

Construction Reference Guide for Tower Dryer

Model: Z-4742/G-4718

Construction Manual

PNEG-2206

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PNEG-2206

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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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.**



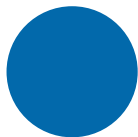
This symbol is used to address practices not related to personal injury.



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

- 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

1. 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

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

Lifting Hazard

- Single person lift can cause injury.
- Use a mechanical lifting device to lift or move the equipment during installation.



ST-0021-2

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

1. Safety

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 the 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

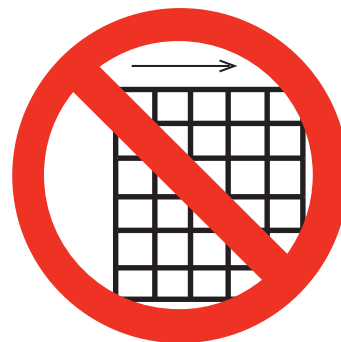
- Keep access door closed while on a platform to avoid falls.
- Always use proper personal protective equipment and proper clothing when using equipment. Failure to follow safety precautions can result in severe injury or death.



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

1. Safety

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

Stay Clear of Rotating Parts

- Do not service equipment while it is in operation.
- Entanglement in rotating parts or exposed belts will cause serious injury or death.
- Keep all shields and covers in place at all times.
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.



ST-0072-1

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.

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ST-0007

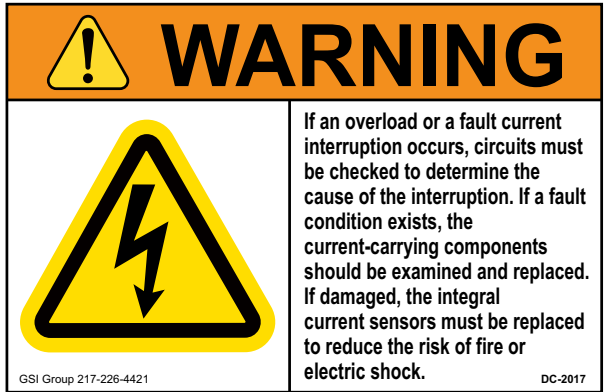
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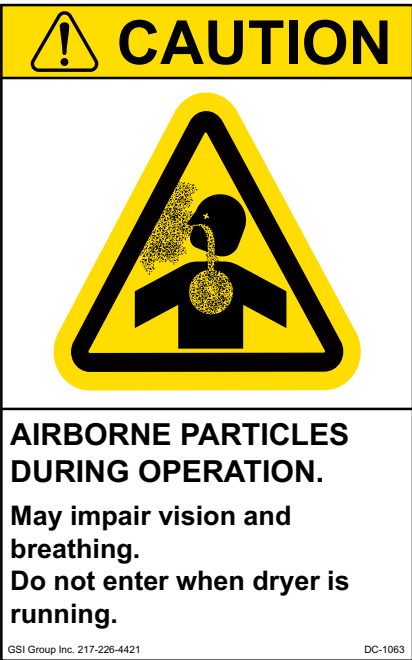
The safety decals on your equipment are safety indicators which must be carefully read and understood by all personnel involved in the installation, operation, service and maintenance of the equipment.

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

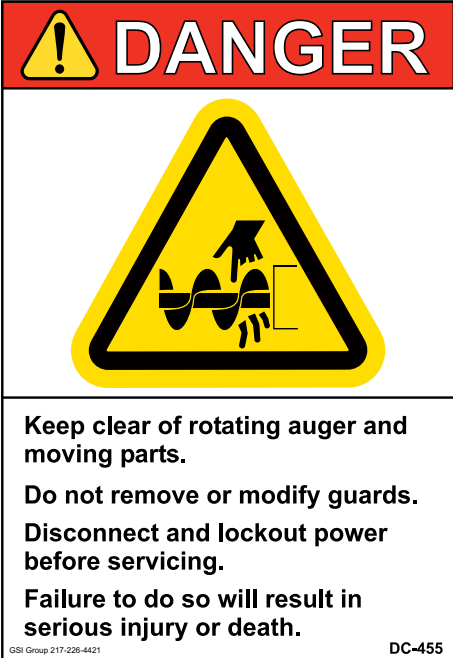
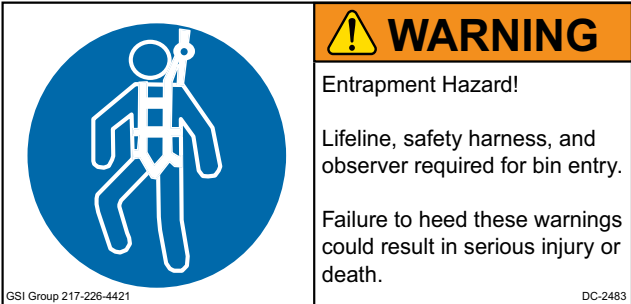
GSI Decals

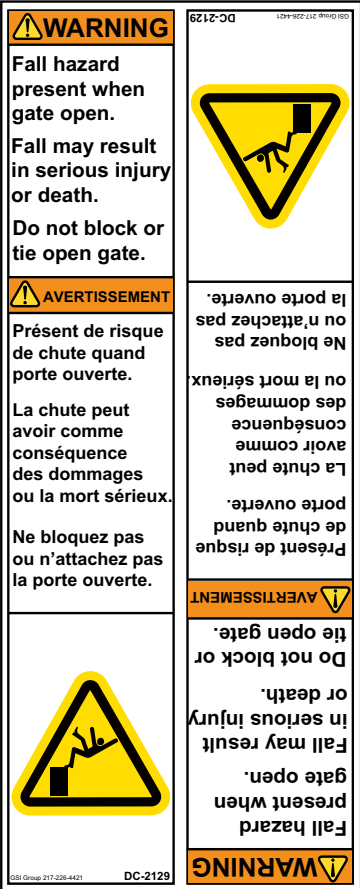
1004 E. Illinois St.
Assumption, IL. 62510
Phone: 1-217-226-4421

Locations	Decal #	Decals	Description
Located on the platforms	DC-2188	 DANGER DO NOT EXCEED PLATFORM LOAD LIMIT Load limit = 1000 LBS. (4.50 kN) Excessive load will damage platform and cause platform to fall. Injury or death will result.	Decal, Danger Load Limit
Located on the inside main power box door	DC-2017	 WARNING If an overload or a fault current interruption occurs, circuits must be checked to determine the cause of the interruption. If a fault condition exists, the current-carrying components should be examined and replaced. If damaged, the integral current sensors must be replaced to reduce the risk of fire or electric shock.	Decal, Fault Current Warning
Located on the hopper service door	DC-1060	 DANGER AMPUTATION HAZARD. Rotating drum below. Will cause serious injury or death. LOCKOUT power before entering or servicing.	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

2. Decals

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	 HIGH VOLTAGE Will cause serious injury or death. Lockout power before servicing. HAUTE TENSION Causera de sérieuses blessures ou la mort. Couper/verrouiller le courant avant l'entretien. DC-1224	Decal, Danger High-Voltage (LG)
Located on the ladders, stairways and platforms	DC-2129	 WARNING Fall hazard present when gate open. Fall may result in serious injury or death. Do not block or tie open gate. AVERTISSEMENT Présent de risque de chute quand porte ouverte. La chute peut avoir comme conséquence des dommages ou la mort sérieux. Ne bloquez pas ou n'attachez pas la porte ouverte. WARNING Fall hazard present when gate open. Fall may result in serious injury or death. Do not block or tie open gate. AVERTISSEMENT Présent de risque de chute quand porte ouverte. La chute peut avoir comme conséquence des dommages ou la mort sérieux. Ne bloquez pas ou n'attachez pas la porte ouverte. DC-2129	Decal, Platform Safety Gate

3. Specifications/Overview

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.

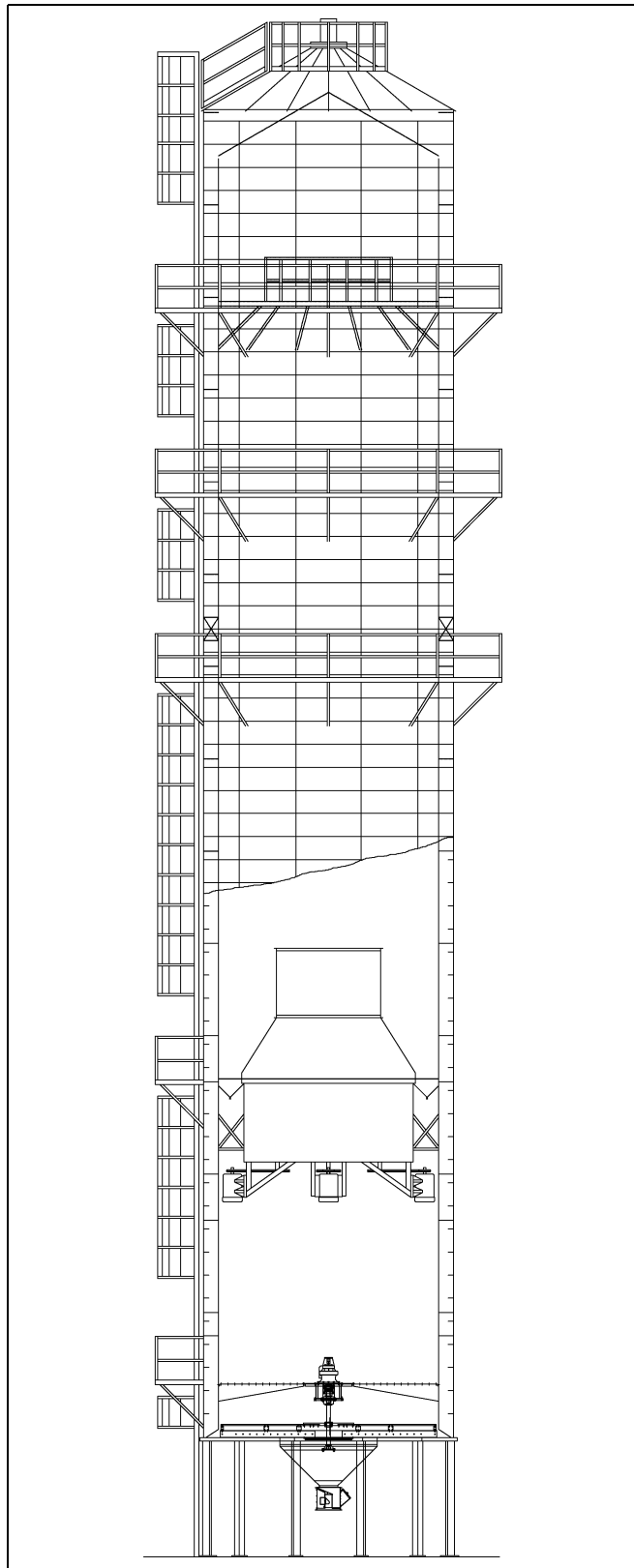


Figure 3A

Specifications	Models	
	Z-4742	G-4718
Drying CFM	213,600	213,600
Cooling CFM	106,800	106,800
Blower HP	3-75	3-75
Metering HP	1.5	-
Burner Capacity (BTU x 1000)	46,138	46,138
Average Heat (BTU x 1000)	26,529	26,529
Grain Column	12-3/4"	12-3/4"
Tower Diameter ¹	18'	18'
Overall Height ²	109'-4"	111'-11"
Wet Holding	731	731
Heat Holding (BU)	2,964	2,964
Cool Holding (BU)	1,038	1,038
Unload Holding	144	144
Total Column Holding	4,002	4,002
Total Dryer Holding (BU)	4,877	4,939
BPH Capacity ³ (20% - 15%)	4,700	4,700
BPH Capacity ³ (25% - 15%)	2,820	2,820

Z-4742	G-4718
18' Diameter x 109'-4" Height 25' Diameter with Catwalks	18' Diameter x 110'-3" Height 25' Diameter with Catwalks+ 20" Inlet Pipe=111'-11" Height

Tower Dryer Model Z-4742 with Moisture Control

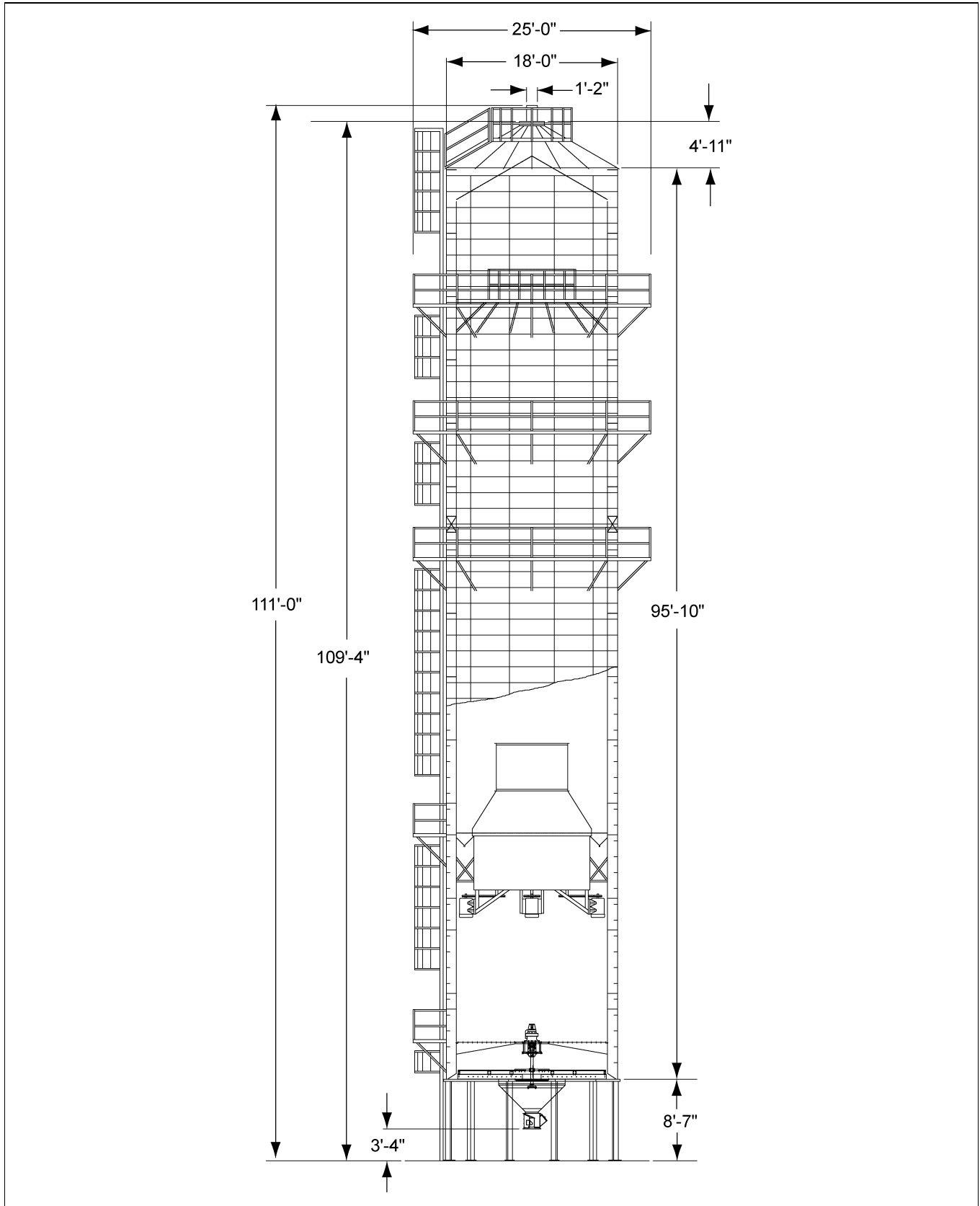


Figure 4A Tower Dryer Model Z-4742

Tower Dryer Model G-4718 with Moisture Control

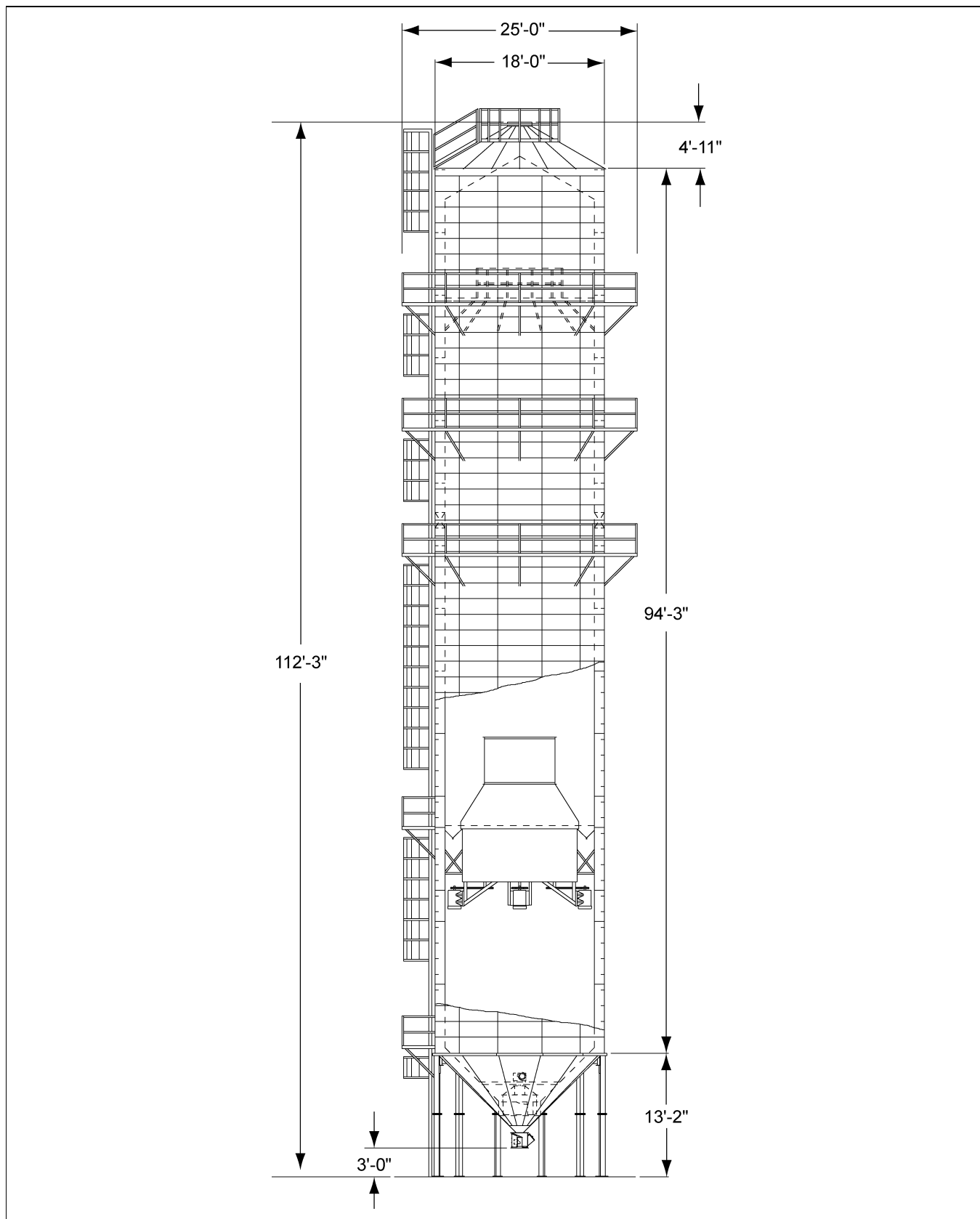


Figure 4B Tower Dryer Model G-4718

Foundation Plan Model (Z-4742 and G-4718)

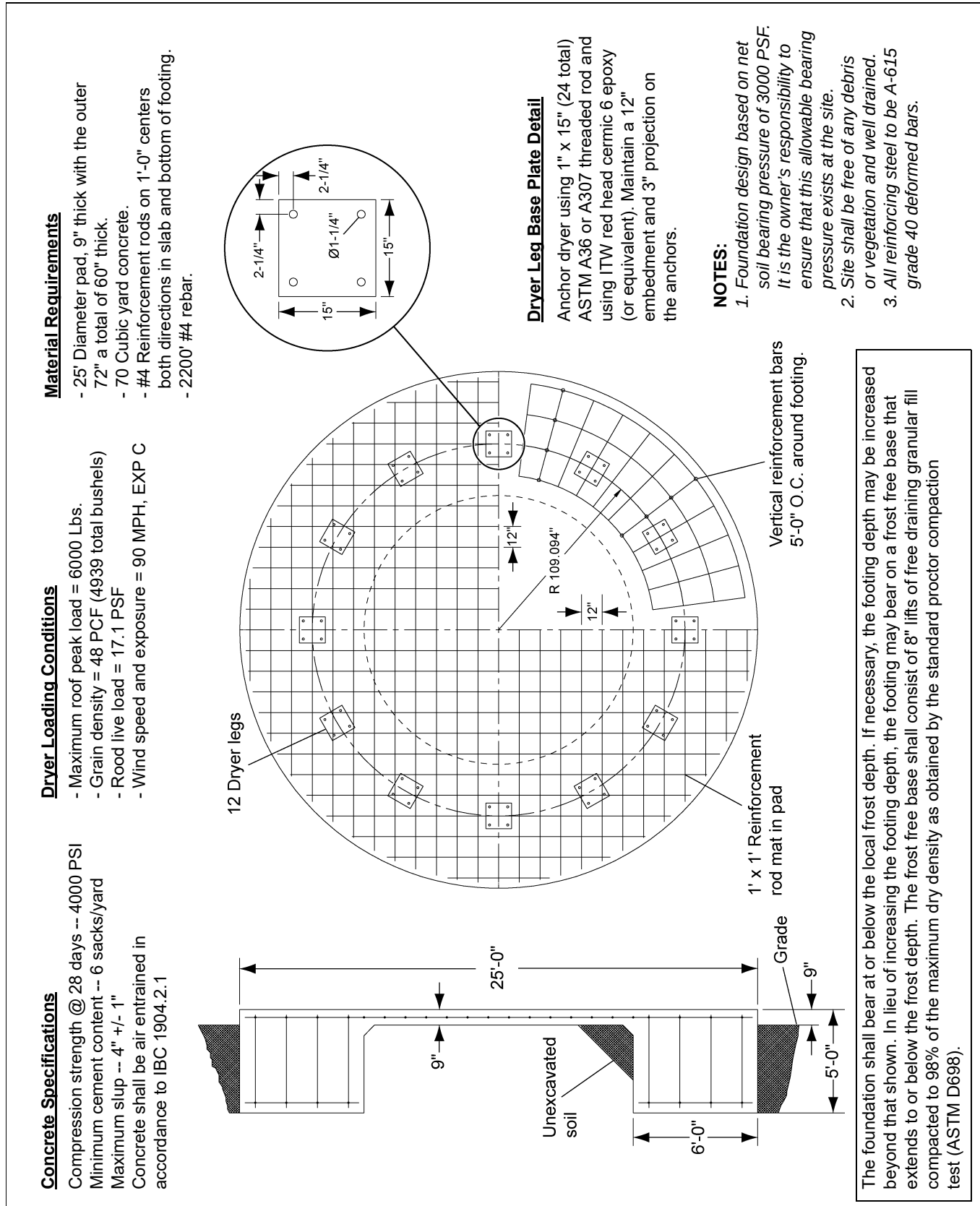
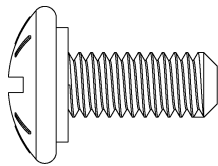
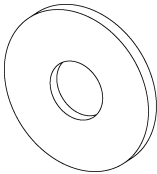
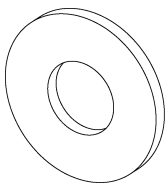
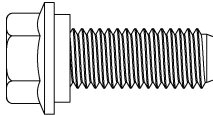
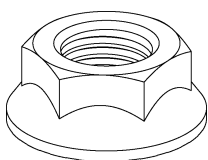
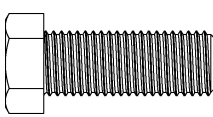
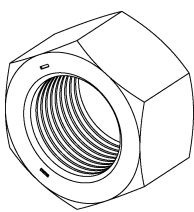
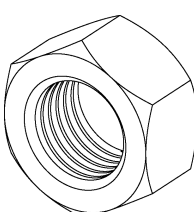
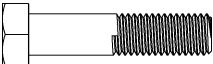
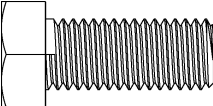
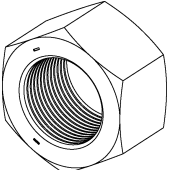
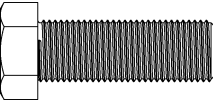
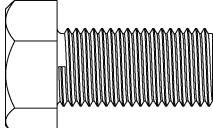
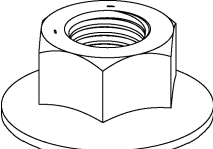
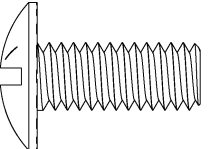
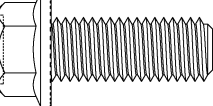


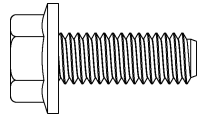
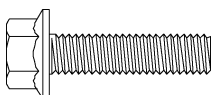
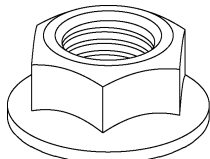
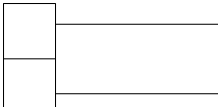
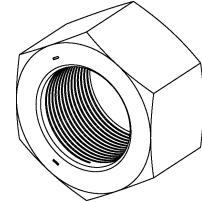
Figure 5A Foundation Plan Models for Z-4742 and G-4718

Hardware Usage for 18' 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		Washer, Flat 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		Washer, Flat 3/8" 7/16" I.D. 1" O.D. YDP	Rolled Channel
S-10260		Bolt, Flange 5/16"-18 x 1" JS500 Grade 8 or Grade 8.2 Full Thread with Sealing Washer	Peak Walkaround to Roof, Roof Ladder to Roof
S-3611		Nut, Flange 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		Nut, Hex 1/2"-13 YDP Grade 5	At all 1/2" Bolts
S-396		Nut, Hex 5/16"-18 YDP Grade 2	Peak Walkaround 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 Stiffener to Legs
S-4109		Bolt, HHTB 5/8"-11 x 1-1/2" YDP Grade 8	Leg Support Clip to Compression Channel
S-4110		Nut, Hex 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		Nut, Flange 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 5	Cooling Floor to Floor Supports
S-7447		Bolt, Flange 5/16"-18 x 1" SS (Full Thread)	Outside Wall Screen, Vertical Seams, Outside Windows

6. Hardware Usage

Part #	Figure	Description	Usage
S-7470		Bolt, Flange 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		Bolt, Flange 3/8"-16 x 1" JS500 Grade 8 or Grade 8.2	Vertical Channel Splices Plates, All Catwalk Clips to Channels, Base Stiffener to Channels, Hopper Support Legs, Plenum Eave Channel, Plenum Roof Rafters
S-7486		Bolt, Flange 3/8"-16 x 1-1/2" JS500 Grade 8 or Grade 8.2 (Full Thread)	Tower Dryer Lifting Clips
S-8452		Nut, Flange 5/16"-18 SS Waxed	All 5/16" Stainless Bolts
S-8956		Bolt, Flange 5/16"-18 x 3/4" SS	Outside Wall Screen, Horizontal Seams
S-234		Nut, Hex 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 18' Diameter Dryer Models

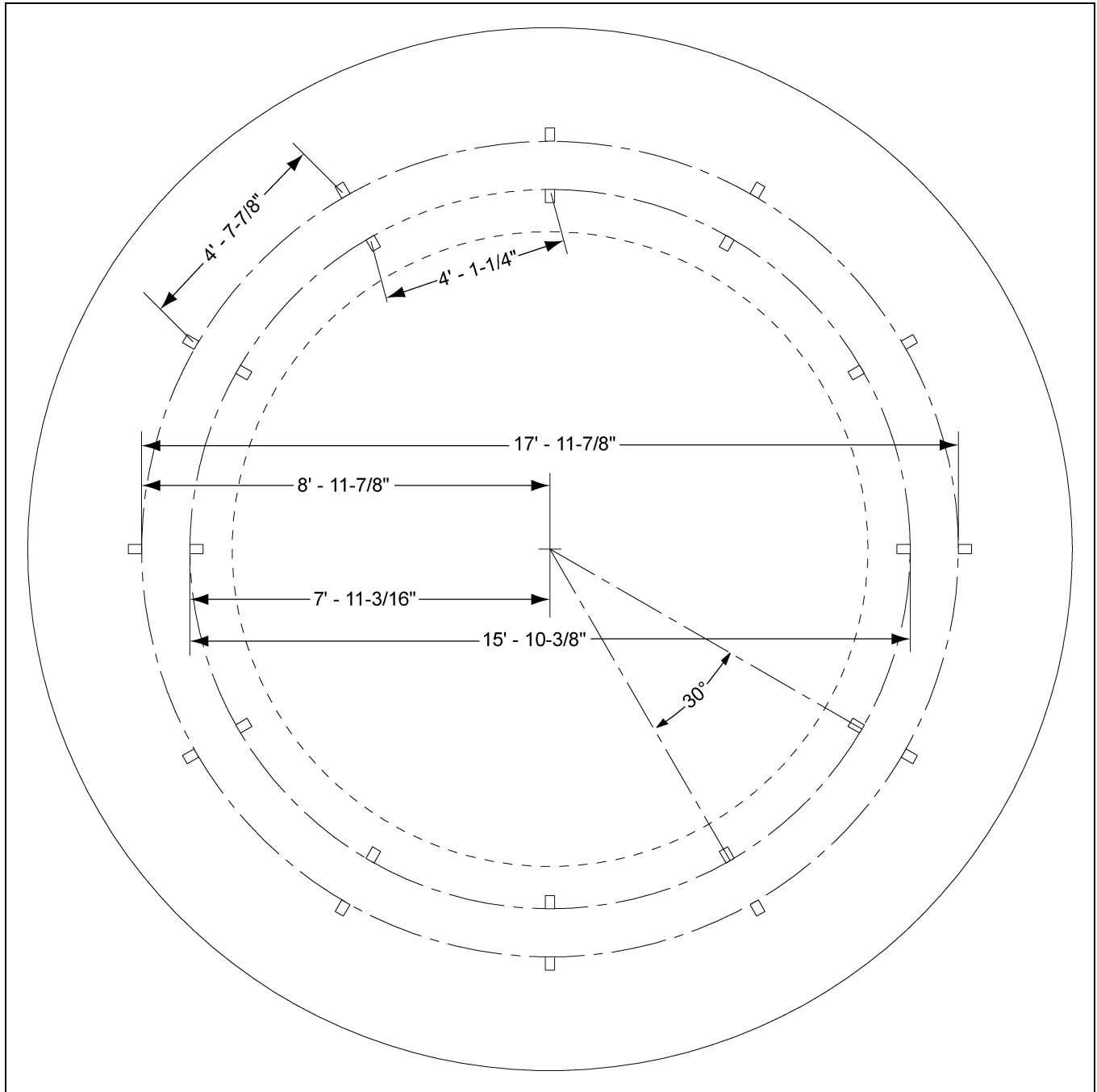


Figure 7A *Jig Clip Positions*

7. Jig Clip Layout Instructions

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

7. Jig Clip Layout Instructions

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

7. Jig Clip Layout Instructions

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.)

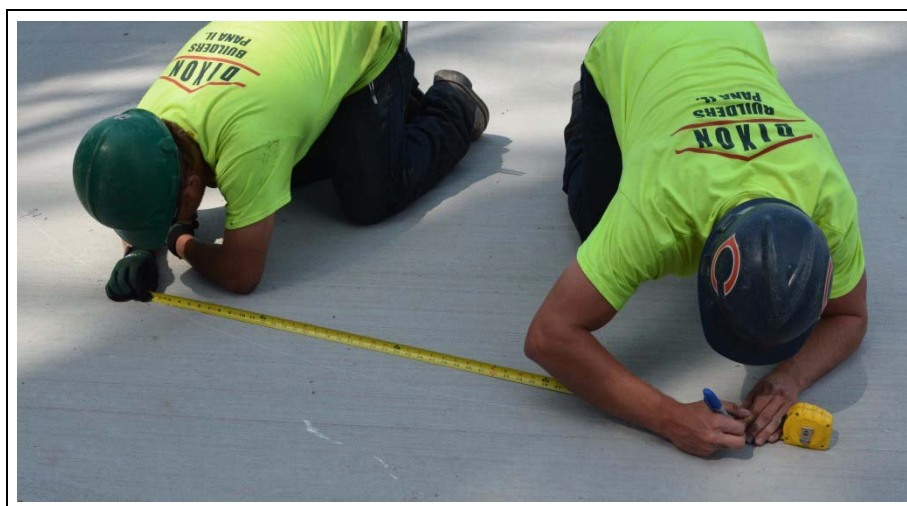


Figure 7H

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.)*

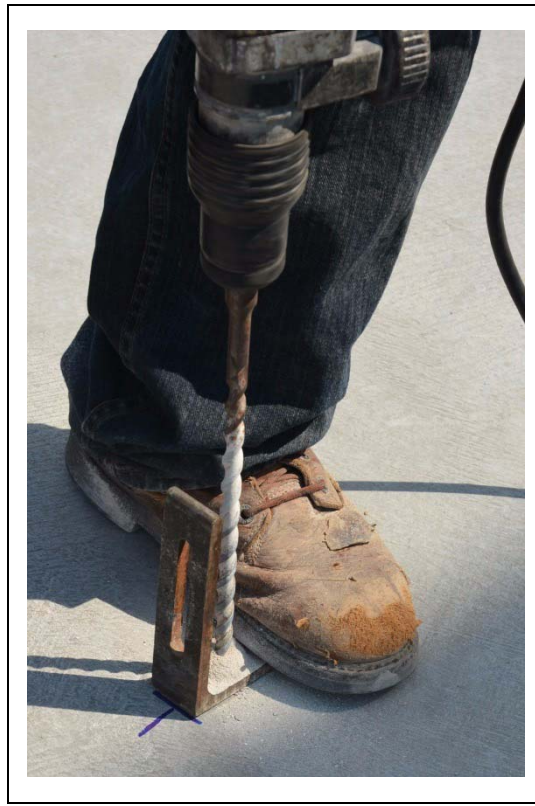


Figure 7J

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



Figure 7K

Sheet Layouts (Z-4742)

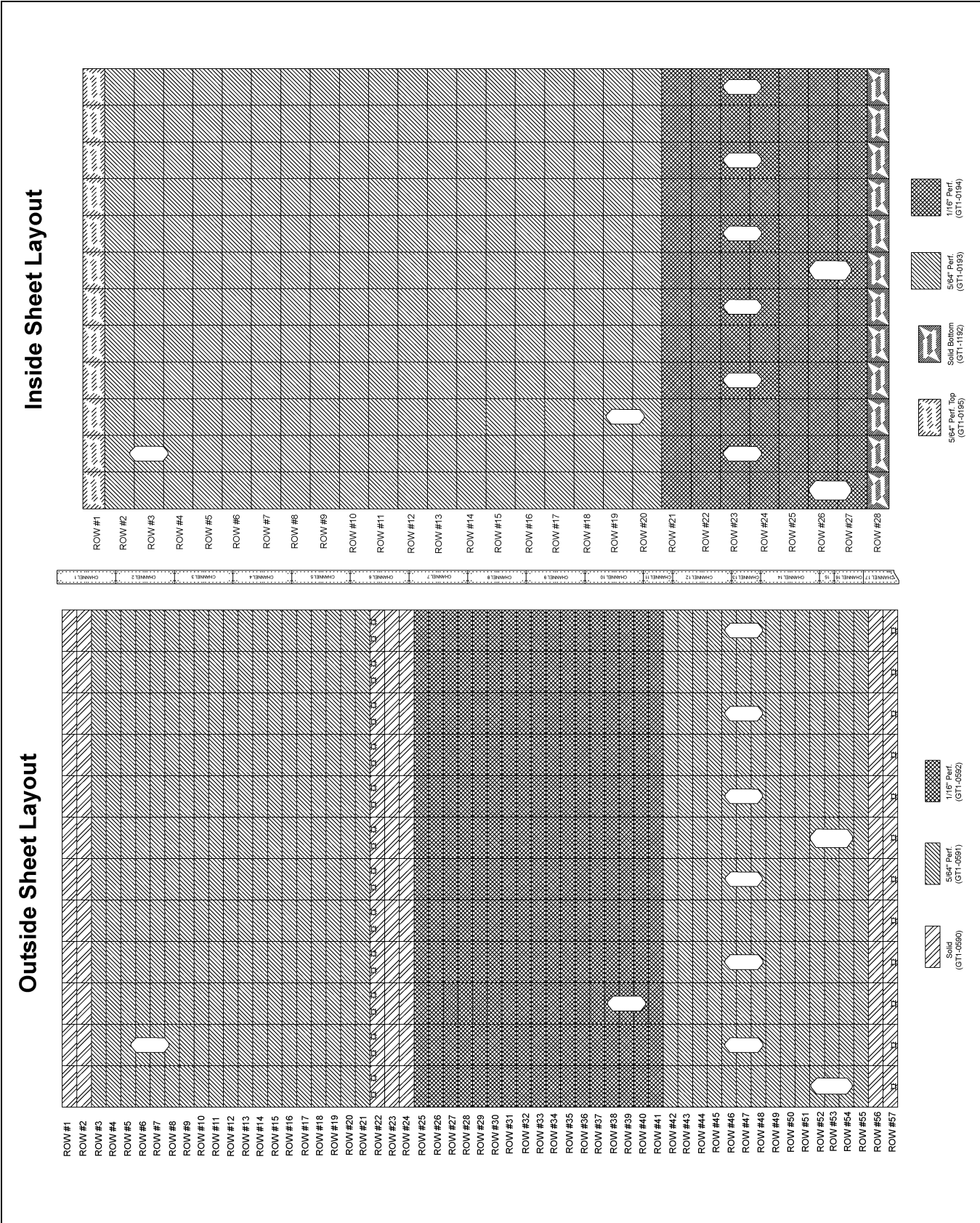


Figure 8A Sheet Layouts

Sidewall Sheet Guidelines

1. Inside sidewall sheets (and hardware) are galvanized, and form plenum chamber wall of dryer.
2. Outside sidewall sheets (and hardware) are stainless steel, and form tower wall of dryer.
3. These two sidewalls of the dryer are separated by columns of vertical channels (6). This structure forms grain columns through which grain flows.
4. Each perforated sidewall sheet has a rough side and a smooth side. Install sidewall sheets so the rough side is away from the grain column. This reduces grain sticking to sidewall sheets and allows grain to flow freely down grain column. (See Figure 8C on Page 32 for sidewall sheets overlap.)
5. Install sidewall sheets to vertical channels so sidewall sheets overlap as explained in Figure 8C on Page 32.
6. Plan ahead and leave out a vertical channel (6) and some sidewall sheets where necessary to bring burner, reducer, and blowers into dryer. (Install the rolled plenum channels temporarily as required to maintain shape and stability.)
7. **Bolts:** In each section of the dryer, loosely install all bolts to the sidewall sheets and common bolts through rolled plenum channels reinforcing sidewall sheets before tightening bolts in that section of the dryer.
8. Insert bolts so that bolt head is in the grain column. This reduces collection of fines (fine debris from grain), and allows grain to flow freely. (See Figure 8C on Page 32.)
9. Do not fill bottom bolt holes in ring of the sidewall sheets. Install next ring of the sidewall sheets with common bolts in bottom bolt holes in previous sidewall sheets.
10. Leave out some bolts for the lifting brackets.
11. On vertical sidewall sheet seams (plumb, up and down), use 5/16" x 1" hex head bolts and nuts.
12. On horizontal sidewall sheet seams (level, left and right), use 5/16" x 3/4" hex head bolts and nuts.

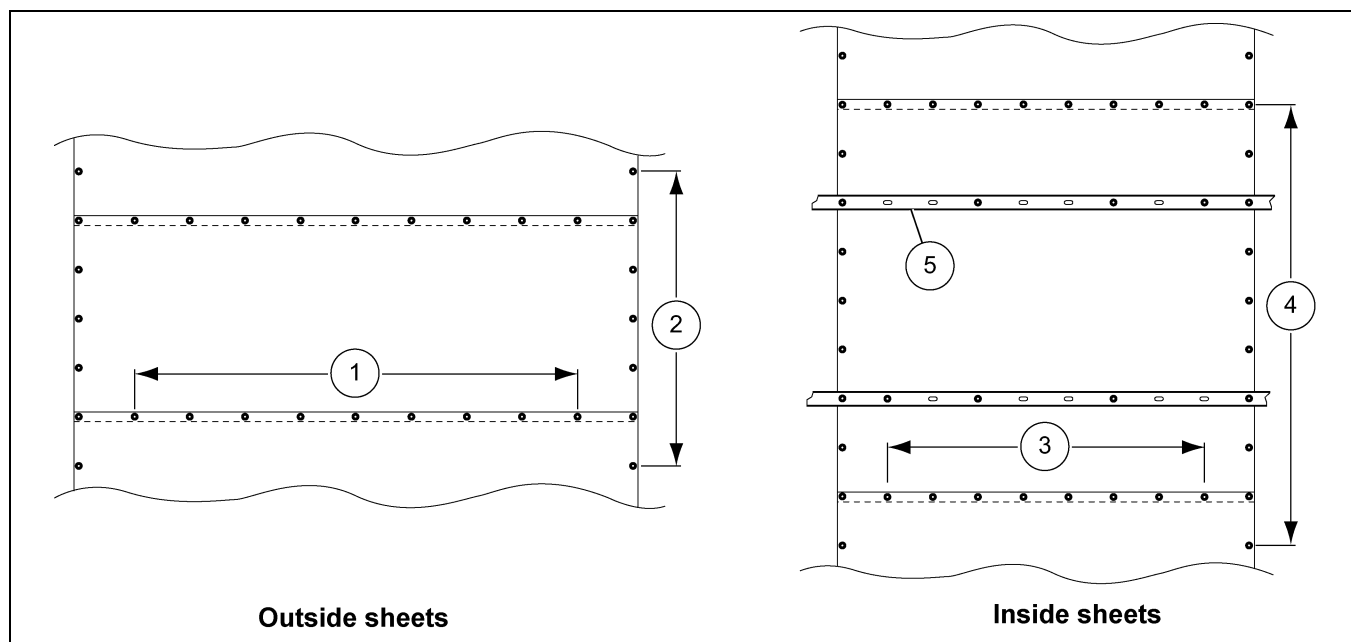


Figure 8B Sidewall Sheet Attachment

Ref #	Description
1	5/16" x 3/4" Stainless Bolts and Nuts
2	5/16" x 1" Stainless Bolts and Nuts
3	5/16" x 3/4" Galvanized Bolts and Nuts

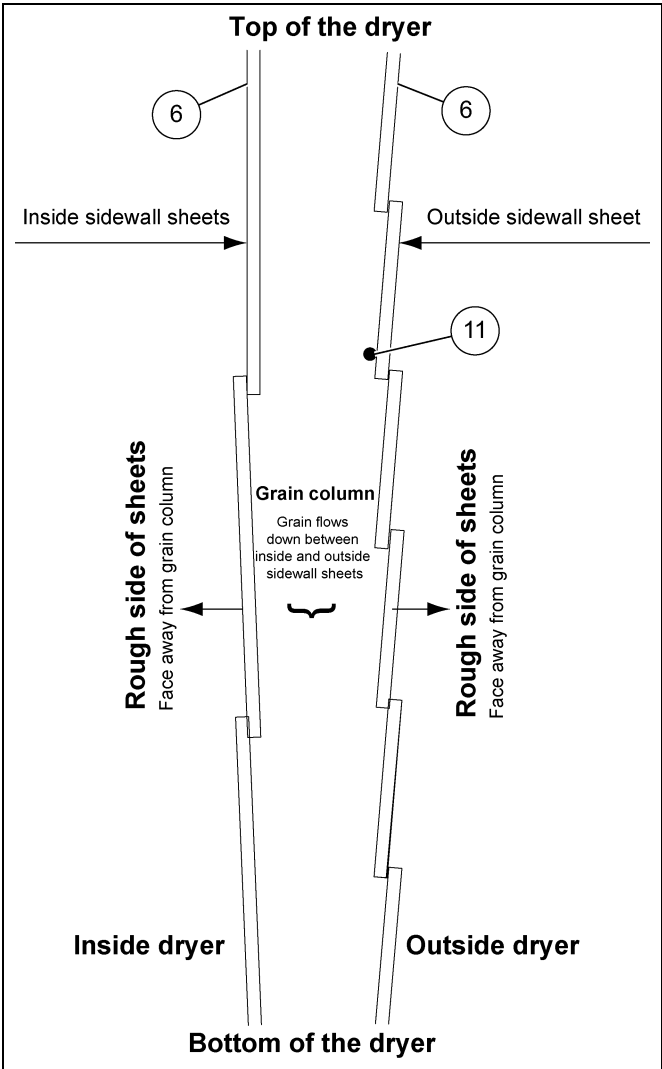
Ref #	Description
4	5/16" x 1" Galvanized Bolts and Nuts
5	Rolled Channel

Sidewall Sheet Guidelines (Continued)

- 13. Use washers where there is a possibility of leaking.
- 14. To tighten bolts, work around the ring of sidewall sheets, tightening horizontal seams, then vertical seams.
- 15. To avoid wrinkling sidewall sheets when tightening bolts, work in pairs. One person (standing in grain column) holds alignment punches in top and bottom holes of sidewall sheets to align them to vertical channel holes. Second person (standing outside grain column) tightens each nut with impact wrench. Drill out misaligned stainless steel sidewall sheets. While one worker is tightening horizontal bolts on the outside sheets, second worker (inside grain column) presses outside sheets outward.
- 16. When installing the sidewall sheets, install the support clips to them for parts such as catwalks, platforms, bracing, etc.

Rolled Plenum Channels

- 17. Rolled plenum channels are spliced with plenum channel splices, and installed in rings to inside sidewall sheets. Install 20" apart, and down length of the dryer. If necessary to clear another part, shift a rolled plenum channel ring up or down 5" (10" maximum).
- 18. Splice to rolled plenum channel, use 5/16" x 1" whiz bolts. Rolled plenum channel to sidewall sheet, use 5/16" x 3/4" whiz bolts.



Ref #	Description
6	Vertical Channels
11	Insert bolts away from the grain column, with head of bolt inside the grain column.

Figure 8C Sidewall Sheets Overlap

Inside Sidewall Sheet Placement

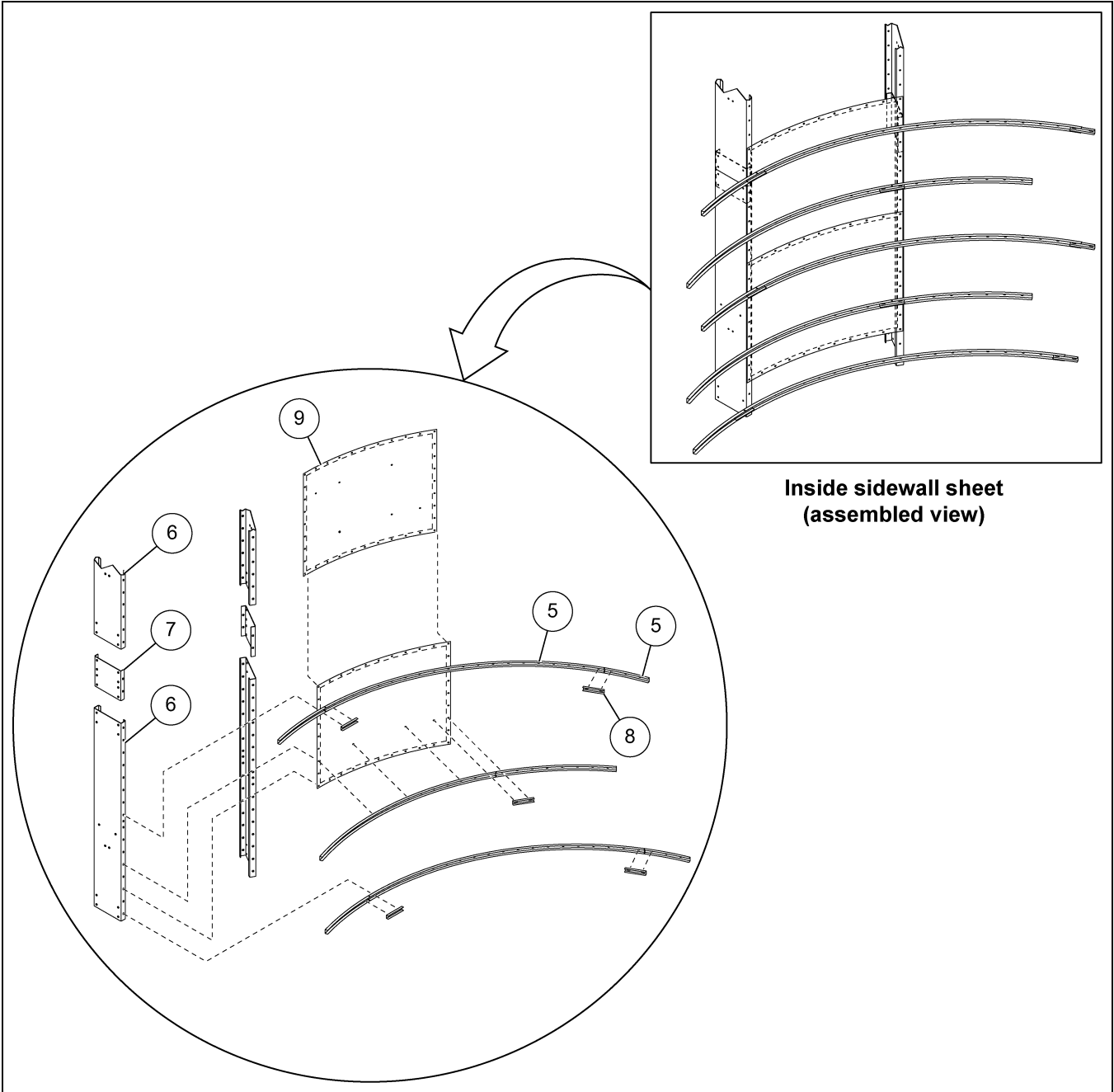


Figure 8D Inside Sidewall Sheet Placement

Ref #	Description
5	Rolled Channel
6	Vertical Channel
7	Vertical Channel Splice
8	Rolled Channel Splice
9	Inside Sidewall Sheet

Outside Sidewall Sheet Placement

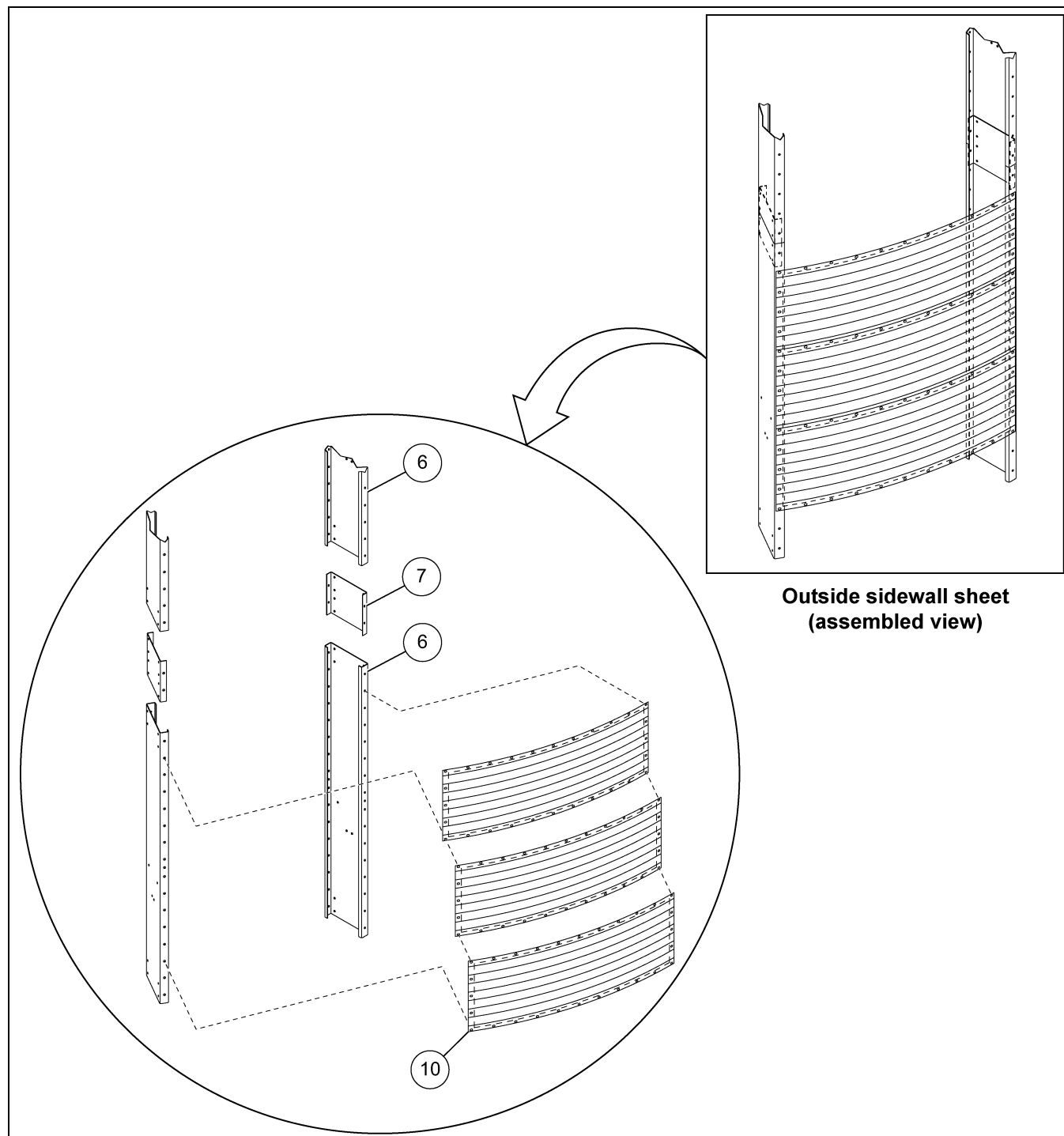


Figure 8E *Outside Sidewall Sheet Placement*

Ref #	Description
6	Vertical Channel
7	Vertical Channel Splice
10	Outside Sidewall Sheet

Clip Placement Channels 1 to 3 (Z-4742 and G-4718)

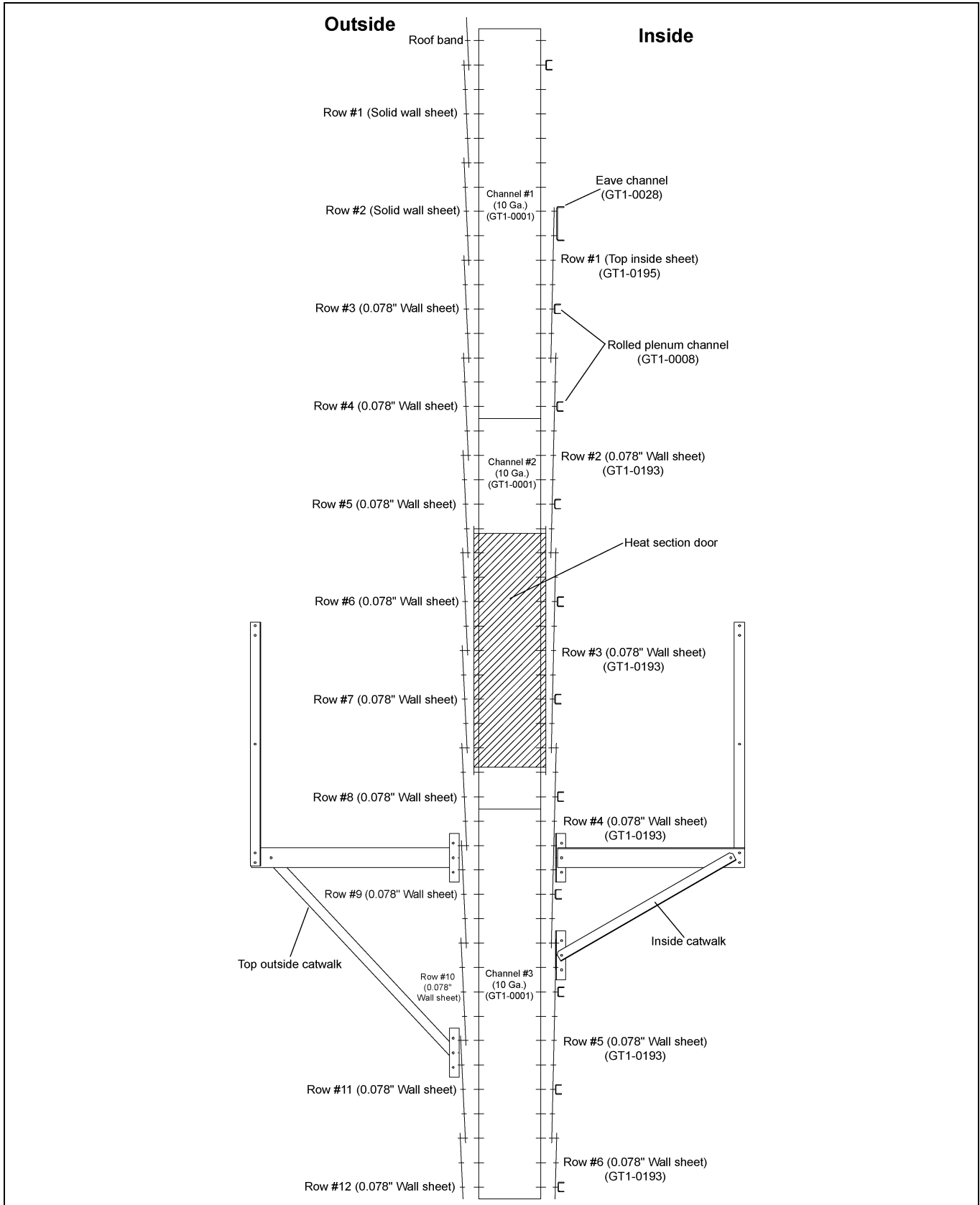


Figure 9A Clip Placement Channels 1 to 3

Clip Placement Channels 4 to 6 (Z-4742 and G-4718)

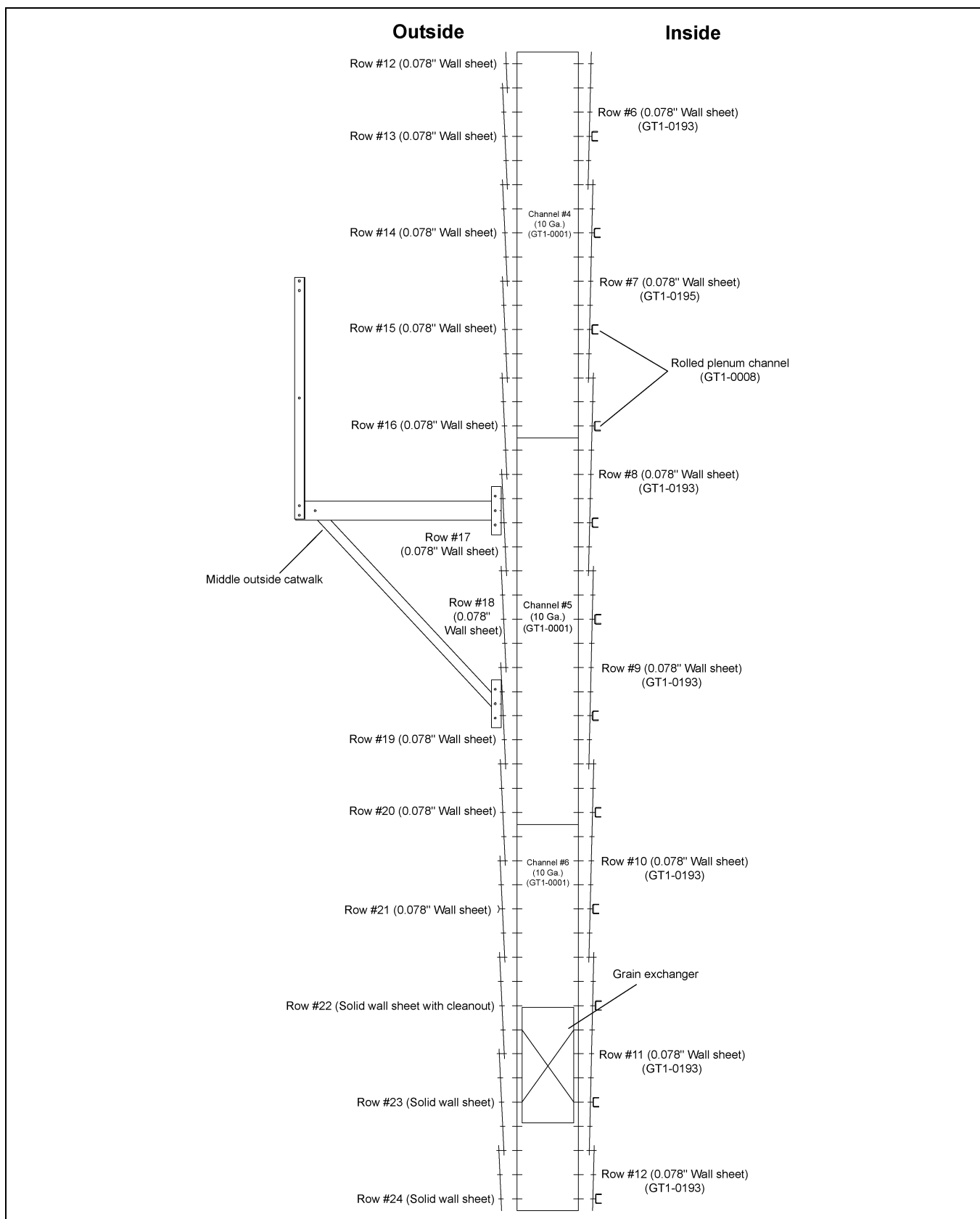


Figure 9B Clip Placement Channels 4 to 6

Clip Placement Channels 7 to 9 (Z-4742 and G-4718)

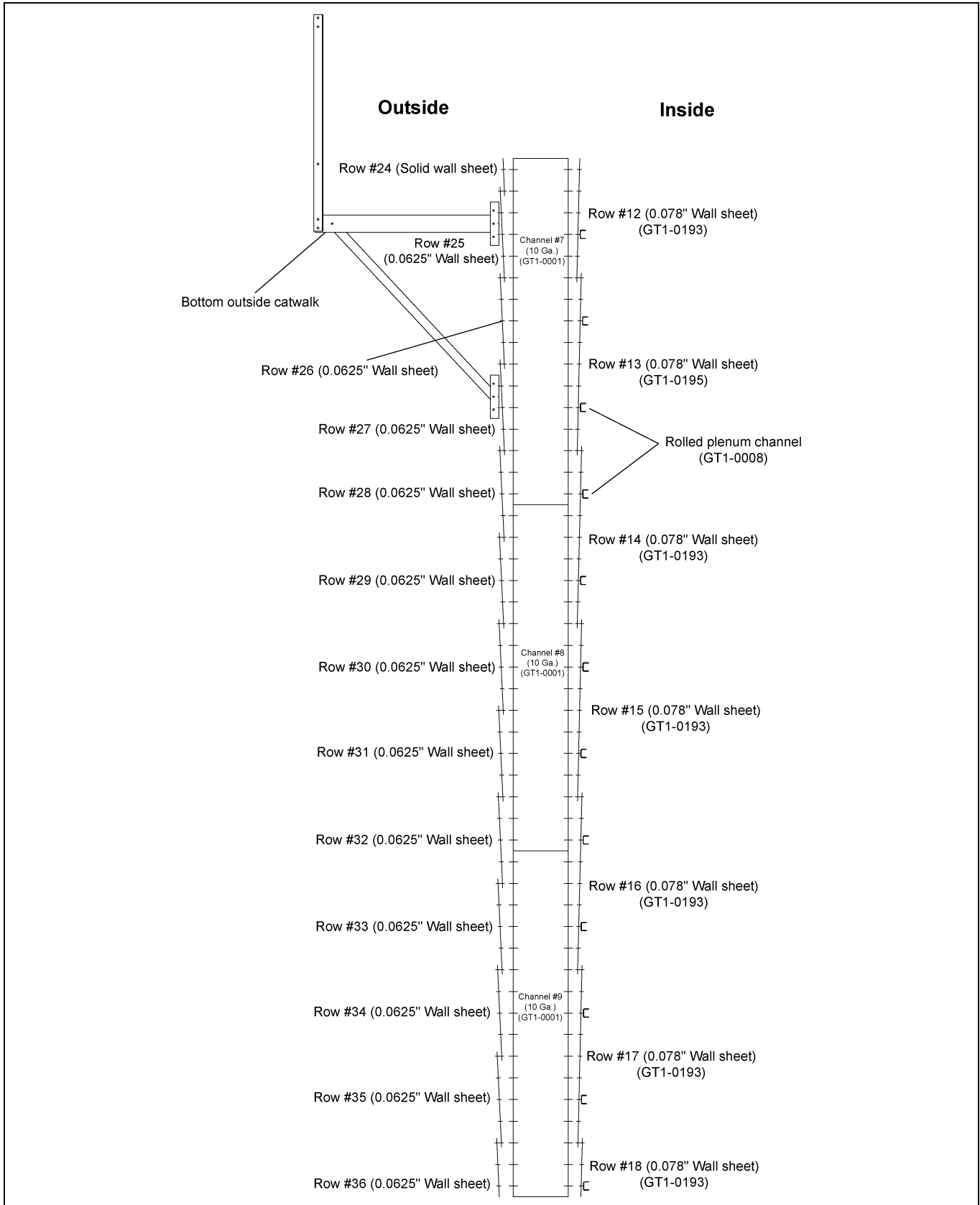


Figure 9C *Clip Placement Channels 7 to 9*

Clip Placement Channels 10 to 12 (Z-4742 and G-4718)

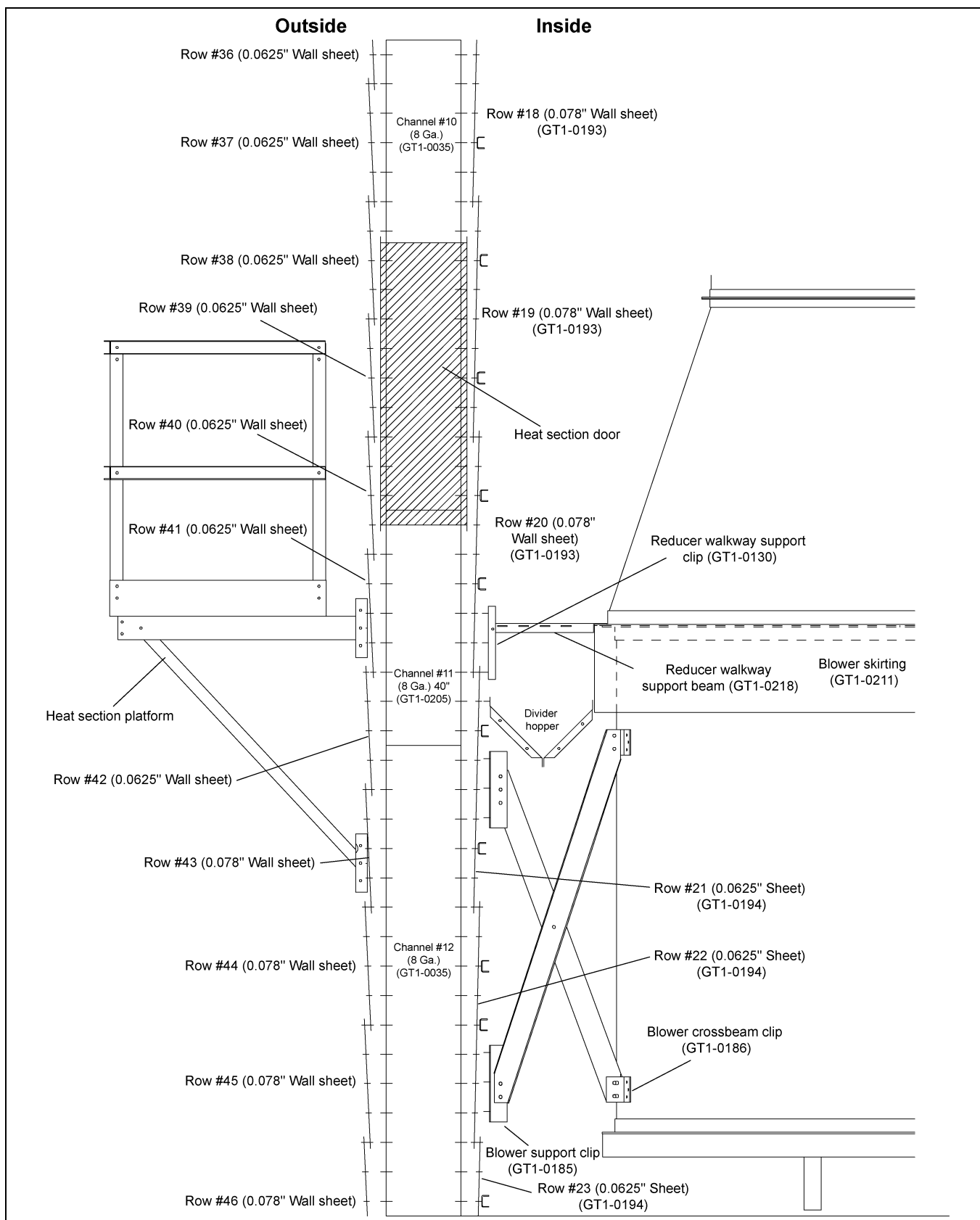


Figure 9D Clip Placement Channels 10 to 12

Clip Placement Channels 13 to 16 (Z-4742)

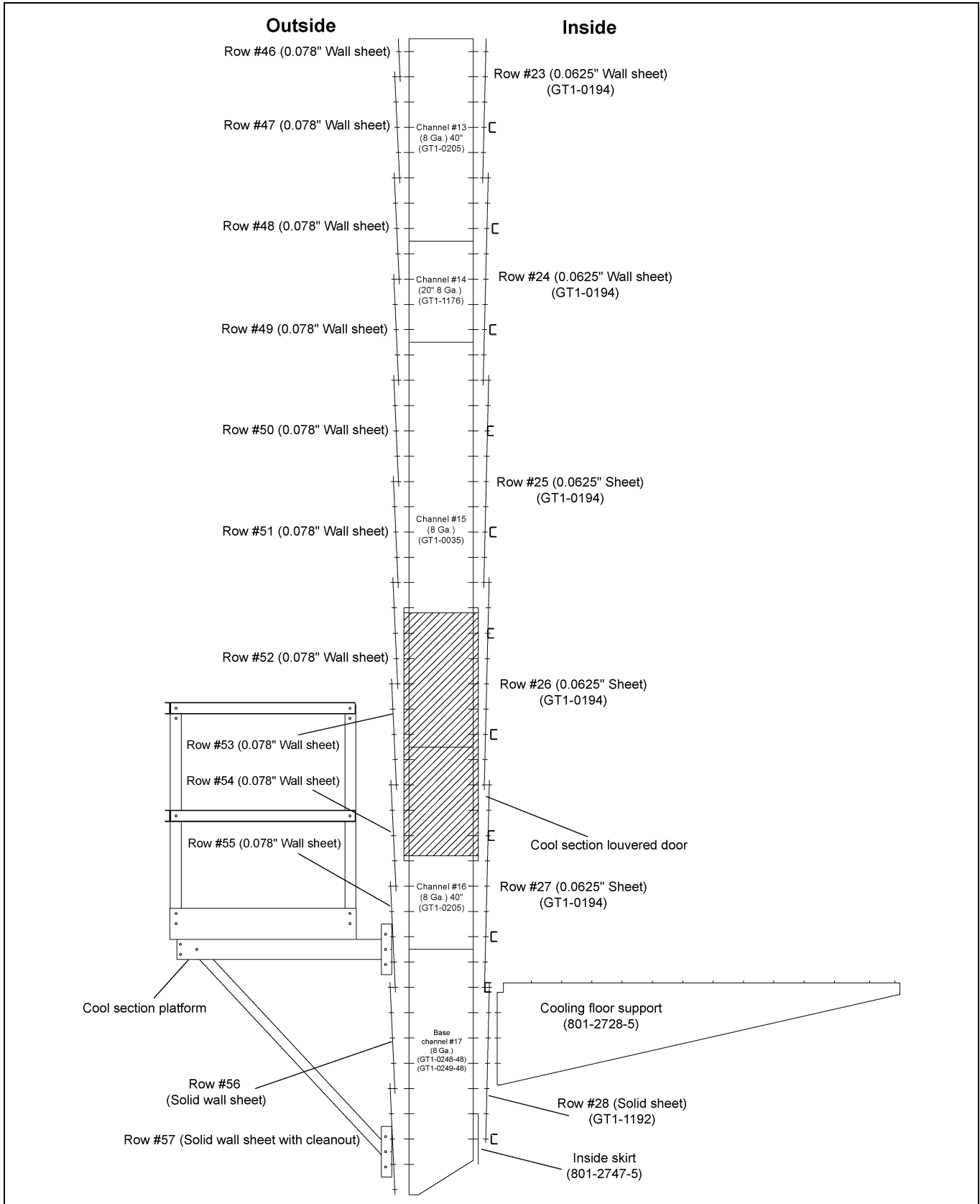


Figure 9E Clip Placement Channels 13 to 16

Clip Placement Channels 13 to 15 (G-4718)

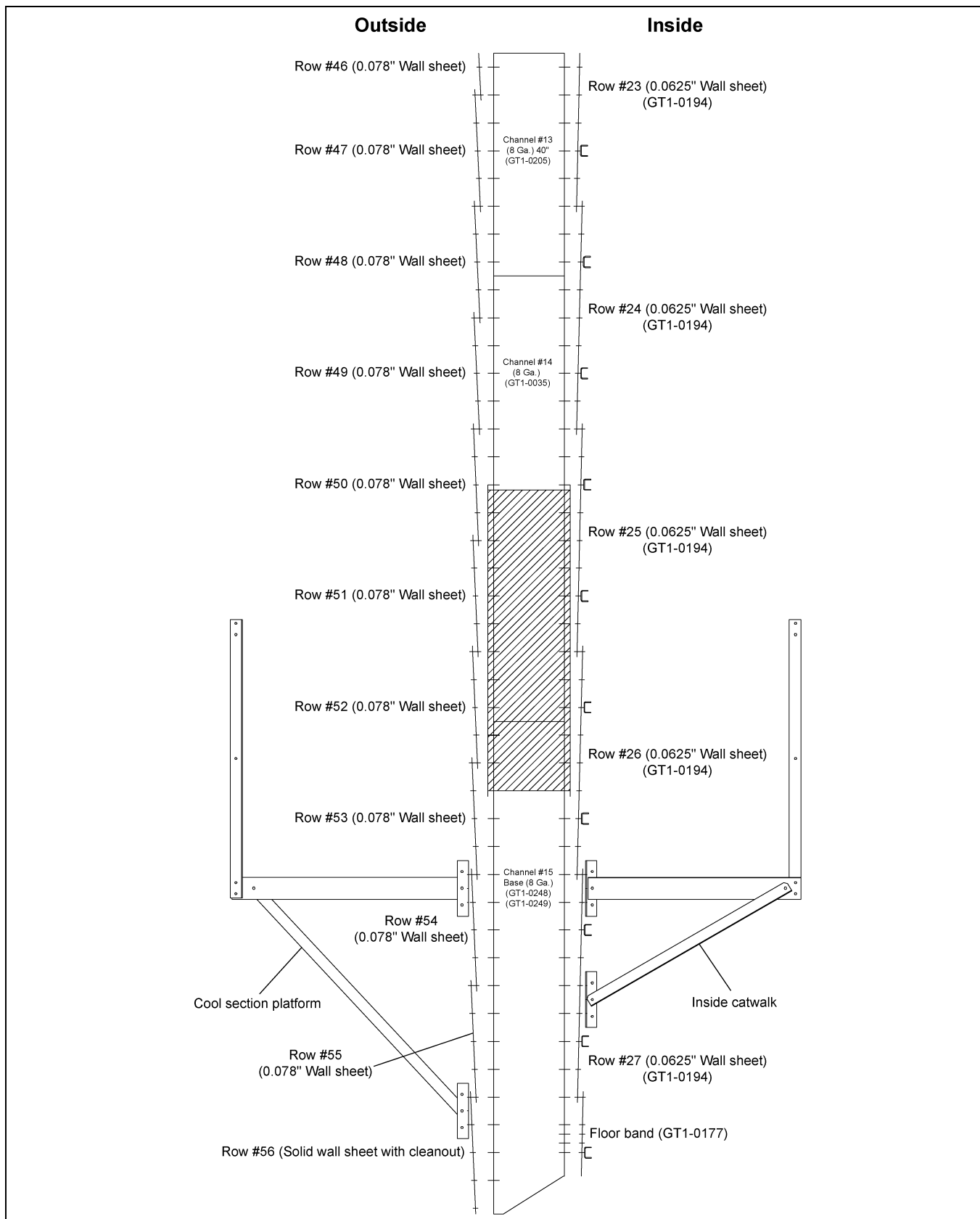


Figure 9F *Clip Placement Channels 13 to 15*

Plenum Roof

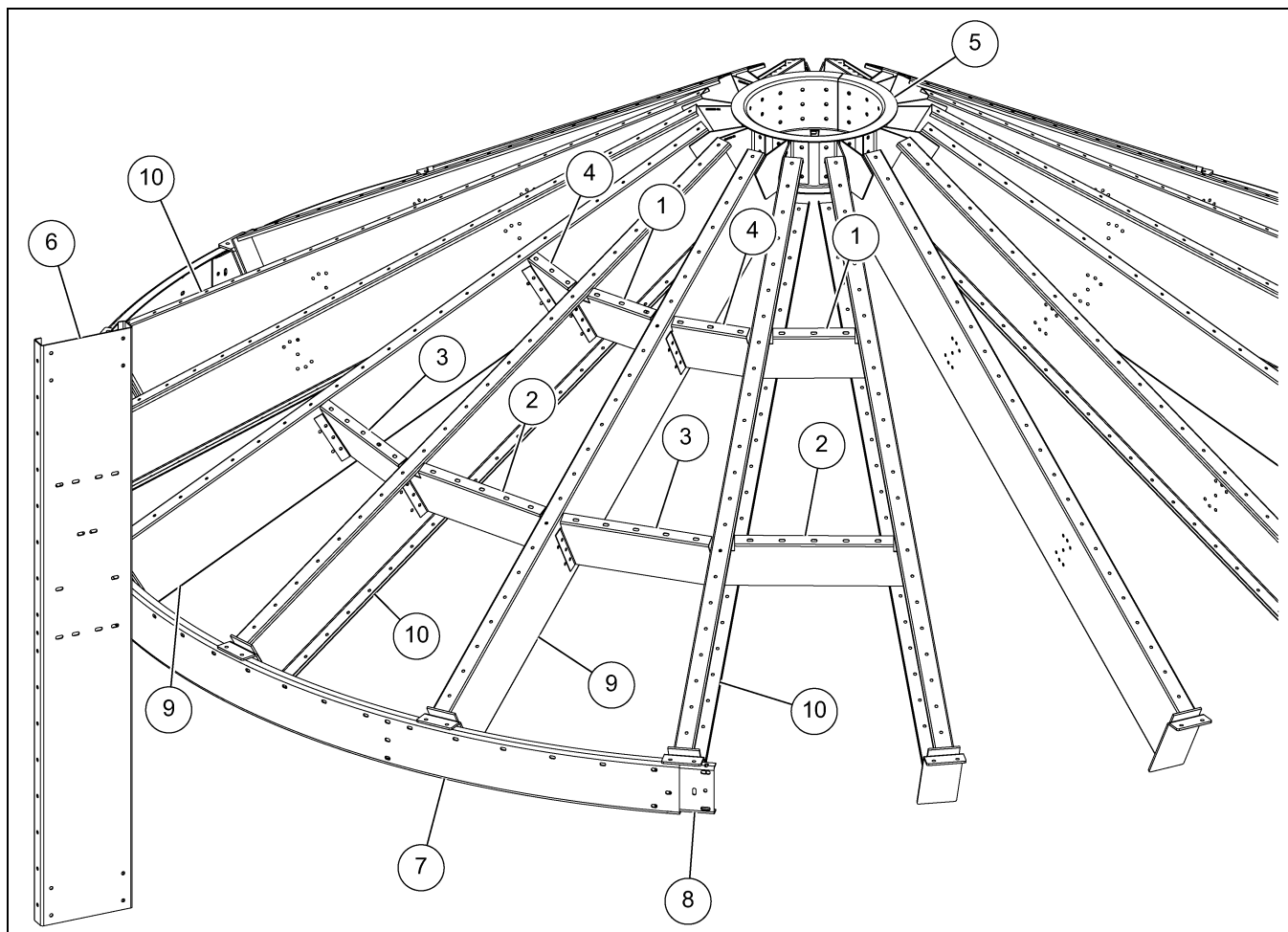


Figure 10A *Plenum Roof*

Ref #	Part #	Description	Qty
1	GT1-0160	Crossmember, Plenum Long Top - 18' 30°	2
2	GT1-0161	Crossmember, Plenum Long Bottom - 18' 30°	2
3	GT1-0299	Crossmember, Plenum Short Bottom - 24' 30°	12
4	GT1-0158	Crossmember, Plenum Short Top - 18' 30°	2
5	GT1-0027	Collar, Plenum Roof Center	1
6	GT1-0001	Vertical Channel - 80" 10 Gauge	16
7	GT1-0028	Plenum Roof Eave Channel	4
8	GT1-0550	Plenum Roof Eave Splice Universal	6
9	GT1-0099	Plenum Rafter Weldment - L.H.	9
10	GT1-0100	Plenum Rafter Weldment - R.H.	9

Plenum Eave Channels

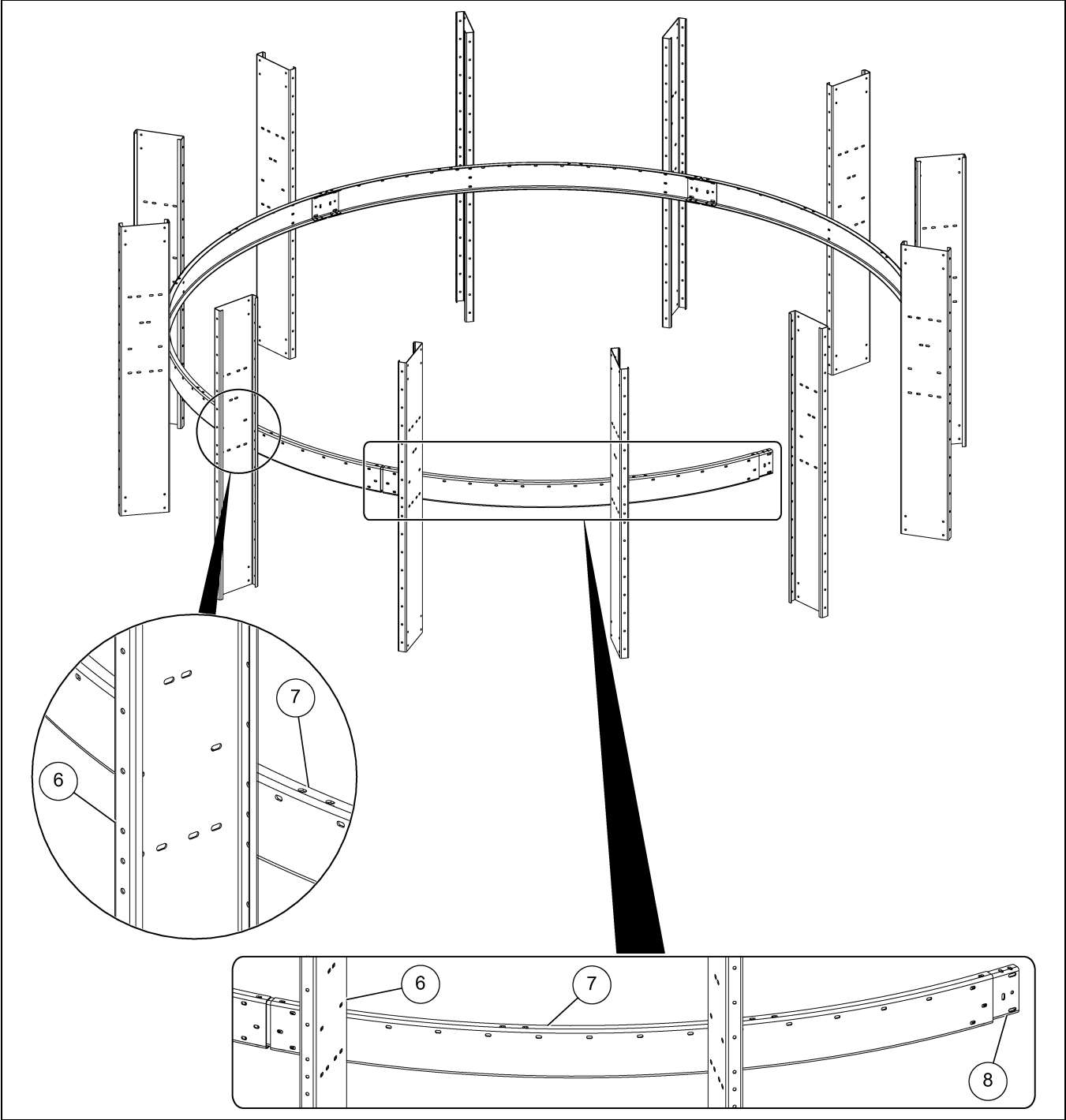


Figure 10B Plenum Eave Channels

Ref #	Part #	Description	Qty
6	GT1-0001	Vertical Channel - 80" 10 Gauge	1
7	GT1-0028	Plenum Roof Eave Channel	4
8	GT1-0550	Plenum Roof Eave Splice Universal	6

Plenum Center Cone and Roof Sheets

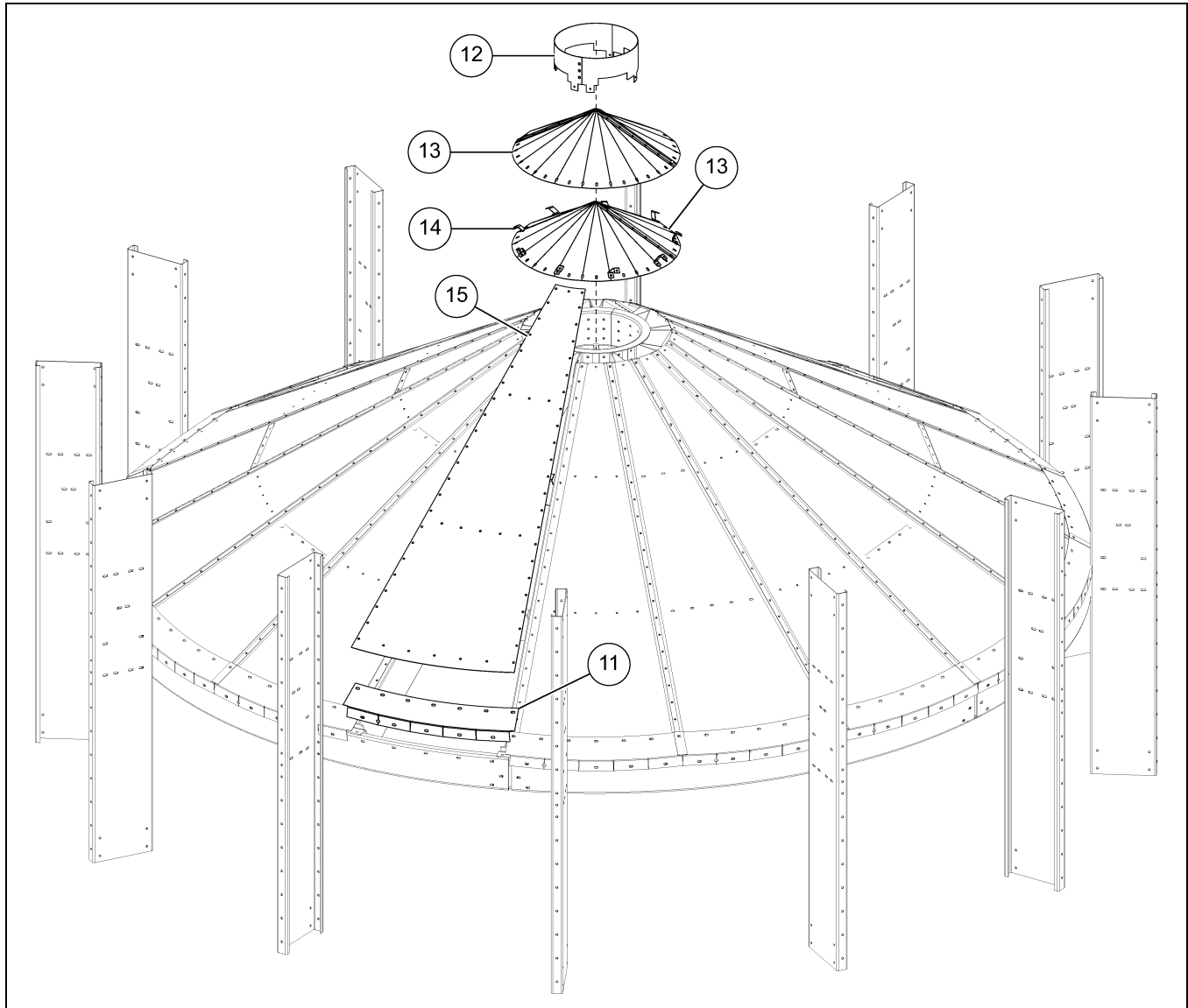


Figure 10C *Plenum Center Cone and Roof Sheets*

Ref #	Part #	Description	Qty
11	GT1-0070	Flashing, Plenum Roof - 18' 30°	18
12	GT1-0071	Plenum Cone Fill Hopper	1
13	GT1-0062	Cone, Plenum Roof Center - 18' 30°	2
14	GT1-0237	Center Cone Offset	9
15	GT1-0036	Plenum Roof Sheet - 18' 30°	18

Roof Band and Roof Clips

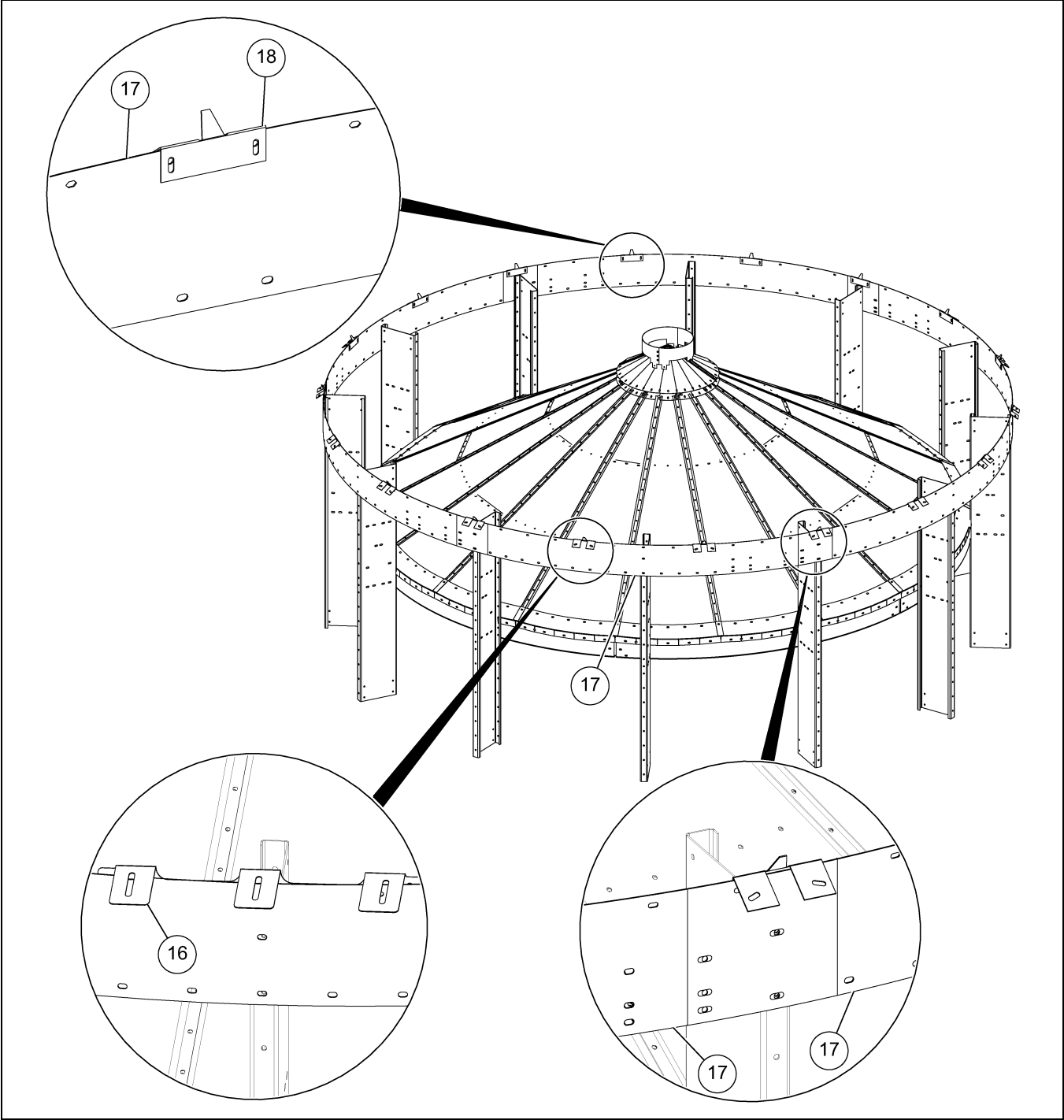


Figure 10D Roof Band and Roof Clips

Ref #	Part #	Description	Qty
16	CTR-1183	Intermediate Eave Angle	18
17	GT1-0106	Roof Band	6
18	GT1-0060	Eave Clip	18

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. Prior to the assembly of the roof and center collar (16), position the flashing (17) to ensure the cap hold-down is in line with the roof ladder.
2. Apply caulking (12) to the center collar (16) where the flashing will be placed.
3. Assemble the flashing (17) pieces together with the center collar (16) using 5/16" x 1" flange bolts (3) and 5/16" flange nuts (5). (See Figure 11A.)

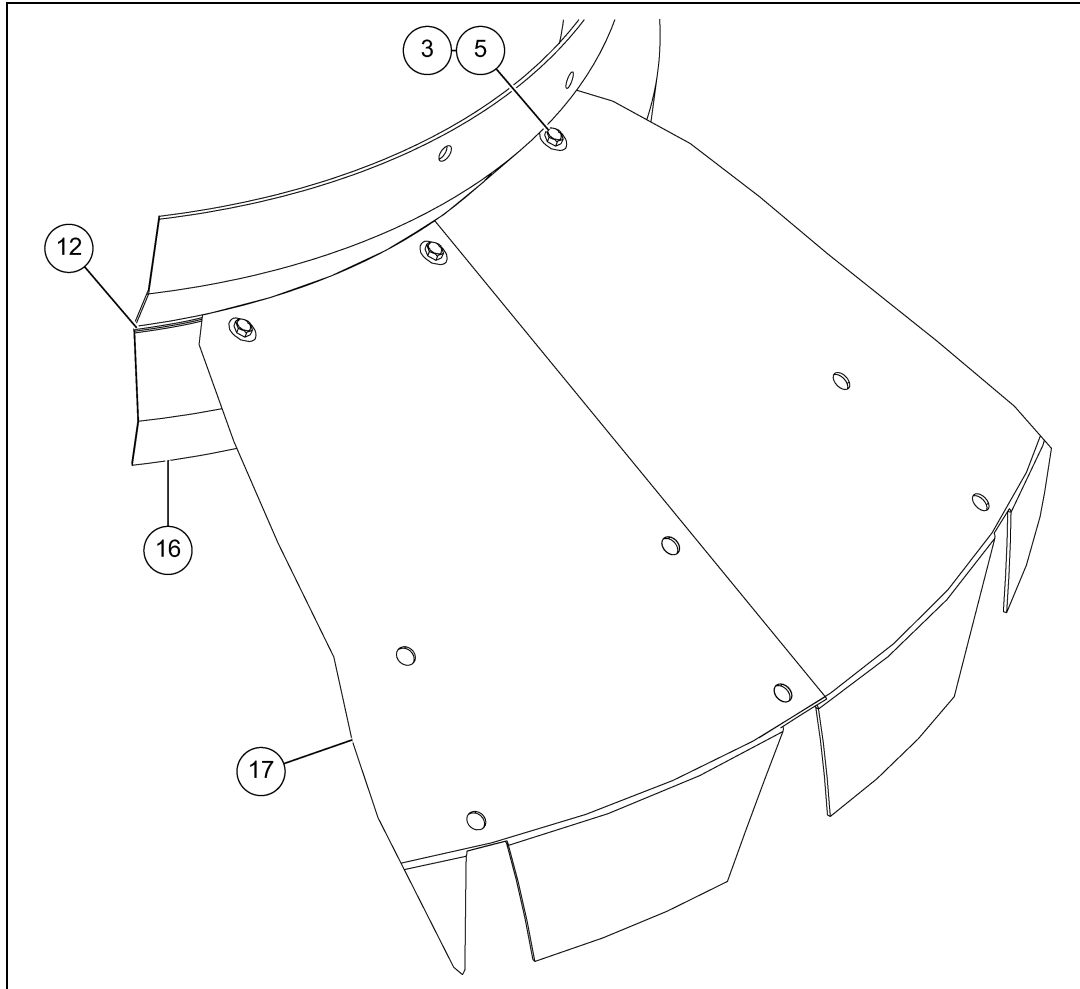


Figure 11A Roof Flashing (for 18' Diameter Bins)

Ref #	Part #	Description
3	S-10260	5/16" x 1" Flange Bolt with Sealing Washer
5	S-3611	5/16" Flange Nut
12	S-4458	Caulking
16	CRP-4608	Center Collar
17	CTR-0639	18' Roof Flashing

11. Roof Assembly for 18' Tower Dryers

Installing the Roof Panels

1. For better results in erecting the roof, install one roof panel (20) in three places.
2. After these three panels are in place, the peak assembly should be centered.
3. Install three roof panels evenly spaced around the center collar (16) and install the roof sheets to the roof clips.
4. Install 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 49](#).

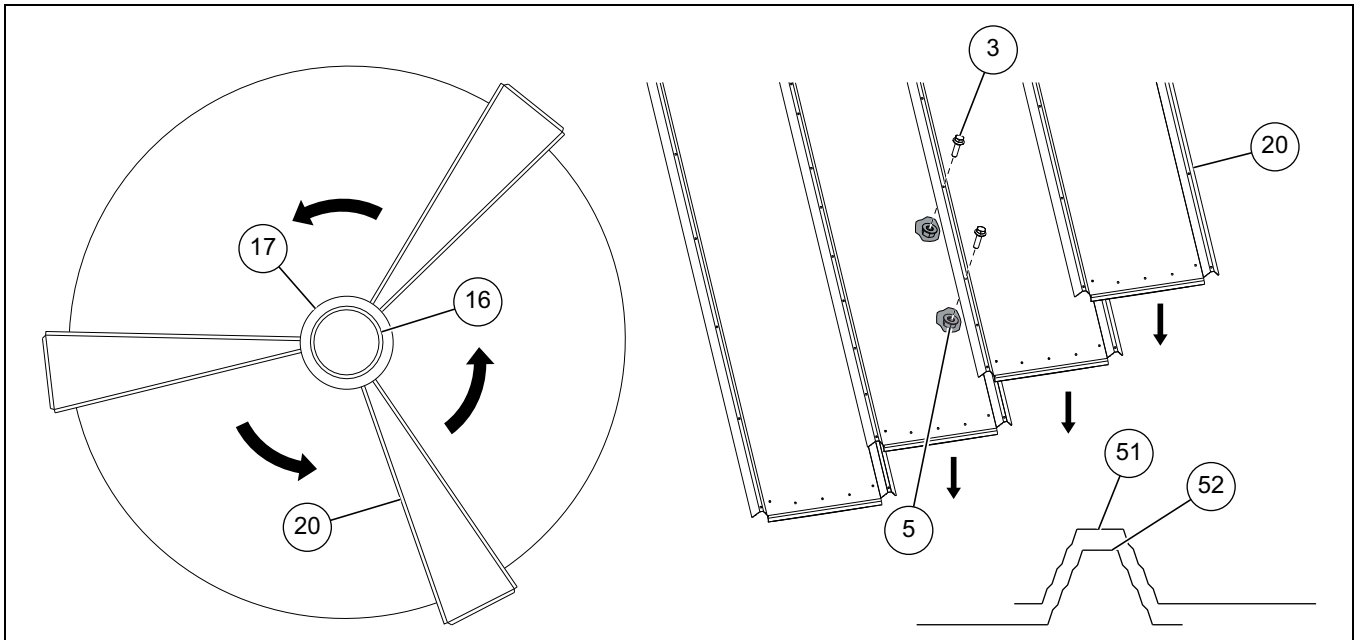


Figure 11B Roof Panels Installation Direction

Ref #	Part #	Description
3	S-10260	5/16" x 1" Flange Bolt with Sealing Washer
5	S-3611	5/16" Flange Nut
16	CRP-4608	Center Collar
17	CTR-0639	18' Roof Flashing

Ref #	Part #	Description
20	CTR-0380	Roof Panel
51		Upper Rib
52		Lower Rib

5. Install the eave clips (13) and intermediate eave angles (14) on the top sidewall with the 5/16" x 1" flange bolts (3) and 5/16" flange nuts (5).

NOTE: The intermediate eave angles are installed between two eave clips.

6. Fasten the roof panels (20) to intermediate eave angles (14) on the eave end and to the roof flashing (17) on the peak end.

NOTE: When installing the roof panels (20), take into consideration placing the manway for ease of access to the sidewall and roof steps (48).

7. Install the roof channels (18) under the ribs of the roof panels (20) where the roof steps (48) are to be installed.

NOTE: All roof channels (18) are installed starting with the second hole in the roof rib (20) from the bottom (roof eave).

Roof Panel Instructions for 18' Tower Dryers

NOTE: Make sure to install the roof steps (48) when assembling the roof panels (20). When assembling the roof steps (48), use 5/16" x 1-1/4" bolts with a flat top washer on top of the slot and an extra neoprene washer (10) between the roof and the roof step (48). This will ensure a more protective seal against moisture.

NOTE: For 18' diameter bins, an additional roof channel (18) must be installed under the ribs of the roof panel where the roof steps are to be installed. Start the roof channel (18) assembly using the second hole in the roof panel (20) rib from the bottom (roof eave). (See Figure 11C.)

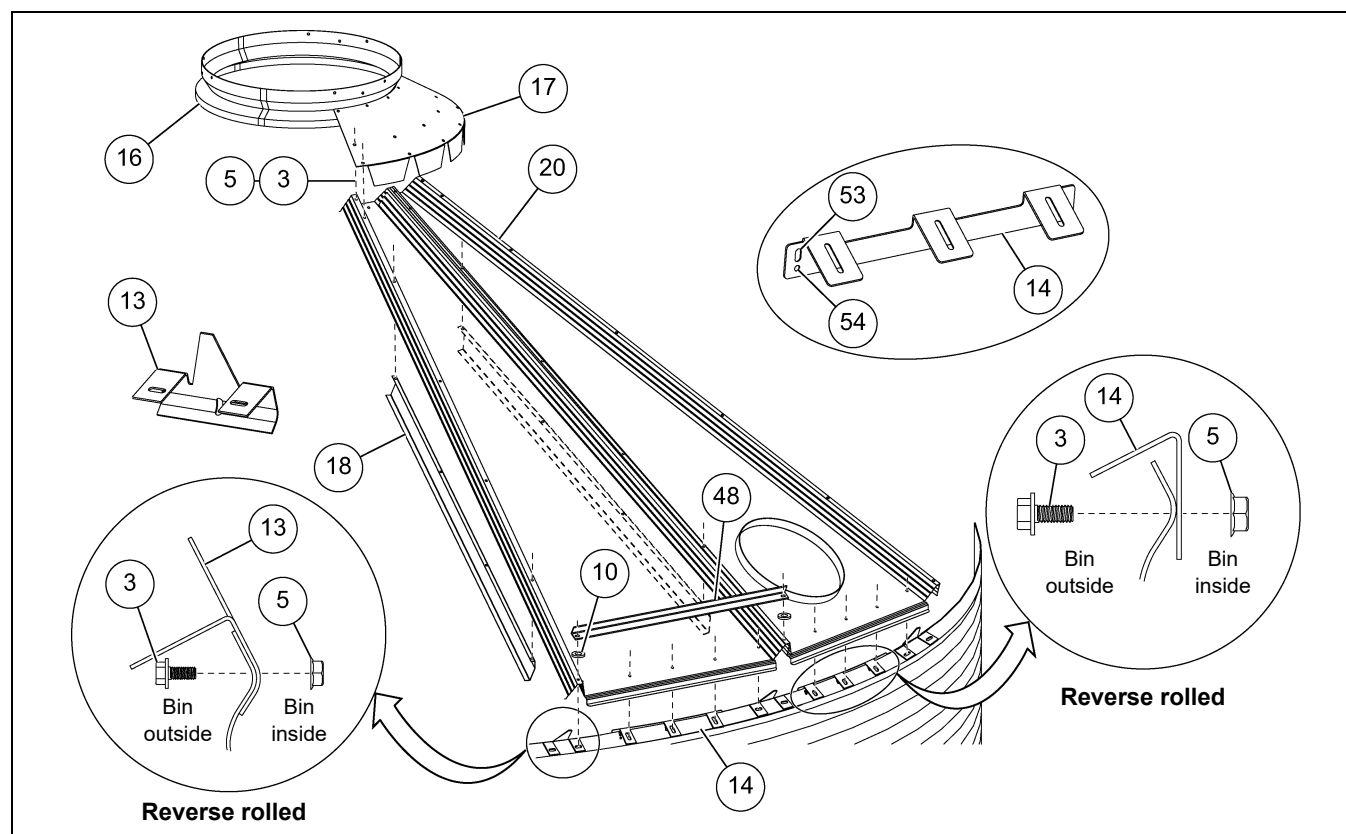


Figure 11C Roof Panel Assembly (For 18' Diameter Bins)

Ref #	Part #	Description	Ref #	Part #	Description
3	S-10260	5/16" x 1" Flange Bolt with Sealing Washer	17	CTR-0639	Roof Flashing
5	S-3611	5/16" Flange Nut	18	CRP-4694	Roof Channel - 18'
10	S-1463	Steel Backed Neoprene Washer	20	CTR-0380	Roof Panel
13	CTR-1198	Eave Clip	48		Roof Step
14	CTR-1183	Intermediate Eave Angle	53		Used with Standard Roofs
16	CRP-4608	Center Collar	54		Used with TopDry Roofs

Roof Panel Information (20)				
Bin Diameter	Part #	Roof Rib Holes	Rib Length	# of Panels
18'	CTR-0380	7	101-7/8"	18

11. Roof Assembly for 18' Tower Dryers

Roof Ring Locations

Two support rings are standard for 18' diameter bin.

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.

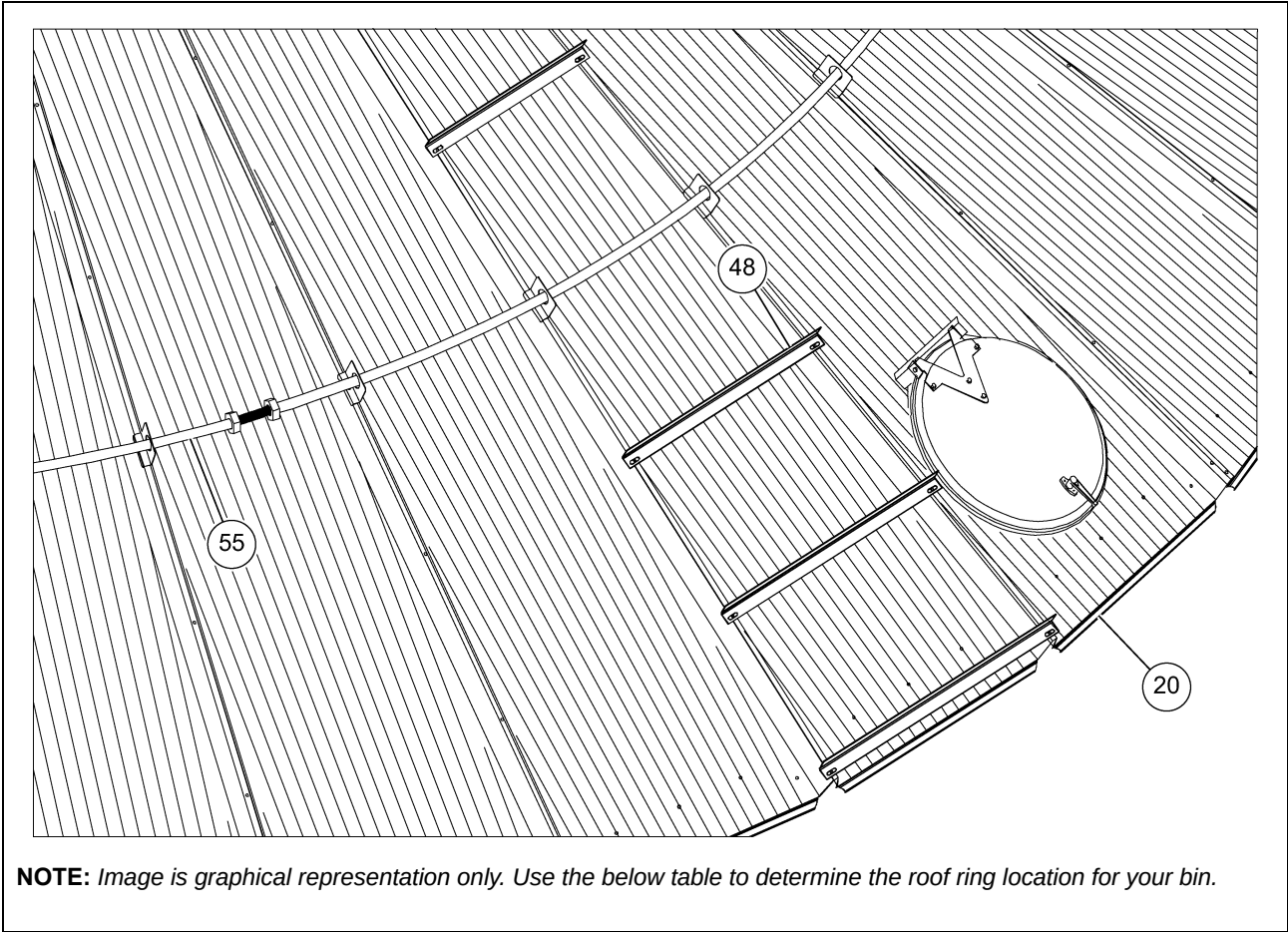


Figure 11D Roof Ring Locations

Ref #	Description
20	Roof Panel (CTR-0380)
48	Roof Step
55	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	18 (T)	4 th Hole	Yellow/White	3
CRP-5363-18	18 (B)	3 rd Hole	Blue/White	4

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 (15) needed for the roof ring section (49) being installed.

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

2. Install a 5/16" x 1" flange bolt (3) to the roof ring clip (15) and install a sealing washer (9) to the underside of the roof ring clip (15).
3. Slide each assembled roof ring clip (15) onto a roof ring section (49) and position each roof ring clip (15) over each roof panel rib.
4. Install a 5/16" flange nut (5) to each roof ring clip (15). (See Figure 11E.)

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

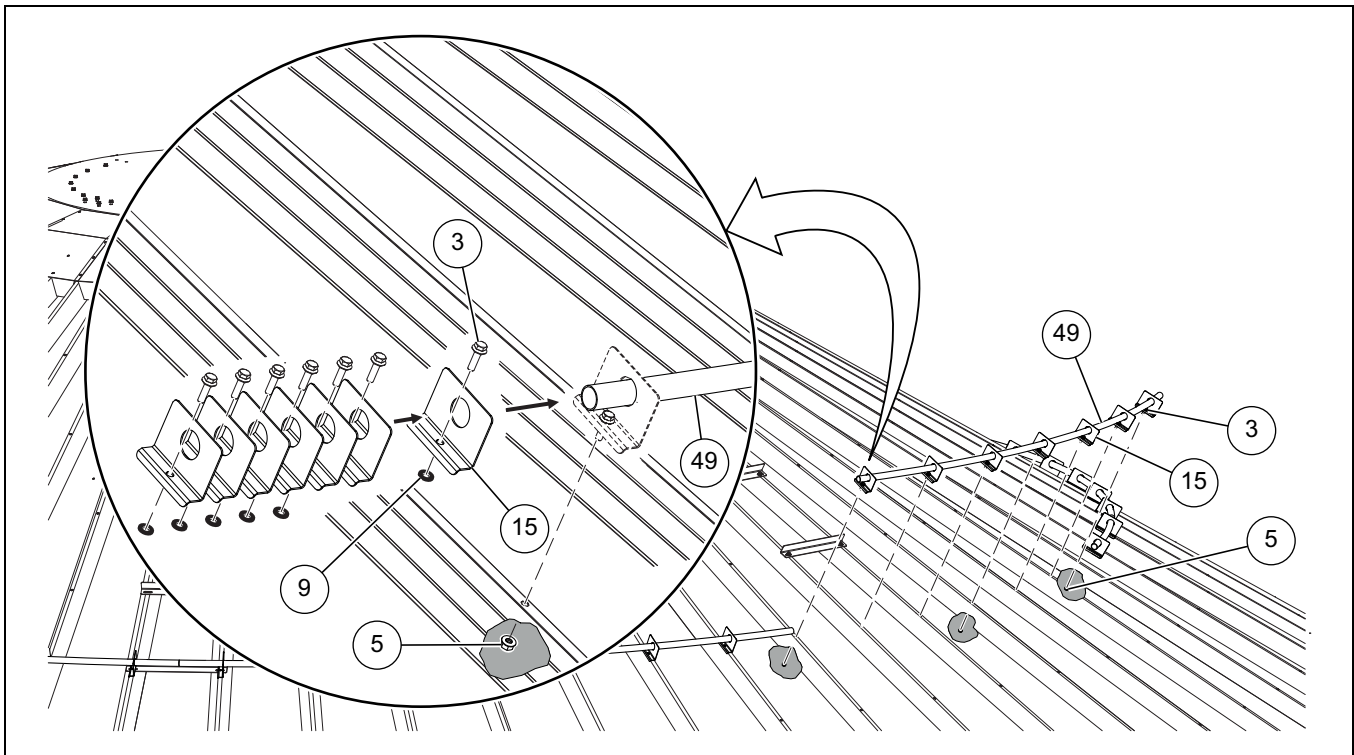


Figure 11E Installing the Roof Ring

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

11. Roof Assembly for 18' Tower Dryers

Installing the Roof Ring (Continued)

5. Locate a threaded stud (11) and install stud nuts (6) evenly and to the center of the threaded stud (11).
6. Install the threaded stud (11) with stud nuts (6) to the end of the roof ring section (49).

NOTE: *Install the threaded stud (11) 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 (49) are installed, tighten each roof ring clip.
9. Adjust each stud nut (6) outward, expanding each roof ring section (49). 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.

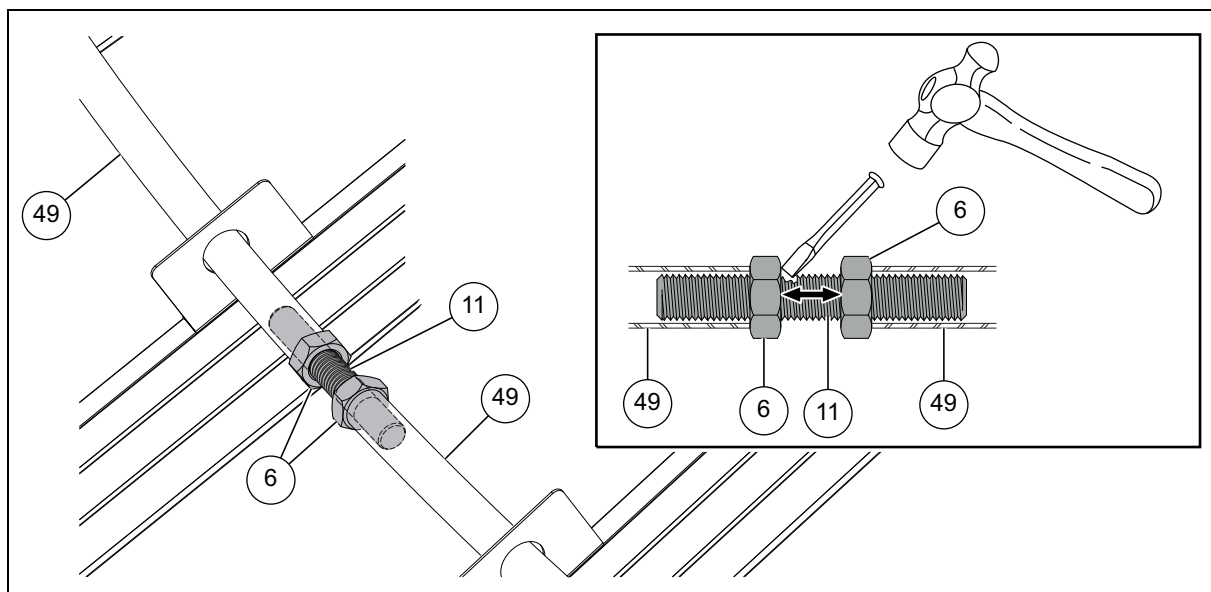
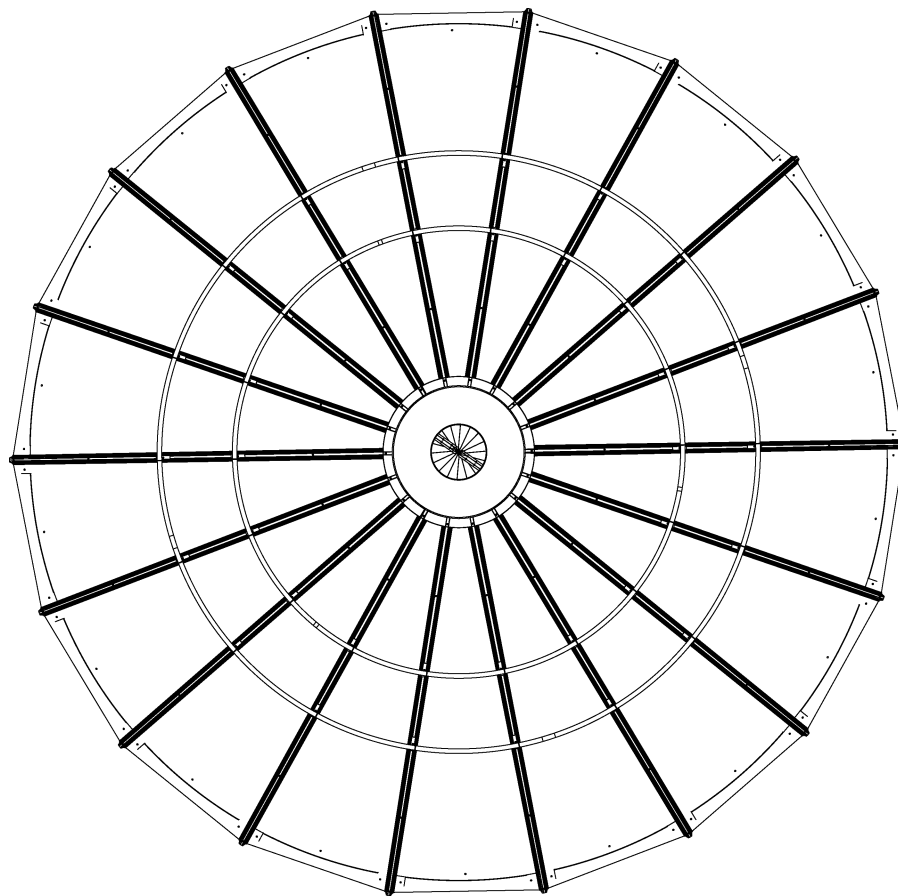
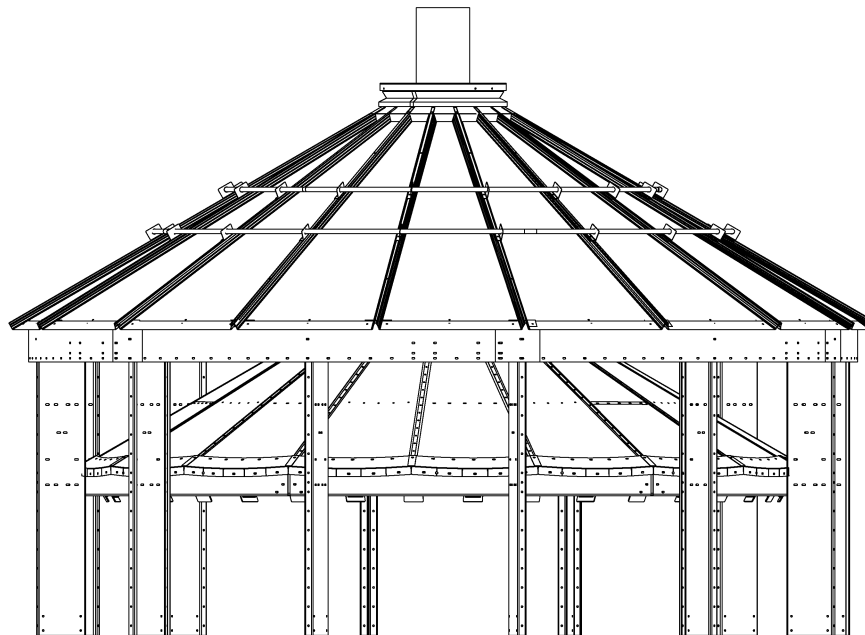


Figure 11F Exploded View of Threaded Stud

Ref #	Part #	Description
6	S-8926	Stud Nut
11	S-8765	Threaded Stud

Ref #	Description
49	Roof Ring Section

Tower Roof**Top view****Front view****Figure 11G Tower Roof**

Roof Cap

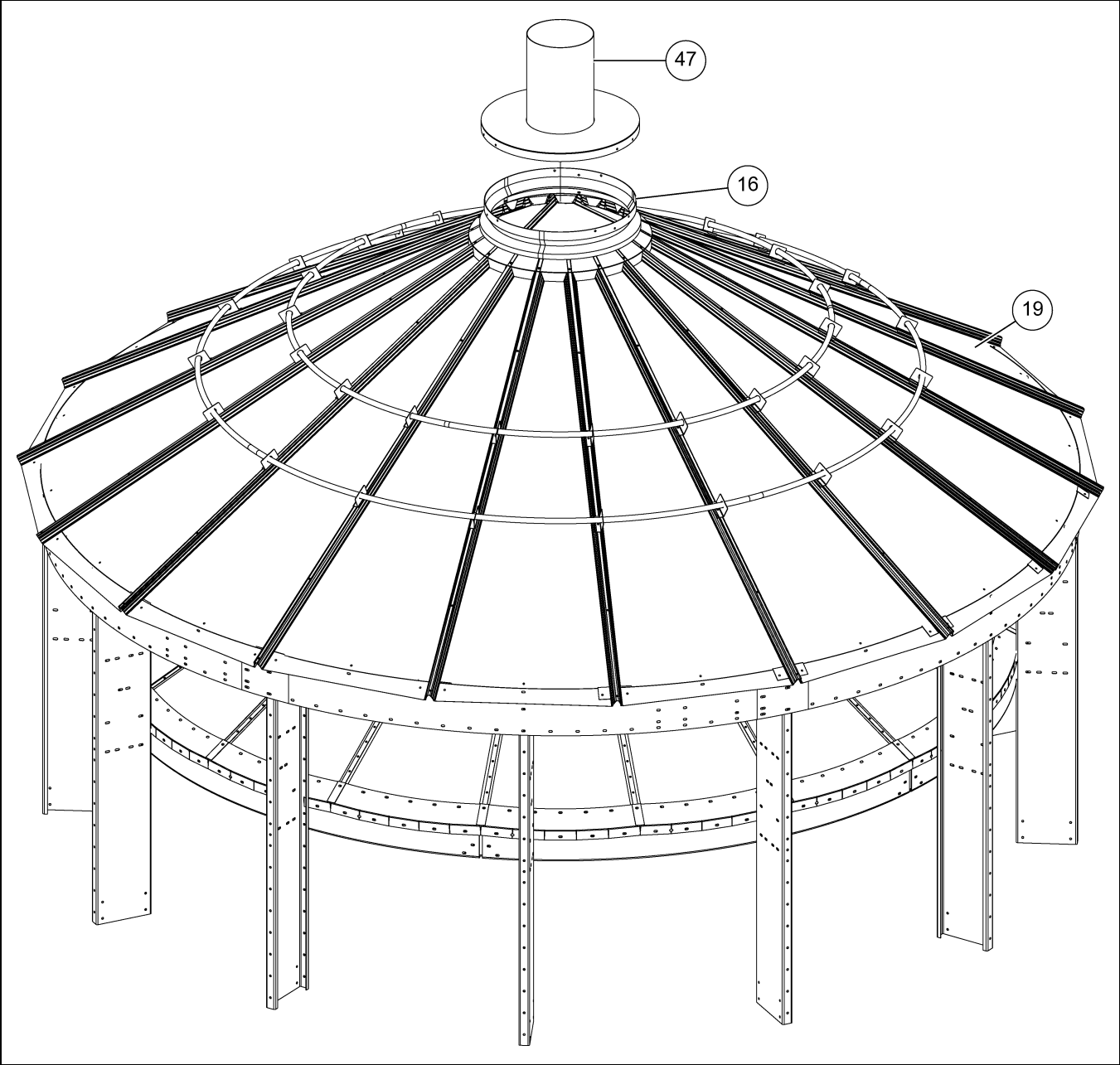


Figure 11H Installing the Roof Cap

Ref #	Part #	Description	Qty
16	CRP-4608	Center Collar	3
19	CRP-4627	18' 30° Roof Panel	18
47	GT4-1423-BS	Flat Top Fill Cap Weldment 14" (23" Long Inside Band)	1

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.



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 (31), entrance support angle (32), transition outside supports (33) and transition support angles (34) to the transition deck plate (21) using 5/16" x 3/4" truss head bolts (2) and 5/16" flange nuts (5).
2. Attach the stair transition plates (22) to the transition support angles (34) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).
3. Install the stiffening angles (31) and the support angles (35) to the bottom side of the standard deck plates (23) using 5/16" x 3/4" truss head bolts (2) and 5/16" flange nuts (5).

NOTE: Install 5/16" x 3/4" truss head bolts (2) with bolt head on the top of the deck plate.

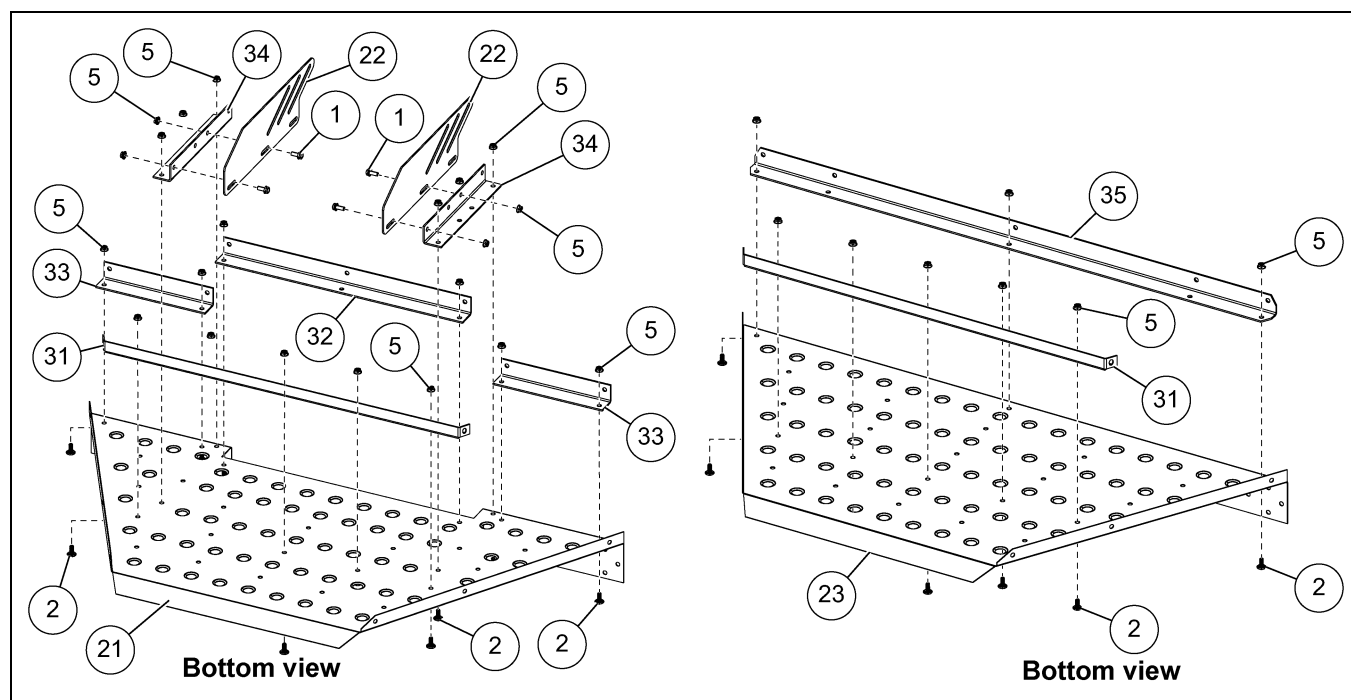


Figure 11I Assembling the Transition and Standard Deck Plates

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
2	S-10267	5/16" x 3/4" Truss Bolt with Sealing Washer
5	S-3611	5/16" Flange Nut
21	WBS-0265	Transition Deck Plate
22	WBS-0261	Stair Transition Plate
23	WBS-0264	Standard Deck Plate

Ref #	Part #	Description
31	WBS-0310	Stiffening Angle
32	WBS-0260	Entrance Support Angle
33	WBS-0272	Transition Outside Support Angle
34	WBS-0256	Transition Support Angle
35	WBS-0263	Support Angle

11. Roof Assembly for 18' Tower Dryers

4. Align the side flanges of the deck plates (21 and 23) and secure using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).
5. Install the tie angles (36) and corner handrail posts (37) to the corners of the deck plates (21 and 23) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE: Install 5/16" x 3/4" flange bolts (1) with bolt head on the inside of the walking area.

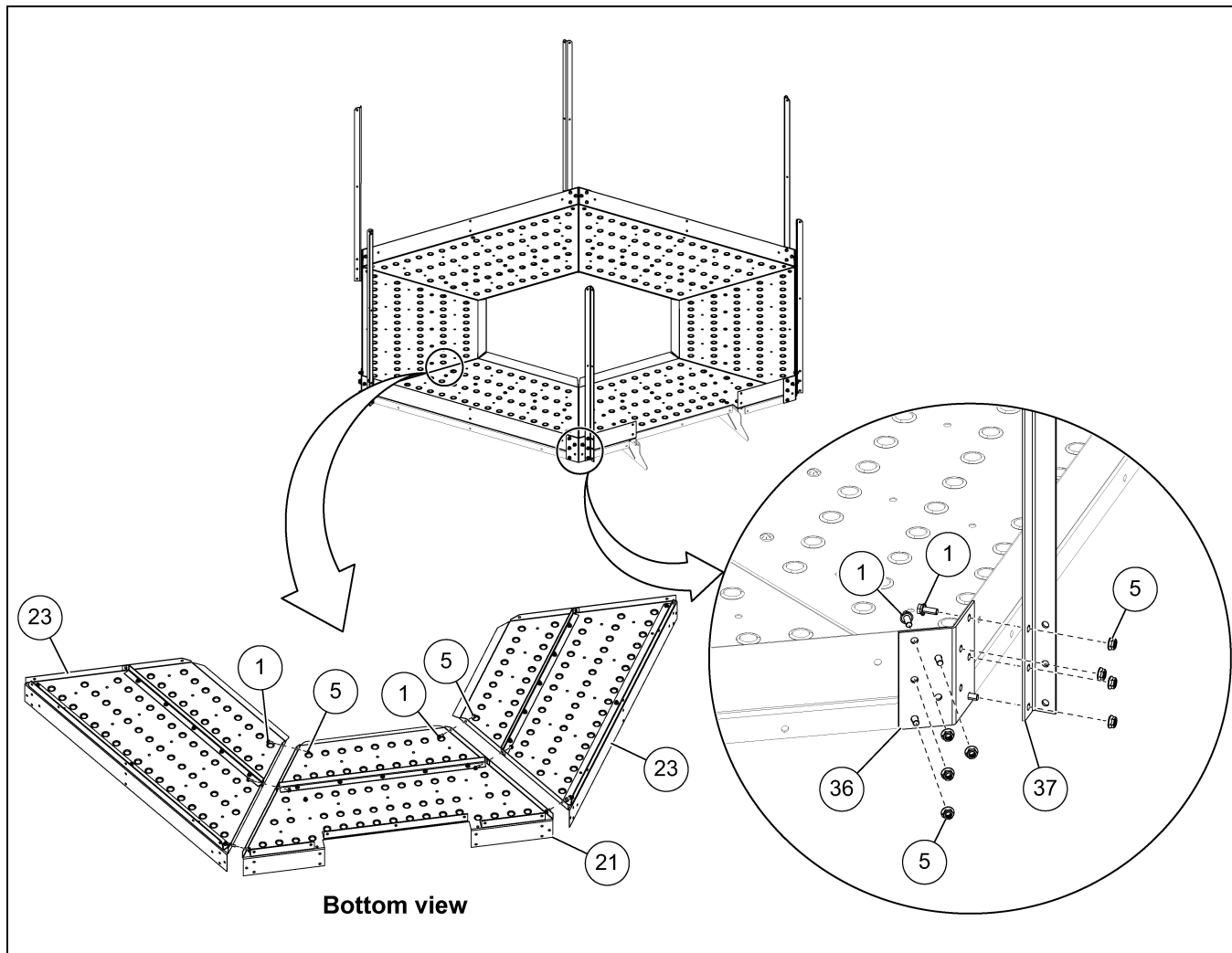


Figure 11J Installing the Tie Angles and Corner Handrail Posts

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
5	S-3611	5/16" Flange Nut
21	WBS-0265	Transition Deck Plate
23	WBS-0264	Standard Deck Plate
36	WBS-0252	Tie Plate
37	WBS-0257	Corner Handrail Post

11. Roof Assembly for 18' Tower Dryers

6. Install the handrail posts (24) to the standard deck plates (23) and attach a walkaround standoff (25) to each of the handrail posts (24) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).
7. Install two truss angles (38) to each of the standard deck plates (23) and walkaround standoffs (25) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE: Install 5/16" x 3/4" flange bolts (1) with bolt head on the inside of the walking area.

NOTE: Leave the 5/16" x 3/4" flange bolts (1) of the walkaround standoff (25) hand tighten, until the peak walkaround is installed onto the roof.

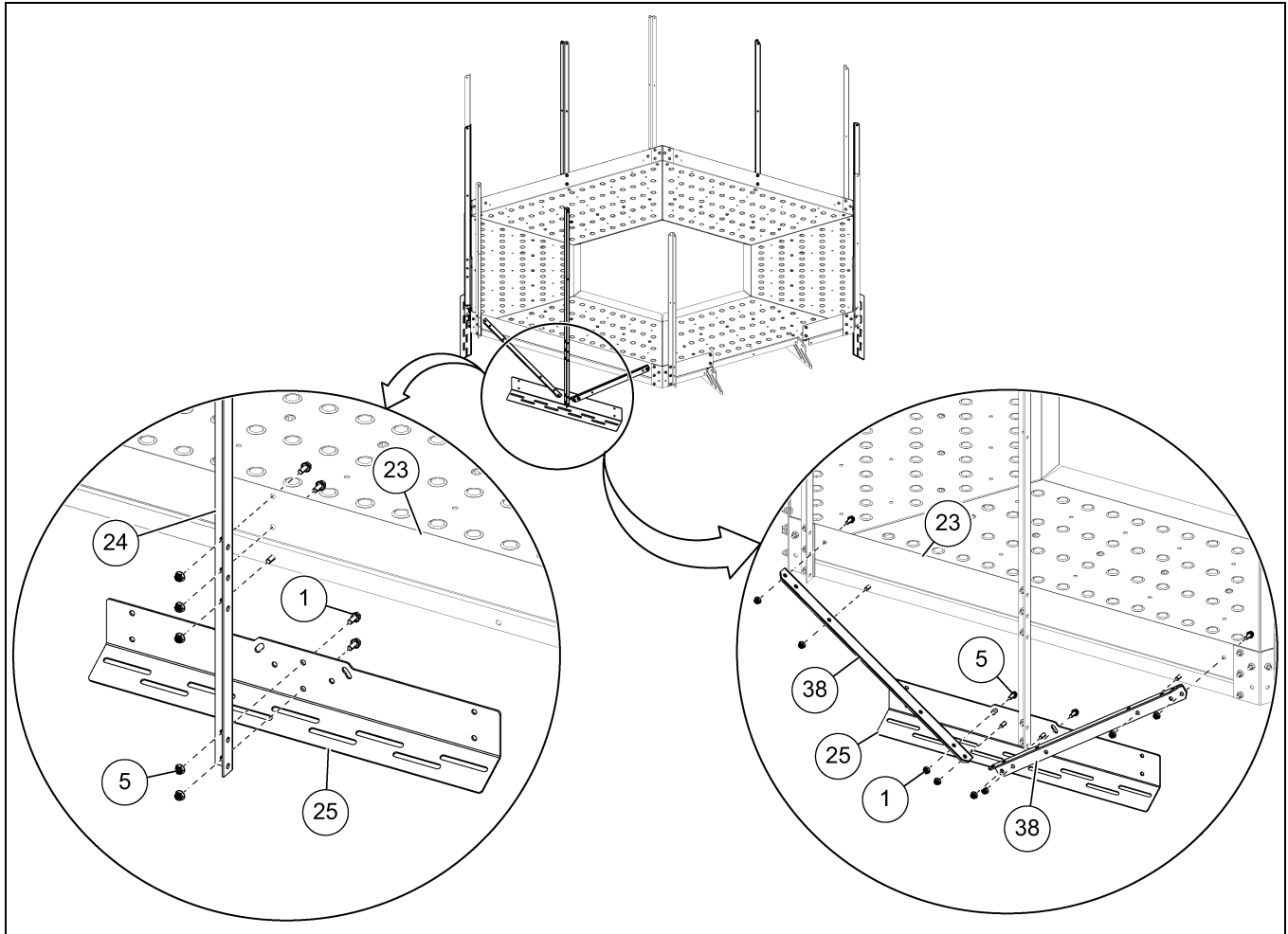


Figure 11K Installing the Handrail Posts and Truss Angles

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
5	S-3611	5/16" Flange Nut
23	WBS-0264	Standard Deck Plate
24	WBS-0250	Handrail Post
25	WBS-0253	Peak Walkaround Standoff
38	WBS-0266	Truss Angle

11. Roof Assembly for 18' Tower Dryers

8. Install two handrail posts (24) to the transition deck plate (21) and transition stair plate (22) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).
9. Attach a walkaround standoff (25) to the handrail posts (24) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).
10. Install the handrail brackets (26) to the handrail posts (24 and 37) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE: Install 5/16" x 3/4" flange bolts (1) with bolt head on the inside of the walking area.

NOTE: Leave the 5/16" x 3/4" flange bolts (1) of the walkaround standoff (25) hand tighten, until the peak walkaround is installed onto the roof.

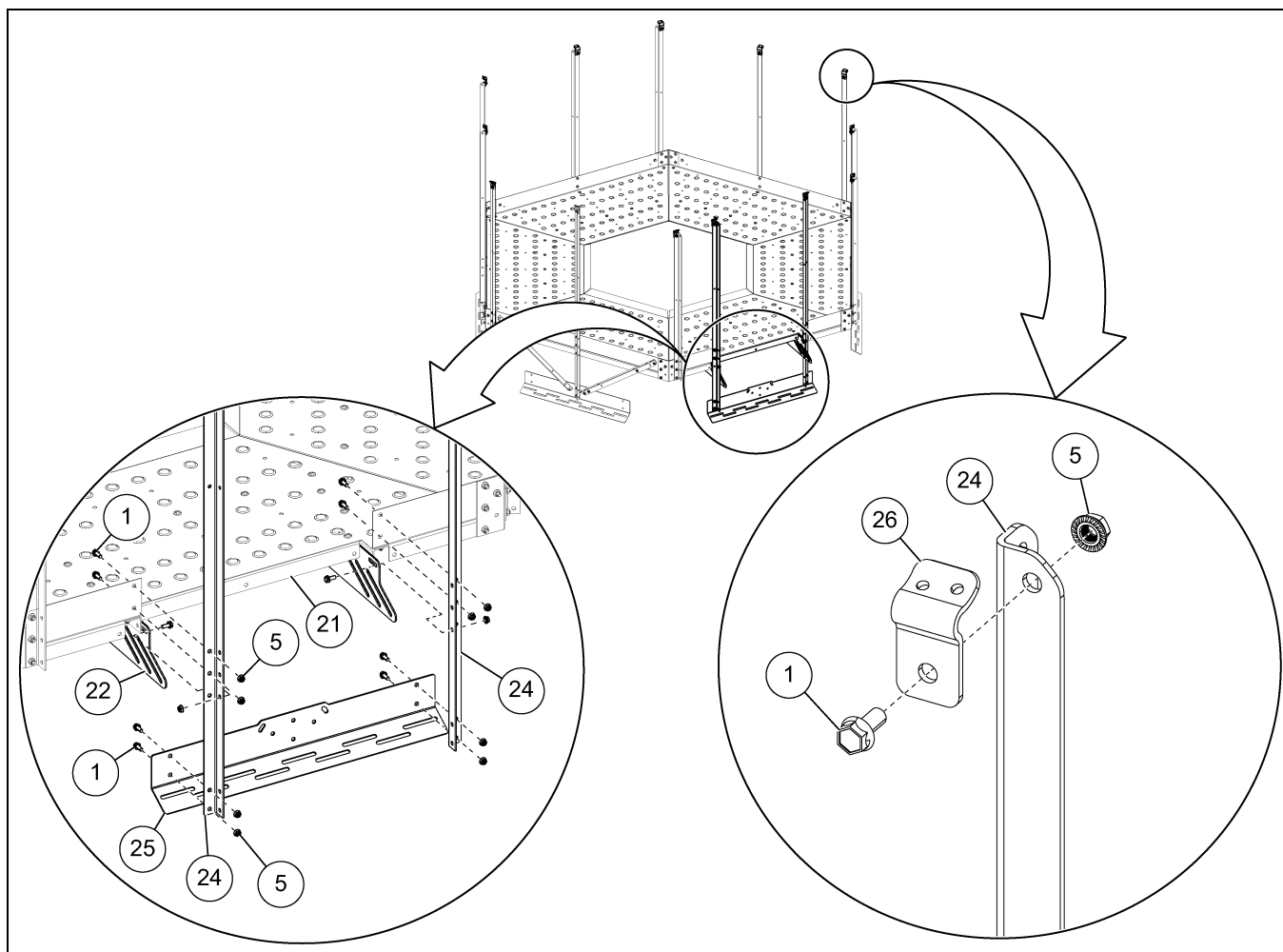


Figure 11L Installing the Handrail Posts and Handrail Brackets

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
5	S-3611	5/16" Flange Nut
21	WBS-0265	Transition Deck Plate
22	WBS-0261	Stair Transition Plate
24	WBS-0250	Handrail Post
25	WBS-0253	Peak Walkaround Standoff
26	WBS-0319	Handrail Bracket

11. Roof Assembly for 18' Tower Dryers

11. Lift and center the peak walkaround on the roof. Install the walkaround standoffs (25) to the roof ribs (56) using bin hardware (4).

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

NOTE: Field drill holes only where the standoff (25) is in direct contact with the roof ribs (56). Install bolts with sealing washer from the inside of the roof ribs (56).

12. Install the top handrails (39) to the handrail brackets (26) using two self-drilling screws (8) per bracket.
13. Install the intermediate handrails (40) to the handrail posts (24 and 37) using self-drilling screws (8). Cut the top (39) and intermediate handrails (40) to fit the opening, approximately 24". Install the 1-1/2" tube plugs (27 and 28) into the ends of the top and intermediate handrails (40).

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.

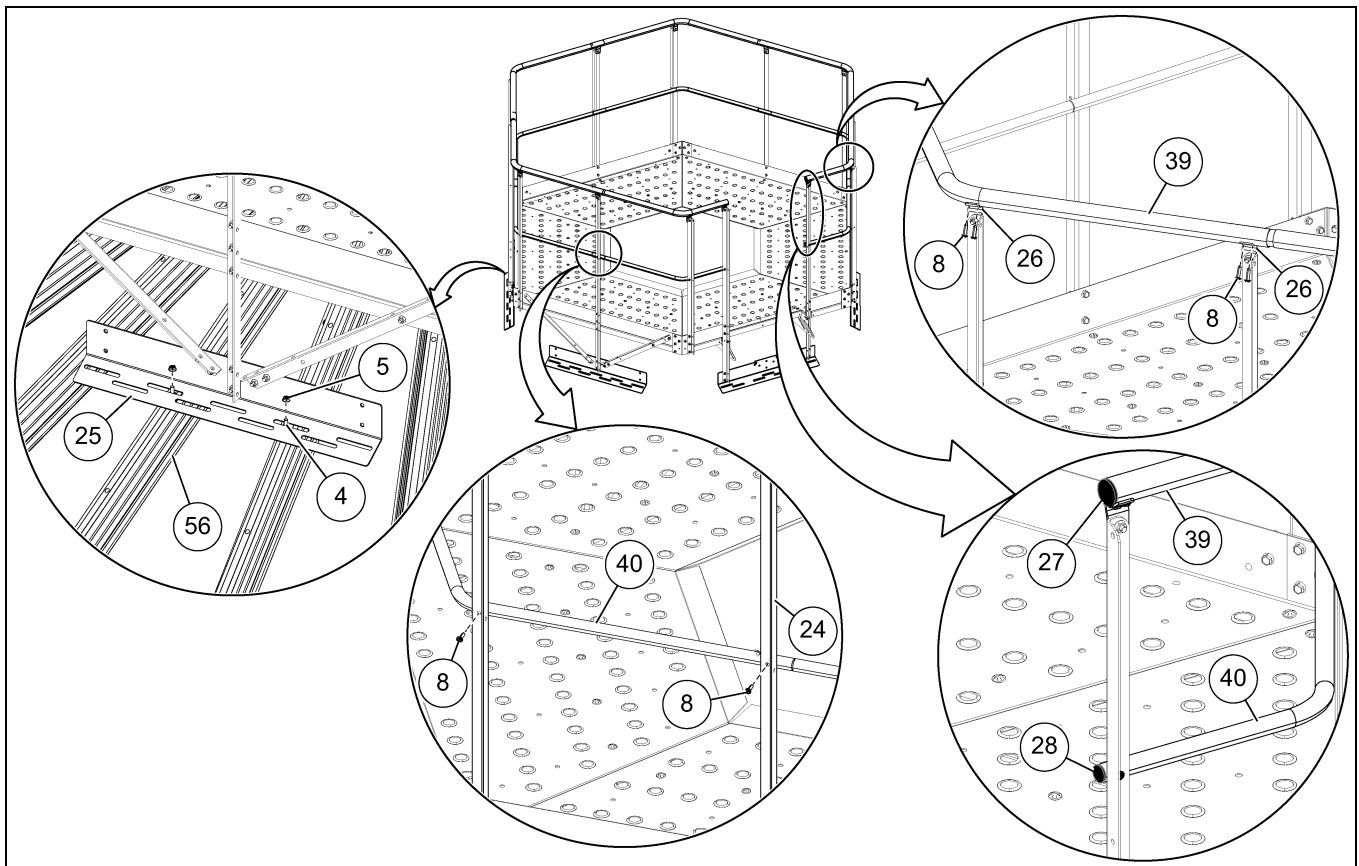


Figure 11M Installing the Peak Walkaround and the Handrails

Ref #	Part #	Description
4		Standard Roof Bolt
5	S-3611	5/16" Flange Nut
8	S-7229	1/4" x 1" Self-Drilling Screw
24	WBS-0250	Handrail Post
25	WBS-0253	Peak Walkaround Standoff
26	WBS-0319	Handrail Bracket

Ref #	Part #	Description
27	S-10382	Upper Handrail End Cap
28	S-10383	Lower Handrail End Cap
39	WBS-0306	Top Handrails
40	WBS-0307	Intermediate Handrail
56		Roof Ribs

Installing the Roof Stairs

1. Place a left 3-step stringer section (42) and a right 3-step stringer section (43) at a distance and assemble the three stair steps (41) in between using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE:

1. Install the 5/16" x 3/4" flange bolts (1) from the outside of the stringer sections and 5/16" flange nuts (5) 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).

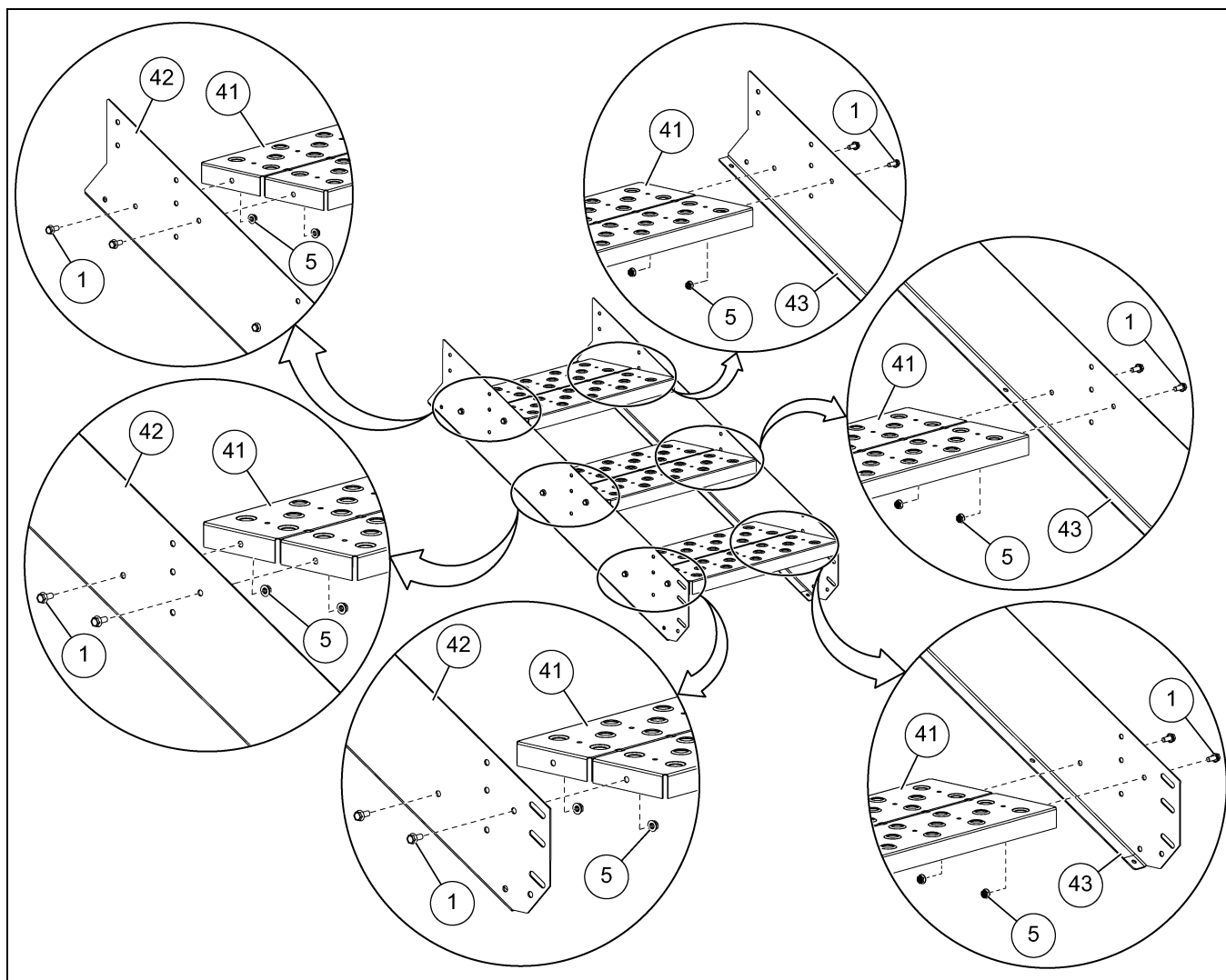


Figure 11N Assembling the 3-Step Stair Section

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

Ref #	Part #	Description
42	RFS-0013	Left 3-Step Stringer Section
43	RFS-0014	Right 3-Step Stringer Section

11. Roof Assembly for 18' Tower Dryers

2. Connect the assembled sets of stair sections (50) together using stringer splice plates (44) 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

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

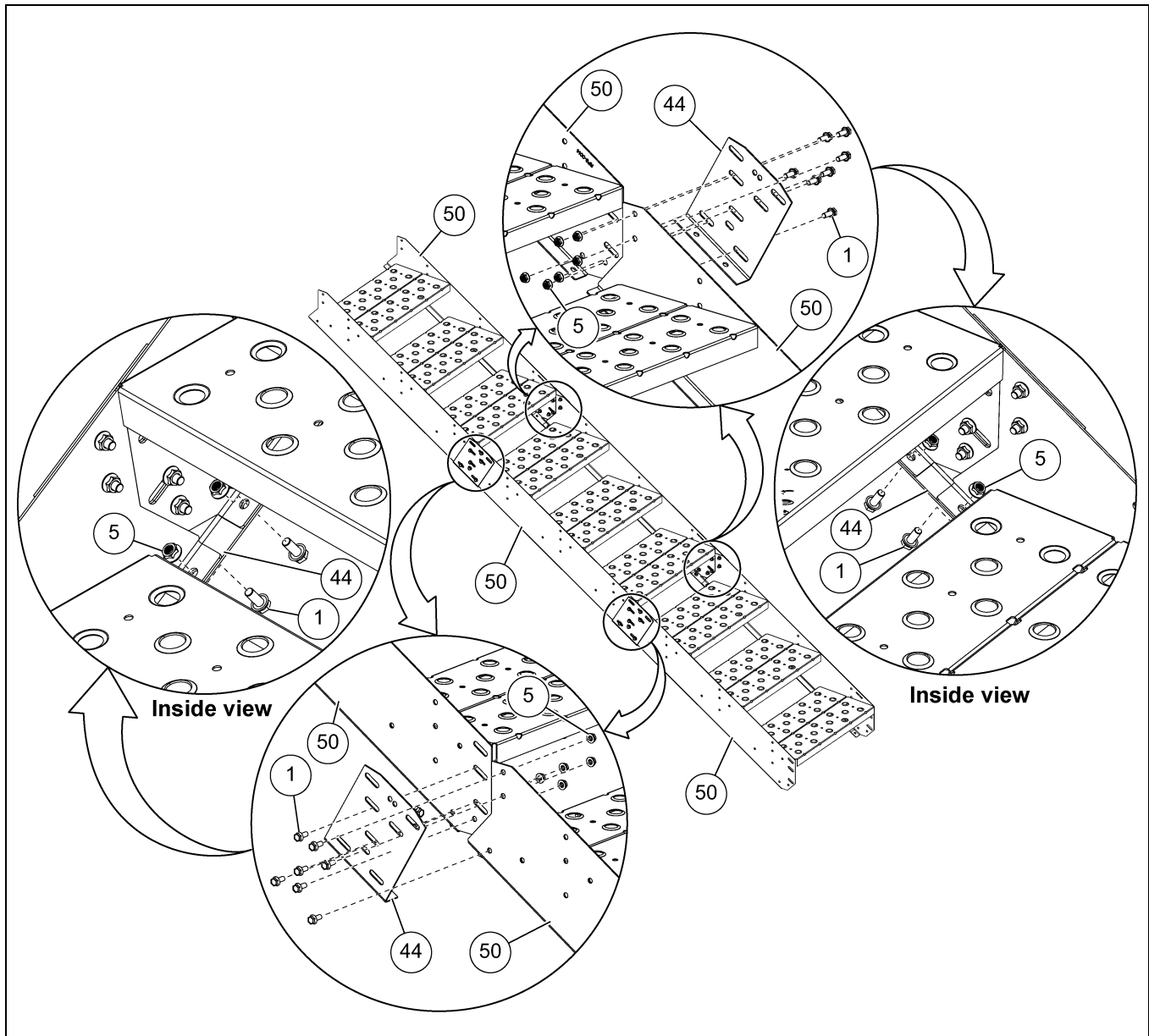


Figure 110 Connecting the 3-Step Stair Sections

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
5	S-3611	5/16" Flange Nut
44	RFS-0019	Splice Plates
50		3-Step Stair Section

11. Roof Assembly for 18' Tower Dryers

- Align and install the handrail posts (29) to the stair sections (50) using the 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE: The handrail post (29) connections should have the 5/16" x 3/4" flange bolts (1) oriented so the 5/16" nuts (5) are outside the walking area to eliminate a trip hazard.

- Assemble the panel support brackets (30) to each pair of handrail posts (29) using the 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE: Do not tighten the 5/16" x 3/4" flange bolts (1), leave hand tight until the stairs assembly is installed onto the roof.

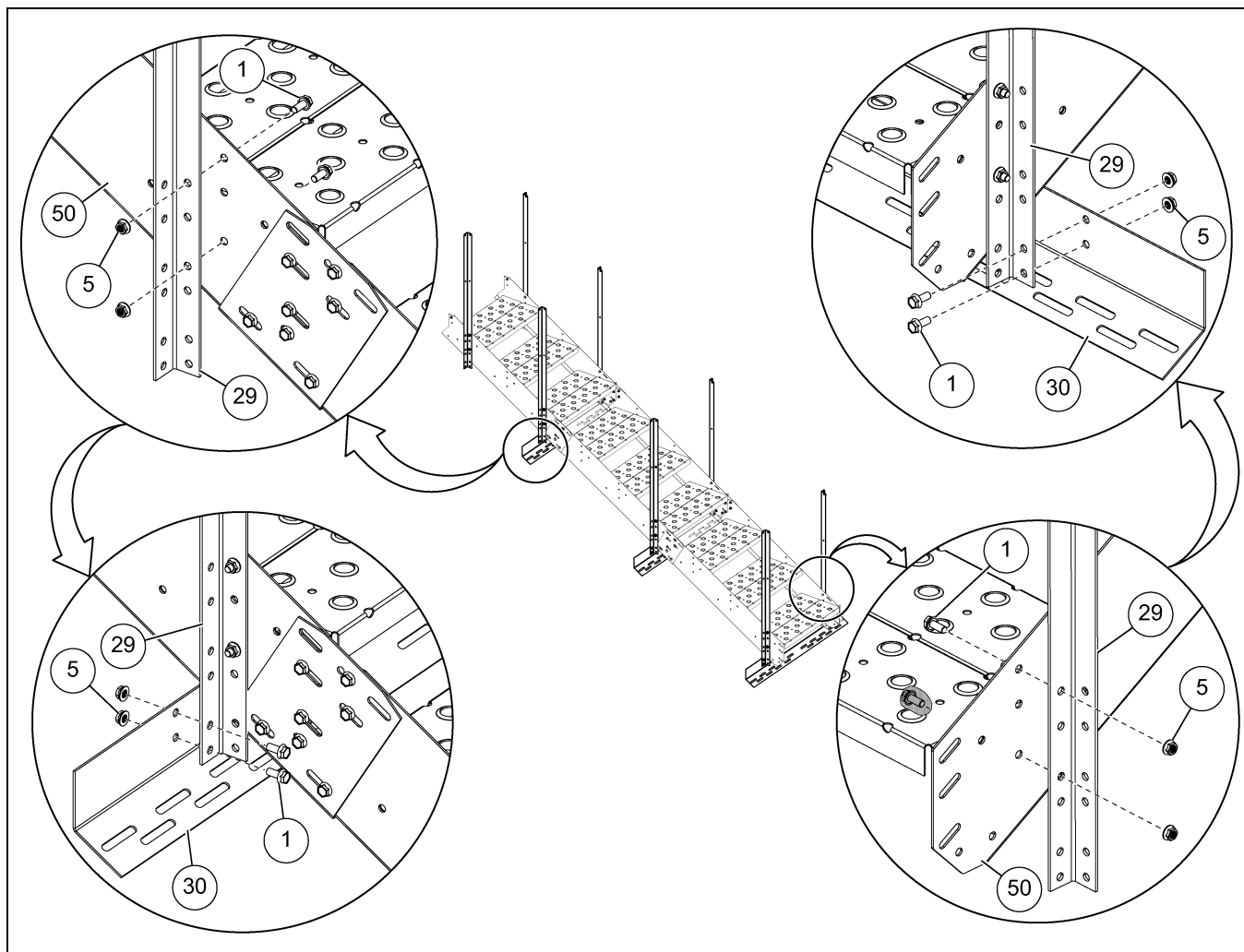


Figure 11P Assembling the Roof Stair Handrail Posts and Panel Support Brackets

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
5	S-3611	5/16" Flange Nut
29	RFS-0048	Roof Stair Handrail Post

Ref #	Part #	Description
30	RFS-0002	Panel Support Bracket
50		3-Step Stair Section

11. Roof Assembly for 18' Tower Dryers

5. Lift and position the assembled roof stairs assembly (57) on the panel adjacent to the manway hole.
6. Center the roof stairs assembly (57) on the roof panel (20) and install the roof stairs assembly to the peak walkaround assembly (58) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).
7. Field drill holes on the roof panel ribs and install the panel support brackets (30) in the roof stair assembly (57) to the roof panel (20) using the standard bin roof bolts (4) and flange nuts (7).

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 (4) with the bolt head from the inside of the bin.
3. As the roof panel (20) narrows near the top, the stair steps may need to be removed to allow a hole to be drilled.

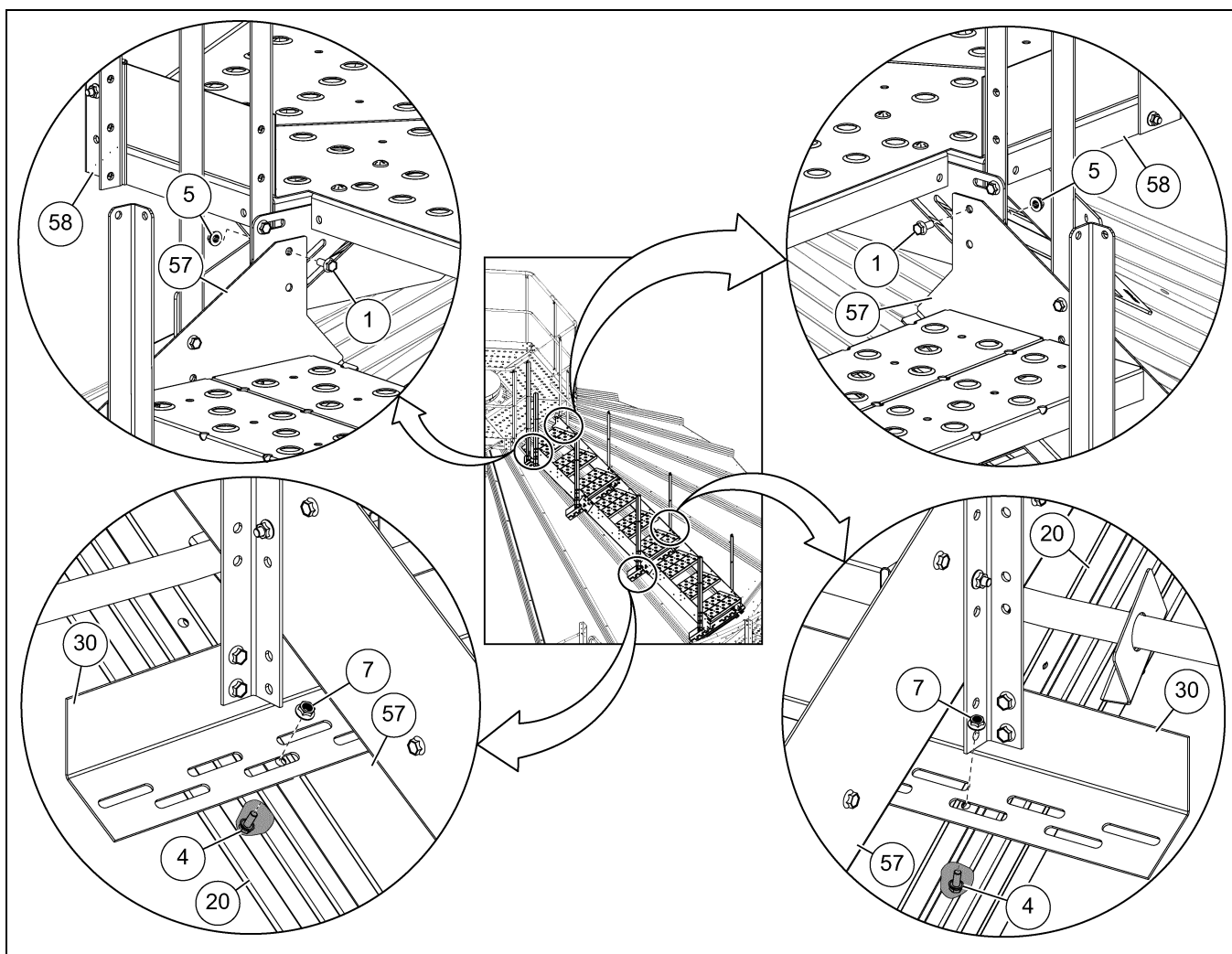


Figure 11Q Installing the Roof Stairs Assembly

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
4		Standard Roof Bolt
5	S-3611	5/16" Flange Nut
7		Flange Nut

Ref #	Part #	Description
20	CTR-0380	Roof Panel
30	RFS-0002	Panel Support Bracket
57		Roof Stair Assembly
58		Peak Walkaround Assembly

11. Roof Assembly for 18' Tower Dryers

8. Install the handrail brackets (26) to the end of handrail posts (29) using 5/16" x 3/4" flange bolts (1) and 5/16" flange nuts (5).

NOTE: Install the 5/16" x 3/4" flange bolts (1) from the inside of the stairs assembly and 5/16" flange nuts (5) on the outside.

9. Starting at the bottom of the roof stair assembly, orient the first upper handrail (45) with the swaged end up and secure it to the handrail brackets (26) using two self-drilling screws (8) per bracket.
10. Install the next upper handrail (45) over the installed handrail and secure it to the handrail brackets (26) using two self-drilling screws (8) per bracket with swaged end up.
11. Orient and align the first lower handrail (46) to the holes located in the middle of the handrail posts (29) and secure using self-drilling screws (8).
12. Align the next lower handrail (46) to the holes located in the middle of the handrail posts (29) over the installed handrail and secure using self-drilling screws (8) with swaged end up.

NOTE: Install the self-drilling screws (8) from the outside of the roof handrail posts (29).

13. At the bottom, trim the handrails and cap them with the provided plastic caps (27 and 28).

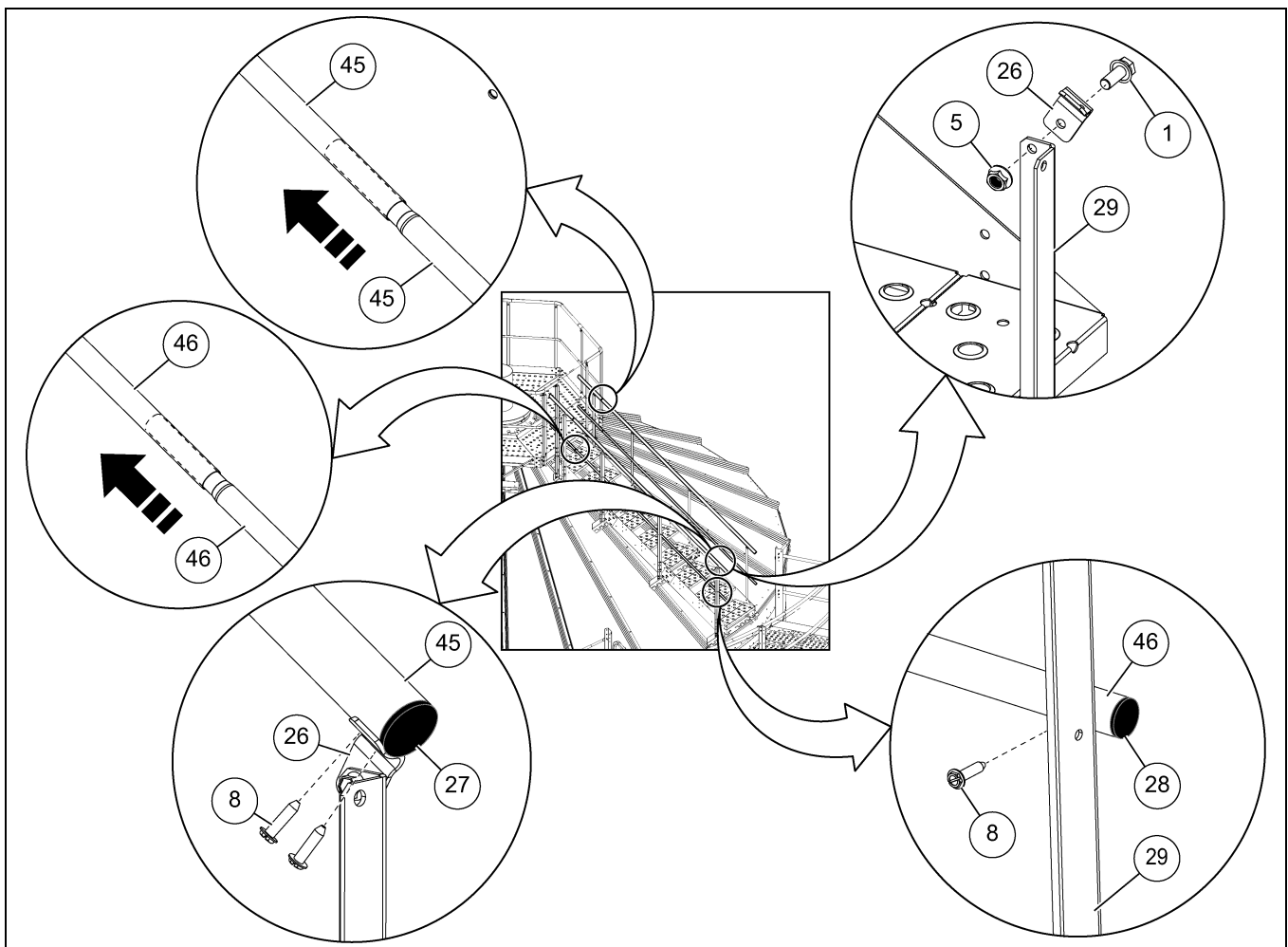
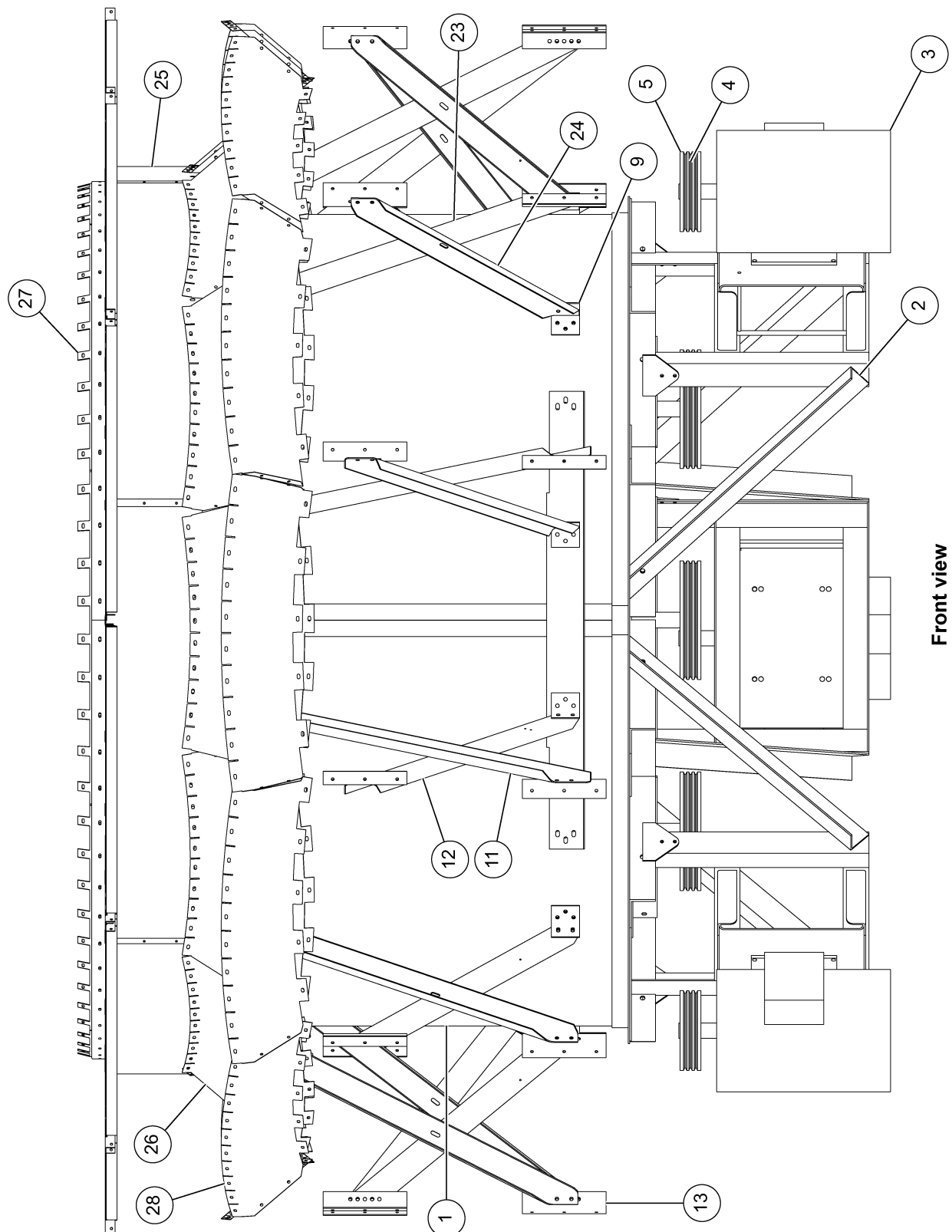


Figure 11R Installing the Handrails

Ref #	Part #	Description
1	S-6606	5/16" x 3/4" Flange Bolt
5	S-3611	5/16" Flange Nut
8	S-7229	1/4" x 1" Self-Drilling Screw
26	WBS-0319	Handrail Bracket
27	S-10382	Upper Handrail End Cap

Ref #	Part #	Description
28	S-10383	Lower Handrail End Cap
29	RFS-0048	Roof Stair Handrail Post
45	RFS-0007	Upper Handrail
46	RFS-0008	Lower Handrail

18' Blower Assembly



NOTE: The parts pointed out on this page are listed on [Page 66](#).

Figure 12A

18' Blower Assembly (Continued)

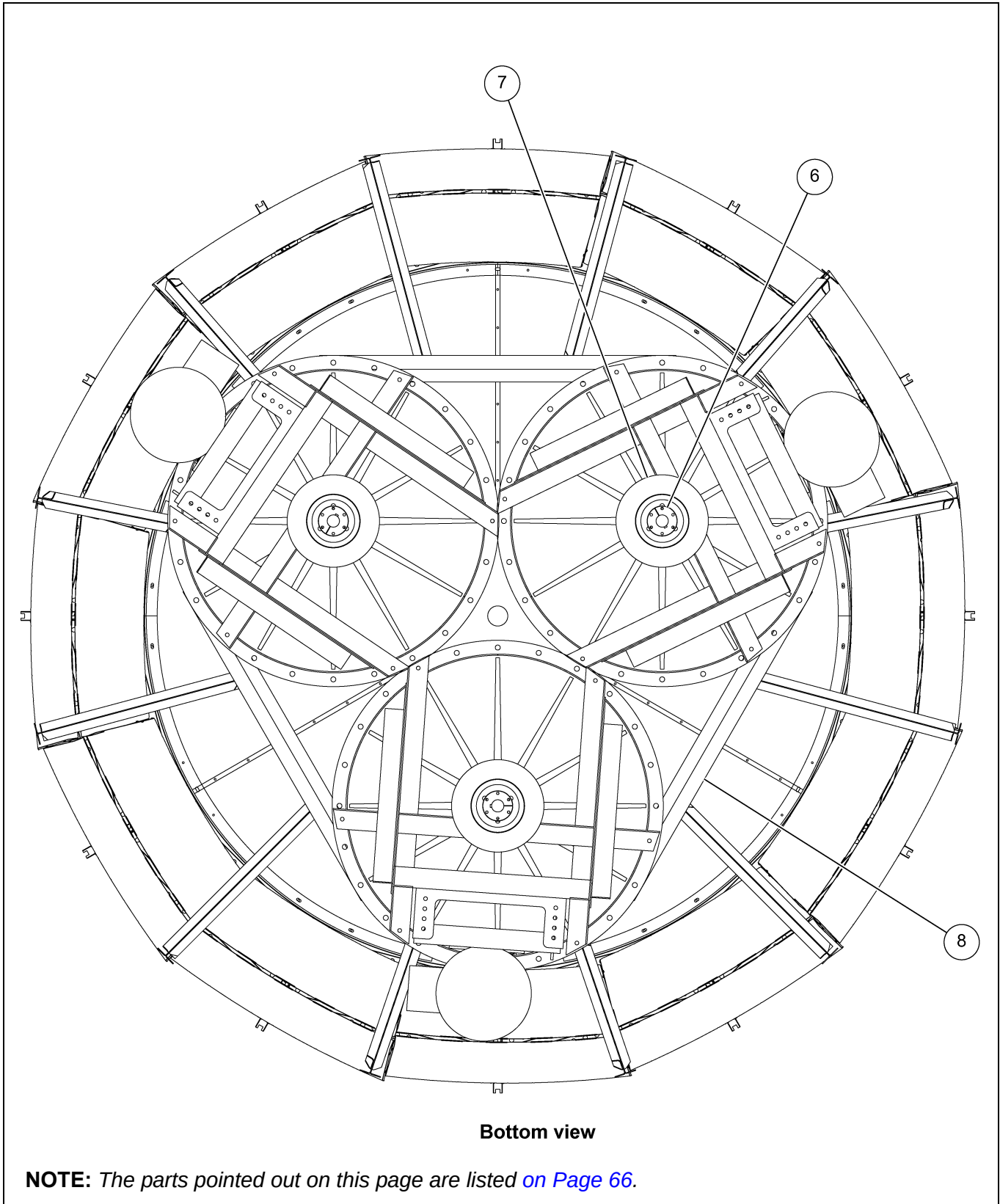


Figure 12B

18' Blower Assembly (Continued)

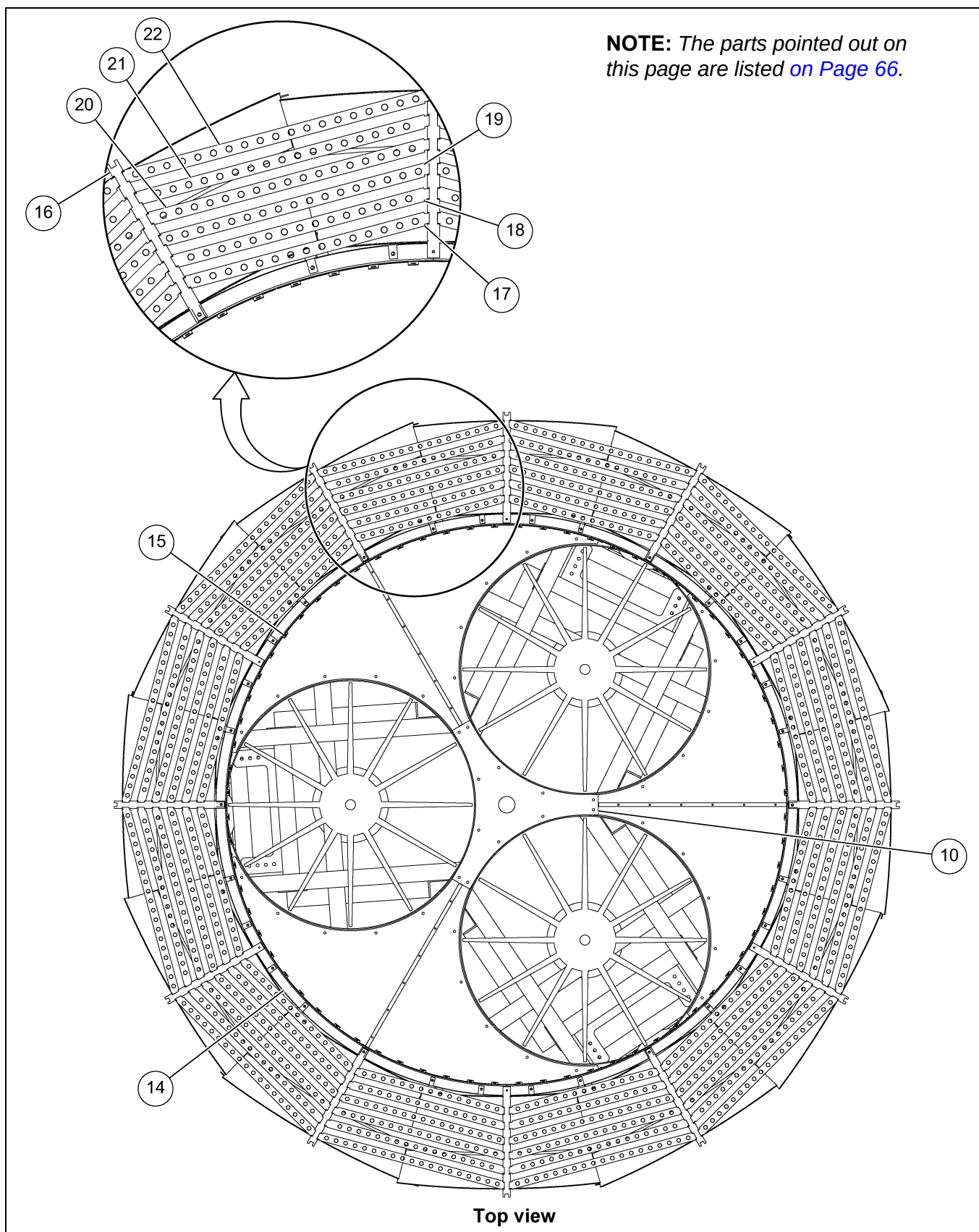


Figure 12C

12. Blower Assembly

Blower Assembly 18' Parts List

Ref #	Part #	Description	Qty
1	GT3-0894-18	QSL Blower 445	3
2	GT3-0894-MM	Lower, QSL 445 Motor Mount	3
3	MTR-0071F	Motor HE, 75 HP 1780 RPM 230/460V 3 PH 60 Hz 365T TEFC	3
4	GT3-0077	Bushing, QD "E" 2-3/8" Bore Dodge # 125512	3
5	GT3-0632	Sheave, QD 3CQ 12.0E	3
6	GT3-0426	Bushing, QD "E" 2-7/16"	3
7	GT3-0740	Sheave, QD 3CQ 18.0E	3
8	GT1-0189	Blower (445) Intermediate Beam	6
9	GT1-0186	Blower Crossbeam Clip	24
10	GT1-0128	Blower (445) Housing Splice	3
11	GT1-0191	Blower (445) Crossbeam Long Intermediate 18' Dryer	6
12	GT1-0190	Blower (445) Crossbeam Short Intermediate 18' Dryer	6
13	GT1-0185	Clip, Blower Support	24
14	GT1-0867-R	Reducer Ring - Rolld Segment - 90°	2
15	GT1-0129	Blower (445) Reducer Panel	6
16	GT1-0131	Reducer Walkway Support Beam 445 Blowers - 18' Dryers	12
17	GT1-0132	Reducer Walkway Slat #1 18' Dryer	12
18	GT1-0133	Reducer Walkway Slat #2 18' Dryer	12
19	GT1-0134	Reducer Walkway Slat #3 18' Dryer	12
20	GT1-0135	Reducer Walkway Slat #4 18' Dryer	12
21	GT1-0136	Reducer Walkway Slat #5 18' Dryer	12
22	GT1-0137	Reducer Walkway Slat #6 18' Dryer	12
23	GT1-0188	Blower (445) Crossbeam Long Main 18' Dryer	6
24	GT1-0187	Blower (445) Crossbeam Short Main 18' Dryer	6
25	GT1-0868	Blower (445) Skirting 15" x 75"	6
26	GT1-0166	Inner (445) Divider Hopper	12
27	GT1-0949	Ring, Reducer Flange (445) Blowers	8
28	GT1-0165	Outer Divider Hopper	12
N/S	GT3-0080	Belt, C112	9

Reducer Walkway and Blower Assembly

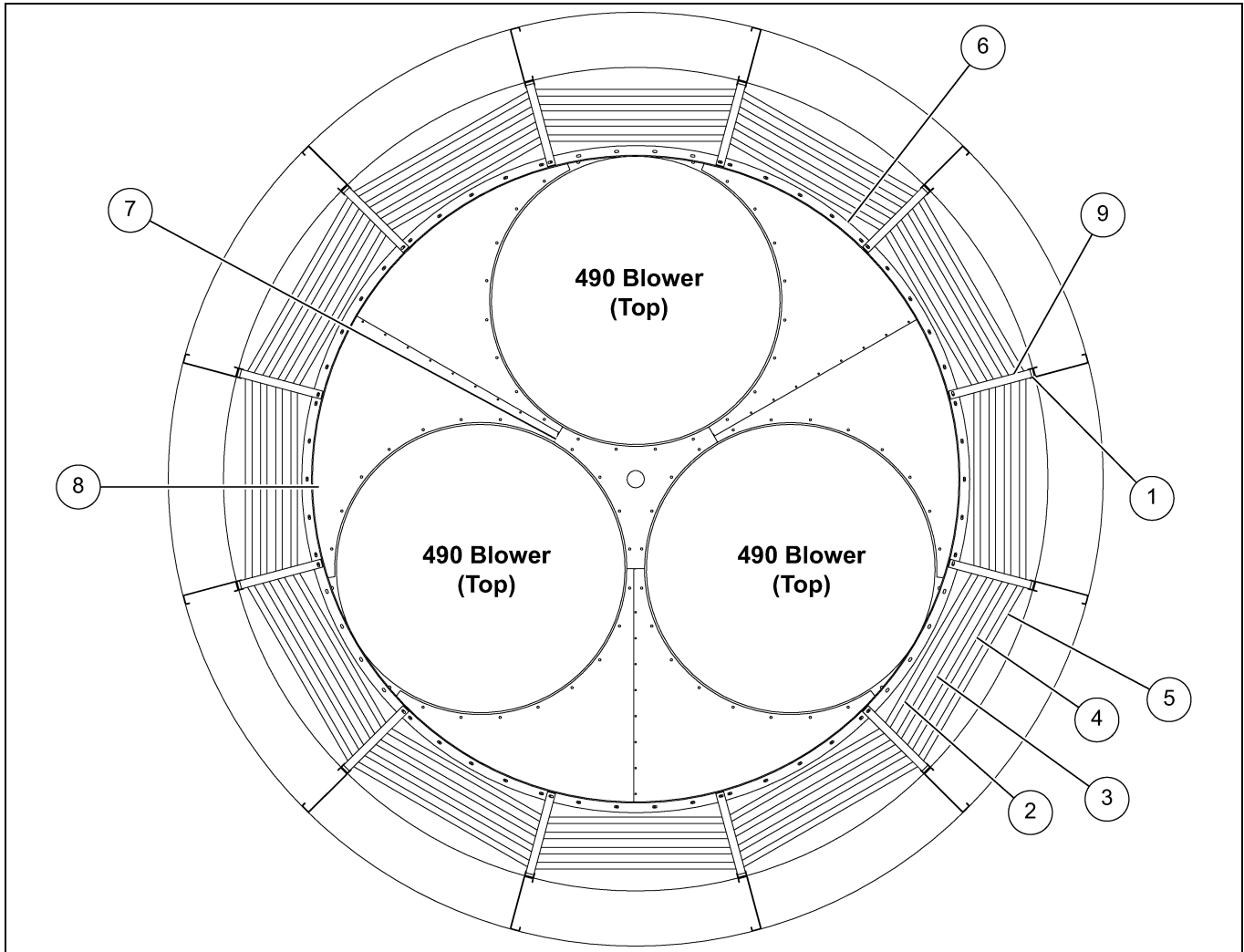


Figure 12D

Reducer Walkway and Blower Assembly Parts List

Ref #	Part #	Description	Qty
1	GT1-0130	Reducer Walkway Support Clip	12
2	GT1-0134	Reducer Walkway Slat #3	12
3	GT1-0135	Reducer Walkway Slat #4	12
4	GT1-0136	Reducer Walkway Slat #5	12
5	GT1-0137	Reducer Walkway Slat #6	12
6	GT1-0207	Reducer Angle Ring 490	1
7	GT1-0209	Blower Housing Splice 490	1
8	GT1-0210	Blower Reducer Panel 490	6
9	GT1-0218	Reducer Walkway Support Beam 490	12

18' Blower Cluster Assembly

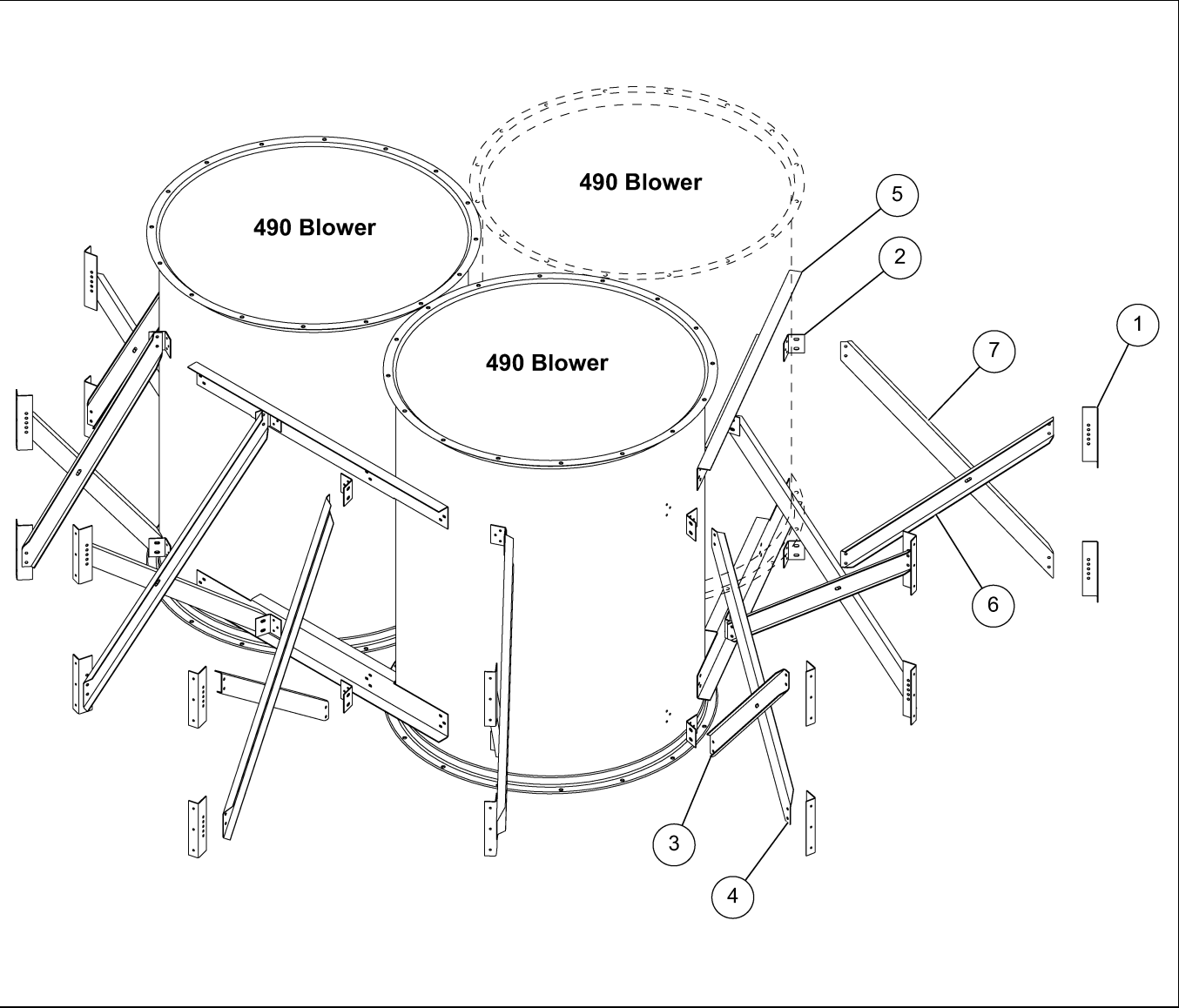
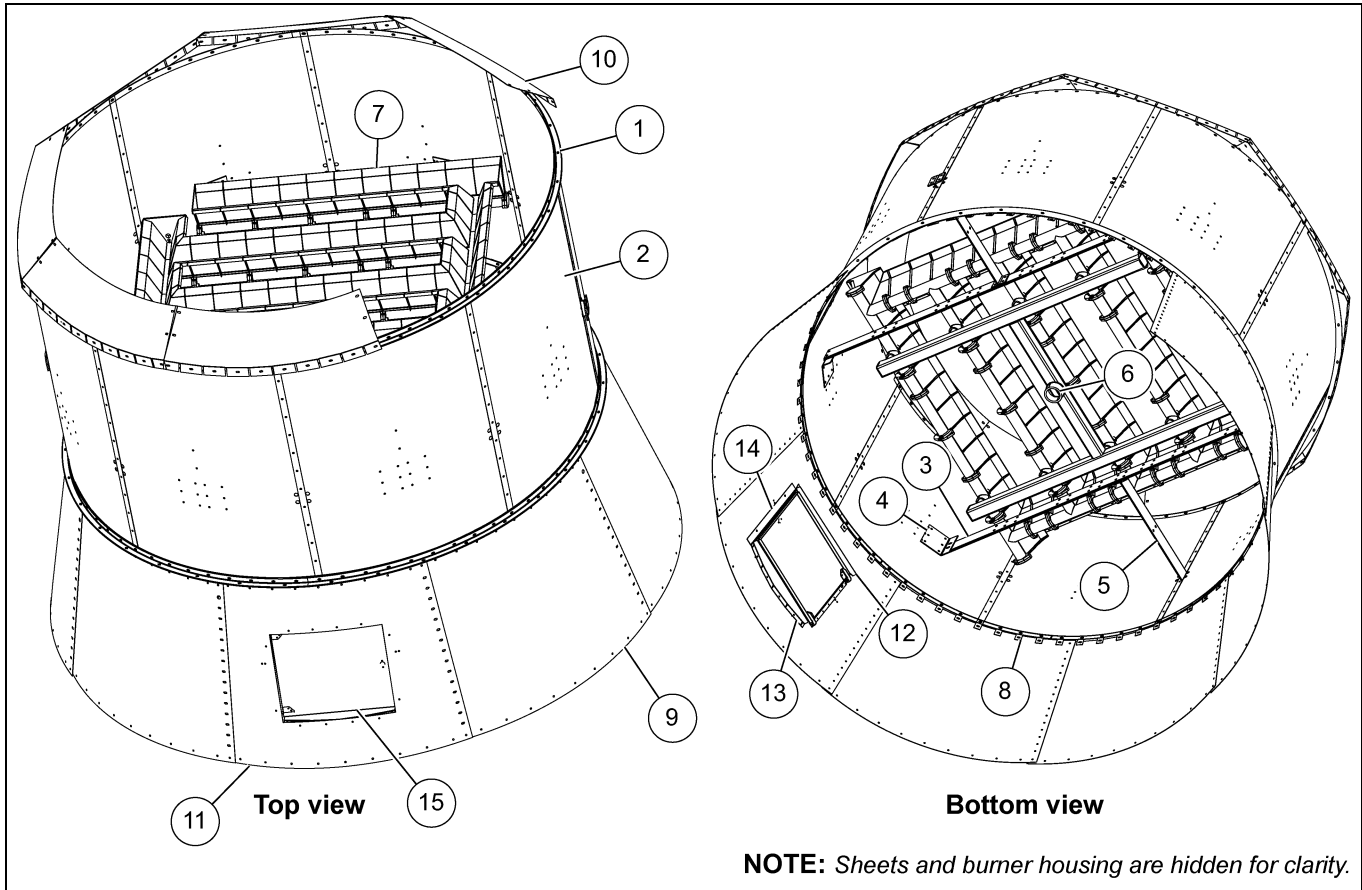


Figure 12E

18' Blower Cluster Assembly Parts List

Ref #	Part #	Description	Qty
1	GT1-0185	Blower Support Clip	24
2	GT1-0186	Blower Crossbeam Clip	24
3	GT1-0230	Blower Crossbeam Short Main 490	6
4	GT1-0231	Blower Crossbeam Long Main 490	6
5	GT1-0232	Intermediate Blower Support Beam 490	6
6	GT1-0233	Blower Crossbeam Short Intermediate 490	6
7	GT1-0234	Blower Crossbeam Long Intermediate 490	6

18' Burner Assembly



Ref #	Part #	Description	Qty
1	GT1-0121-R	Burner Angle Ring Segment	4
2	GT1-0118	Burner Housing Sheet	8
3	GT1-0117	Burner Support Bracket	4
4	GT1-0115	Burner Mounting Bracket	4
5	GT1-0116	Burner Support Tee	4
6	GT1-1012	Burner Manifold Weldment - 3500	1
7	GT3-1021	Maxon NP-1-LE-AL Burner - 4000/4700	1
8	GT1-0948	Ring, Reducer Flange (445) Blowers	8
9	GT1-0950	Reducer Sheet - 445 Blowers	7
10	GT1-0238	Burner Housing Baffle	8
11	GT1-0952	Reducer Sheet - 445 Blowers	1
12	GT1-0140	Reducer Door Top Bracket	1
13	GT1-0141	Reducer Door Bottom Bracket	1
14	GT1-0142	Reducer Door Side Bracket	1
15	GT4-0396	Burner Access Door Assembly	1

18' Base Assembly for Z-4742

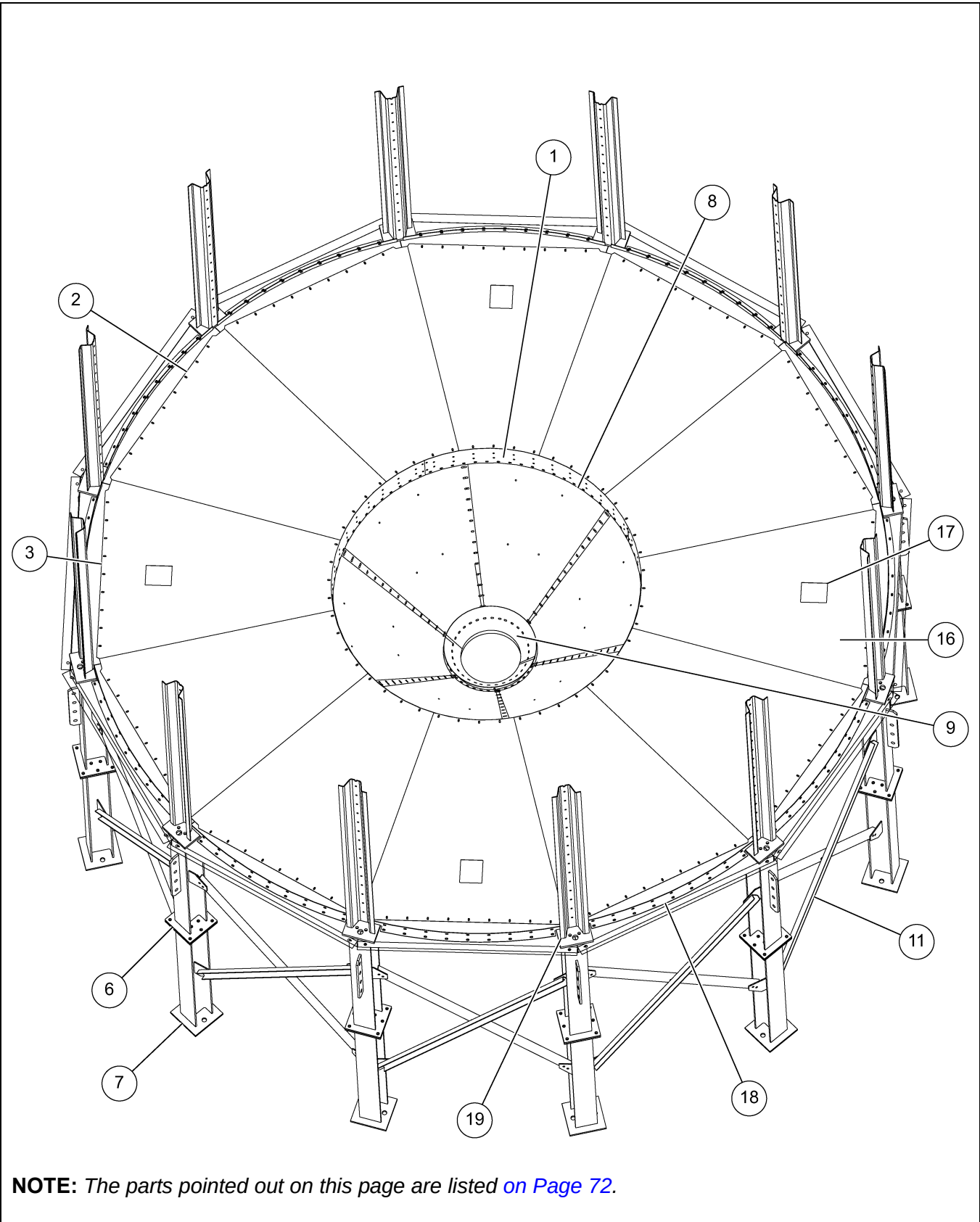


Figure 14A

18' Base Assembly for Z-4742 (Continued)

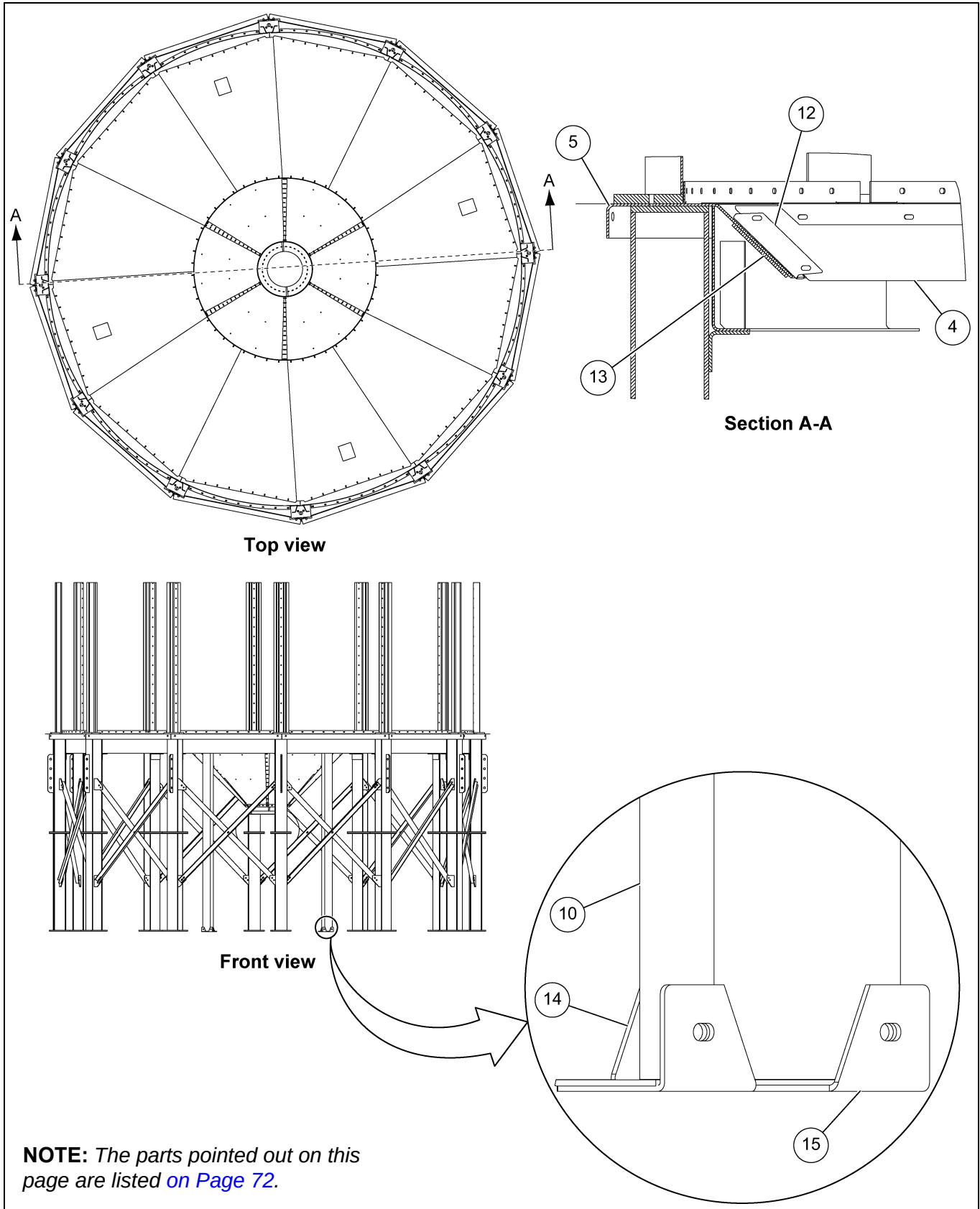


Figure 14B

14. Base Assembly

18' Base Assembly for Z-4742 Parts List

Ref #	Part #	Description	Qty
1	GT1-1185	Angle, Rolled 7' Discharge	4
2	GT1-1189	Sheet, Grain Floor Panel	8
3	GT1-1189C	Sheet, Grain Floor Panel with Cleanout	4
4	GT1-1190	Support, Grain Floor	12
5	810-1425-0	Compression Angle Weldment 18' Sweep Dry	12
6	GT1-1217	Upper Column Weldment	12
7	GT1-1218	Lower Column Weldment	12
8	BLK-10693	Hopper Panel: 7' 45° 22" (Formed)	6
9	GT1-1197	Weldment, 16" Discharge Flange	1
10	GT1-1191	Discharge Hopper Support Legs	4
11	801-2721-0	Bracket, Diagonal 18' Dryers	24
12	801-2748-3	Bracket, Outer - 18' Ground Floor Support	12
13	CHT-1182	18' Red Splice Plate	12
14	BLK-10057	Leg Anchor Plate, Back, Formed Part	4
15	BLK-10058	Leg Anchor Plate, Front	4
16	810-1127-2	Floor Drain Frame Weldment	4
17	801-1029-9	Gate, Drain Frame	4
18	GT1-0374	Strip, Rolled Bolt-On Seal	12
19	GT1-0051	Base Stiffener Weldment	12
N/S	GT1-1193	Hopper Liner - Flat Bottom Dryer	6

18' Hopper Base Assembly for G-4718

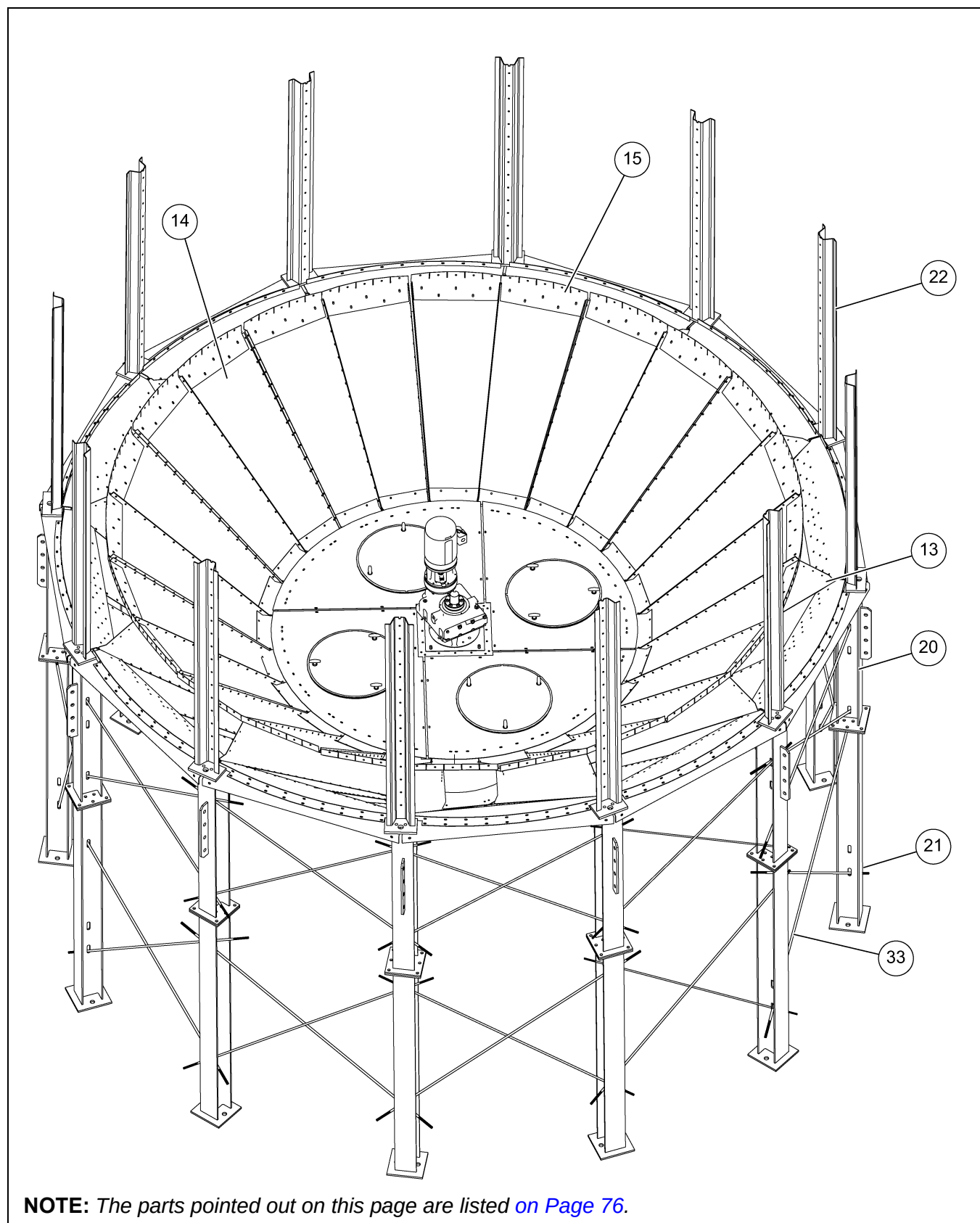


Figure 14C

18' Hopper Base Assembly for G-4718 (Continued)

NOTE: The parts pointed out on this page are listed [on Page 76](#).

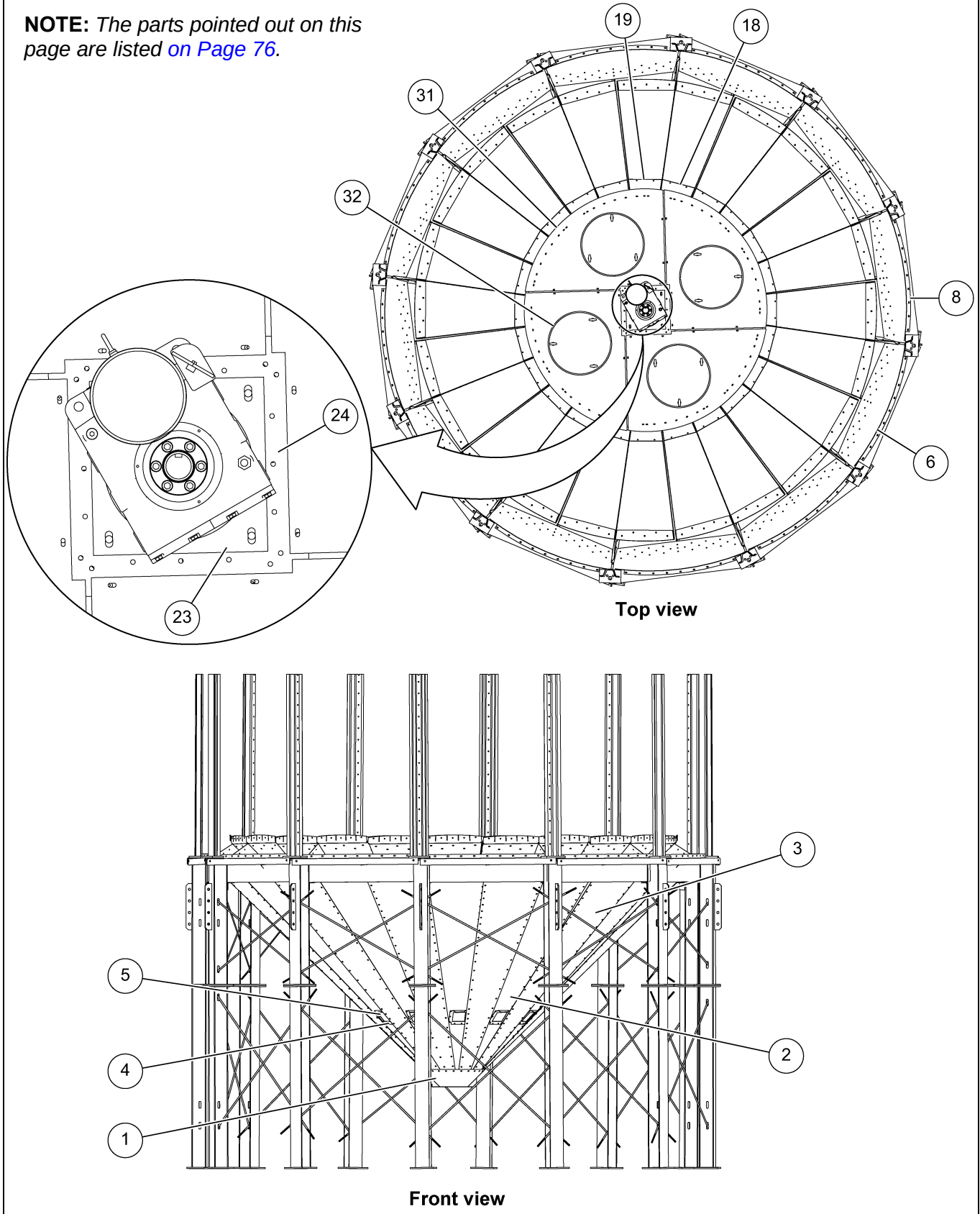


Figure 14D

18' Hopper Base Assembly for G-4718 (Continued)

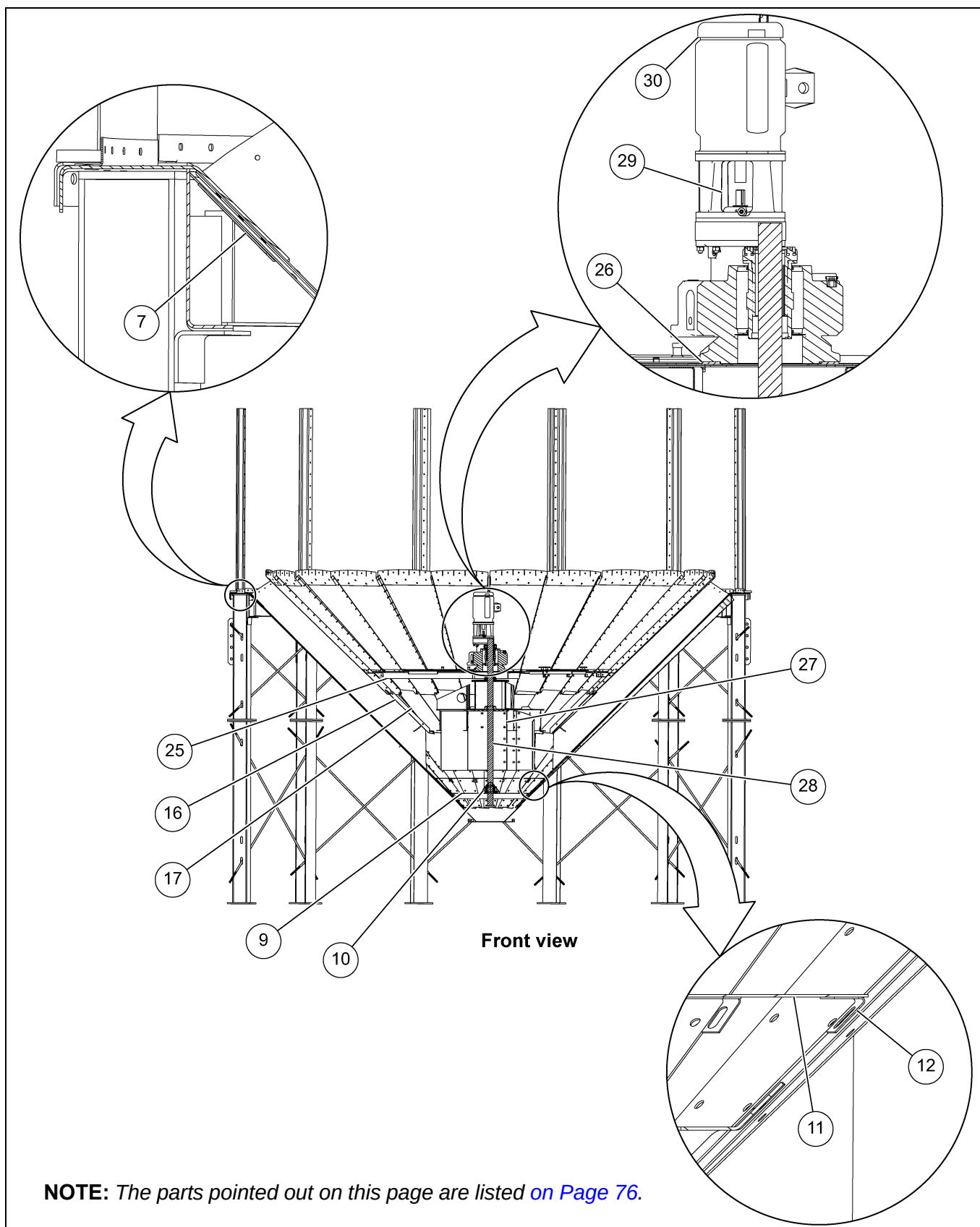


Figure 14E

14. Base Assembly

18' Hopper Base Assembly for G-4718 Parts List

Ref #	Part #	Description	Qty
1	GT1-0539	Hopper Collar Weldment - 18' 45°	1
2	GT1-0076	Hopper Panel R.H. with Discharge	12
3	GT1-0077	Hopper Panel L.H.	12
4	GT1-0074	Port, Discharge	12
5	GT1-0075	Plate, Discharge	12
6	GT1-0373	Compression Angle Weldment - 18' 45°	12
7	GT1-0532	Hopper Compression Angle Splice	12
8	GT1-0374	Strip, Rolled Bolt-On Seal	12
9	GT1-0217	Support, Metering Drum Bearing	1
10	GT3-0057	Bearing, MB-2206 Bottom 2-3/8" Bore	1
11	GT1-0667	New Metering Drum Floor - 18'	1
12	GT1-0665	Clip, New Metering Drum Floor	12
13	GT1-0887	Hopper Channel - 18' 45° Dryer	12
14	GT1-0888	Inner Hopper Sheet - 18' Dryer	24
15	GT1-0065	Flange, Inner Hopper Panel - 18'	24
16	GT1-0889	Adjustment Gate Panel R.H. - 18' Dryer	12
17	GT1-0890	Adjustment Gate Panel L.H. - 18' Dryer	12
18	GT1-1029	Floor Support Bracket @ Torque Arm - 18'	4
19	GT1-1030	Floor Support Bracket - Inner Hopper - 18'	20
20	GT1-0244-12	Upper Column Weldment - 18' (with 24" Extension Length)	12
21	GT1-0245-12	Lower Column Weldment - 18' (with 24" Extension Length)	12
22	GT1-0051	Base Stiffener Weldment	12
23	GT1-0892	Plate, Gearbox Adjustment - Inner Hopper	1
24	GT1-1241	Plate, Gearbox - New Hopper Bottom Used in Bolted Down Floor	1
25	GT1-0222	Arm, Gearbox Torque	4
26	GT1-0891	Plate, Gearbox Adapter - Tower Dryers	1
27	GT4-1131	Metering Drum Assembly	1
28	GT1-0444	Metering Drive Shaft Weldment	1
29	GT3-1038	Gearbox, Sumitomo C6145Y 90:1 Reducer Model: EVYJS-C6145Y-F5-88	1
30	GT3-0138F	Motor, 5 HP 184TC Inverter Duty 184T Frame TEFC C-Face Inverter D	1
31	GT1-1240	Sheet, Floor Panel (New) - Inner Hopper Bolted Down Floor	4
32	815-2079-3	Door, Access Assembly	4
33	CHT-1175	CHT X-Brace 3/4" x 116" 18' 45°	48

18' Sweep Arm Assembly

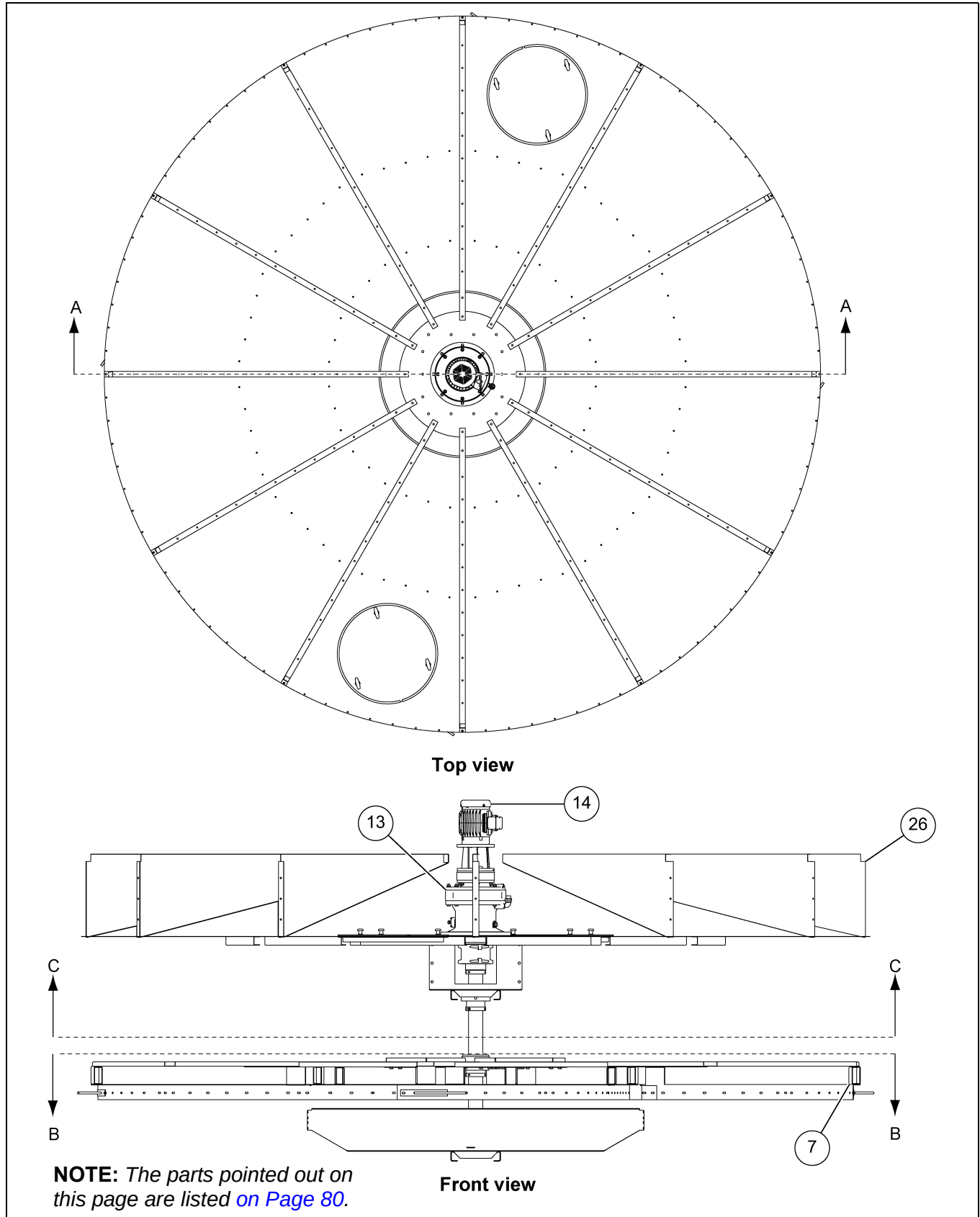


Figure 15A

18' Sweep Arm Assembly (Continued)

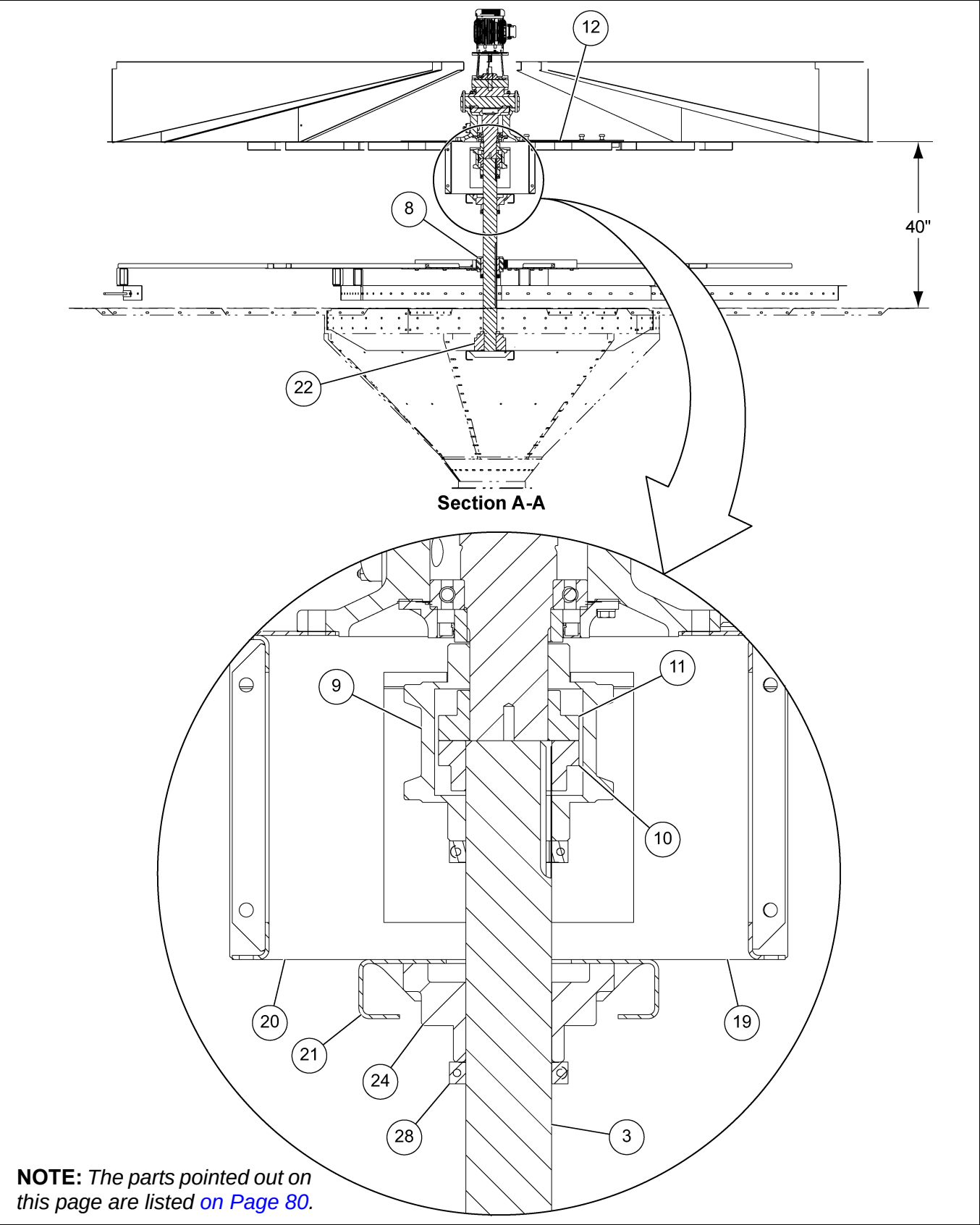


Figure 15B

18' Sweep Arm Assembly (Continued)

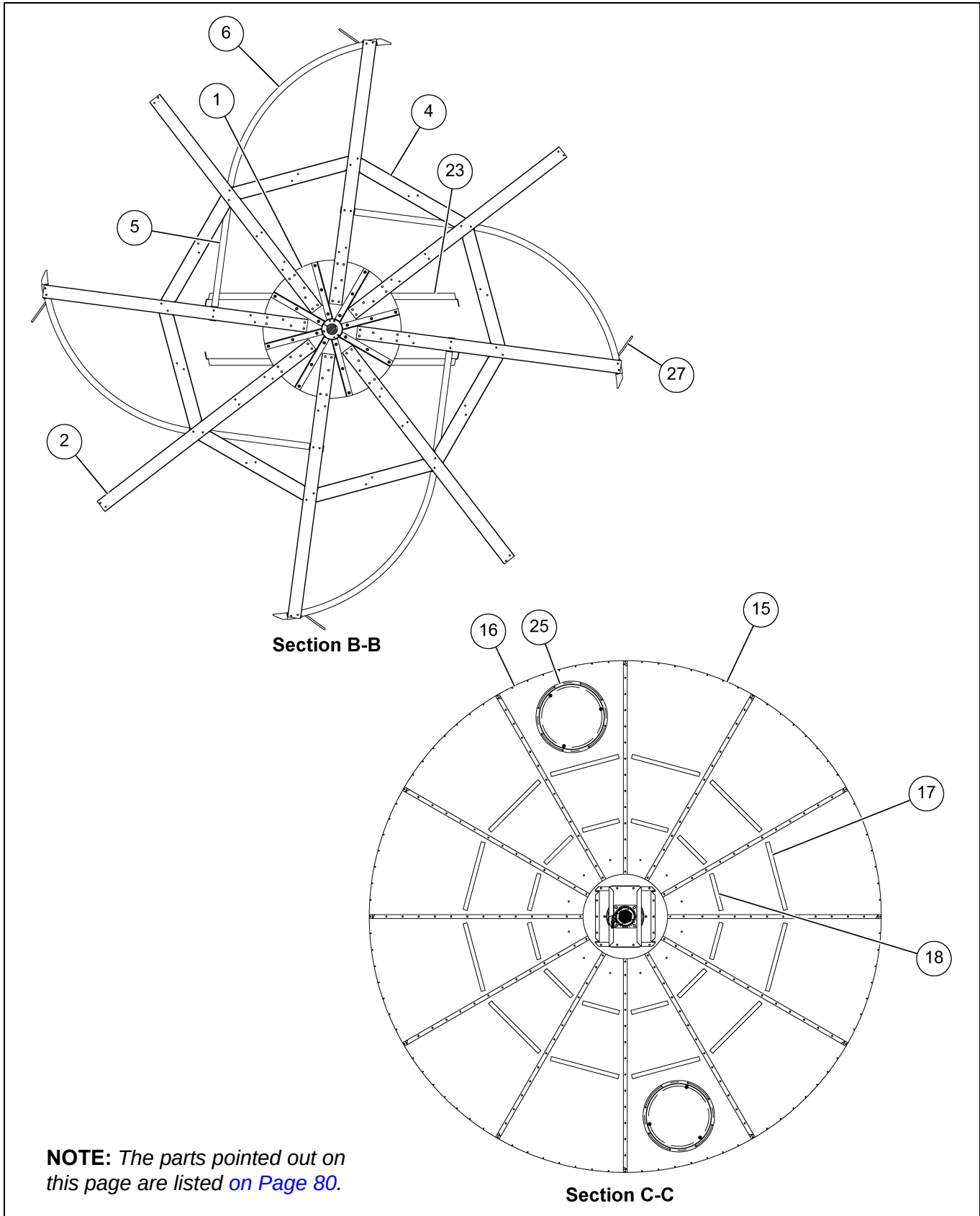


Figure 15C

15. Sweep Assembly

18' Sweep Arm Assembly Parts List

Ref #	Part #	Description	Qty
1	810-1384-9	Center Unload Disk Weldment	1
2	801-2738-4	Support, Radial - 18' Sweep	8
3	806-1793-9	Unload Shaft - 18' and 24' Sweep Dry	1
4	801-2146-0	Unload Sweep Lateral Support	8
5	801-2741-8	Support, Sweep Straight 4" - 18' Sweep	4
6	801-2739-2	Angle, Sweep 4" Curved - 18' Sweep	4
7	GT1-1188	Unload Sweep Spacer	24
8	717-1365-5	Split Taper Bushing, S1 x 3-7/16"	1
9	717-1414-1	Cover, 1090GCAH Grid Kit	1
10	717-1415-8	Hub, Coupling 1090 3-7/16"	1
11	717-1416-6	Hub, Coupling 1090 3-1/8"	1
12	801-2727-7	4185/18' Gearbox Mounting Plate	1
13	717-1371-3	Gearbox, Sumitomo 6185DB 1003:1	1
14	702-1068-7F	Motor, 1-1/2 HP 3 PH 1765 60 Hz SU	1
15	801-2729-3	Cooling Floor Panel - 18'	10
16	801-2730-1	Sheet, Cooling Floor Panel with Door 18'	2
17	801-1480-4	Stiffener, Formed 26" LG	12
18	801-1481-2	Stiffener, Formed 14" LG	12
19	801-2251-8	Support, Lateral Channel, Sweep	2
20	801-2703-8	Support, Bearing Channel 24' Dryers	2
21	801-2252-6	Support, Top Bearing, Sweep Unload	2
22	717-1420-8	Bearing, 2-15/16 RFB215	1
23	GT1-1187	Channel, Bottom Bearing Support	2
24	CE-00522	Bearing, Ball Dodge #F4BSCM307	1
25	815-2079-3	Access Door Assembly	2
26	801-2728-5	Support, Cooling Floor 18'	12
27	GT1-1458	Agitator Weldment	4
28	717-1435-6	Collar, Locking 3-7/16"	3

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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