

# Top Dry Ladders, Safety Cage, and Platforms

Assembly Manual

**PNEG-1877**

**Date: 04-04-12**

GSI GROUP



PNEG-1877

**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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# Contents

<b>Chapter 1</b>	<b>Top Dry Ladder and Platform Layouts.....</b>	<b>5</b>
	Available Top Dry Ladder and Platform Packages .....	5
	5 Ring Top Dry Platform and Ladder Packages .....	6
	7 Ring Top Dry Platform and Ladder Packages .....	7
	8 Ring Top Dry Platform and Ladder Packages .....	8
	9 Ring Top Dry Platform and Ladder Packages .....	9
	10 Ring Top Dry Platform and Ladder Packages.....	10
	11 Ring Top Dry Platform and Ladder Packages.....	11
	12 Ring Top Dry Platform and Ladder Packages.....	12
<b>Chapter 2</b>	<b>Ladders .....</b>	<b>13</b>
	Ladder Extension Rail Installation .....	13
	Ladder Section Assembly.....	14
	Ladder Standoff Bracket Detail .....	15
<b>Chapter 3</b>	<b>Eave Platform .....</b>	<b>17</b>
	Eave Platform Mounting Angle Location .....	17
	Eave Starter Bracket and Ladder Assembly .....	19
	Eave Platform Assembly .....	20
	Adjustable Eave Braces .....	21
	Top Dry Eave Platform Parts.....	22
<b>Chapter 4</b>	<b>Storage Chamber Platform .....</b>	<b>25</b>
	Storage Chamber Platform Assembly .....	25
	Storage Chamber Platform Parts .....	26
	Extension Angle Hole Detail .....	28
<b>Chapter 5</b>	<b>Safety Cage Assembly.....</b>	<b>29</b>
	Adapter Assembly Detail .....	29
	Connection Detail .....	29
	Intermediate Safety Cage Hoop Assembly.....	30
	Safety Cage Hoop Bracket Detail.....	31
	Safety Cage Vertical Supports .....	32
	Safety Cage Sections .....	32
	48" Safety Cage Bell Section .....	33

# NOTES

# 1 Top Dry Ladder and Platform Layouts

## Topics Covered in this Chapter

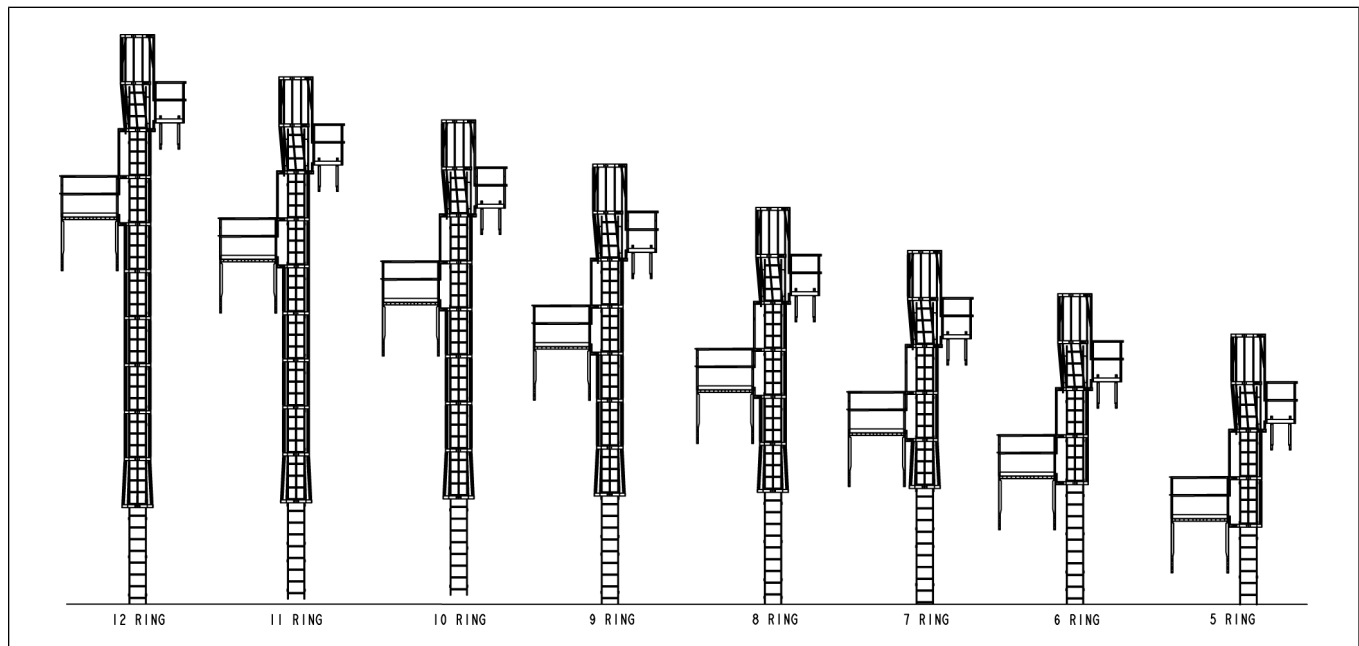
- Available Top Dry Ladder and Platform Packages
- 5 Ring Top Dry Platform and Ladder Packages
- 7 Ring Top Dry Platform and Ladder Packages
- 8 Ring Top Dry Platform and Ladder Packages
- 9 Ring Top Dry Platform and Ladder Packages
- 10 Ring Top Dry Platform and Ladder Packages
- 11 Ring Top Dry Platform and Ladder Packages
- 12 Ring Top Dry Platform and Ladder Packages

## Available Top Dry Ladder and Platform Packages

Ladder and Platform packages are available for Top Dry systems ranging in size from 5 Rings to 12 Rings. Packages include ladders, eave platform, storage chamber platform and safety cages.

**NOTE:** *Platforms may be installed on either left or right side of ladder as long as platforms are on opposite sides of the ladder.*

**Figure 1-1** Available Ladder and Platform Packages



### 5 Ring Top Dry Platform and Ladder Packages

Figure 1-2 5 Ring Top Dry Package Locations

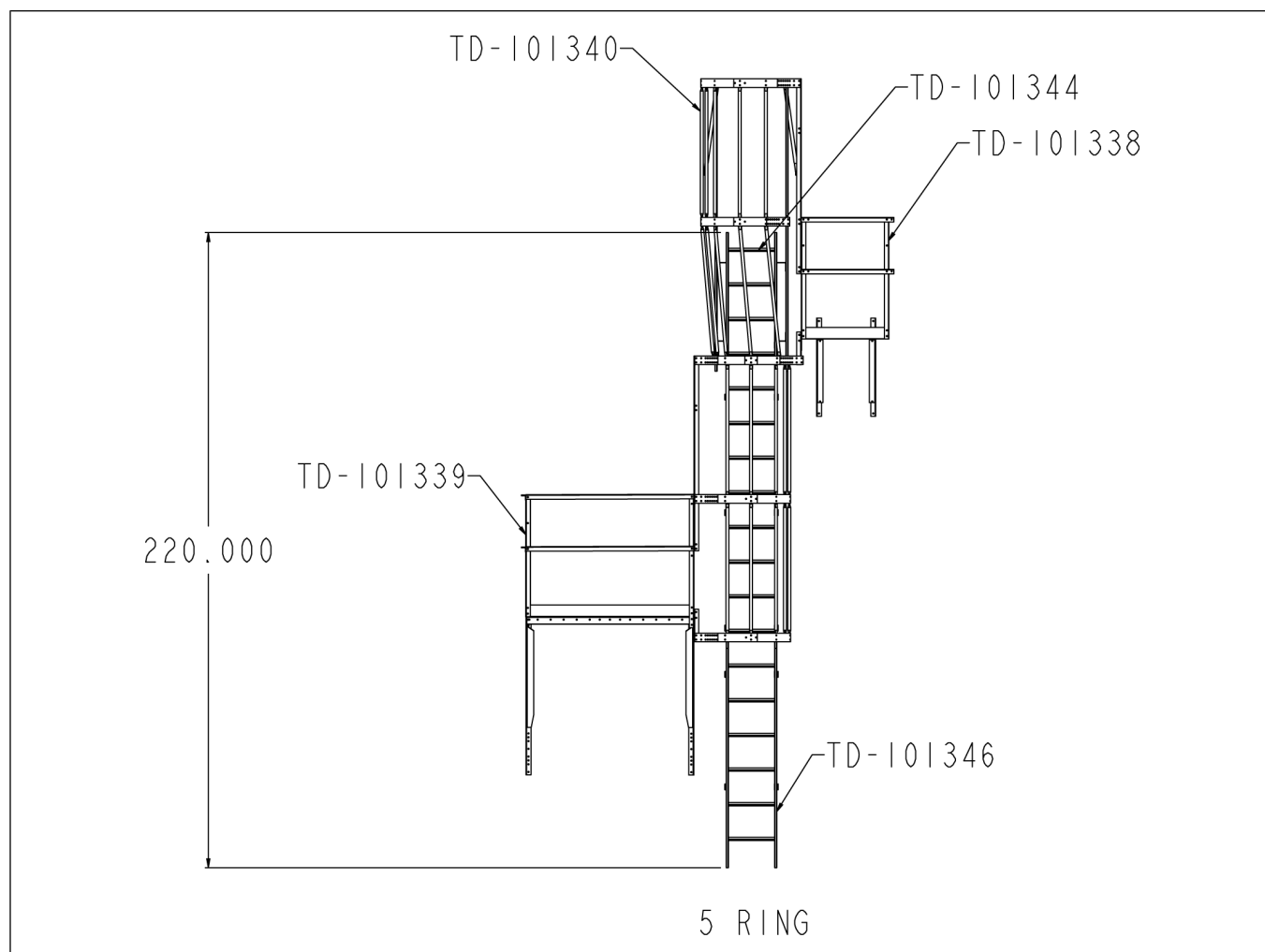


Table 1-1 5 Ring Top Dry Packages

Callout	Description	Quantity
TD-101338	Top Dry Eave Platform	1
TD-101339	Top Dry STORAGE CHAMBER PLATFORM	1
TD-101340	Top Dry Platform Cage Package	1
TD-101344	Top Dry Ladder Package (12')	1
TD-101346	8' Ladder Package	1

## 7 Ring Top Dry Platform and Ladder Packages

Figure 1-3 7 Ring Top Dry Package Locations

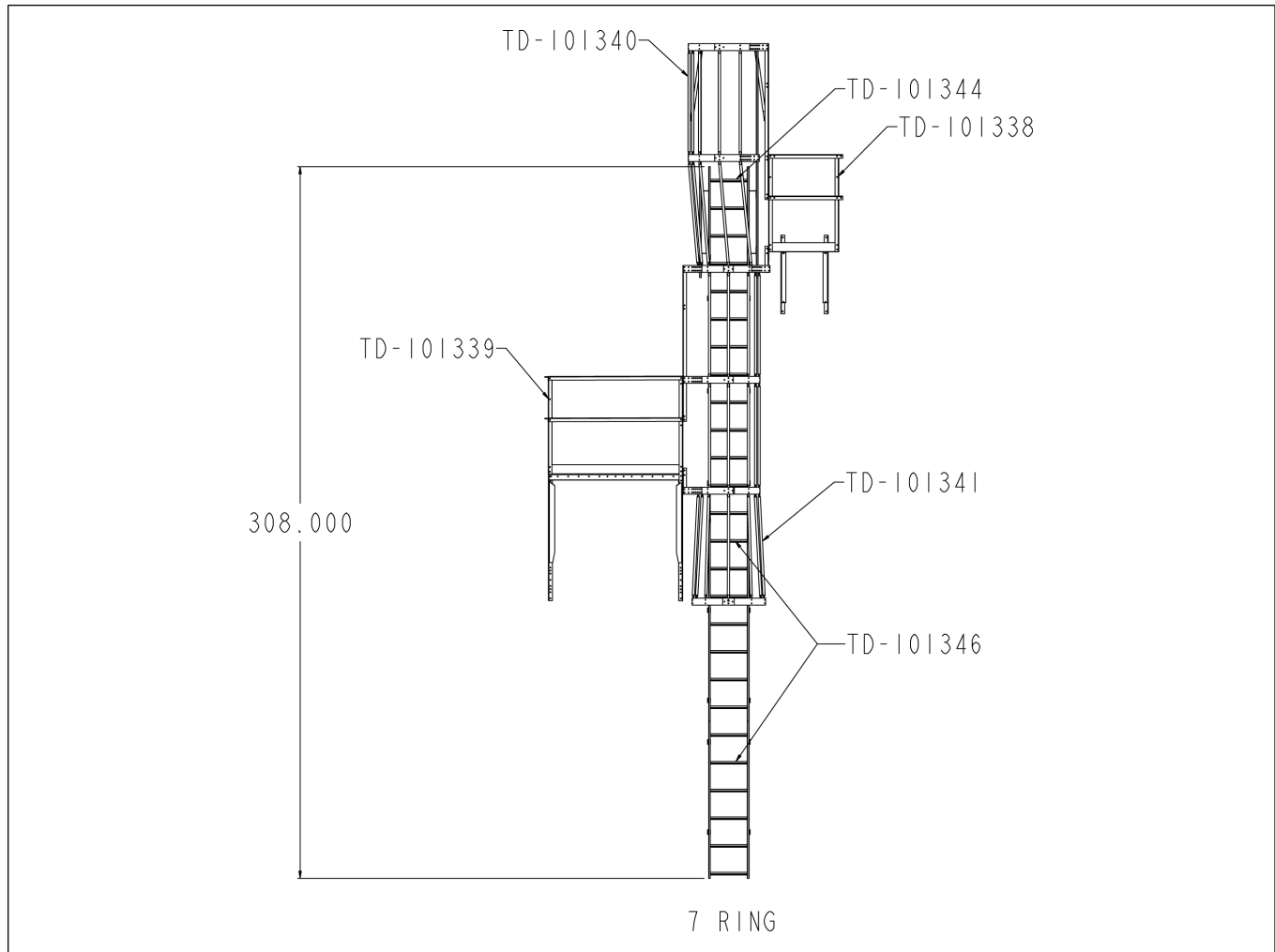
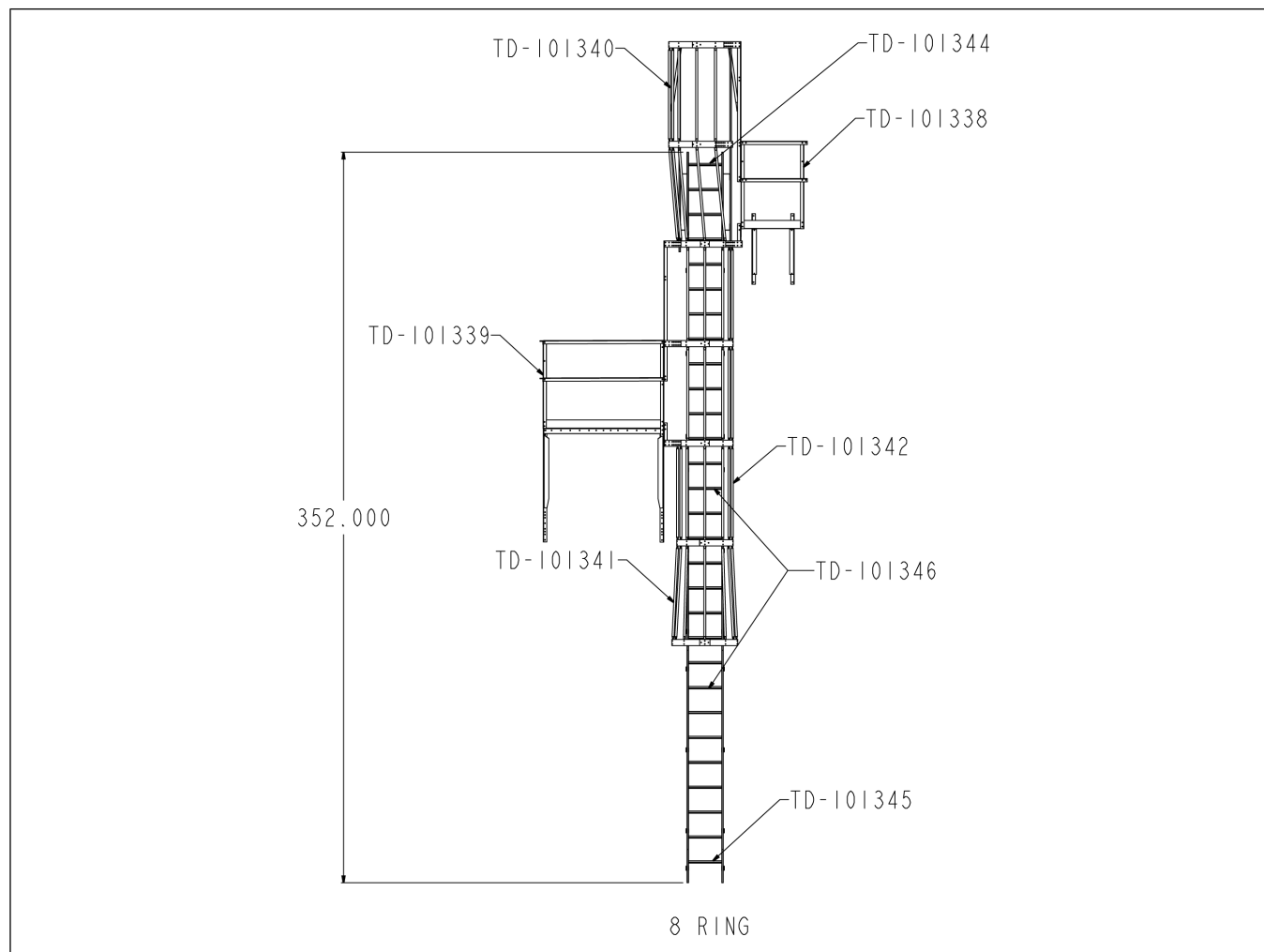


Table 1-2 7 Ring Top Dry Packages

Callout	Description	Quantity
TD-101338	Top Dry Eave Platform	1
TD-101339	Top Dry STORAGE CHAMBER PLATFORM	1
TD-101340	Top Dry Platform Cage Package	1
TD-101344	Top Dry Ladder Package (12')	1
TD-101345	4' Standard Ladder Package	1
TD-101346	8' Ladder Package	1

### 8 Ring Top Dry Platform and Ladder Packages

**Figure 1-4** 8 Ring Top Dry Package Locations



**Table 1-3** 8 Ring Top Dry Packages

Callout	Description	Quantity
TD-101338	Top Dry Eave Platform	1
TD-101339	Top Dry STORAGE CHAMBER PLATFORM	1
TD-101340	Top Dry Platform Cage Package	1
TD-101341	4' Bell Package	1
TD-101342	4' Safety Cage	1
TD-101344	Top Dry Ladder Package (12')	1
TD-101345	4' Standard Ladder Package	1
TD-101346	8' Ladder Package	2



## 9 Ring Top Dry Platform and Ladder Packages

Figure 1-5 9 Ring Top Dry Package Locations

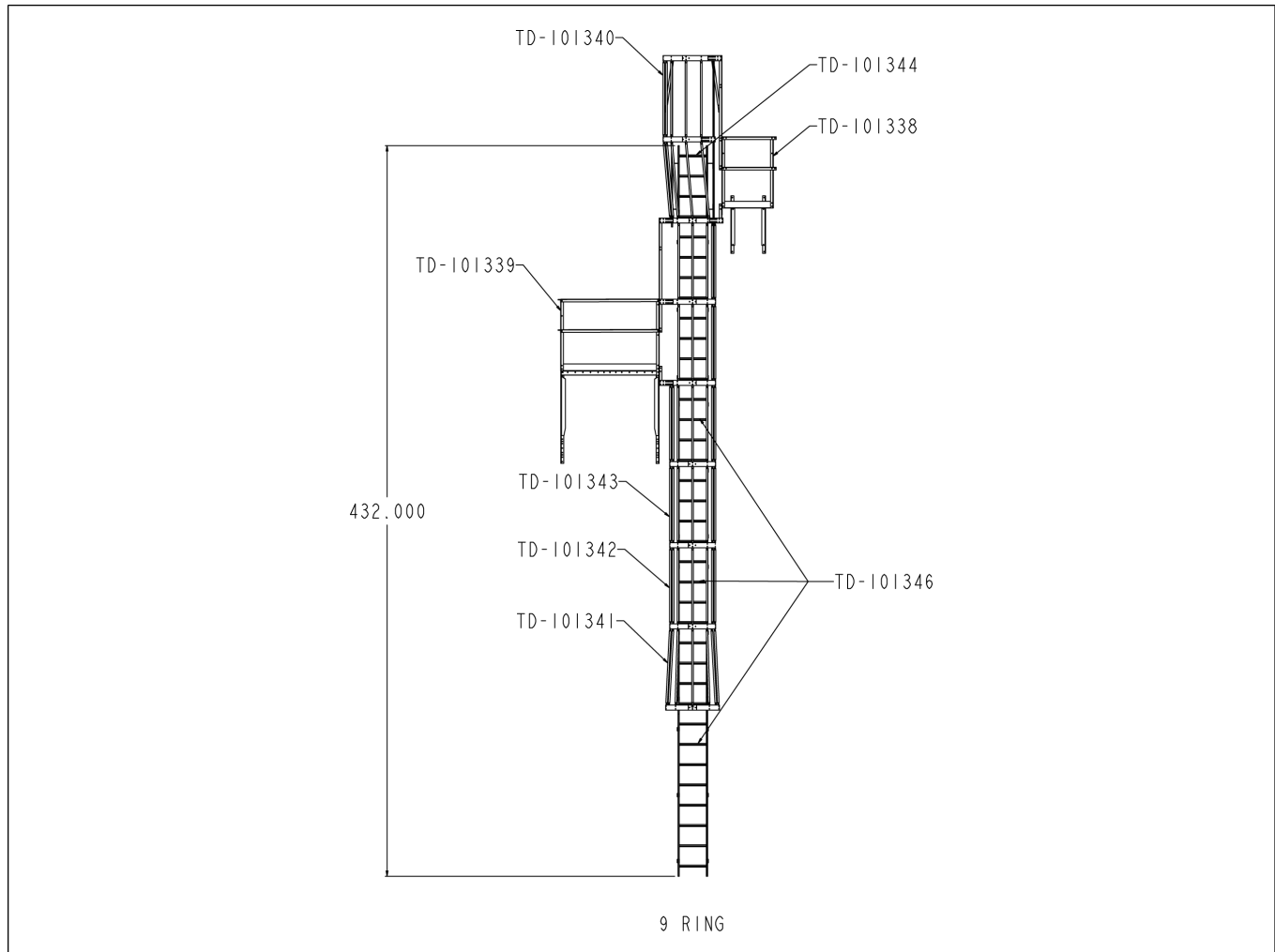
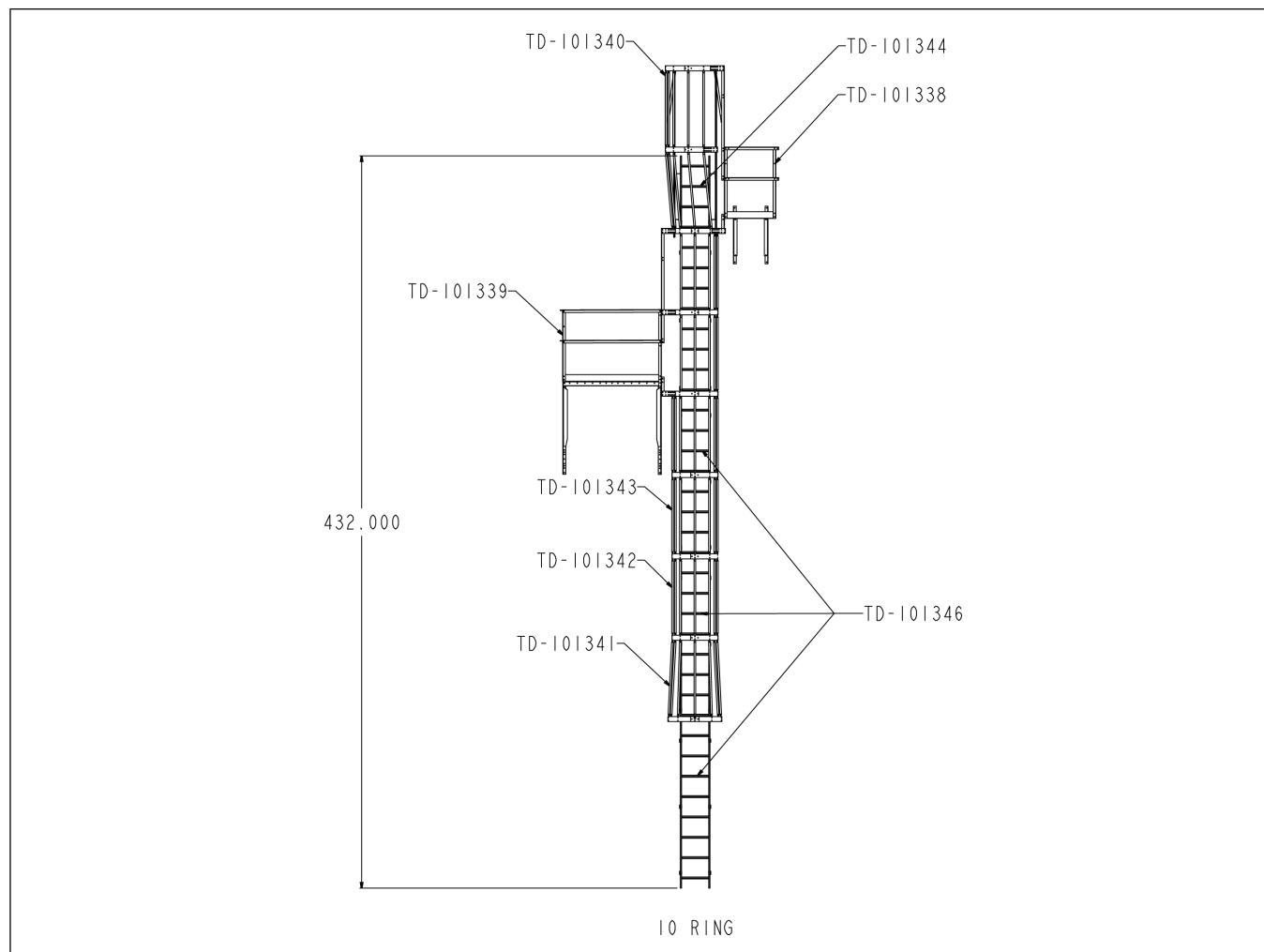


Table 1-4 9 Ring Top Dry Packages

Callout	Description	Quantity
TD-101338	Top Dry Eave Platform	1
TD-101339	Top Dry STORAGE CHAMBER PLATFORM	1
TD-101340	Top Dry Platform Cage Package	1
TD-101341	4' Bell Package	1
TD-101342	4' Safety Cage	1
TD-101343	8' Standard Safety Cage	1
TD-101344	Top Dry Ladder Package (12')	1
TD-101346	8' Ladder Package	3

### 10 Ring Top Dry Platform and Ladder Packages

**Figure 1-6** 10 Ring Top Dry Package Locations



**Table 1-5** 10 Ring Top Dry Packages

Callout	Description	Quantity
TD-101338	Top Dry Eave Platform	1
TD-101339	Top Dry STORAGE CHAMBER PLATFORM	1
TD-101340	Top Dry Platform Cage Package	1
TD-101341	4' Bell Package	1
TD-101342	4' Safety Cage	1
TD-101343	8' Standard Safety Cage	1
TD-101344	Top Dry Ladder Package (12')	1
TD-101346	8' Ladder Package	3

## 11 Ring Top Dry Platform and Ladder Packages

Figure 1-7 11 Ring Top Dry Package Locations

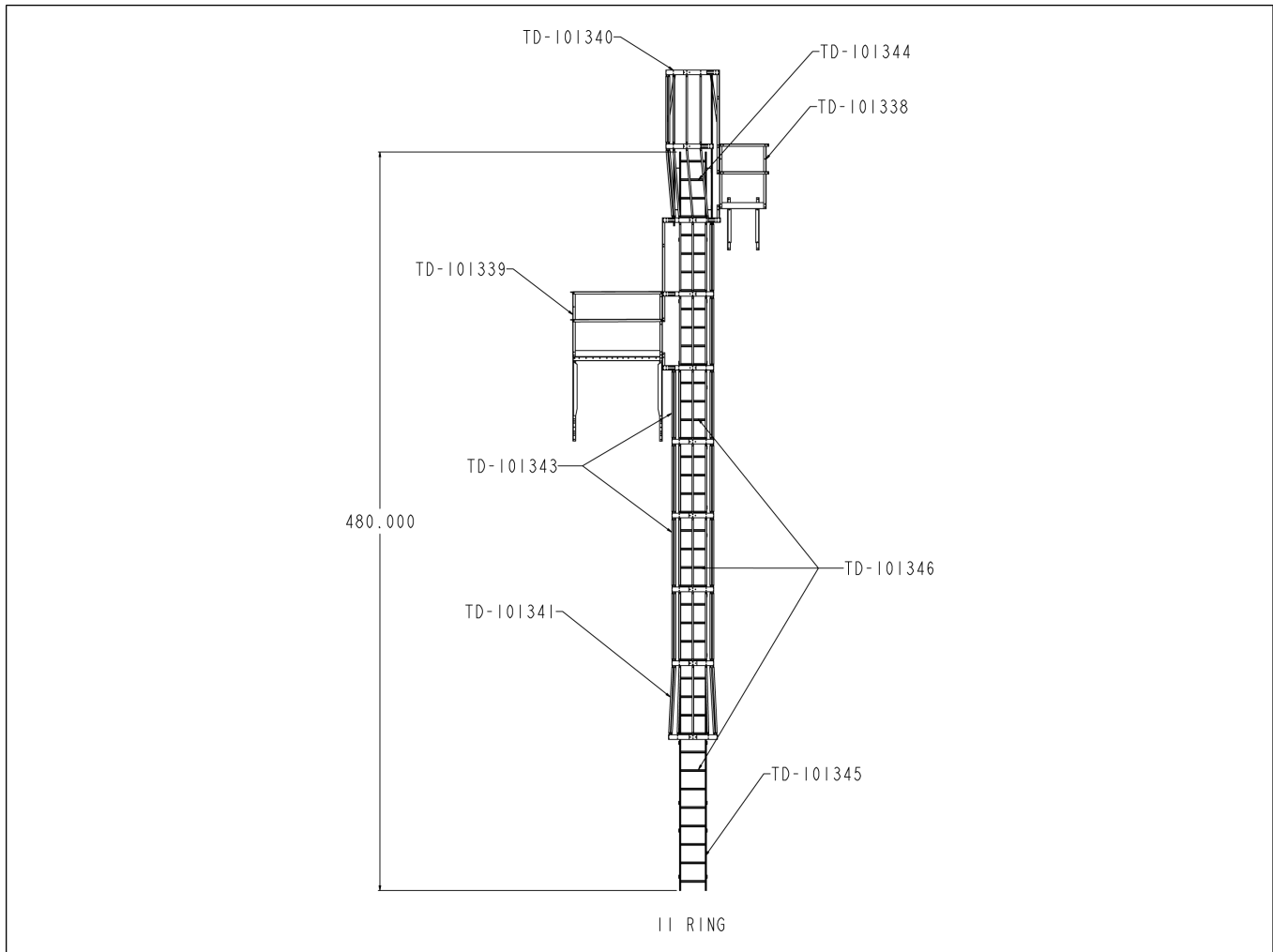
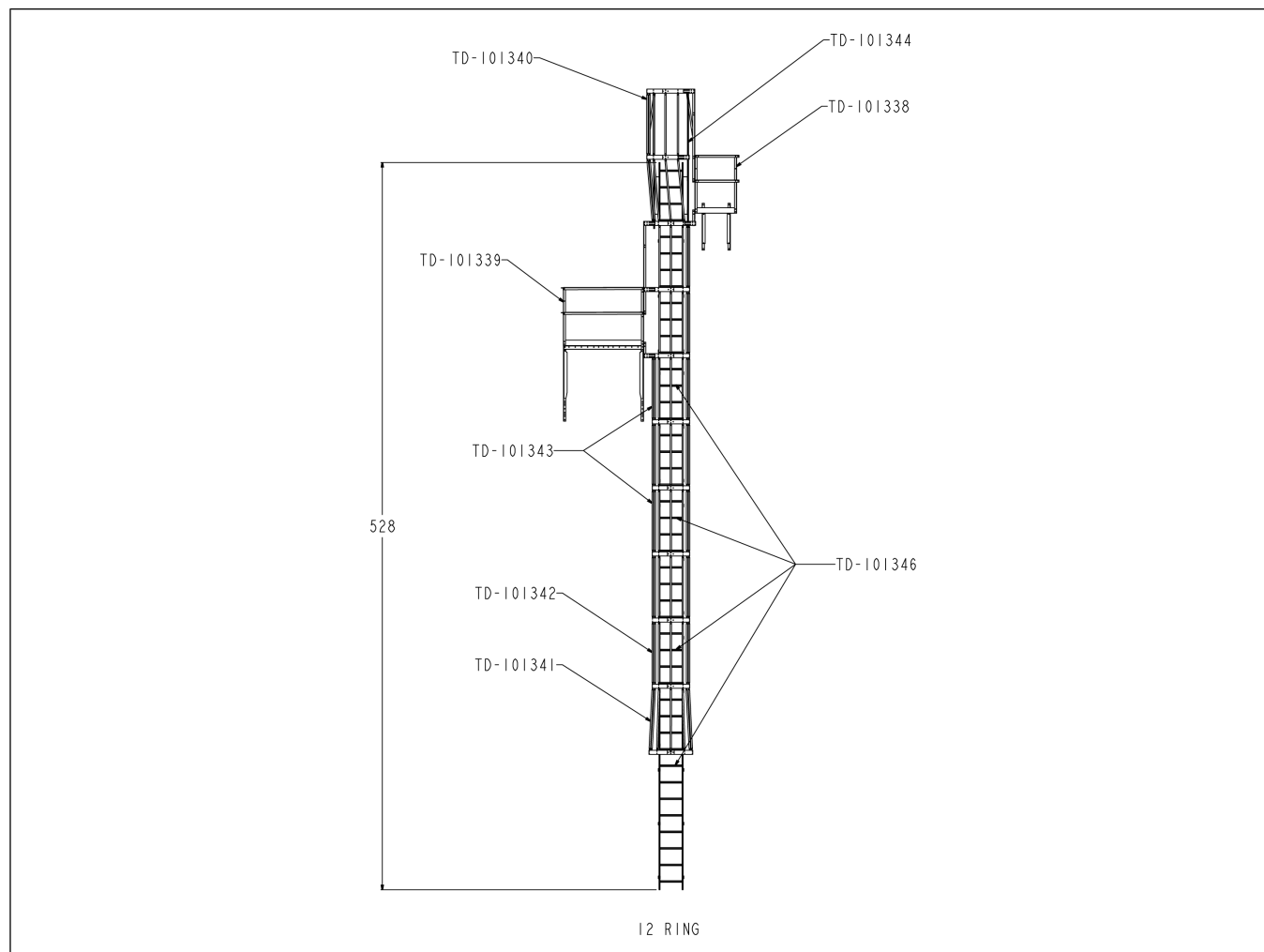


Table 1-6 11 Ring Top Dry Packages

Callout	Description	Quantity
TD-101388	Top Dry Eave platform	1
TD-101339	Top Dry Storage Chamber Platform	1
TD-10140	TopDry Platform Cage Package	1
TD-101341	4' Bell Package	1
TD-101343	8' Standard Safety Cage	2
TD-101344	Top Dry Ladder Package (12')	1
TD-101345	4' Standard Ladder Package	1
TD-101346	8' Ladder Package	3

### 12 Ring Top Dry Platform and Ladder Packages

**Figure 1-8** 12 Ring Top Dry Package Locations



**Table 1-7** 12 Ring Top Dry Packages

Callout	Description	Quantity
TD-101338	Top Dry Eave Platform	1
TD-101339	Top Dry STORAGE CHAMBER PLATFORM	1
TD-101340	Top Dry Platform Cage Package	1
TD-101341	4' Bell Package	1
TD-101342	4' Standard Safety Cage	1
TD-101343	8' Standard Safety Cage	2
TD-101344	Top Dry Ladder Package (12')	1
TD-101346	8' Ladder Package	4

# 2 Ladders

## Topics Covered in this Chapter

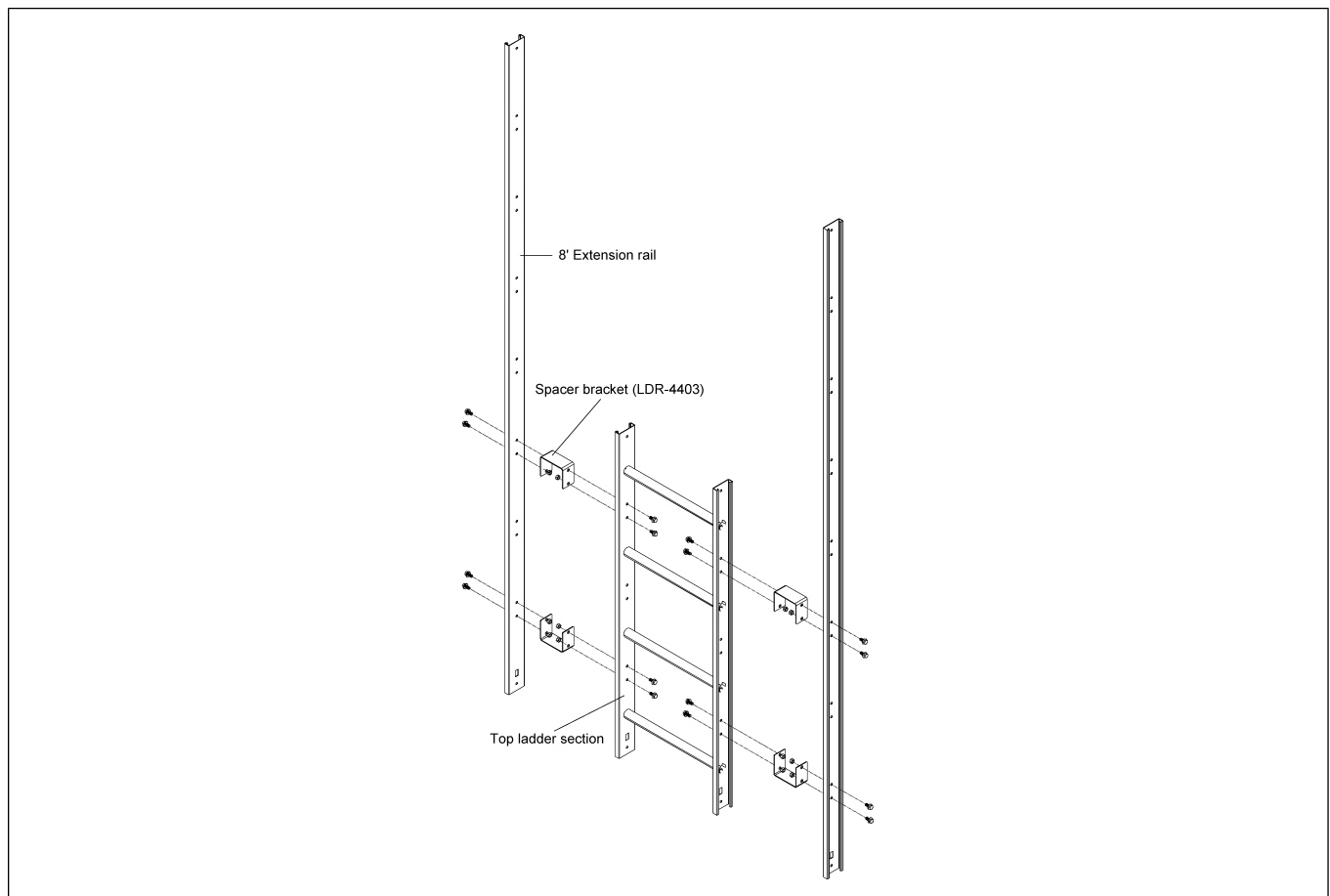
- Ladder Extension Rail Installation
- Ladder Section Assembly
- Ladder Standoff Bracket Detail

## Ladder Extension Rail Installation

All ladder systems that include a safety cage must also include ladder extension rails attached to the top 4' ladder section.

1. Bolt spacer brackets through the top and bottom set of holes in the top ladder section
2. Attach the extension rails to the spacer brackets aligning the bottom of the extension flush with the bottom of the top ladder section.
3. Fasten with 5/16" x 3/4" bin bolts.

**Figure 2-1** *Ladder Extension Rail*

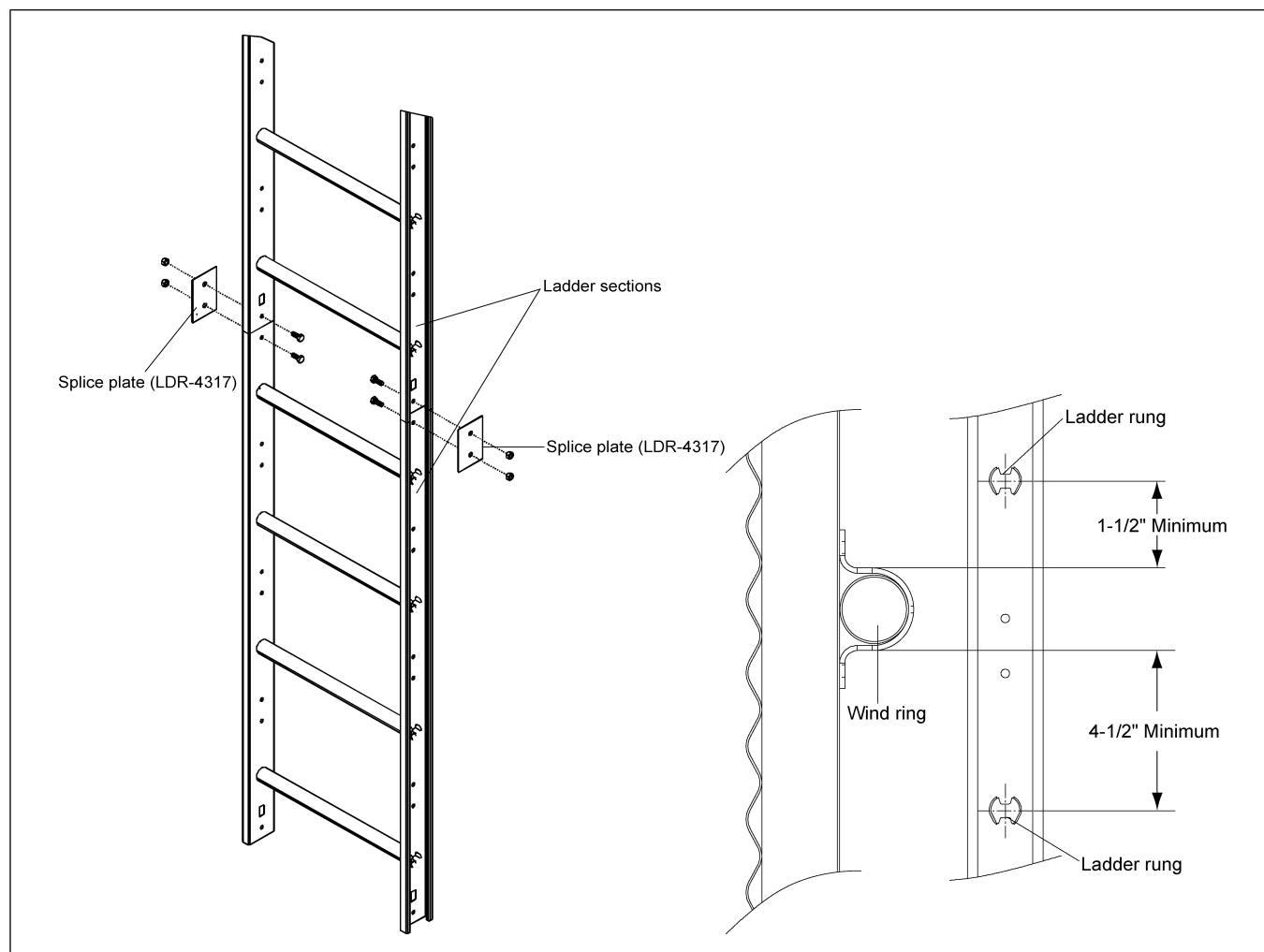


### Ladder Section Assembly

1. Attach two (2) splice plates (LDR-4317) to the ends of both ladder sections, connecting them together.
2. Fasten with 5/16" x 3/4" bolts. The head of the bolt should be to the inside of the ladder with the splice plate on the outside.

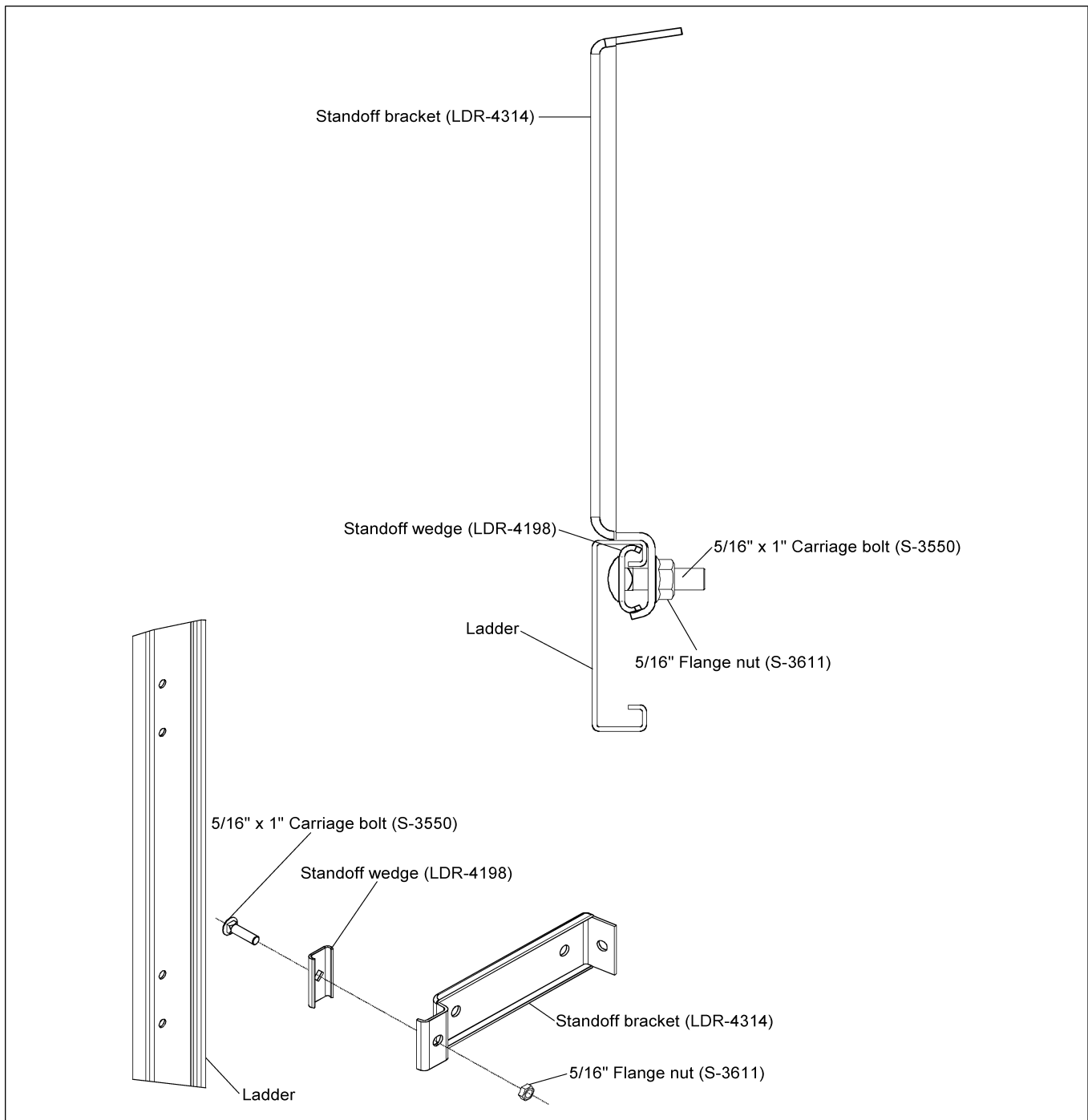
**NOTE:** *Wind rings must be installed in relation to the ladder rungs leaving a minimum of 1-1/2" below a ladder rung and 4-1/2" above a ladder rung.*

**Figure 2-2** Ladder Section Assembly



## Ladder Standoff Bracket Detail

Figure 2-3 Ladder Standoff Bracket Detail



# NOTES



# 3 Eave Platform

## Topics Covered in this Chapter

- Eave Platform Mounting Angle Location
- Eave Starter Bracket and Ladder Assembly
- Eave Platform Assembly
- Adjustable Eave Braces
- Top Dry Eave Platform Parts

## Eave Platform Mounting Angle Location

1. Locate eave platform mounting angles 9-3/8" to the right of the ladder holes.
2. Field drill 3/8" holes on 8" centers into sidewall sheets.

**Figure 3-1** Eave Platform Mounting Angles

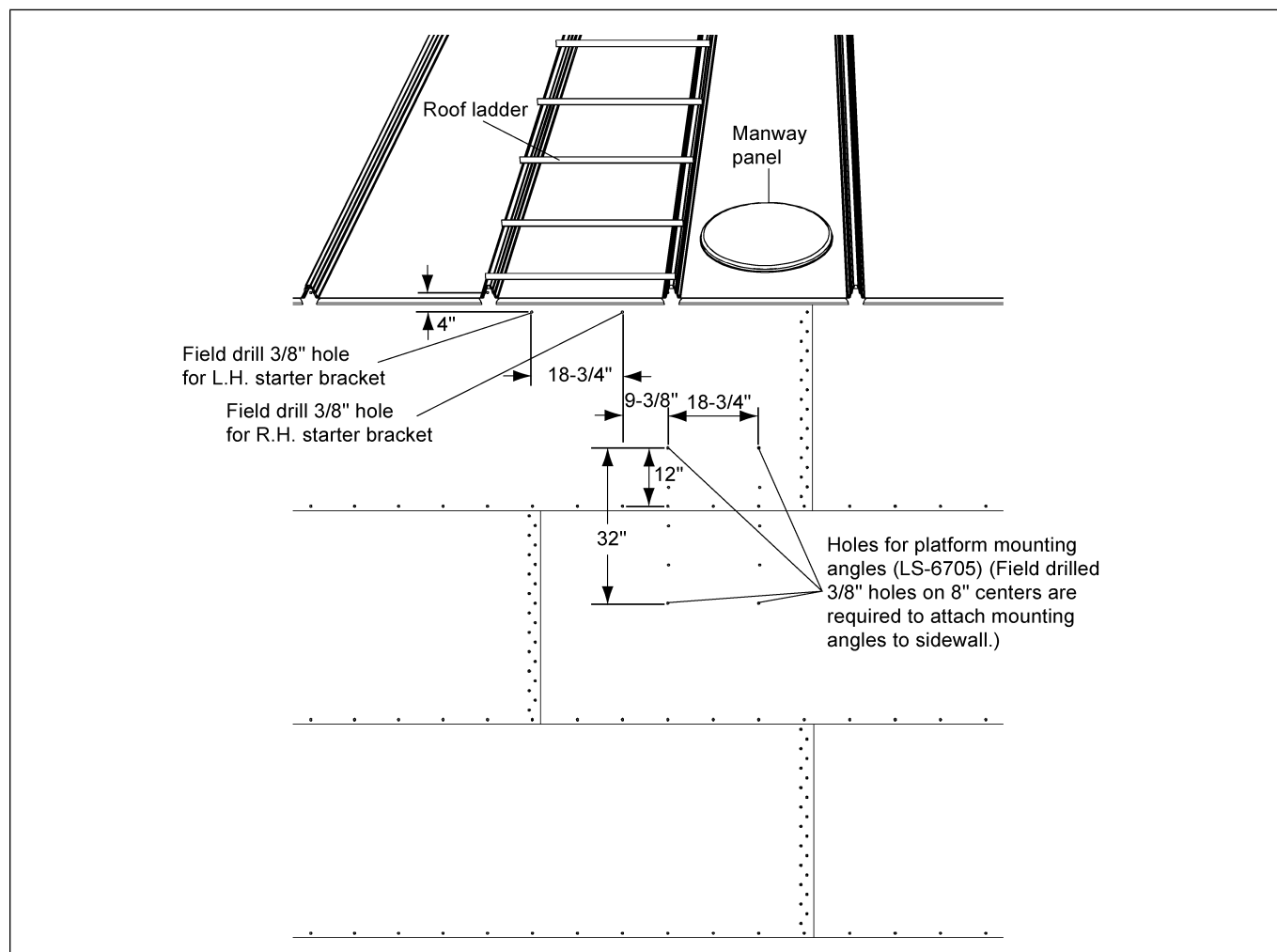
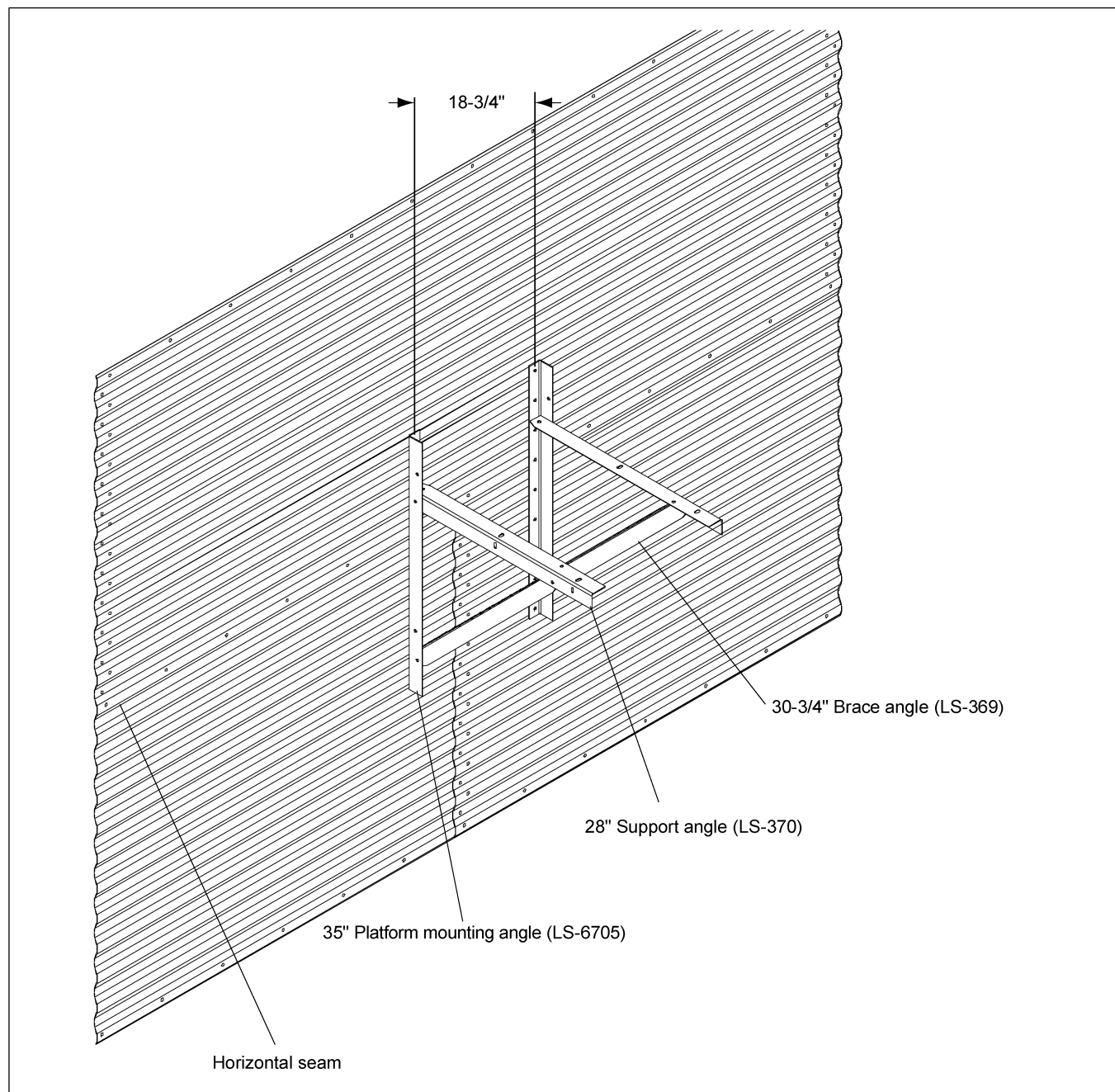


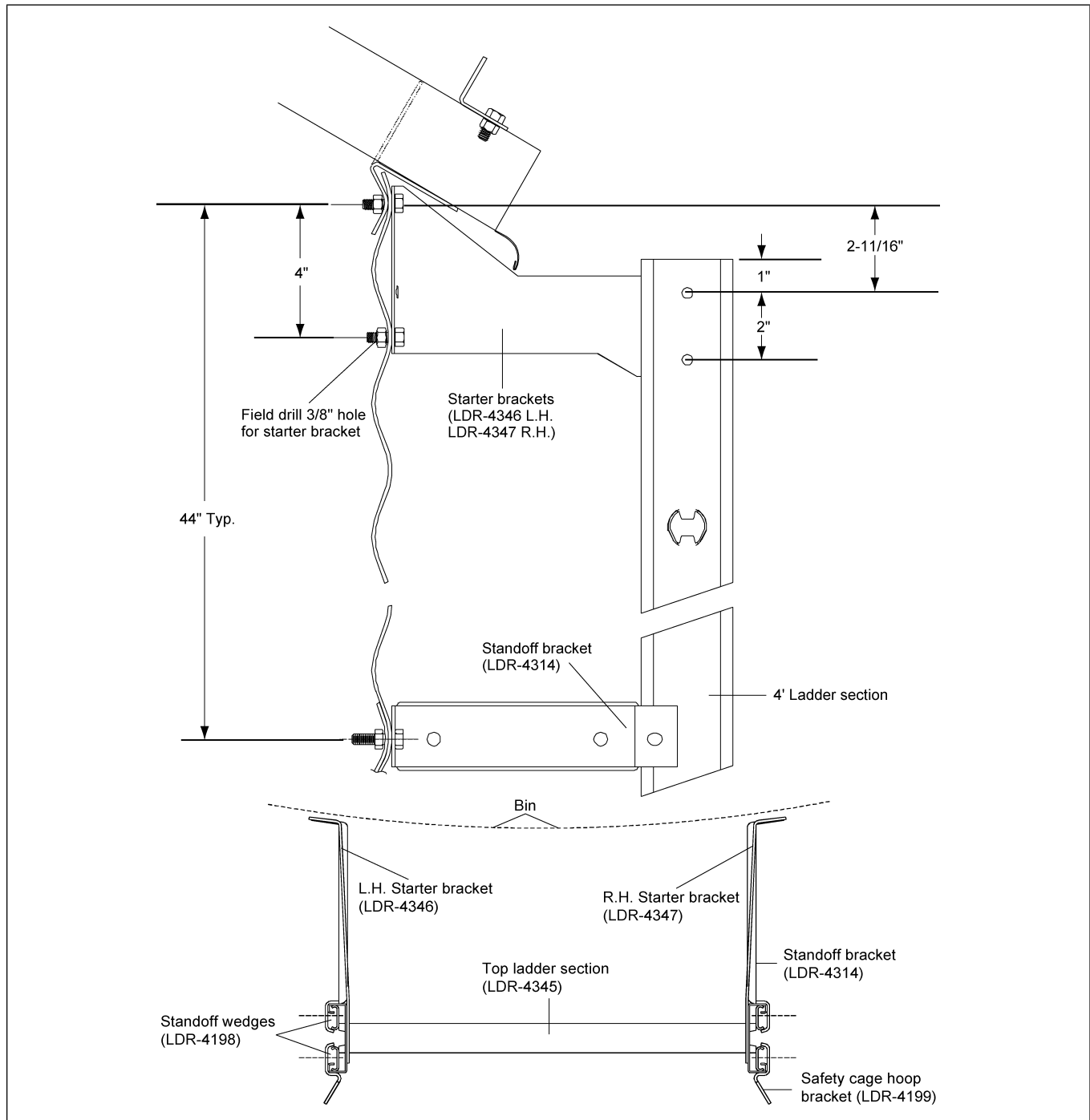
Figure 3-2 Platform Support Mounting Location



## Eave Starter Bracket and Ladder Assembly

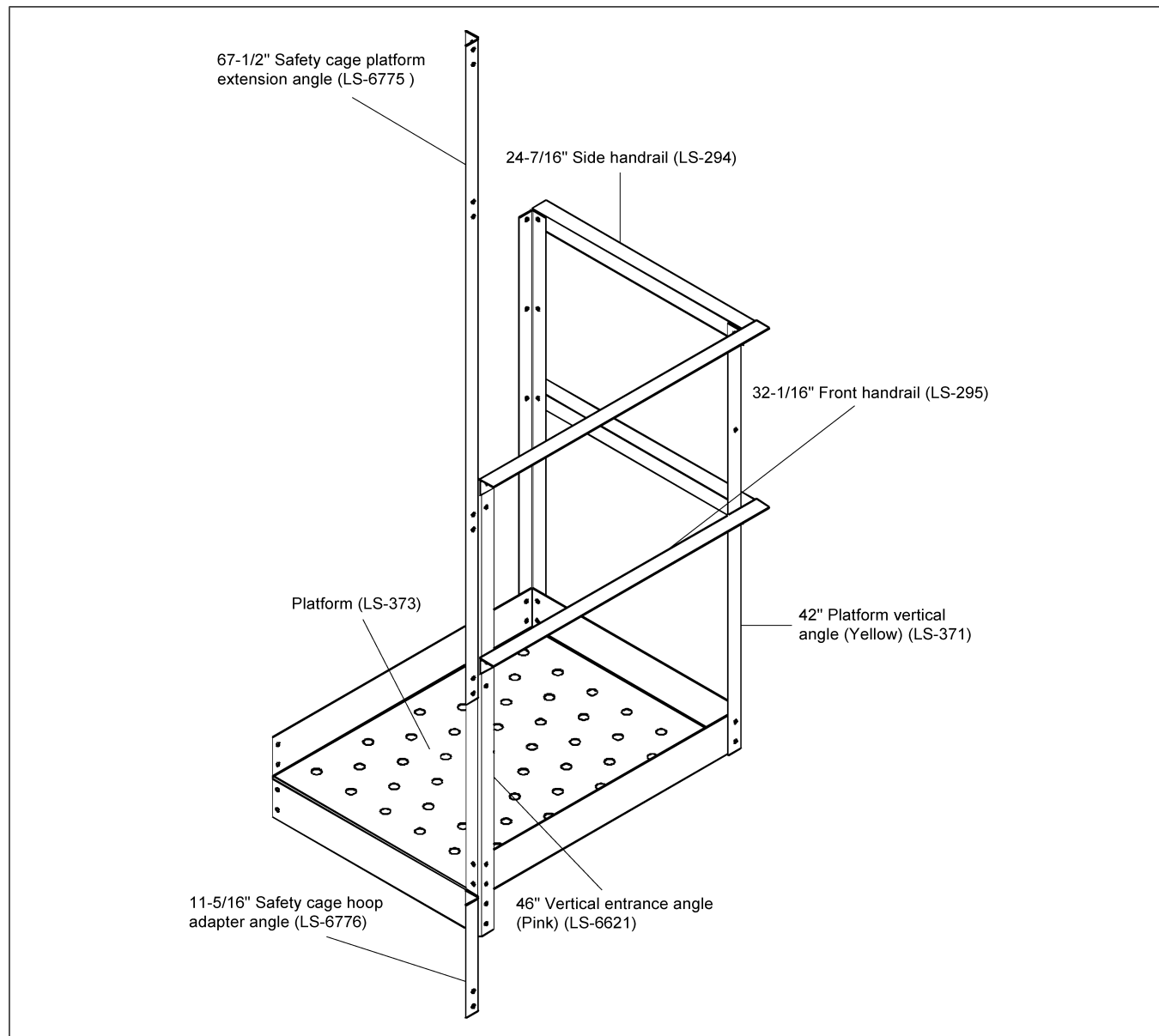
1. The ladder starter brackets must be located in line with the top horizontal seam.
2. Attach ladder to the starter brackets using the hole located 1" from top of the ladder.
3. Field drill the second 3/8" hole for the starter bracket on the ladder 2" below the hole 1" from the top of the ladder.
4. All standoff brackets must be installed every 44" and attached to each 4' ladder section required.
5. Use 5/16" x 3/4" bin bolts for these connections.

**Figure 3-3** Eave Starter Bracket for Ladders



### Eave Platform Assembly

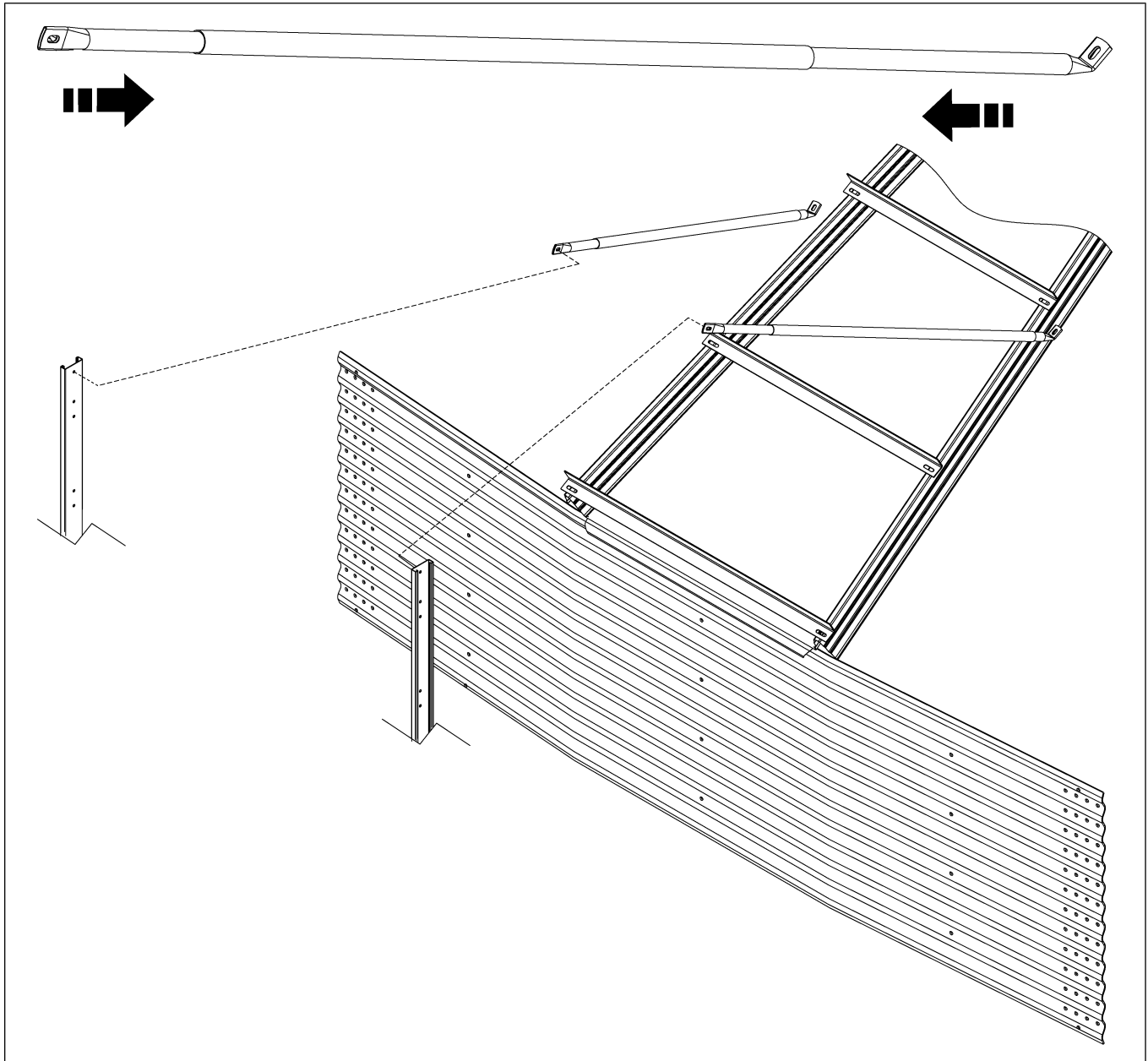
1. Attach the platform to the platform support using 5/16" x 3/4" bolts and nuts.
2. Position all the vertical angles in place, making sure to orient the vertical entrance angle to the left front corner of the platform.
3. Attach front and side handrails using 5/16" x 3/4" bolts and nuts.



## Adjustable Eave Braces

An eave adjustable brace is comprised of one large diameter tube and two (2) smaller tubes.

1. Slide the smaller tubes inside the larger tube and attach one smaller tube to the top of the ladder extension rail.
2. Adjust the other smaller tube so the bottom of the flattened tube reaches the roof panel.
3. Field drill four (4) 5/16" holes through both large and small tubes and bolt together using 1/4" x 1-1/2" bolts and nuts to prevent the adjustable braces from sliding.



### Top Dry Eave Platform Parts

Figure 3-4 Top Dry Eave Platform Parts

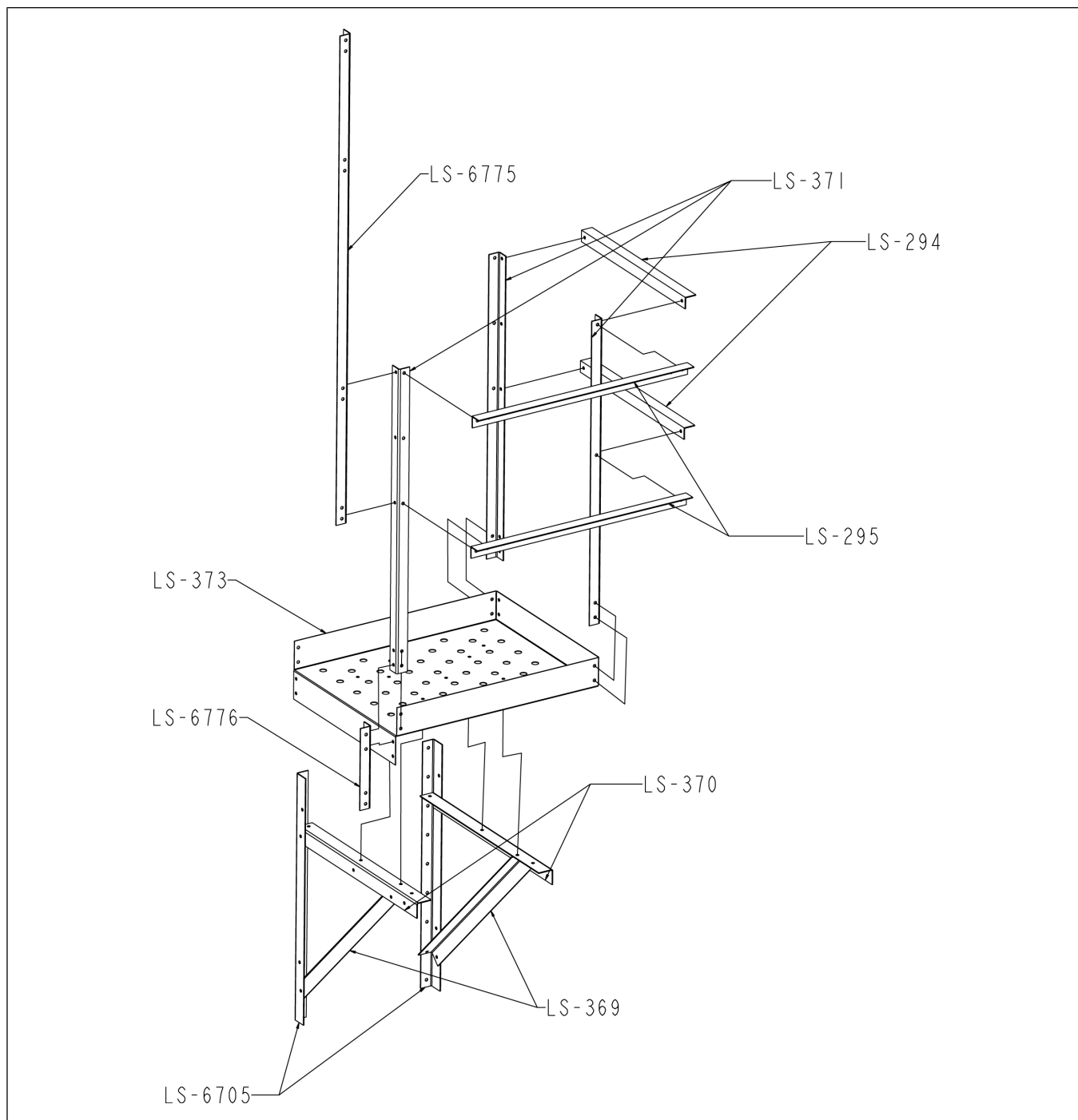


Table 3-1 Top Dry Eave Platform Parts

Component	Description
LS-6705	Platform Mounting Angle
LS-369	Brace Angle
LS-370	Support Angle
LS-373	Platform
LS-371	Platform Vertical Angle
LS-6621	Vertical Entrance Angle Extension
LS-294	End Handrail Angle
LS-295	Front Handrail Angle
LS-6776	Safety Cage Hoop Adapter Angle
LS-6775	Safety Cage Extension Angle
S-275	5/16" x 3/4" YDP Grade 5 Hex Head Bin Bolt
S-277	5/16" x 1-1/4" YDP Grade 5 Hex Head Bin Bolt
S-396	5/16" Hex Nut

# NOTES



# 4 Storage Chamber Platform

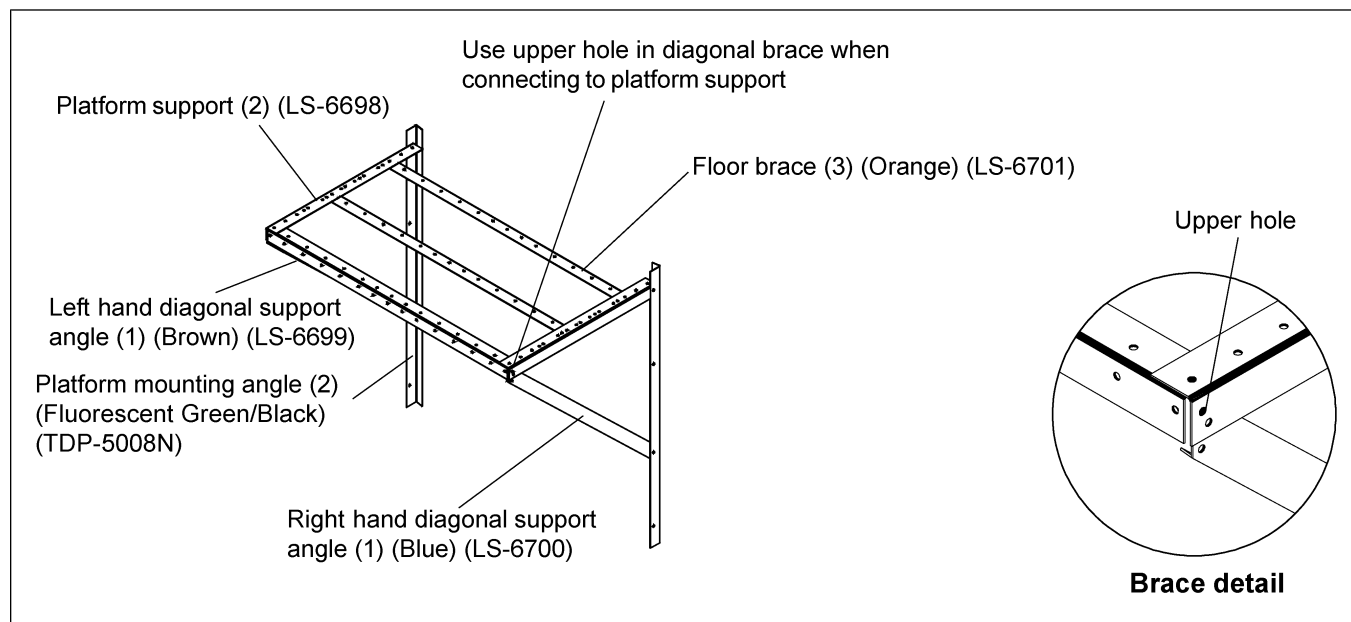
## Topics Covered in this Chapter

- Storage Chamber Platform Assembly
- Storage Chamber Platform Parts
- Extension Angle Hole Detail

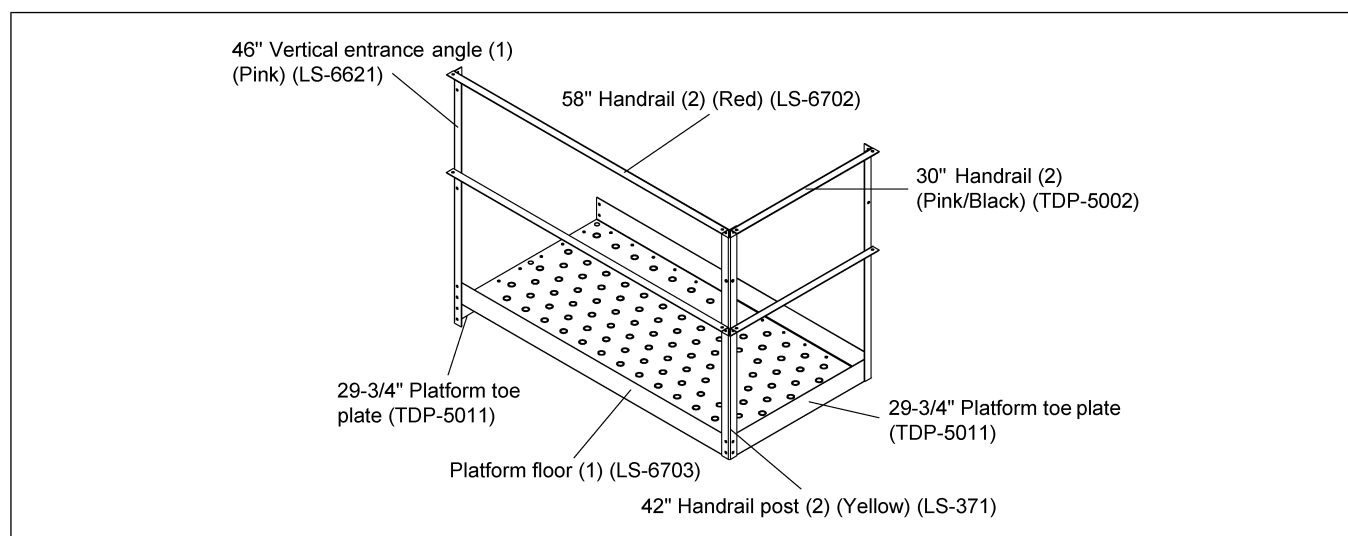
## Storage Chamber Platform Assembly

1. Use 5/16" x 3/4" truss head bolts and nuts for all connections.
2. Mount platform mounting angles to the side of the bin located 9–3/8" from the ladder and 56–1/4" apart.
3. Attach the platform supports and diagonal supports to the mounting angles.
4. Attach the three floor braces to the platform supports.
5. Attach the platform floor and toe boards simultaneously to the floor braces.
6. Bolt the vertical entrance angle to the platform floor, toe plate, and platform support.
7. Bolt the handrail posts to the platform floor and toe plates.
8. Attach the handrails to the vertical posts.

**Figure 4-1** Platform Support Details



**Figure 4-2 Assembled Platform**



## Storage Chamber Platform Parts

**Figure 4-3 Top Dry Storage Chamber Platform Parts**

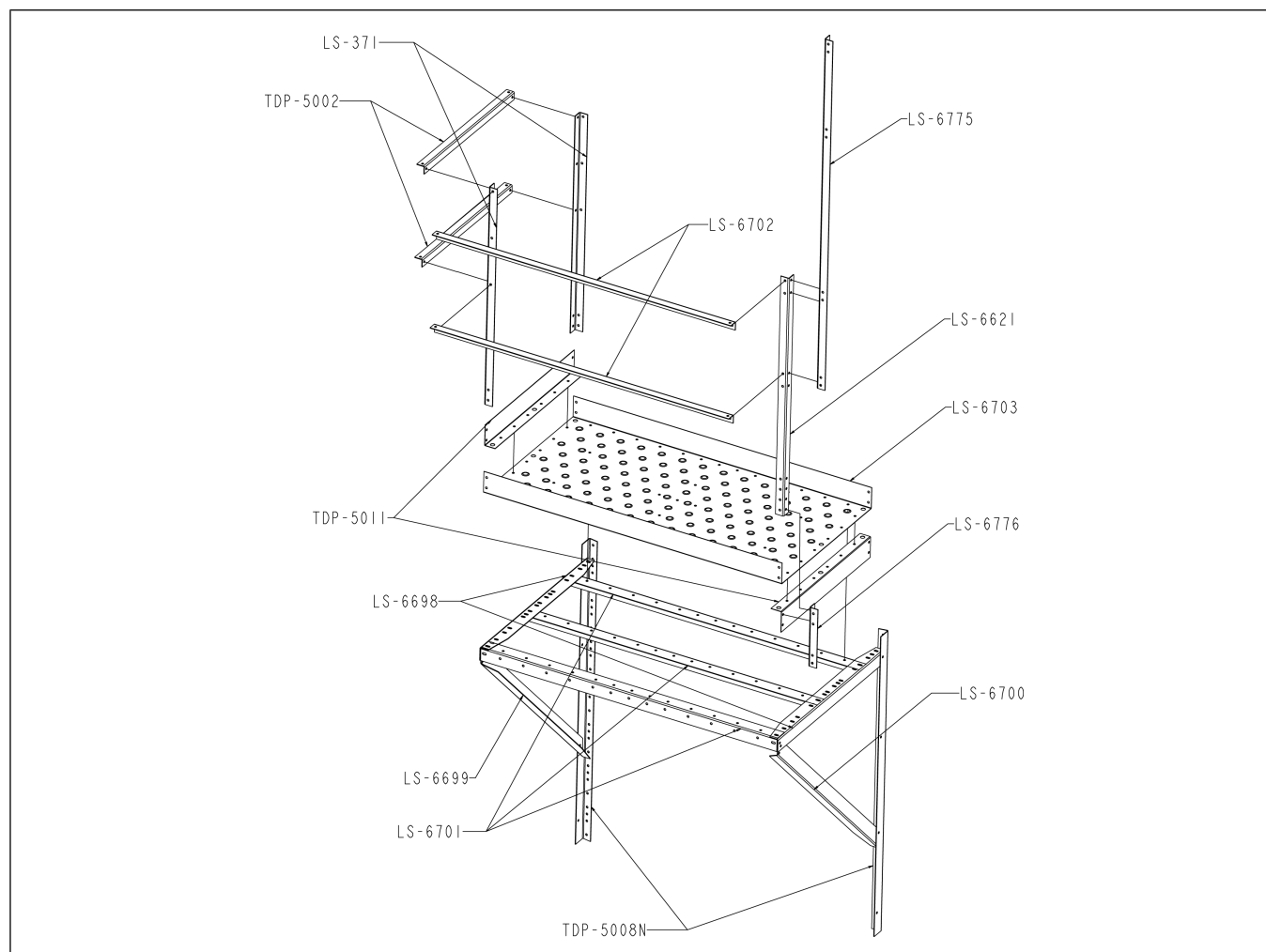
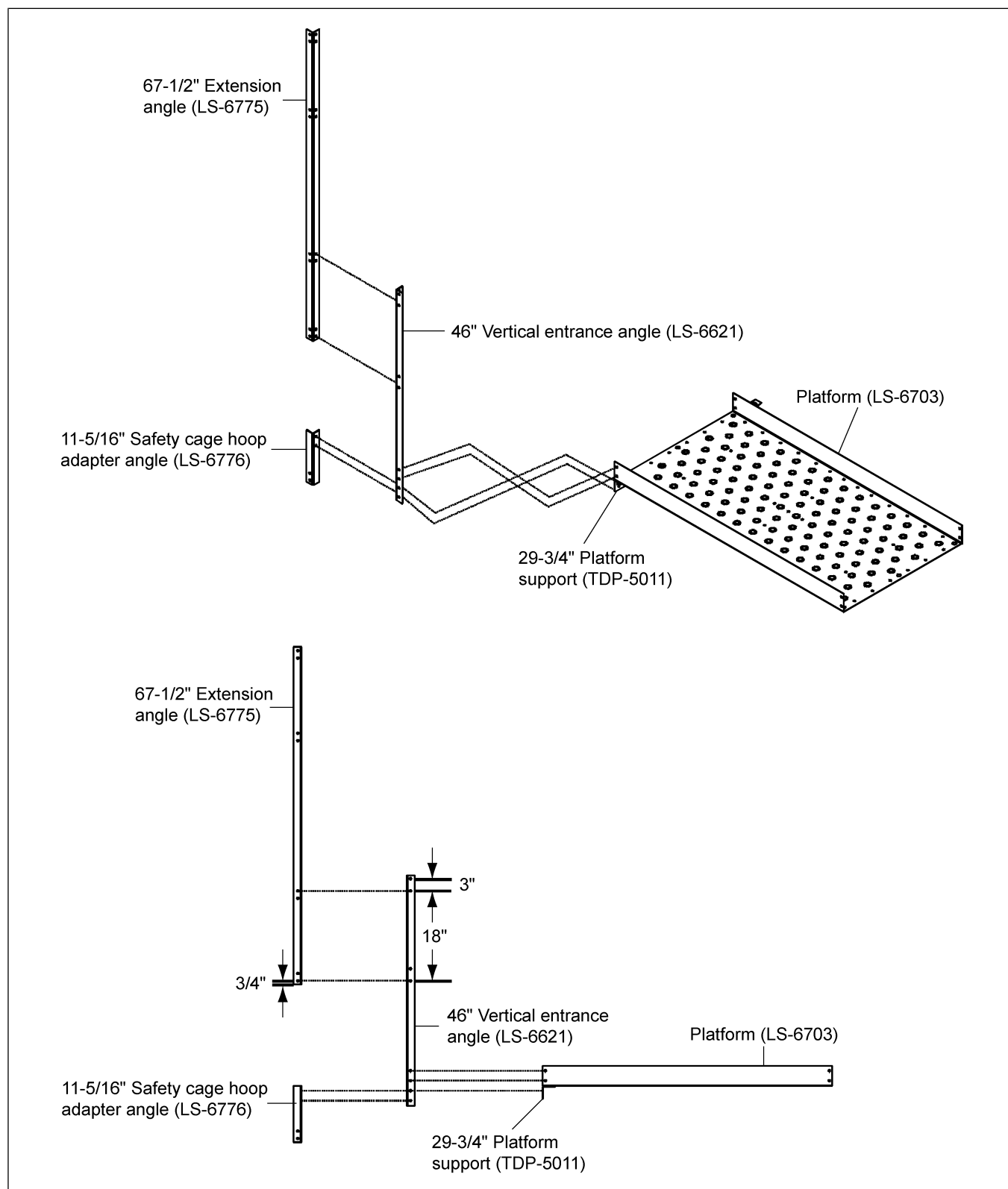


Table 4-1 Top Dry Storage Chamber Platform Parts

Component	Description
LS-6703	SINGLE PIECE PLATFORM FLOOR
LS-371	PLATFORM VERTICAL ANGLE
LS-6621	VERTICAL ENTRANCE ANGLE EXT ST
LS-6698	EXT STIFF PLATFORM SPPRT ANGLE
LS-6699	DIAG SUPPRT ANGLE LEFT HAND
LS-6700	DIAG SPRT ANGLE RIGHT HAND EXT
LS-6701	PLATFORM FLOOR BRACE
LS-6702	58" HANDRAIL TOPDRY ACESS PLTF
LS-6775	Safety Cage Extension Angle
LS-6776	Safety Cage Hoop Adapter Angle
TDP-5002	30" HANDRAIL
TDP-5008N	SIDEWALL BRACE-2.66 PLATFRM
TDP-5011	PLATFORM TOE PLATE
S-275	BOLT, HHBIN 5/16-18 X 3/4 YDP GR5
S-396	NUT, HEX 5/16-18 YDP GR2

## Extension Angle Hole Detail



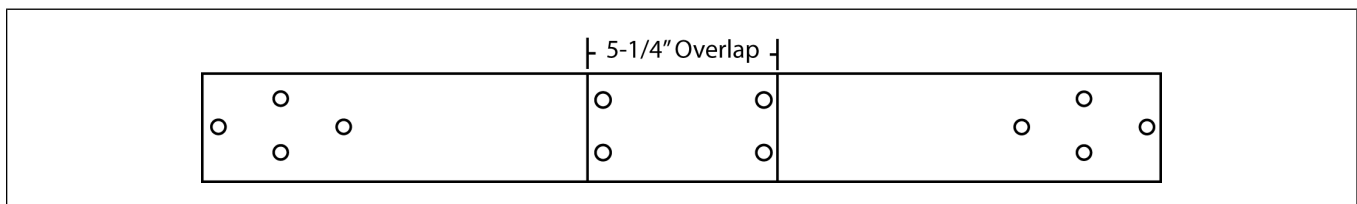
# 5 Safety Cage Assembly

## Topics Covered in this Chapter

- Adapter Assembly Detail
- Connection Detail
- Intermediate Safety Cage Hoop Assembly
- Safety Cage Hoop Bracket Detail
- Safety Cage Vertical Supports
- Safety Cage Sections
- 48" Safety Cage Bell Section

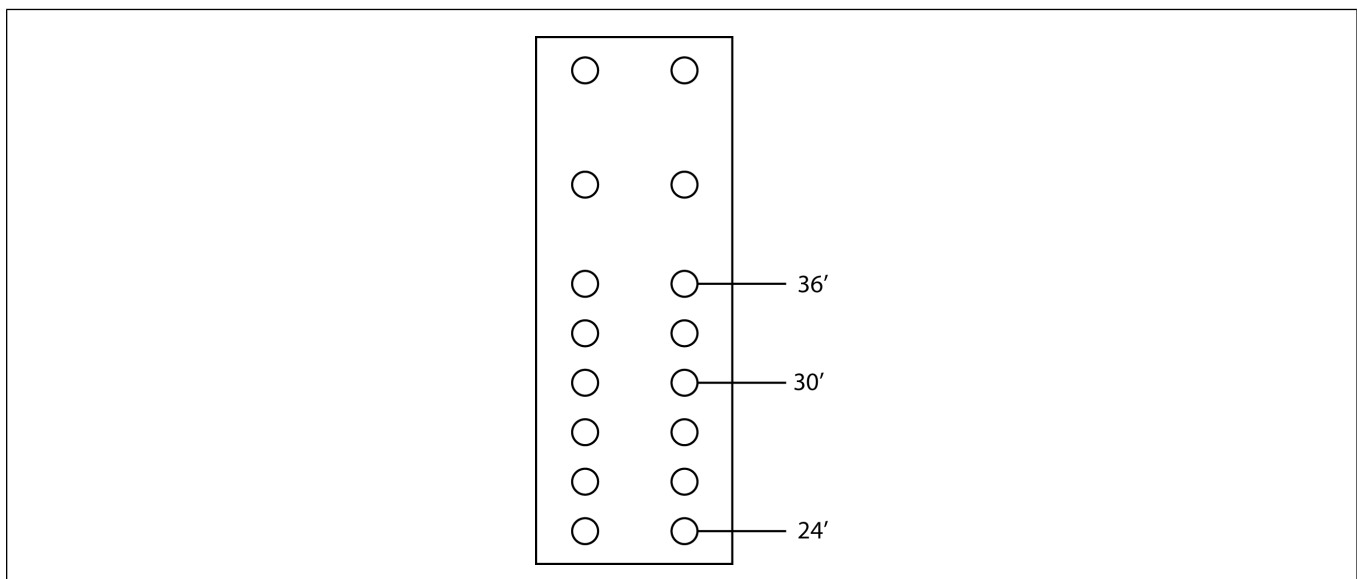
## Adapter Assembly Detail

Platform to safety cage adapter overlap detail for 24' diameter through 36' diameter bins.



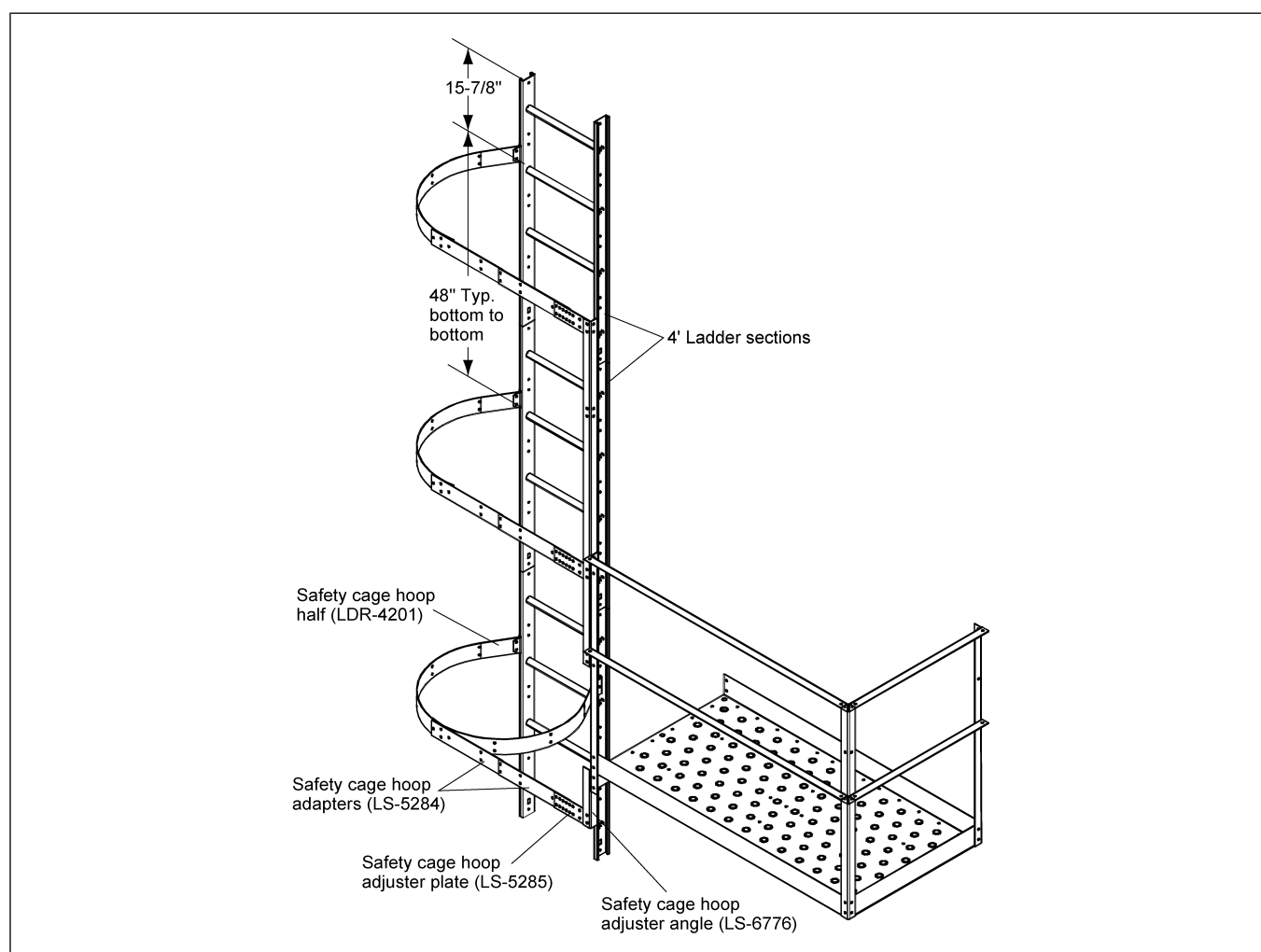
## Connection Detail

Use to determine the proper holes to use when attaching the safety cage hoop adapters to the safety cage hoop adjuster plate for the bin diameter used.



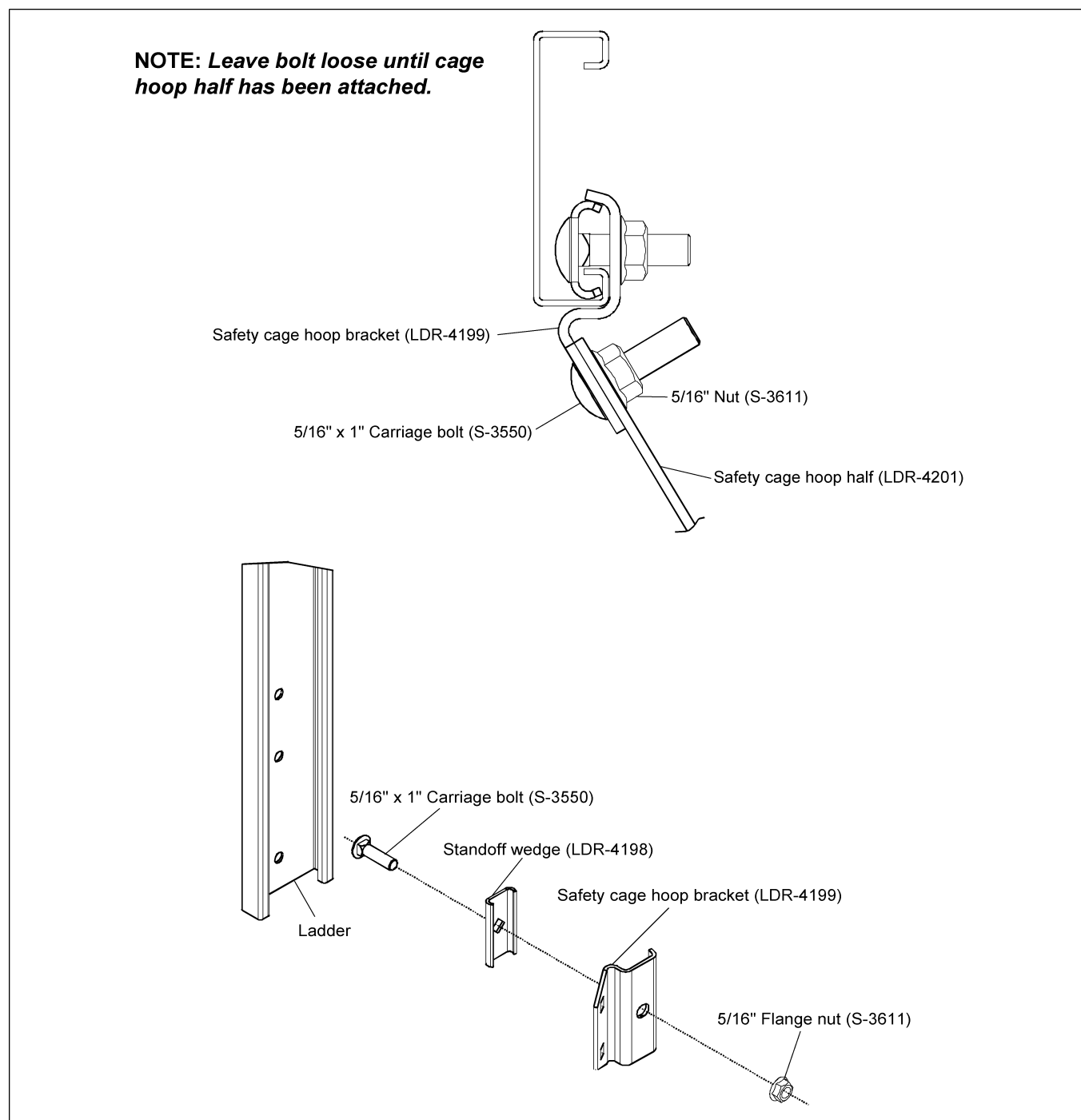
### Intermediate Safety Cage Hoop Assembly

1. Use 5/16" x 3/4" bolt with the head of the bolts to the inside of the safety cage.
2. Attach the safety cage hoop brackets to the ladder section.
3. Take the safety cage hoop adjuster plates and bolt them onto the extension angle.
4. Bolt the safety cage hoop adapters and safety cage hoop halves together using the proper holes depending on the diameter of the grain bin.
5. Bolt these assemblies to the safety cage hoop brackets and safety cage hoop adjuster plates, tighten bolts as you go.
6. The bottom assembly requires two (2) hoop halves and will be positioned just below the platform.
7. Use the safety cage hoop adjuster angle to secure the two (2) hoop half assembly to the vertical entrance angle on the platform assembly.



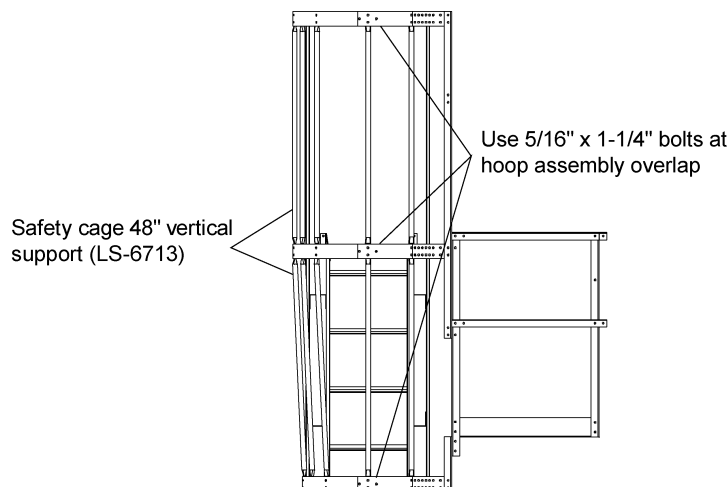
## Safety Cage Hoop Bracket Detail

Figure 5-1 Safety Cage Hoop Bracket Detail



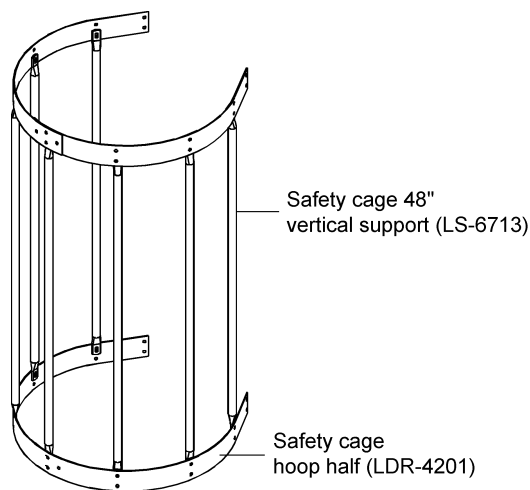
### Safety Cage Vertical Supports

1. After all three (3) hoop assemblies are in place, attach the 48" vertical supports from hoop assembly to hoop assembly, as shown in Figure 8Q. This requires ten (10) supports, five (5) between each set of hoops.
2. The second set of vertical supports must be bent at the flat area to allow for the tapering of the bottom hoop assembly. Use 5/16" x 3/4" bolts (unless otherwise noted) with the head of the bolt to the inside of the safety cage.



### Safety Cage Sections

1. Attach the vertical support pieces to the existing hoop halves above using the 5/16" x 3/4" bolts and nuts, with the heads on the inside of the cage.
2. Fasten two (2) hoop halves together and bolt to other end of vertical supports.
3. Attach safety cage hoop brackets to ladder.
4. Once safety cage hoop brackets have been installed, attach cage hoop halves and tighten bolts. Repeat installation for each safety cage required.

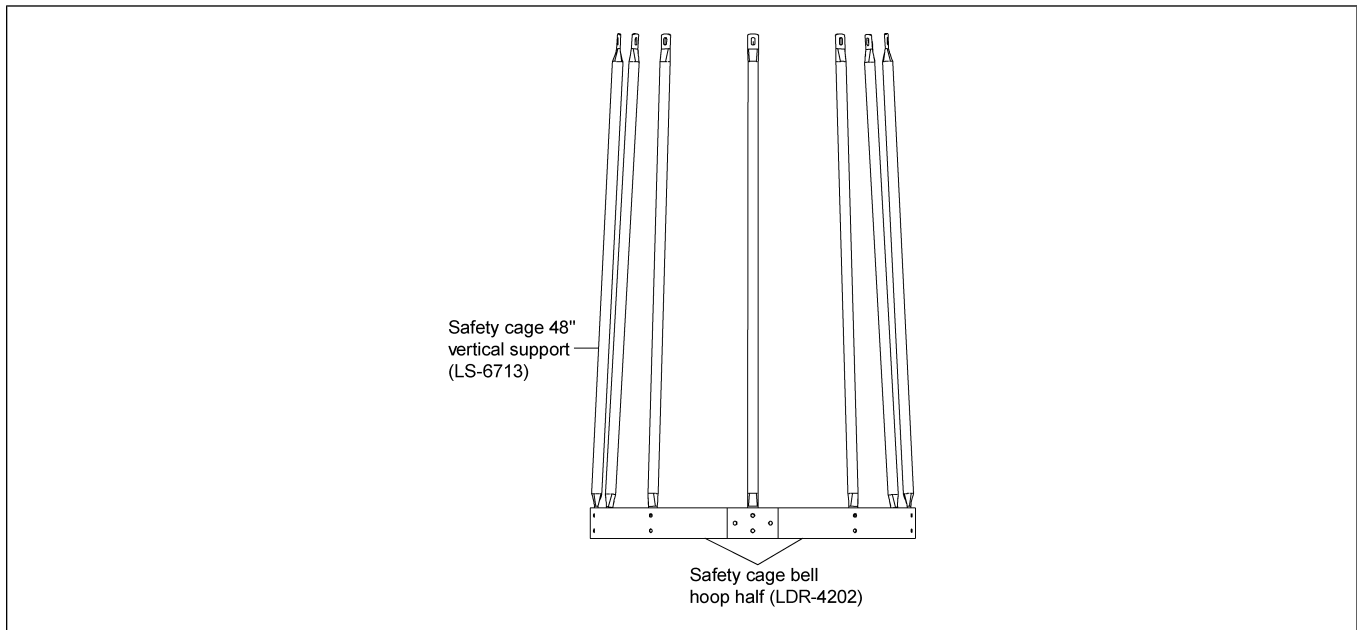




## 48" Safety Cage Bell Section

1. Attach the vertical supports to the hoop half assembly from the final safety cage installation using 5/16" x 3/4" bolts and nuts (with the heads on the inside of the cage).
2. Assemble the special bell safety cage hoop halves and attach to other end of vertical supports.
3. The vertical support must be bent at the flat area to allow for the angle of the bell section. Attach the safety cage hoop brackets to the ladder as described in [Intermediate Safety Cage Hoop Assembly, page 30](#).
4. Once the safety cage hoop brackets are installed, attach the bell safety cage hoop half assembly to the safety cage brackets and tighten bolts.
5. Once the safety cage hoop brackets are installed, attach the bell safety cage hoop half assembly to the safety cage brackets and tighten bolts.

**NOTE:** *The safety cage bell section is to be used at the point of termination of the safety cage and should be just above the base platform (generally 7' to 8').*



# NOTES

## GSI Group, LLC Limited Warranty

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 after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

### Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period
<b>AP Fans and Flooring</b>	Performer Series Direct Drive Fan Motor	3 Years
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
<b>Cumberland Feeding/Watering Systems</b>	Feeder System Pan Assemblies	5 Years **
	Feed Tubes (1-3/4" and 2.00")	10 Years *
	Centerless Augers	10 Years *
	Watering Nipples	10 Years *
<b>Grain Systems</b>	Grain Bin Structural Design	5 Years
<b>Grain Systems Farm Fans Zimmerman</b>	Portable and Tower Dryers	2 Years
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years

\* Warranty prorated from list price:  
0 to 3 years - no cost to end-user  
3 to 5 years - end-user pays 25%  
5 to 7 years - end-user pays 50%  
7 to 10 years - end-user pays 75%

\*\* Warranty prorated from list price:  
0 to 3 years - no cost to end-user  
3 to 5 years - end-user pays 50%

† Motors, burner components and moving parts not included.  
Portable dryer screens included.  
Tower dryer screens not included.

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12<sup>th</sup>) month from the date of purchase and continuing until the sixtieth (60<sup>th</sup>) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

### Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) 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.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. 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.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

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. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

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(revised July 2009)

**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.**

G S I G R O U P



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