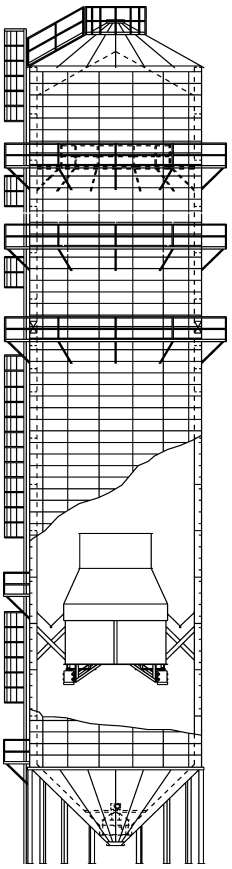


Construction Reference Guide for Tower Dryer

Model: Z-7060/G-7000

Construction Manual

PNEG-2209

Version: 1.**1**

Date: **09-29-20**

PNEG-2209

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.

Contents

Table of Contents

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.

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

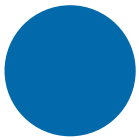
WARNING This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**

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

NOTICE 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

- Warning: If the information in the manual is not followed exactly, a fire or explosion can result, causing property damage, personal injury or loss of life.
- 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.
- Retain these instructions for future reference.

ST-0025-3

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

Install and Operate Equipment Properly

- Before attempting to remove and re-install the fan blade, contact GSI for the recommended procedure.

ST-0033-2

Install and Operate Gas-Fired Equipment Properly

- Gas-fired equipment should be installed by a qualified pipe fitter and must conform with local codes.
- For Canada: The equipment shall be installed in accordance with the *Natural Gas and Propane Installation Code, CSA B149.1, or the Propane Storage and Handling Code, CSA B149.2,* or applicable provincial regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.
- For the United States: The equipment shall be installed in accordance with the *National Fuel Gas Code ANSI Z223.1/NFPA 54.*

ST-0016-2

For Your Safety

- If you smell gas:
  - Do not try to light any appliance.
  - Extinguish any open flames.
  - Do not touch any electrical switch.
  - Immediately call your gas supplier. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
- The use and storage of gasoline and other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.
- Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

ST-0024-1

Install and Operate Electrical Equipment Properly

- Electrical controls must be installed by a qualified electrician and must meet the standards set by applicable local codes (National Electrical Code for the US, Canadian Electric Code, or EN60204 along with applicable European Directives for Europe).
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.
- Make sure all equipment is properly grounded.

ST-0027-4

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

Maintain Equipment and Work Area

- Understand service procedures before doing work.
- Keep area clean and dry.
- Do not service equipment while it is operating. Disconnect and lock-out power and fuel supply before entering equipment or before performing maintenance.
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.
- Depressurize the fuel train before disassembling for service.
- Allow the fan to operate for 20 minutes with the burner off to purge products of combustion and to cool the components before entering.
- Check regularly for any developing gas plumbing leaks. Do not operate the dryer if any gas leak is detected. Shut down and repair before further operation.

ST-0030-2

Exercise Caution When Drying Flammable Grains

- Be aware that some grains are highly flammable including but not limited to rapeseed, canola, linseed, sunflower and milo.
- All grain and seed must be whole (minimal cracking or crushing), clean and dust free before drying.
- Avoid dust and chaff from being drawn into the fan and heater.
- To reduce risk of fire, keep the fan, heater, drying plenum and ducts clean at all times.
- In the event of a fire (or suspected fire):
    1. Shut down the entire dryer.
    2. Turn off fuel at the tank or supply valve.
    3. Shut off and lock electrical power.
    4. Evacuate the area.
    5. Call the fire department.

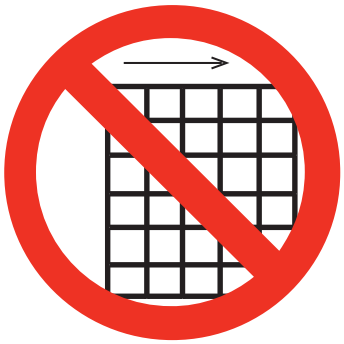
ST-0032-1

Fall Hazard

- Keep access door closed while on a platform to avoid falls.
- Always use proper personal protective equipment and proper clothing when using equipment. Failure to follow safety precautions can result in severe injury or death.

ST-0042-2

Maintain Equipment and Work Area



- Equipment is intended for the use of grain drying only. Any other use is a misuse of this equipment.
- The operating instructions in this manual pertain to the common cereal grains as indicated. When drying any other grain, contact GSI for additional recommendations.
- Be certain that capacities of auxiliary conveyors are matched to dryer metering capacities.
- On LP fired units, set pressure regulator to avoid excessive gas pressure applied to the burner during ignition and operation. Do not exceed maximum recommended drying temperatures.
- Equipment has sharp edges that can cause serious injury. To avoid injury, handle sharp edges with caution and use proper protective clothing and equipment at all times.
- All guards must be in place before and during operation. Images of guards removed in this manual are for illustration purposes only.
- Use caution when working around high-speed fans, gas burners, augers and auxiliary conveyors which can start automatically.
- Keep hands, feet, and clothing away from moving parts.
- Do not bypass any safety device or interlock.
- Do not enter the dryer or bin while it is operating.
- Do not operate in an area where combustible material will be drawn into the dryer.

ST-0034-2

Stay Clear of Hoisted Equipment

- Always use proper lifting or hoisting equipment when assembling or disassembling equipment.
- Do not walk or stand under hoisted equipment.
- Always use sturdy and stable supports when needed for installation. Not following these safety precautions creates the risk of falling equipment, which can crush personnel and cause serious injury or death.

ST-0047-1

Confined Space Hazards and Entry Procedures

- Note that the interior of this equipment is considered a confined space. Maintenance of this equipment can require access to the confined space.
- Access doors must be shut and locked except when access is required.
- Doors giving access to dangerous equipment must be safety interlocked.
- The following entry procedures must be followed:
  - Be aware of all possible hazards present inside the confined space and wear personal protective equipment (PPE) as needed.
  - Complete a permit to work and follow all permit required confined space entry procedures defined by the site manager.
  - Make sure that the area has been purged of any hazardous products or gases. Check the atmosphere for harmful gases or vapors with a suitable gas analyzer and make sure levels are safe before entering.
  - Do not smoke or use naked flames.
  - Lock out and tag out power supplies and fuel supplies to all equipment.
  - Do not work alone. Work in teams of at least three so that help is immediately available in the event of an emergency.
  - Confirm that all personnel have safely exited the equipment and tools have been recovered once work is complete.

ST-0055-1

Fall Hazard

- Ladders, stairways and platforms are for use by competent and trained personnel only. Do not allow children or other unauthorized persons to have access to the equipment.
- Access to the equipment must be restricted by the use of security fencing and lockable gates.
- Lower sections of ladders must be fitted with a lockable safety gate to prevent unauthorized access.
- Make sure that hot surfaces have had adequate time to cool before working on or in the equipment.
- Lock out and tag out power supplies and fuel supplies to all equipment.
- Do not attach lifting equipment to ladders or platforms.
- Do not go outside of the safety rails provided on elevated platforms.
- Do not work at heights during high winds, rain, snow, or ice storms.

ST-0056-1

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.

Date	*Employee Name*	*Supervisor Name*

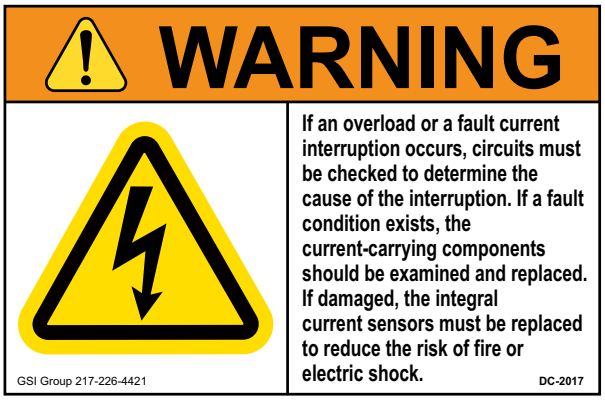
ST-0007

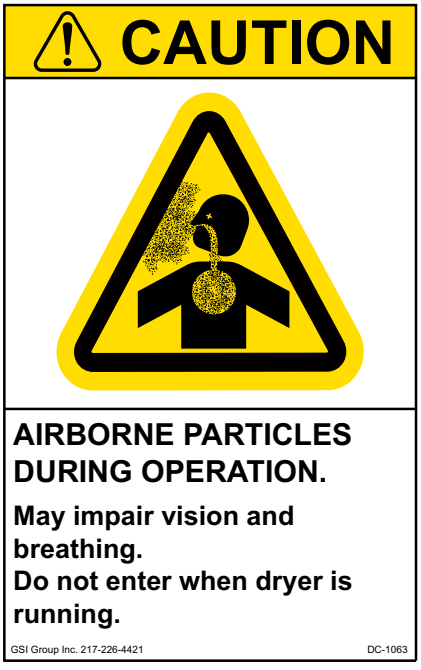
2. Decals

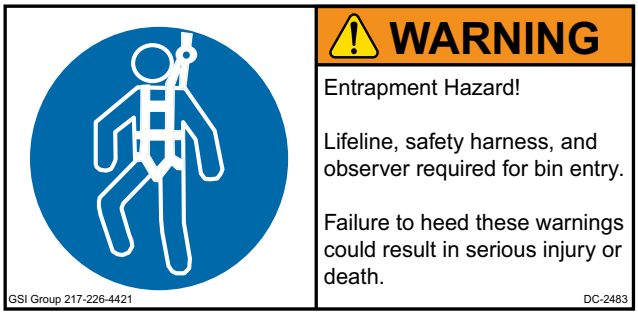
The safety decals on your equipment are safety indicators which must be carefully read and understood by all personnel involved in the installation, operation, service and maintenance of the equipment.

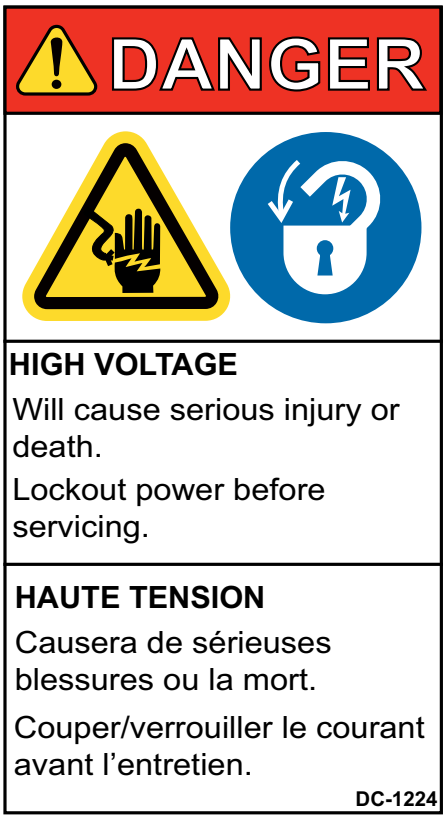
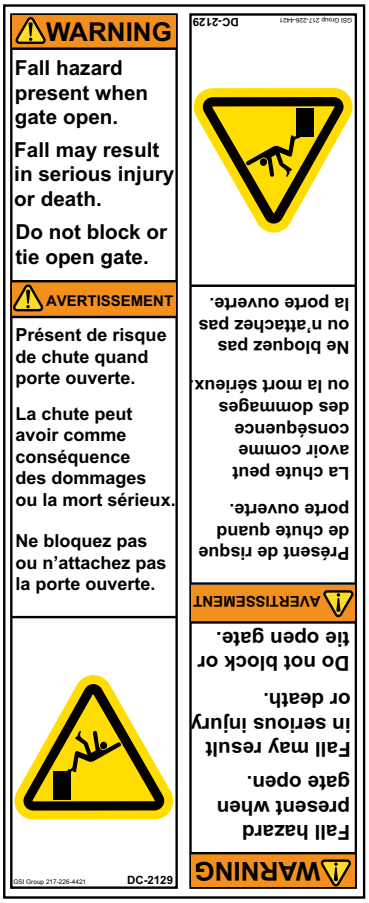
To replace a damaged of missing decal, contact us to receive a free replacement.

GSI Decals
1004 E. Illinois St.
Assumption, IL. 62510
Phone: 1-217-226-4421

Locations	Decal #	Decals	Description
Located on the platforms	**DC-2188**		**Decal, Danger Load Limit**
Located on the inside main power box door	**DC-2017**		**Decal, Fault Current Warning**
Located on the hopper service door	**DC-1060**		**Decal, Danger Rotating Drum**

Locations	Decal #	Decals	Description
Located on the heat section door	DC-1061		Decal, Warning Flame and Pressure
Located on the walk-in floor access ports to unload system	DC-1062		Decal, Danger, Do not Stand on Drum
Located on the outside of cool section door	DC-1063		Decal, Caution Airborne Part

Locations	Decal #	Decals	Description
Located on the outside of cool section door	DC-1064		Decal, Warning High Speed Belt
Located on the unload systems	DC-455		Decal, Danger Rotating Auger
Located on the access doors	DC-2483		Decal, Warning, Bin Access Entry

Locations	Decal #	Decals	Description
Located on the cooling access door and main power panel	DC-1224		Decal, Danger High-Voltage (LG)
Located on the ladders, stairways and platforms	DC-2129		Decal, Platform Safety Gate

NOTE: *This manual does not cover all the details to construct a Tower Dryer. This document covers the items the builders ask questions about the most. To review full step by step instructions, refer to PNEG-707. This is a reference guide only for the main connections points and layouts of the dryer.*

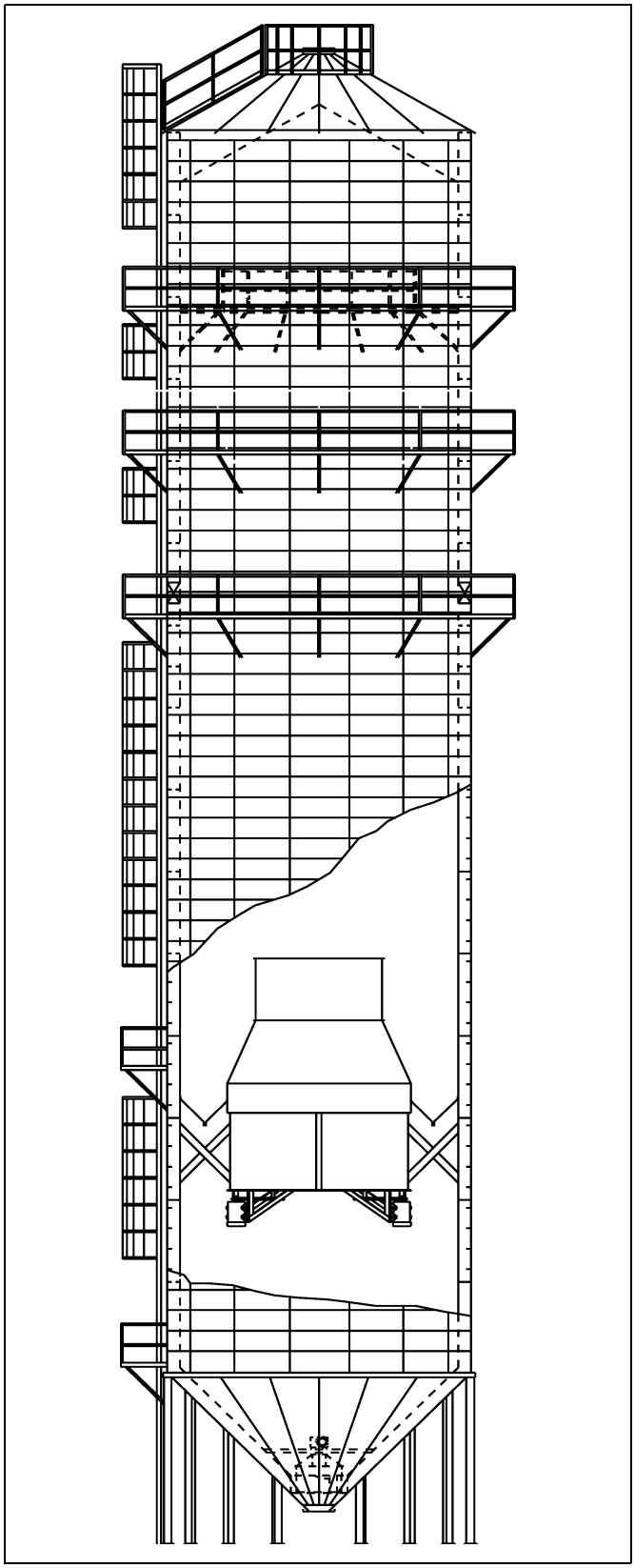


Figure 3A

Specifications	Models	
	Z-7060	G-7000
Drying CFM	337,500	337,500
Cooling CFM	168,750	168,750
Blower HP	3-125	3-125
Metering HP	2	-
Burner Capacity (BTU x 1000)	72,900	72,900
Average Heat (BTU x 1000)	41,918	41,918
Grain Column	12-3/4"	12-3/4"
Tower Diameter[1]	24'	24'
Overall Height [2]	117'-10"	123'-2"
Wet Holding	1,279	1,279
Heat Holding (BU)	4,452	4,452
Cool Holding (BU)	1,381	1,381
Unload Holding	287	287
Total Column Holding	5,833	5,833
Total Dryer Holding (BU)	7,399	7,522
BPH Capacity[3] (20% - 15%)	7,000	7,000
BPH Capacity[3] (25% - 15%)	4,200	4,200

Z-7060	G-7000
24' Diameter x 117'-10" Height 32' Diameter with Catwalks	24' Diameter x 121'-6" Height 32' Diameter with Catwalks +20" Inlet Pipe=123'-2" Height

Tower Dryer Model Z-7060 with Moisture Control

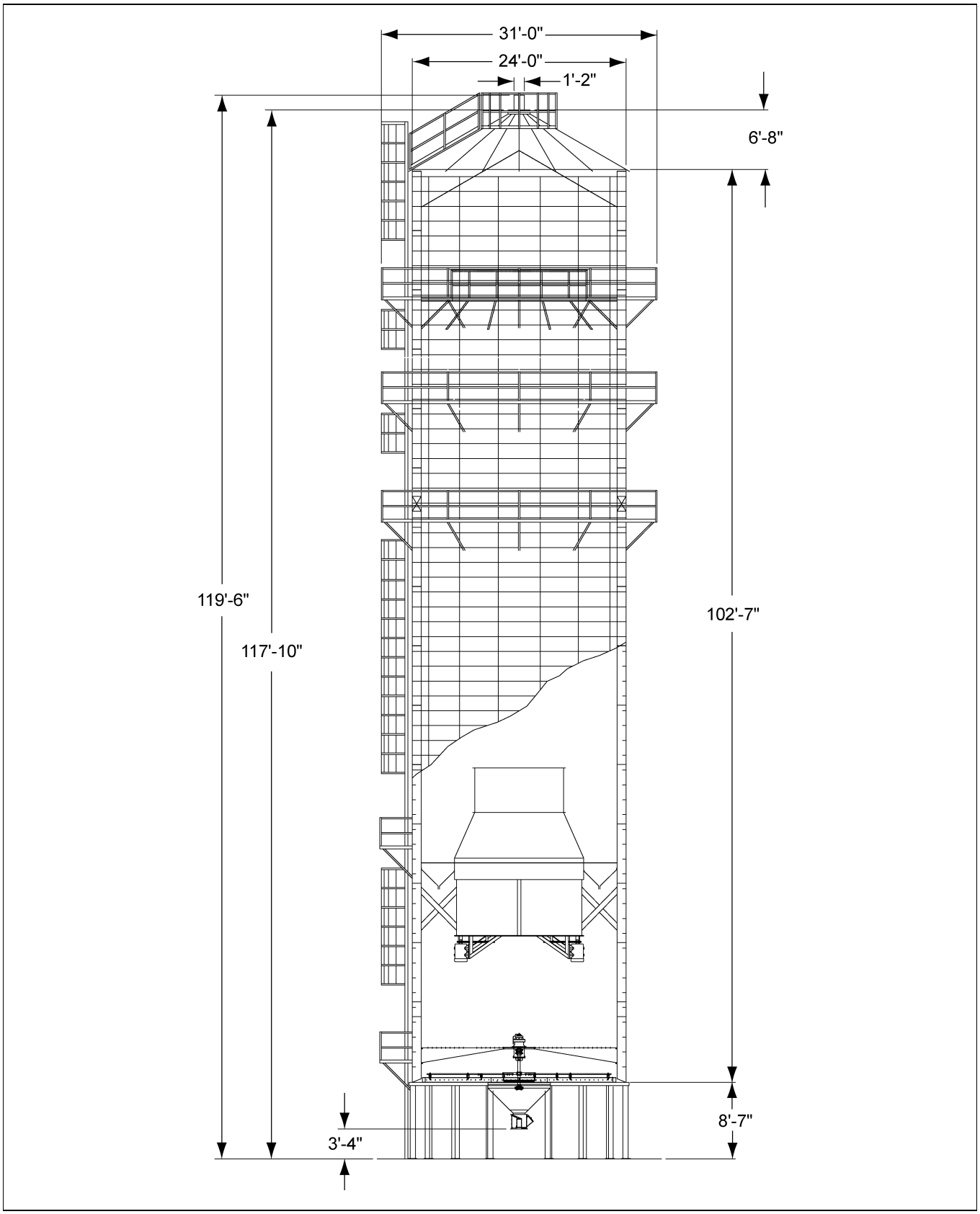


Figure 4A

Tower Dryer Model G-7000 with Moisture Control

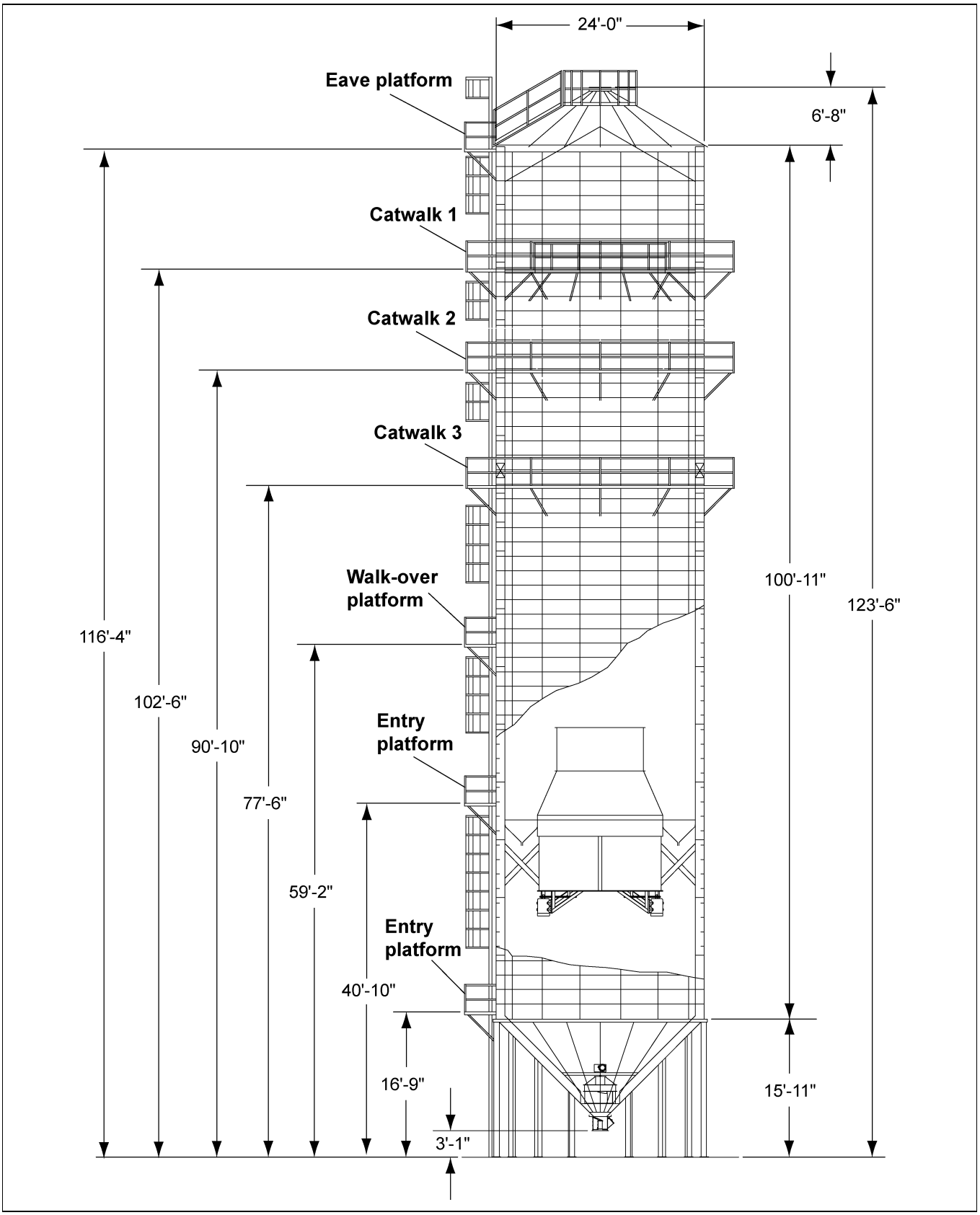


Figure 4B

Foundation Plan Model (Z-7060 and G-7000)

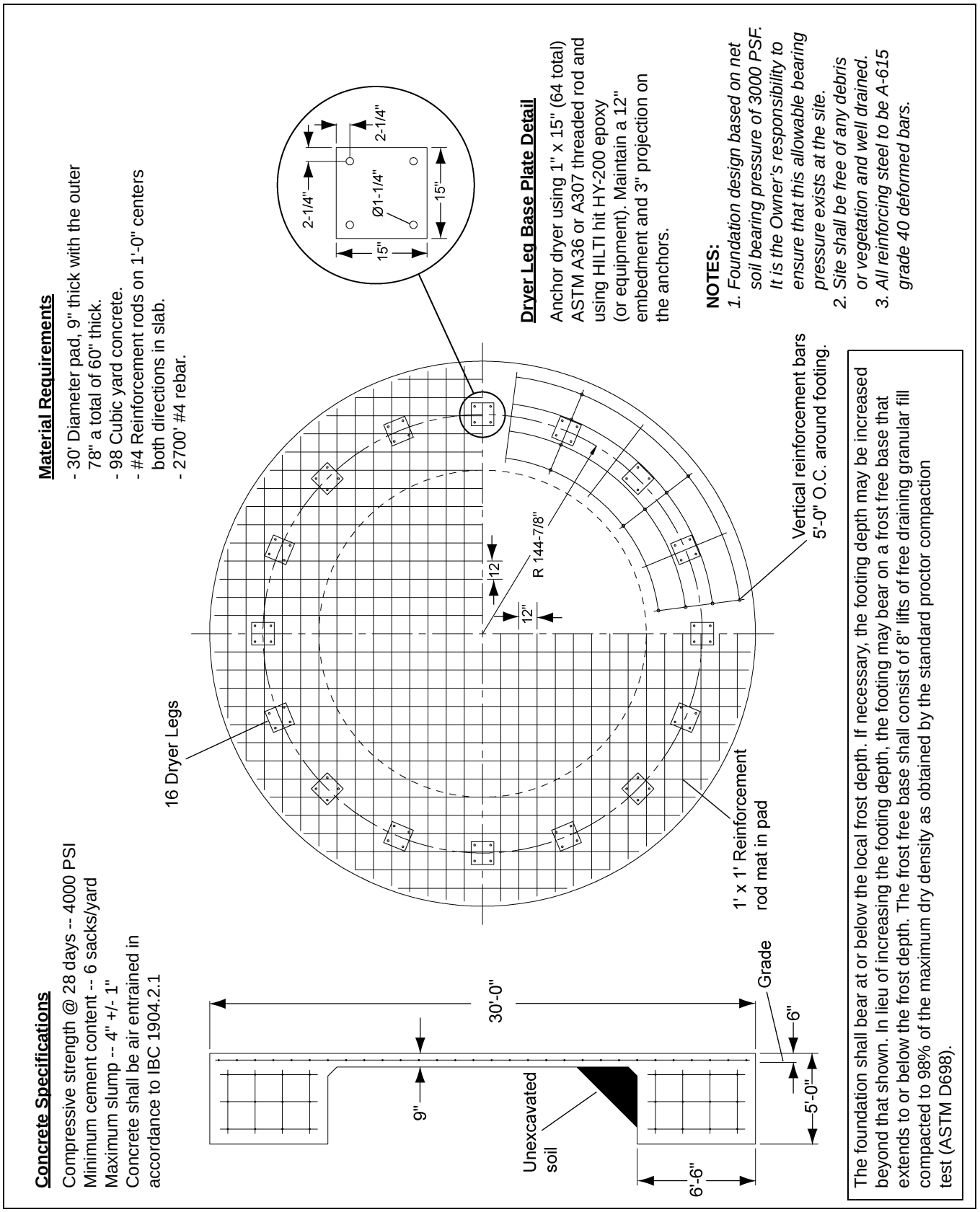
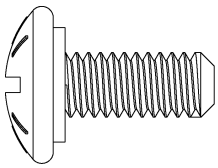
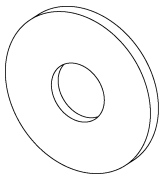
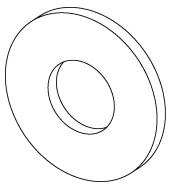
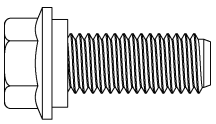
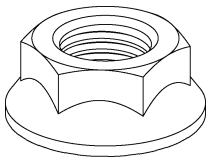
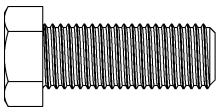
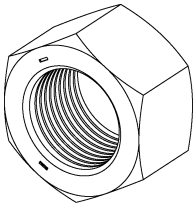
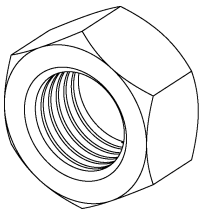
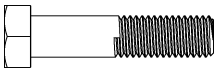
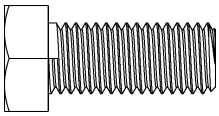
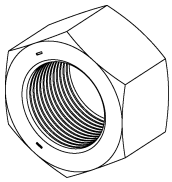
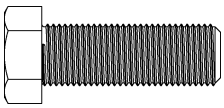
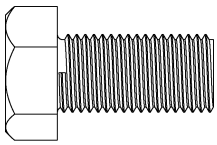
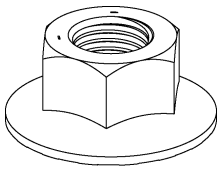
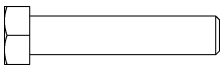
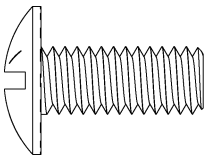
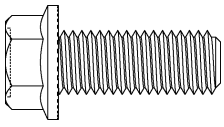
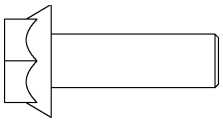
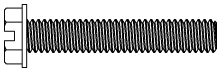
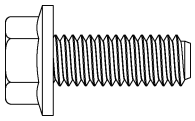
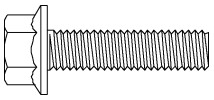
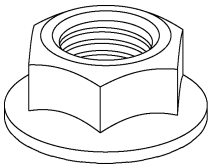
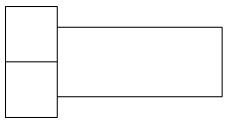
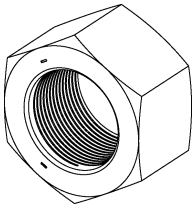
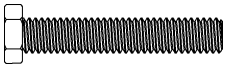


Figure 5A

Hardware Usage for 24' Dryers

Part #	Figure	Description	Usage
725-1003-5		Truss, Head Torx #14 x 3/4" L AB Poin	Cooling Floor to Rolled Channel and Cross Support
S-2121		Flat Washer 1/2" - 9/16" x 1-3/8" x 10-9/16" x 1-3/8" x 3/32" Type A Plated	Blower Supports, Clips, Leg X-Braces, Gearbox
S-248		Flat Washer 3/8" 7/16" I.D. 1" O.D. YDP	Rolled Channel
S-10260		Flange Bolt 5/16"-18 x 1" JS500 Grade 8 or Grade 8.2 Full Thread with Sealing Washer	Peak Walk Around to Roof, Roof ladder to Roof
S-3611		Flange Nut 5/16"-18 YDP Grade 2	At all 5/16" Galvanized Bolts
S-3728		Bolt, HHTB 1/2"-13 x 1-1/2" YDP Grade 8 or Grade 8.2	Blower X-braces
S-3729		Hex Nut 1/2"-13 YDP Grade 5	At all 1/2" Bolts
S-396		Hex Nut 5/16"-18 YDP Grade 2	Peak Walk Around to Roof, Roof ladder to Roof

Part #	Figure	Description	Usage
S-4108		Bolt, HHCS 5/8"-11 x 2-3/4" YDP Grade 8	Base Stiffner to Legs
S-4109		Bolt, HHTB 5/8"-11 x 1-1/2" YDP Grade 8	Leg Support Clip to Compression Channel
S-4110		Hex Nut 5/8"-11 YDP Grade 5	At all 5/8" Bolts
S-4329		Bolt, HHTB 5/8"-11 x 2" YDP Grade 8 or Grade 8.2	Dryer Leg Splice
S-4492		Bolt, HHCS 1/2"-13 x 1" YDP Grade 8 or Grade 8.2	Blower Supports, Blower Filler Pieces, Sweep Bearing Supts, Gearbox Plate
S-968		Flange Nut 3/8"-16 ZN Grade 5 Wide Flange	All 3/8" Bolts
S-6500		Bolt, HHCS 1/2"-13 x 2-1/2" ZN Grade 5	Gearbox Mounting
S-6620		Screw, MS 5/16"-18 x 3/4" THS ZN Clear Grade	Cooling Floor to Floor Supports
S-7447		Flange Bolt 5/16"-18 x 1" SS (Full Thread)	Outside Wall Screen, Vertical Seams. Outside Windows

Part #	Figure	Description	Usage
S-7470		Flange Bolt 5/16"-18 x 1" ZN Grade 5	Inside Wall Sheets, Inside Windows, Rolled Channels, Burner Housing and Reducer, Grain Floor, Grain Floor Supports, Discharge Hopper, Plenum Roof Sheets, Plenum Cross Rafters
S-7581		Screw, SDS #12"-14 x 1" HWH ZN Tek	Heat Section Door
S-7485		Flange Bolt 3/8"-16 x 1" JS500 Grade 8 or Grade 8.2	Vertical Channel Splices Plates, All Catwalk Clips to Channels, Base Stiffner to Channels, Hopper Support Legs, Plenum Eave Channel, Plenum Roof Rafters
S-7928		Flange Bolt 3/8"-16 x 1-1/2" JS500 Grade 8	Tower Dryer Lifting Clips
S-8452		Flange Nut 5/16"-18 SS Waxed	All 5/16" Stainless Bolts
S-8956		Flange Bolt 5/16"-18 x 3/4" SS	Outside Wall Screen, Horizontal Seams
S-234		Hex Nut 3/4"-10 ZN Grade 5, Zinc Plated	At all 3/4" Bolts
S-8387		Bolt, HHCS 3/4"-10 x 2-3/4" ZN Grade 8	Blower Motors

Jig Clip Positions for 24' Diameter Dryer Models

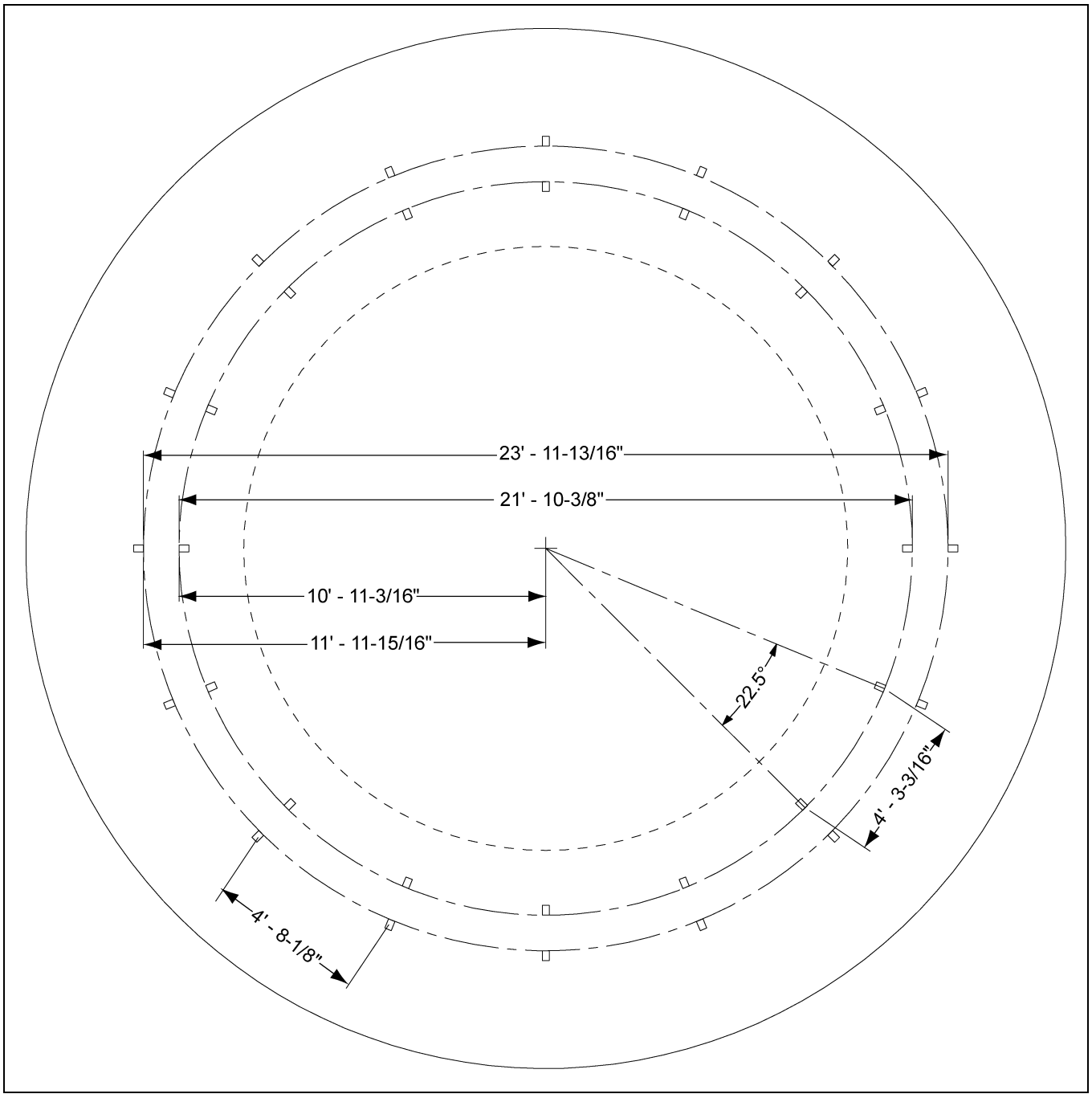


Figure 7A

Installing the Jig Clip

1. Gather a solid piece of material (steel or wood) that will span the radius of the dryer. *(See Figure 7B.)*

Figure 7B

2. Install a screw through one end of the material. *(See Figure 7C.)*

Figure 7C

3. Measure from the point of the screw down the length of the material the exact distance of the inner radius and make a mark.
4. Install a screw through the material at the mark. *(See Figure 7D.)*

Figure 7D

5. Measure the diameter of the concrete pad to find the radius and mark the middle of the concrete pad in two (2) directions to make an X.

6. Place tape measure at the center of the pad and measure around the concrete pad to double check the center is accurately located. *(See Figure 7E.)*

Figure 7E

7. Place the point of one screw in the scribe on the center of the concrete pad and have one person press on the end to keep the screw on the center.

8. Have another person move the scribe around the concrete pad, pushing down hard enough to scribe into the concrete. *(See Figure 7F.)*

Figure 7F

9. Mark on the concrete where the DC, gas, power, unload and ladder will be located. *(See Figure 7G.)*

   NOTE: *This will show you how best to position the tower clips to avoid interfering with the equipment that will be installed later, like the tower unload system.*

Figure 7G

10. Measure the inside chord distance along the scribed diameter and mark the locations, making sure that they are positioned so as not to interfere with the equipment that will be installed later. *(See Figure 7H.)*

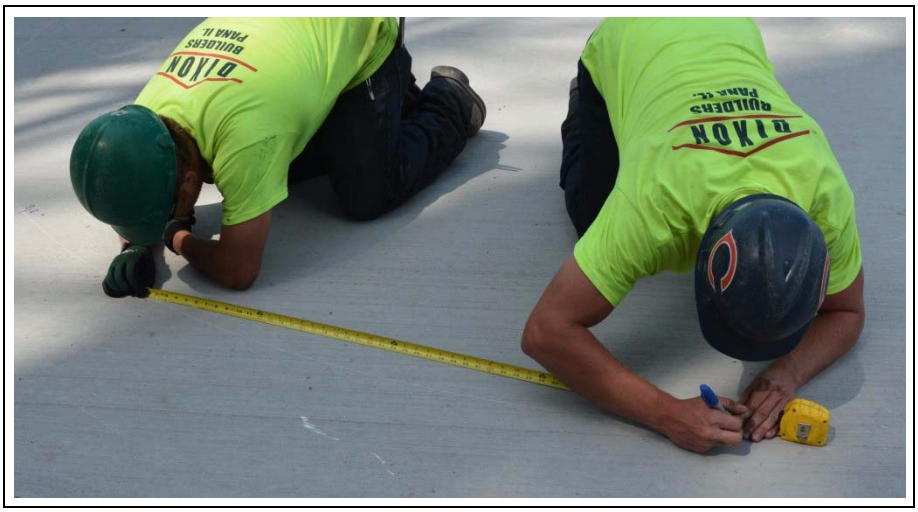


Figure 7H

11. Stretch a string from the center to each mark on the diameter and make a small perpendicular mark across on the outside of the diameter and also one 12" from the diameter. *(See Figure 7I.)*

Figure 7I

12. Place the jig clips centered on the perpendicular mark with the edge on the diameter mark.
13. Drill the hole through the concrete using the jig clip as a guide. *(See Figure 7J.)*

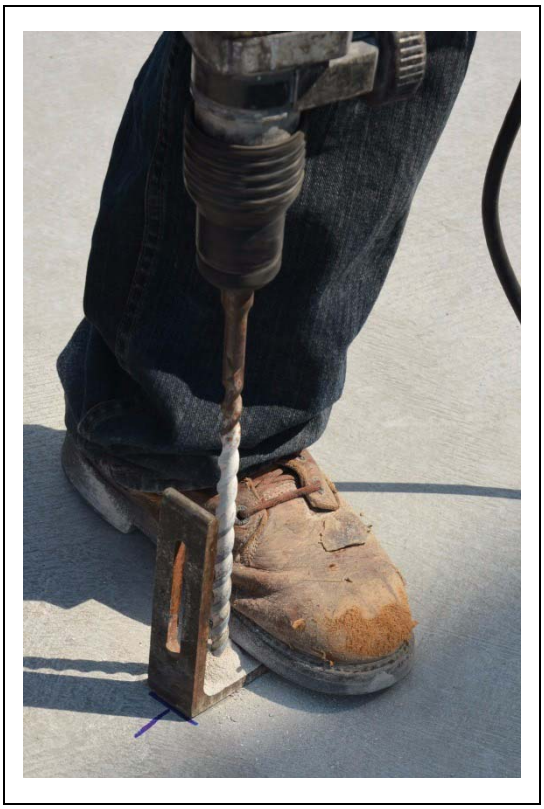


Figure 7J

14. Install the jig clip to the concrete using an expansion bolt. *(See Figure 7K.)*

Figure 7K

Sheet Layout (Z-7060)

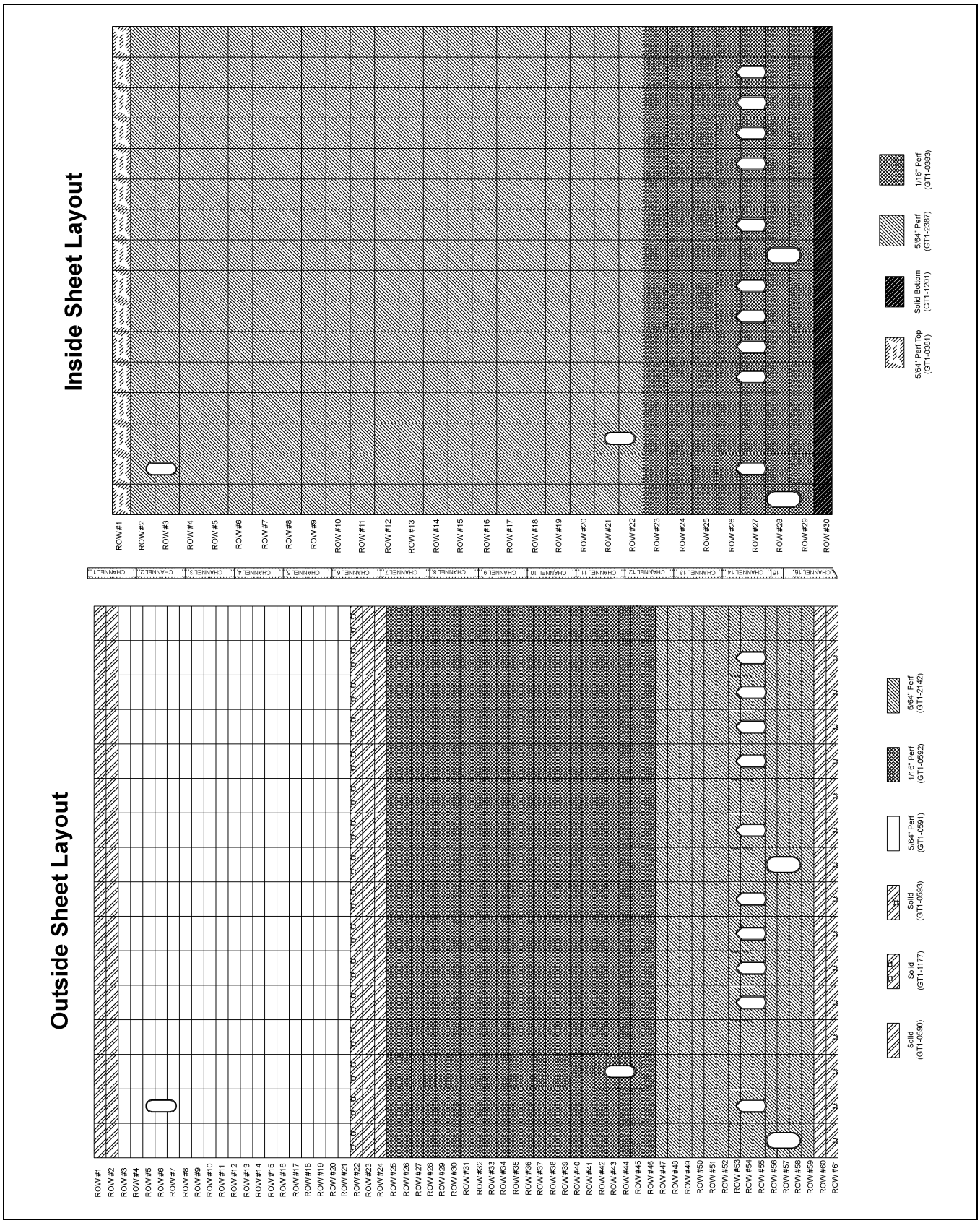


Figure 8A

Clip Placement (Z-7060 and G-7000) Channels 1 to 3

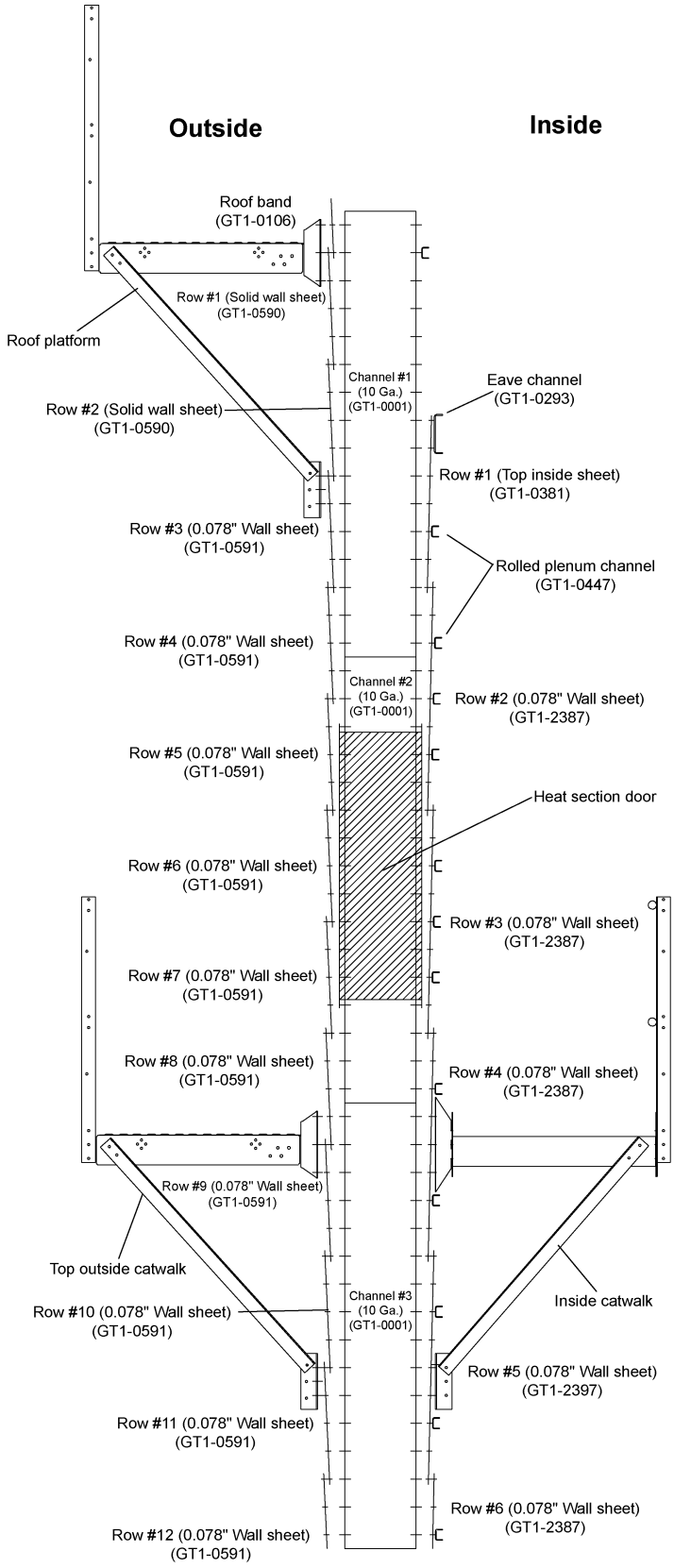


Figure 9A

Clip Placement (Z-7060 and G-7000) Channels 4 to 7

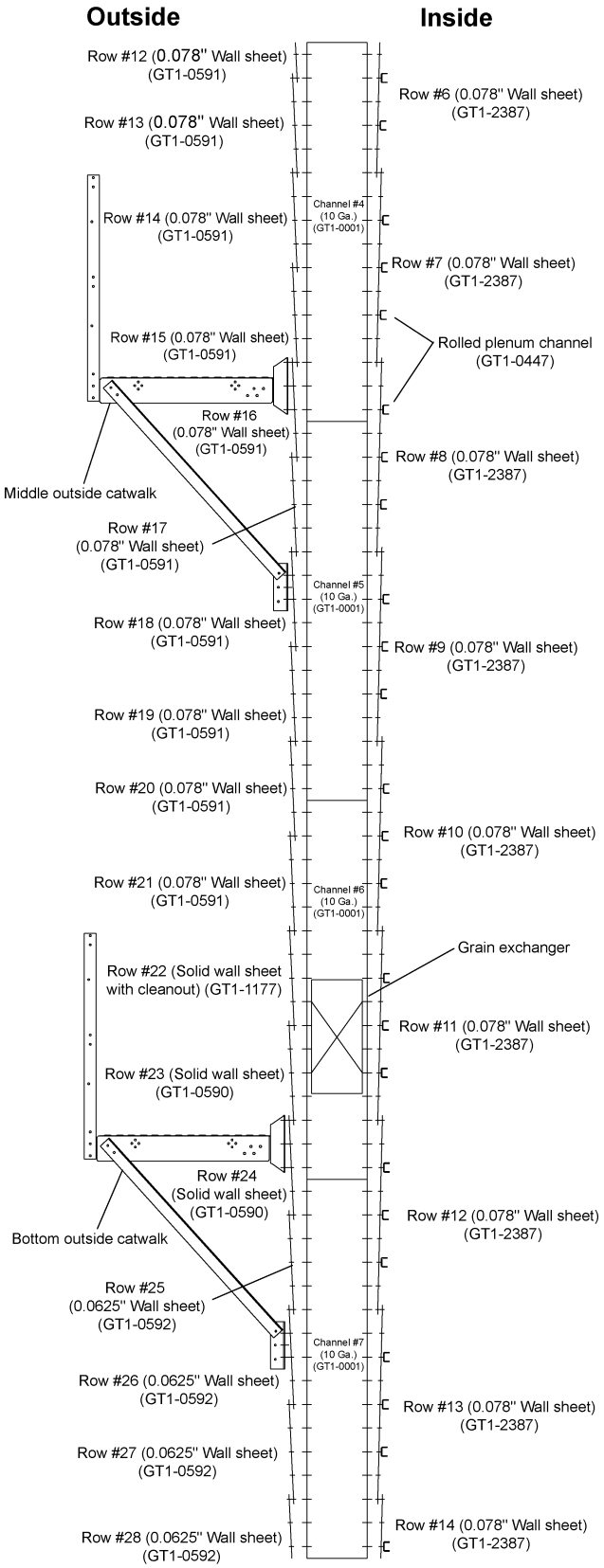


Figure 9B

Clip Placement (Z-7060 and G-7000) Channels 8 to 10

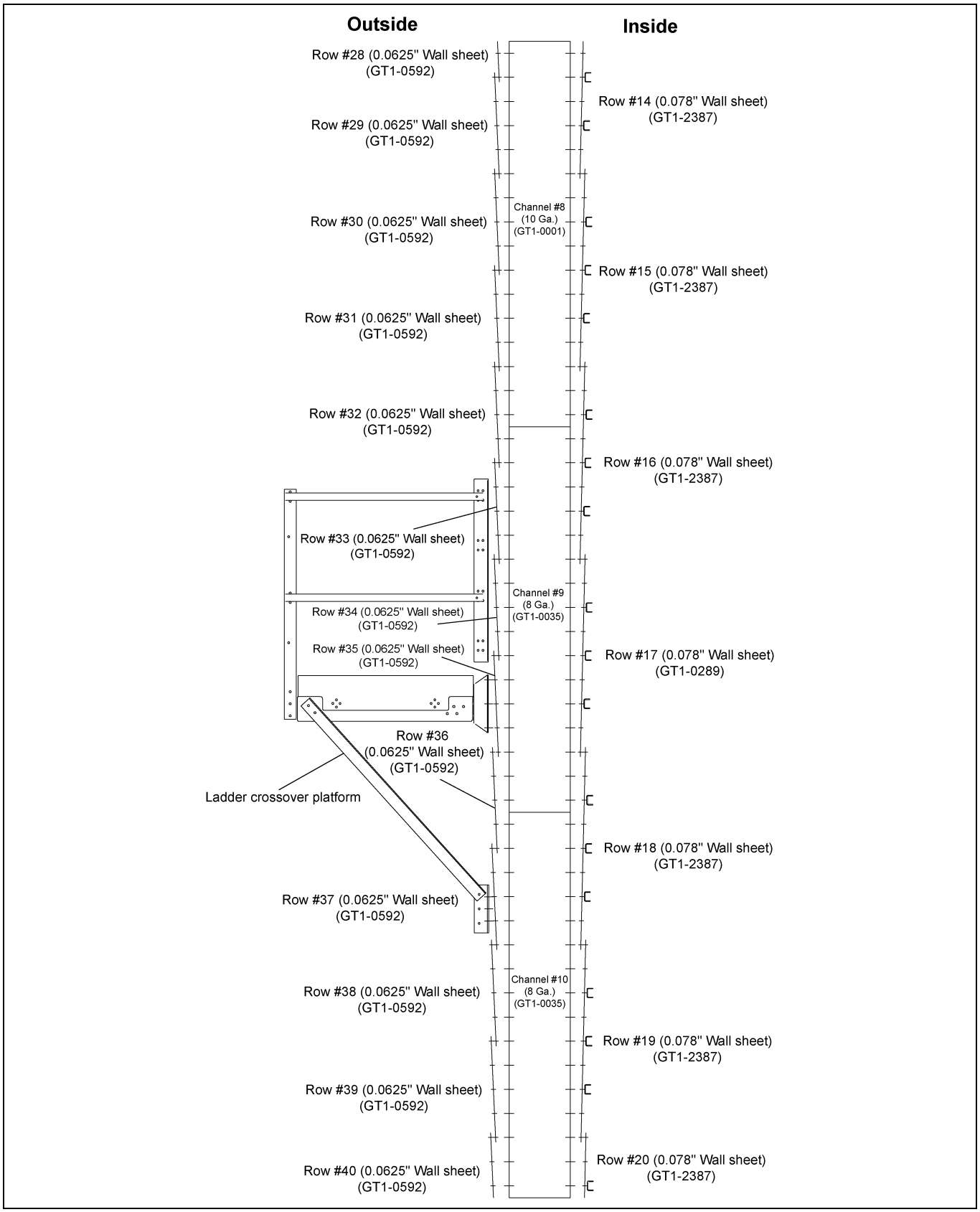


Figure 9C

Clip Placement (Z-7060 and G-7000) with ESI Blowers Channels 11 to 13

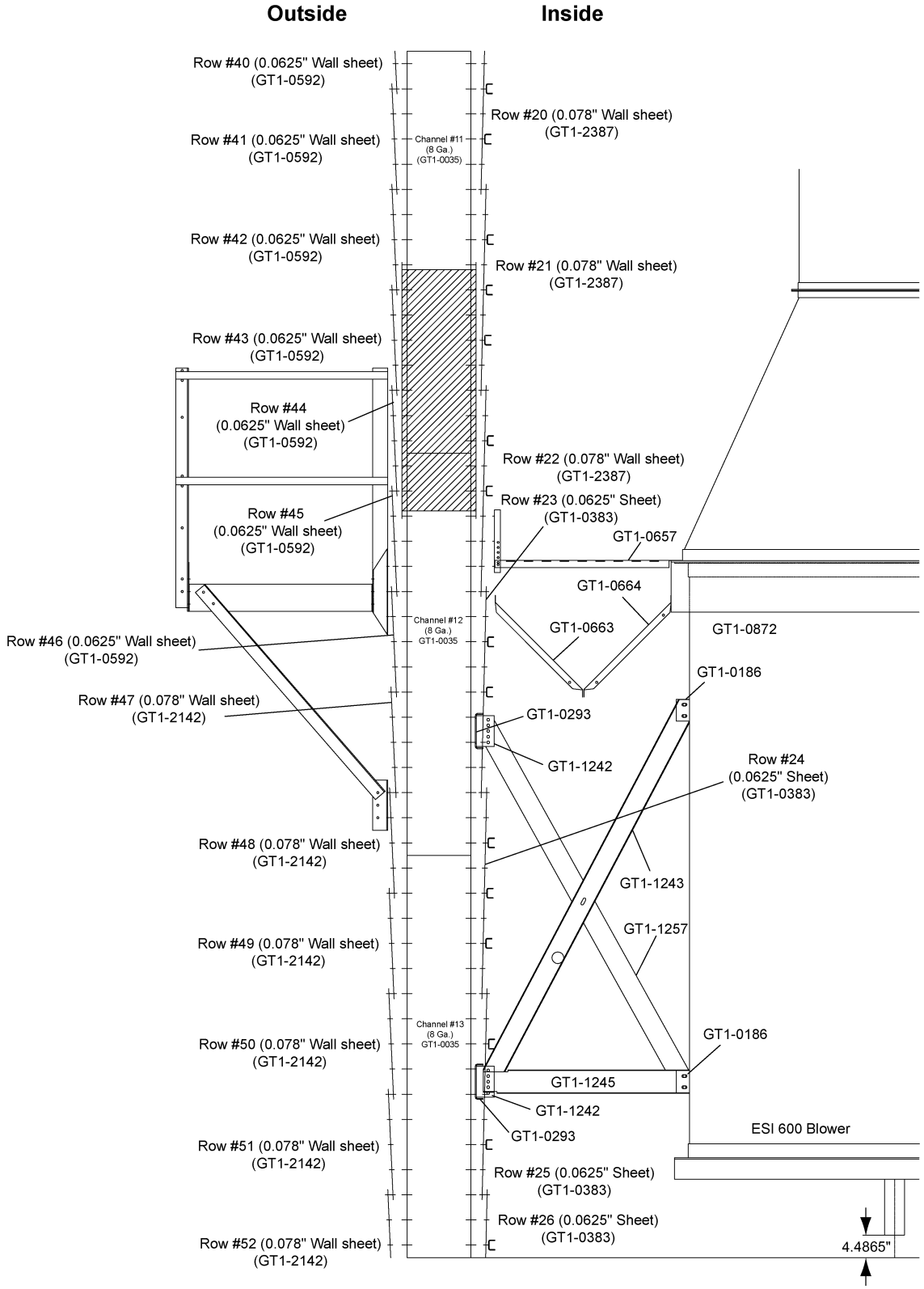


Figure 9D

Clip Placement (Z-7060) Channels 14 to 16

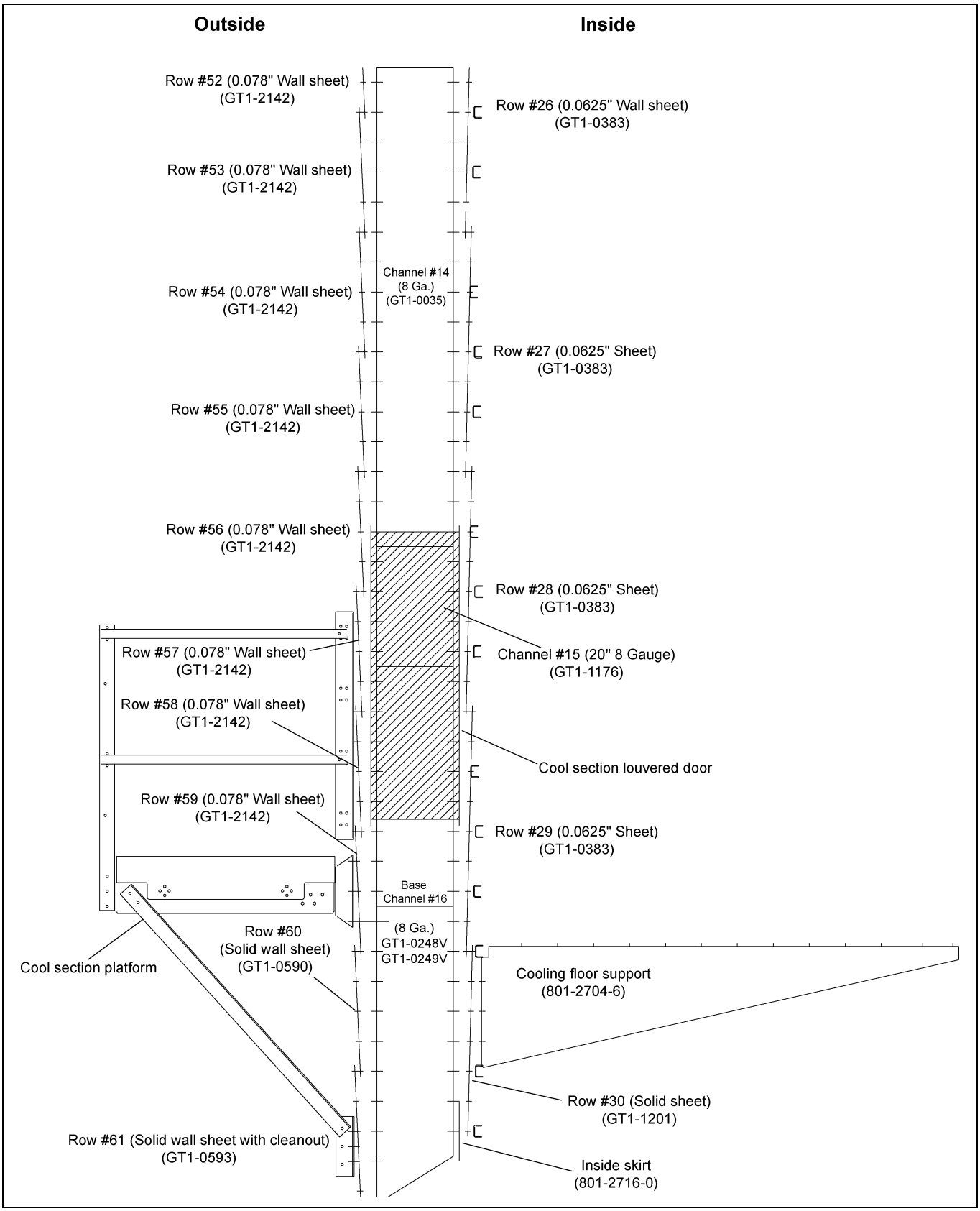


Figure 9E

Clip Placement (G-7000) Channels 14 to 16

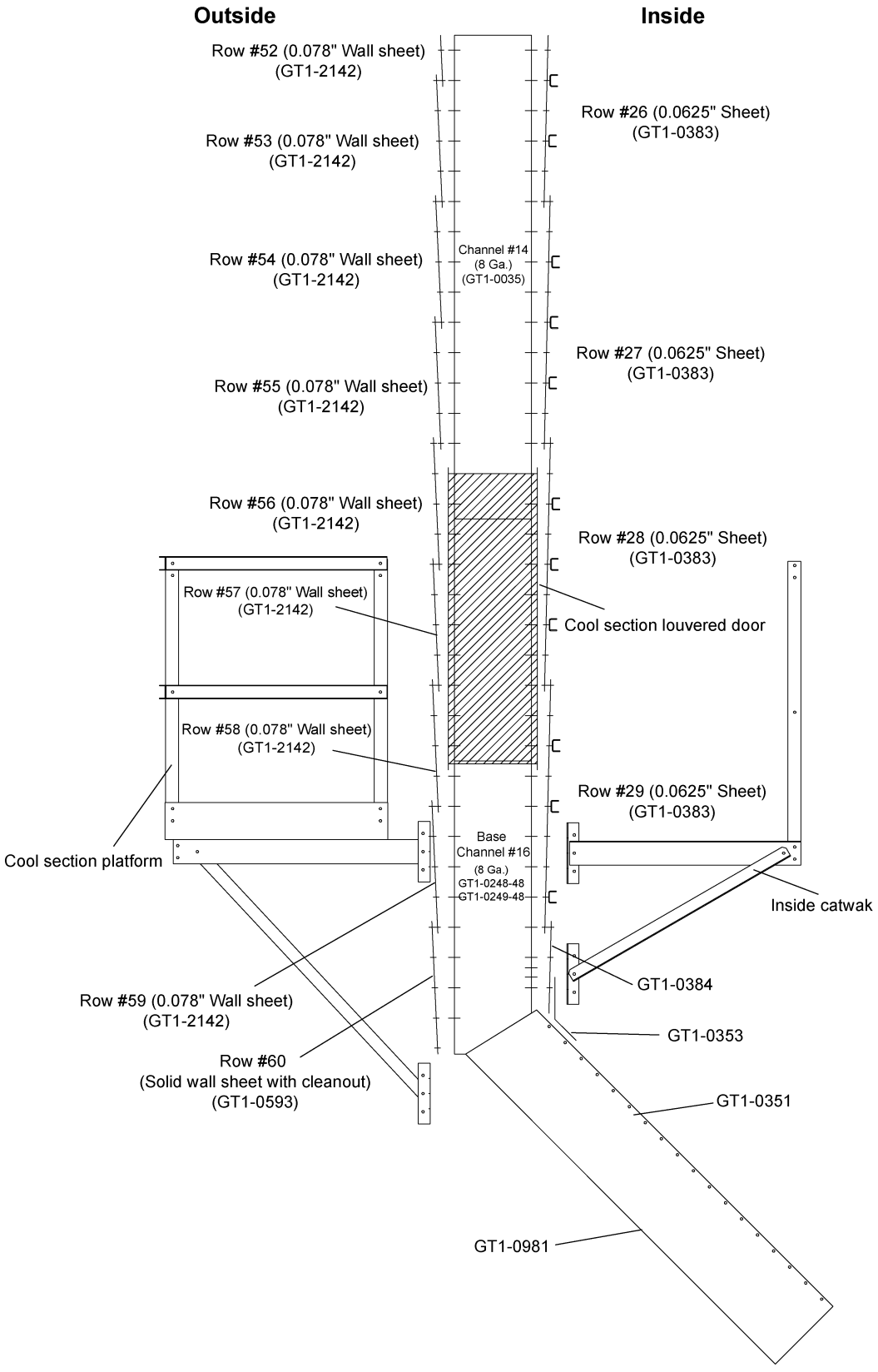


Figure 9F

Plenum Roof

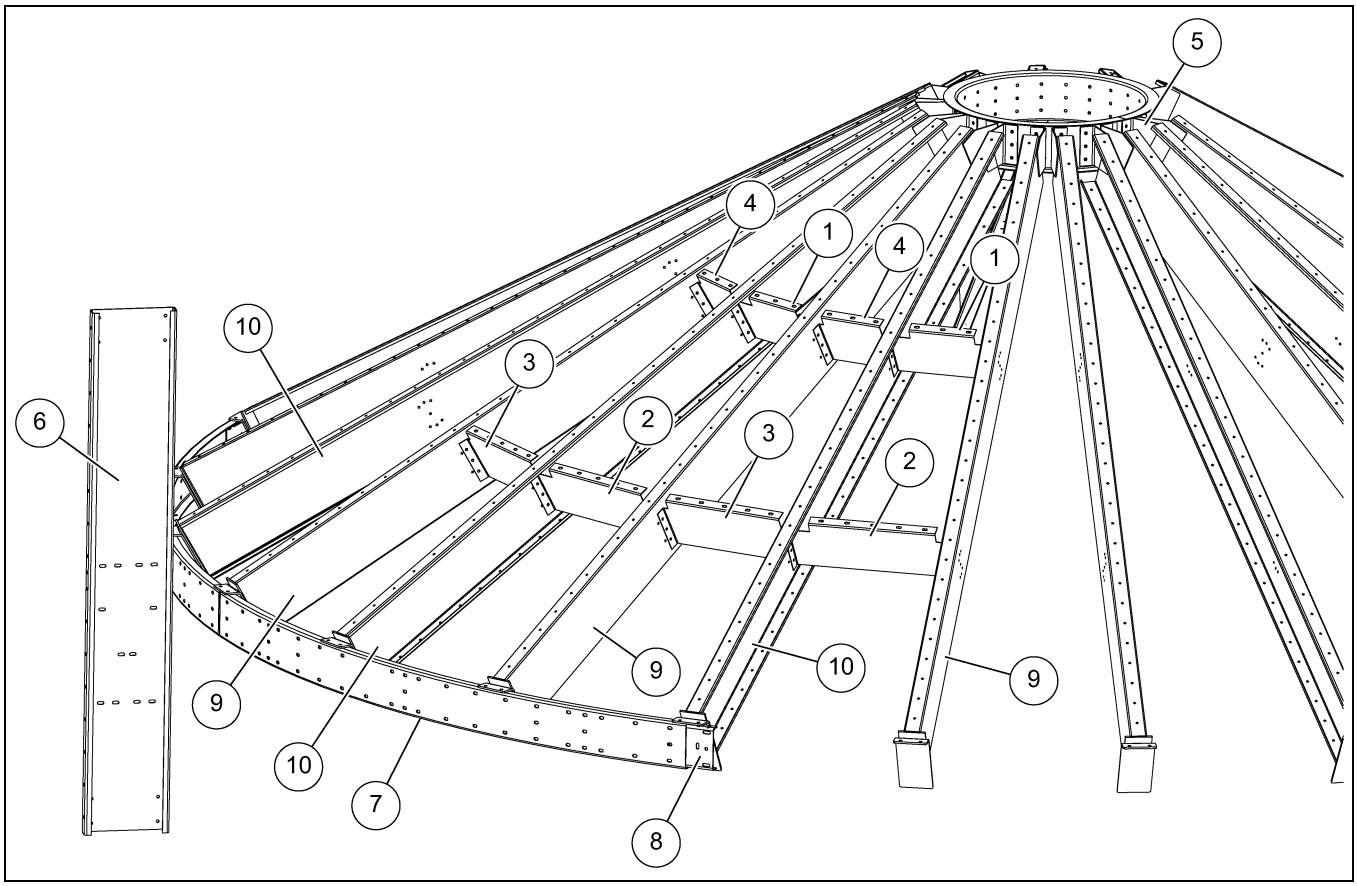


Figure 10A

Ref #	Part #	Description	Qty
1	GT1-0300	Crossmember, Plenum Long Top - 24' 30°	12
2	GT1-0301	Crossmember, Plenum Long Bottom - 24' 30°	12
3	GT1-0299	Crossmember, Plenum Short Bottom - 24' 30°	12
4	GT1-0298	Crossmember, Plenum Short Top - 24' 30°	12
5	GT1-0291	Collar, Plenum Roof Center - 24'	1
6	GT1-0001	Vertical Channel - 80" 10 Gauge	16
7	GT1-0293	Plenum Roof Eave Channel 24' Dryer	8
8	GT1-0550	Plenum Roof Eave Splice Universal	8
9	GT1-0303	Plenum Rafter Weldment - R.H. - 24' 30°	12
10	GT1-0302	Plenum Rafter Weldment - L.H. - 24' 30°	12

Plenum Eave Channels

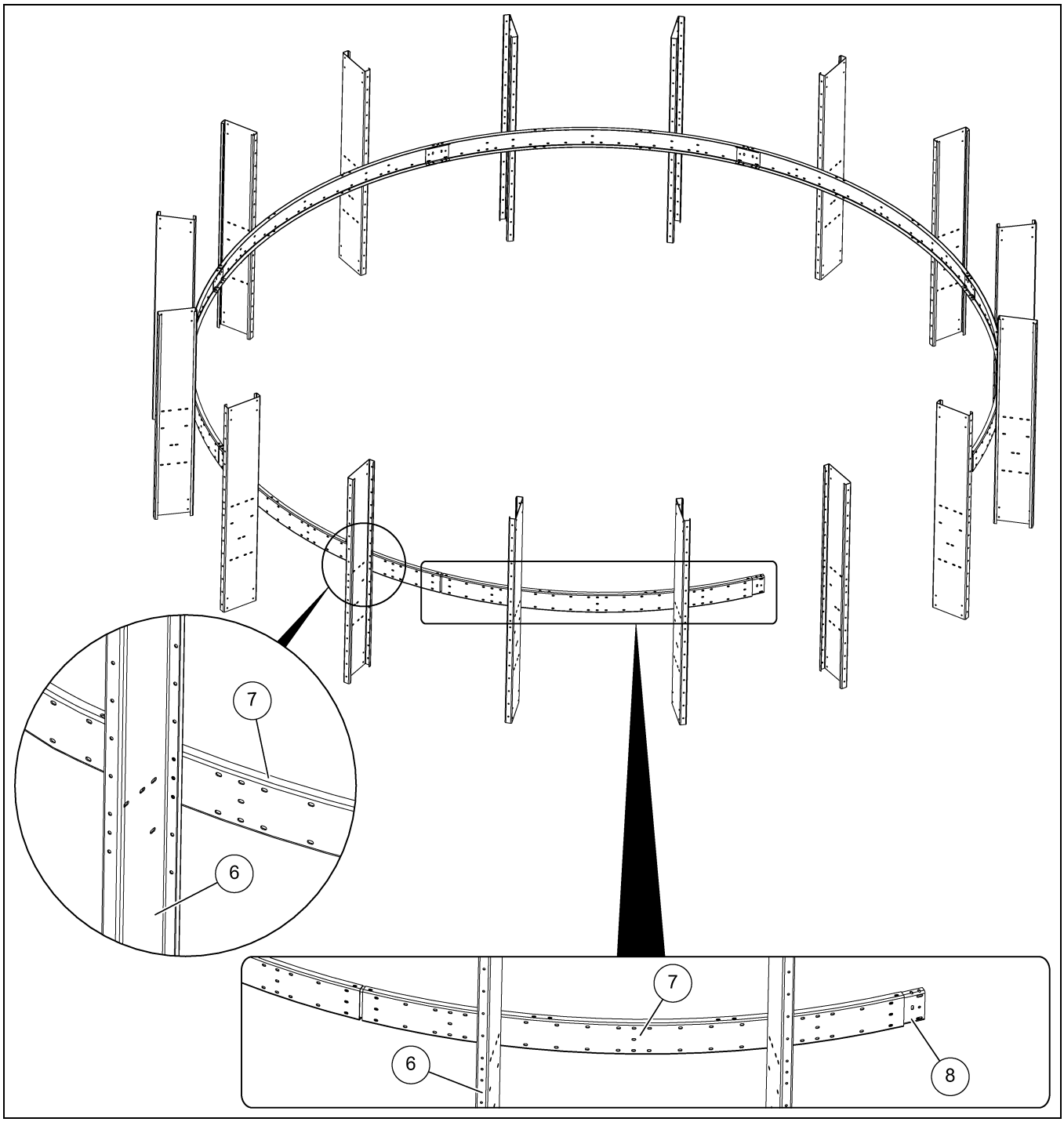


Figure 10B

Ref #	Part #	Description	Qty
6	GT1-0001	Vertical Channel - 80" 10 Gauge	16
7	GT1-0293	Plenum Roof Eave Channel 24' Dryer	8
8	GT1-0550	Plenum Roof Eave Splice Universal	8

Plenum Center Cone and Roof Sheets

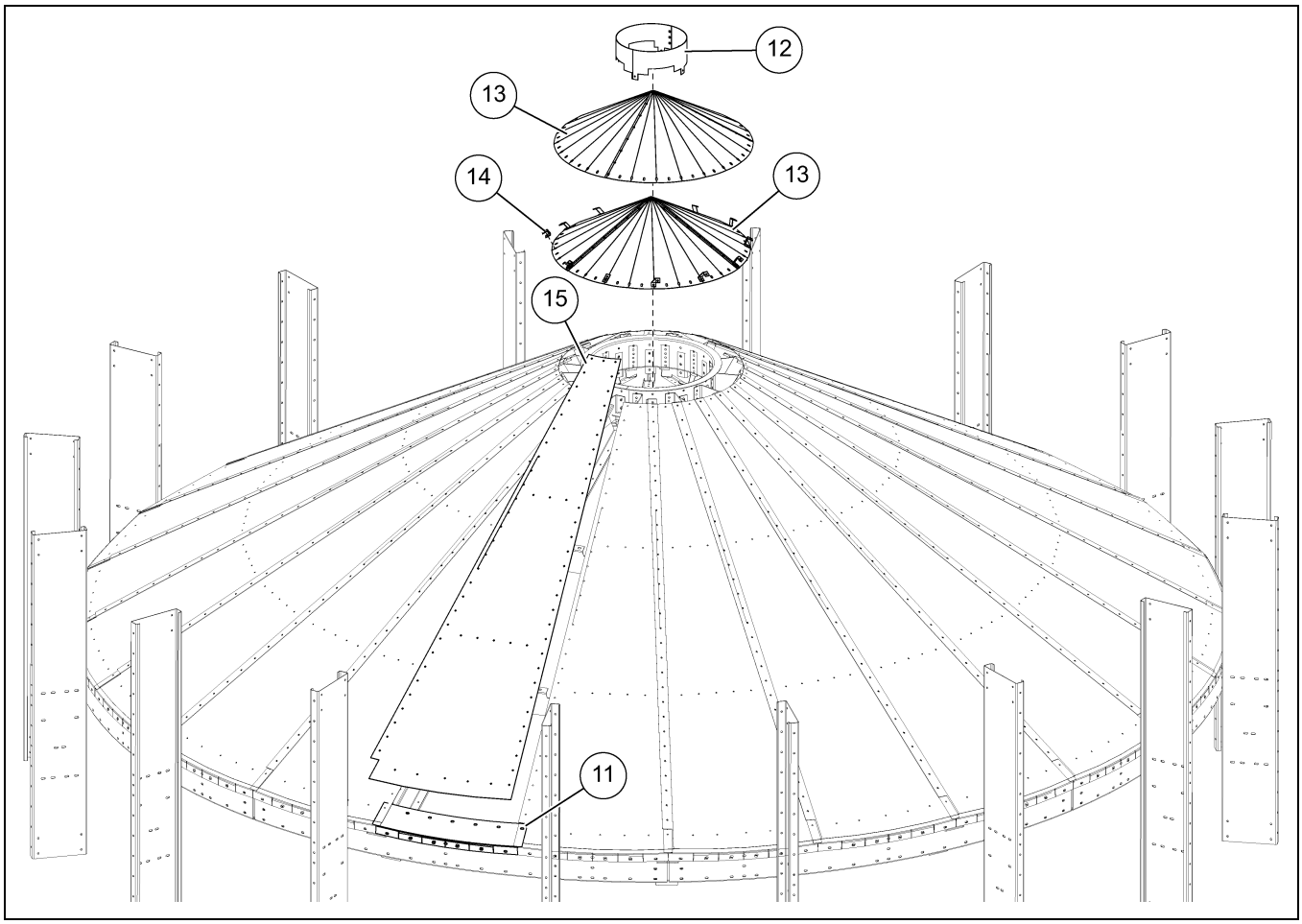


Figure 10C

Ref #	Part #	Description	Qty
11	GT1-0295	Plenum Roof Flashing 24' Dryer	24
12	GT1-0071	Plenum Cone Fill Hopper	1
13	GT1-0292	Cone, Plenum Roof Center - 24' 30°	2
14	GT1-0237	Center Cone Offset	12
15	GT1-0296	Plenum Roof Sheet - 24' 30°	24

Roof Band and Roof Clips

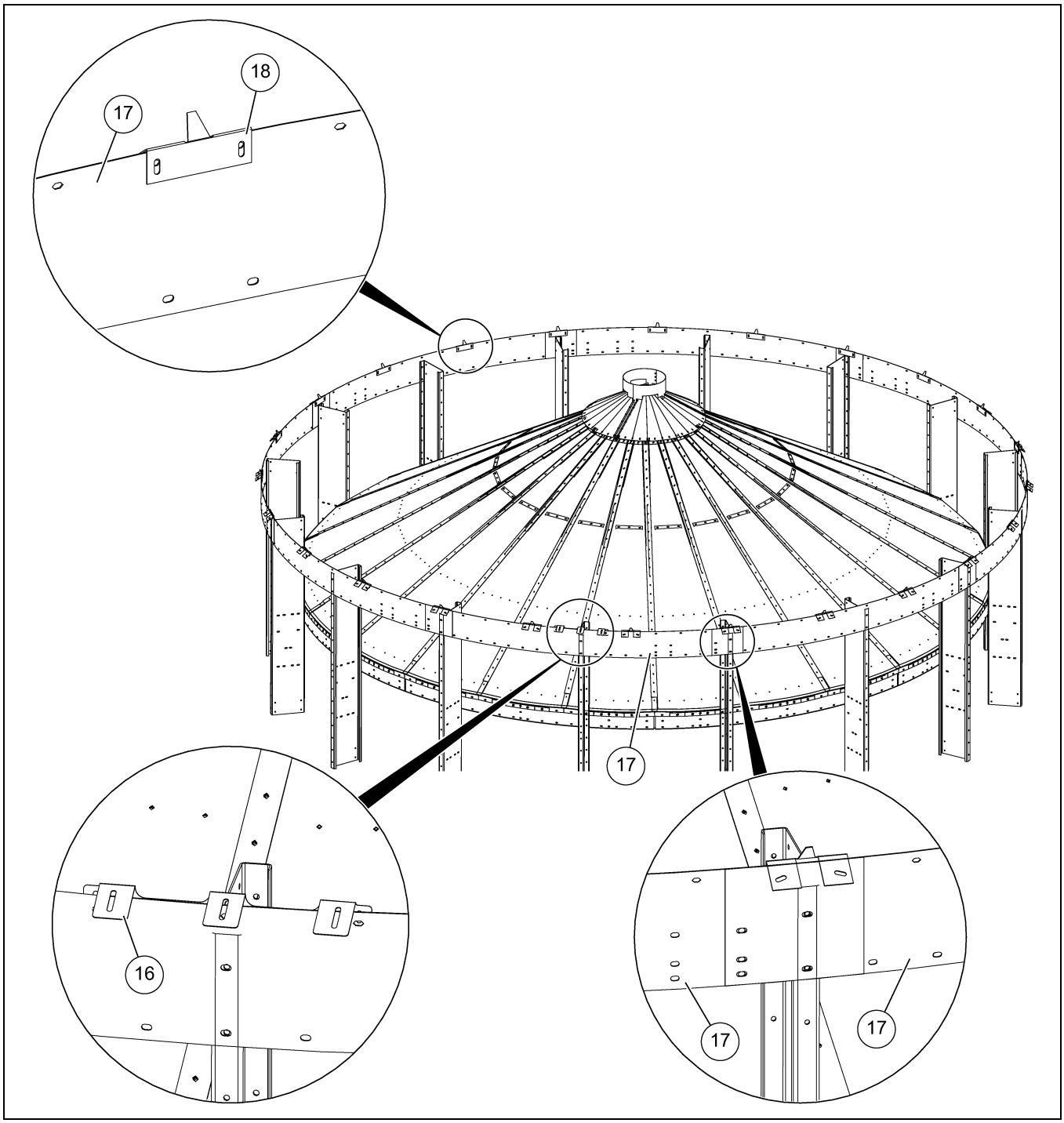


Figure 10D

Ref #	Part #	Description	Qty
16	CTR-1183	Intermediate Eave Clip	24
17	GT1-0106	Roof Band	8
18	GT1-0060	Eave Clip	24

Installing the Roof Flashing

The roof flashing will seal the area between the center collar and the roof panels. The flashing pieces are assembled to the center collar before attaching the roof panels to the flashing.

1. Apply caulking (4) to the center collar (1) where the flashing will be placed.
2. Assemble the flashing (5) pieces together with the center collar (1) using 5/16" flange bolts (2) and 5/16" flange nuts (3). *(See Figure 11A.)*

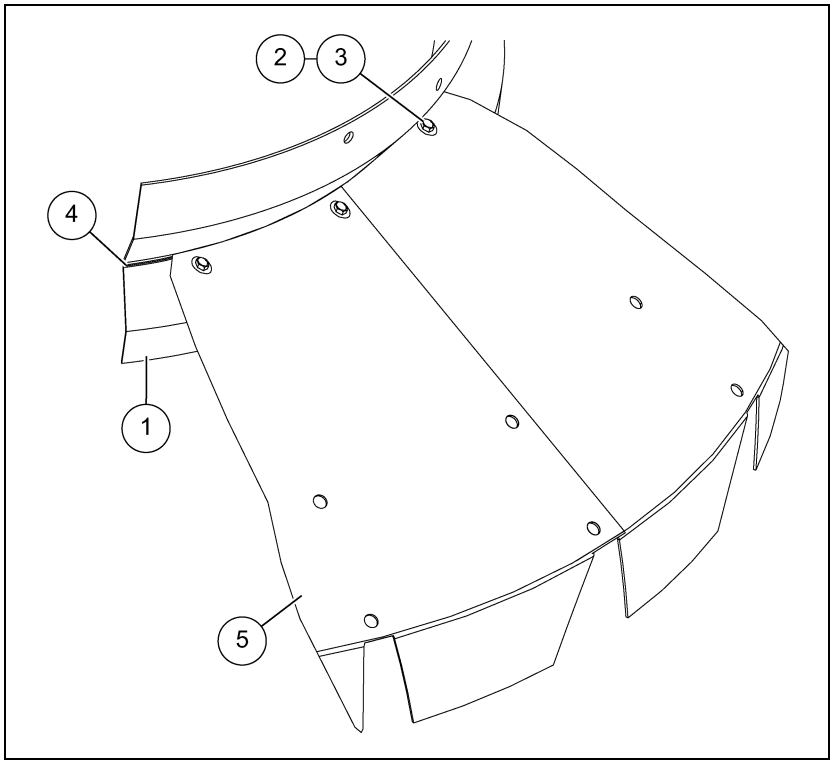


Figure 11A *Roof Flashing (for 24' Diameter Bins)*

Ref #	Part #	Description
1	CRP-4608	Center Collar
2	S-10260	5/16" x 1" Flange Bolt with Sealing Washer
3	S-3611	5/16" Flange Nut
4	S-4458	Caulking
5	CTR-0641	24' Roof Flashing

Installing the Roof Panels

1. Place the center collar above the plenum roof center.
2. Install three roof panels evenly spaced around the center collar (1) and install the roof sheets to the roof clips.
3. Install the intermediate panels making sure to lap them counterclockwise until all panels are in place.

NOTE: ***Do not tighten the bolts until the roof is completely assembled. Make sure to overlap the adjacent panels in counterclockwise direction as shown in Figure 11B.***

NOTE: ***Do not install bolts onto the holes for roof ring locations until the roof rings are installed. See roof ring instructions on Page 45.***

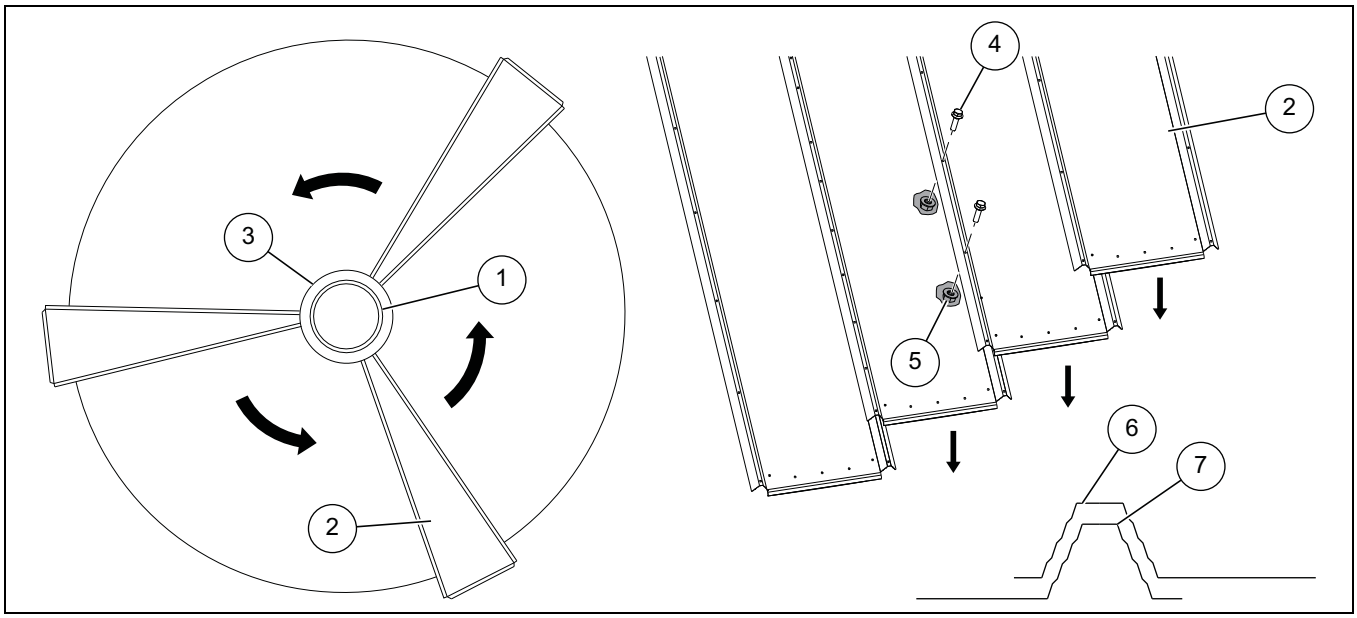


Figure 11B *Roof Panels Installation Direction*

Ref #	Part #	Description
1	CRP-4608	Center Collar
2	CTR-0382	Roof Panel
3	CTR-0641	24' Roof Flashing
4	S-10260	5/16" x 1" Flange Bolt with Sealing Washer

Ref #	Part #	Description
5	S-3611	5/16" Flange Nut
6		Upper Rib
7		Lower Rib

4. Install the eave clips (8) and intermediate eave angle (10) on the top sidewall with the 5/16" flange bolts (4) and 5/16" flange nuts (5).

NOTE: *The intermediate eave angle (10) are installed between two eave clips (8).*

5. Fasten the roof panels (2) to intermediate eave angle (10) on the eave end and to the roof flashing (3) on the peak end.

NOTE: *When installing the roof panels (2), take into consideration placing the manway for ease of access to the sidewall and roof steps (9).*

6. Install the roof channels (14) under the ribs of the roof panels (2) where the roof steps (9) are to be installed.

NOTE: *All roof channels (14) are installed starting with the second hole in the roof rib (7) from the bottom (roof eave).*

Roof Panel Instructions for 24' Tower Dryers

NOTE: *Make sure to install the roof steps (9) when assembling roof panels (2). When assembling the roof steps (9), use 5/16" x 1-1/4" bolts with a flat top washer on top of the slot and an extra neoprene washer (11) between the roof and the roof step (9). This will ensure a more protective seal against moisture.*

NOTE: *For 24' diameter bins an additional roof channel (14) must be installed under the ribs of the roof panel where the roof steps are to be installed. Start the roof channel (14) assembly using the second hole in the roof panel (2) rib from the bottom (roof eave). (See Figure 11C.)*

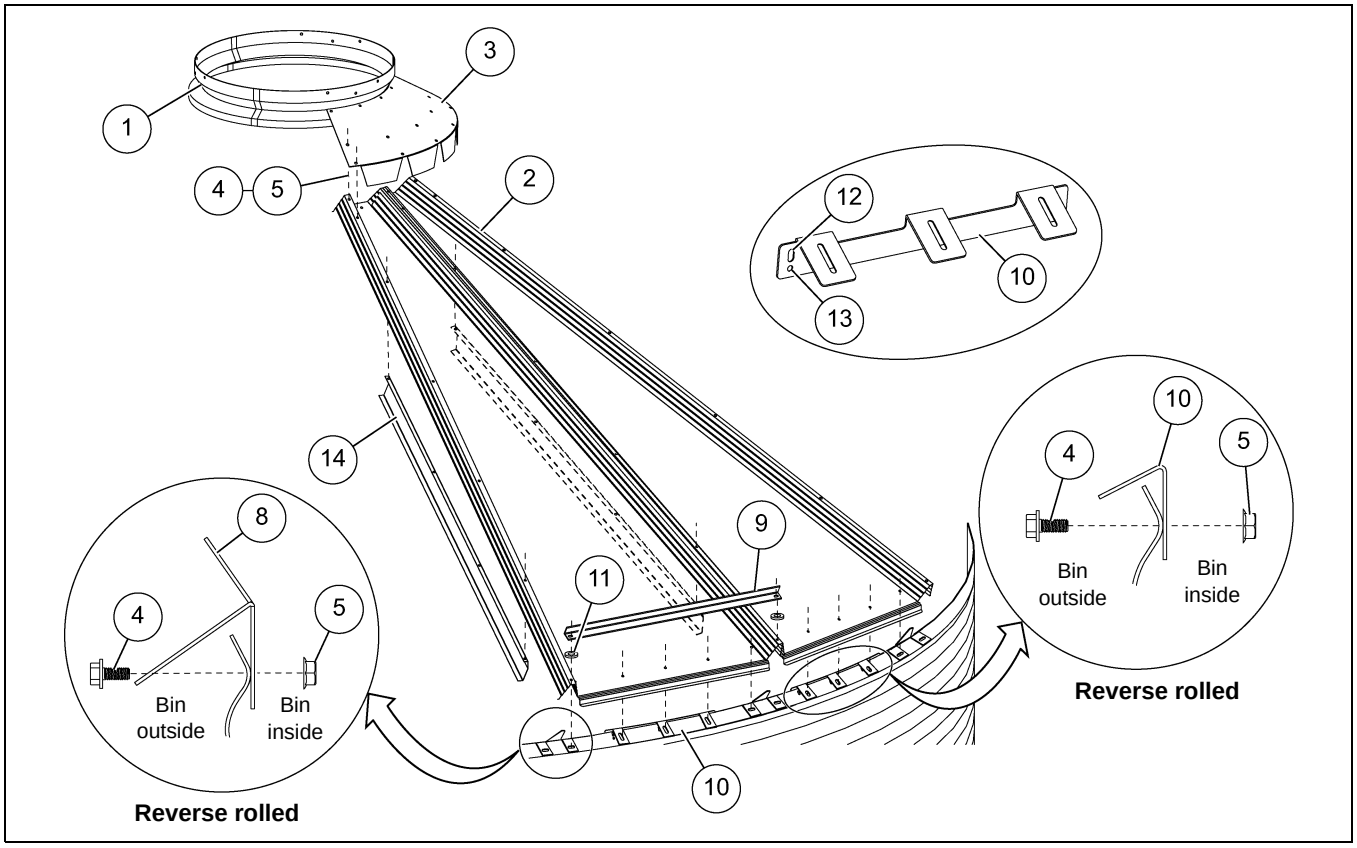


Figure 11C *Roof Panel Assembly (For 24' Diameter Bins)*

Ref #	Description
1	Center Collar (CRP-4608)
2	Roof Panel (CTR-0382)
3	Roof Flashing (CTR-0641)
4	5/16" x 1" Flange Bolt with Sealing Washer (S-10260)
5	5/16" Flange Nut (S-3611)
8	Eave Clip (GT1-0060)

Ref #	Description
9	Roof Step
10	Intermediate Eave Angle (CTR-1183)
11	Steel Backed Neoprene Washer (S-1463)
12	Used with Standard Roofs
13	Used with TopDry Roofs
14	Roof Channel - 24' (CRP-4693)

Roof Panel Information (2)				
Bin Diameter	**Part #**	**Roof Rib Holes**	**Rib Length**	**# of Panels**
24'	CTR-0382	9	149-1/8"	24

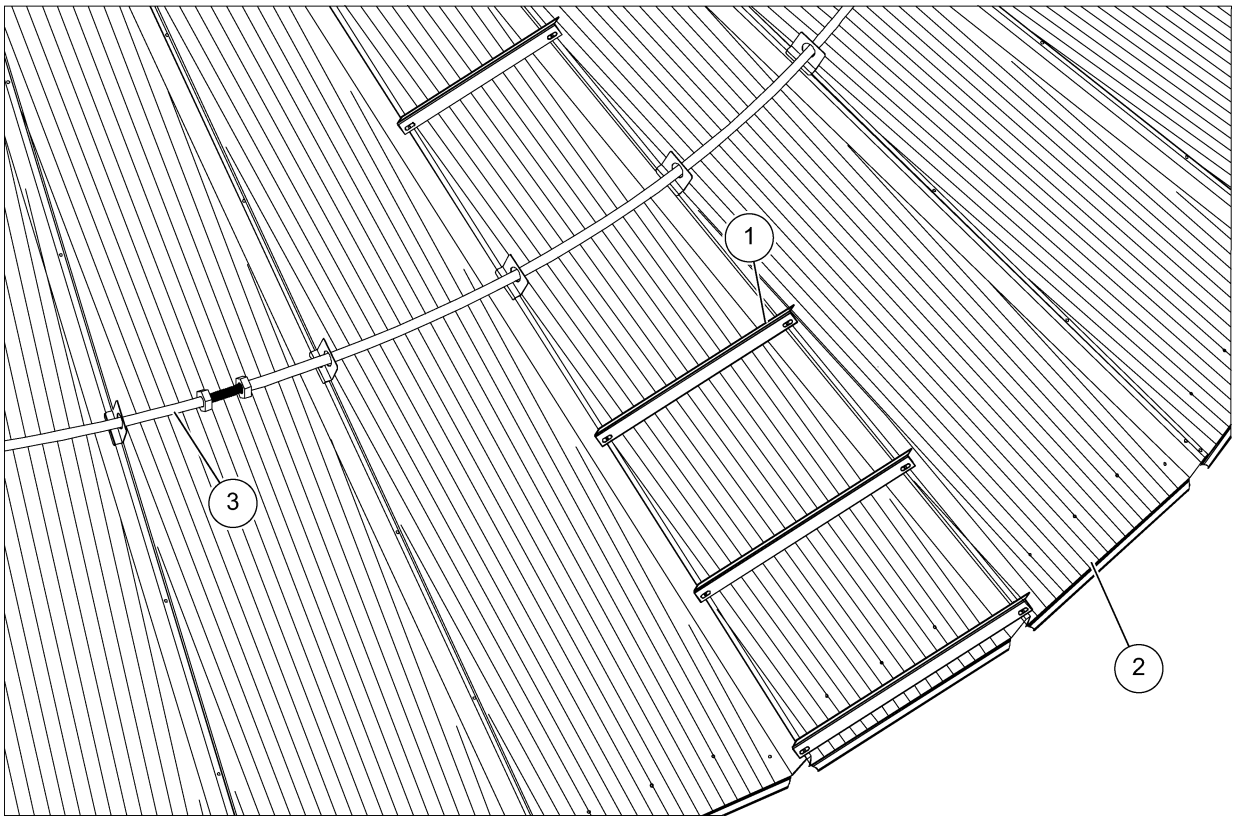
Roof Ring Locations

Two support rings are standard for 12'-48' diameter bins.

IMPORTANT: *Maximum weight to be supported and/or suspended from the roof is to be 6000 pounds only.*

To determine the location of the roof rings, start at the wide or eave of the roof panel and count each hole. Having counted up the required distance, as described in the below table, install the appropriate brackets.

NOTE: *The last roof ring pipe will need to be cut to length.*



NOTE: *Image is graphical representation only. Use the below table to determine the roof ring location for your bin.*

Figure 11D

Ref #	Description
1	Roof Step
2	Roof Panel
3	Roof Ring

Roof Ring Pipe Part Number	Bin Diameter Roof Ring Location	Roof Ring Location from Eave End	Roof Ring Color Code	Number of Pipes per Ring
CRP-5363-15	24 (T)	6th Hole	Yellow/White	3
CRP-5363-24	24 (B)	4th Hole	Red/White	5

Installing the Roof Ring

Quantity and part numbers of roof ring kits vary with the location placement and with the size of each bin. The following procedure will be similar for each kit.

1. Determine the quantity of roof ring clips (3) needed for the roof ring section (2) being installed.

   NOTE: *Each roof panel rib must have a roof ring clip installed.*

2. Install a 5/16" flange bolt (1) to the roof ring clip (3) and install a sealing washer (5) to the underside of the roof ring clip (3).

3. Slide each assembled roof ring clip (3) onto a roof ring section (2) and position each roof ring clip (3) over each roof panel rib.

4. Install a 5/16" flange nut (4) to each roof ring clip (3). *(See Figure 11E.)*

   NOTE: *Do not tighten hardware until all roof ring sections have been installed.*

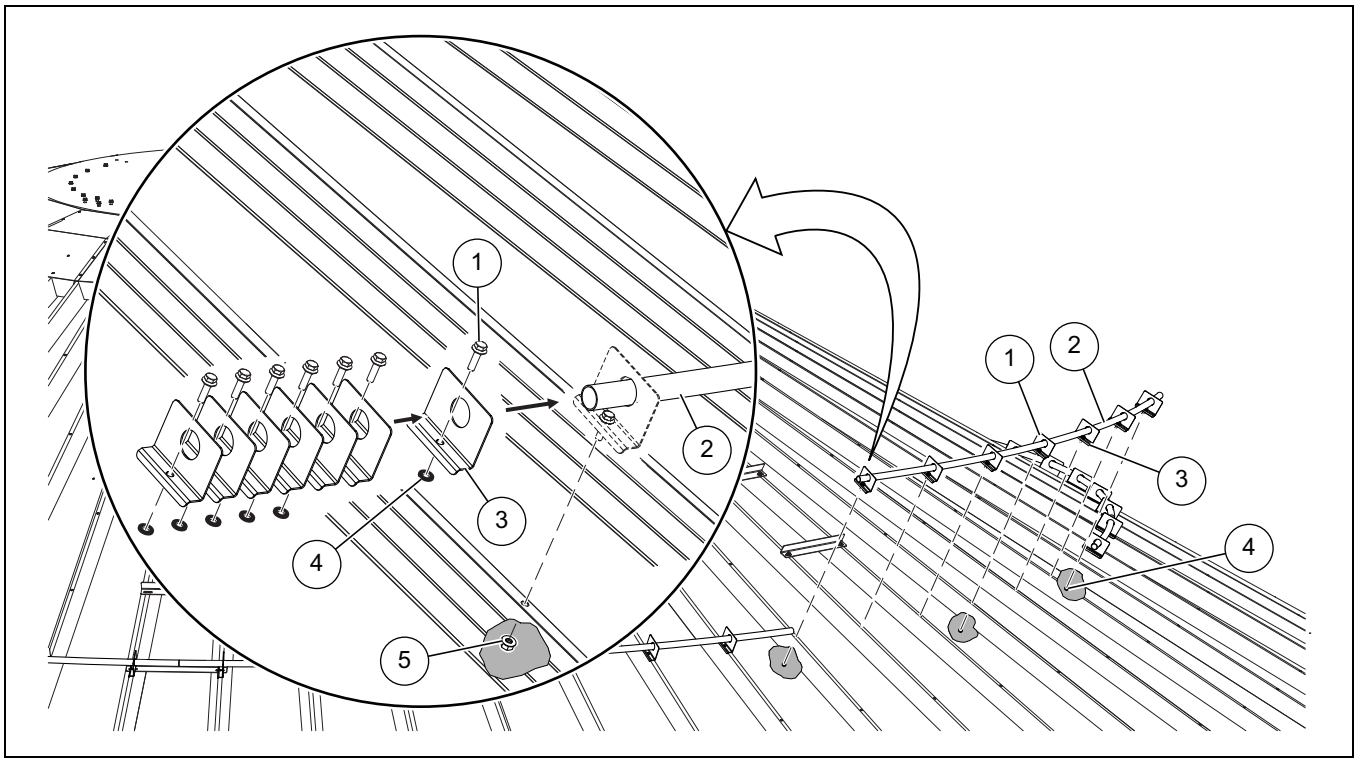


Figure 11E *Roof Ring Shown*

Ref #	Part #	Description
1	S-10260	5/16" x 1" Flange Bolt with Sealing Washer
2		Roof Ring Section
3	R-997	Roof Ring Clip
4	S-3611	5/16" Flange Nut
5	S-10303	Sealing Washer

Installing a Roof Ring (Continued)

5. Locate a threaded stud (6) and install stud nuts (7) evenly and to the center of the threaded stud (6).
6. Install the threaded stud (6) with stud nuts (7) to the end of the roof ring section (2).

   NOTE: *Install the threaded stud (6) to the side where the next roof ring section will be installed.*
7. Repeat this process, installing each new roof ring section end onto the preceding threaded stud just installed.
8. When all roof ring sections are installed, tighten each roof ring clip (2).
9. Adjust each stud nut (7) outward, expanding each roof ring section. Continue this procedure evenly until the roof ring raises the roof, showing a slight crown.

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

   NOTE: *Roof ring expansion bolts may become dislodged from the roof ring during the life of the bin due to the influence of wind or other factors. If one expansion bolt is dislodged, the entire ring will become ineffective. After expansion to the jam nuts final position, the nuts on the expansion bolt should be secured to prevent this. This may be done by staking the expansion bolt threads at the jam nut location, use of suitable thread locking compounds or other effective methods. (See Figure 11F.)*

   In addition, drilling holes through the support pipe and expansion bolt and connecting together with a 1/4" diameter bolt is an effective way to prevent the bolt from dislodging during certain wind and pressure conditions.

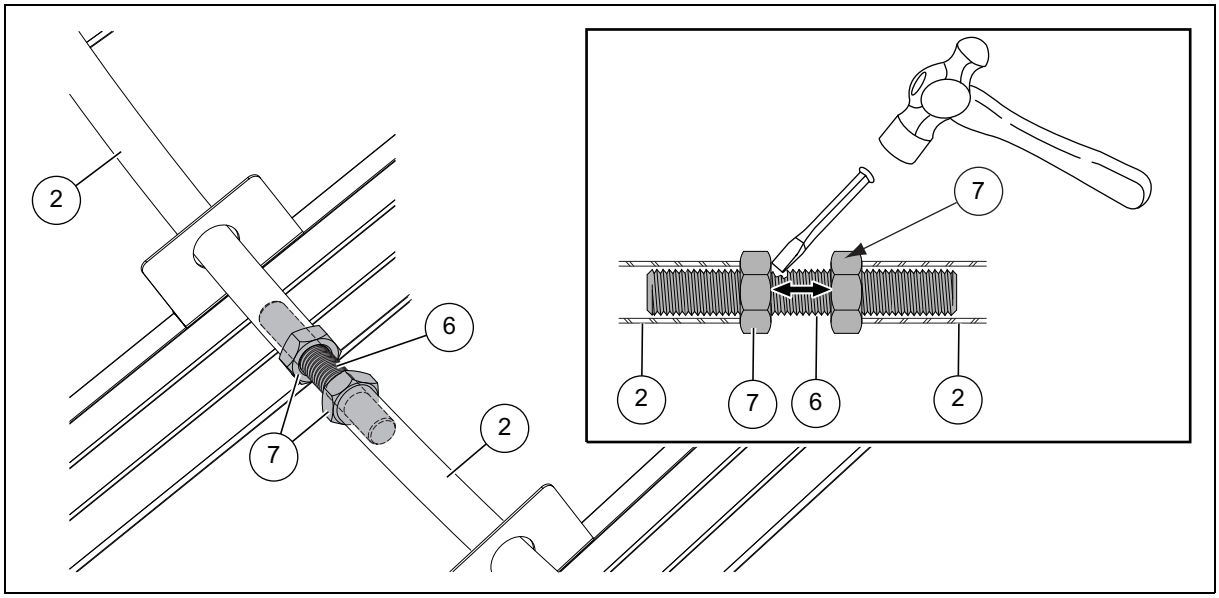
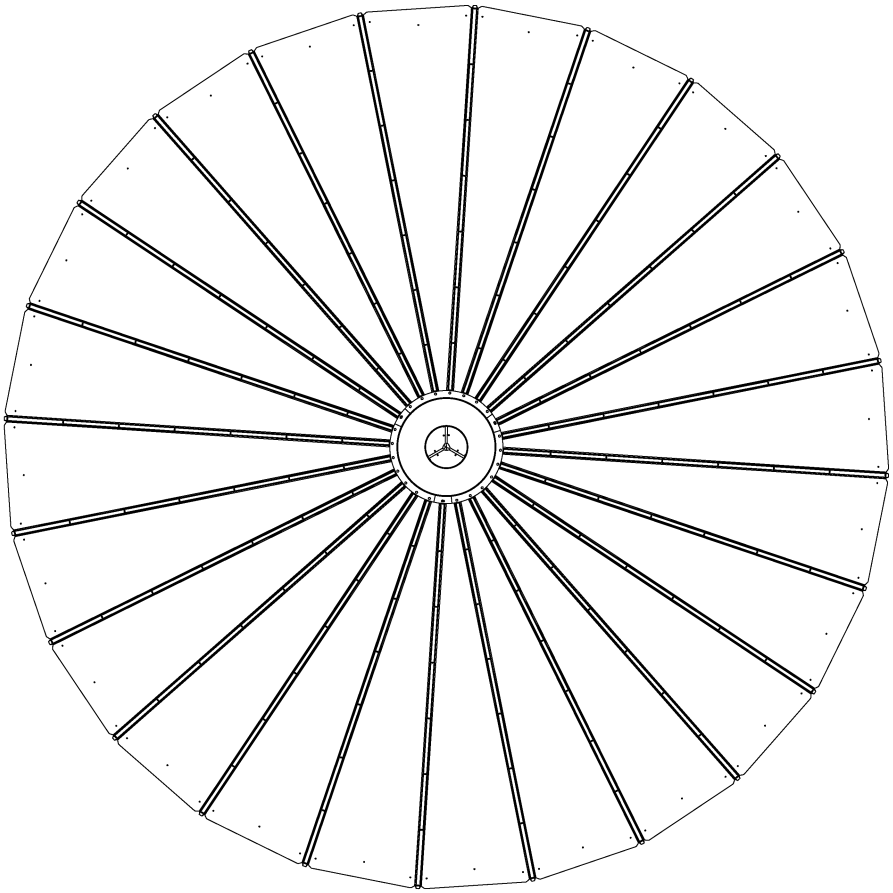


Figure 11F *Exploded View of Threaded Stud*

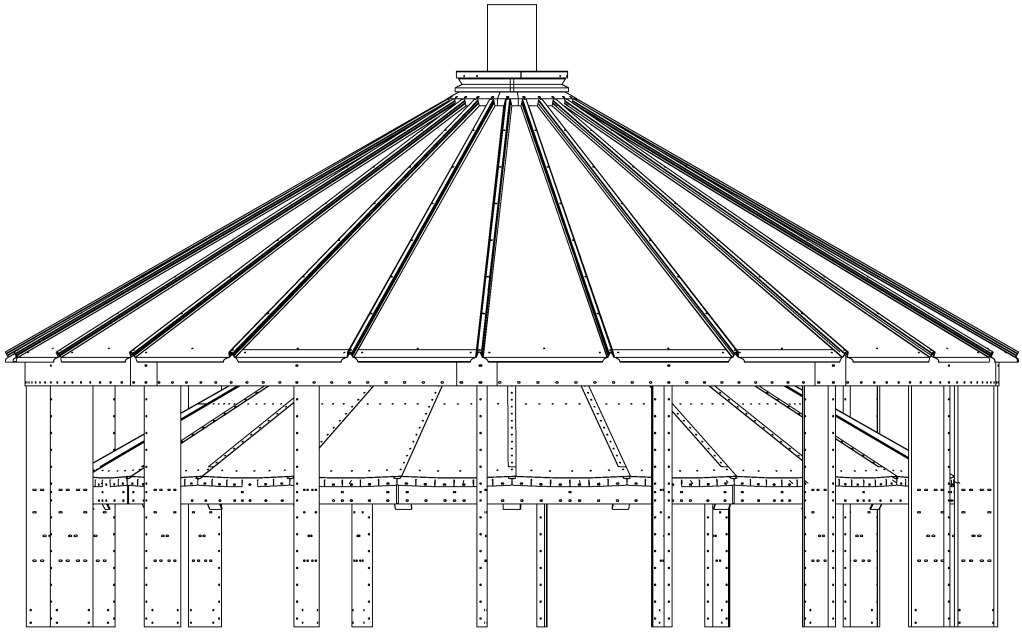
Ref #	Part #	Description
2		Roof Ring Section
6	S-8765	Threaded Stud

Ref #	Part #	Description
7	S-8926	Stud Nut

Tower Roof



Top view



Front view

Figure 11G

Roof Cap

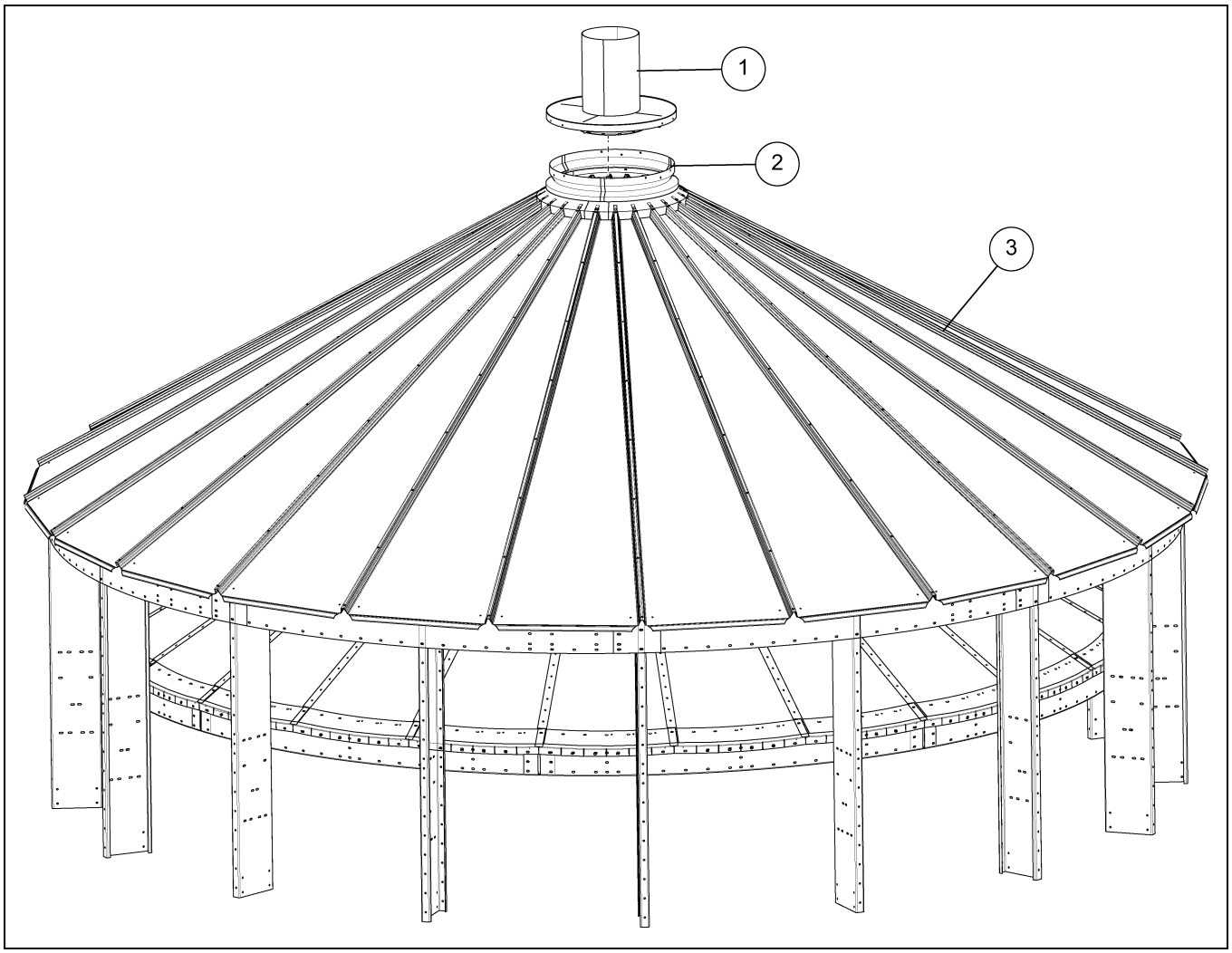


Figure 11H

Ref #	Part #	Description	Qty
1	GT4-1423-BS	Flat Top Fill Cap Weldment 14" (23" Long Inside Band)	1
2	CRP-4608	24' Center Collar	3
3	GT1-0296	Plenum Roof Sheet - 24' 30°	24

Installing the 7' Peak Walkaround (WBS-1026)

Assemble the deck plates upside down for easier access to the bottom and then flip the entire assembly over when complete. It is recommended that the assembly of the deck plates and handrail posts be completed on the ground and then hoisted to the roof to complete the handrails.

DANGER

Use proper lifting or hoisting equipment when assembling or disassembling equipment. Do not walk or stand under hoisted equipment. Falling equipment can crush personnel and cause serious injury or death.

1. Assemble the stiffening angle (5), entrance support angle (6), transition outside supports (7) and transition support angles (8) to the transition deck plate (9) using 5/16" truss head bolts (1) and 5/16" flange nuts (4).
2. Attach the stair transition plates (10) to the transition support angles (8) using 5/16" flange bolts (2) and 5/16" flange nuts (4).
3. Install the stiffening angles (5) and the support angles (11) to the bottom side of the standard deck plates (12) using 5/16" truss head bolts (1) and 5/16" flange nuts (4).

NOTE: *Install 5/16" truss head bolts (1) with bolt head on the top of the deck plate.*

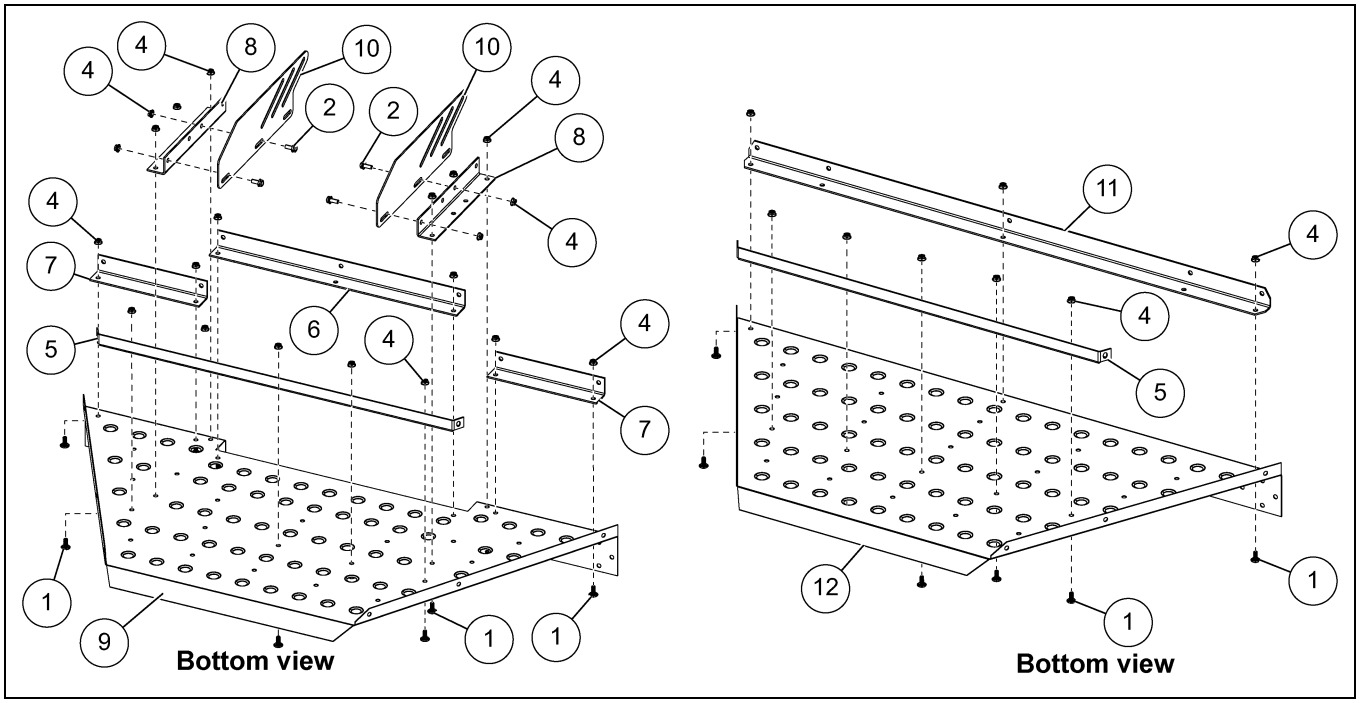


Figure 11I *Assembling the Transition and Standard Deck Plates*

Ref #	Part #	Description
1	S-10267	5/16" x 3/4" Truss Bolt with Sealing Washer
2	S-6606	5/16" x 3/4" Flange Bolt
4	S-3611	5/16" Flange Nut
5	WBS-0310	Stiffening Angle
6	WBS-0260	Entrance Support Angle
7	WBS-0272	Transition Outside Support Angle

Ref #	Part #	Description
8	WBS-0256	Transition Support Angle
9	WBS-0265	Transition Deck Plate
10	WBS-0261	Stair Transition Plate
11	WBS-0263	Support Angle
12	WBS-0264	Standard Deck Plate

4. Align the side flanges of the deck plates (9 and 12) and secure using 5/16" flange bolts (2) and 5/16" flange nuts (4).

5. Install the tie angles (13) and corner handrail posts (14) to the corners of the deck plates (9 and 12) using 5/16" flange bolts (2) and 5/16" flange nuts (4).

NOTE: *Install flange bolts (2) with bolt head on the inside of the walking area.*

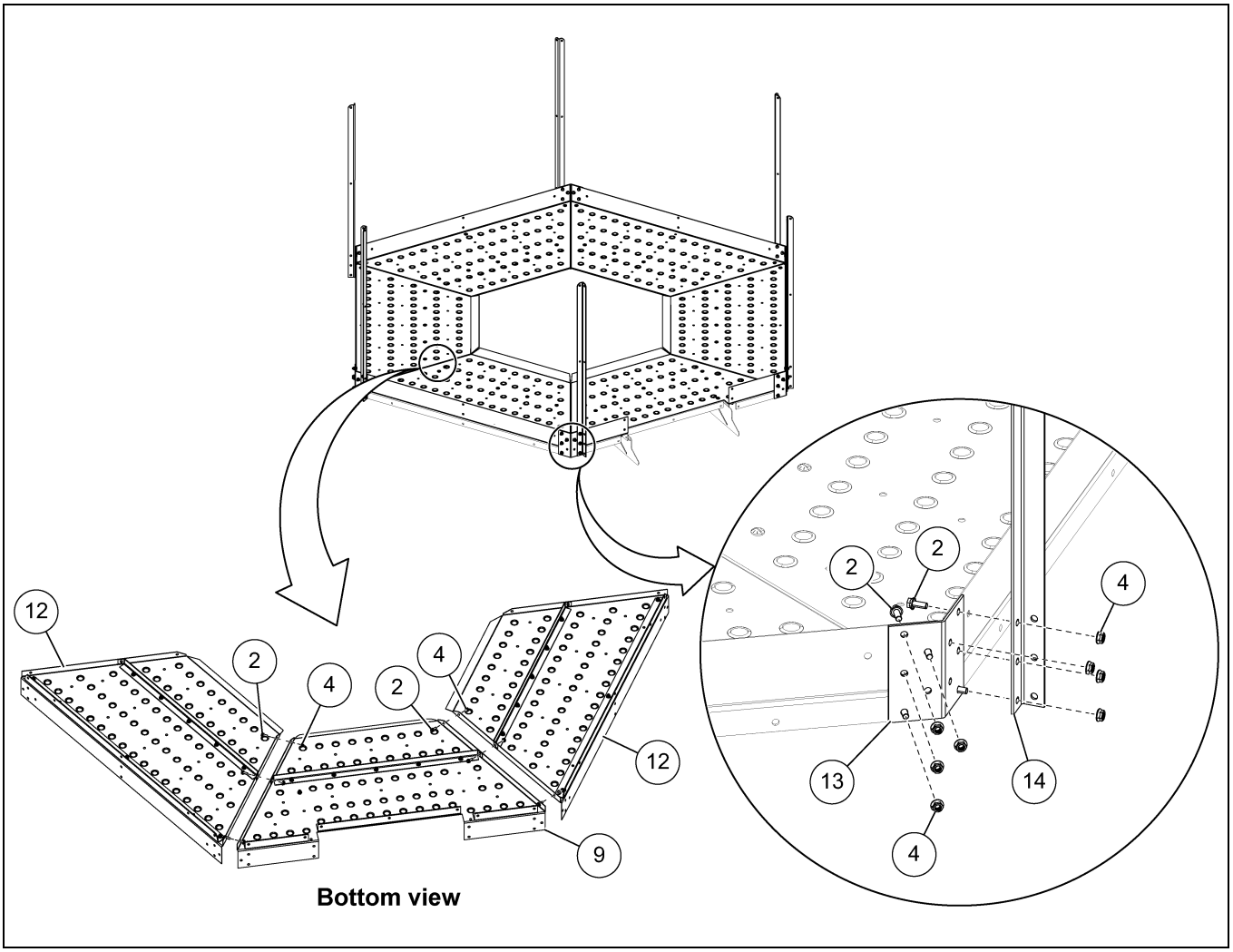


Figure 11J *Installing the Tie Angles and Corner Handrail Posts*

Ref #	Part #	Description
2	S-6606	5/16" x 3/4" Flange Bolt
4	S-3611	5/16" Flange Nut
9	WBS-0265	Transition Deck Plate
12	WBS-0264	Standard Deck Plate
13	WBS-0252	Tie Plate
14	WBS-0257	Corner Handrail Post

6. Install the handrail posts (15) to the standard deck plates (12) and attach a walkaround standoff (16) to each of the handrail posts (15) using 5/16" flange bolts (2) and 5/16" flange nuts (4).
7. Install two truss angles (17) to each of the standard deck plates (12) and walkaround standoffs (16) using 5/16" flange bolts (2) and 5/16" flange nuts (4).

NOTE: *Install 5/16" flange bolts (2) with bolt head on the inside of the walking area.*

NOTE: *Leave the 5/16" flange bolts (2) of the walkaround standoff (16) hand tighten, until the peak walkaround is installed onto the roof.*

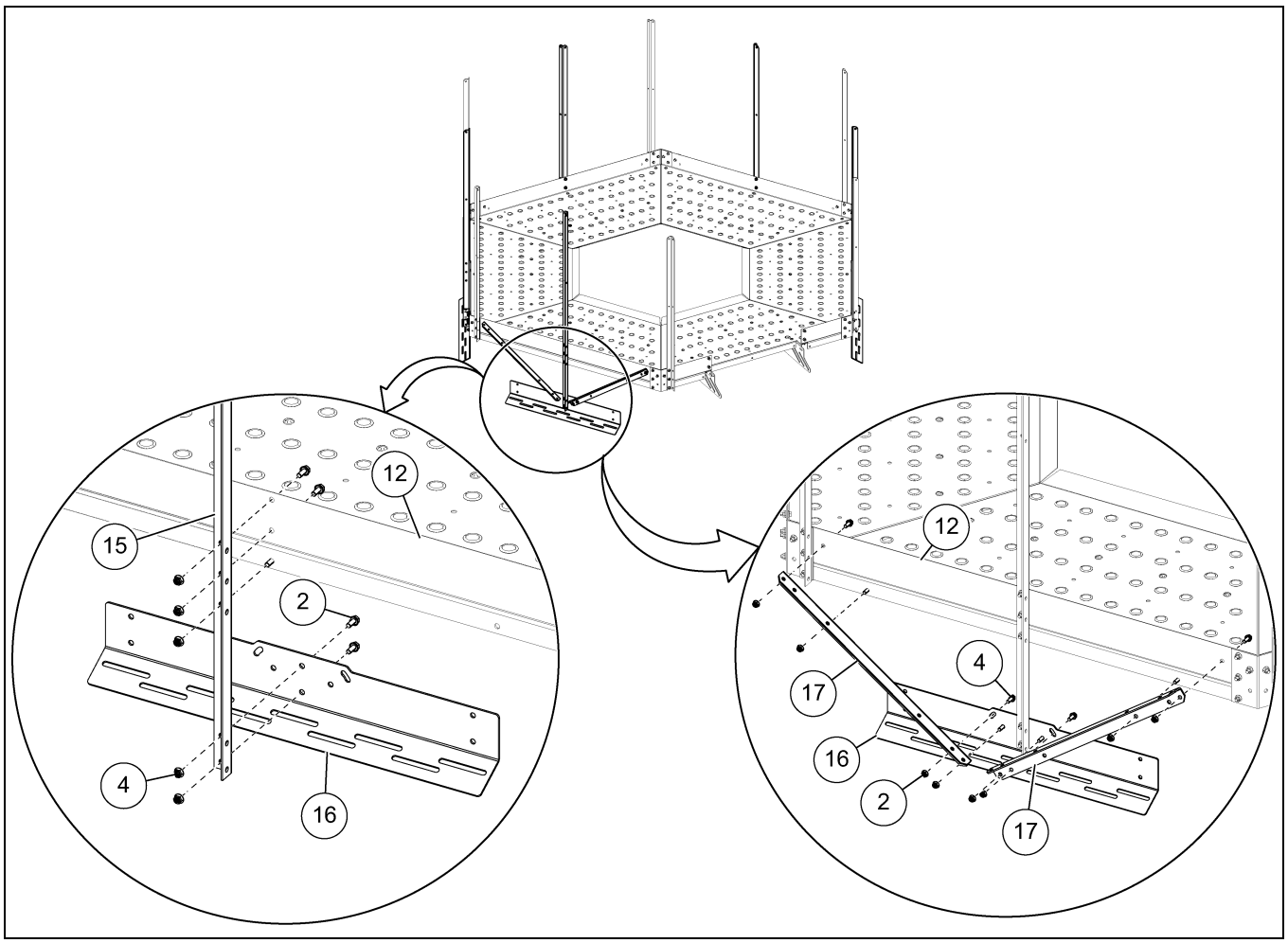


Figure 11K *Installing the Handrail Posts and Truss Angles*

Ref #	Part #	Description
2	S-6606	5/16" x 3/4" Flange Bolt
4	S-3611	5/16" Flange Nut
12	WBS-0264	Standard Deck Plate
15	WBS-0250	Handrail Post
16	WBS-0253	Peak Walkaround Standoff
17	WBS-0266	Truss Angle

8. Install two handrail posts (15) to the transition deck plate (9) and transition stair plate (10) using 5/16" flange bolts (2) and 5/16" flange nuts (4).
9. Attach a walkaround standoff (16) to the handrail posts (15) using 5/16" flange bolts (2) and 5/16" flange nuts (4).
10. Install the handrail brackets (18) to the handrail posts (14 and 15) using 5/16" flange bolts (2) and 5/16" flange nuts (4).

    NOTE: *Install 5/16" flange bolts (2) with bolt head on the inside of the walking area.*

    NOTE: *Leave the 5/16" flange bolts (2) of the walkaround standoff (16) hand tighten, until the peak walkaround is installed onto the roof.*

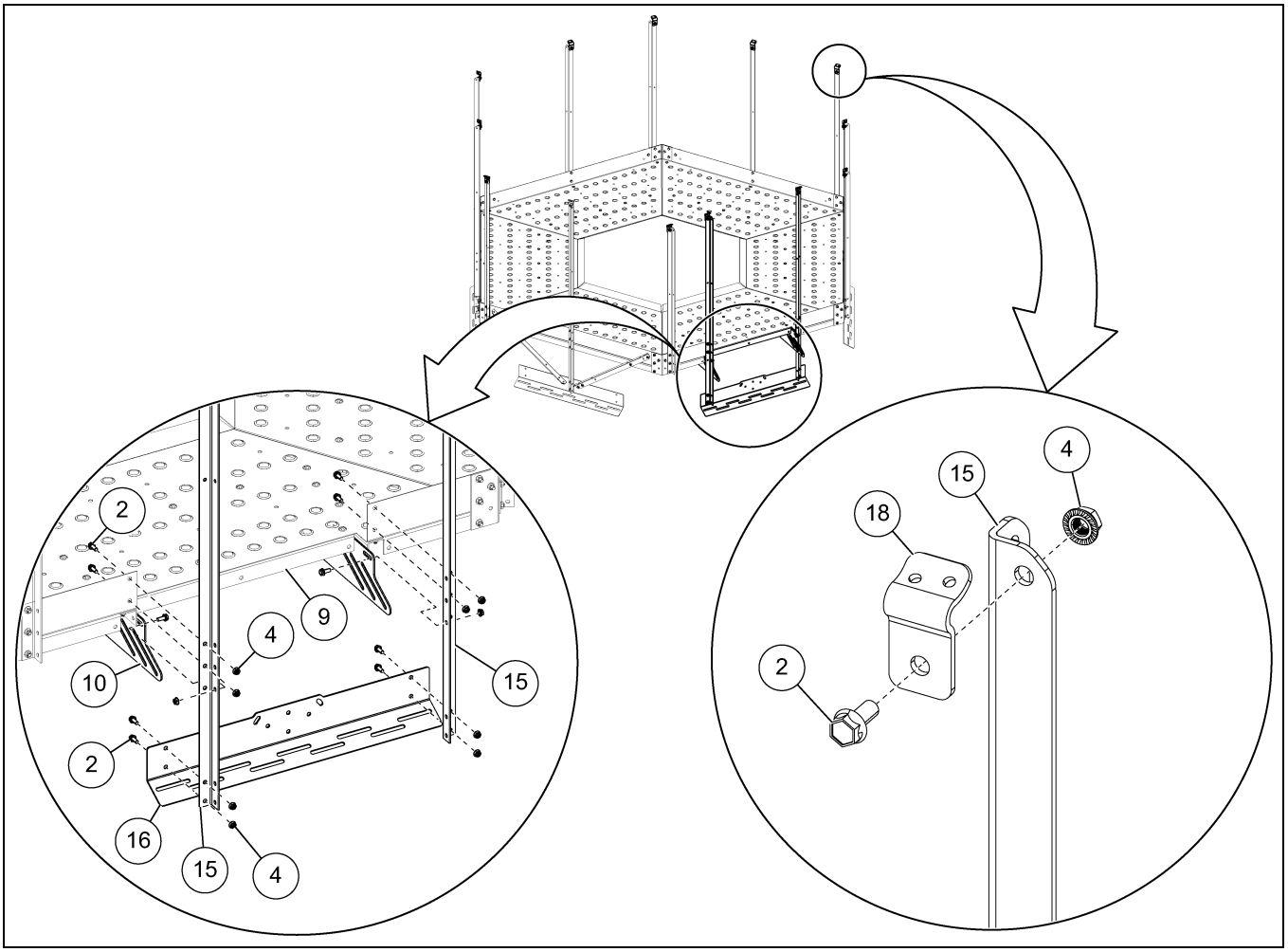


Figure 11L *Installing the Handrail Posts and Handrail Brackets*

Ref #	Part #	Description
2	S-6606	5/16" x 3/4" Flange Bolt
4	S-3611	5/16" Flange Nut
9	WBS-0265	Transition Deck Plate
10	WBS-0261	Stair Transition Plate
15	WBS-0250	Handrail Post
16	WBS-0253	Peak Walkaround Standoff
18	WBS-0319	Handrail Bracket

11. Lift and center the peak walkaround on the roof. Install the walkaround standoffs (16) to the roof ribs (21) using bin hardware (22).

    NOTE: *Make sure to align the entrance of the platform with the roof stairs.*

    NOTE: *Field drill holes only where the standoff (16) is in direct contact with the roof ribs (21). Install bolts with sealing washer from the inside of the roof ribs (21).*

12. Install the top handrails (19) to the handrail brackets (18) using two self-drilling screws (3) per bracket.

13. Install the intermediate handrails (20) to the handrail posts (14 and 15) using self-drilling screws (3). Cut the top (19) and intermediate handrails (15) to fit the opening, approximately 24". Install the 1-1/2" tube plugs (23 and 24) into the ends of the top and intermediate handrails (15).

    NOTE: *Slide the handrails over the previous handrails before attaching to the handrail brackets or handrail posts.*

    NOTE: *Ensure the handrail posts are straight and vertical and then attach the handrails to the handrail brackets or handrail posts. Trim the handrails at the entrance and add end caps.*

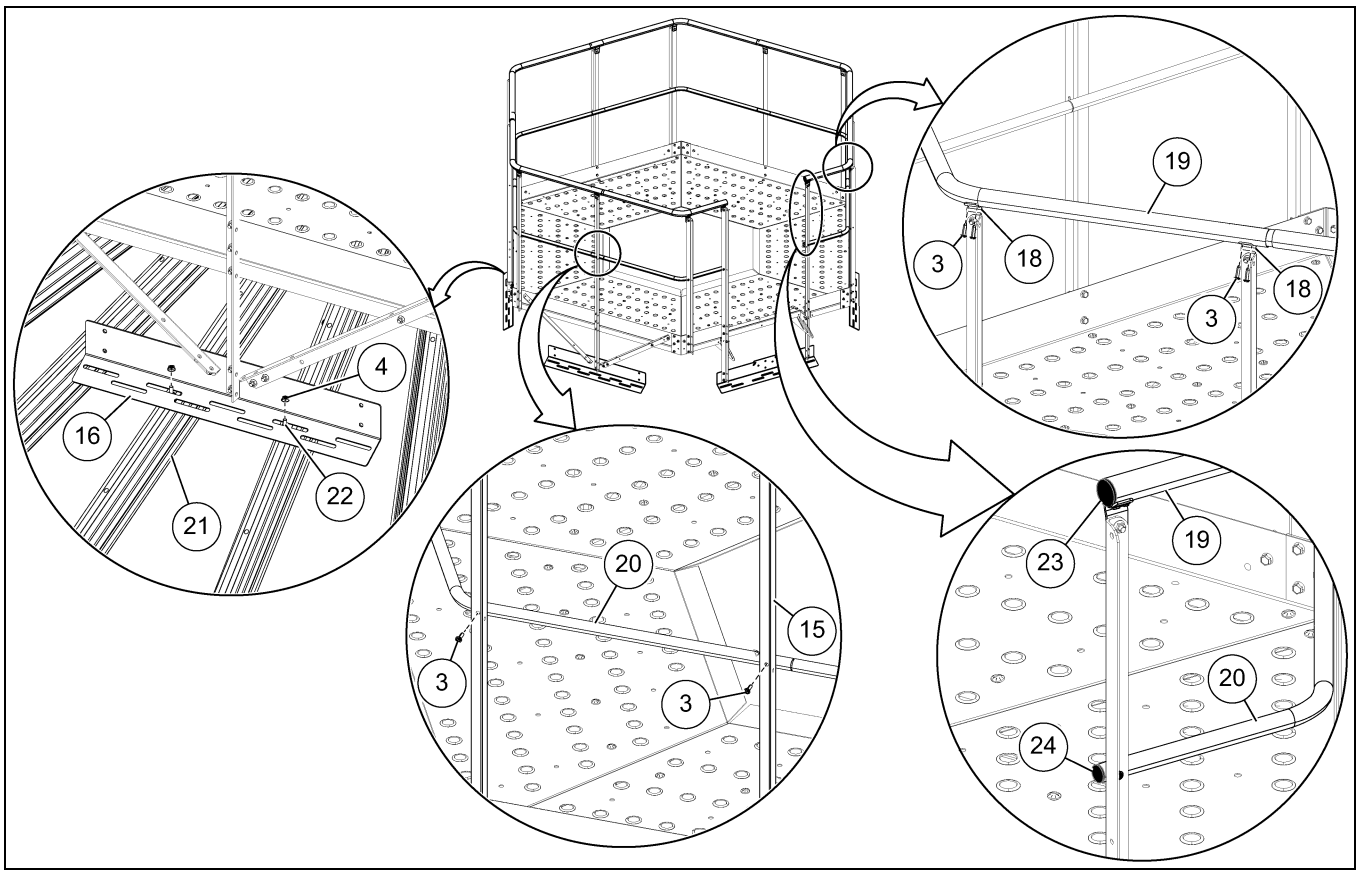


Figure 11M *Installing the Peak Walkaround and the Handrails*

Ref #	Part #	Description
3	S-7229	1/4" x 1" Self-Drilling Screws
4	S-3611	5/16" Flange Nut
15	WBS-0250	Handrail Post
16	WBS-0253	Peak Walkaround Standoff
18	WBS-0319	Handrail Bracket
19	WBS-0306	Top Handrails

Ref #	Part #	Description
20	WBS-0307	Intermediate Handrail
21		Roof Ribs
22		Standard Roof Bolt
23	S-10382	Upper Handrail End Cap
24	S-10383	Lower Handrail End Cap

Installing the Roof Stairs

1. Place a left 3-step stringer section (4) and a right 3-step stringer section (5) at a distance and assemble the three stair steps (3) in between using 5/16" flange bolts (1) and 5/16" flange nuts (2).

   NOTE:

   1. Install the 5/16" flange bolts (1) from the outside of the stringer sections and 5/16" flange nuts (2) on the inside.

   2. Place the stringers with flanges at the bottom and towards the inside.

   3. Repeat the above step to assemble the multiple sets of 3-step stair sections (if required).

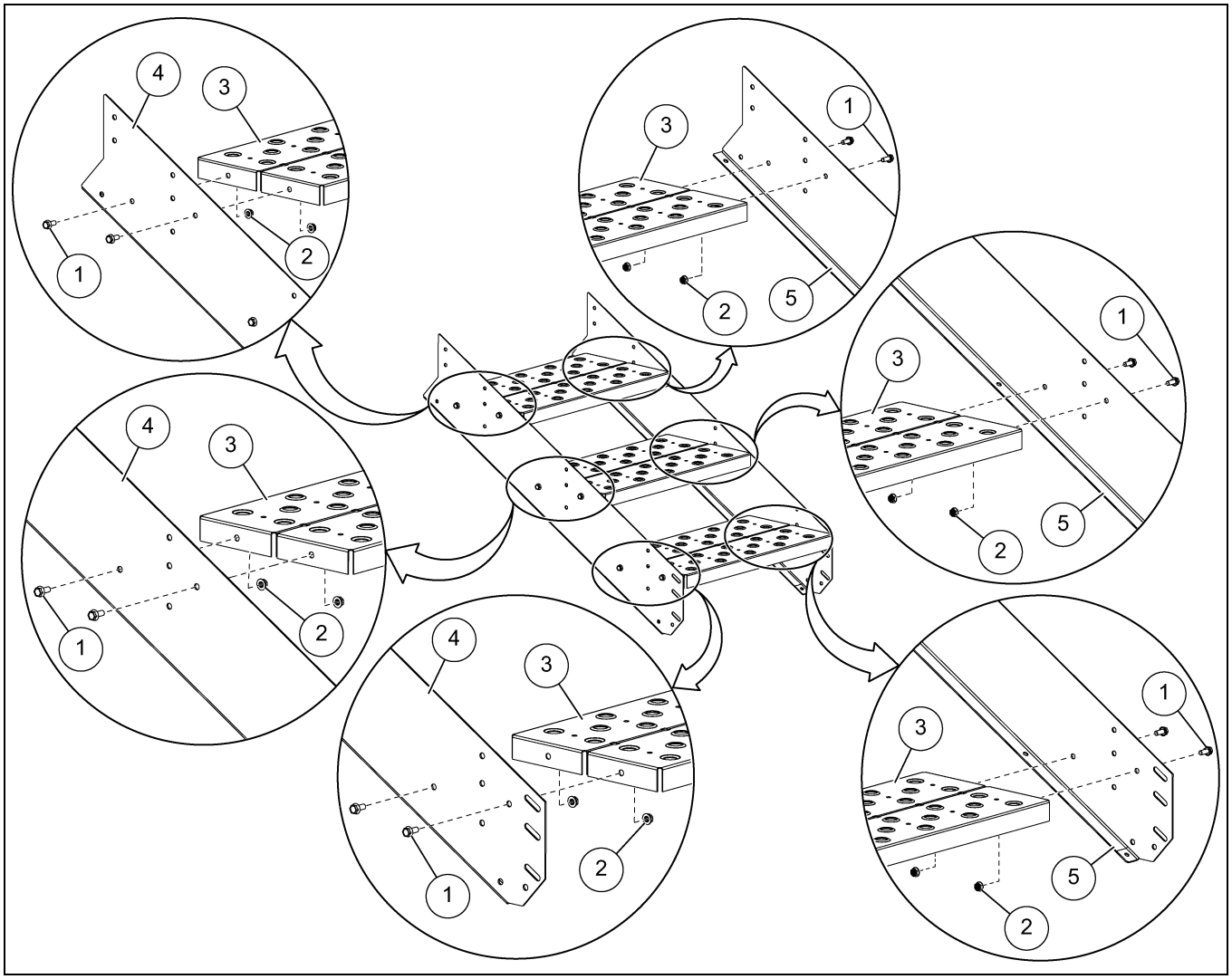


Figure 11N *Assembling the 3-Step Stair Section*

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
2	S-3611	5/16" Flange Nut
3	WBS-0007	Stair Step

Ref #	Part #	Description
4	RFS-0013	Left 3-Step Stringer Section
5	RFS-0014	Right 3-Step Stringer Section

2. Connect the assembled sets of stair sections (7) together using stringer splice plates (6) 5/16" flange bolts (1) and 5/16" flange nuts (2).

NOTE: *The above assembly instruction is for splicing three 3-step sections to form a roof stair section.*

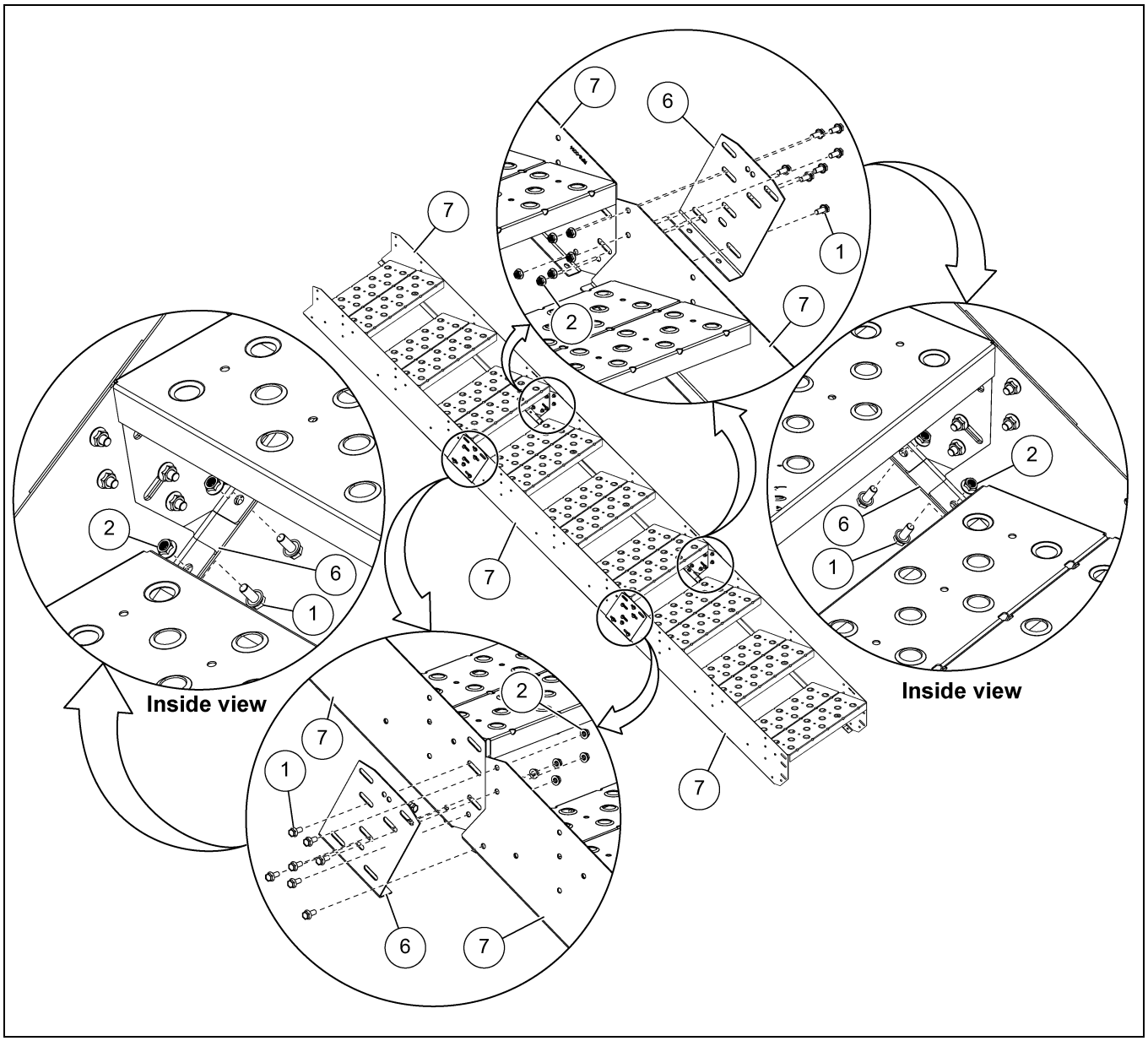


Figure 11O *Connecting the 3-Step Stair Sections*

Ref #	Part #	Description
1	S-6606	5/16 x 3/4" Flange Bolt
2	S-3611	5/16" Flange Nut
6	RFS-0019	Splice Plates
7		3-Step Stair Section

3. Align and install the handrail posts (8) to the stair sections (7) using the 5/16" flange bolts (1) and 5/16" flange nuts (2).

   NOTE: *The handrail post (8) connections should have the 5/16" bolts (1) oriented so the 5/16" nuts (2) are outside the walking area to eliminate a trip hazard.*

4. Assemble the panel support brackets (9) to each pair of handrail posts (8) using the 5/16" flange bolts (1) and 5/16" flange nuts (2).

   NOTE: *Do not tighten the* 5/16" *flange bolts (1), leave hand tight until the stairs assembly is installed onto the roof.*

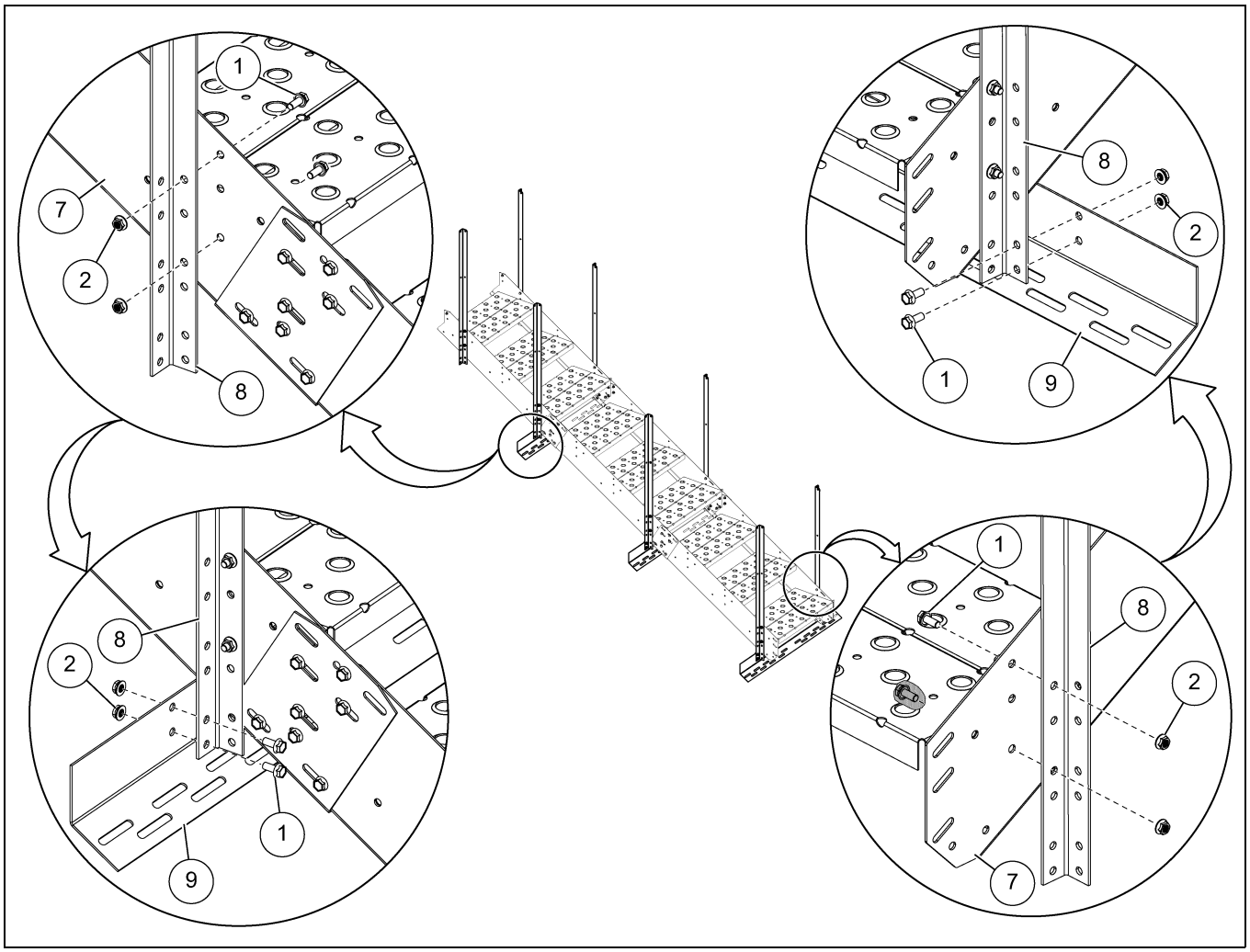


Figure 11P *Assembling the Roof Stair Handrail Posts and Panel Support Brackets*

Ref #	Part #	Description
1	S-6606	5/16 x 3/4" Flange Bolt
2	S-3611	5/16" Flange Nut
7		3-Step Stair Section

Ref #	Part #	Description
8	RFS-0048	Roof Stair Handrail Post
9	RFS-0002	Panel Support Bracket

5. Lift and position the assembled roof stairs assembly (13) on the panel adjacent to the manway hole.
6. Center the roof stairs assembly (13) on the roof panel (10) and install the roof stairs assembly to the peak walkaround assembly (14) using 5/16" flange bolts (1) and 5/16" flange nuts (2).
7. Field drill holes on the roof panel ribs and install the panel support brackets (9) in the roof stair assembly (13) to the roof panel (10) using the standard bin roof bolts (11) and 5/16" flange nuts (12).

NOTE:

1. If two slots in the panel mount bracket align on a roof panel rib, ***field drill one hole in the slot that is closer to the center line of the roof panel rib.***

2. Install the standard roof bolts (11) with the bolt head from the inside of the bin.

3. *As the roof panel (10) narrows near the top, the stair steps may need to be removed to allow a hole to be drilled.*

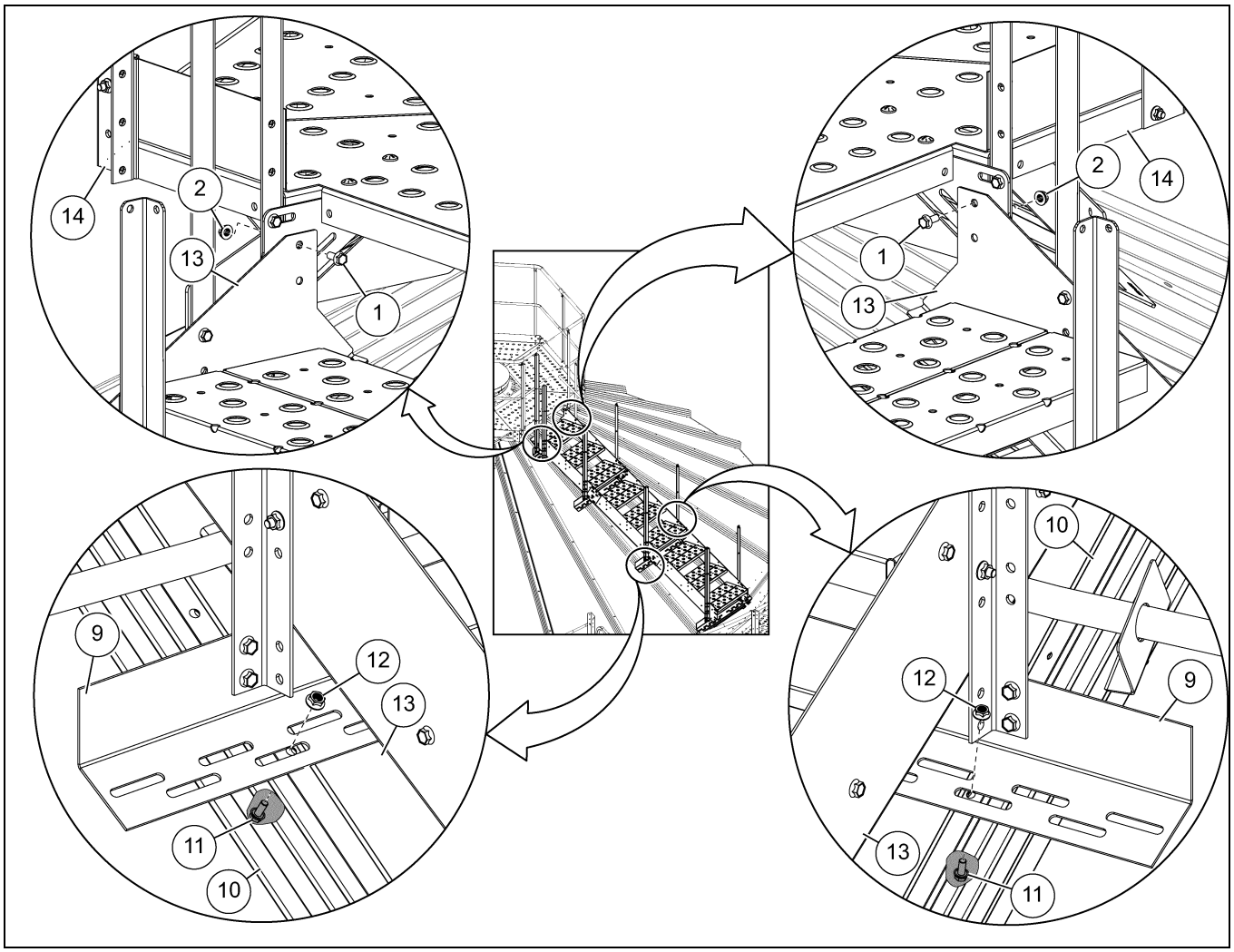


Figure 11Q *Installing the Roof Stairs Assembly*

Ref #	Part #	Description
1	S-6606	5/16 x 3/4" Flange Bolt
2	S-3611	5/16" Flange Nut
9	RFS-0002	Panel Support Bracket
10		Roof Panel

Ref #	Description
11	Standard Roof Bolt
12	Flange Nut
13	Roof Stair Assembly
14	Peak Walkaround Assembly

8. Install the handrail brackets (16) to the end of handrail posts (8) using 5/16" flange bolts (1) and 5/16" flange nuts (2).

   NOTE: *Install the 5/16" flange bolts (2) from the inside of the stairs assembly and 5/16" flange nuts (3) on the outside.*

9. Starting at the bottom of the roof stair assembly, orient the first upper handrail (17) with the swaged end up and secure it to the handrail brackets (16) using two self-drilling screws (15) per bracket.
10. Install the next upper handrail (17) over the installed handrail and secure it to the handrail brackets (16) using two self-drilling screws (15) per bracket with swaged end up.
11. Orient and align the first lower handrail (18) to the holes located in the middle of the handrail posts (8) and secure using self-drilling screws (15).
12. Align the next lower handrail (18) to the holes located in the middle of the handrail posts (8) over the installed handrail and secure using self-drilling screws (15) with swaged end up.

    NOTE: *Install the self-drilling screws (15) from the outside of the roof handrail posts (8).*

13. At the bottom, trim the handrails and cap them with the provided plastic caps (19 and 20).

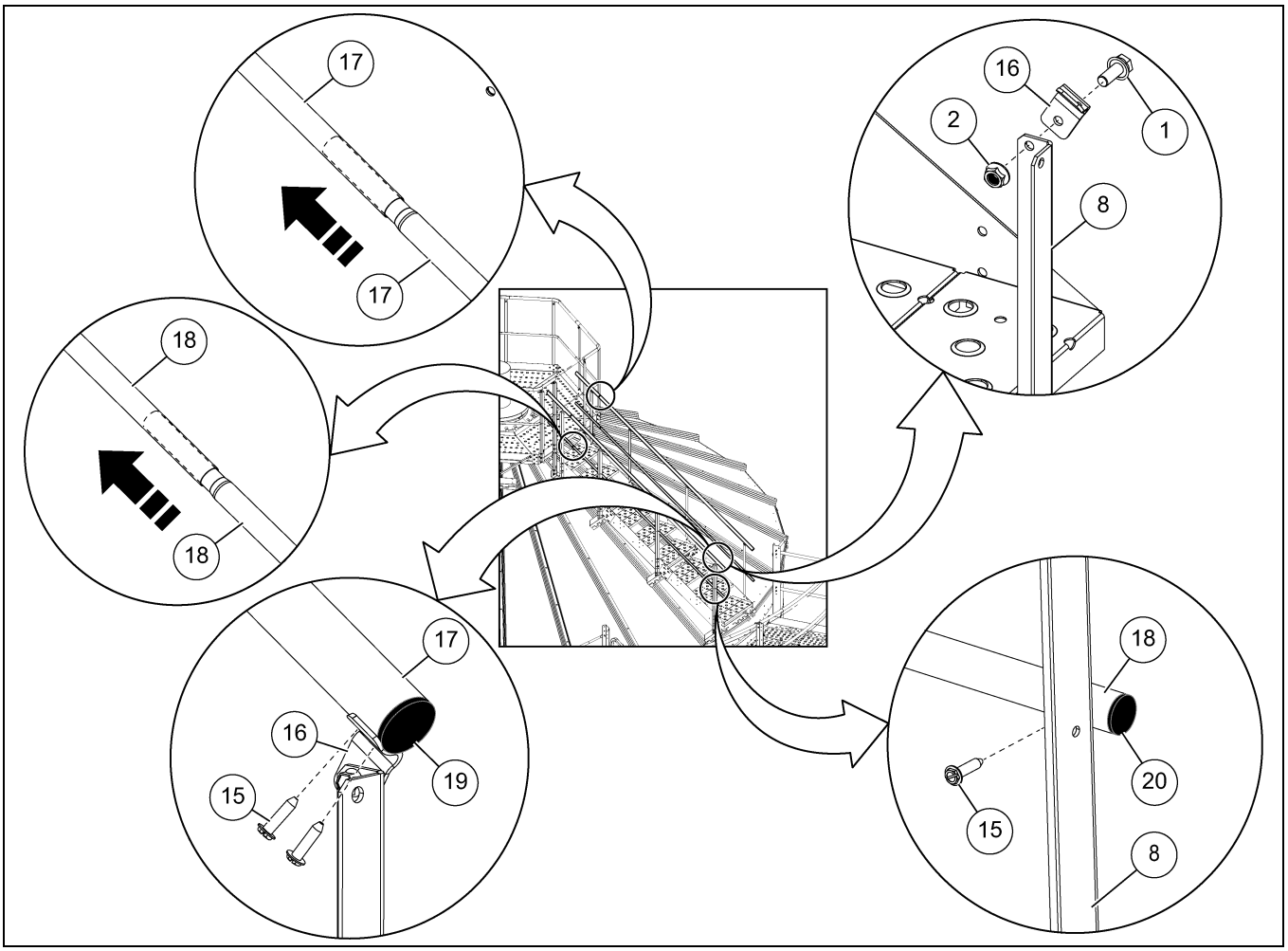
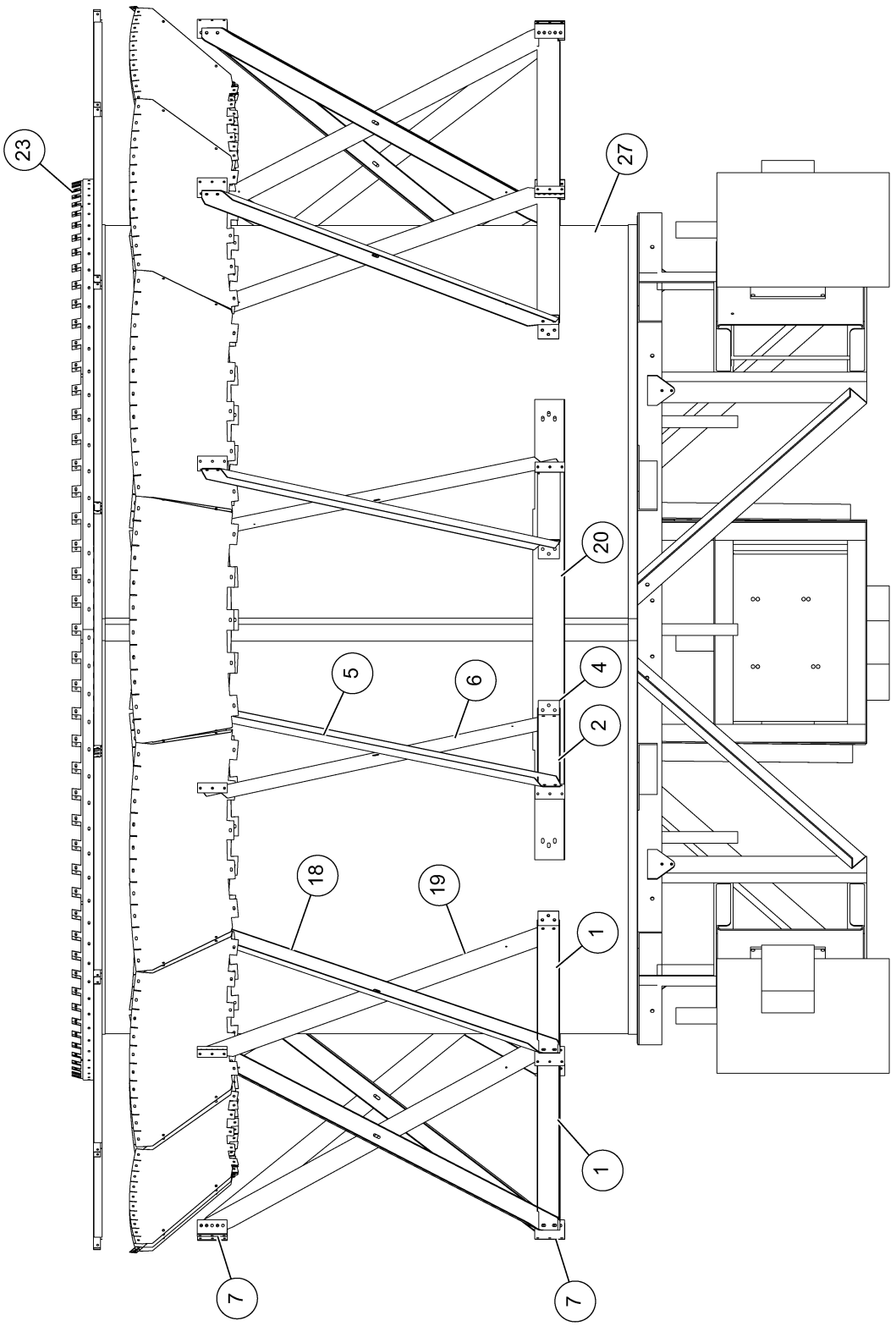


Figure 11R *Installing the Handrails*

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
2	S-3611	5/16" Flange Nut
8	RFS-0048	Roof Stair Handrail Post
15	S-7229	1/4" x 1" Self-Drilling Screw
16	WBS-0319	Handrail Brackets

Ref #	Part #	Description
17	RFS-0007	Upper Handrail
18	RFS-0008	Lower Handrail
19	S-10382	Upper Handrail End Cap
20	S-10383	Lower Handrail End Cap

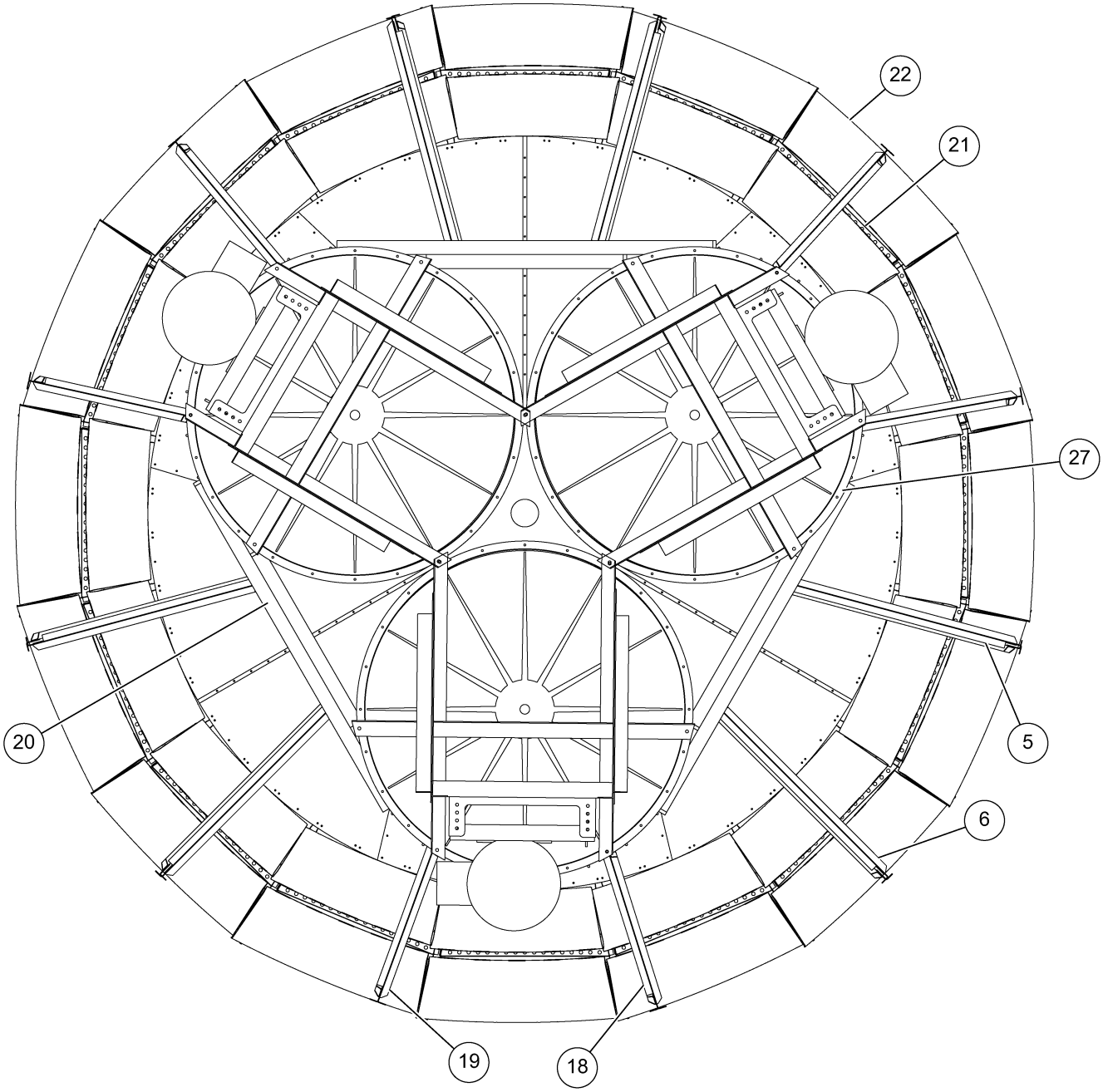
24' Blower Assembly



NOTE: *The parts pointed out on this page are listed* *on Page 62.*

Figure 12A

24' Blower Assembly (Continued)



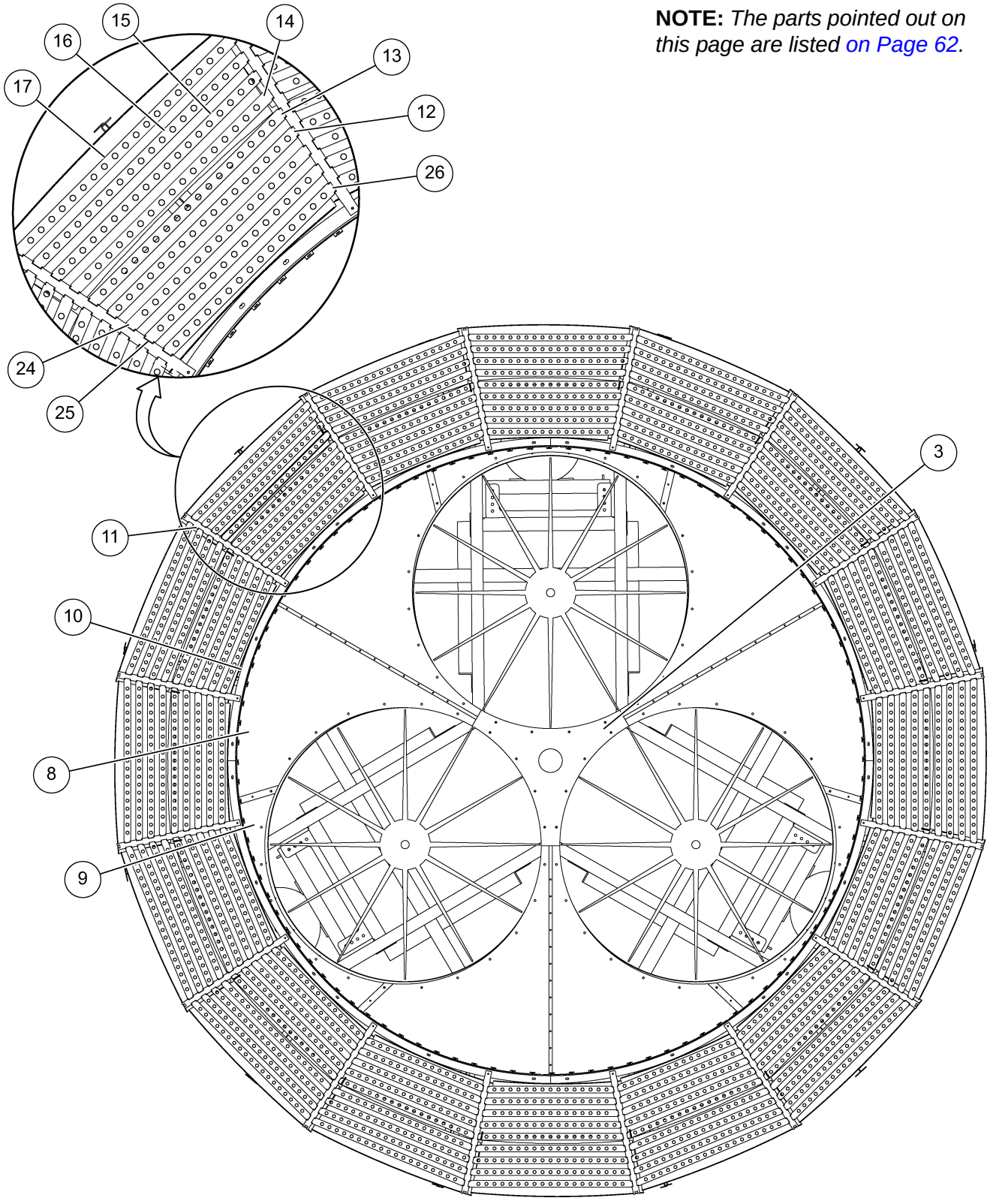
Top view

NOTE: *The parts pointed out on this page are listed on Page 62.*

Figure 12B

24' Blower Assembly (Continued)

NOTE: *The parts pointed out on this page are listed on Page 62.*



Top view

Figure 12C

24' Blower Assembly Parts List

Ref #	Part #	Description
1	GT1-1245	Beam, Blower Horizontal Main (3-600)
2	GT1-1248	Beam, Blower Horizontal Intermediate (3-600)
3	GT1-1143	Blower (3-600) Housing Splice
4	GT1-0186	Clip, Blower Crossbeam - 24'
5	GT1-1246	Crossbeam, Blower (490) - Long Intermediate
6	GT1-1258	Crossbeam, Blower (3-600) Short Intermediate
7	GT1-1242	Clip, Blower Support - QSL Blower - 24'
8	GT1-1145	Blower (3-600) Filler Sheet
9	GT1-1144	Blower (3-600) Reducer Support
10	GT1-0871-R1	Reducer Ring Rolled Segment - 542 (90°)
11	GT1-0657	Support, Reducer Walkway Beam - 24' Dryer - 542
12	GT1-0335	Reducer Walkway Slat #1 24' Dryer
13	GT1-0336	Reducer Walkway Slat #2 24' Dryer
14	GT1-0337	Reducer Walkway Slat #3 24' Dryer
15	GT1-0338	Reducer Walkway Slat #4 24' Dryer
16	GT1-0339	Reducer Walkway Slat #5 24' Dryer
17	GT1-0340	Reducer Walkway Slat #6 24' Dryer
18	GT1-1243	Blower Crossbeam (3-600) Long Main
19	GT1-1257	Crossbeam, Blower (3-600) Short Main
20	GT1-0362	Blower, Intermediate Beam (600)
21	GT1-0664	Hopper, Inner Divider - 24' Dryer - 542
22	GT1-0663	Hopper, Outer Divider - 24' Dryer - 542
23	GT1-0964	Ring, Bottom Reducer Flange - 542 Blower
24	GT1-0658	Reducer Walkway Slat #7 24' Dryer - 542
25	GT1-0659	Reducer Walkway Slat #8 24' Dryer - 542
26	GT1-0660	Reducer Walkway Slat #9 24' Dryer - 542
27		Blower, Barry #600 Assembly
N/S	GT1-0872	Skirt, Blower (542) - 10" x 76"

24' Burner Assembly

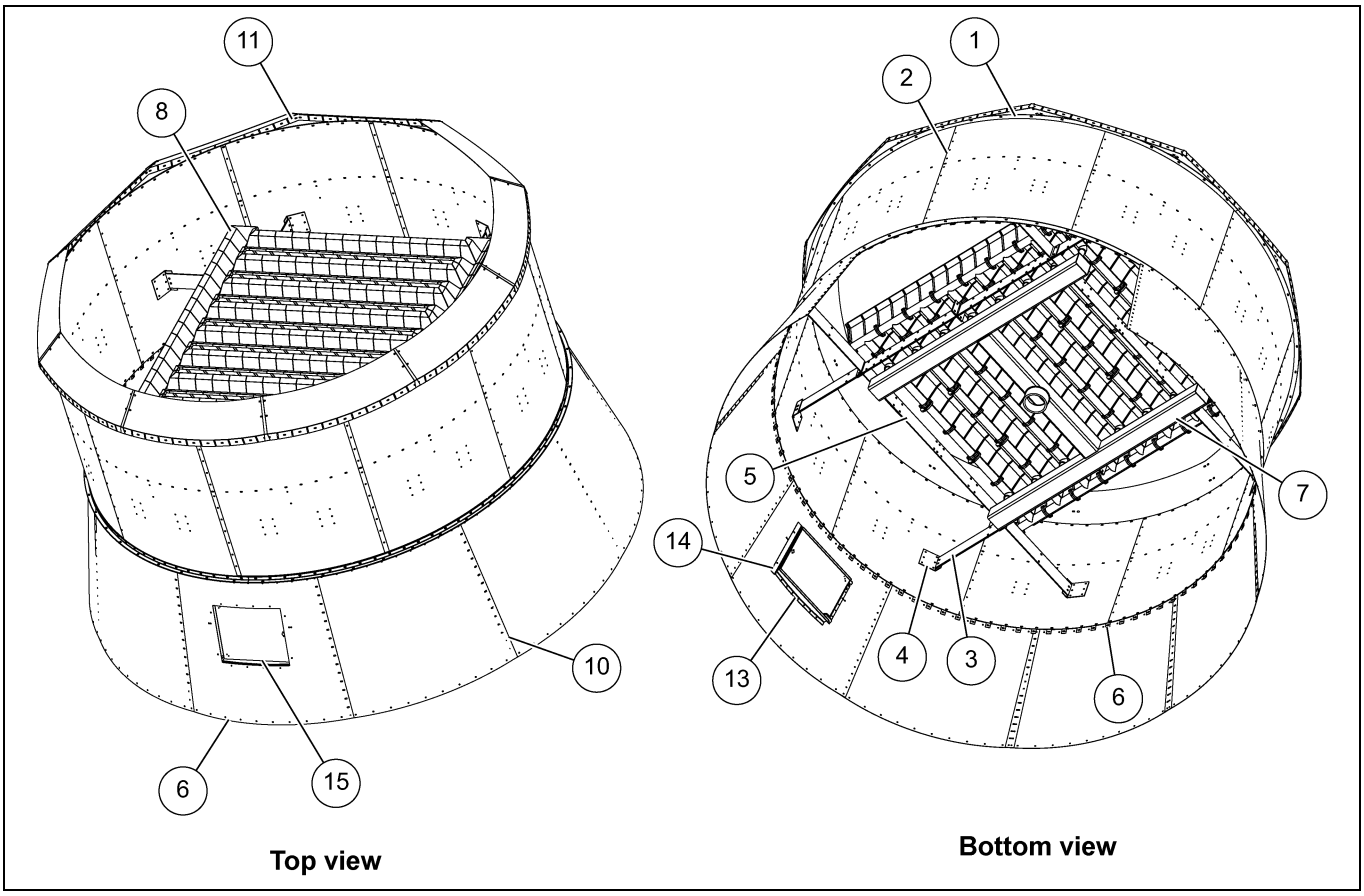
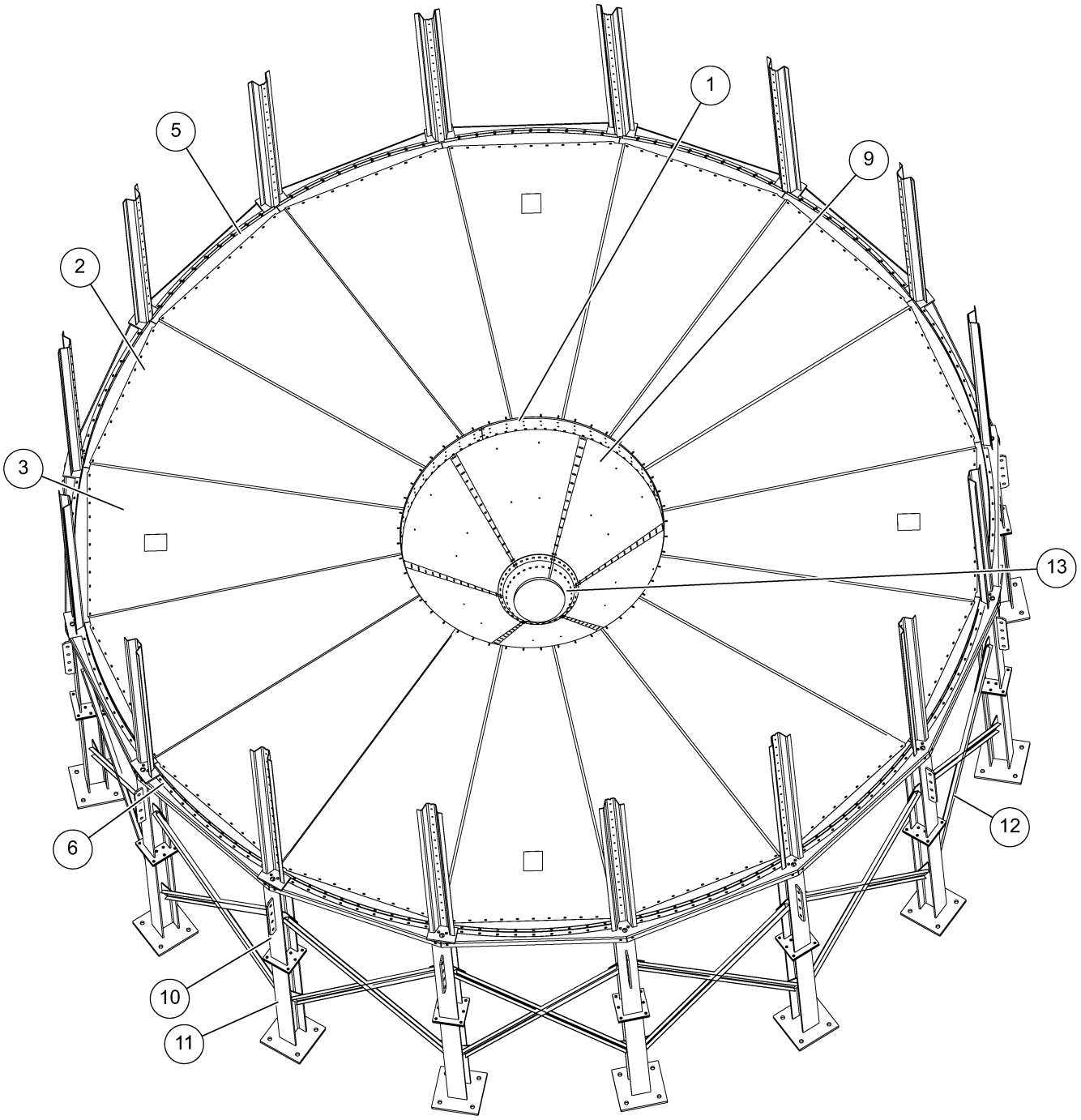


Figure 13A

24' Burner Assembly Parts List

Ref#	Part #	Description	Qty
1	GT1-0379-R	Burner Ring, Half Assembly - 24'	4
2	GT1-0413	Sheet, Burner Housing - 24'	10
3	GT1-0390	Burner Support - Main Beam 24' Diameter Dryer	4
4	GT1-0115	Burner Mounting Bracket	8
5	GT1-0392	Support, Burner - Tie Beam - 24'	2
6	GT1-0391	Crossbeam, Burner Support - 24'	4
7	GT1-1020	Burner Manifold Weldment, 7000 Dryers	1
8	GT3-1022	Burner, NP-1-LE-AL, 5000/6000/7000	1
9	GT1-0963	Ring, Top Reducer Flange - 542 Blowers	10
10	GT1-0965	Sheet, Reducer - 542 Blowers	9
11	GT1-0367	Baffle, Burner Housing - 24'	10
12	GT1-0966	Sheet, Reducer Door - 542 Blowers	1
13	GT1-0344	Bracket, Reducer Door Top/Bottom - 24'	2
14	GT1-0345	Bracket, Reducer Door Side - 24'	1
15	GT4-0396	Burner Access Door Assembly	1

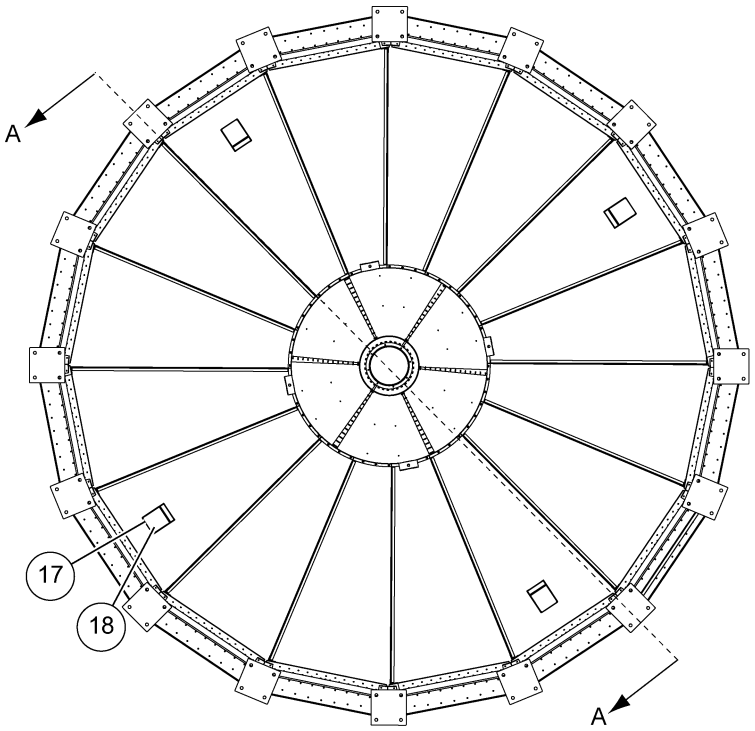
24' Base Assembly for Z-7060



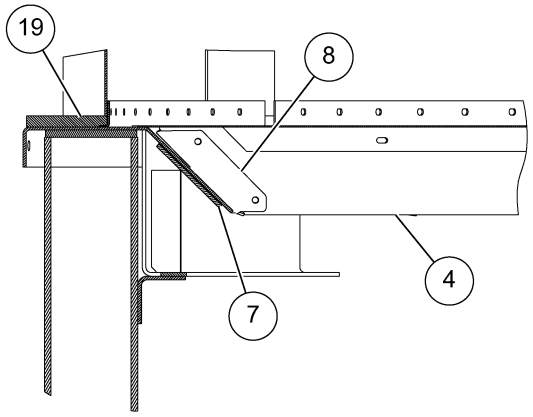
NOTE: *The parts pointed out on this page are listed* *on Page 66**.*

Figure 14A

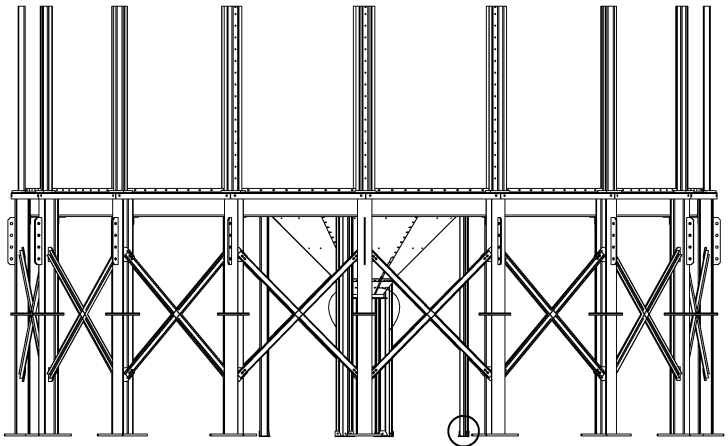
24' Base Assembly for Z-7060 (Continued)



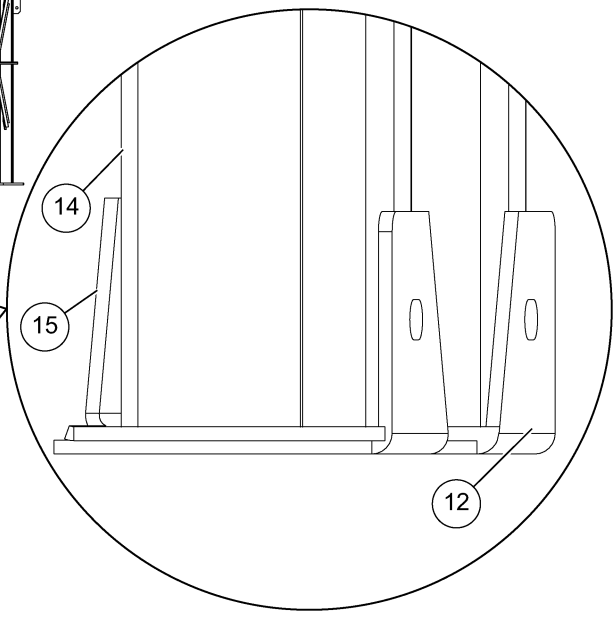
Top view



Section A-A



Front view



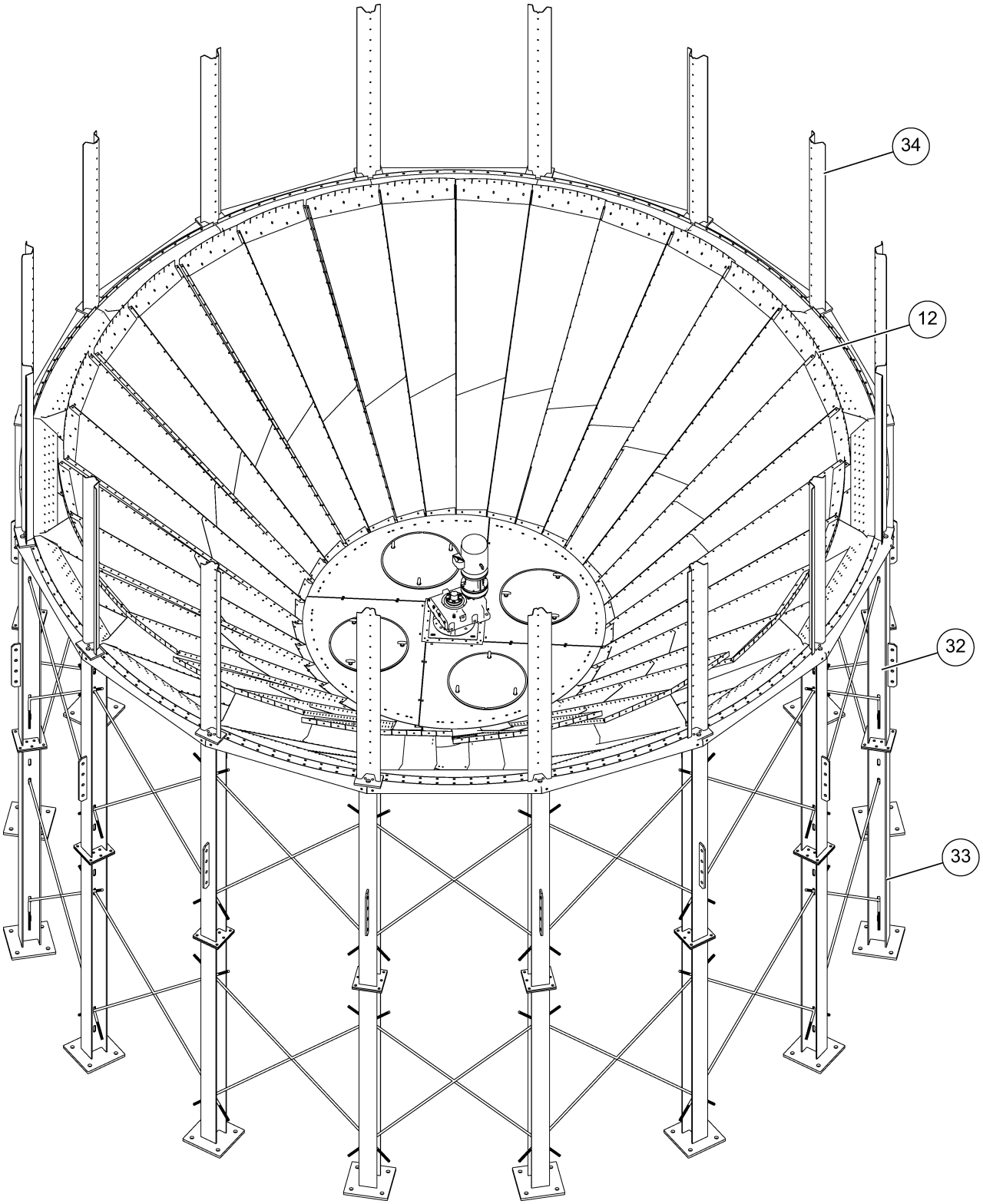
NOTE: *The parts pointed out on this page are listed* *on Page 66.*

Figure 14B

24' Base Assembly for Z-7060 Parts List

Ref #	Part #	Description	Qty
1	GT1-1185	Angle, Rolled 7' Discharge	4
2	GT1-1198	Sheet, Grain Floor Panel - 24' New	12
3	GT1-1198C	Sheet, Grain Floor Panel with Cleanout - 24'	4
4	GT1-1199	Support, Grain Floor - 24' Dryer New	16
5	810-1421-9	Compress Angle Weldment 24' Dryer	16
6	GT1-0377	Strip, Rolled Bolt-On Seal - 24'	16
7	CHT-1125-Y	24' Commercial Hopper Splice Plate Ochre	16
8	801-2715-2	Bracket, Outer 24' Dryers	16
9	BLK-10693	Hopper Panel: 7' 45° 22" (Formed)	6
10	GT1-1220-BS	Upper Column Weldment - 24' Flat Bin Silver	16
11	GT1-1221-BS	Lower Column Weldment - 24' Flat Bin Silver	16
12	GT1-1204	Crossmember, Leg X-Brace, 24' Flat Dryer	32
13	GT1-1197	Weldment, 16" Discharge Flange	1
14	GT1-1191	Discharge Hopper Support Legs	4
15	BLK-10057	Leg Anchor Plate, Back, Formed Part	4
16	BLK-10058	Leg Anchor Plate, Front	4
17	810-1127-2	Floor Drain Frame Weldment	4
18	801-1029-9	Gate, Drain Frame	4
19	GT1-0051	Base Stiffener Weldment	16
N/S	GT1-1193	Hopper Liner - Flat Bottom Dryer	6

24' Hopper Base Assembly for G-7000

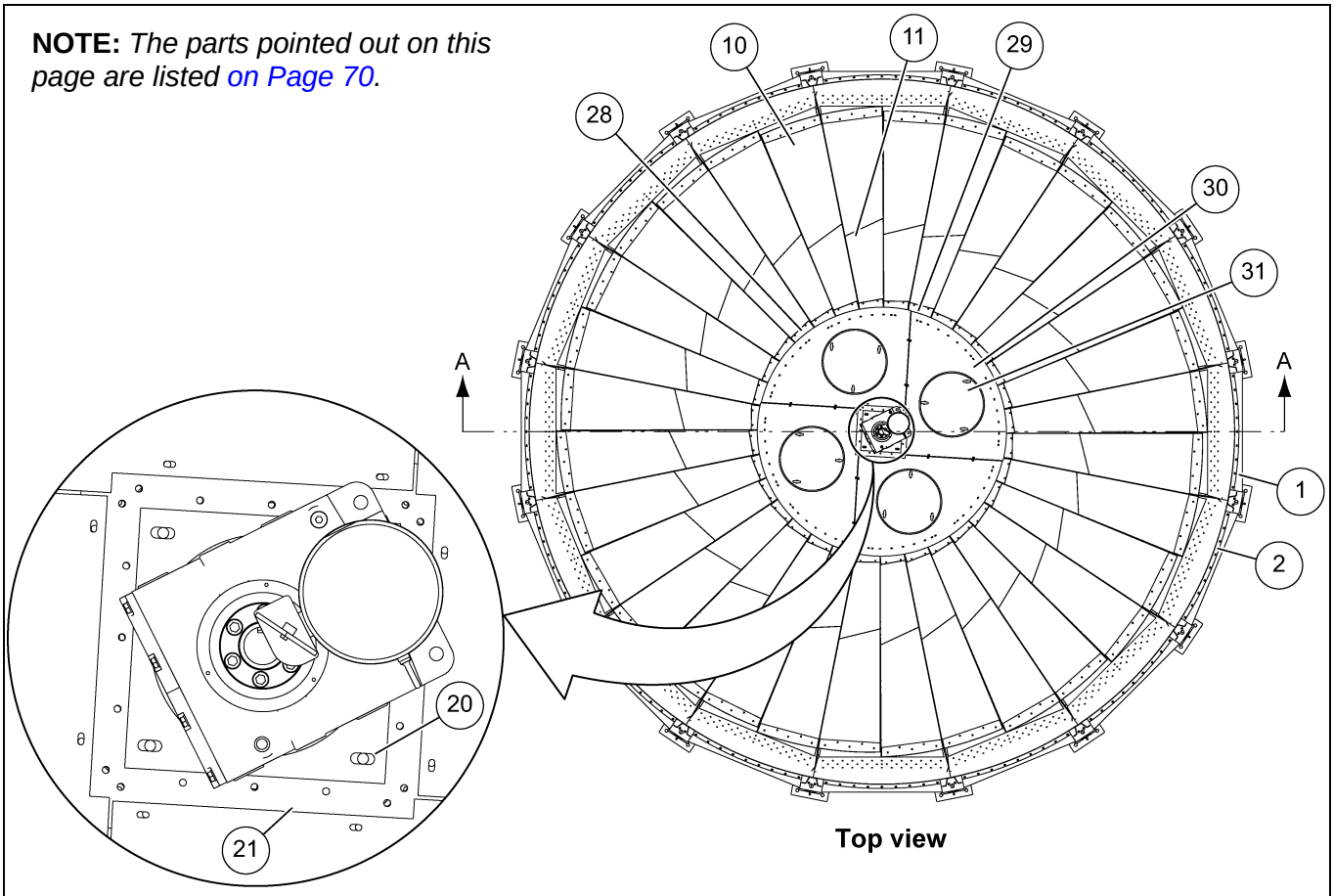


NOTE: *The parts pointed out on this page are listed* *on Page 70.*

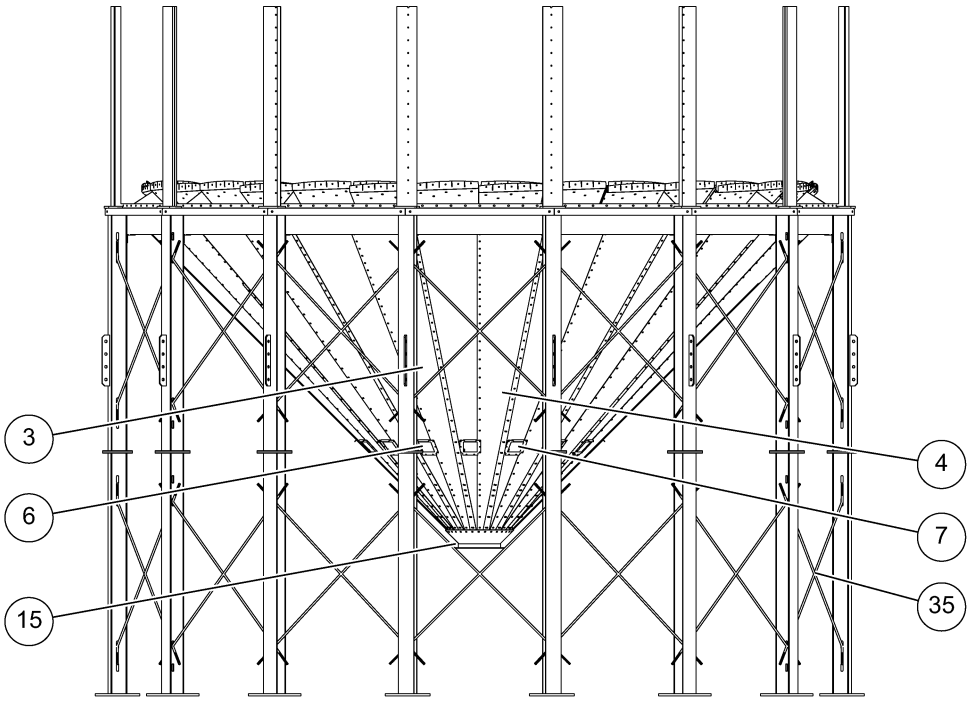
Figure 14C

24' Hopper Base Assembly for G-7000 (Continued)

NOTE: *The parts pointed out on this page are listed* *on Page 70**.*



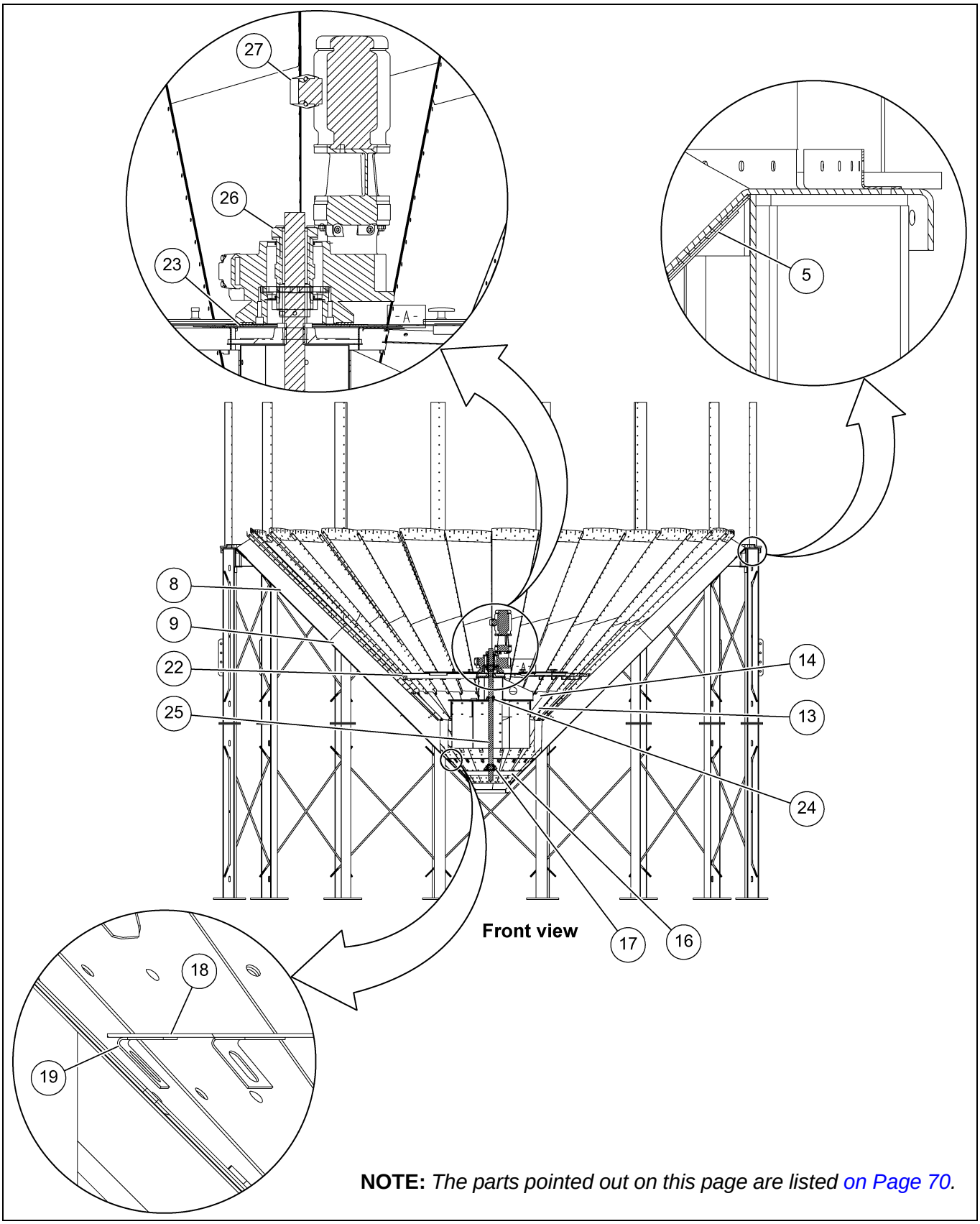
Top view



Front view

Figure 14D

24' Hopper Base Assembly for G-7000 (Continued)



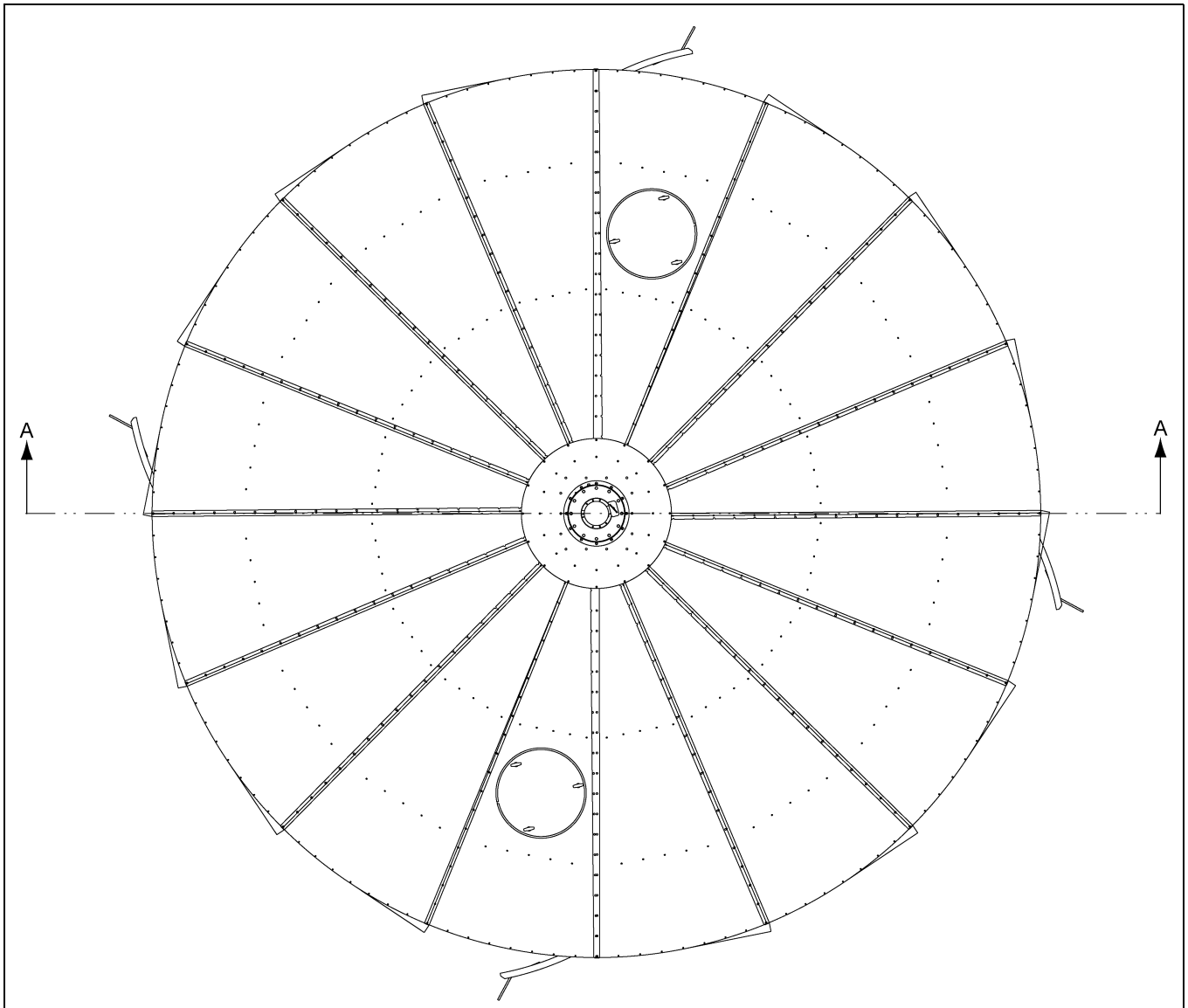
NOTE: *The parts pointed out on this page are listed* *on Page 70.*

Figure 14E

24' Hopper Base Assembly for G-7000 Parts List

Ref #	Part #	Description	Qty
1	GT1-0376	Compression Angle Weldment - 24'-45º	16
2	GT1-0377	Strip, Rolled Bolt-On Seal - 24'	16
3	GT1-0346	Hopper Panel R.H. with Discharge - 24'	16
4	GT1-0389	Hopper Panel L.H. - 24'	16
5	GT1-0533	Hopper Compression Angle Splice - 24'	16
6	GT1-0074	Port, Discharge	16
7	GT1-0075	Plate, Discharge	16
8	GT1-0981	Hopper Channel Top Half - 24'	16
9	GT1-0982	Hopper Channel Bottom Half - 24'	16
10	GT1-0351	Inner Hopper Panel Top Half - 24'	32
11	GT1-0983	Inner Hopper Sheet Bottom Half - 24'	32
12	GT1-0353	Inner Hopper Flange - 24'	32
13	GT1-0985	Adjustment Gate Panel R.H. - 24' Dryer	16
14	GT1-0984	Adjustment Gate Panel L.H. - 24' Dryer	16
15	GT1-0540	Hopper Collar Weldment - 24' 45º	1
16	GT1-0217	Support, Metering Drum Bearing	1
17	GT3-0057	Bearing, MB-2206 Bottom 2-3/8" Bore	1
18	GT1-0668	New Metering Drum Floor - 24'	1
19	GT1-0665	Clip, New Metering Drum Floor	16
20	GT1-0892	Plate, Gearbox Adjustment - Tower Dryer	1
21	GT1-1241	Plate, Gearbox - New Hopper Bottom Used in Bolted Down Floor	1
22	GT1-0222	Arm, Gearbox Torque	4
23	GT1-0891-BS	Plate, Gearbox Adapter - Tower Dryer Bin Silver	1
24	GT4-1131	Metering Drum Assembly	1
25	GT1-0444	Metering Drive Shaft Weldment	1
26	GT3-1038	Gearbox, Sumitomo C6145Y 90:1 Reducer	1
27	GT3-0138F	Motor, 5HP 184TC Inverter Duty 184T	1
28	GT1-1032	Floor Support Bracket - Inner Hopper - 24'	28
29	GT1-1031	Floor Support Bracket @ Torque Arm - 24'	4
30	GT1-1240	Sheet, Floor Panel - Inner Hopper Bolted Down Floor	4
31	815-2079-3	Door, Access Assembly	4
32	GT1-2416-Y	Upper Column Weldment (with 24" Extended Length) Powder Coat	16
33	GT1-2415-Y	Lower Column Weldment (with 24" Extended Length) Powder Coat	16
34	GT1-0051	Base Stiffener Weldment	16
35	CHT-1203	CHT X-Brace 3/4" x 100" 15'-45º	64

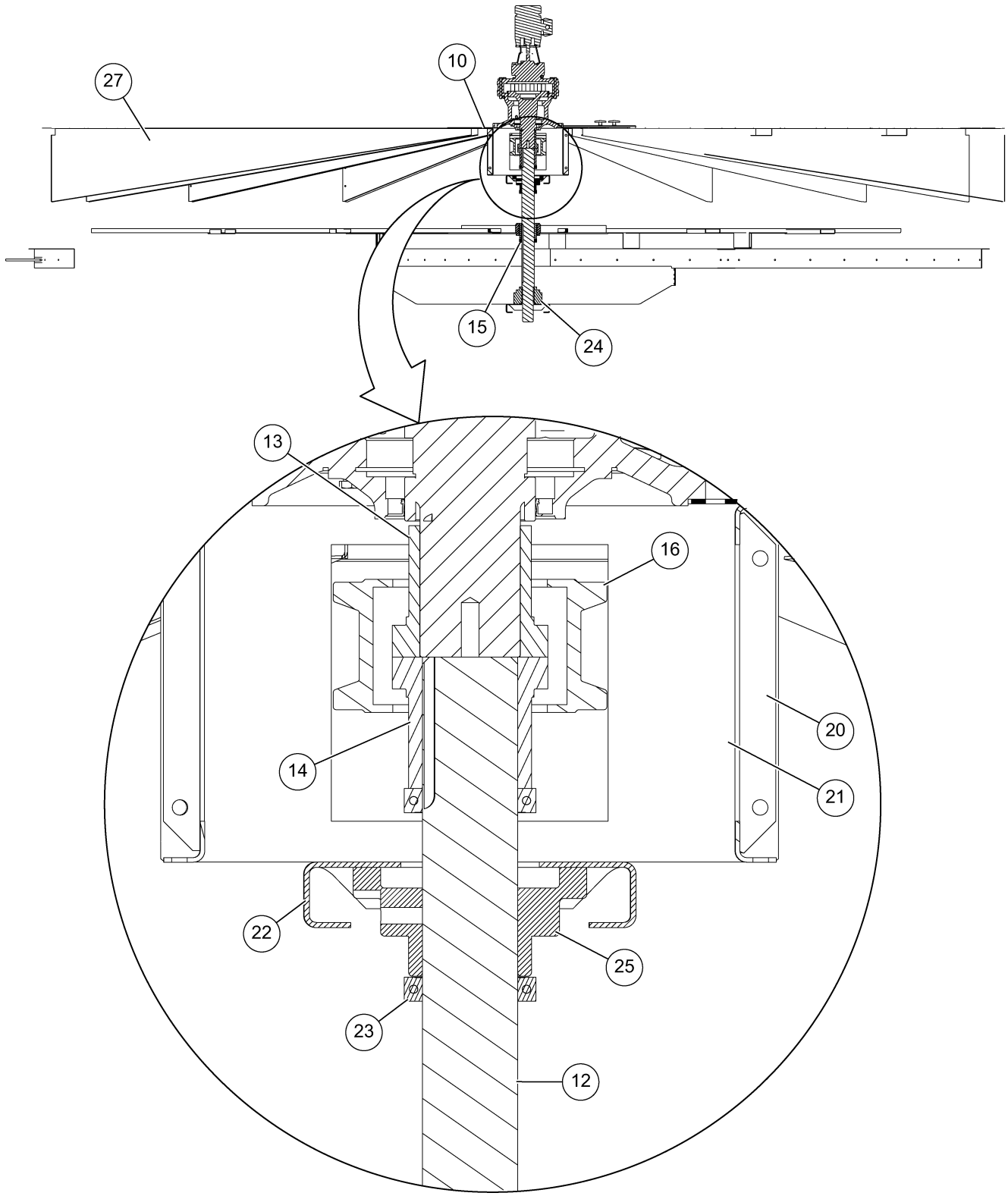
24' Sweep Arm Assembly



NOTE: *The parts pointed out on this page are listed* *on Page 74**.*

Figure 15A

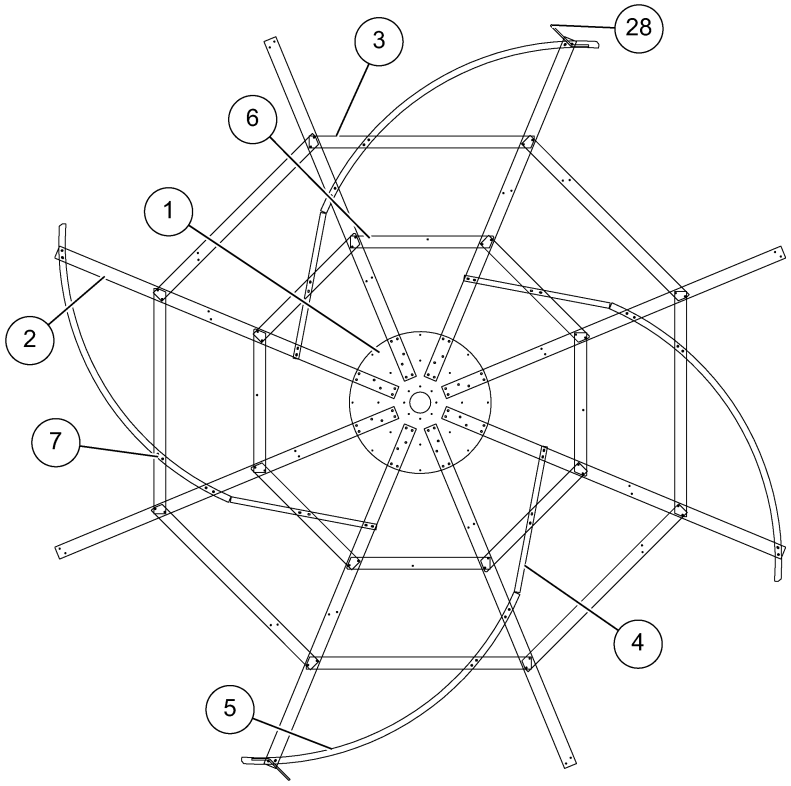
24' Sweep Arm Assembly (Continued)



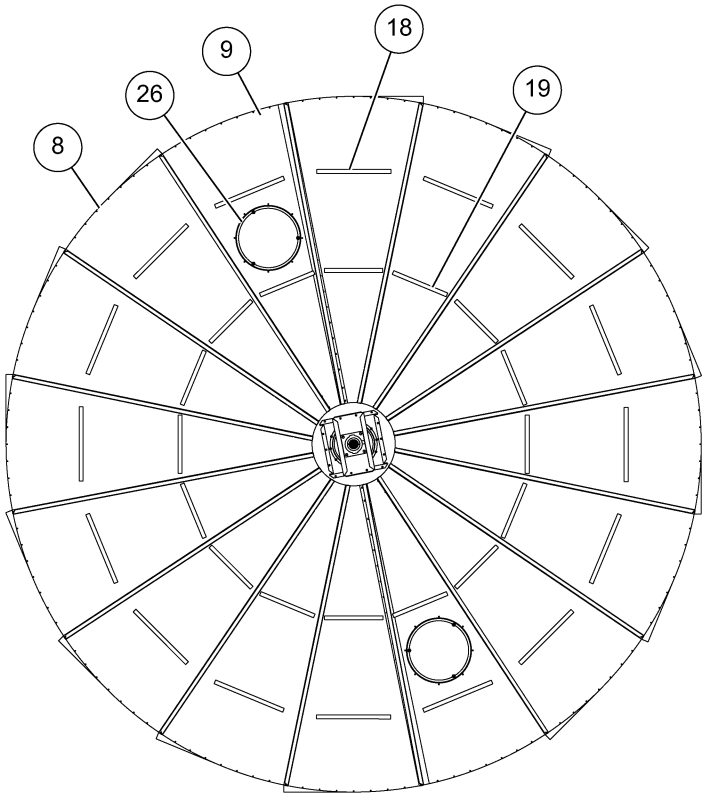
NOTE: *The parts pointed out on this page are listed* *on Page 74**.*

Figure 15B

24' Sweep Arm Assembly (Continued)



Section B-B



Section C-C

NOTE: *The parts pointed out on this page are listed on Page 74.*

Figure 15C

24' Sweep Arm Assembly Parts List

Ref #	Part #	Description	Qty
1	810-1384-9	Center Unload Disk Weldment	1
2	801-2158-5	Unload Sweep Support Arm 23'-4" Dryer	8
3	801-2159-3	Unload Sweep Lateral Supports 23'-4"	8
4	801-2400-1	Unload Sweep Arm 6" Inside Sweep	4
5	GT1-1200	Angle, 6" Rolled Unload Sweep - 24' New	4
6	801-2146-0	Unload Sweep Lateral Supports	8
7	GT1-1188	Unload Sweep Spacer - New	24
8	801-2700-4	Sheet, Cooling Floor Panel - 24' Dryers	14
9	801-2701-2	Cooling Floor Panel with Dryer - 24' Dryers	2
10	801-2702-0	Plate, Gearbox Mounting 4190/4195	1
11	717-1440-6	Gearbox, Sumitomo 6195DA 1505:1	1
12	806-1793-9	Unload Shaft - 18' and 24' Sweep Dry	1
13	717-1374-7	Hub, 1100H Coupling 3-5/8"	1
14	717-1375-4	Hub, 1100H Coupling 3-7/16" Bore	1
15	717-1365-5	Split Taper Bushing, S1 x 3-7/16"	1
16	717-1357-2	Cover, 1100GCAH Grid Kit	1
17	702-1067-9F	Motor, 2 HP 3 PH 1725 RPM 60 Hz Super	1
18	801-1482-0	Stiffener, Formed 28" LG	16
19	801-1483-8	Stiffener, Formed 22" LG	16
20	801-2251-8	Support, Lateral Chan, Sweep	2
21	801-2703-8	Support, Bearing Chan 24' Dryers	2
22	801-2252-6	Support, Top Bearing, Sweep Unload	2
23	717-1435-6	Collar, Locking 3-7/16"	3
24	717-1420-8	Bearing, 2-15/16 RFB215	1
25	CE-00522	Bearing, 3-7/16 Series 300 VF4S	1
26	815-2079-3	Access Door Assembly	2
27	801-2704-6	Support, Cooling Floor 24' Dryers	16
28	GT1-1458	Agitator Weldment	4

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 ▪ 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)	5 Years
Conditioning	Dryer Structural Design – (Tower, Portable and TopDry) ▪ Includes (frame, portable dryer screens, ladders, access doors and platforms)	5 Years
	All other Dryer parts including: ▪ Electrical (controls, sensors, switches and internal wiring)	2 Years
	All Non-PTO Driven Centrifugal and Axial Fans	3 Years
	Bullseye Controllers	2 Years
Material Handling	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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