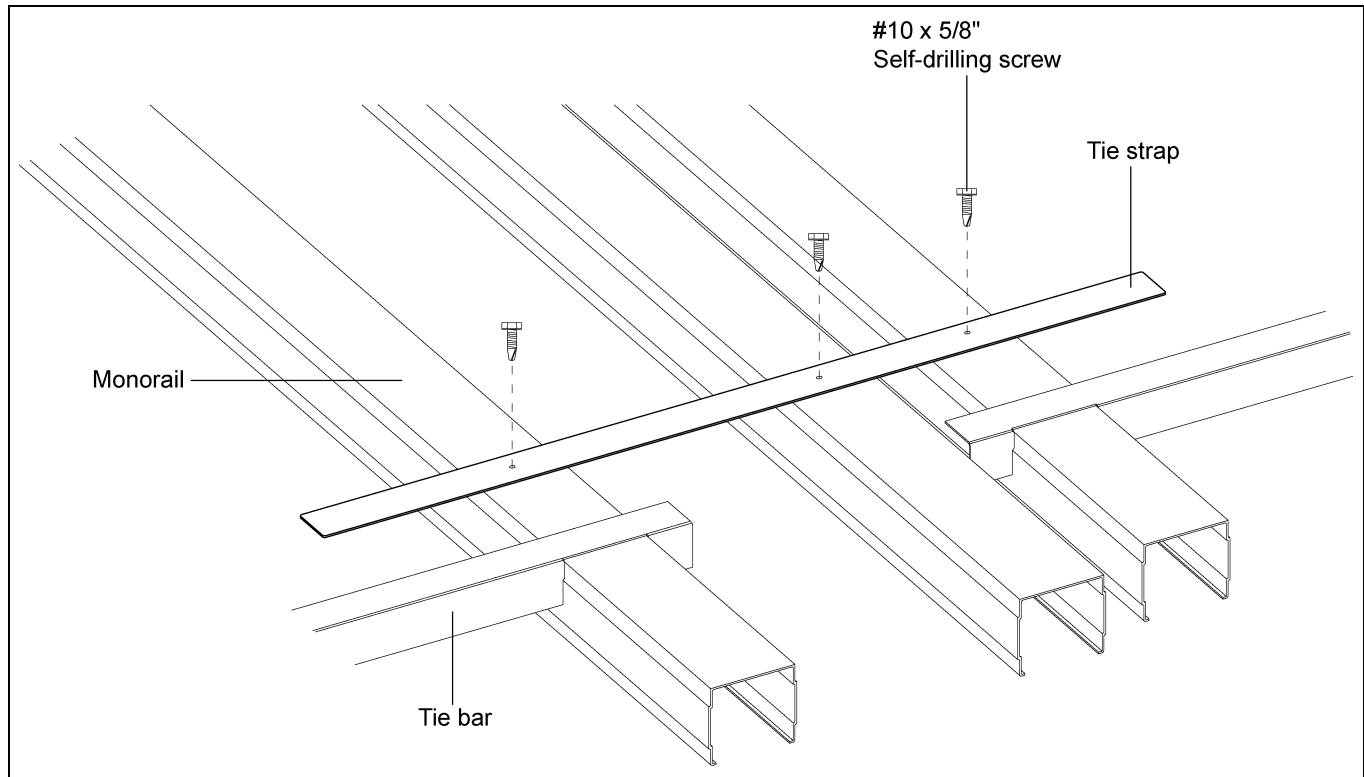


Figure 4D *Strap Detail*

Assembling Legs to Rail

1. Place two corners of the monorail leg into the rails as shown.
2. By twisting the leg it will spread the rail enough to get the other corners inside.
3. The leg can then be pushed down into the rail until the tabs lock it into place. (*See Figure 4E.*)

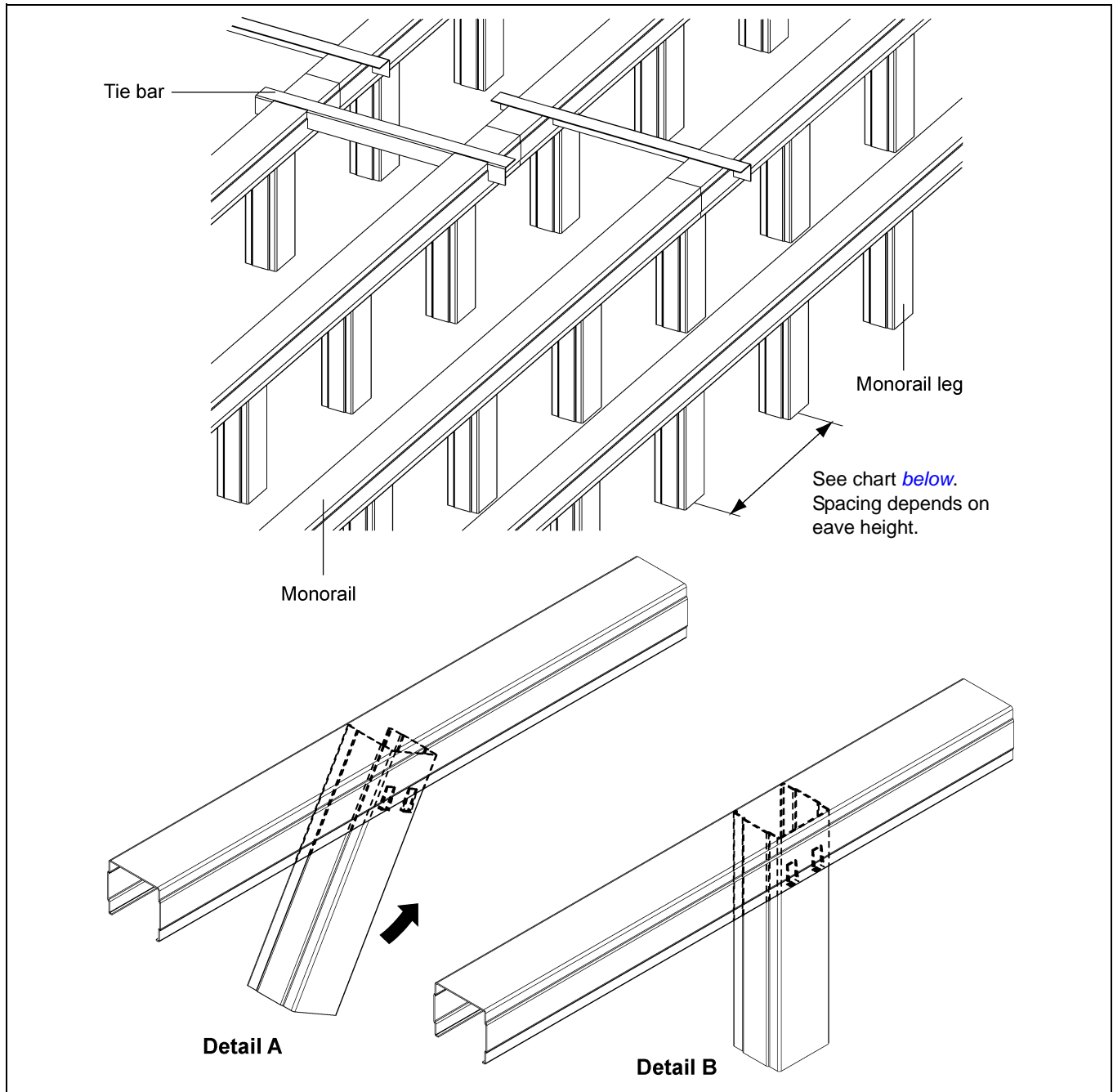


Figure 4E Assembly Leg Rail

Monorail “Rail and Leg Spacing”/“Full Floor Leg Quantity” for 20' Bin Diameter

4.00" Ring	2.66" Ring	Eave Height (ft.)	Rail Spacing	Reference Page	Leg Spacing	Leg Qty
22	30	81	16	See Page 23	16	260

4. Monorail Installation

Monorail Splice Detail

1. Insert the monorail leg (2) vertically at the joint between the ends of the monorails (1), centering the leg (2) on the splice as shown in [Figure 4F](#).

NOTE: Lock the monorail leg (2) securely into the monorails (1) using the locking tabs (5).

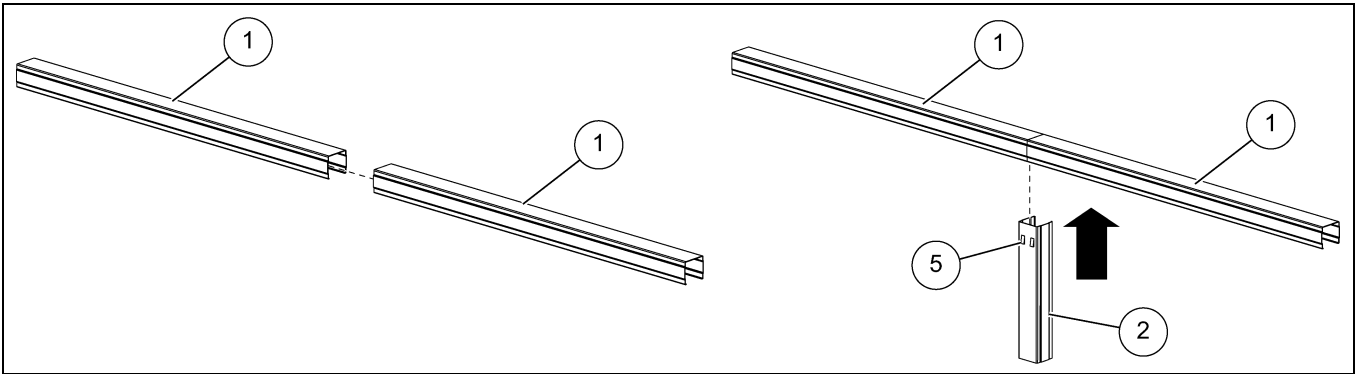


Figure 4F Installing the Monorail Leg

Ref #	Part #	Description
1	FL-403-1	Rails for Monorail Per Foot
2*	FL-403-X	Monorail Leg

Ref #	Description
5	Leg Locking Tabs

2. Use the four self-tapping screws (3) to secure the monorails (1) to the monorail leg (2) as shown in [Figure 4G](#). (**NOTE:** See the orientation of the monorail leg (2) in [Figure 4G](#).)

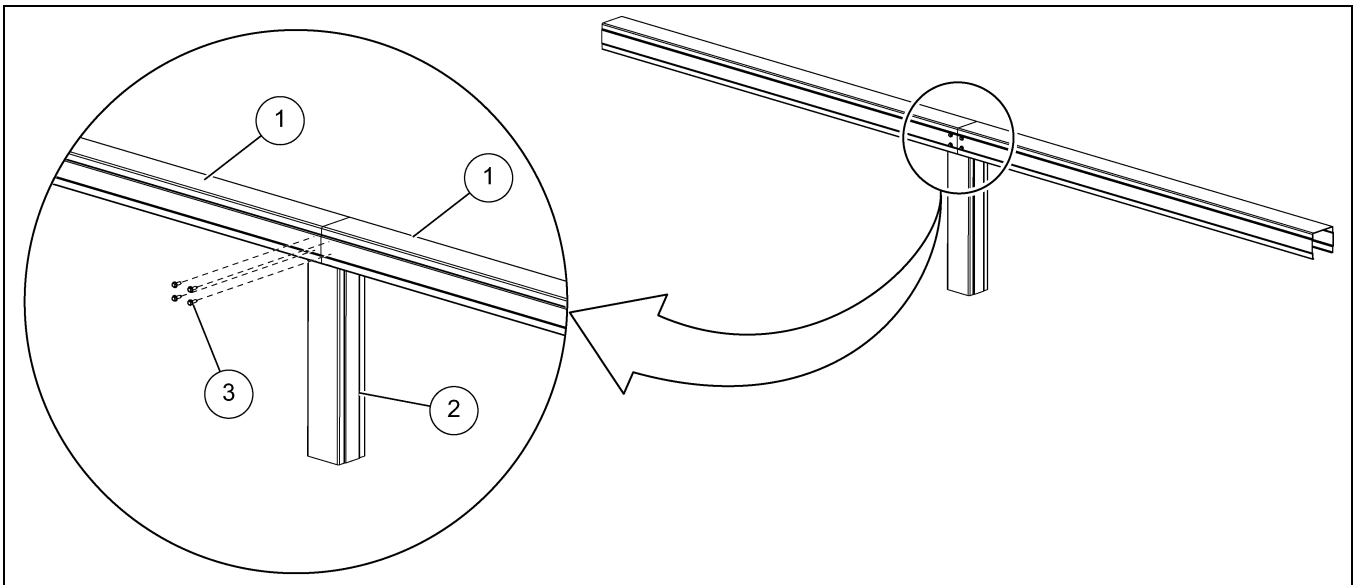


Figure 4G Installing the Screws in the Monorail

Ref #	Part #	Description
1	FL-403-1	Rails for Monorail Per Foot
2*	FL-403-X	Monorail Leg
3	S-280	Screw, SDS #10-16 x 5/8" HWH ZN

* **NOTE:** "X" denotes the monorail leg part number extension.

Monorail Splice Detail (Continued)

3. Use the four self-tapping screws (3) and the monorail splice plate (4) on the other side of the monorail joint as shown in [Figure 4H](#). (**NOTE:** See the orientation of the monorail leg (2) in [Figure 4H](#).)

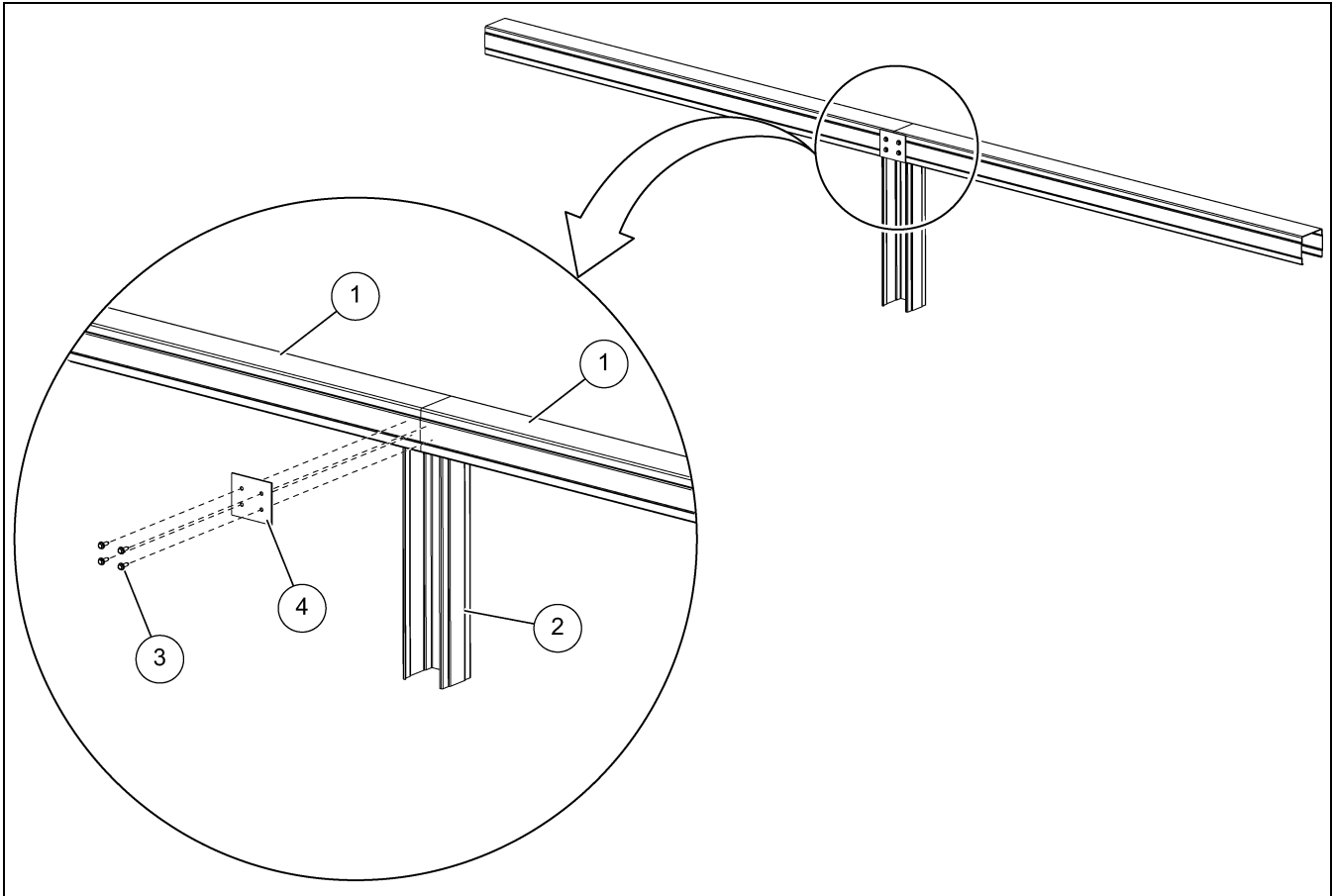


Figure 4H *Installing the Monorail Splice Plate*

Ref #	Part #	Description
1	FL-403-1	Rails for Monorail Per Foot
2*	FL-403-X	Monorail Leg
3	S-280	Screw, SDS #10-16 x 5/8" HWH ZN
4	FL-7415	Monorail Splice Plate

* **NOTE:** "X" denotes the monorail leg part number extension.

Outer Perimeter Rail Details

3' Sections of monorail should be placed around the perimeter of the bin. Monorail legs for perimeter rails should be spaced 16" apart on center. *(See Figure 4I.)*

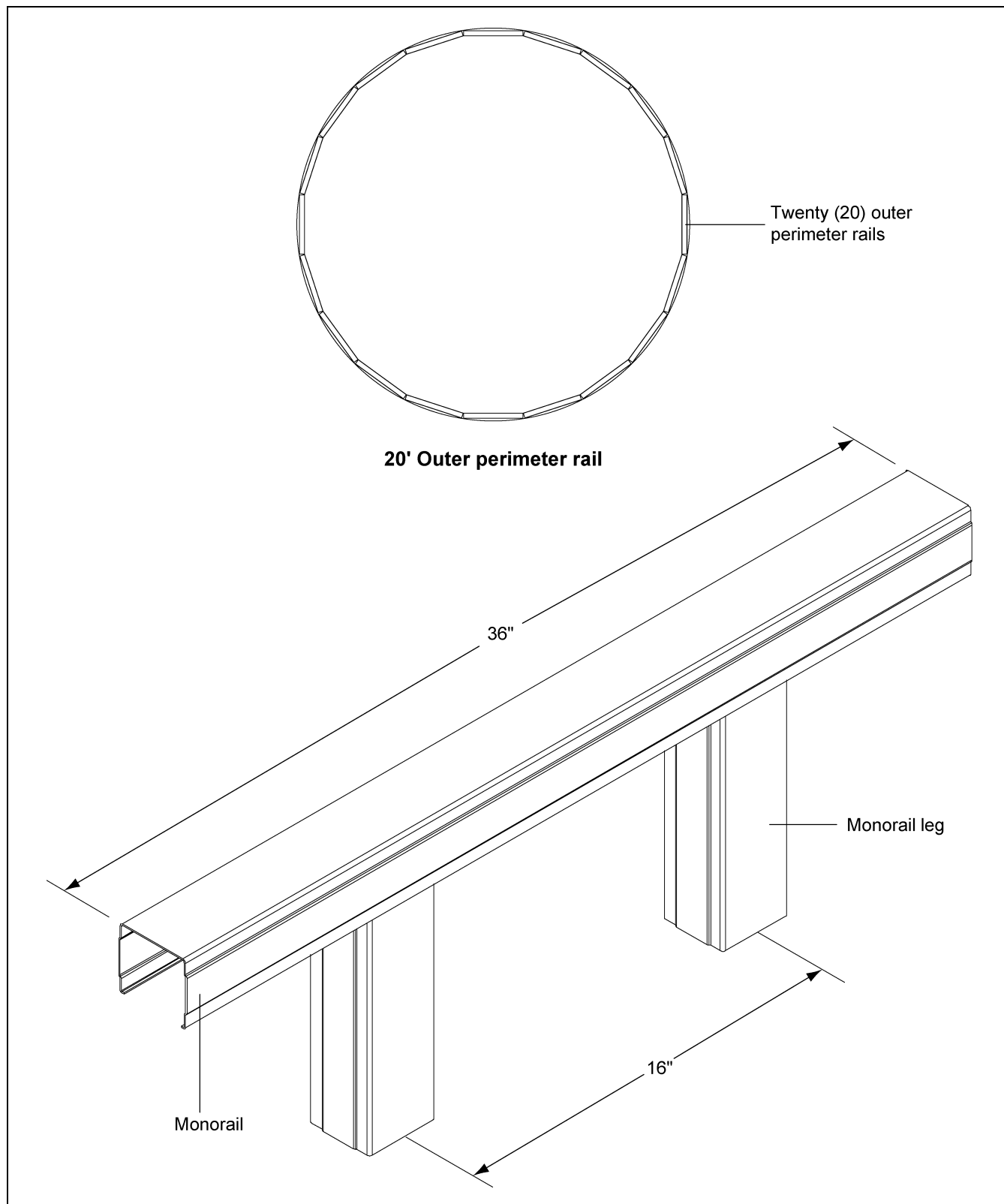


Figure 4I

Flashing Installation

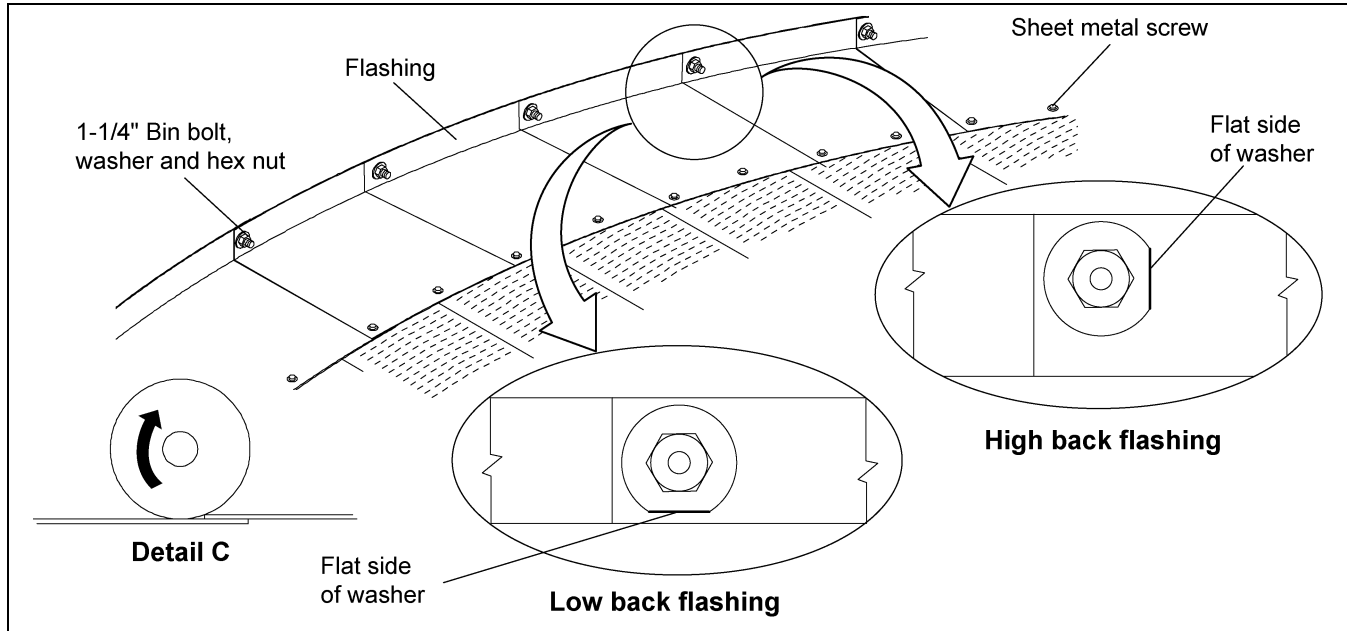


Figure 5A

Formed Flashing Installation

If bin sweep auger is to be used, overlap flashing such that rotation (usually clockwise) of the sweep will climb up on the next flashing section. (See detail C in [Figure 5A](#).) This will prevent the rotating/slipping outer wheel of the sweep from catching on the flashing edges.

After the floor is in place, lay the flashing pieces on top of the floor place over the 1-1/4" bin bolts. [See Figure 5B and Figure 5C on Page 20](#) to determine the correct sequence for placing the nuts and washers. Finger tighten the nuts. While holding flashing flat, fasten the flashing to the floor with sheet metal screws. Now tighten flashing nuts.

Flashing Installation (Continued)

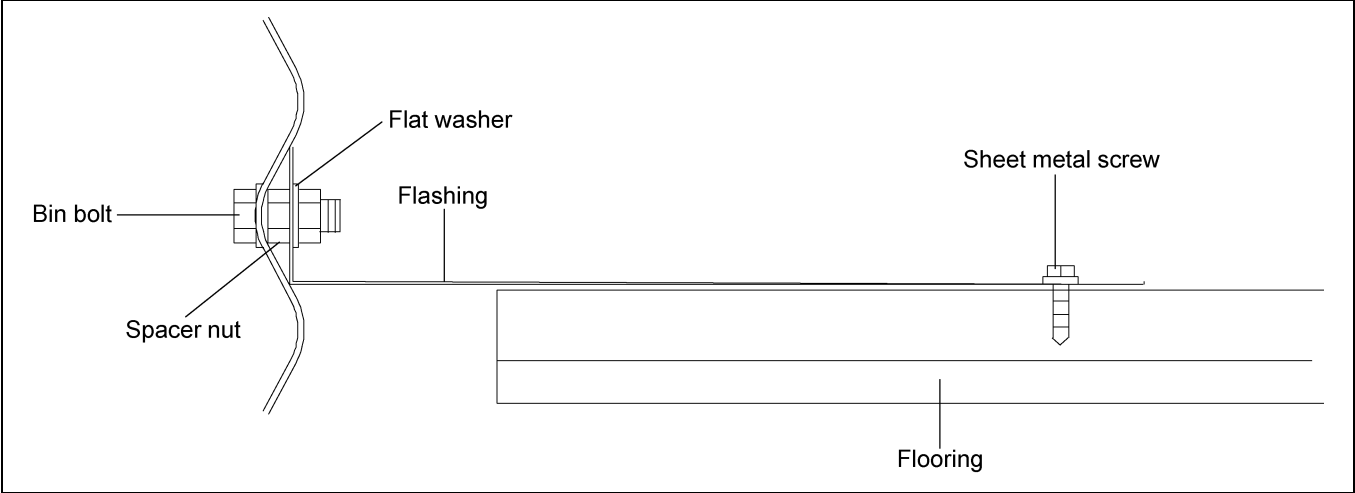


Figure 5B 2.66" Corrugation

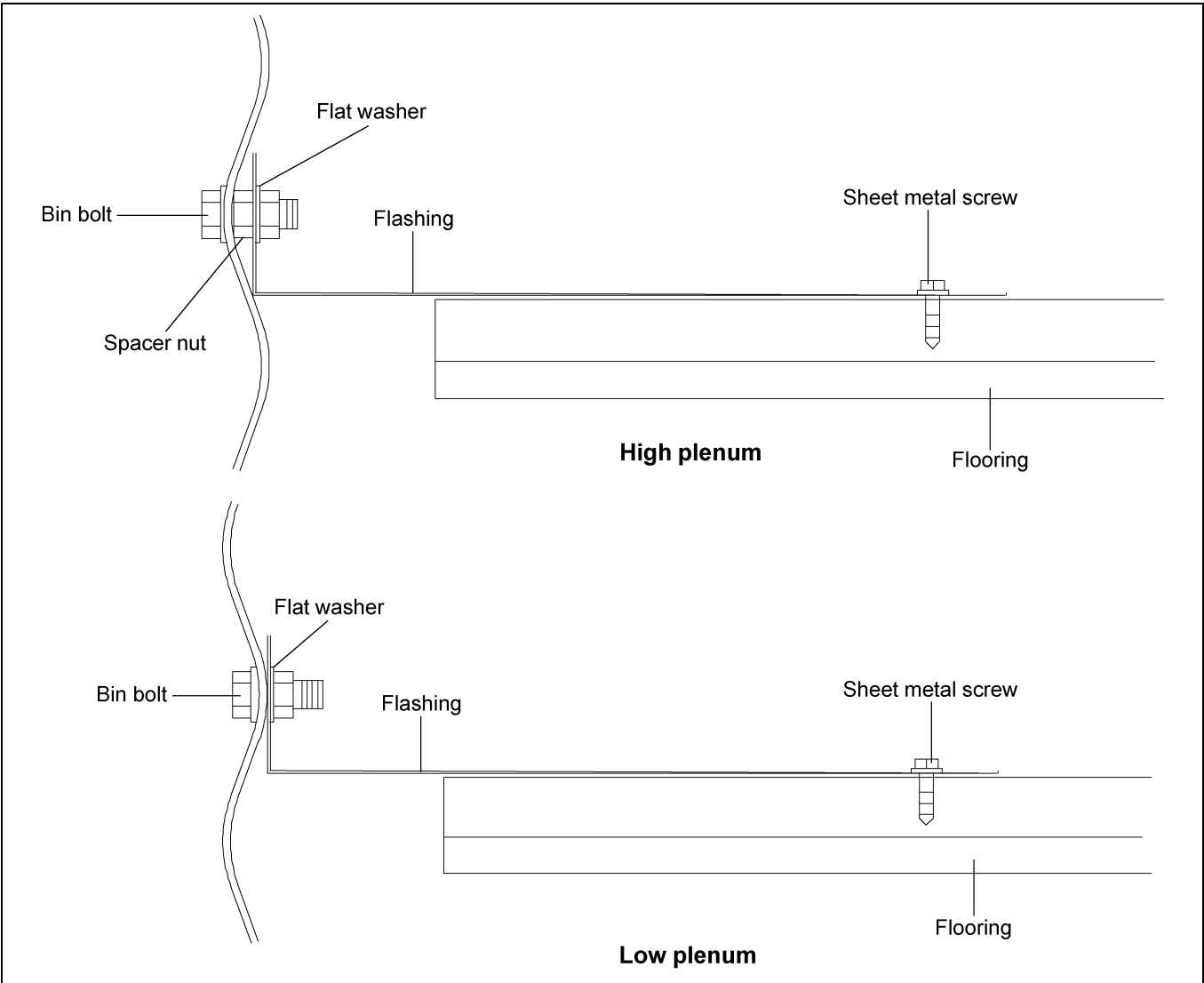


Figure 5C 4.00" Corrugation

Center Well Assembly Details

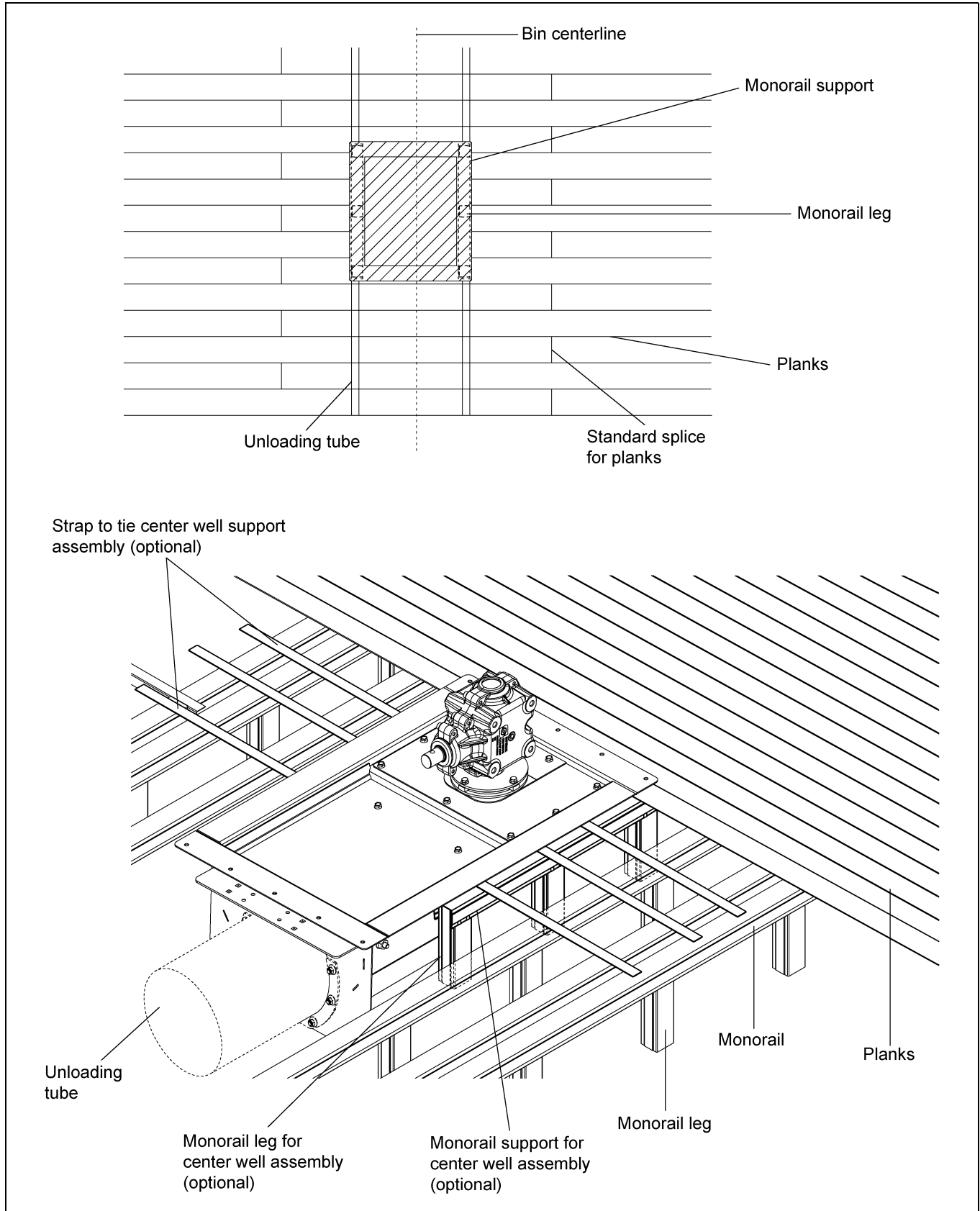


Figure 5D 20' Diameter Bin Center Well Position

Intermediate Well Assembly Details

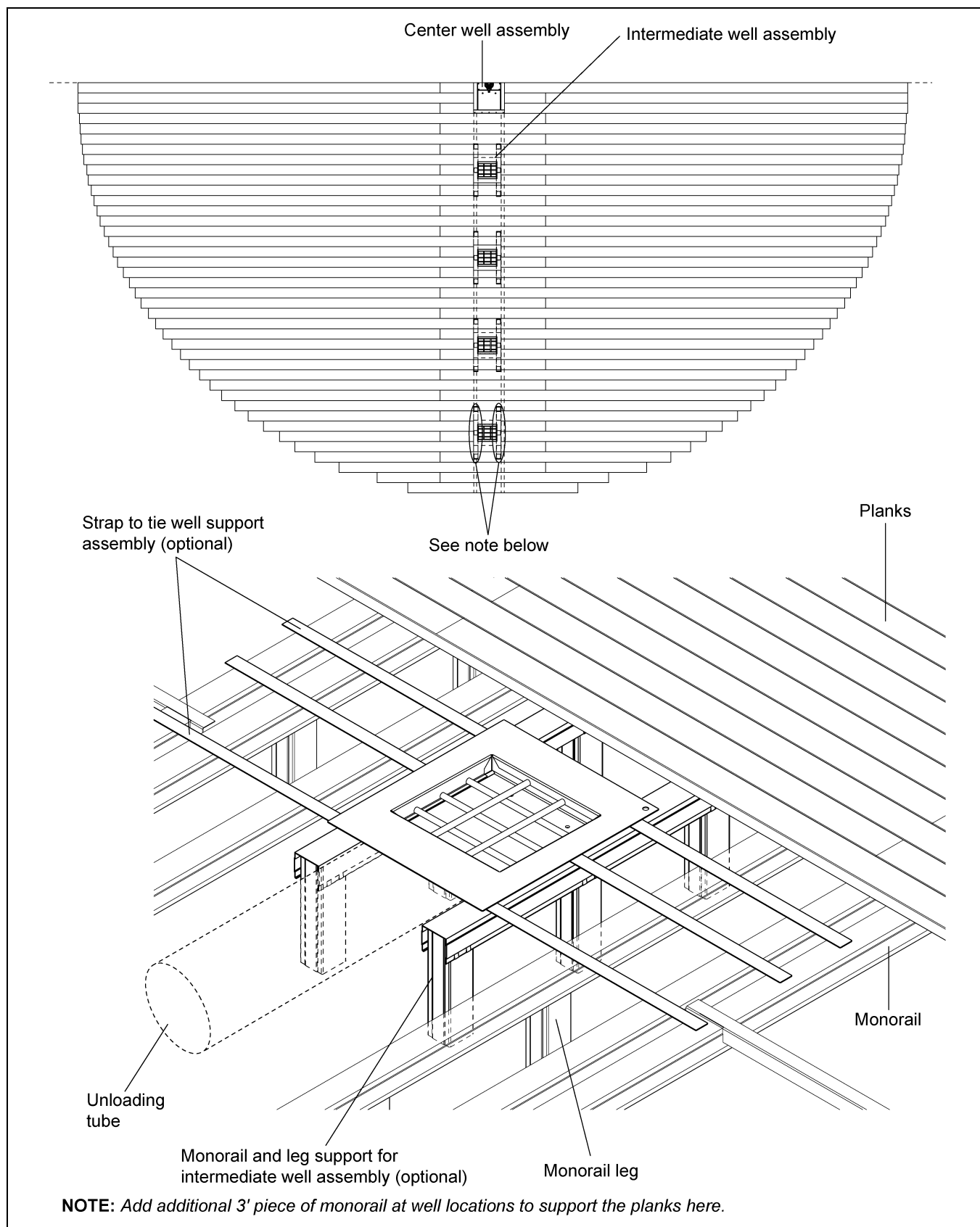


Figure 5E 20' Diameter Bin Intermediate Well Position

20'-16" Rail Spacing Layout

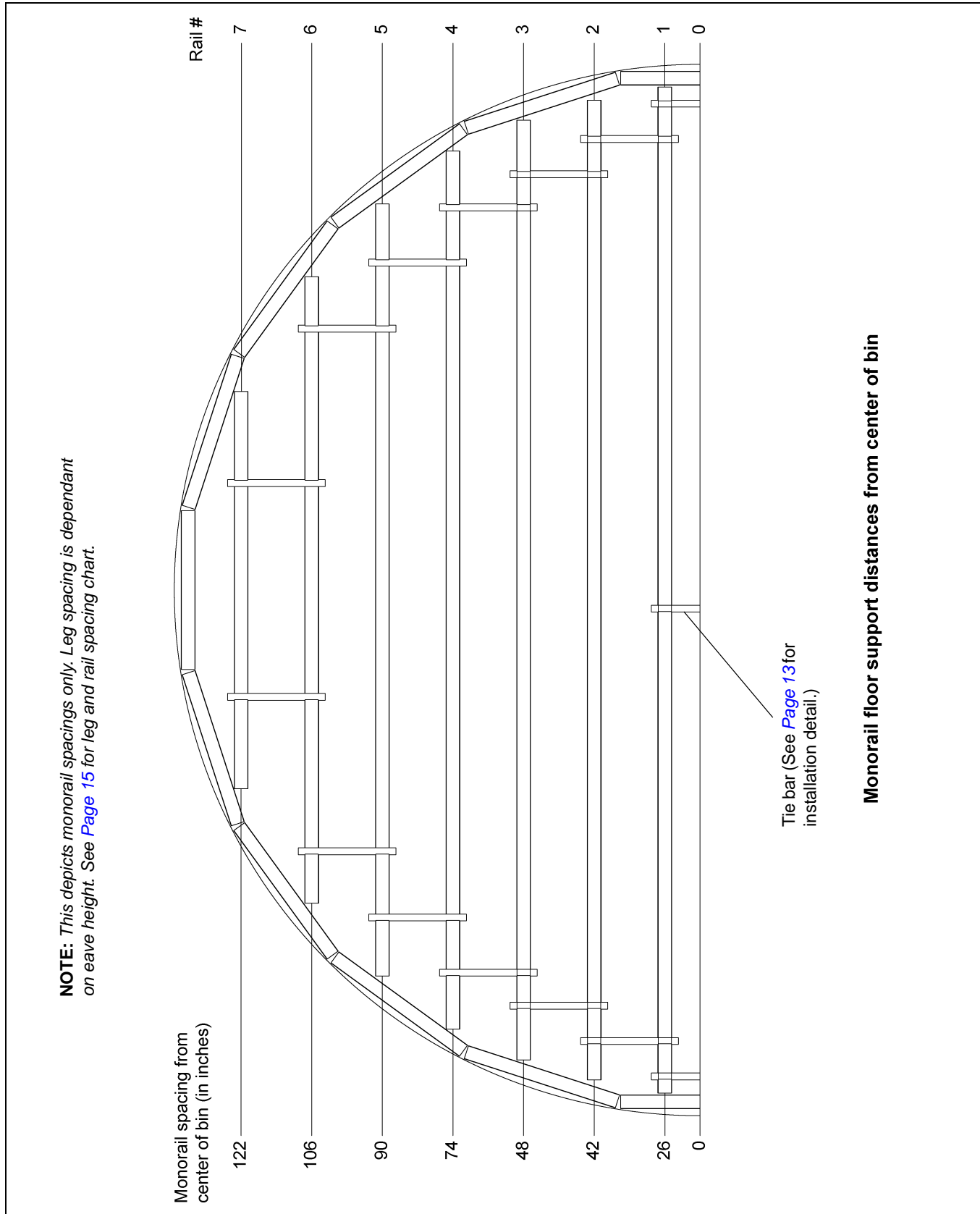


Figure 6A 20' Diameter 16" Rail Spacing

20'-16" Monorail Spacing Layout

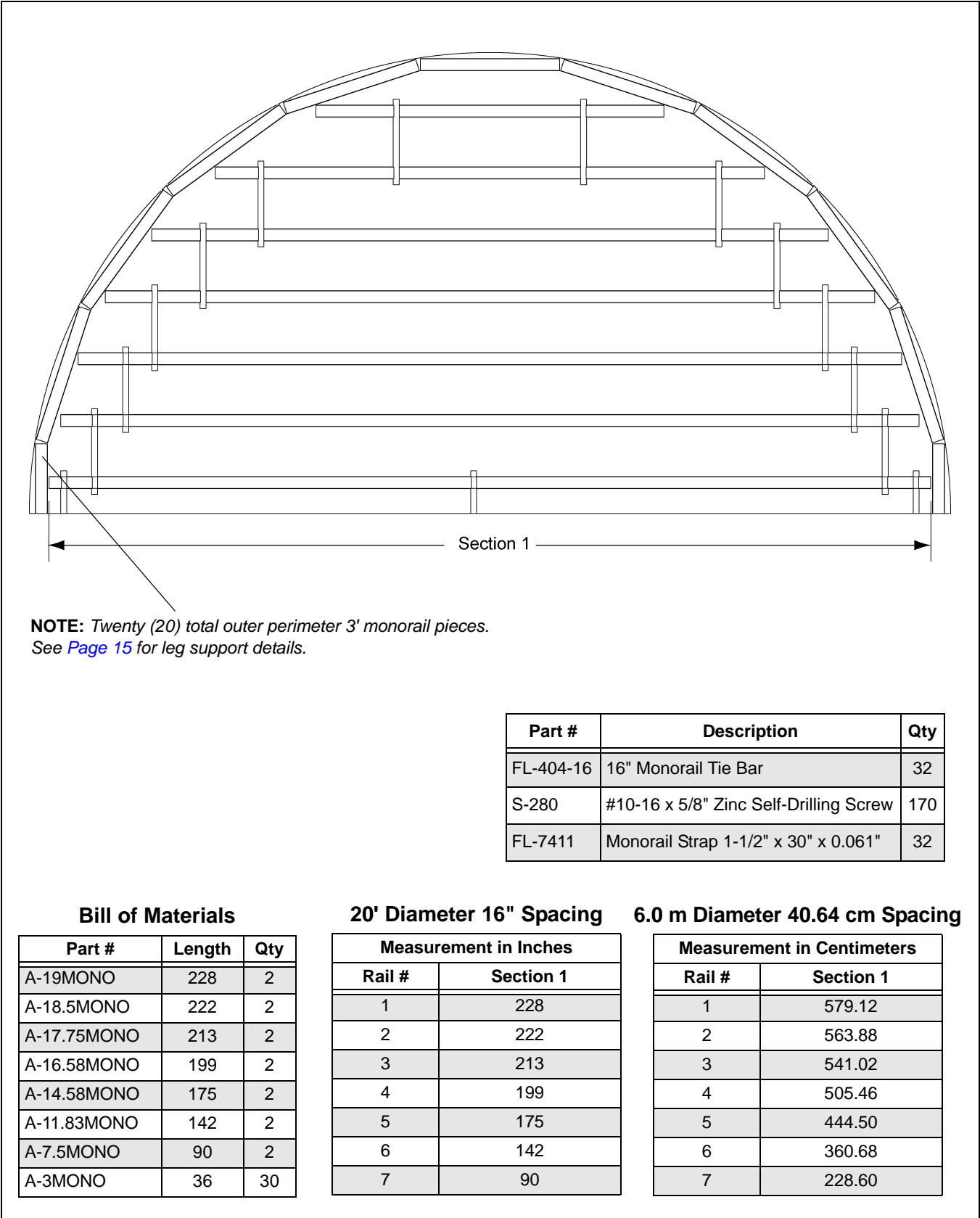


Figure 6B 20' Diameter Bin with 16" Monorail Spacing

20' Floor Bundle Layout

NOTE: The 20' floor has one bundle. The split of the floor is staggered from one 7" plank to the next.

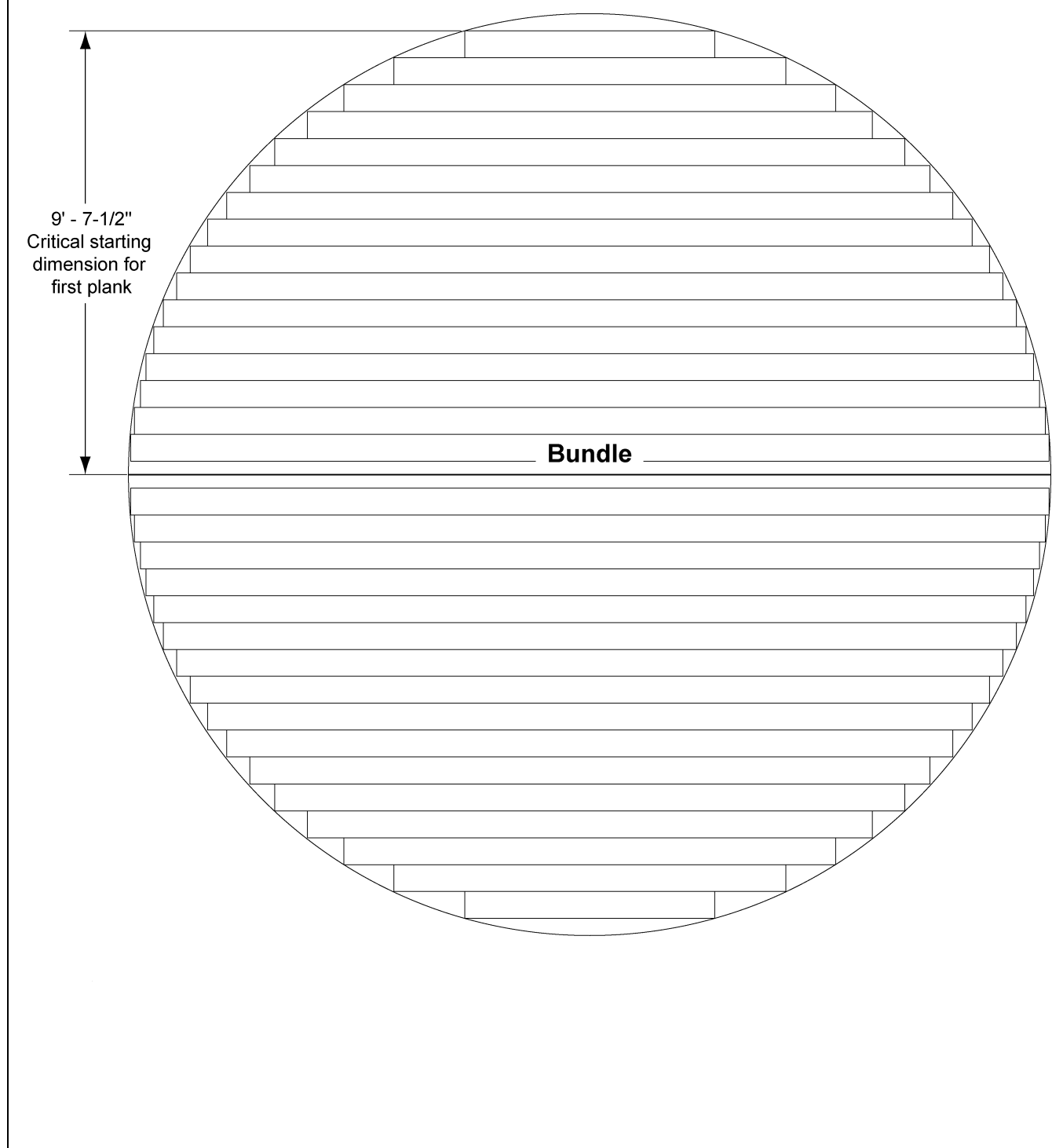


Figure 6C 20' Floor Bundle Layout

20' Floor Plank Layout

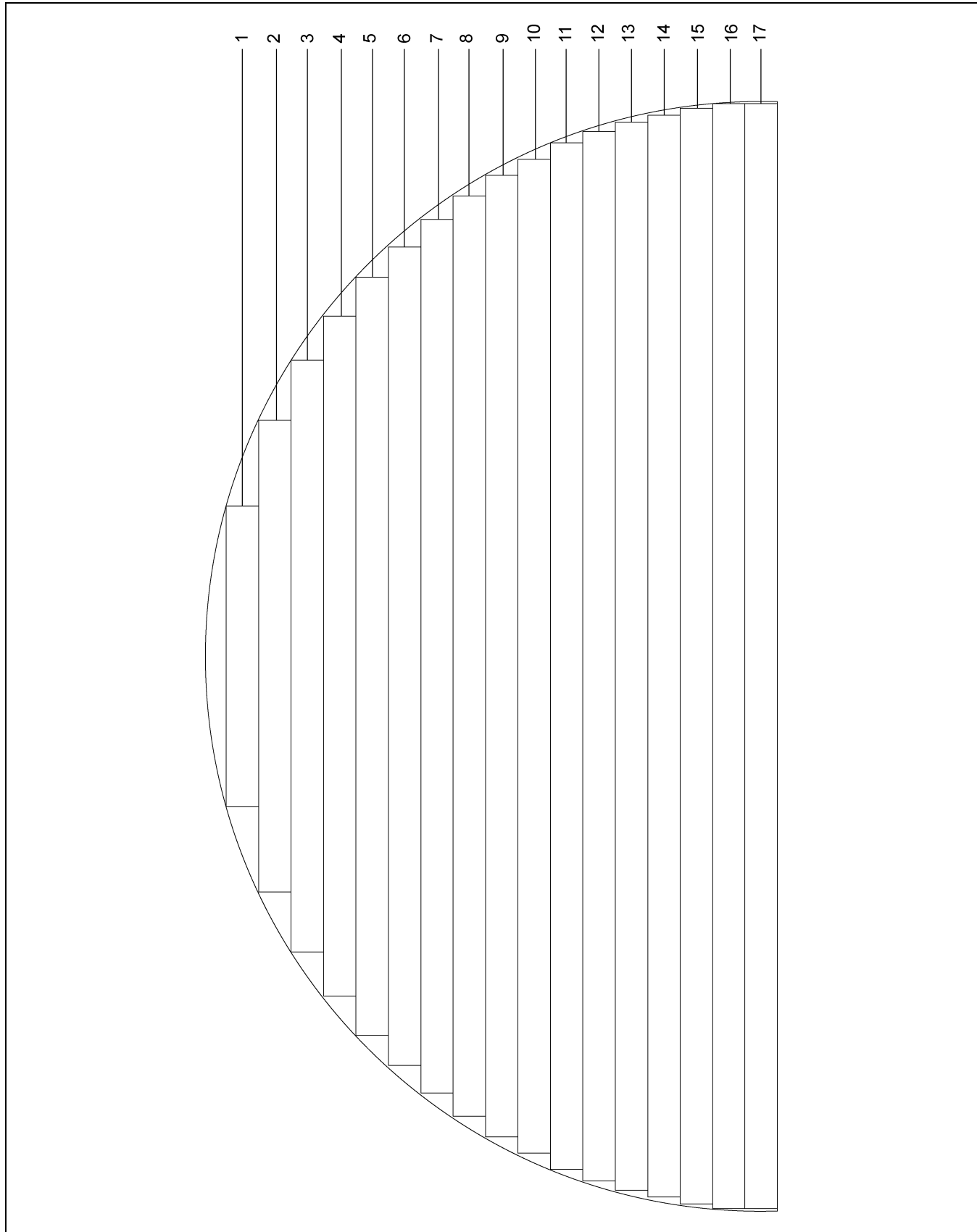


Figure 6D Plank Layout for 20' Diameter Bin

20' Floor Plank Layout

Plank #	Plank Length	In Inch	In Metric
1	5'-5"	65	165.10
2	8'-6"	102	259.08
3	10'-8"	128	325.12
4	12'-3"	147	373.38
5	13'-8"	164	416.56
6	14'-9"	177	449.58
7	15'-9"	189	480.06
8	16'-7"	199	505.46
9	17'-4"	208	528.32
10	17'-11"	215	546.10
11	18'-6"	222	563.88
12	18'-11"	227	576.58
13	19'-3"	231	586.74
14	19'-6"	234	594.36
15	19'-9"	237	601.98
16	19'-11"	239	607.06
17	19'-11"	239	607.06

NOTES

Limited Warranty - N.A. Grain Products

The GSI Group, LLC. ("GSI") warrants products which it manufactures, to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months from the date of shipment (or, if shipped by vessel, 14 months from the date of arrival at the port of discharge). If, in GSI's sole judgment, a product is found to have a defect in materials and/or workmanship, GSI will, at its own option and expense, repair or replace the product or refund the purchase price. This Limited Warranty is subject to extension and other terms as set forth below.

Warranty Enhancements:

The warranty period for the following products is enhanced as shown below and is in lieu of (and not in addition to) the above stated warranty period. (Warranty Period is from date of shipment.)

	Product	Warranty Period
Storage	Grain Bin Structural Design	5 Years
	• Sidewall, roof, doors, platforms and walkarounds	
	• Flooring (when installed using GSI specified floor support system for that floor)	
	• Hopper tanks (BFT, GHT, NCHT, and FCHT)	
Conditioning	Dryer Structural Design - (Tower, Portable and TopDry)	5 Years
	• Includes (frame, portable dryer screens, ladders, access doors and platforms)	
	All other Dryer parts including:	2 Years
	• Electrical (controls, sensors, switches and internal wiring)	
	All Non-PTO Driven Centrifugal and Axial Fans	3 Years
Material Handling	Bullseye Controllers	2 Years
	Bucket Elevators Structural Design	5 Years
	Towers Structural Design	5 Years
	Catwalks Structural Design	5 Years
	Accessories (stairs, ladders and platforms) Structural Design	5 Years

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH HEREIN; SPECIFICALLY, GSI DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) ANY PRODUCT MANUFACTURED OR SOLD BY GSI, OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

The sole and exclusive remedy for any claimant is set forth in this Limited Warranty and shall not exceed the amount paid for the product purchased. This Warranty only covers the value of the warranted parts and equipment, and does not cover labor charges for removing or installing defective parts, shipping charges with respect to such parts, any applicable sales or other taxes, or any other charges or expenses not specified in this Warranty. GSI shall not be liable for any other direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. Expenses incurred by or on behalf of a claimant without prior written authorization from the GSI warranty department shall not be reimbursed. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor. Prior to installation, the end-user bears all responsibility to comply with federal, state and local codes which apply to the location and installation of the products.

This Limited Warranty extends solely to products sold by GSI and does not cover any parts, components or materials used in conjunction with the product, that are not sold by GSI. GSI assumes no responsibility for claims resulting from construction defects, unauthorized modifications, corrosion or other cosmetic issues caused by storage, application or environmental conditions. Modifications to products not specifically delineated in the manual accompanying the product at initial sale will void all warranties. This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained.

Notice Procedure:

In order to make a valid warranty claim a written notice of the claim must be submitted, using the RMA form, within 60 days of discovery of a warrantable nonconformance. The RMA form is found on the OneGSI portal.

Service Parts:

GSI warrants, subject to all other conditions described in this Warranty, Service Parts which it manufactures for a period of 12 months from the date of purchase unless specified in Enhancements above.

(Limited Warranty - N.A. Grain Products_ revised 01 October 2020)

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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