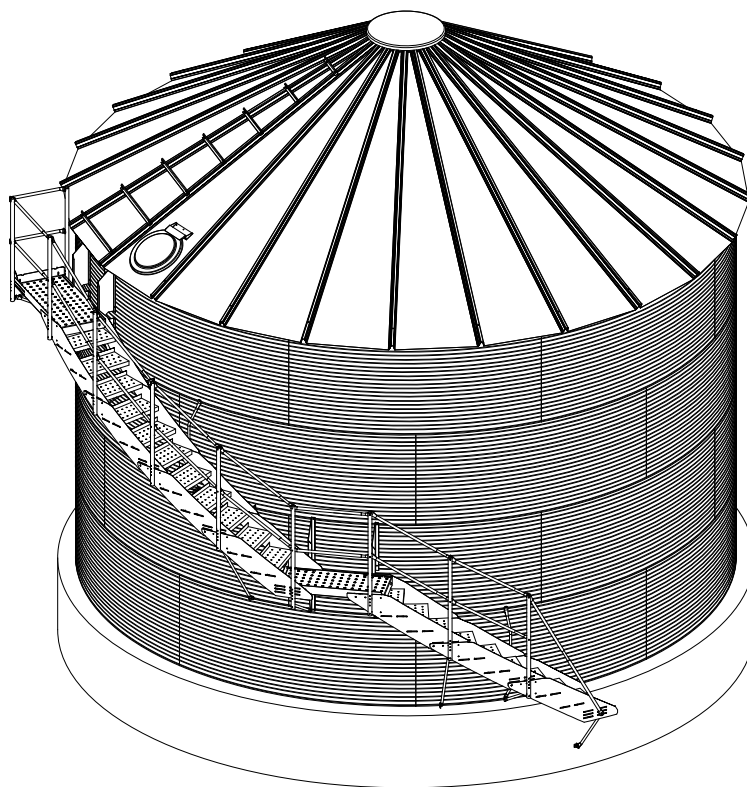


Circular Stair

Grain Bin Installation and Storage Instructions



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 198400 R4

Revised: October 2020

Original Instructions

New in this Manual

The following changes have been made in this revision of the manual:

Description
Updated manual to provide clearer installation instructions and details.

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1. Introduction

Before assembling, please read this manual. Familiarize yourself with the process and the necessary precautions for efficient and safe assembly of this Westeel Circular Stair.

Everyone present at the assembly site is required to be familiar with all safety precautions.

Keep this manual available for frequent reference and review it with new personnel. Call your local distributor or dealer if you need assistance or additional information.

2. Safety

2.1. Safety Alert Symbol and Signal Words



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

Signal Words: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.



Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.



Indicates a hazardous situation that, if not avoided, could result in serious injury or death.



Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety

Read and understand all safety instructions, safety decals, and manuals and follow them when assembling the equipment.

- Only experienced personnel who are familiar with this type of assembly and installation should perform this work. Untrained assemblers/installers expose themselves and bystanders to possible serious injury or death.
- Do not modify the circular stair in any way or deviate from the instructions in this manual without written permission from the manufacturer. Unauthorized modification or methods may impair the function and/or safety. Any unauthorized modification will void the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Contact your local representative or Westeel if you need assistance or additional information.
- Always follow applicable local codes and regulations.

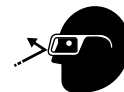


2.3. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn when installing the equipment.

Safety Glasses

- Wear safety glasses at all times to protect eyes from debris.



Coveralls

- Wear coveralls to protect skin.



Hard Hat

- Wear a hard hat to help protect your head.



Steel-Toe Boots

- Wear steel-toe boots to protect feet from falling debris.



Work Gloves

- Wear work gloves to protect your hands from sharp and rough edges.



2.4. Safety Decals

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory as applicable.

2.5. Decal Installation/Replacement

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the decal backing paper.

3. Before You Begin

3.1. Site and Assembly

Unless otherwise specifically provided in writing, Westeel does not take responsibility for any defects or damages to any property, or injury to any persons, arising from or related to any site or assembly considerations, including but not limited to:

- Bin location and bin siting
- Soil conditions and corresponding foundation requirements (note that the examples provided in manuals are for specifically stated soil conditions)
- Bin assembly (Westeel recommends the use of qualified bin installers; contact Westeel for information on installers in your area)
- Field modifications or equipment additions that affect the bin structure
- Interconnections with neighboring structures
- Compliance with all applicable safety standards, including but not limited to fall restraint systems (ladders or other systems). Local safety authorities should be contacted as standards vary between jurisdictions.

3.2. Critical Assembly Requirements

To ensure a successful, safe and reliable outcome you must comply with the following assembly techniques and practices:

1. Comply with all local code and jurisdictional requirements applicable to your circular stair installation.
2. Make sure that the proper hardware is utilized for all bolted connections. If a shortage occurs, do not substitute. Take the necessary steps to obtain the proper hardware. Make sure nuts are tightened to the required torque values as specified in the appropriate assembly manual.
3. Comply with all assembly instructions provided in the appropriate assembly manual to make sure your whole circular stair is constructed safely.

3.3. Product Storage

Rust on Galvanized Parts

1. White rust forms when moisture is allowed to collect on galvanized surfaces that have yet to develop the durable zinc oxide layer. This zinc oxide layer naturally occurs as the surface interacts with carbon dioxide, and is characterized over time by the dull grey appearance that weathered galvanized surfaces get.
2. Parts that are not well ventilated or well drained can collect water between surfaces and develop white rust.
3. White rust is not a structural concern if its development is stopped in the early stages. A light film or powdery residue can occur after a period of heavy rainfall or a short time of improper storage. If white rust has started to develop, separate parts and wipe off any moisture. Next, using a clean cloth, apply a thin layer of petroleum jelly or food-grade oil to the entire part.
4. If moisture is left on parts, this white rust can become more aggressive and turn into red rust. Red rust can cause degradation in the material and become a structural concern. Any parts that have red rust should be replaced immediately.

Storage Guidelines

- Start assembly as soon as possible.
- All circular stair boxes, ladder boxes and hardware boxes should be stored inside. These are not waterproof, and will deteriorate in normal weather conditions, allowing moisture to contact the parts inside.

If Parts Become Wet

- Any boxed parts that become wet should be dried and stored in a new box that is free of moisture.

3.4. Important Notes

- Westeel does not provide a foundation design for this product, and is not liable for any damages or injuries related to inadequately designed or constructed foundations. Customers must contract professional services for all foundation design and construction work.
- Contact local power officials for minimum power line clearance.
- See [Section 3.2 – Critical Assembly Requirements on page 7](#) for mandatory siting and assembly requirements.
- Tighten all bolts to the recommended torque settings.

4. Preparation

4.1. Check Shipment

Unload the parts at the assembly site and compare the packing slip to the shipment. Ensure that all items have arrived and that none are damaged.

Report damaged parts or shortages immediately to your Dealer. The Dealer will order any replacement parts immediately to ensure that assembly will not be held up by missing parts. All parts will be charged for and credit will be issued by party at fault. No credit will be issued if freight bills are signed as received in good condition.

4.2. List of Tools and Equipment

Use quality tools and equipment. Use them safely, and correctly, for their intended use. Tools for this application should include:

Tools

- Electric or pneumatic (air) impact tools
- Power drill and drill bits
- Sockets (multiple 9/16" and 1/2" sockets recommended)
- Large-pocket carpenter pouch
- 8" (20 cm) metal punches (for aligning bolt holes)
- Step and extension ladders, construction grade
- 6-point wrenches (Imperial, box end)
- Metal-cutting saw suitable for cutting handrails
- Scaffolding

Minimum Recommended Safety Equipment

- A properly-stocked first-aid kit
- Eye, foot, head, and hand protection (safety glasses, steel-toed boots, hard hat, work gloves)
- Cable, chain, or rope to tie-off bin or jacks in case of wind
- Body harness and lifeline (for use where falling hazard exists)
- Ground fault interrupt protected electrical hook-ups

4.3. Order Optional Equipment

Optional equipment such as block-off gate, self-closing gate, etc., should all be on site and checked before assembly starts. Plan your installation in advance. For details, see assembly instruction supplied with optional equipment.

4.4. Stair Location Planning

Planning the location of the circular stairs relative to the other grain bin features is important. It is important that all components of the grain bin be properly located to maximize their efficiency and effectiveness. It is also important to plan grain bin locations relative to other grain bins. These locations should be considered before the foundation is poured. Double-check desired locations of the inspection hatch, roof ladder or stairs, platforms, walkways, fans and/or heaters, unload system, venting equipment, and side entry door.

The stairs are designed to be installed using existing wall sheet holes as installation pickup points. The few exceptions to this are noted in the installation instructions. The circular stairs are also designed to be installed in either direction. Therefore, once the starting position at the top of the bin is designated, the stairs can progress down to the right, or down to the left, which ever is preferable.

The stairs are assembled in half-tier increments. Each half tier progresses a total of three standard $9 \frac{3}{8}$ " wall sheet hole spacings around the bin. The top platform, and rest platforms, also span three standard $9 \frac{3}{8}$ " wall sheet hole spacings. Since there are a total of twelve standard $9 \frac{3}{8}$ " hole spacings per wall sheet, it takes a combination of two full vertical tiers of circular stairs, or three half-tier sections and a platform section, to progress the equivalent of one full wall sheet around the bin.

Note

Toward the bottom of larger bins, the horizontal wall sheet hole spacing may decrease to $4 \frac{11}{16}$ ". In this case the number of hole spacings per half stair section, or platform, would double to six.

Uprights (on stiffened bins) and vertical wall sheet seams, create the need for special consideration as it is wise to avoid these locations. This is relatively easy to do since uprights are spaced at six standard wall sheet hole locations, as are vertical seams (both which are multiples of three). Therefore when starting the circular stair at the top of a stiffened bin, it is suggested to use any of the horizontal wall sheet seam holes that are not a stiffener location, or a vertical wall seam location. On non-stiffened bins, the vertical wall seams are the only consideration. Once started properly, the balance of the circular stair should proceed without any interference with either stiffener, or wall sheet seams.

The top platforms can be located at a full tier height location (which is aligned with the horizontal wall sheet seams) or at a half tier height location (which is located midway between the horizontal wall sheet seams).

- Align the top platform with the roof ladder or stairs, or the inspection hatch (subject to owner's preference).
- Locating the top platform at the eave may be preferable if accessing a roof stair, or roof ladder.
- Locating the top platform at the mid-tier location may be preferable if accessing the inspection hatch. A shortened ladder section, or step, can be used to access the roof ladder.

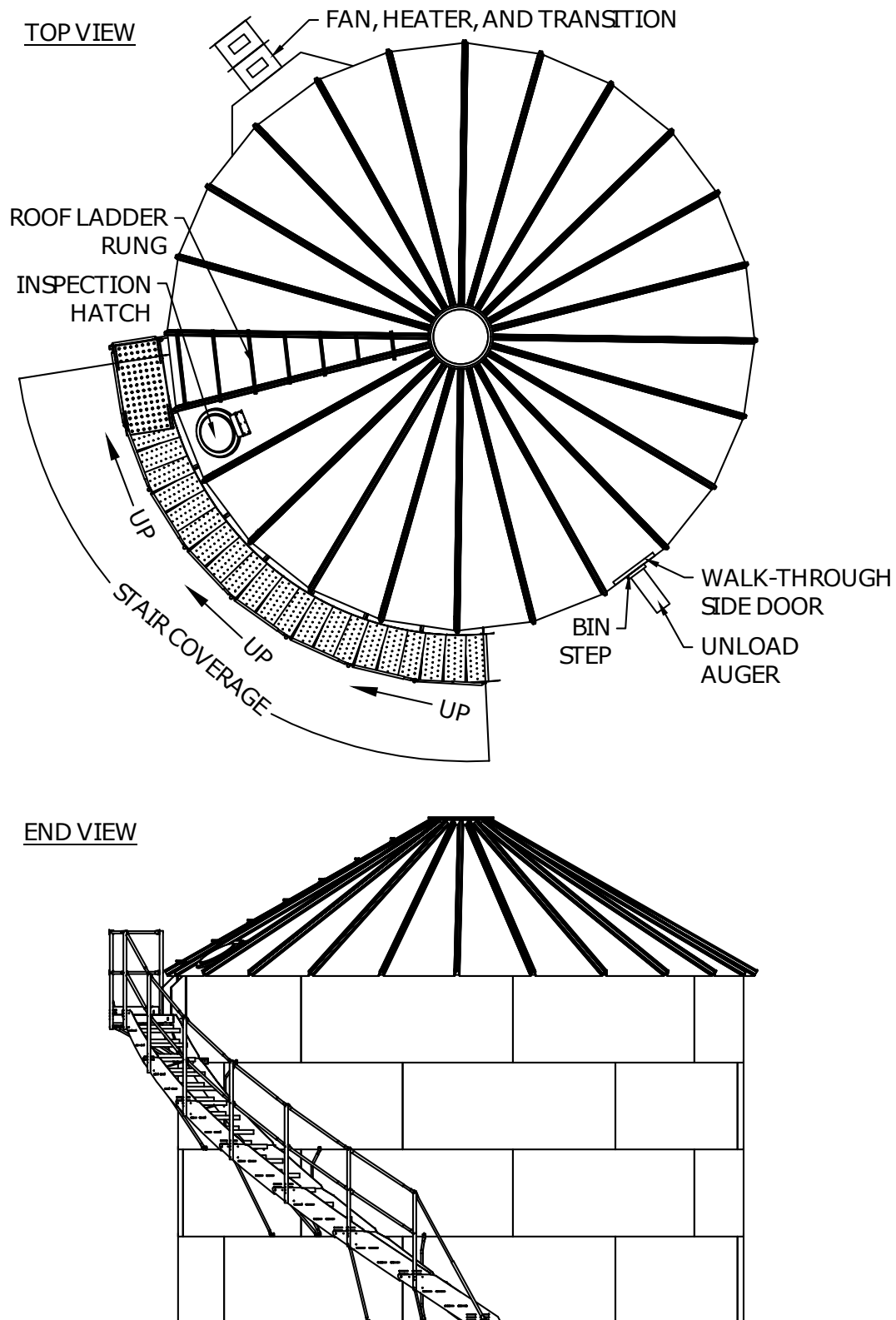
Rest platforms are located at full tier height locations only (i.e. aligned with the horizontal wall sheet seams).

Note

All circular stair installation details contained within this manual are provided as if the circular stairs are installed on a 24' bin and are spiralling down the bin from the top platform in a counter-clockwise direction. The circular stairs are also designed to spiral down the bin in a clockwise direction. This is not illustrated.

The figure below shows a suggested typical layout. Fan, heater, and transition should be placed directly opposite unload auger.

Figure 1. Circular Stair Coverage (2404 bin example)



Refer to the following figures and tables to plan Circular Stair layout.

Figure 2. Attachment Points for Circular Stair Installation

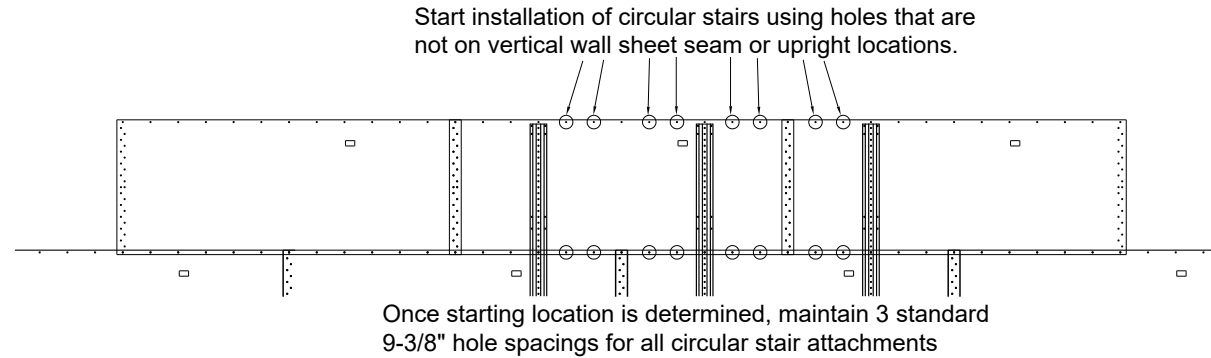


Figure 3. Platform at Mid-Tier Location Attachment Points

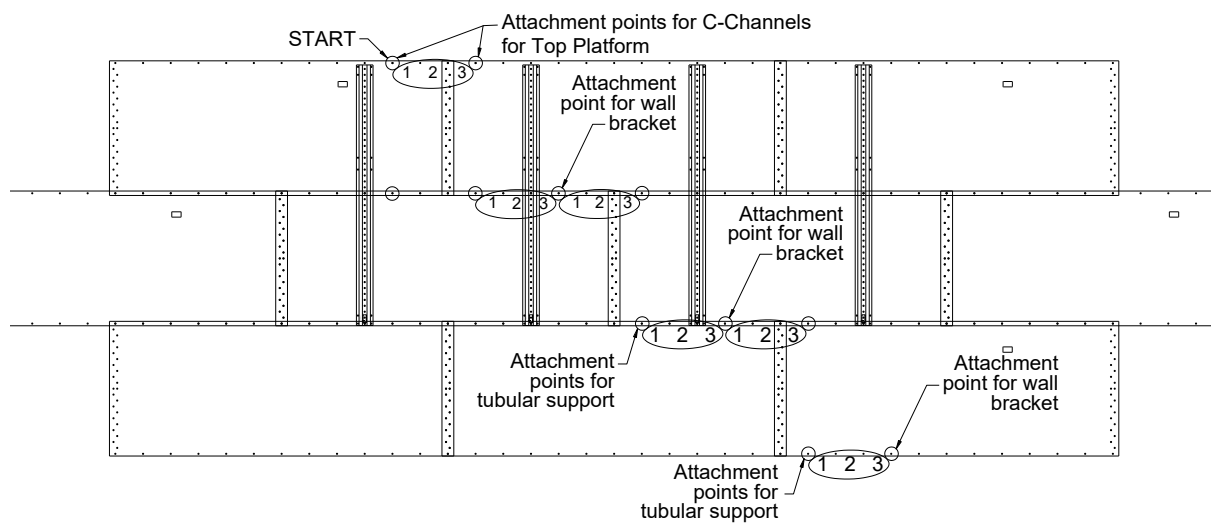
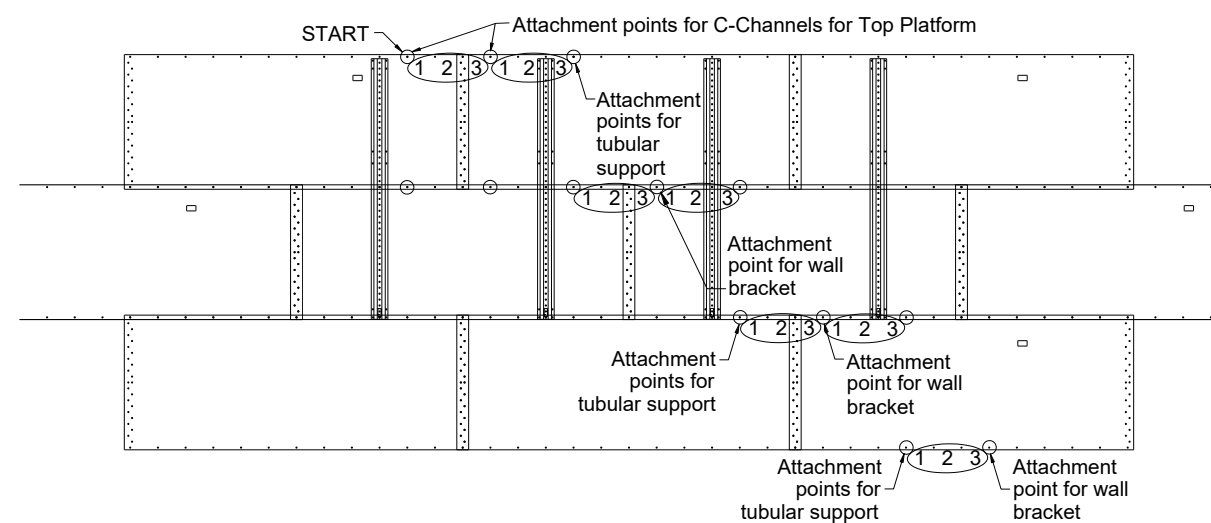


Figure 4. Platform at Eave Location Attachment Points



Note

The following tables do not account for rest platforms. If rest platforms are being installed you must add 3 to the amount of 9-3/8" bolt spaces.

Table 1. Circular Stair Running Distance — Farm

# of Tiers	Tier Height ¹	9-3/8" Bolt Spaces ²	Horizontal Distance ³	
			ft - in	meters
3	11' 0"	18	14' 3/4"	4.29
4	14' 8"	24	18' 9"	5.72
5	18' 4"	30	23' 5-1/4"	7.14
6	22' 0"	36	28' 1-1/2"	8.57
7	25' 8"	42	32' 9-3/4"	10.00
8	29' 4"	48	37' 6"	11.43
9	33' 0"	54	42' 2-1/4"	12.86
10	36' 8"	60	46' 10-1/2"	14.29
11	40' 4"	66	51' 6-3/4"	15.72
12	44' 0"	72	56' 3"	17.15
13	47' 8"	78	60' 11-1/4"	18.57
14	51' 4"	84	65' 7-1/2"	20.00
15	55' 0"	90	70' 3-3/4"	21.43
16	58' 8"	96	75' 0"	22.86

1. Tier height based on 44" distance between horizontal seams on a wall sheet.
2. Based on twelve 9-3/8" horizontal bolt spaces per wall sheet.
3. Horizontal distance measured around grain bin from platform's rear support to front of bottom tread.

Table 2. Circular Stair Running Distance for Platform at Eave Location - Farm

# of Tiers	Tier Height ¹	9-3/8" Bolt Spaces ²	Horizontal Distance ³	
			ft - in	meters
3	11' 0"	21	16' 4-7/8"	5.00
4	14' 8"	27	21' 1-1/8"	6.43
5	18' 4"	33	25' 9-3/8"	7.86
6	22' 0"	39	30' 5-5/8"	9.29
7	25' 8"	45	35' 1-7/8"	10.72
8	29' 4"	51	39' 10-1/8"	12.14
9	33' 0"	57	44' 6-3/8"	13.57
10	36' 8"	63	49' 2-5/8"	15.00
11	40' 4"	69	53' 10-7/8"	16.43
12	44' 0"	75	58' 7-1/8"	17.86
13	47' 8"	81	63' 3-3/8"	19.29
14	51' 4"	87	67' 11-5/8"	20.72
15	55' 0"	93	72' 7-7/8"	22.15
16	58' 8"	99	77' 4-1/8"	23.57

1. Tier height based on 44" distance between horizontal seams on a wall sheet.
2. Based on twelve 9-3/8" horizontal bolt spaces per wall sheet.
3. Horizontal distance measured around grain bin from platform's rear support to front of bottom tread.

5. Assembly



Before continuing, ensure you have completely read and understood this manual's Safety section, in addition to the safety information in the section(s) below.

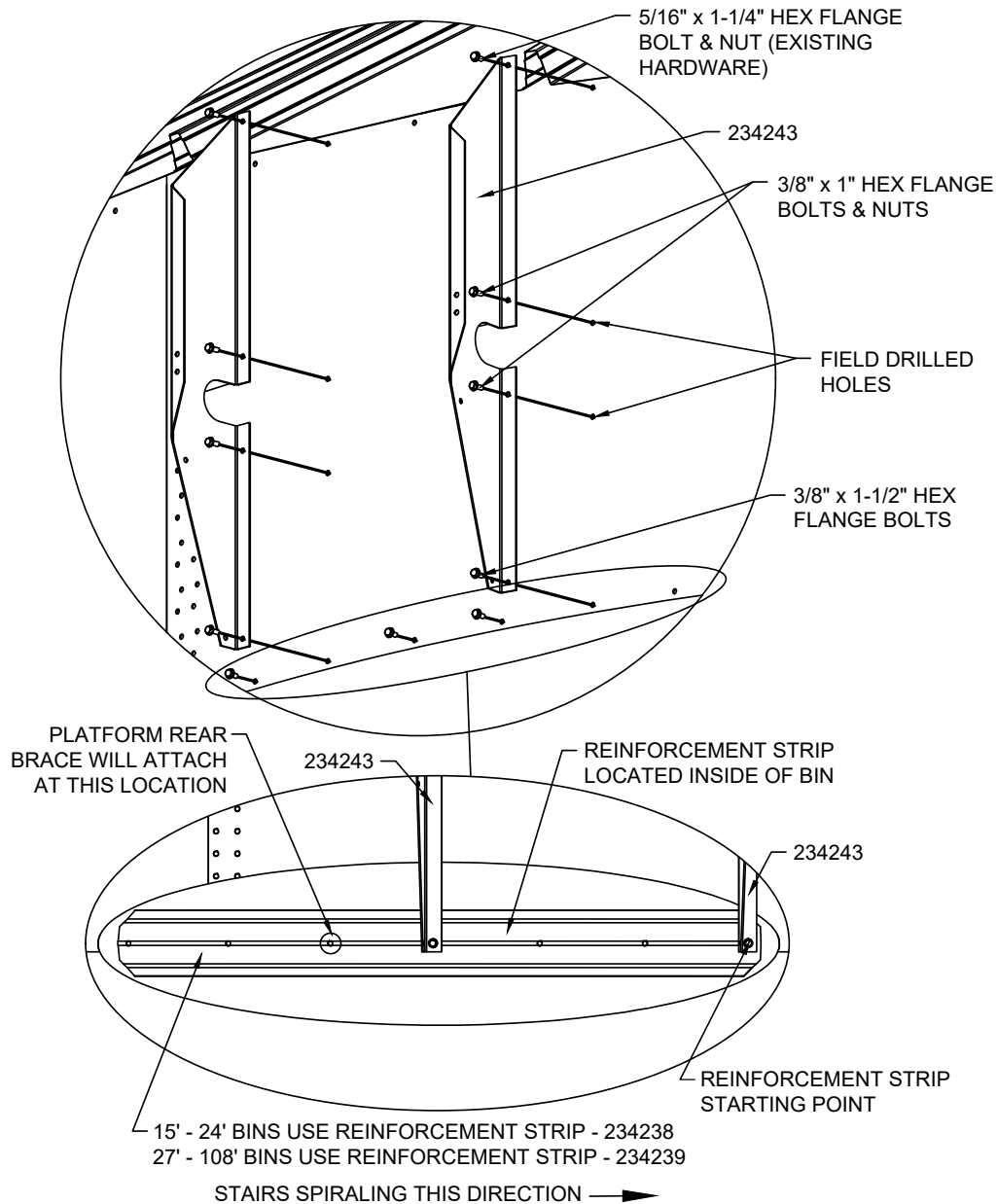
5.1. Assembly Safety

WARNING

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Carry out assembly in a large open area with a level surface.
- Always have two or more people assembling the circular stair.
- Make sure you have sufficient lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.
- Stay away from overhead power lines and other obstructions during assembly. Contact with power lines can cause electrocution.
- Do not work in high winds.
- The equipment shall be installed in accordance with applicable local codes and regulations.

5.2. Top Platform at Mid-Tier Location

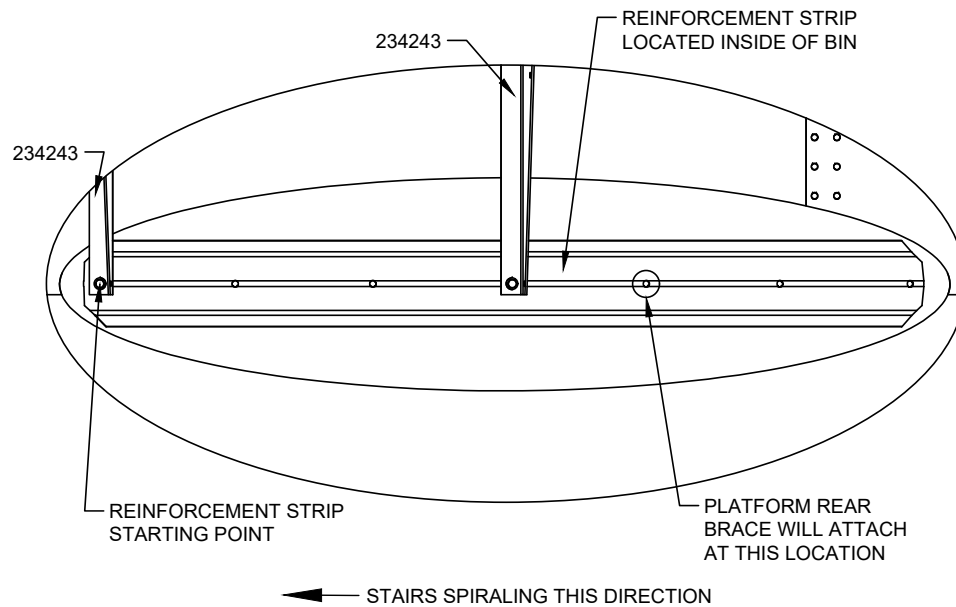
Figure 5. C-Channel Brace Installation



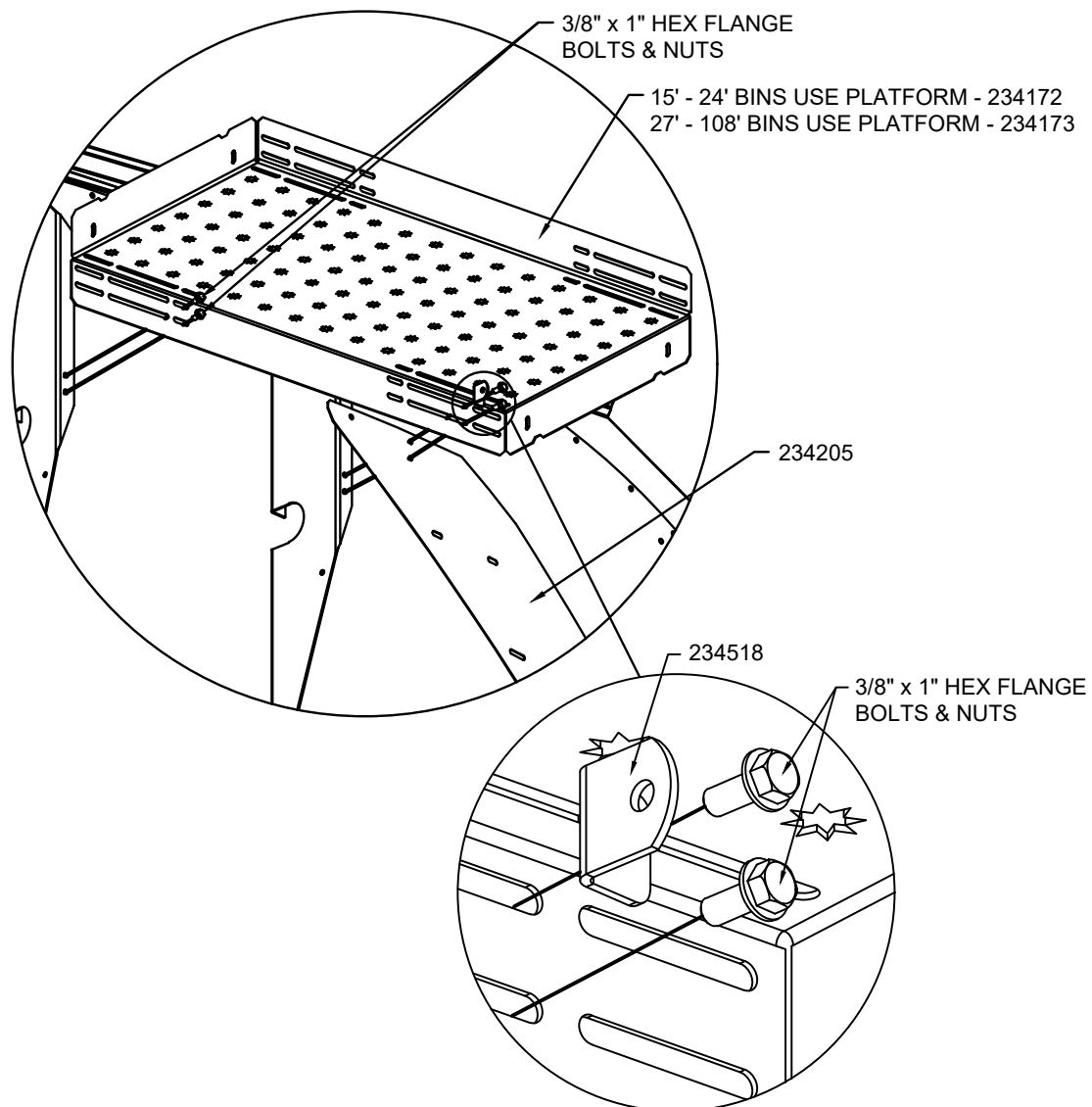
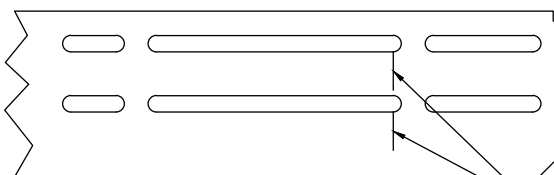
For stairs spiraling counter-clockwise down the bin and viewing the bin from the outside: Align the right-most hole of the reinforcement strip with the platform's leading channel support. The other six holes in the reinforcement strip will be to the left and share bolt holes with the platform's rear channel support and platform's rear brace attachment.

Note

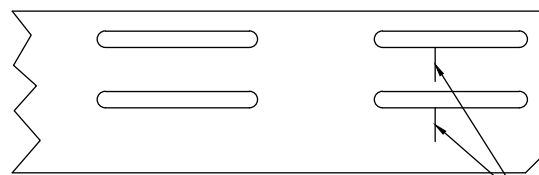
When installing the Reinforcement Strip, it may overlap holes in the vertical seams of the wall sheets. Holes may need to be field drilled in the Reinforcement Strip at these locations.

Figure 6. Reinforcement Strip Installation & Orientation for Stairs Spiraling Clockwise

For stairs spiraling clockwise down the bin and viewing the bin from the outside: Align the left-most hole of the reinforcement strip with the platform's leading channel support. The other six holes in the reinforcement strip will be to the right and share bolt holes with the platform's rear channel support and platform's rear brace attachment.

Figure 7. Platform and Inner Stringer Installation**15' - 24' PLATFORM - 234172**

ENGRAVED DASH MARKS SHOW THE ATTACHMENT POINT FROM THE LEADING EDGE OF THE PLATFORM TO THE LEADING CHANNEL SUPPORT

27' - 108' PLATFORM - 234173

ENGRAVED DASH MARKS SHOW THE ATTACHMENT POINT FROM THE LEADING EDGE OF THE PLATFORM TO THE LEADING CHANNEL SUPPORT

Figure 8. Rear Handrail Posts Installation

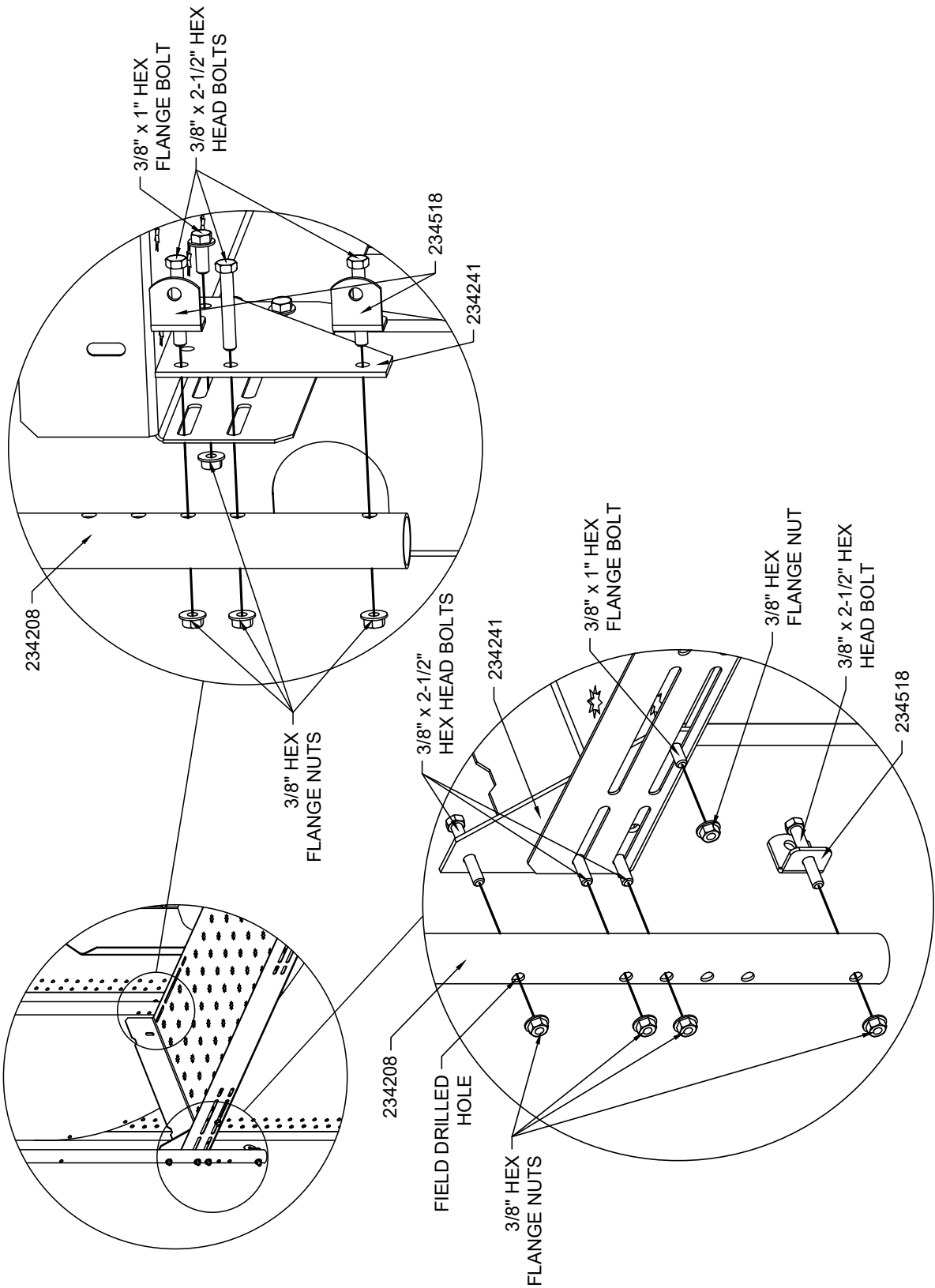


Figure 9. Handrail Post and Outer Stringer Installation

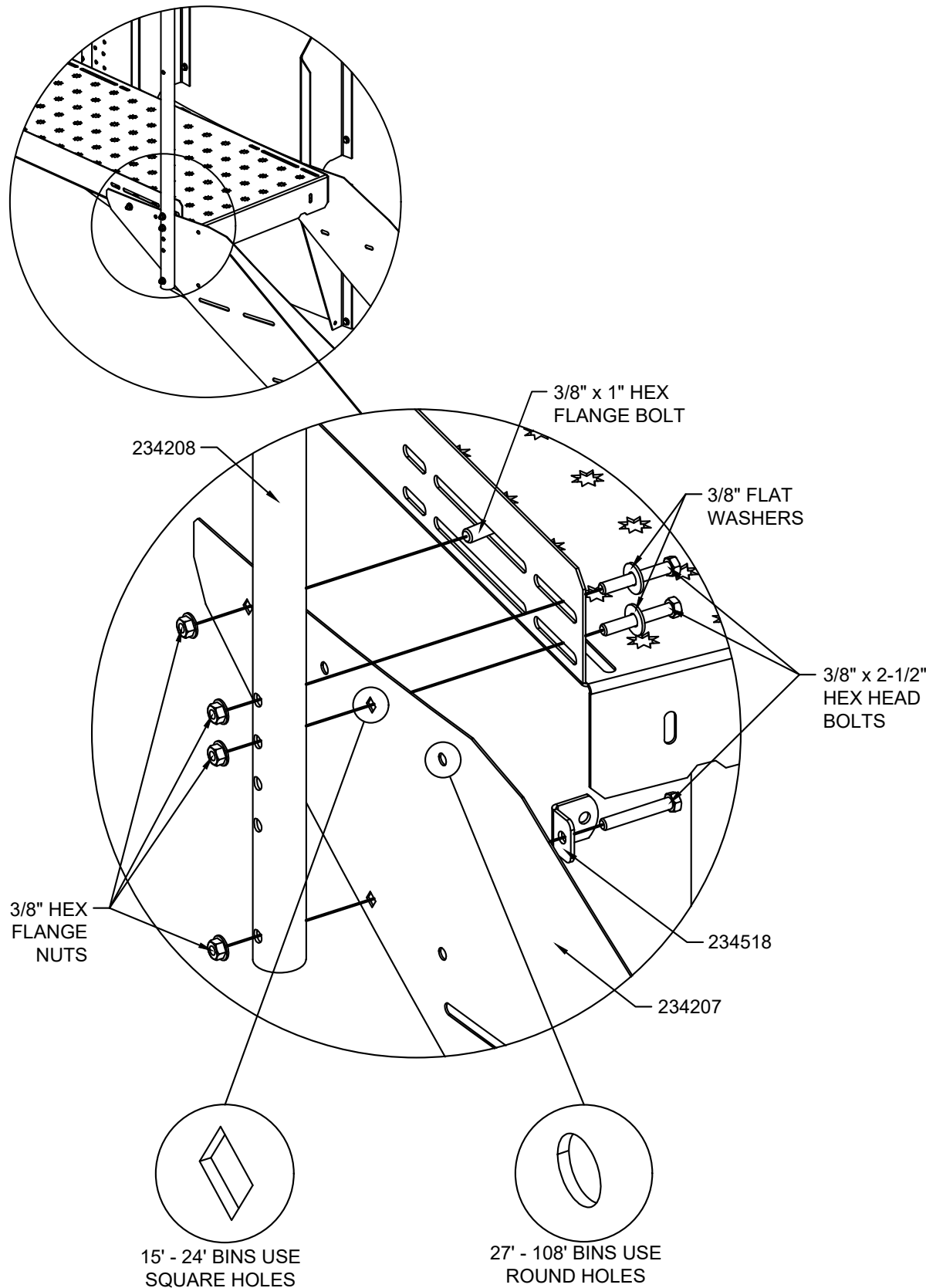
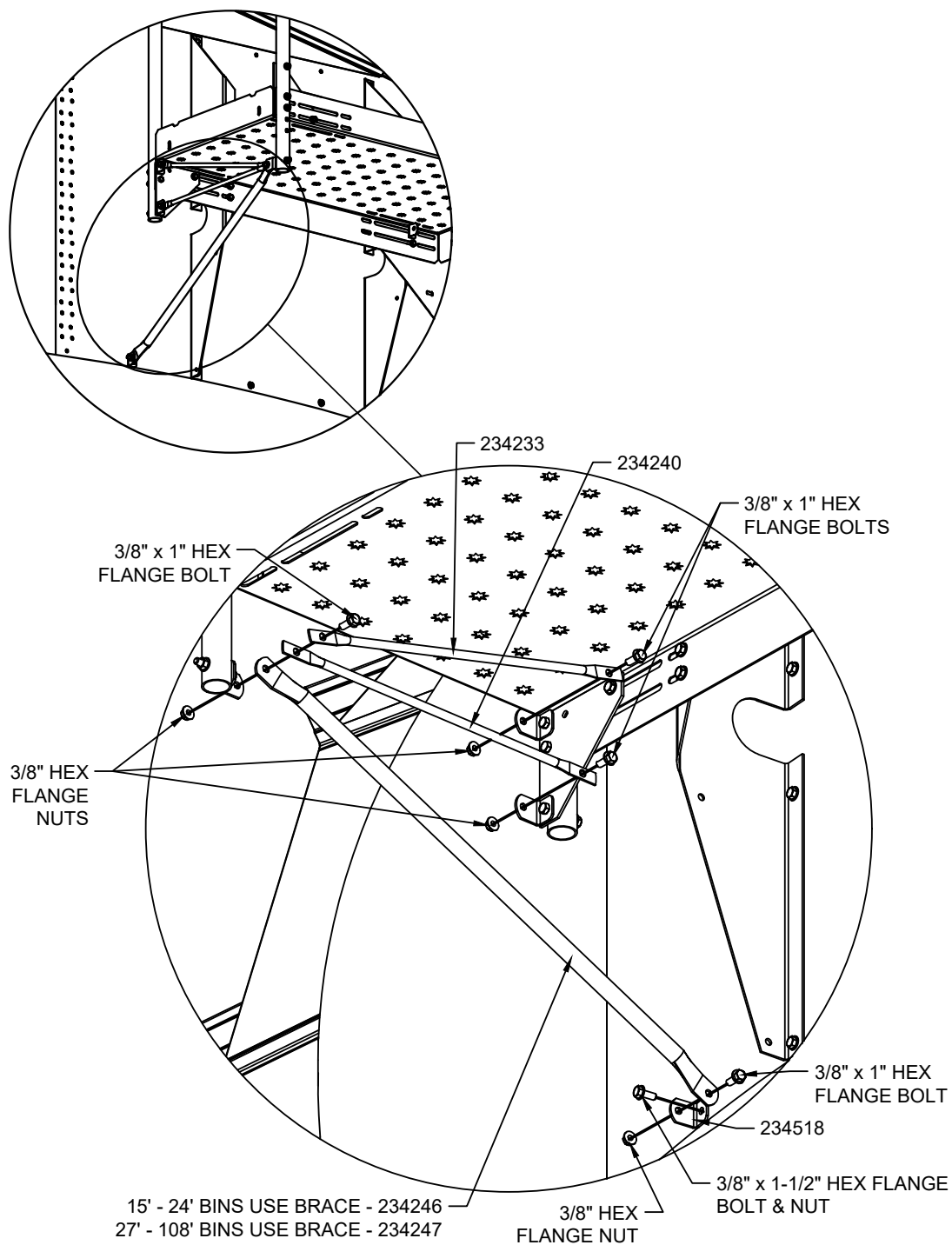


Figure 10. Platform Rear Tubing Braces Installation**Note**

Install 234518 one bolt hole over from the C-Channel (234243).

Figure 11. Platform Front Tubing Braces Installation

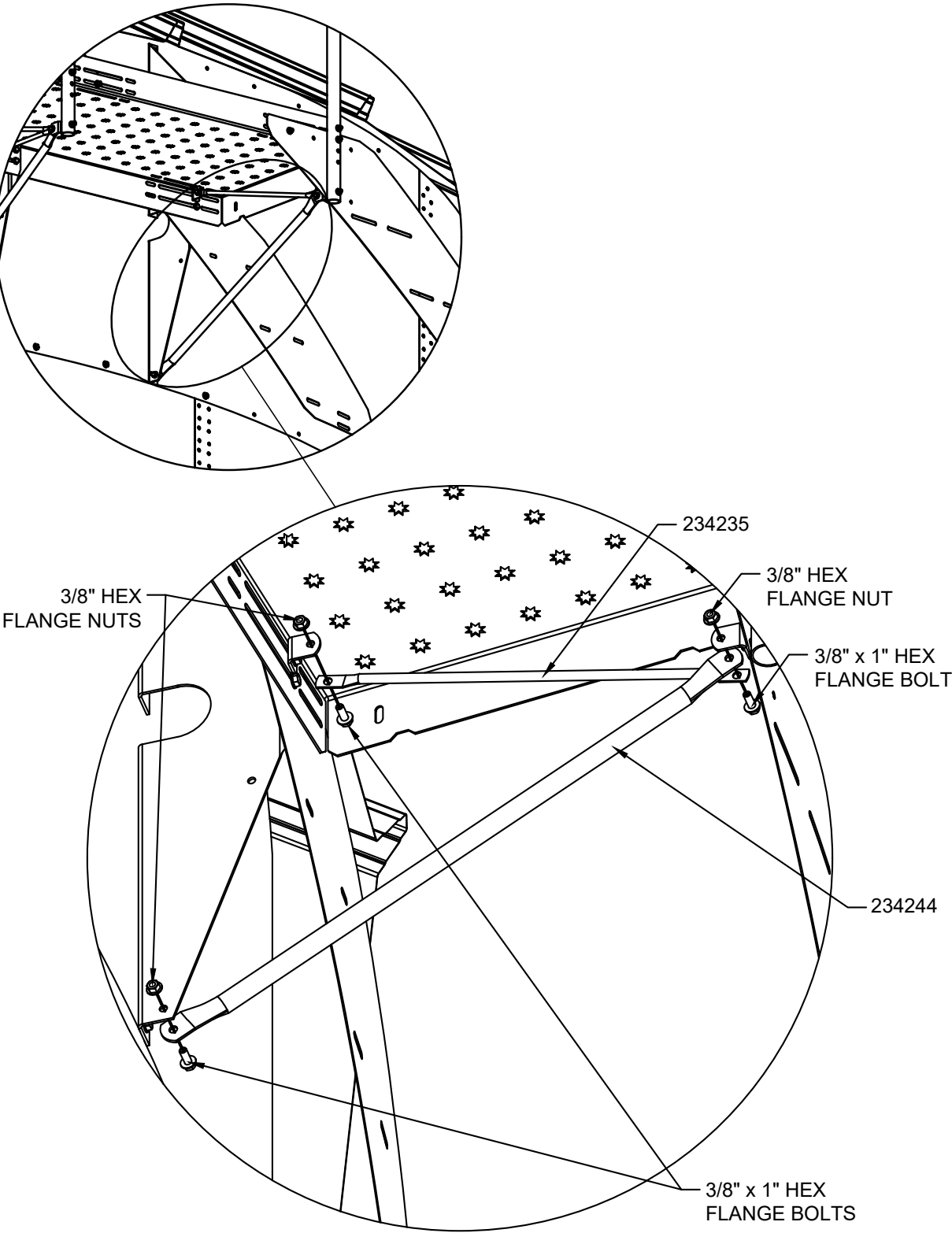
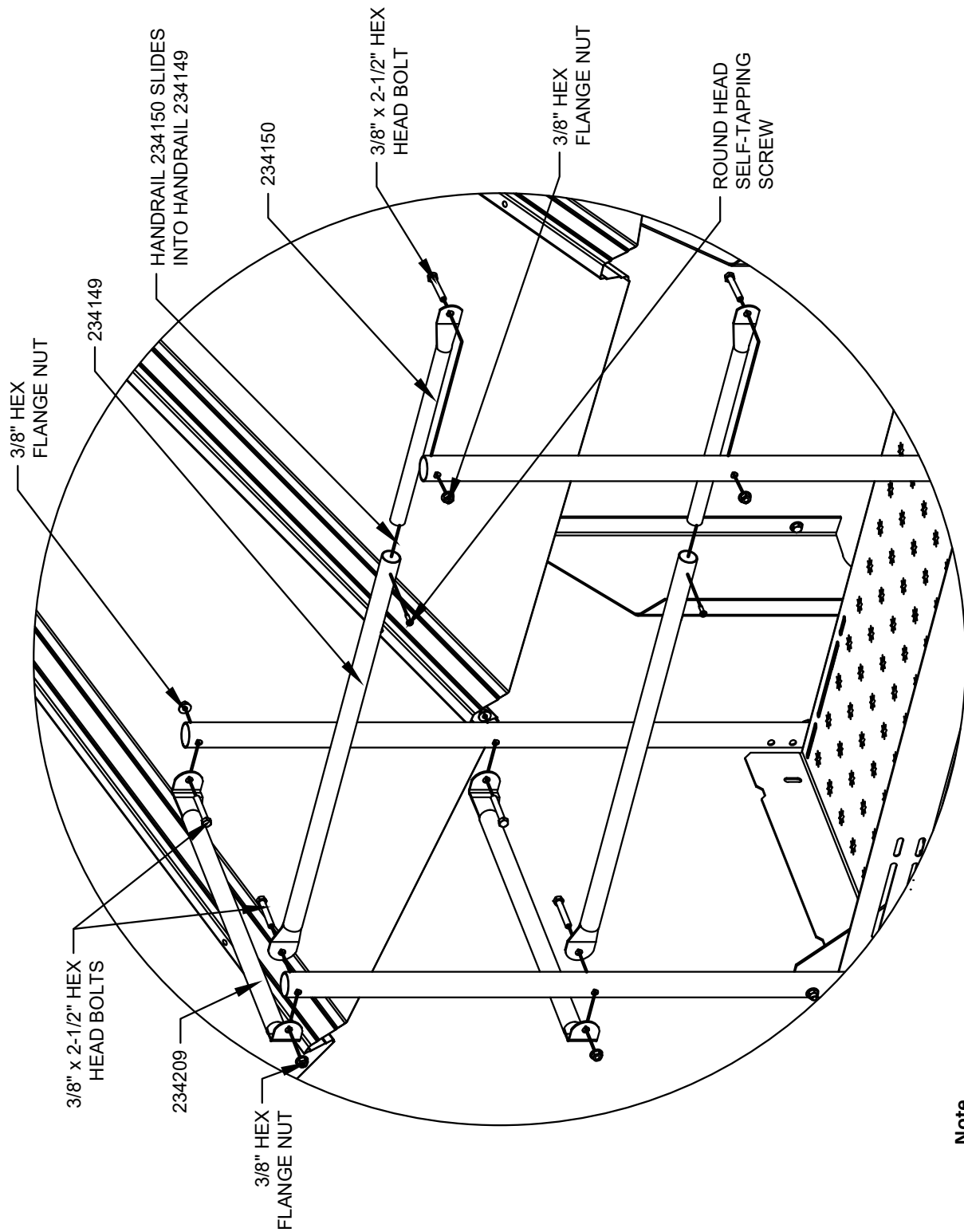
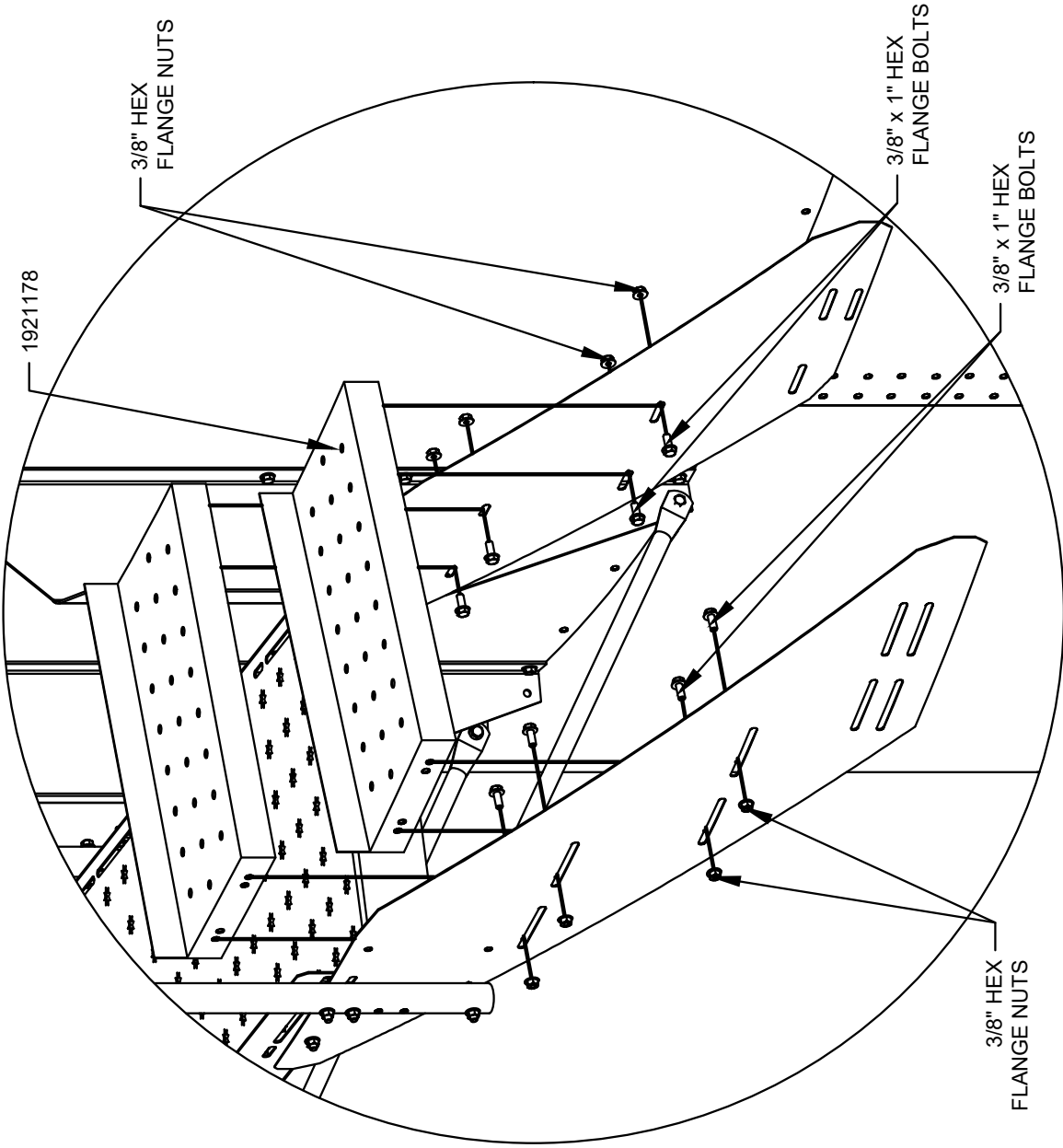


Figure 12. Handrail Installation



Note
Ensure the round-head self-tapping screw is installed 1" from the open end of the handrails after they have been attached to the posts.

Figure 13. Stair Tread Installation

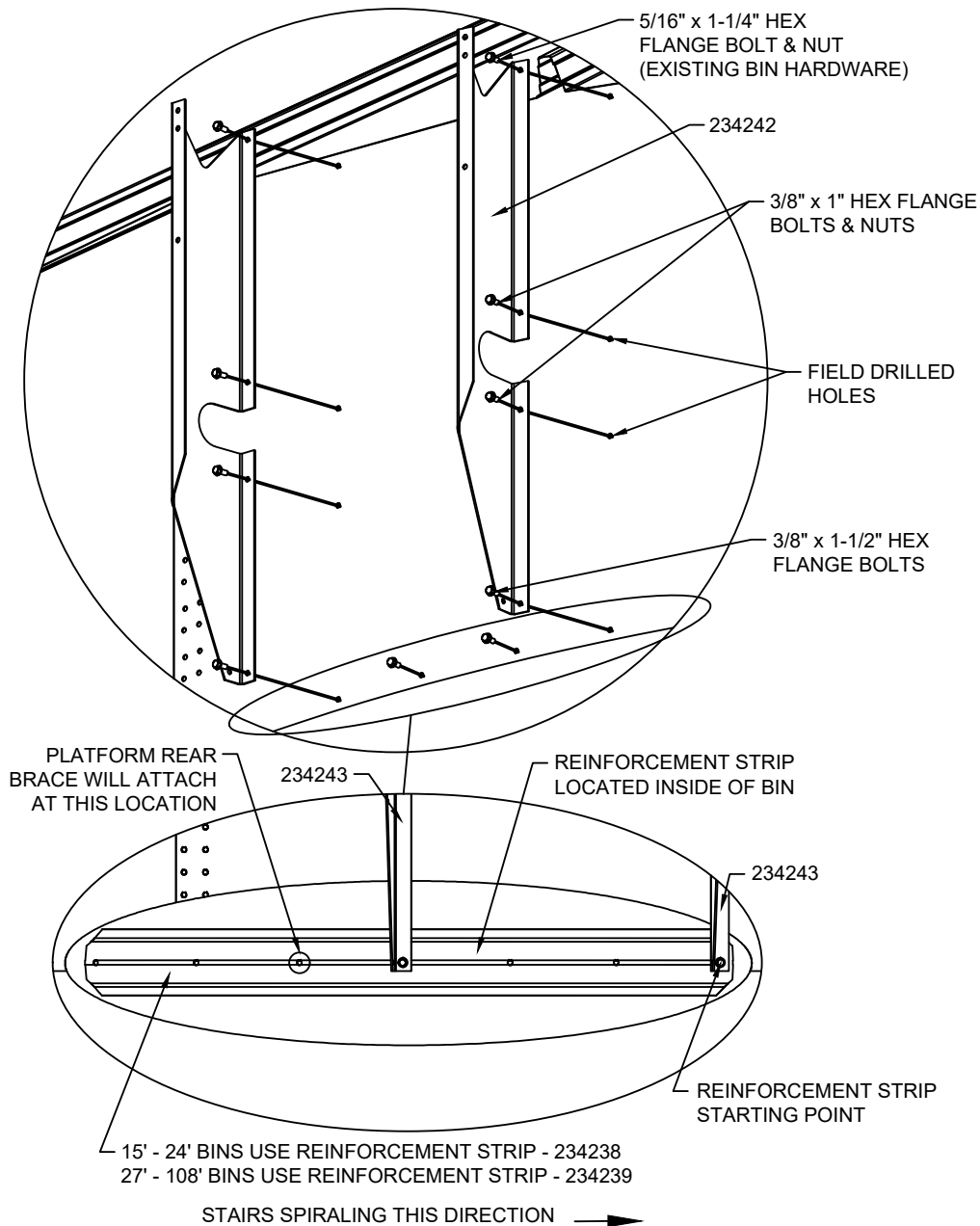


Note

Ensure the back toe-board of the stair tread is aligned with the front face of the previous stair tread or platform.

5.3. Top Platform at Eave Location

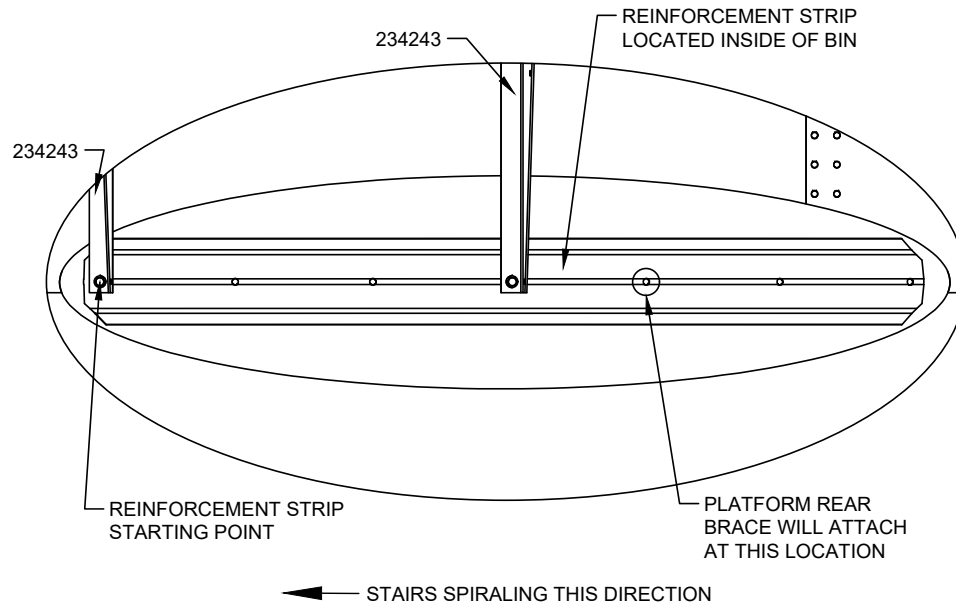
Figure 14. C-Channel Brace Installation



For stairs spiraling counter-clockwise down the bin and viewing the bin from the outside: Align the right-most hole of the reinforcement strip with the platform's leading channel support. The other six holes in the reinforcement strip will be to the left and share bolt holes with the platform's rear channel support and platform's rear brace attachment.

Note

When installing the Reinforcement Strip, it may overlap holes in the vertical seams of the wall sheets. Holes may need to be field drilled in the Reinforcement Strip at these locations.

Figure 15. Reinforcement Strip Installation & Orientation for Stairs Spiraling Clockwise

For stairs spiraling clockwise down the bin and viewing the bin from the outside: Align the left-most hole of the reinforcement strip with the platform's leading channel support. The other six holes in the reinforcement strip will be to the right and share bolt holes with the platform's rear channel support and platform's rear brace attachment.

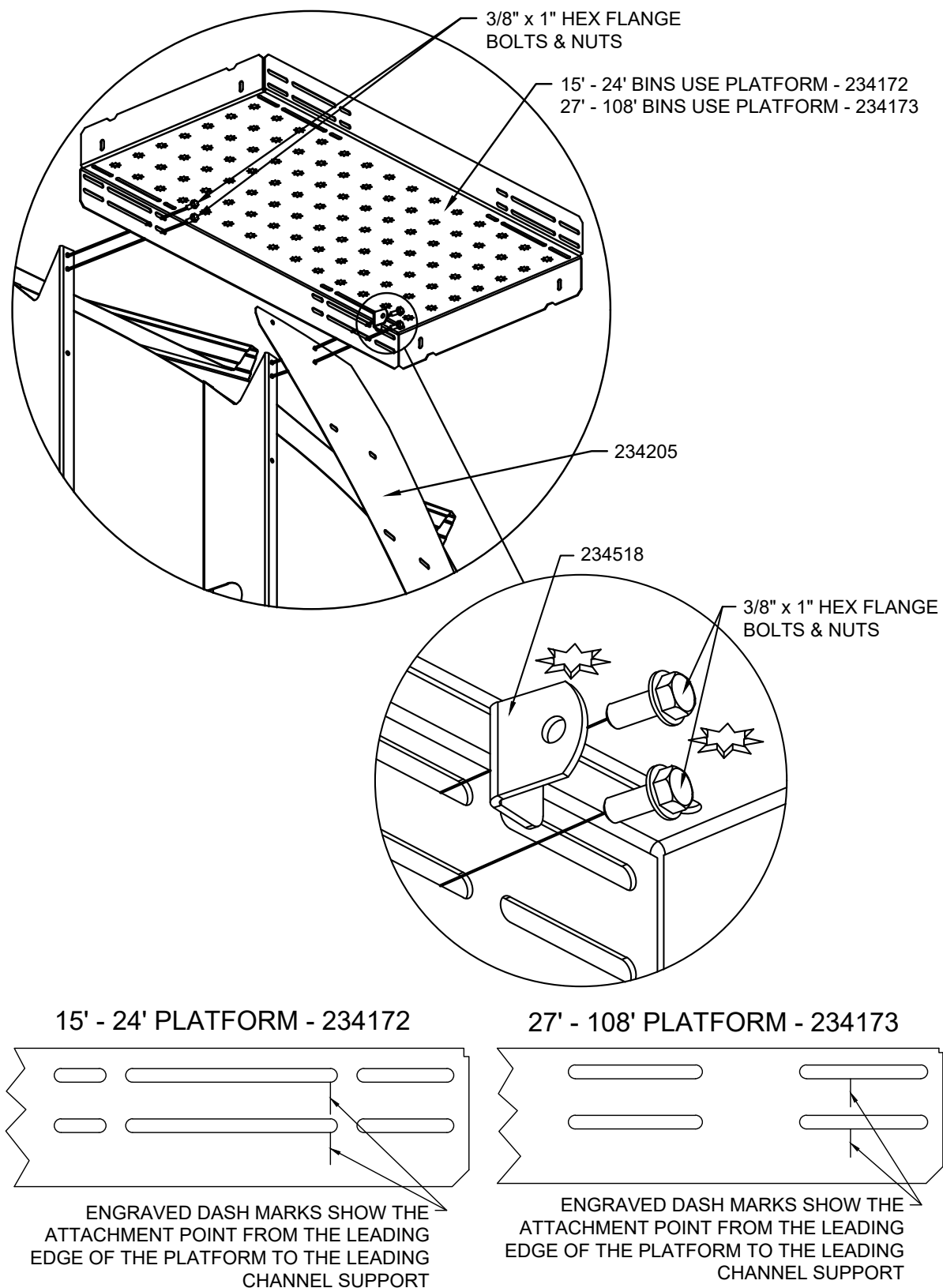
Figure 16. Platform and Inner Stringer Installation

Figure 17. Rear Handrail Posts Installation

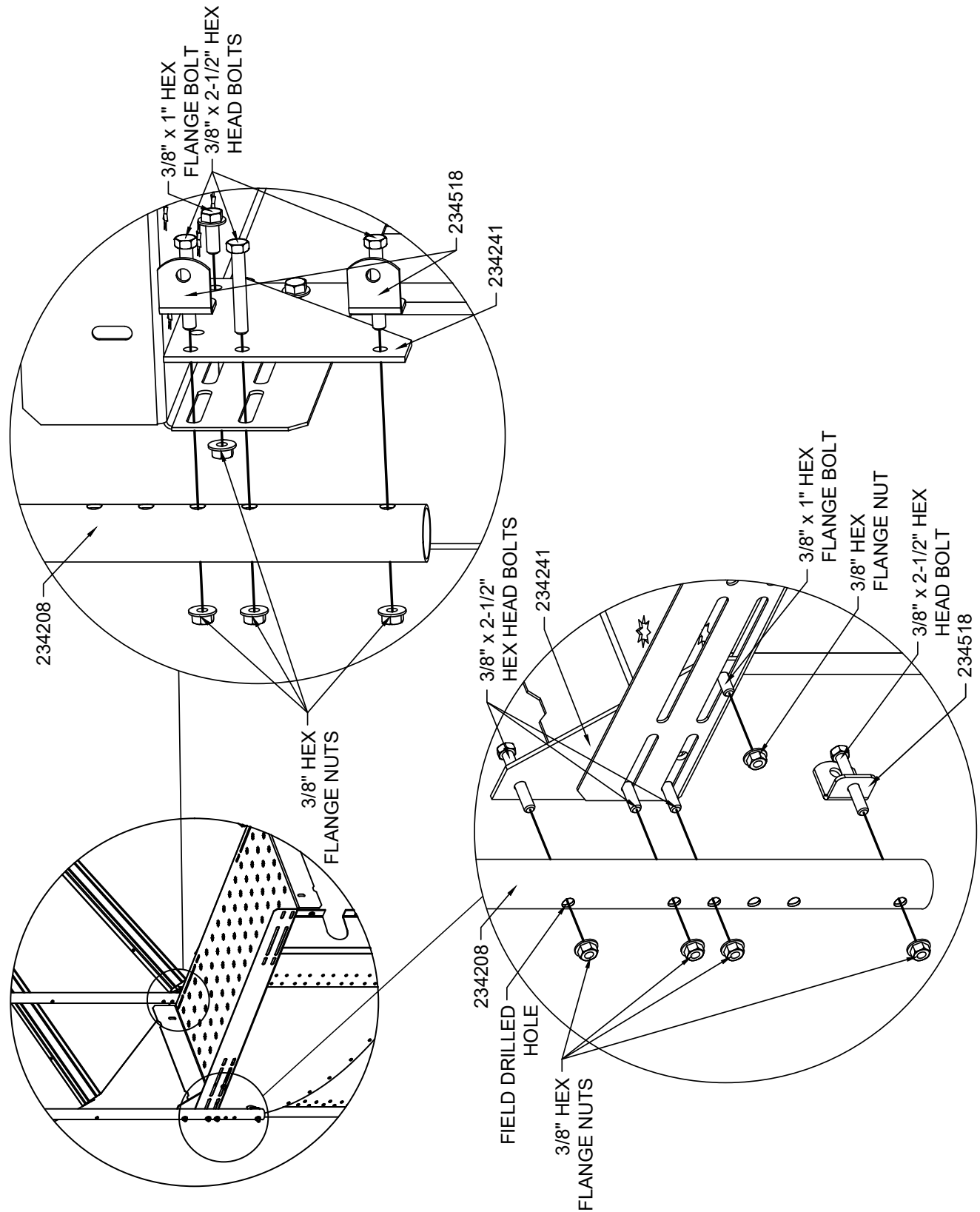


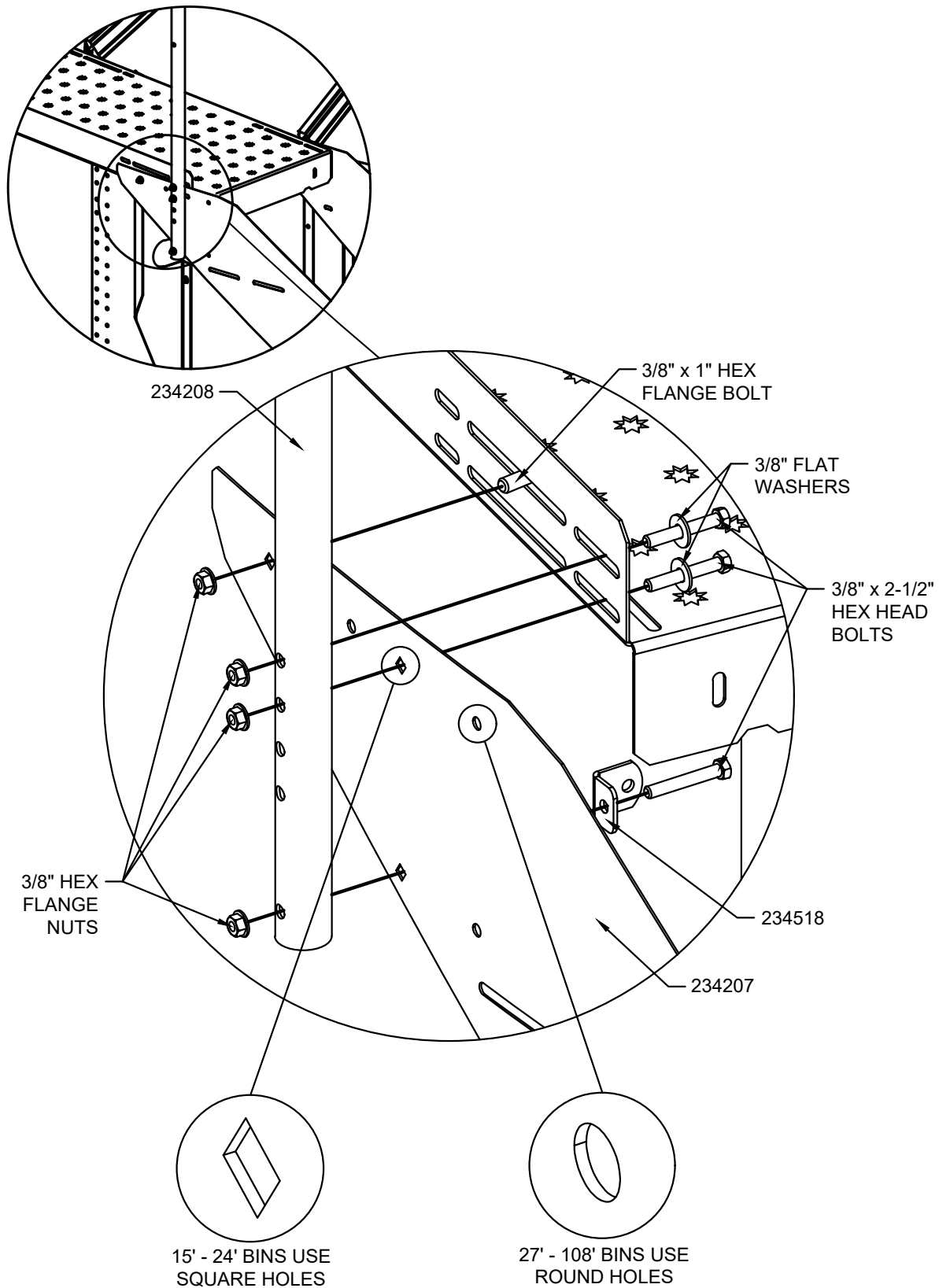
Figure 18. Handrail Post and Outer Stringer Installation

Figure 19. Platform Rear Tubing Braces Installation

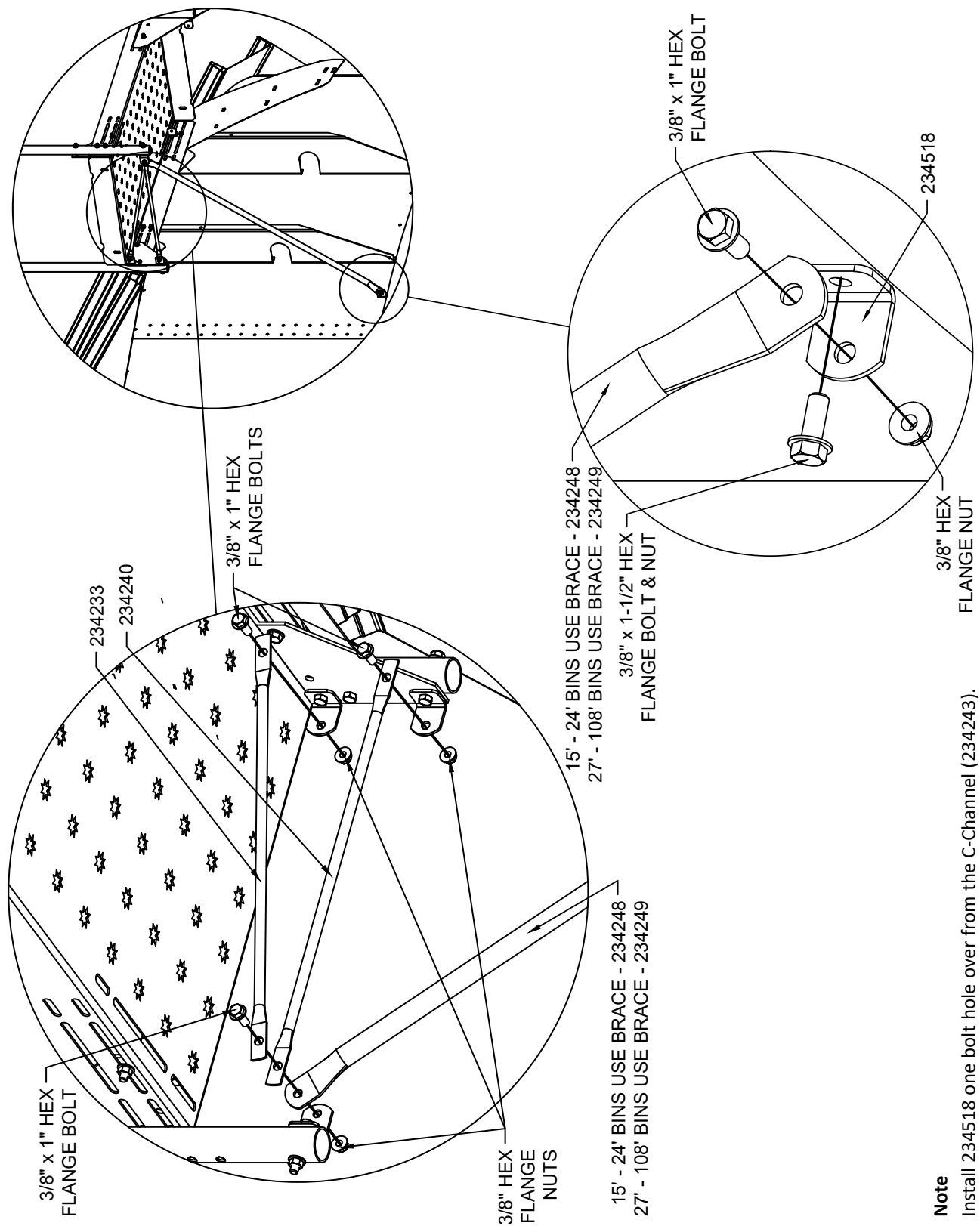
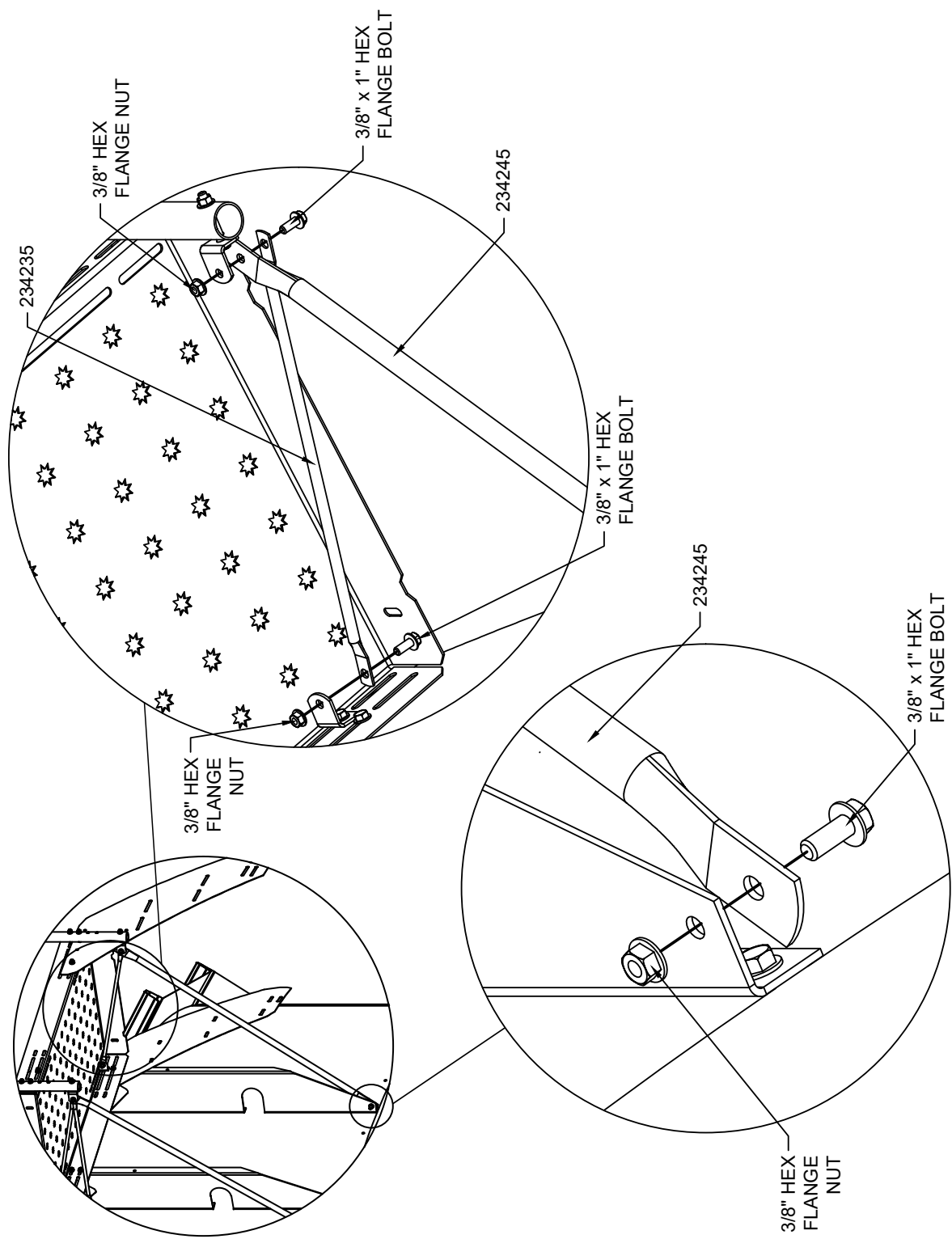


Figure 20. Platform Front Tubing Braces Installation



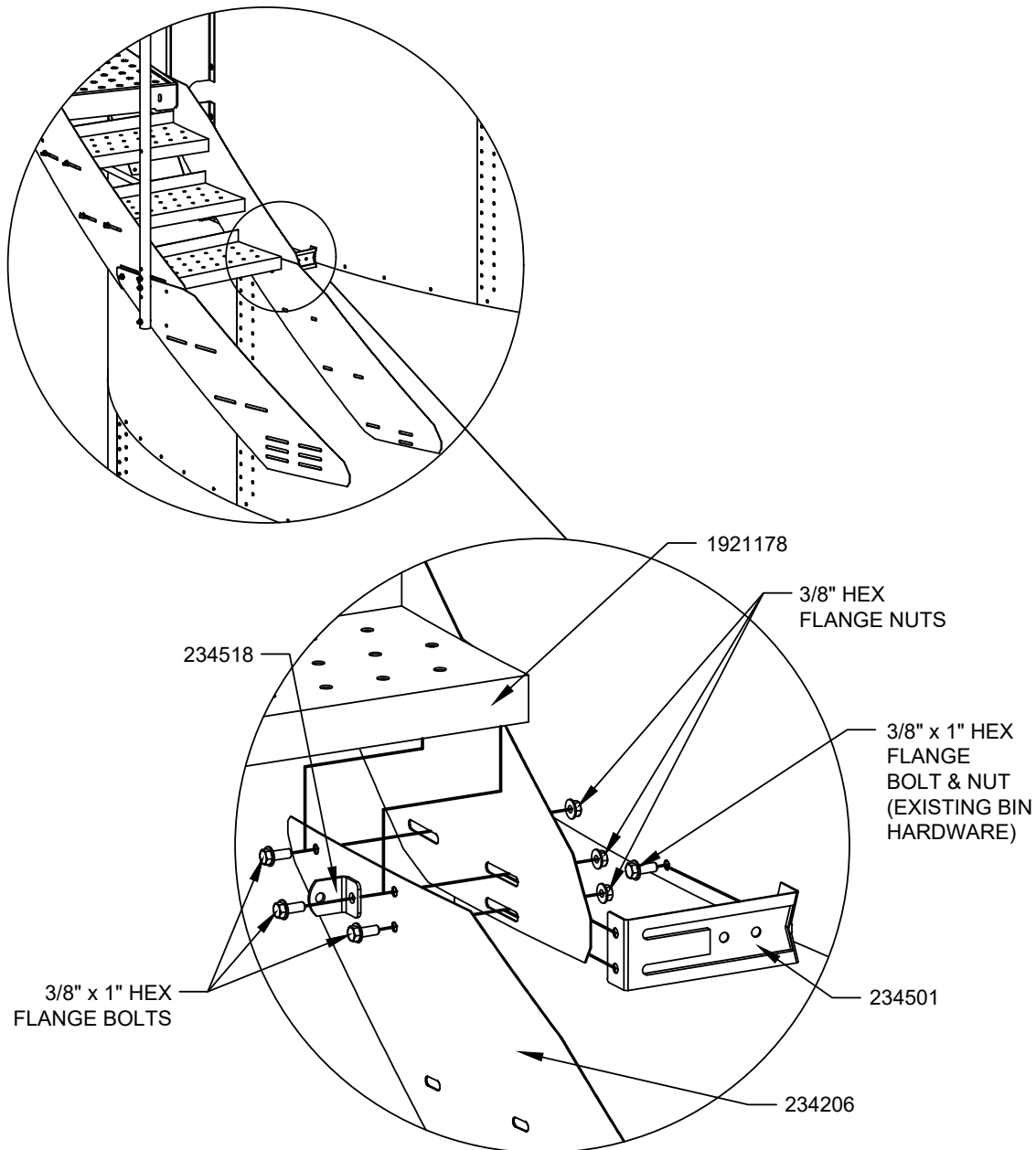
Note

The rest of the installation of the Top Platform at Eave Location (handrails and treads) is as per the Top Platform at Mid-Tier Location. Some other required parts are supplied with the mating stair modules.

5.4. Circular Stair Modules Installation

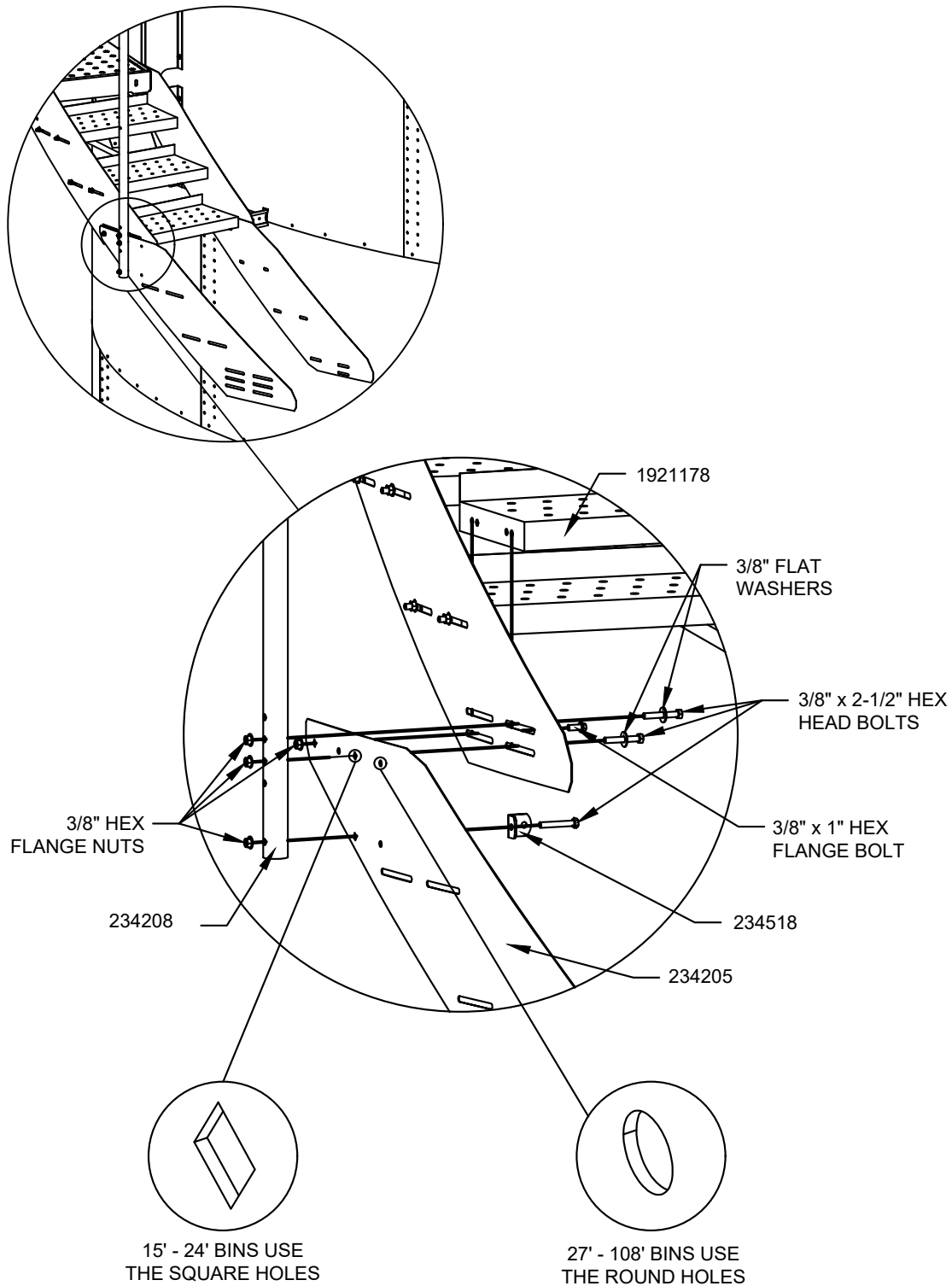
The circular stair components are supplied in 1, 2 or 3 tier packages. There are two inner and outer stringers, and six stair treads, per tier. The attachment of the first stair section to a platform is provided in the section dealing with platform installations. The assembly of mating single tier circular stair modules is as follows.

Figure 21. Inner Stringer and Tread Installation at Horizontal Seam



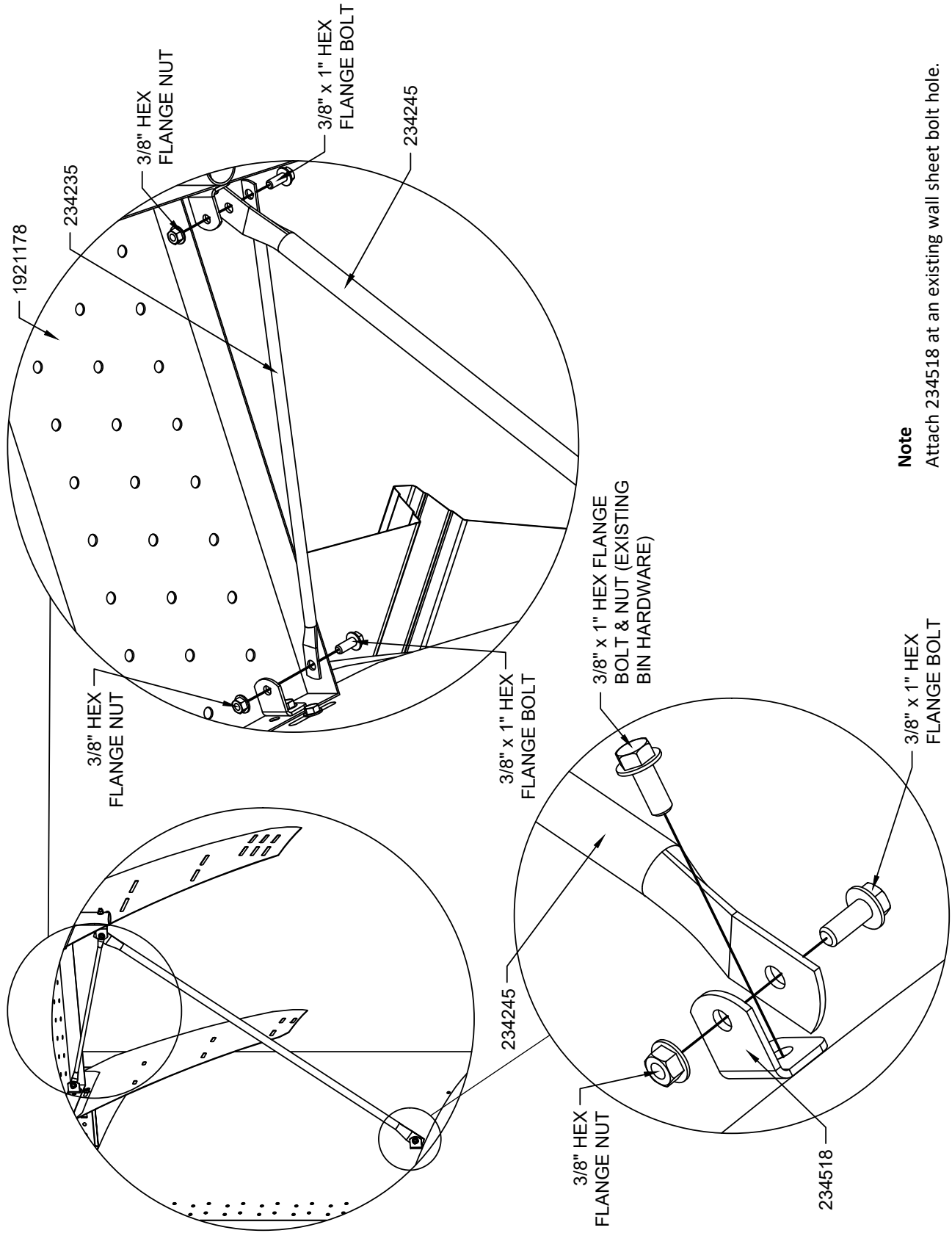
Note

Ensure the back toe-board of the stair tread is aligned with the front face of the previous stair tread or platform.

Figure 22. Handrail Post, Outer Stringer and Tread Installation**Note**

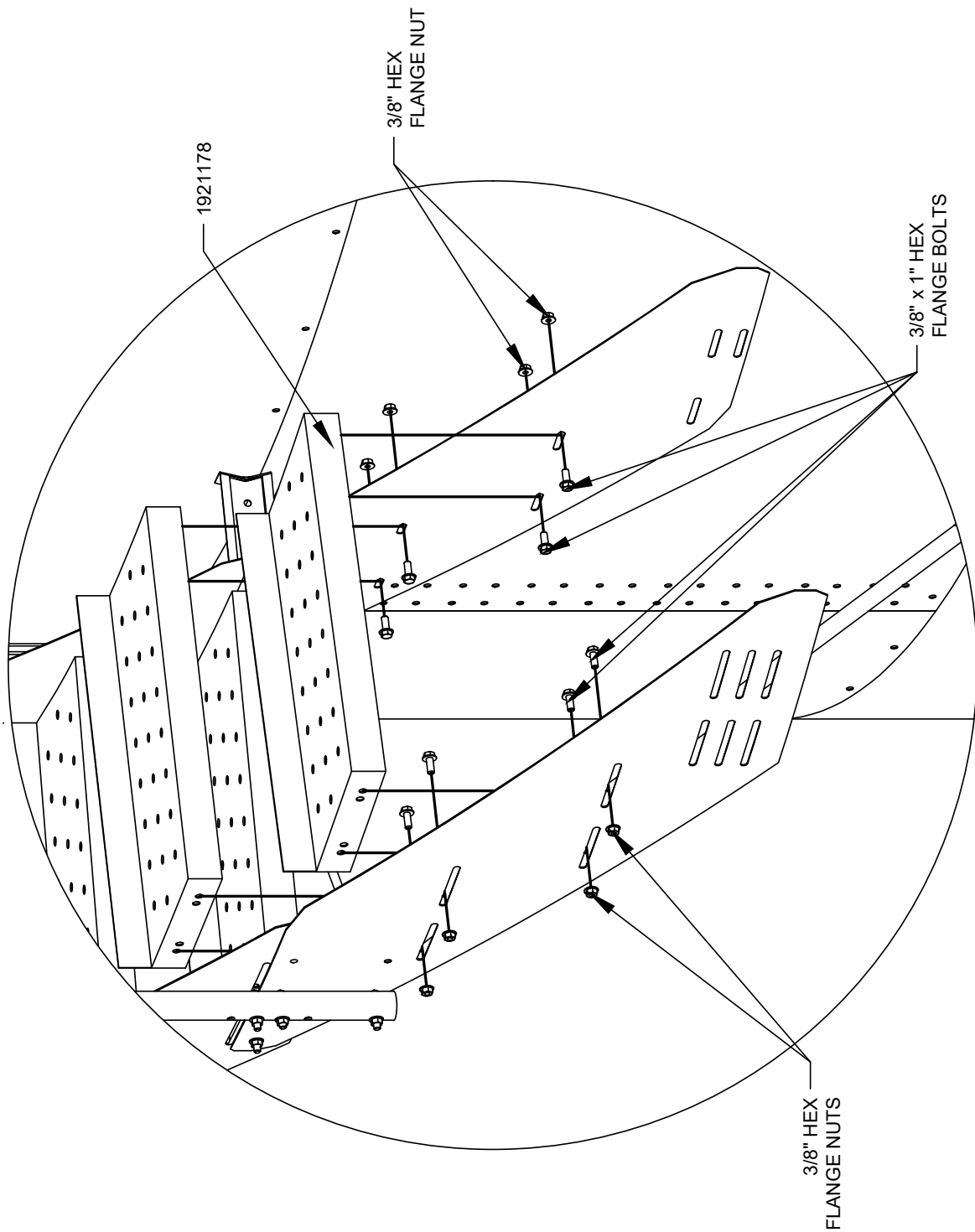
Ensure the back toe-board of the stair tread is aligned with the front face of the previous stair tread or platform.

Figure 23. Tread Full Tier Tubing Braces Installation



Note
Attach 234518 at an existing wall sheet bolt hole.

Figure 24. Stair Tread Installation



Note
Ensure the back toe-board of the stair tread is aligned with the front face of the previous stair tread or platform.

Figure 25. Inner Stringer and Tread Installation at Mid-Tier

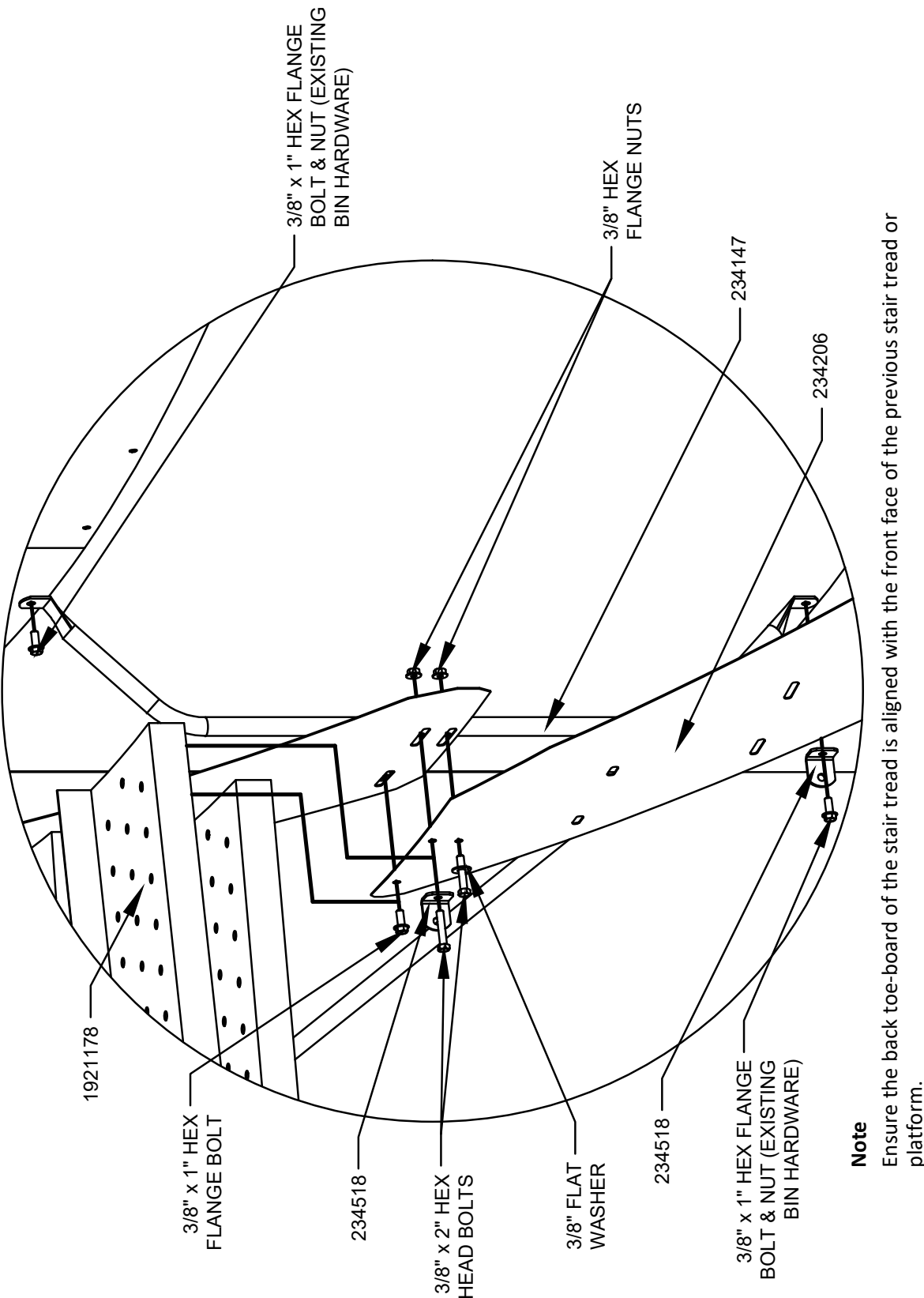
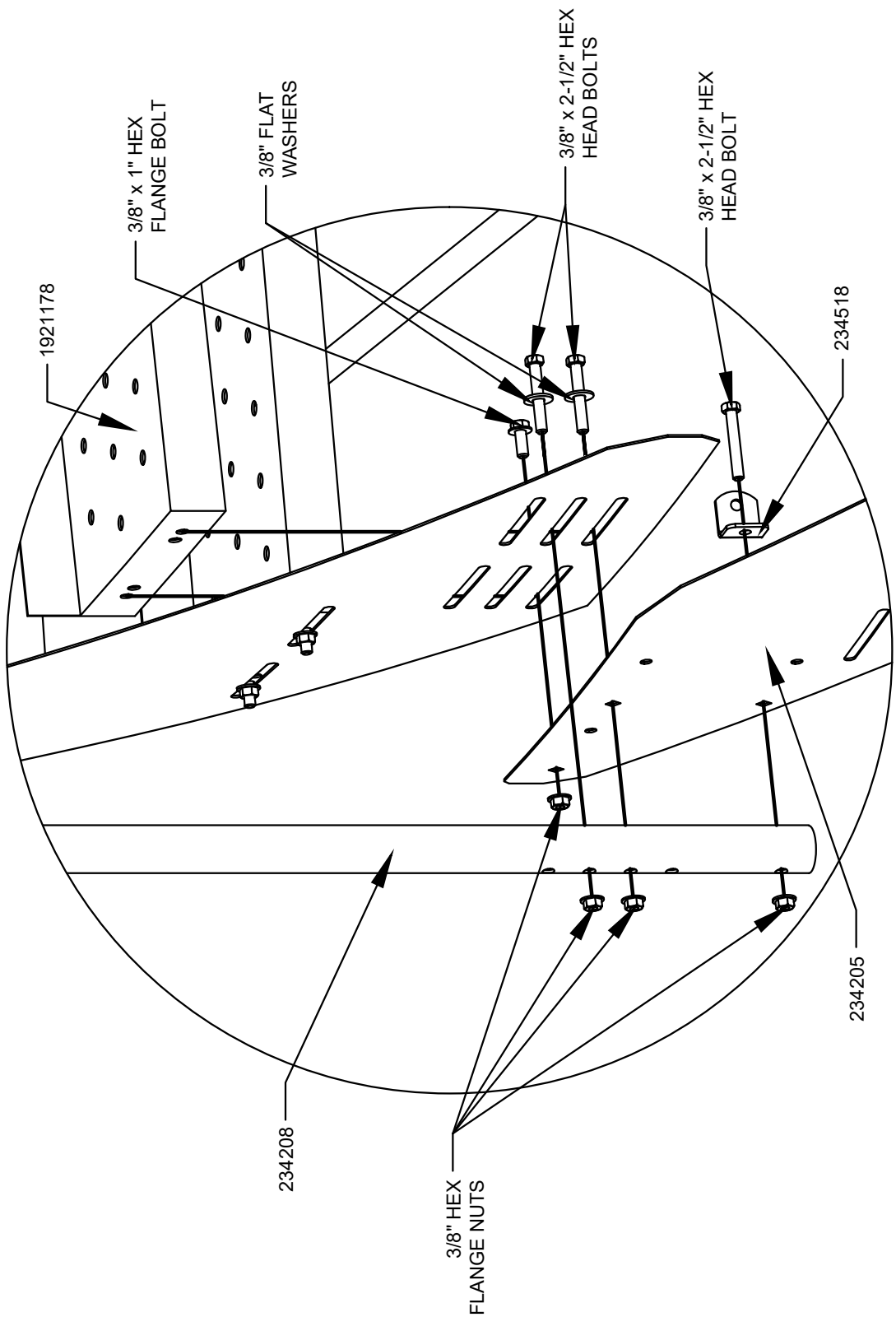


Figure 26. Handrail Post & Outer Stringer Installation



Note

Ensure the back toe-board of the stair tread is aligned with the front face of the previous stair tread or platform.

Figure 27. Tread Mid-Tier Tubing Braces Installation

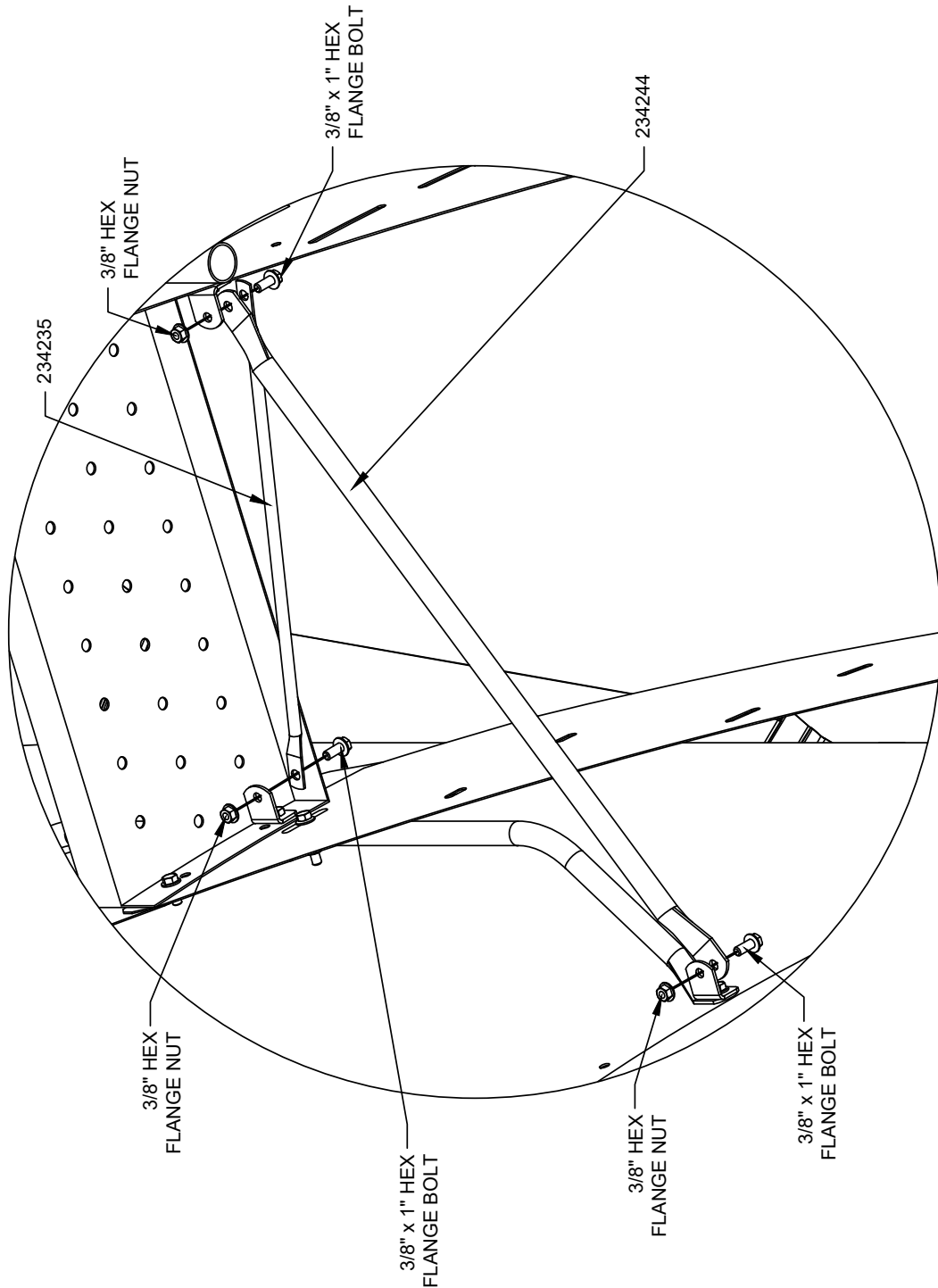
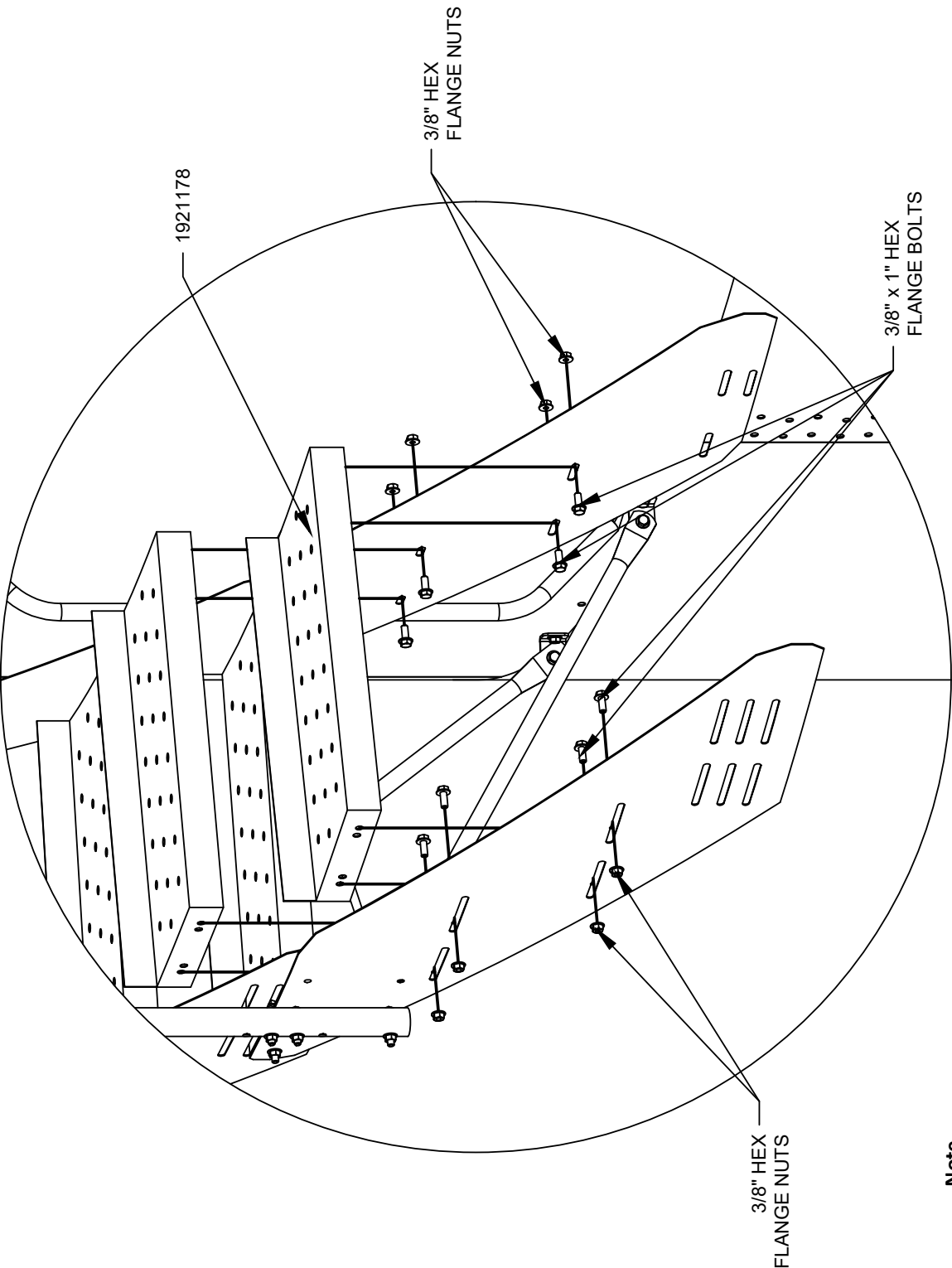


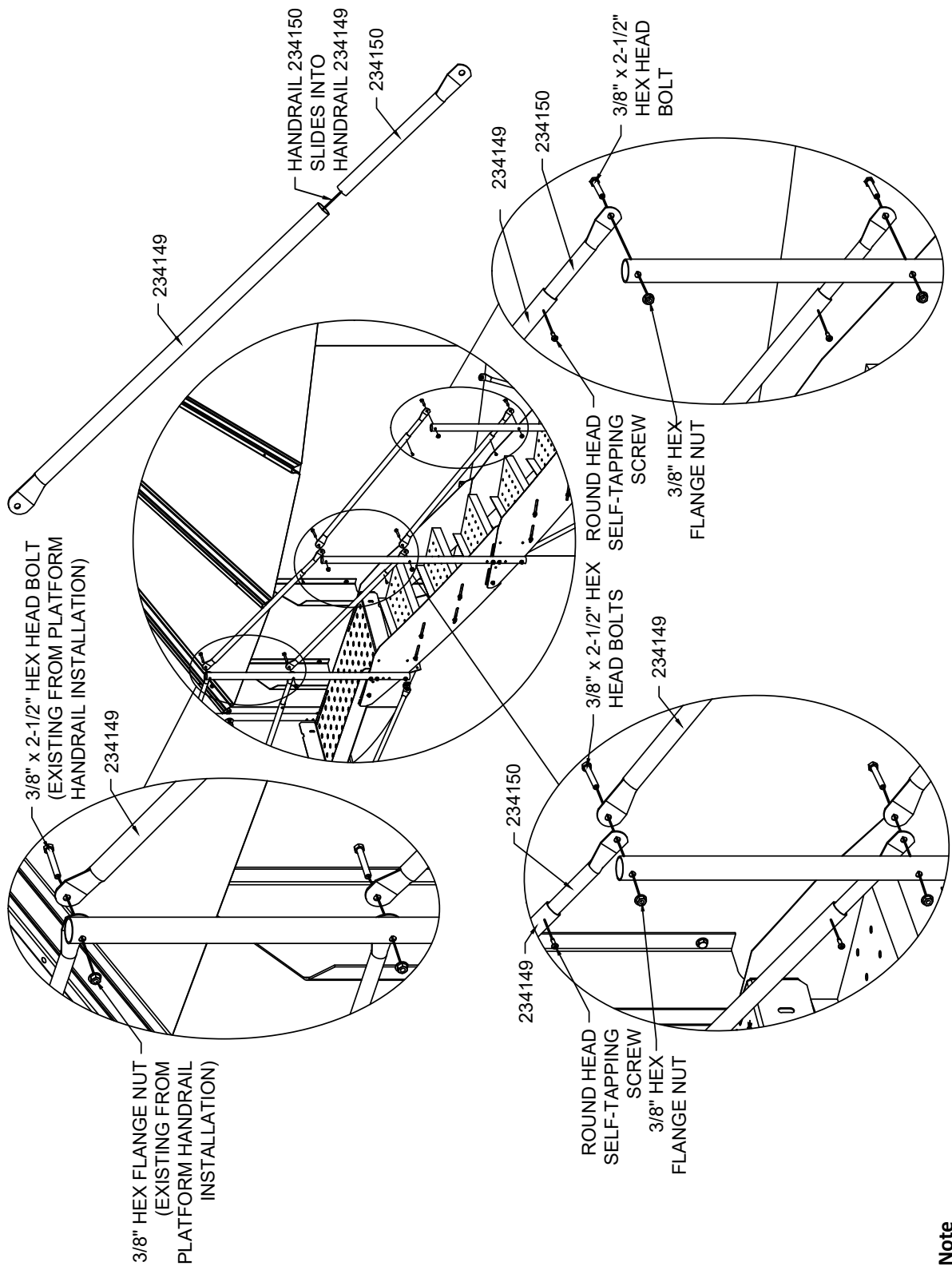
Figure 28. Tread Installation



Note

Ensure the back toe-board of the stair tread is aligned with the front face of the previous stair tread or platform.

Figure 29. Handrail Installation



Note

Ensure the round-head self-tapping screws are installed 1" from the open end of the handrails after they have been attached to the posts.

5.5. Rest Platform Installation

Figure 30. C-Channel Brace Installation

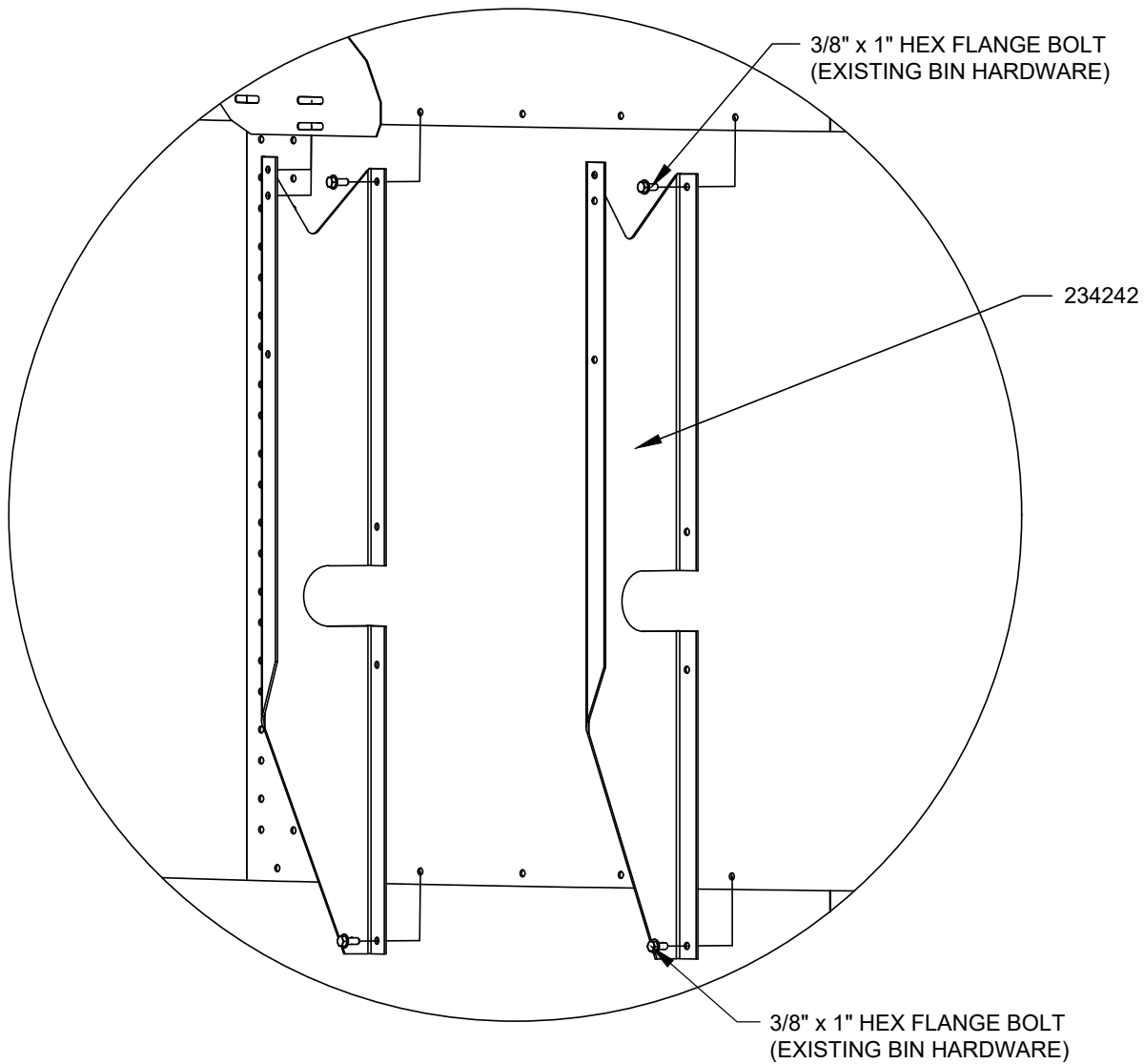
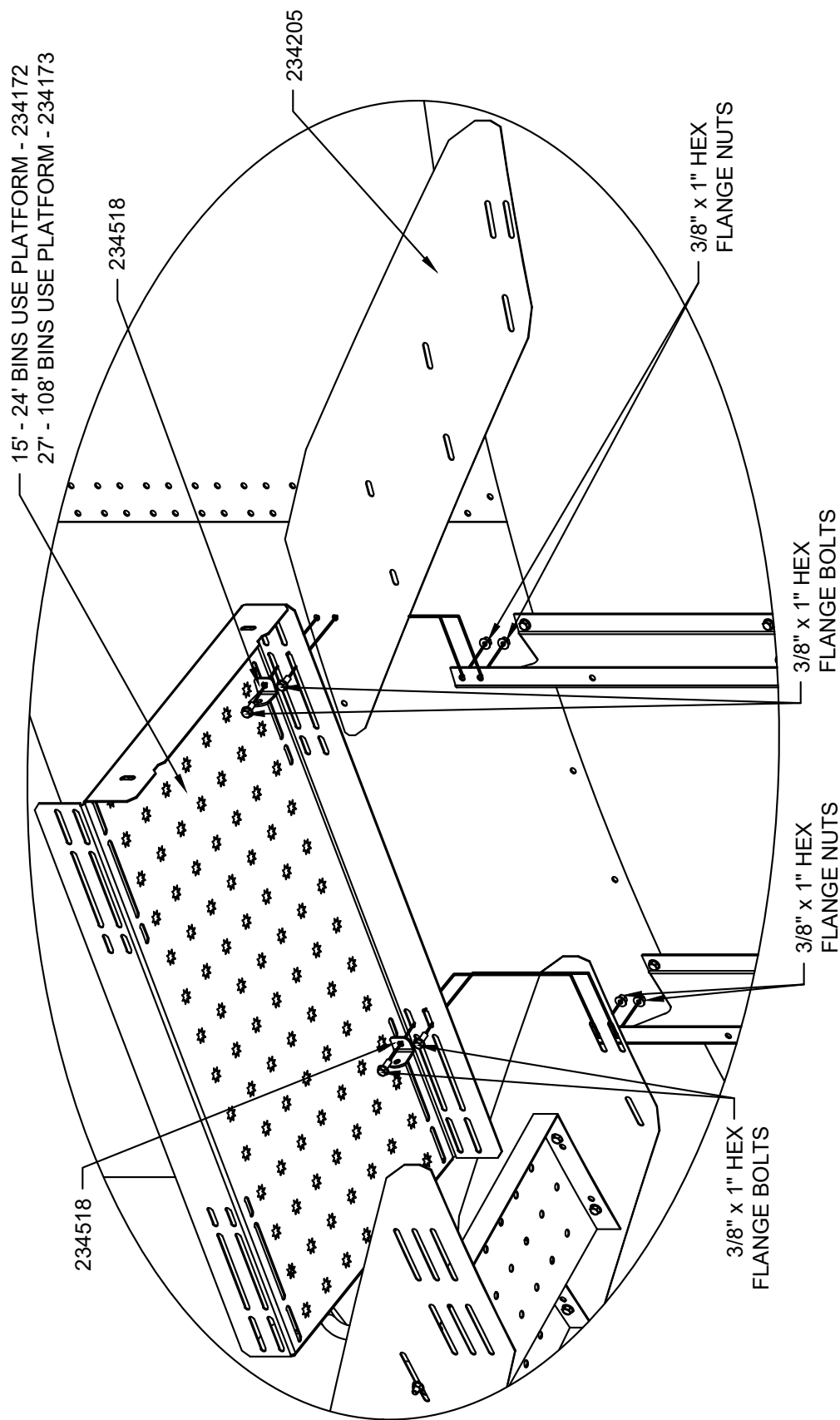


Figure 31. Platform and Inner Stringer Installation



Note

The timing of the front edge of the rest platform is the same as the top platform. Refer back to Figure 14 for dimensions.

Figure 32. Handrail Posts and Outer Stringer Installation

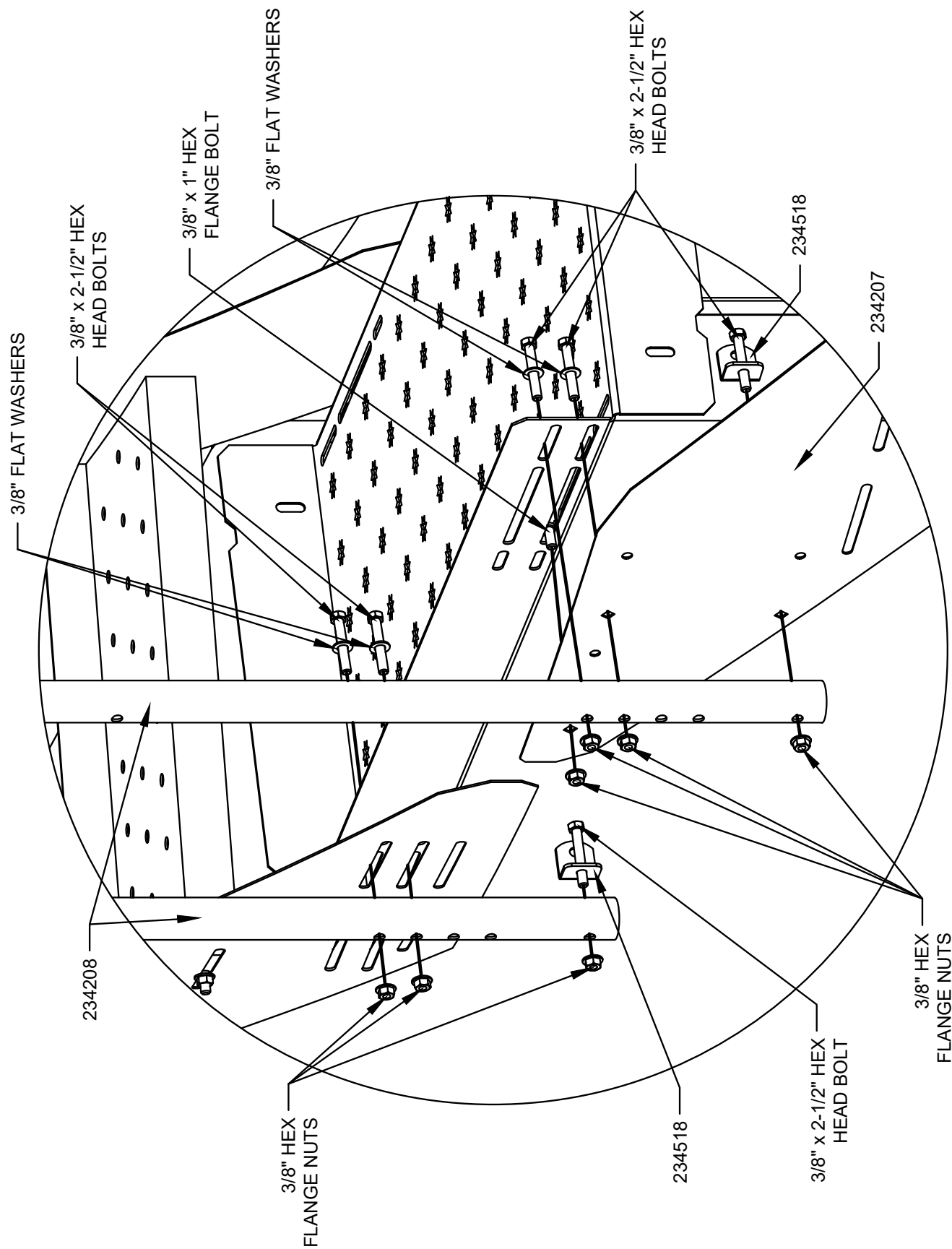


Figure 33. Platform Rear Tubing Braces Installation

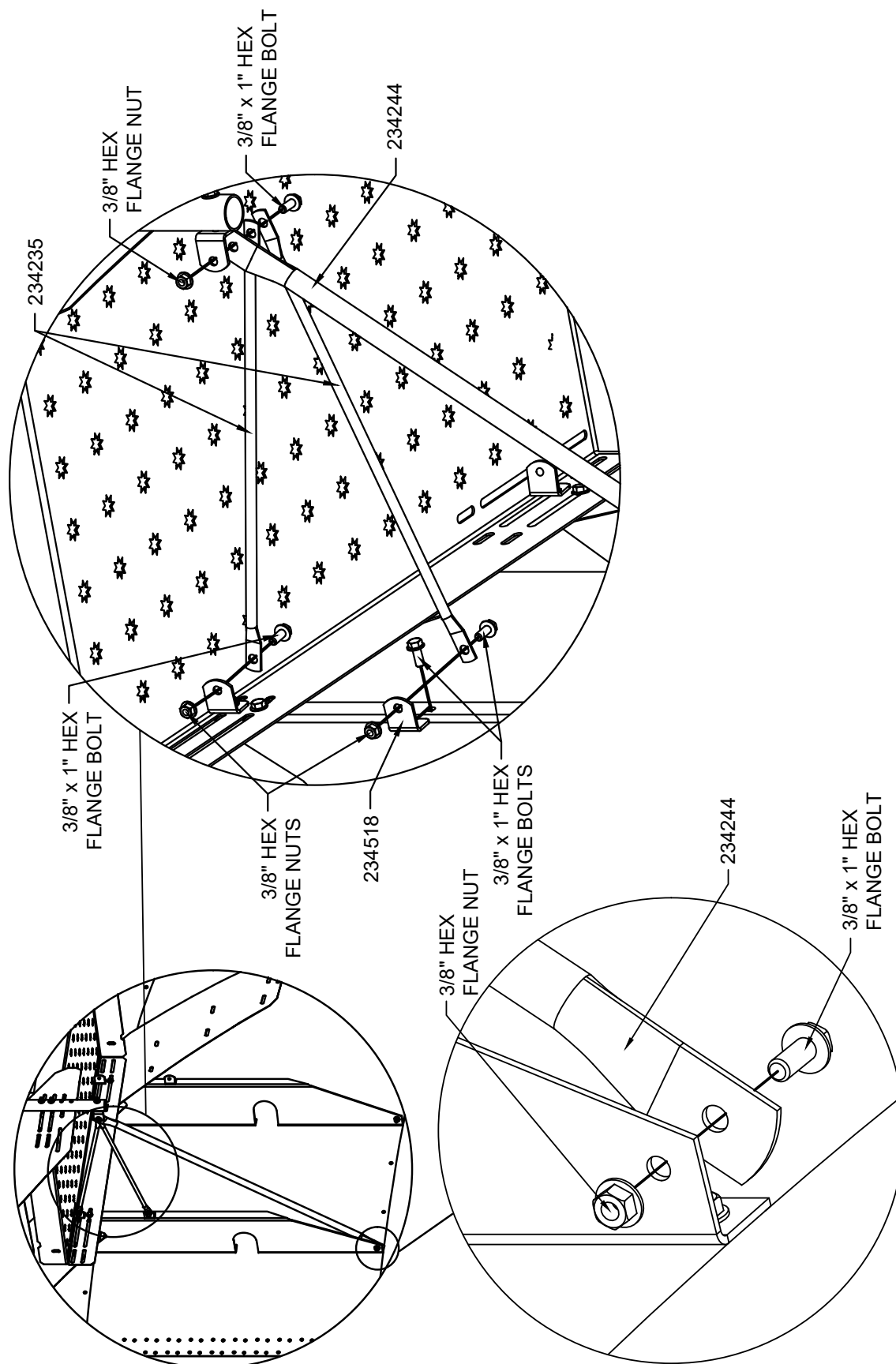


Figure 34. Platform Front Tubing Braces Installation

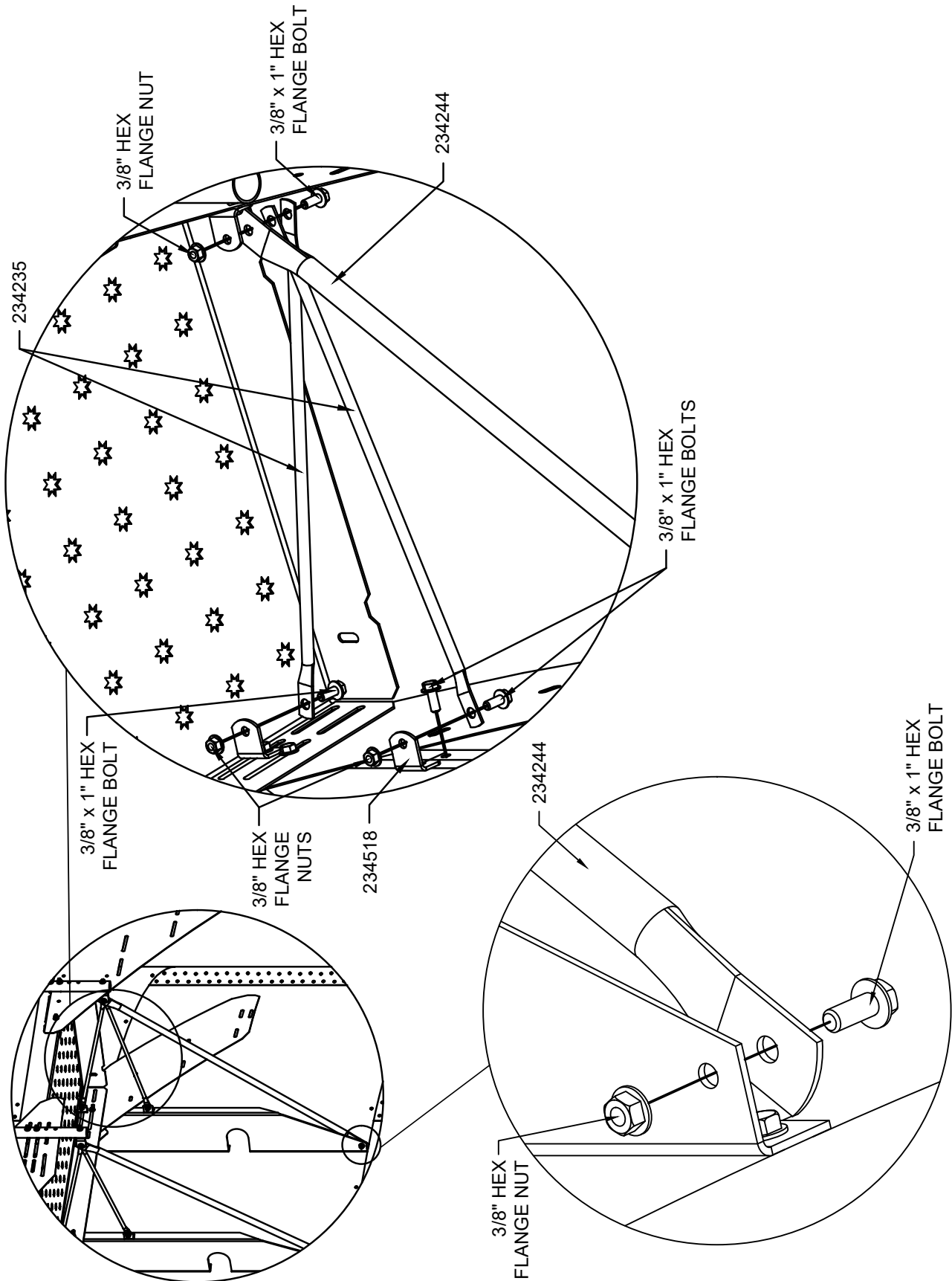
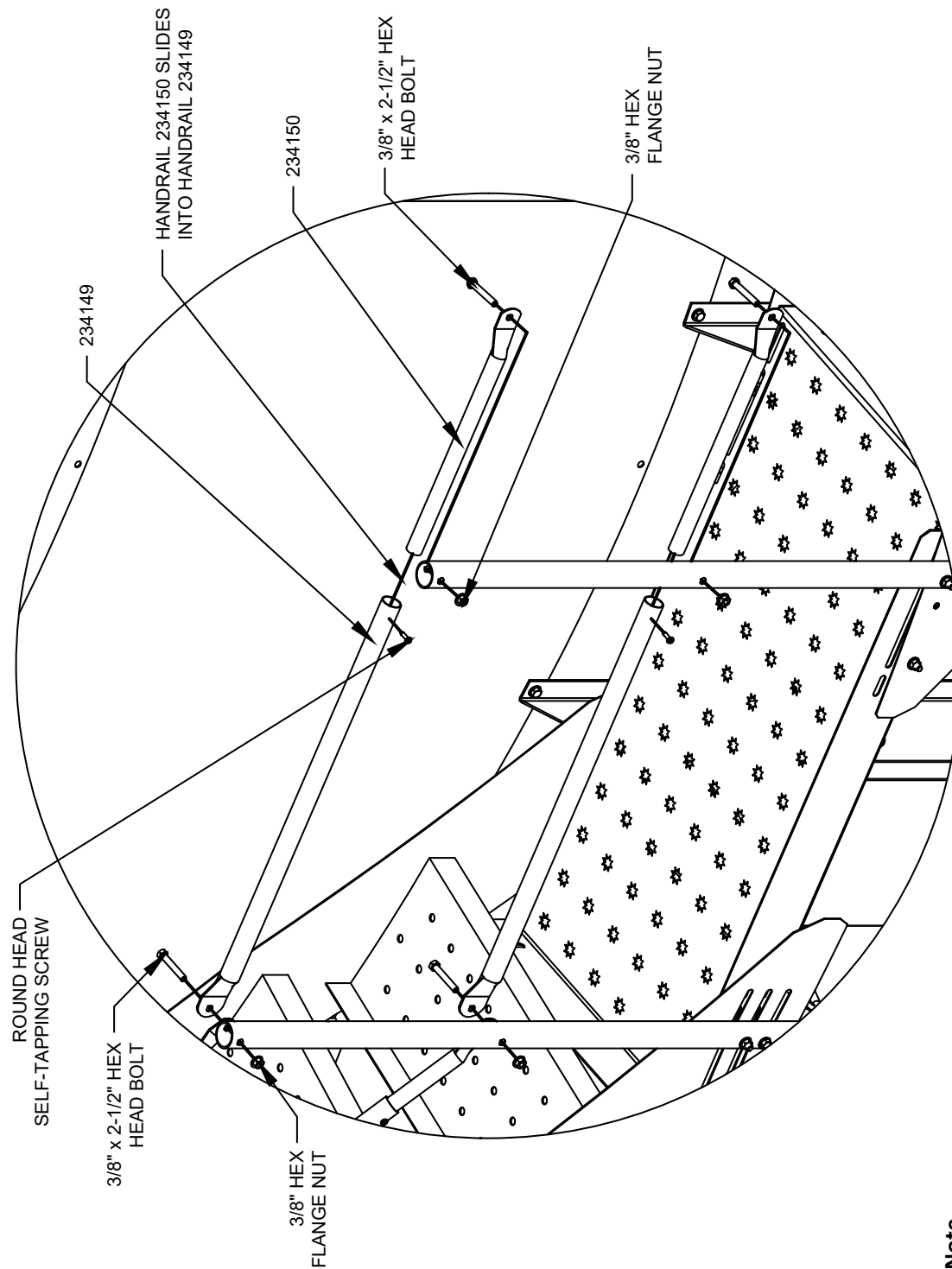


Figure 35. Handrail Installation

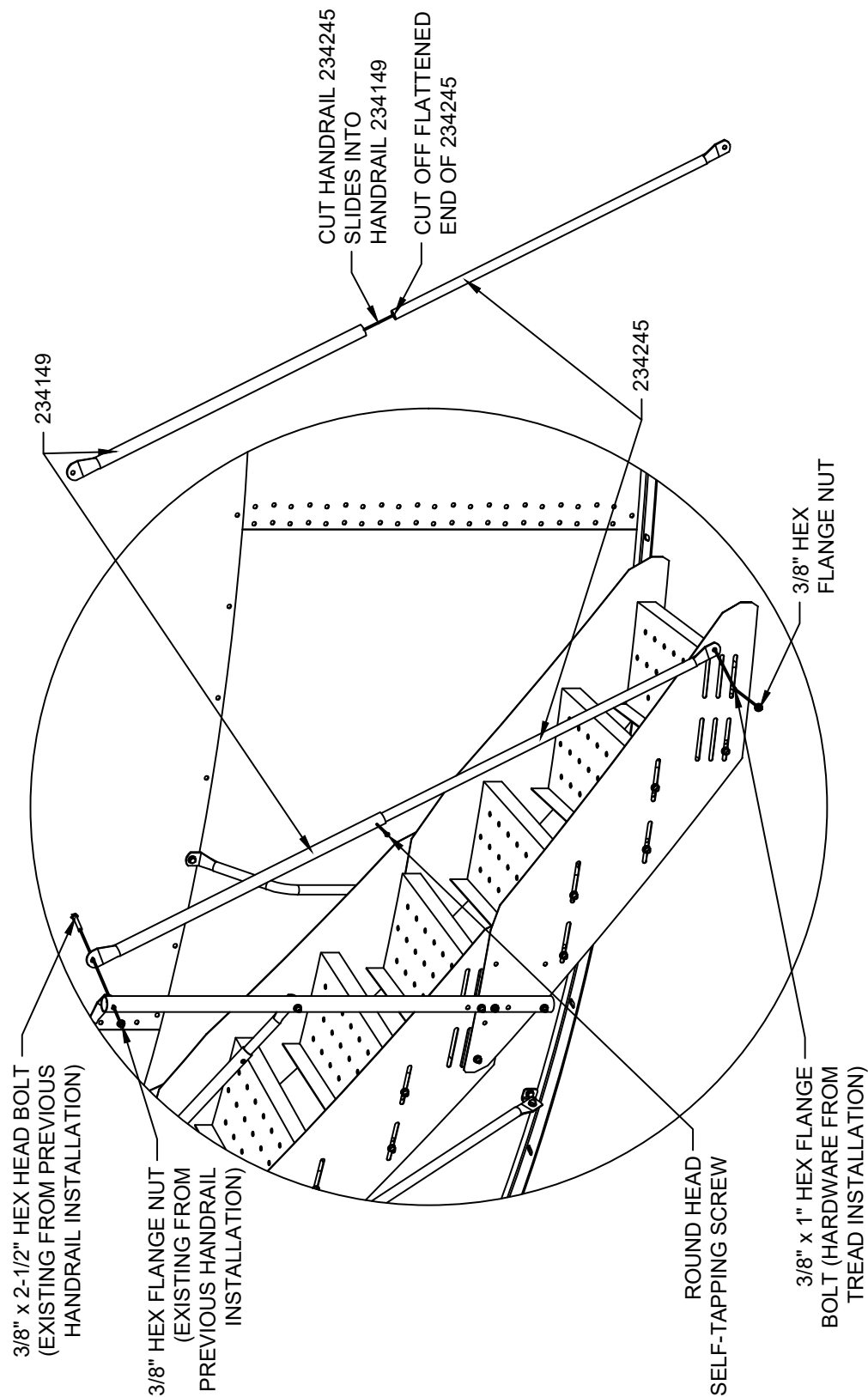


Note

- It may be necessary to field cut and shorten the long handrail, 234149, in order for the handrail to fit between the handrail posts.
- Ensure the round-head self-tapping screw is installed 1" from the open end of the handrails after they have been attached to the posts.

5.6. Bottom Tier Installation

Figure 36. Bottom Handrail Installation



Note

Ensure the round head self-tapping screw is installed 1" from the open end of the handrail after they have been attached to the posts.

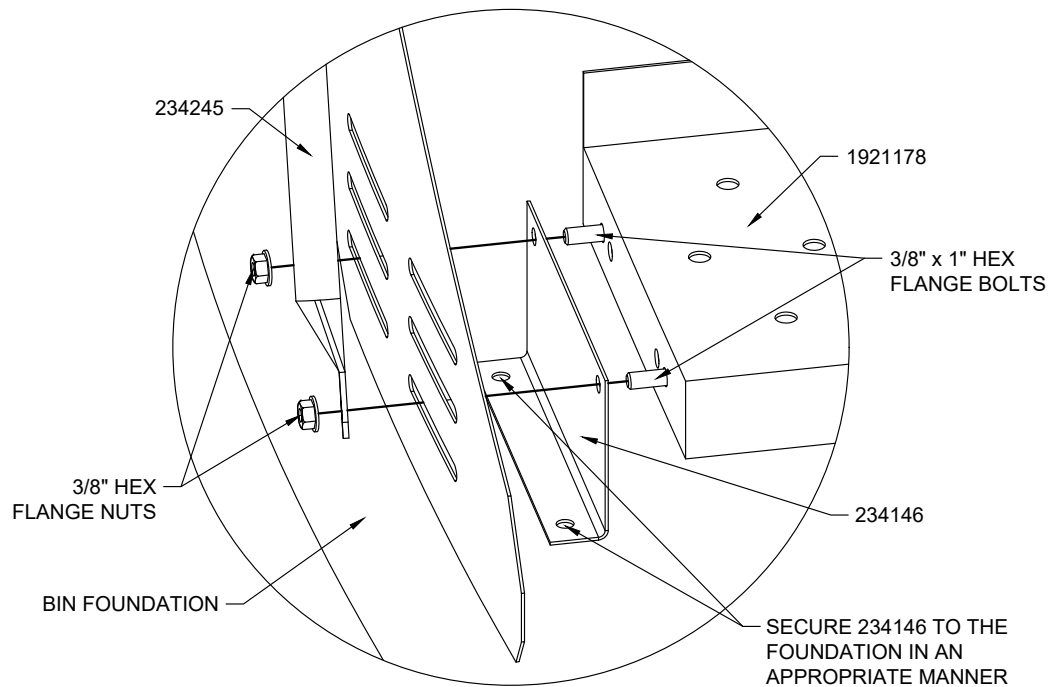
Bottom Tier Support Assemblies

There are two different bottom stair support assemblies that can be used depending on where the outside edge of the foundation ends in comparison to the outside stringer of the circular stairs.

- If the stairs do not overhang the foundation, see [5.6.1](#).
- If the stairs do overhang the foundation, see [5.6.2](#).

5.6.1 Bottom Tier Stair Support for Stairs not Overhanging the Foundation

Figure 37. Support Assembly for Stairs not Overhanging the Foundation



5.6.2 Bottom Tier Stair Support for Stairs Overhanging the Foundation

1. Attach one end of 234244 to the underside of the bottom tread as shown in [Figure 38](#).
2. Attach both of 234518 to the loose end of 234244 as show in [Figure 39](#).
 - a. Swing the loose end of 234244 against the foundation and mark the locations for the anchor bolts.
 - b. Move the loose end away and drill the holes for the anchor bolts.
 - c. Attach the loose end using the anchor bolts and tighten the hardware.
3. If 234244 swings lower than the bottom of the foundation, refer to [Figure 40](#) and complete the following instructions.
 - a. Field cut the flat end of 234244 so that it will attach as low on the foundation as possible.
 - b. Field drill a 3/8" hole into 234244, 1" away from the cut end of 234244.
 - c. Follow Step 2 above to attach the field cut end of 234244 to the foundation.

Figure 38. Bottom Support for Stairs Overhanging the Foundation

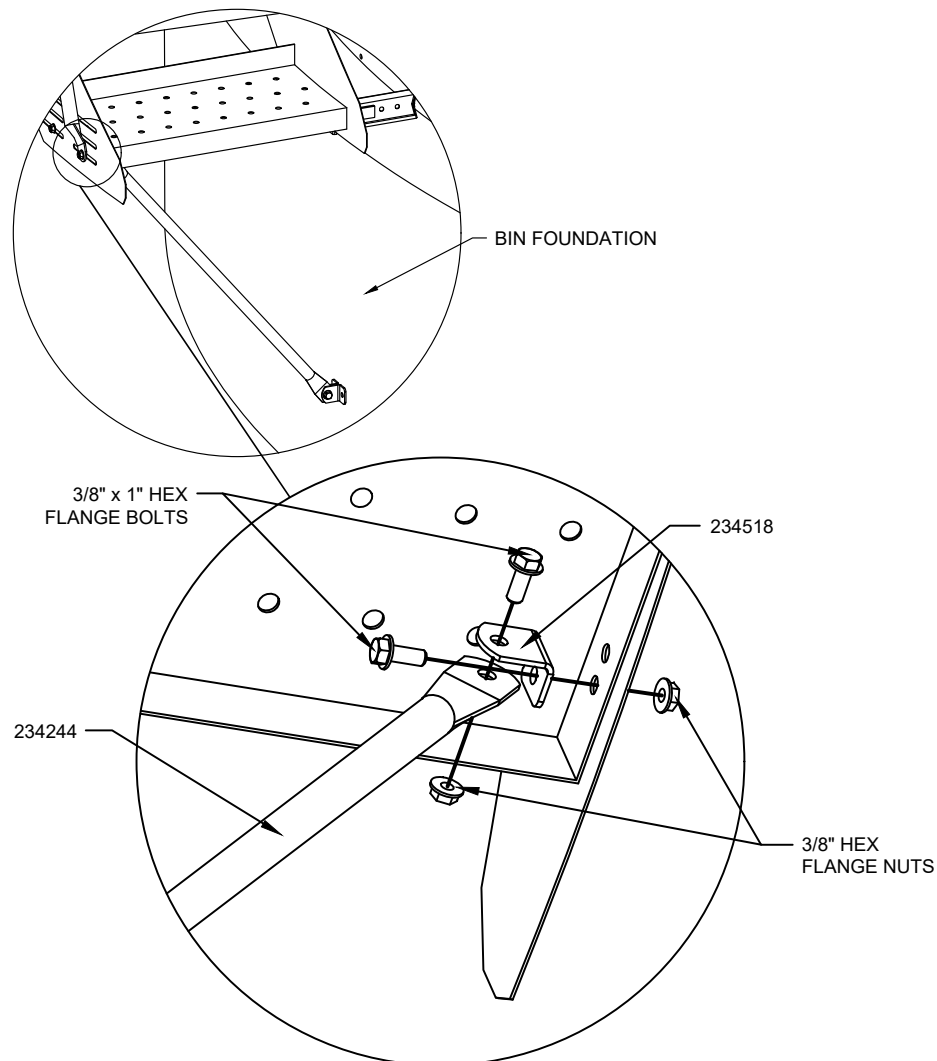


Figure 39. Support Assembly Connection to Foundation

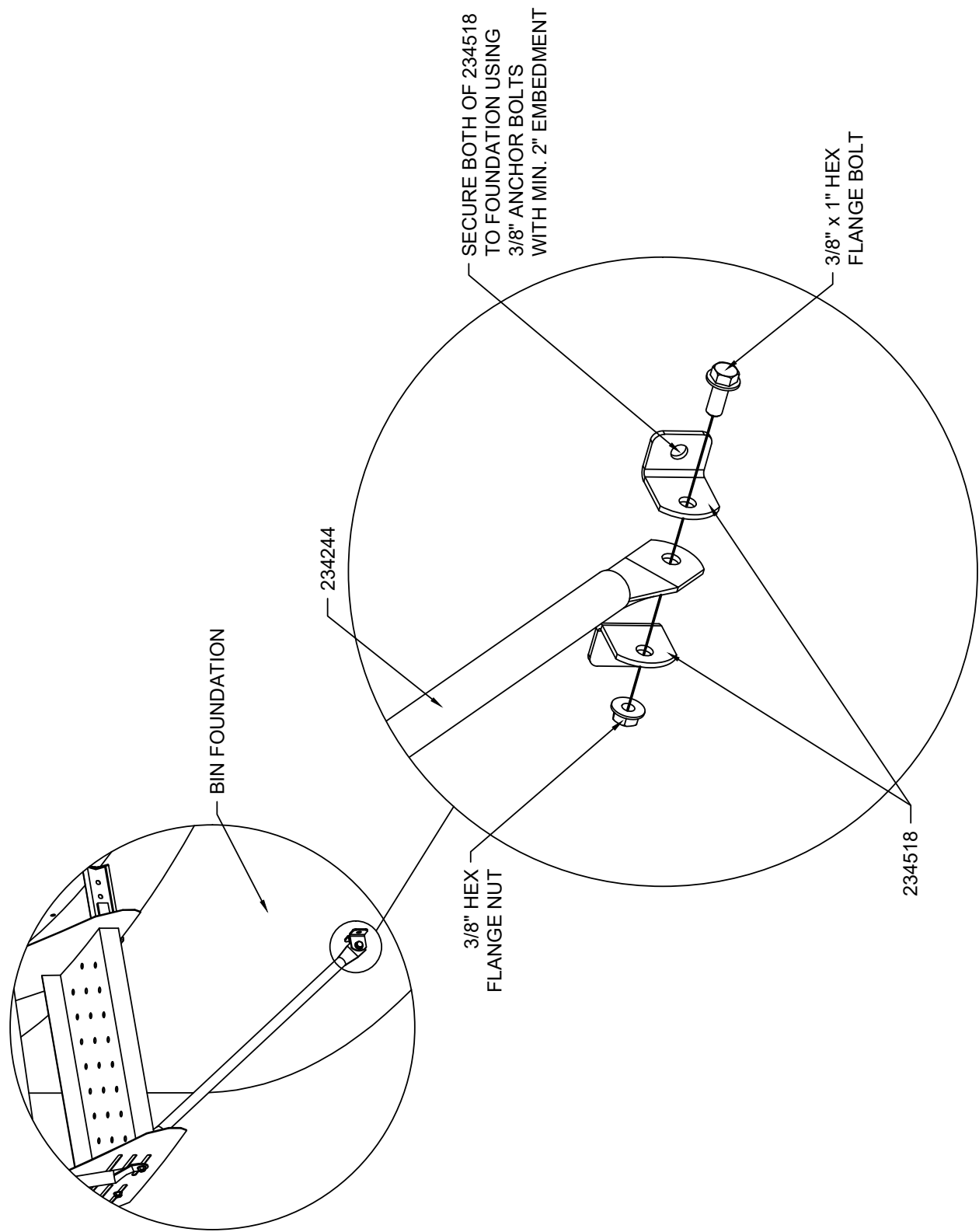
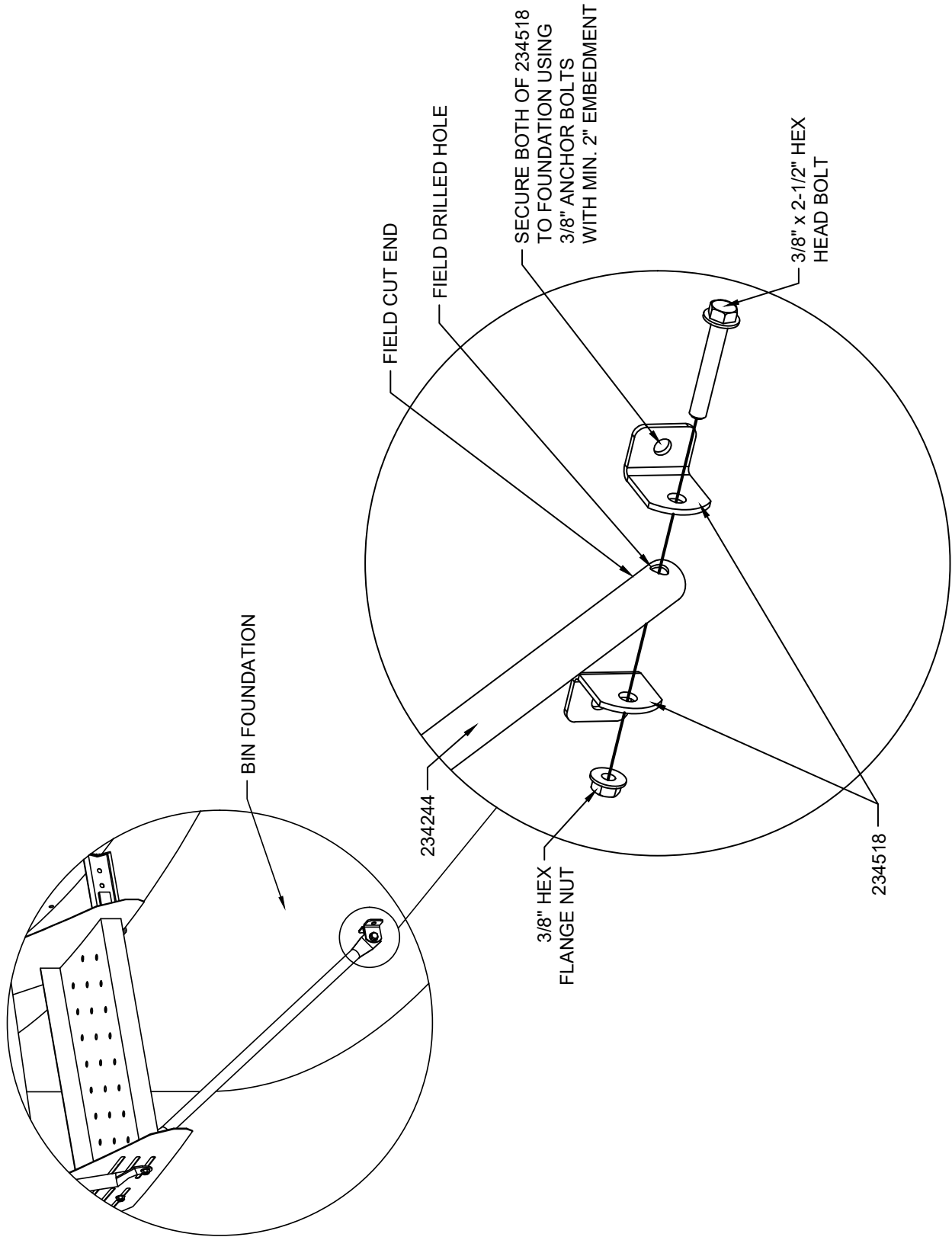


Figure 40. Support Assembly Connection to Foundation (Field Cut Tube)



5.7. Optional Circular Stair Gates

5.7.1 Circular Stair Access Gate

An optional circular stair gate is available to restrict access to the circular stairs and the roof. The Circular Stair Access Gate must be installed on the second half-tier or higher.

- In order for the gate to stay closed, the latch catches onto the hand rail.
- The gate can be locked shut by using a padlock through the matching holes on the latch bracket and the latch.

Figure 41. Bracket Installation

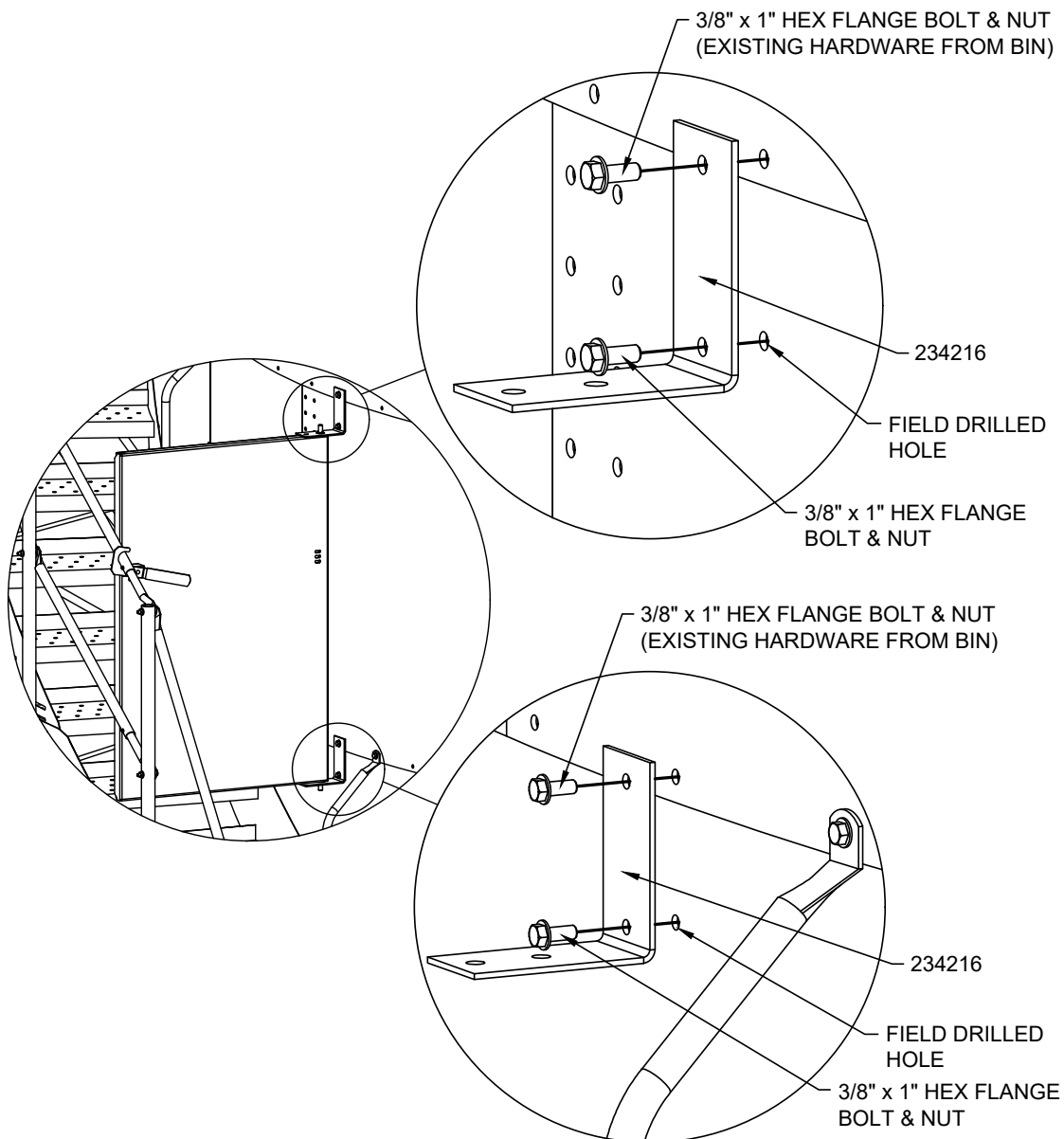
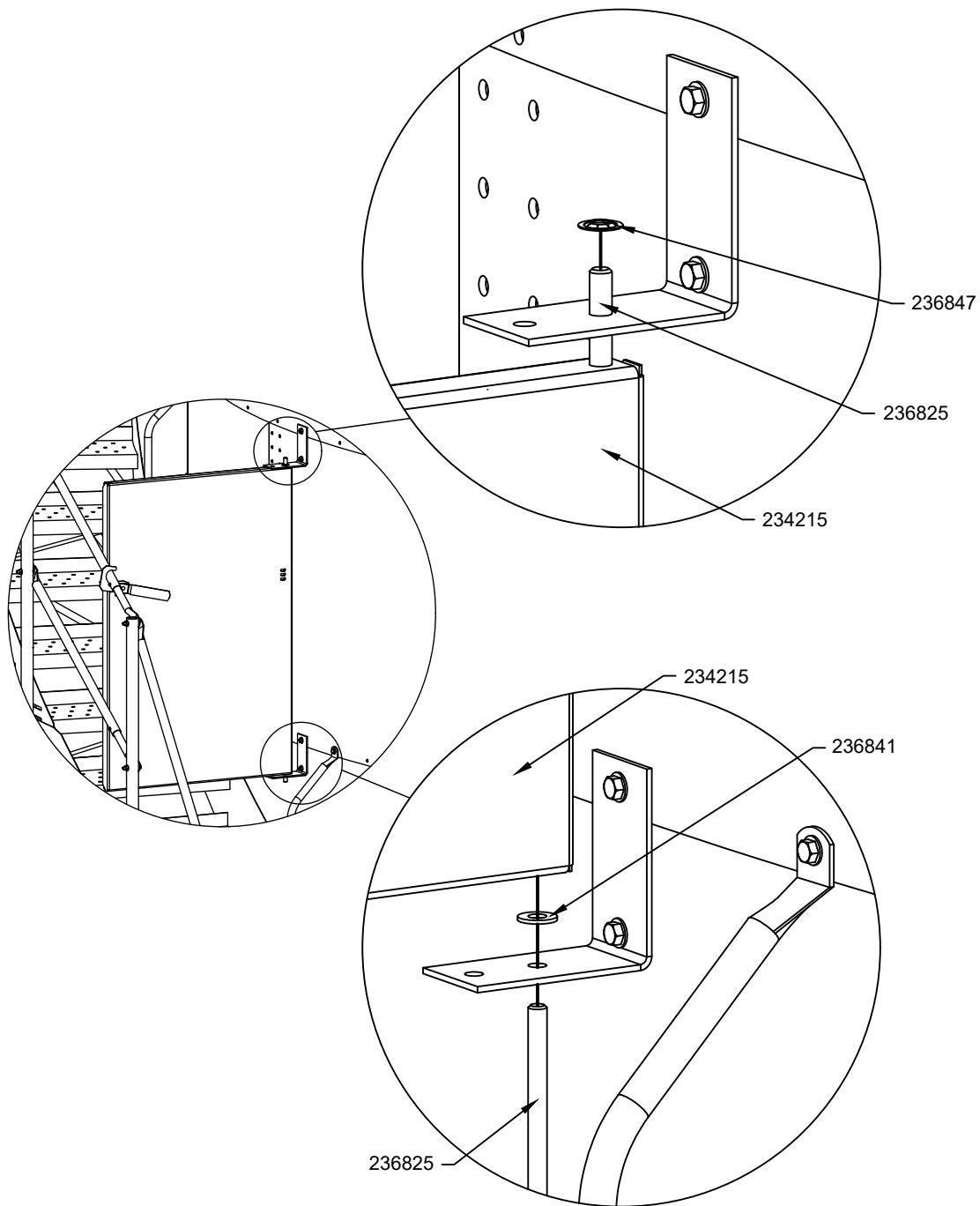
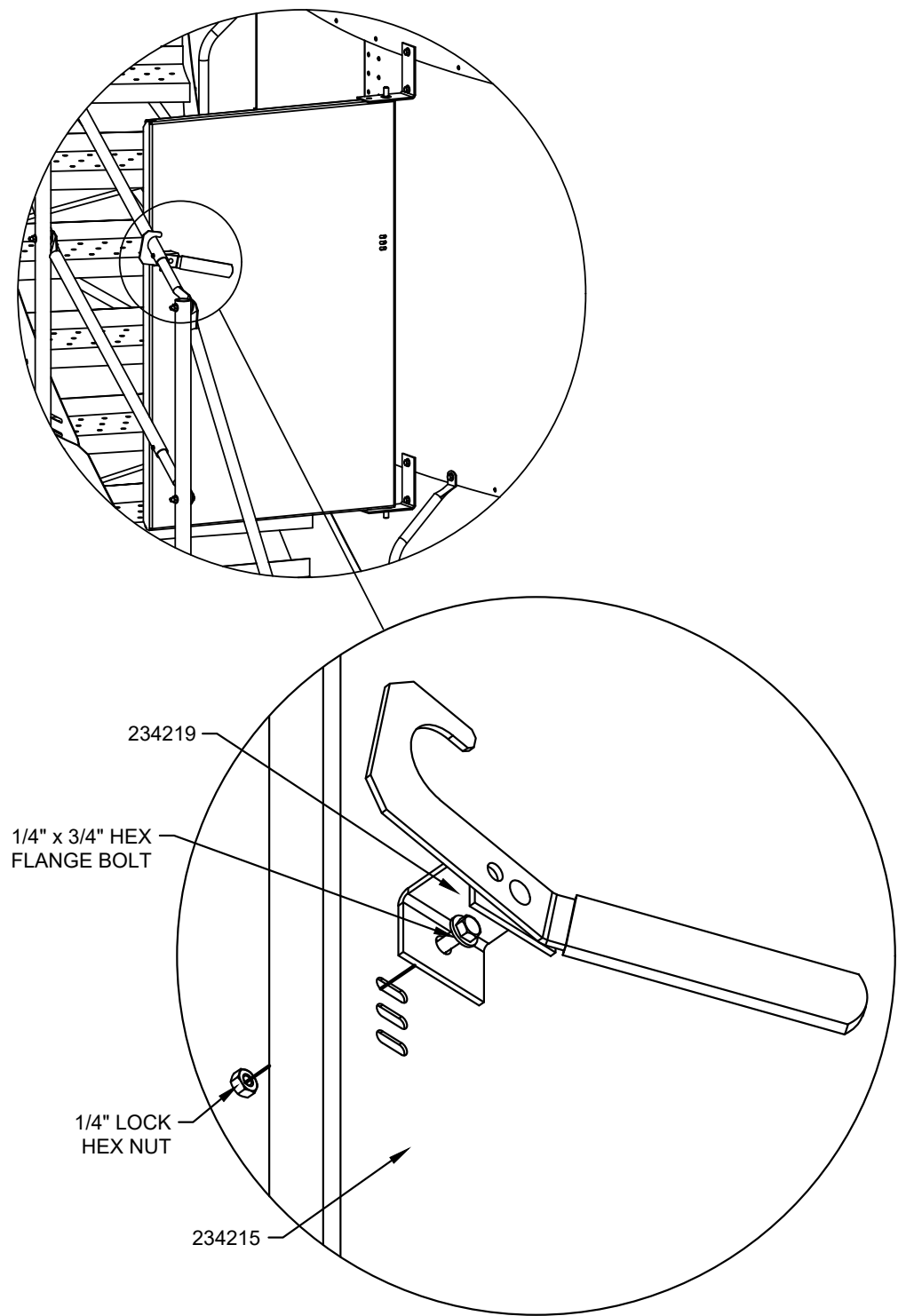


Figure 42. Door Pan Installation**Note**

For easiest installation, install 236825 through the bottom 234216 and continue it up through the top 234216.

Figure 43. Latch Installation



Note
Handrails not shown for installation clarification.

5.7.2 Circular Stair Self-Close Gate

An optional Self-Close Stair Gate is available to add additional protection when climbing or descending the circular stairs, and if working from heights. The Self-Close Stair Gate must be installed at a rest platform.

The below figures show the Self-Close Stair Gate for the circular stairs going down the bin in a counter-clockwise direction. The Self-Close Stair Gate can be used for the circular stairs going down the bin in a clockwise direction also, but the hinges and latch assembly will be on opposite sides from what is shown in the figures below.

Note

The Latch, 213376, comes in two parts; the Latch Handle and the Latch Lock. These two parts will be installed at different times. Ensure that when the Self-Close Stair Gate installation is complete that the Latch Handle is aligned with and fits properly into the Latch Lock.

Figure 44. Circular Stair Self-Close Gate

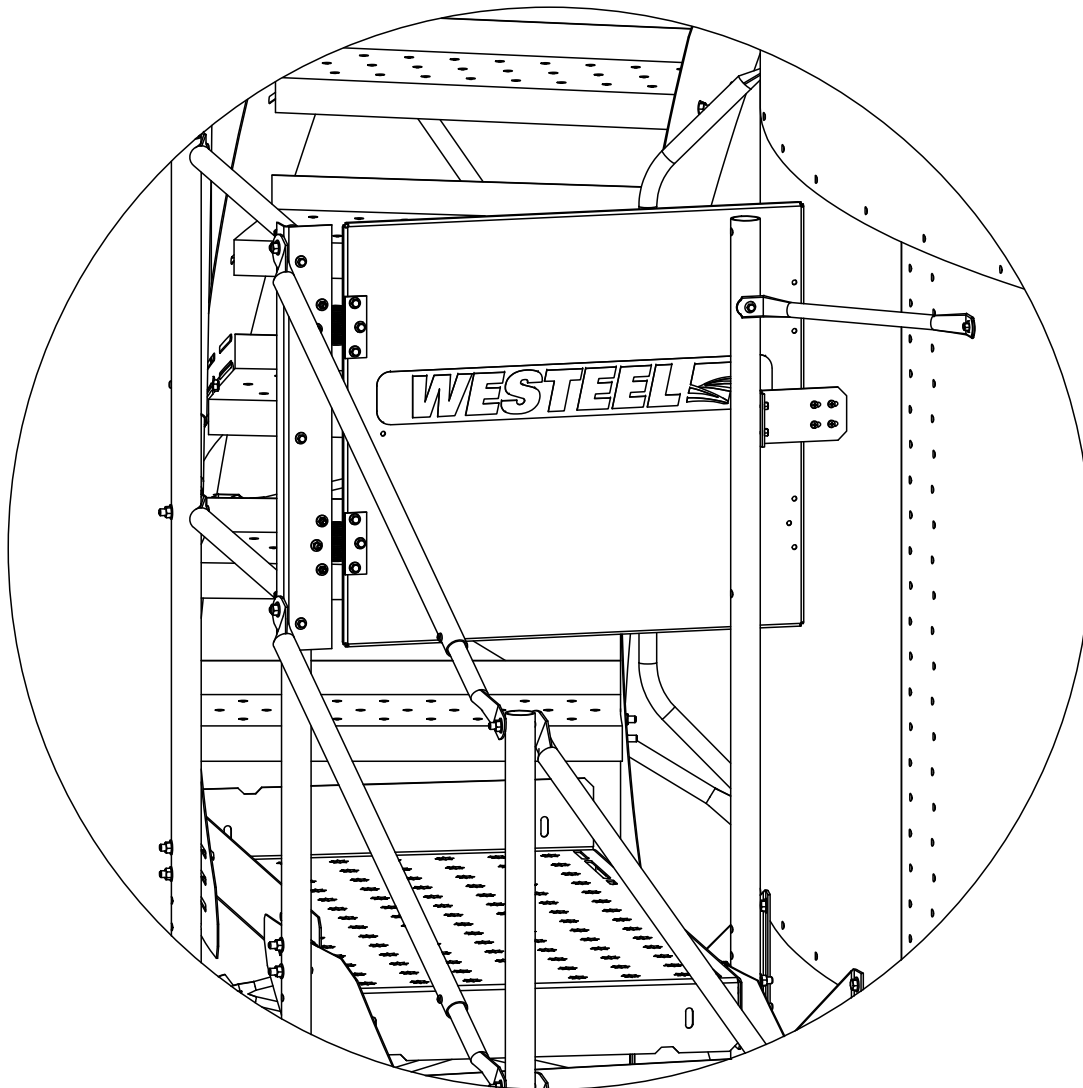


Figure 45. Hinge Bracket & Hinges Installation

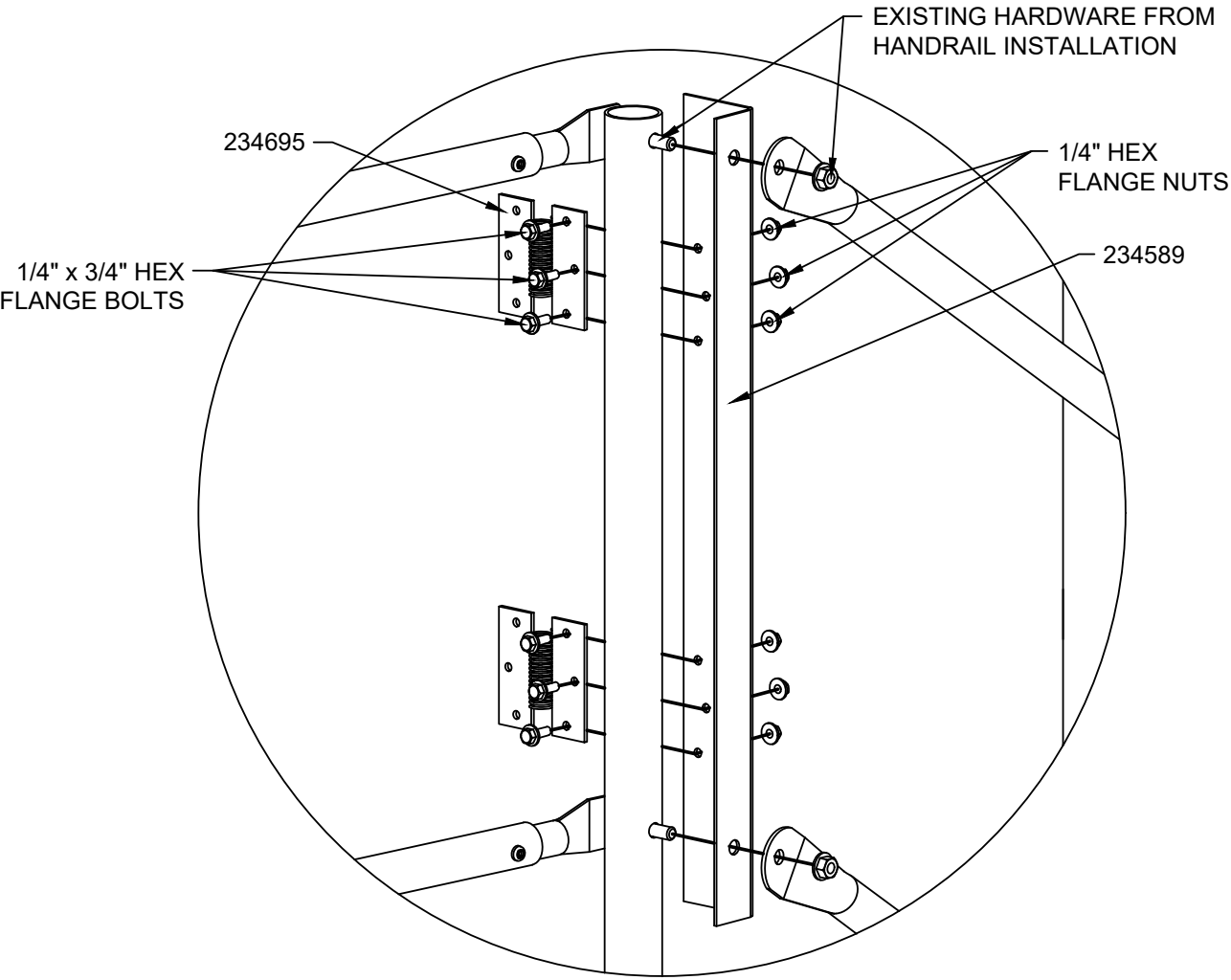
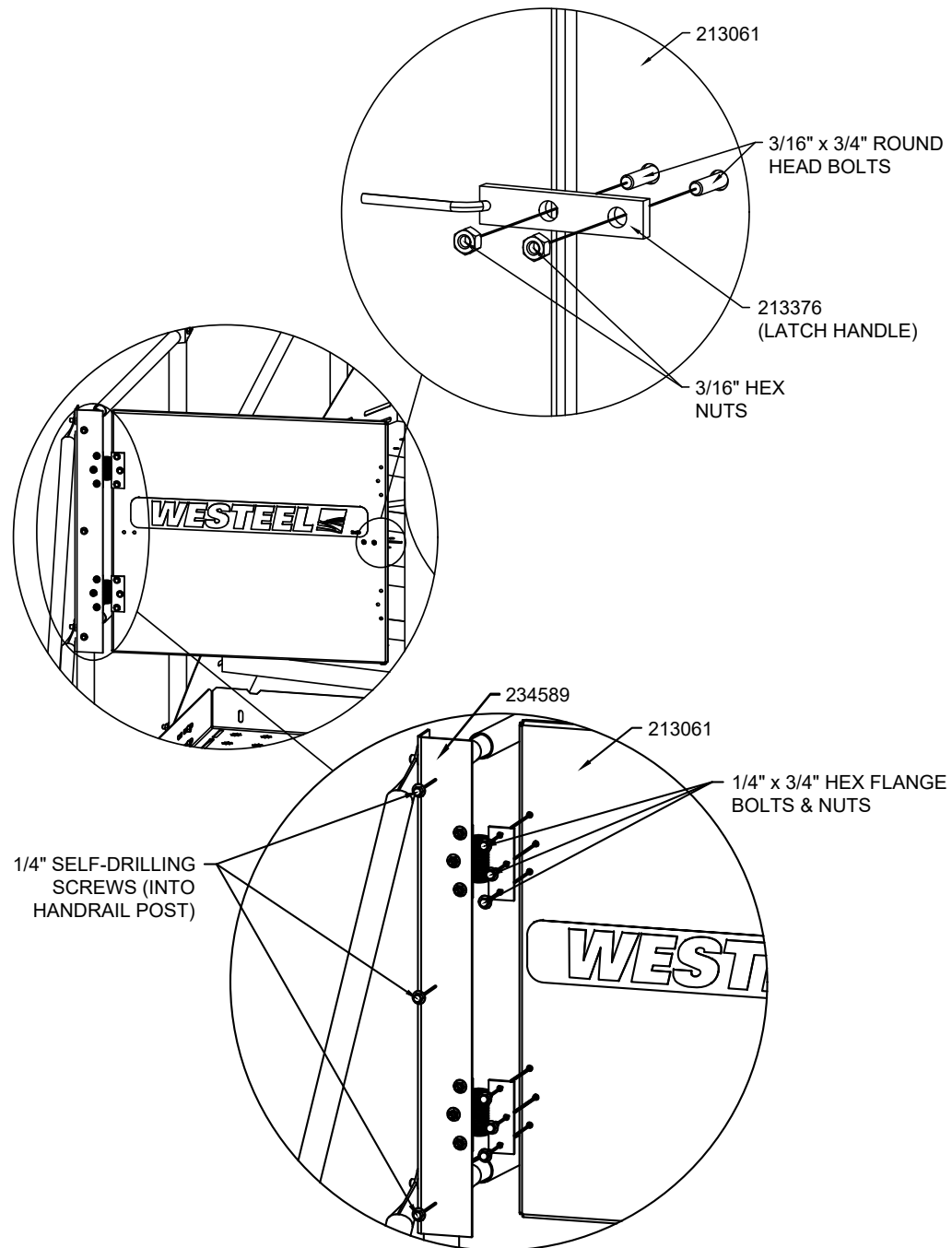
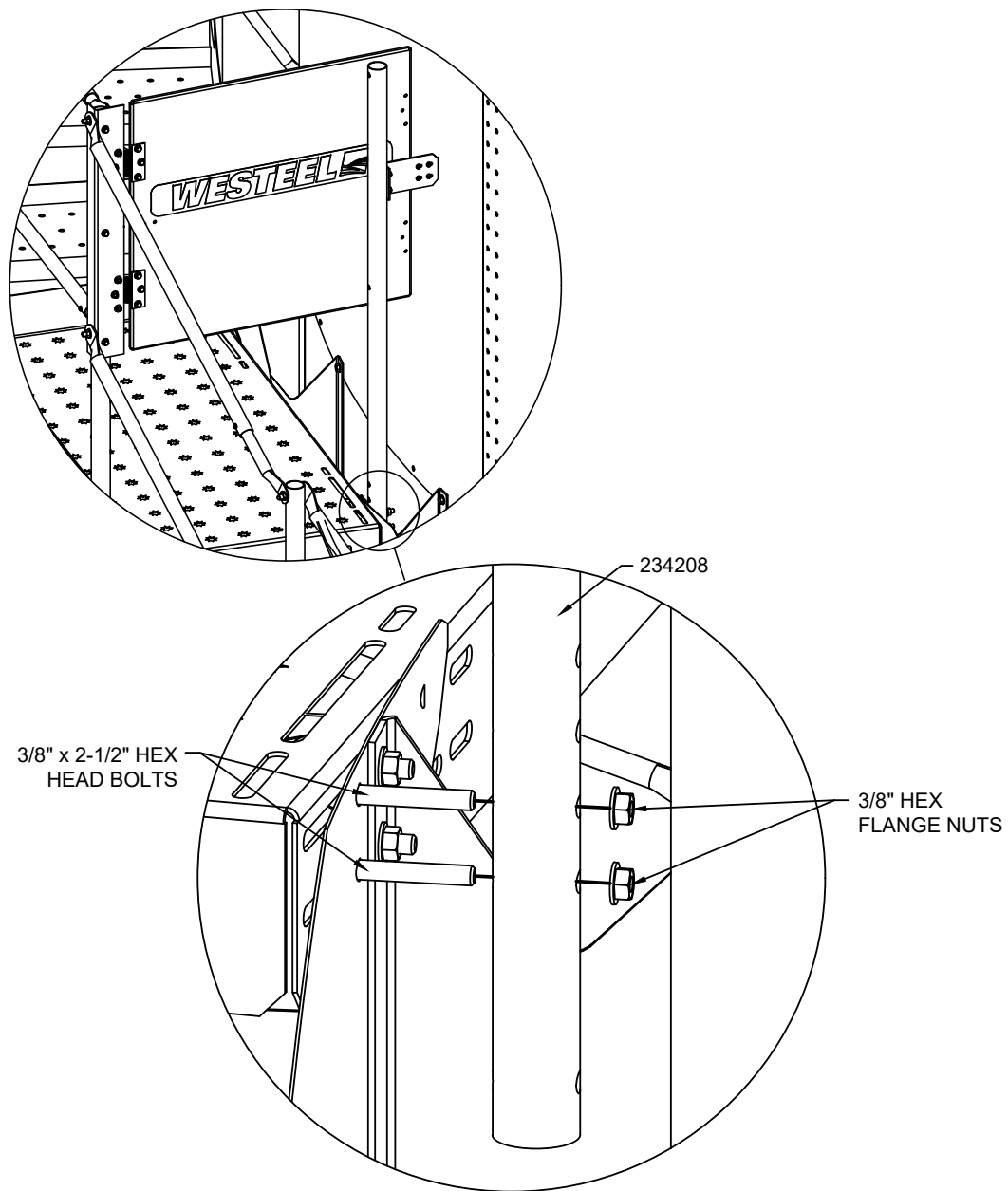
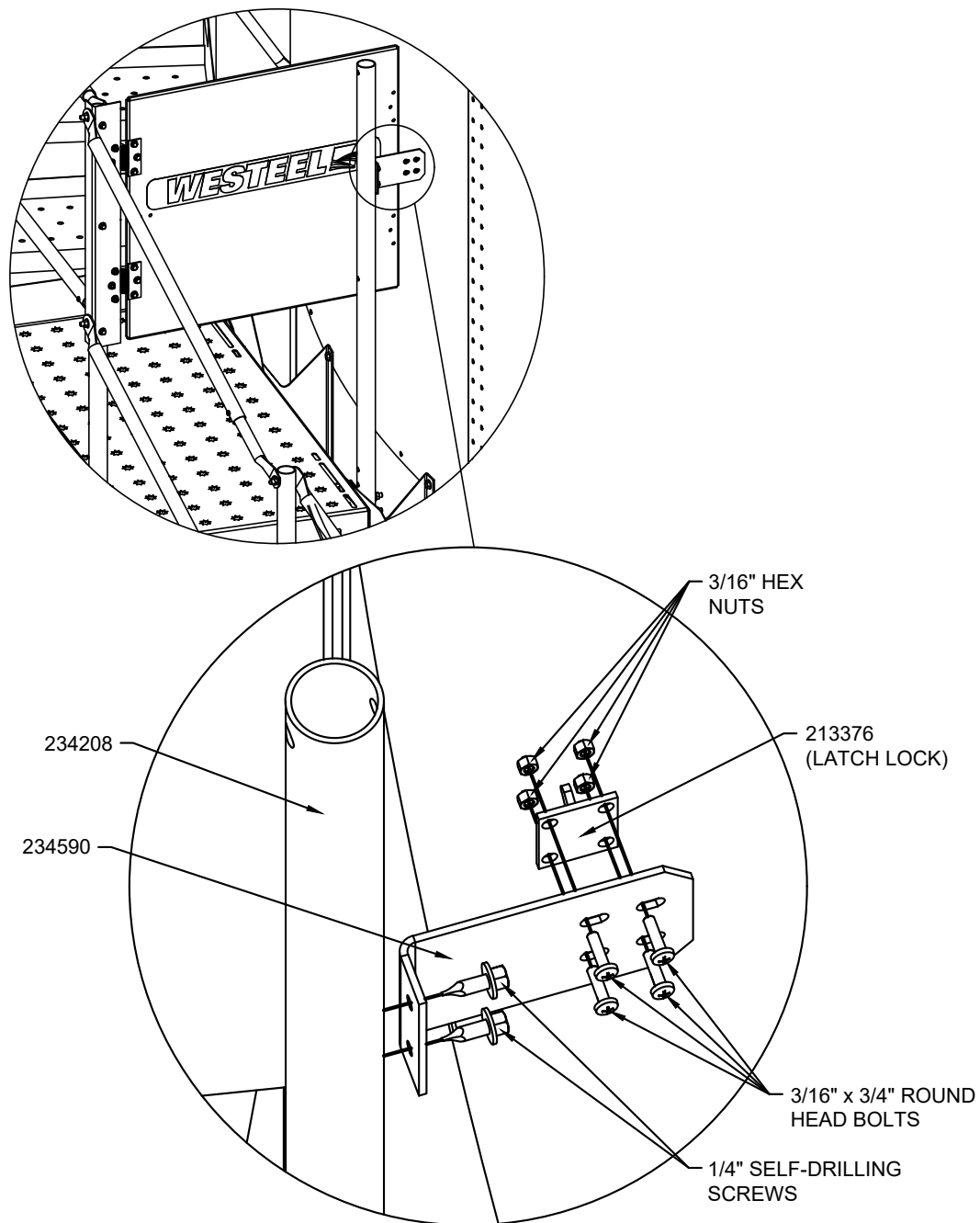


Figure 46. Door Pan and Latch Handle Installation**Note**

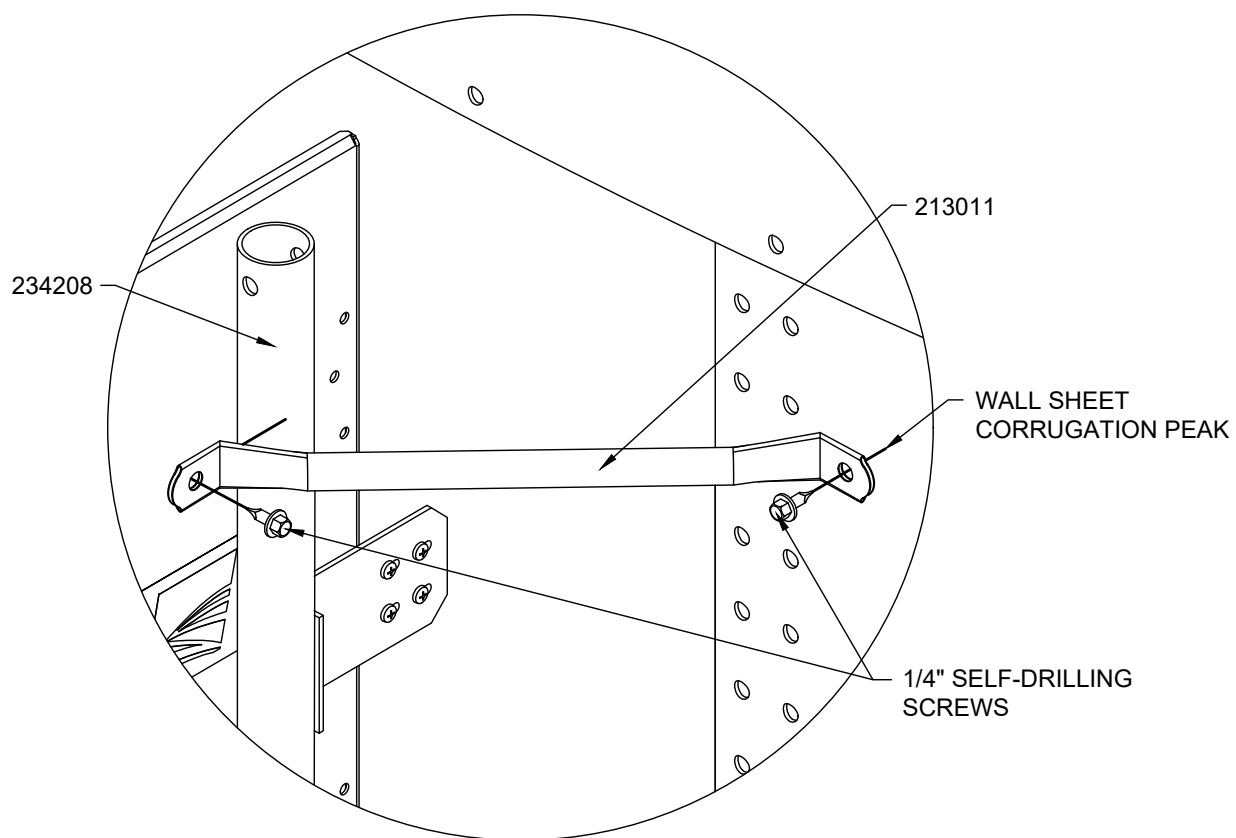
- Attach 213061 so that the Westeel decal is facing down the stairs.
- The Latch Handle is installed on the flange side, opposite face of the decal of 213061.

Figure 47. Post Installation**Note**

- Ensure 234208 is straight and touches the surface of the door pan.
- If 234208 is not straight, 3/8" flat washers can be added between 234208 and the side flange of the platform.

Figure 48. Latch Lock Bracket & Latch Lock Installation**Note**

- Install 234590 so that the Latch Lock aligns with the Latch Handle.
- If needed, put one or two washers, per bolt hole, between 234590 and the Latch Lock to ensure the Latch Handle sits properly in the Latch Lock.

Figure 49. Post Support Brace Installation**Note**

- Ensure 213011 is horizontal and pointed towards the front of the platform.
- If installing the Circular Stair Self-Close Gate on a Top Platform at Eave location, attach 213011 between 234208 and the closest roof rib.

5.8. Circular Stair Optional Support Details on Hoppers

Figure 50. Circular Stair Configuration

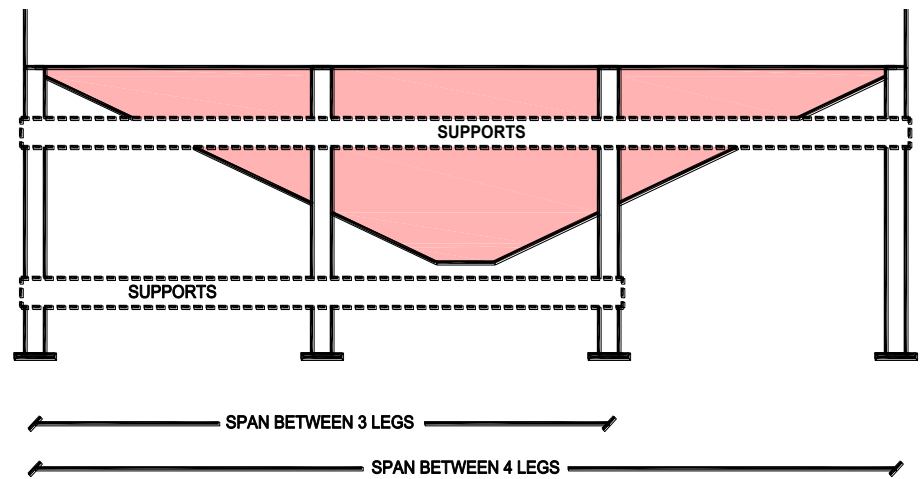
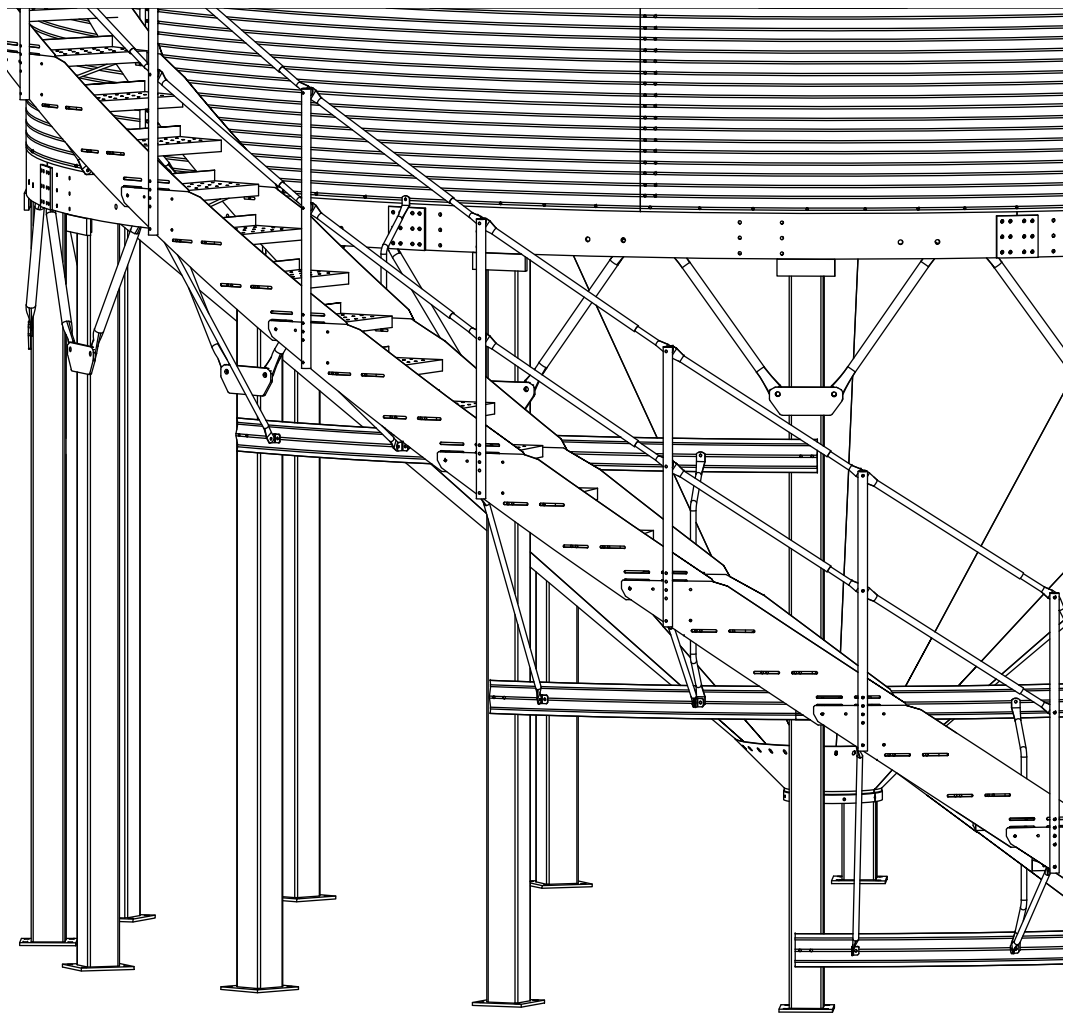


Figure 51. Circular Stair to Hopper Legs Connection



Use the appropriate table to identify the quantity of supports needed to span between hopper legs.

- For spans greater than 60", use two supports, overlapped and connected together with at least two self drilling screws.
- Ensure enough hopper legs are spanned across with supports to properly attach the circular stairs.

Table 3. 21' Diameters or Less (Use Support 234569)

Hopper Size	# of Legs	Hopper Height (ft)	Rows of Supports	For Ladder Configuration	For Span Between 2 Legs	For Span Between 3 Legs	For Circular Stairs Configuration	Circular Stair Packages for Hopper Bottom
Unstiffened SSK								
15' Dia	6	9.3	2	4	2	4	6	1-235383, 1-235393
18' Dia	8	10.7	2	4	2	4	8	1-235383, 1-235393
21' Dia	12	12.2	3	6	2	3	8	1-235384
Stiffened SSK								
15' Dia	10	9.2	2	2	1	2	4	1-235382, 1-235393
18' Dia	12	10.6	2	2	1	2	4	1-235383, 1-235393
21' Dia	14	12.1	3	3	1	2	6	1-235384
Welded (Elite)								
14' Dia	6	6.6	1	2	2	4	4	1-235382, 1-235393
15' Dia	6	7.2	1	2	2	4	4	1-235383
15' Dia	7	7.2	1	2	2	3	3	1-235383
16' Dia	8	7.8	2	4	2	3	6	1-235382, 1-235393
18' Dia	9	8.0	2	4	2	3	6	1-235383
18' Dia	10	8.0	2	4	2	3	6	1-235383
19' Dia	9	8.4	2	4	2	4	6	1-235383
19' Dia	11	8.4	2	4	2	3	6	1-235383
21' Dia	11	9.1	2	4	2	3	6	1-235383, 1-235393
21' Dia	13	9.1	2	4	2	3	6	1-235383, 1-235393
Commercial Hoppers								
15' Dia	10	9.9	2	2	1	2	4	1-235383, 1-235393
18' Dia	12	11.4	3	3	1	2	6	1-235384
21' Dia	14	13.0	3	3	1	2	6	1-235384, 1-235393

Table 4. 24' Diameters or Greater (Use Support 234568)

Hopper Size	# of Legs	Hopper Ht (ft)	Rows of Supports	For Ladder Configuration	For Span Between 2 Legs	For Span Between 3 Legs	For Circular Stairs Configuration	Circular Stair Packages for Hopper Bottom
Stiffened SSK								
24' Dia	16	11.9	3	3	1	2	6	1-235384
27' Dia	18	13.2	3	3	1	2	6	1-235384, 1-235393
Commercial Hoppers								
24' Dia	16	14.5	3	3	1	2	6	1-235384, 1-235393
27' Dia	18	13.9	3	3	1	2	6	1-235384, 1-235393
30' Dia	20	15.1	4	4	1	2	8	1-235382, 1-235384
33' Dia	22	15.2	4	4	1	2	8	1-235382, 1-235384
36' Dia	24	16.4	4	4	1	2	8	1-235382, 1-235384, 1-235393

6. Appendix

6.1. Circular Stair Packages

Table 5. Circular Stair Packages

PART NUMBER	DESCRIPTION	1/2 TIER & TOP PLAT-FORM + BOTTOM TIER*	STD 44" TIER	2 X STD 44" TIER*	3 X STD 44" TIER*	BOTTOM TIER*	1/2 TIER & TOP PLAT-FORM	REST PLAT-FORM	TOP PLAT-FORM (FULL TIER)	1/2 TIER & TOP PLAT-FORM + BOTTOM TIER*	1/2 TIER & TOP PLAT-FORM	REST PLAT-FORM	TOP PLAT-FORM (FULL TIER)	STD HALF TIER
		15-24	-	-	-	-	15-24	15-24	15-24	27-108	27-108	27-108	27-108	-
235381	235382	235383	235384	235385	235386	235387	235388	235389	235390	235391	235392	235393		
234147	ONE TIER TUBE SUPPORT	1	1	2	3	1	-	-	-	1	-	-	-	-
234206	OUTER STRINGER	2	2	4	6	2	-	-	-	2	-	-	-	1
234205	INNER STRINGER	3	2	4	6	2	1	-	-	3	1	-	-	1
234208	HANDRAIL POST	5	2	4	6	2	3	1	2	5	3	1	2	1
234149	HANDRAIL - LONG	7	4	8	12	5	2	2	-	7	2	2	-	2
234150	HANDRAIL - SHORT	6	4	8	12	4	2	2	-	6	2	2	-	2
1921178	TREAD	9	6	12	18	6	3	-	-	9	3	-	-	3
234207	OUTER STRINGER FOR PLATFORM	1	-	-	-	-	1	1	1	1	1	1	1	-
234246	MID-TIER PLATFORM REAR BRACE (15-24)	1	-	-	-	-	1	-	-	-	-	-	-	-
234247	MID-TIER PLATFORM REAR BRACE (27-108)	-	-	-	-	-	-	-	-	1	1	-	-	-
234244	BRACE (SHORT)	2	1	2	3	1	1	-	-	2	1	-	-	-
234245	BRACE (LONG)	2	1	2	3	2	-	1	-	2	-	1	-	-
234248	EAVE PLATFORM REAR BRACE (15-24)	-	-	-	-	-	-	-	1	-	-	-	-	-
234249	EAVE PLATFORM REAR BRACE (27-108)	-	-	-	-	-	-	-	-	-	-	-	1	-
234172	PLATFORM (15-24)	1	-	-	-	-	1	1	1	-	-	-	-	-
234173	PLATFORM (27-108)	-	-	-	-	-	-	-	-	1	1	1	1	-
234209	PLATFORM END RAIL	2	-	-	-	-	2	-	2	2	2	-	2	-
234501	LADDER WALL CLIP	2	1	2	3	1	1	-	-	2	1	-	-	1
234146	BASE BRACKET	1	-	-	-	1	-	-	-	1	-	-	-	-
234241	POST GUSSET	2	-	-	-	-	2	-	2	2	2	-	2	-
234238	REINFORCEMENT STRIP (15-24)	1	-	-	-	-	1	-	1	-	-	-	-	-
234239	REINFORCEMENT STRIP (27-108)	-	-	-	-	-	-	-	-	1	1	-	1	-
234242	PLATFORM EAVE MOUNT CHANNEL	-	-	-	-	-	-	1	2	-	-	2	2	-
234243	PLATFORM MID-TIER MOUNT CHANNEL	2	-	-	-	-	2	-	-	2	2	-	-	-
234235	PLATFORM TO POST BRACE	3	2	4	6	2	1	3	-	3	1	3	-	1
234240	EAVE PLATFORM TO END POST BRACE 21.25"	1	-	-	-	-	1	-	1	1	1	-	1	-
234233	EAVE PLATFORM TO END POST BRACE 21.94"	1	-	-	-	-	1	-	1	1	1	-	1	-
234518	SUPPORT ARM BRACKET	12	6	12	18	6	6	4	4	12	6	4	4	2
	HARDWARE BAG	234000	234001	234002	234003	234004	234005	234006	234007	234008	234009	234010	234011	234001

*STANDARD LADDER PACKAGES

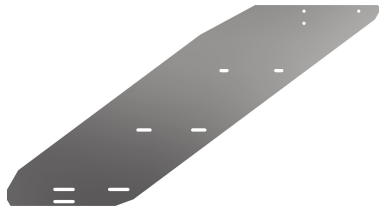
Table 6. Circular Stair Gate Package-234218 (Optional)

PART NUMBER	DESCRIPTION	QUANTITY
234215	DOOR PAN	1
234216	BRACKET FOR STAIR GATE	2
234219	SUB ASSEMBLY FOR LATCH	1
236825	HINGE ROD	1
236841	SPACER WASHER 1/2	1
152398	BLT HFW .25 x .75 GR8.2	2
150014	NUT HX LK NI .25-20 ZN G2	2
236847	DOOR PUSH NUT 1/2	1

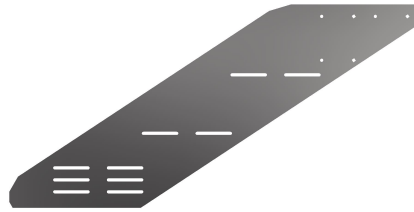
Table 7. Self Close Gate Package — 234210 (Optional)

PART NUMBER	DESCRIPTION	QUANTITY
213061	DOOR PAN FOR CATWALK	1
234589	HINGE BRACKET	1
234590	LOCK BRACKET	1
234208	HANDRAIL POST	1
213011	LATERAL BRACE	1
234695	SPRING HINGE	2
213376	LATCH	1
235901	1/4" x 3/4" BOLT	0.2 (bags = 15 pcs)
154156	1/4" NUTS	15
154005	BLT #10-24 x 3/4" ZN	8
150008	NUT #10-24 ZN	8
157042	BLT SLF Drill 1/4"-14 x 1.0 JS500	15
193775	WSHR Sealing 3/8" STL/NEO	8
154977	WSHR FLT 3/8" TYP AW ZN	6
185011	CARTON	1
198400	CIRCULAR STAIR MANUAL	1

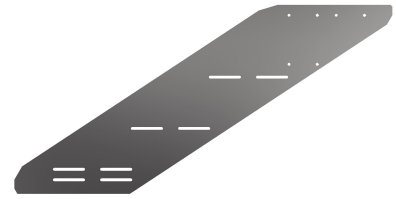
6.2. Circular Stair Parts Identification



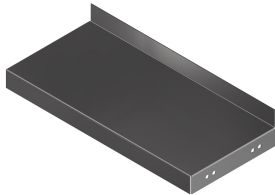
234205 – Inner Stringer



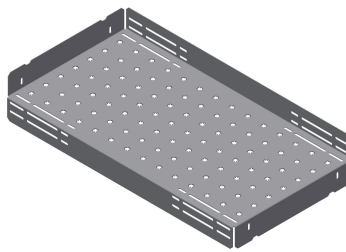
234206 – Outer Stringer



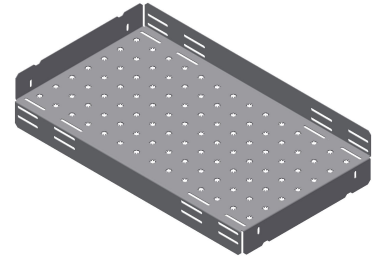
234207 – Outer Stringer for Platform



1921178 – Tread



234172 – Platform 15'- 24'



234173 – Platform 27'- 108'



234146 – Base Bracket



234208 – Handrail Post



234149 – Handrail
(1.25" Dia x 34" Long)

234150 – Handrail
(1" Dia x 17" Long)



234209 – Platform End Rail



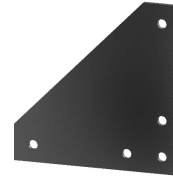
234147 – One Tier Tube Support



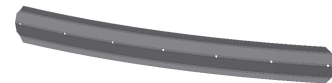
234518 – Support Arm Bracket



234501 – Ladder Wall Clip



234241 – Post Gusset

234233 - Top Platform to End Post
Brace (0.5" Dia x 21.94" Long)234240 - Top Platform to End Post
Brace (0.5" Dia x 21.25" Long)234235 - Handrail Post Support
Brace (0.5" Dia x 22.13" Long)234238 - Reinforcement Strip
(15' - 24')234239 - Reinforcement Strip
(27' - 108')234244 - Support Brace (Short)
(1" Dia x 33.88" Long)234245 - Support Brace (Long)
(1" Dia x 48.94" Long)234242 - Platform Eave Mount
Channel234243 - Platform Mid-Tier Mount
Channel234246 - Mid-Tier Platform Rear
Brace (15' - 24')234247 - Mid-Tier Platform Rear
Brace (27' - 108')234248 - Eave Platform Rear Brace
(15' - 24')234249 - Eave Platform Rear Brace
(27' - 108')

6.3. Optional Stair Gates Parts Identification



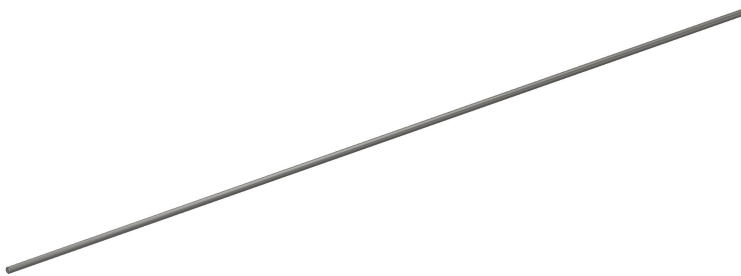
234216 – Bracket for Stair Gate



234215 – Block-Off Door Pan



234219 – Latch Assembly



236825 – Hinge Rod (46" Long)



234589 – Hinge Bracket



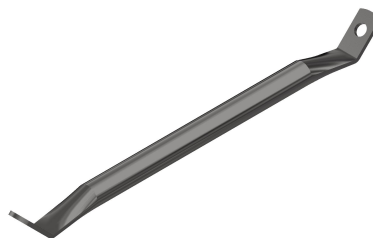
213061 – Self Closing Gate Door



234590 – Lock Bracket



213376 – Self Closing Gate Latch

213011 – Lateral Brace
(0.815" Dia x 15-3/4" Long)

7. Limited Warranty: Westeel Grain Bin Products

Westeel – Ag Growth International ("Westeel") warrants products that it has manufactured and/or that are branded with its name (the "goods") subject to the following terms and limitations, (the "warranty"):

Duration of Warranty

This warranty will run from the date of purchase from the dealer or distributor, authorized by Westeel. The duration of the warranty is limited as follows:

Galvanized Bins	5 years
EasyFlow2	24 months
Westeel Fans	36 months
Floors	12 months
Catwalk	12 months
Bulk Feed Tanks	24 months
SeedStor-K Cones	
Paint	12 months
Structural	30 months
Elite Cones	
Paint	30 months
Structural	10 years
WESTEEL cones	
Paint	No Warranty
Structural	12 months
Smooth Wall Bins	
Paint	60 months
Structural	10 years
Commercial Smooth Wall Bins	
Paint	12 months
Structural	10 years

Limitation of Remedies Replacement

Within the warranty period, Westeel will replace the goods and/or original manufactured components thereof which are found, to Westeel's satisfaction, to be defective. Westeel is not responsible for direct, indirect, special, consequential, or any other damages of any kind, including personal injury to any individual, howsoever caused, including caused by transportation of the goods for repair or replacement.

Procedure for Obtaining Service

In the event of a warranty claim, the purchaser must complete any and all information required by Westeel in order to properly assess or investigate the claim. Westeel will not be responsible for the removal of any of the goods found to be defective, or transportation charges to and from Westeel's authorized dealer or distributor, or for installation of any replacement goods and/or parts furnished under the warranty.

Limitations as to Scope of Warranty

The warranty does not extend to defects or damage caused, in whole or in part, by:

1. use of a kind and/or to a degree not reasonably expected to be made of the goods;
2. improper storage of the goods both prior to and after purchase;
3. damage caused by, or in the course of, installation or assembly;
4. any use of the goods which is not an intended use as specified in Westeel's published product literature, or otherwise specified by Westeel in writing;
5. any equipment attached to or used in conjunction with the goods;
6. any field modifications or substitutions to original bin components;
7. inadequate ventilation or any other circumstance not in keeping with proper maintenance and/or use of the goods;
8. Acts of God, accident, neglect or abuse of the goods by the purchaser and/or any other individual or entity; or
9. Any use or installation inconsistent with Westeel's Standard Disclaimers.

Limitations as to Manufacturer

The warranty does not cover products sold by Westeel that are not manufactured by Westeel. In those circumstances, the purchaser is referred to the manufacturer of those products.

Limitation of Implied Warranties and Other Remedies

To the extent allowed by law, neither Westeel nor its dealers, nor any company affiliated with Westeel makes any warranties, representations, or promises as to the quality, performance, or freedom from defect of any Product covered by this Warranty.

WESTEEL HEREBY DISCLAIMS, TO THE EXTENT APPLICABLE, ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. A PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THIS WARRANTY ARE THOSE SET FORTH IN THIS WARRANTY. IN NO EVENT WILL WESTEEL, ITS DEALERS, OR ANY COMPANY AFFILIATED WITH WESTEEL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES.

Some jurisdictions do not allow waivers of certain warranties, so the above waivers may not apply to you. In that event, any implied warranties are limited in duration to ninety (90) days from delivery of the products. You may also have other rights which vary from jurisdiction to jurisdiction.

Exclusive Warranty

This warranty is the only warranty provided by Westeel and all other warranties and/or commitments, whether express or implied and no matter by whom made, statutory or otherwise, are subsumed and replaced by it and are of no legal effect. If any provision of the warranty is held by a court of

competent jurisdiction to be void or unenforceable, in whole or in part, such provision shall be deemed severable and will not affect or impair the legal validity of any other provision of the warranty.



450 Desautels Street
P.O. Box 792
Winnipeg, Manitoba, R3C 2N5 Canada
Phone: 1-888-937-8335

Website: www.aggrowth.com
Email: customerservice.winnipeg@westeel.com
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