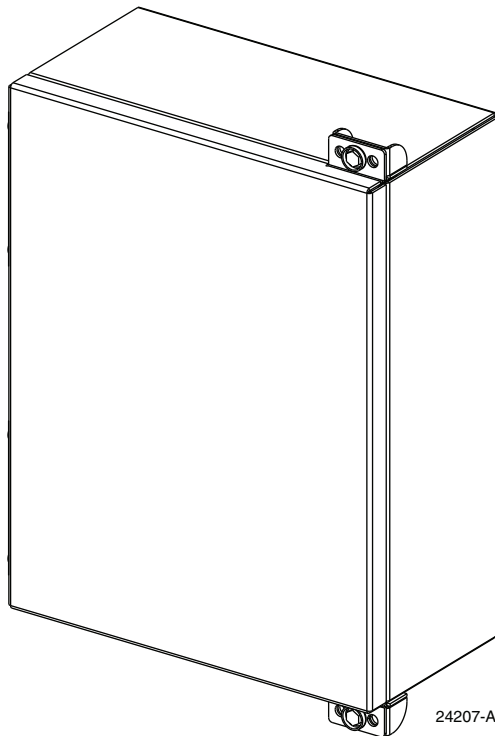


## **FDH 5000 144, 288** **Indoor/Outdoor Cabinet**

### User Manual



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## REVISION HISTORY

ISSUE	DATE	REASON FOR CHANGE
Rev. A	12/2019	Original release
Rev. B	05/2020	Dimensions for the mounting bracket above ground changed + note added.
Rev. C	04/2024	Product name change from mini 288 FDH to FDH 5000

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## ABOUT THIS MANUAL

This publication describes the FDH 5000 Indoor/Outdoor Cabinet. Also included are procedures for mounting the cabinet, installing additional splitter modules, installing additional connector panels, storing the splitter output fibers, connecting the splitter output fibers to the distribution fibers, and replacing damaged components.

## RELATED PUBLICATIONS

Listed below are related manuals and their publication numbers. Copies of these publications can be ordered by contacting the CommScope Technical Assistance Center at 1.800.830.5056, or by e-mail to TAC.Americas@commscope.com.

Title	Publication Number
Optical Fiber Connector Wet and Dry Cleaning Instructions	<b>ADCP-90-159</b>
FDH 5000 432, 576 & 864 Outdoor Cabinet	<b>TC-1568-IP</b>

## ADMONISHMENTS

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment. An admonishment identifies a possible hazard and then explains what may happen if the hazard is not avoided. The admonishments — in the form of Dangers, Warnings, and Cautions — must be followed at all times. These warnings are flagged by use of the triangular alert icon (seen below) and are listed in descending order of severity of injury or damage and likelihood of occurrence.



**Danger:** *Danger is used to indicate the presence of a hazard that **will** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*



**Warning:** *Warning is used to indicate the presence of a hazard that **can** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*







**Caution:** *Caution is used to indicate the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided.*

## GENERAL SAFETY PRECAUTIONS



**Warning:** *Wet conditions increase the potential for receiving an electrical shock when installing or using electrically-powered equipment. To prevent electrical shock, never install or use electrical equipment in a wet location or during a lightning storm.*

-  **Danger:** Do not look into the ends of any optical fiber. Exposure to laser radiation may result. Do not assume the laser power is turned-off or that the fiber is disconnected at the other end.
-  **Danger:** Use adequate lifting equipment when moving or installing Fiber Distribution Hub cabinets. Verify that the maximum lift weight rating of the equipment is sufficient to handle the weight of the cabinet.
-  **Danger:** Do not stand under a Fiber Distribution Hub cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment or apparatus could result in serious personal injury and cause significant damage to the cabinet.
-  **Warning:** Before digging, check with all local utilities for the presence of buried cables or pipes. Contact with underground cables or pipes, especially electric power cables and gas service lines, could interrupt local utility service and cause serious personal injury and extensive property damage.

## STANDARDS CERTIFICATION

**Telcordia:** This equipment complies with the applicable sections of GR-3123-CORE and GR-3125-CORE.

## LIST OF ACRONYMS AND ABBREVIATIONS

The acronyms and abbreviations used in this manual are detailed in the following list:

<b>AWG</b>	American Wire Gauge
<b>C</b>	Centigrade
<b>F</b>	Fahrenheit
<b>FDH</b>	Fiber Distribution Hub
<b>FTTP</b>	Fiber To The Premises
<b>ID</b>	Inside Diameter
<b>OSP</b>	Outside Plant
<b>PNP</b>	Plug and Play
<b>RBR</b>	Reduced Bend Radius
<b>RMA</b>	Return Material Authorization

# 1 DESCRIPTION

This section provides a description of the FDH 5000 Indoor/Outdoor Cabinet plus the cabinet specifications.

## 1.1 FDH 5000 Cabinet

The FDH 5000 cabinet is a secure, above-ground, indoor/outdoor fiber optic distribution cabinet that is designed to hold the splitters, adapters required for Fiber To The Premises (FTTP) network applications.

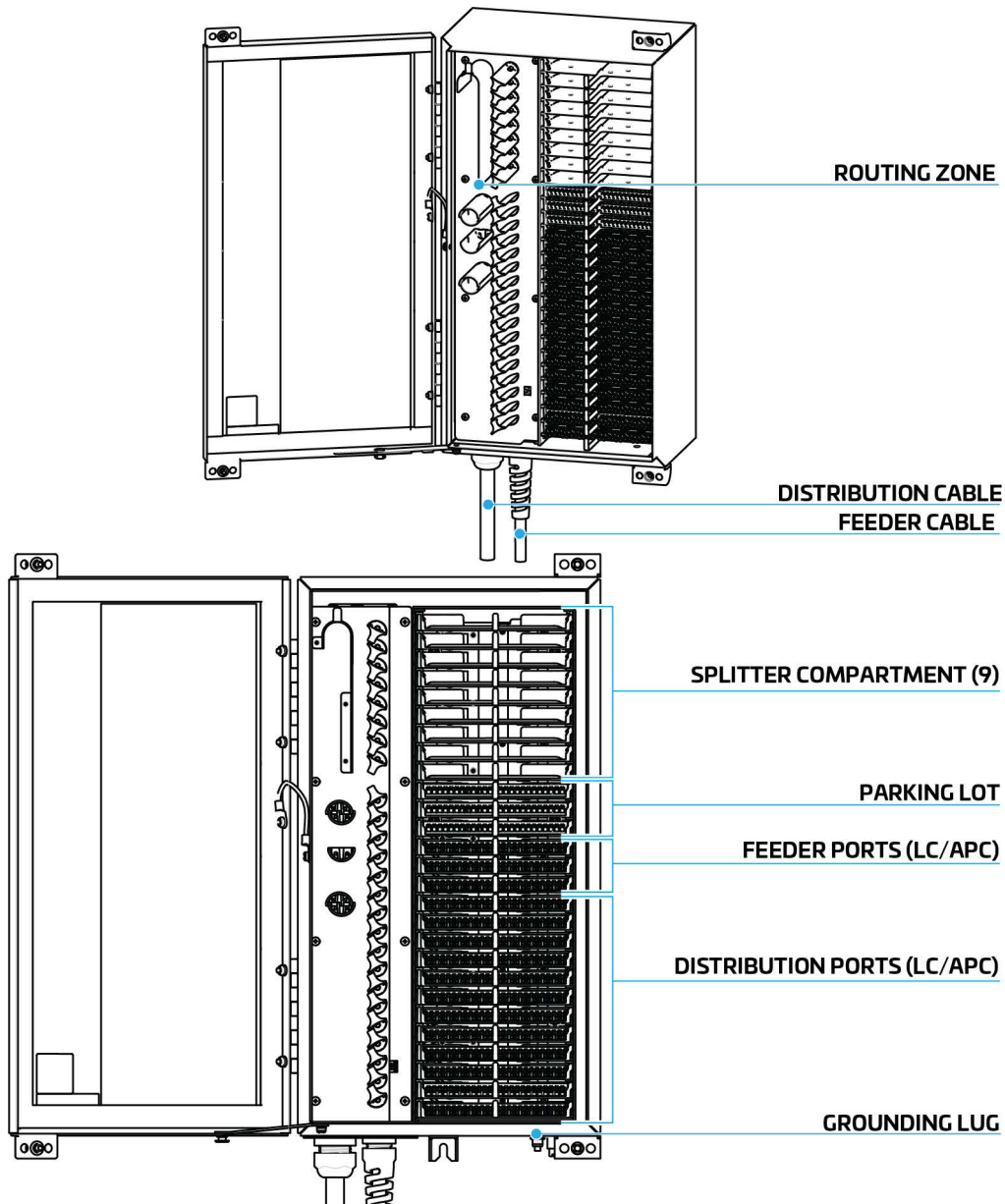


Figure 1. FDH 5000 Cabinet

## All Cabinet Versions

the terminated distribution cable fibers. The adapter packs provide mounting spaces for up to 72 bulkhead adapters. The cabinet may be configured with LC/APC connectors/adapters.

**Storage Panel** – Provides a temporary “parking lot” for unused splitter output fibers. Each splitter module comes with a connector pack that mounts in the storage panel.

**Splitter Compartment** – Provides a place for mounting the plug and play splitter modules. Supports up to 9 splitters. The splitters specified for use with the FDH 5000 cabinet are equipped with reduced bend radius (RBR) fibers and 54-inch output fibers.

**Exterior Grounding Lug** – Provides a means for connecting a #6 solid copper grounding cable (from an approved earth ground source) to the cabinet.

**Interior Grounding Studs** – Provide a connection point for grounding OSP cables with metallic strength members.

The feeder and distribution cables enter/exit the cabinet from the bottom. Compression fittings are provided for securing each cable to the **outside** of the cabinet. The compression fitting grips the cable sheath and also prevents dirt and moisture from entering the cabinet at the cable entry/exit point. For cables that will be spliced, additional clamps are provided for securing the cable to the inside of the cabinet.

The cabinet itself may be grounded by connecting a #6 solid copper grounding cable (from an approved ground source) to a lug on the outside of the cabinet.

The exterior shell of the outdoor cabinet is constructed of heavy gauge aluminum and is coated with an almond-colored finish. The cabinet is equipped with one front door that provides full access to the optical components. The cabinet door is equipped with stainless steel hinges, a door catch that prevents accidental closing, and two tamper-resistant door keepers that may be fitted with padlocks. Access to the cabinet requires a 216B key tool (accessory) to release the door keeper screws. A screen vent allows any moisture that may accumulate within the cabinet to be released.

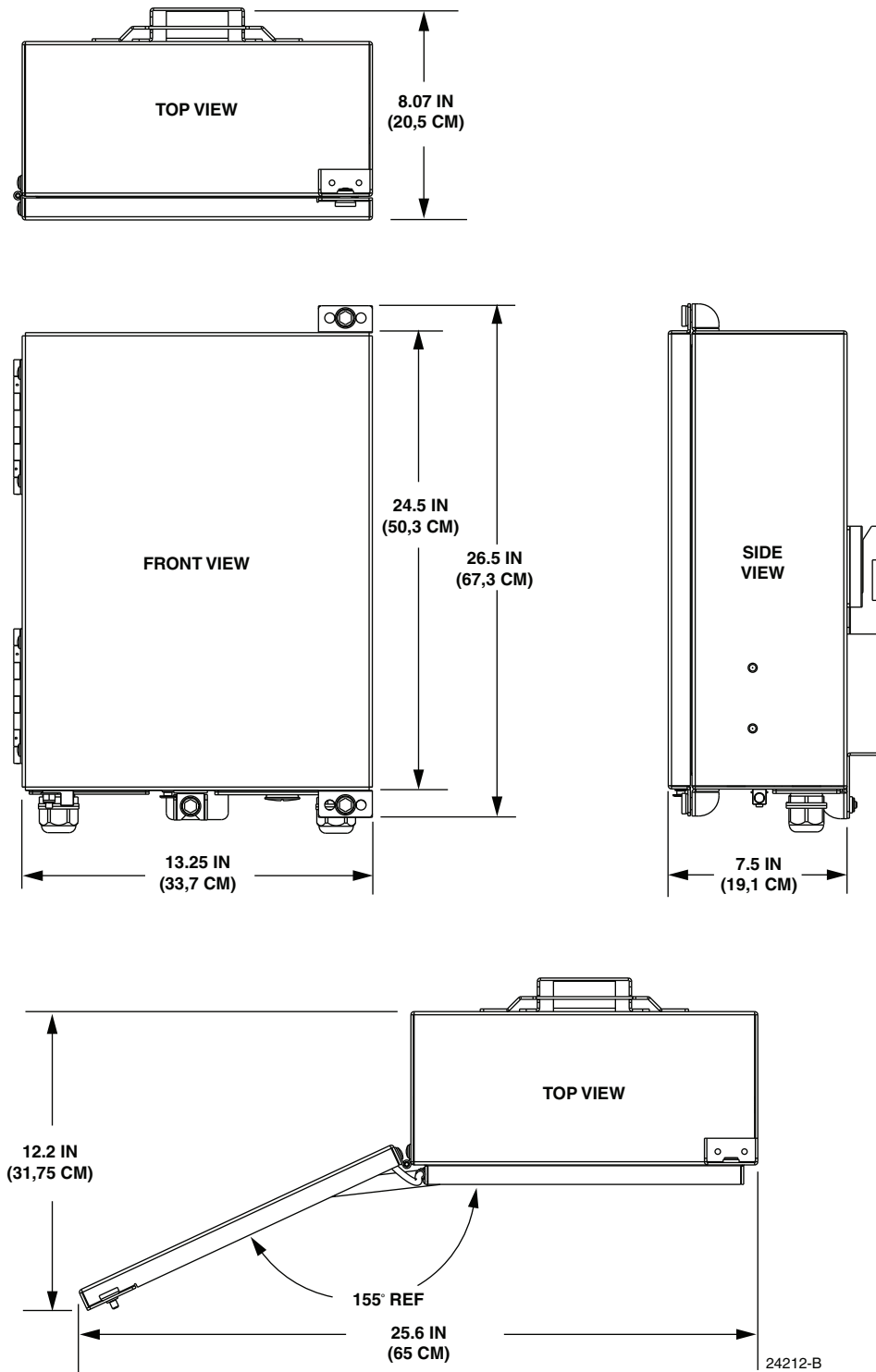
The FDH 5000 cabinet is designed to be installed in either an indoor or an outdoor environment. When used indoors, installer must follow NEC guidelines related to cable use within a building.

The cabinet specifications are provided in [Table 1](#).

**Table 1. FDH 5000 Cabinet Specifications**

PARAMETER	SPECIFICATION
<b>Cabinet</b>	
Nominal cabinet dimensions (H x W x D) (See <a href="#">Figure 2</a> for exact dimensions)	24.5 x 13.25 x 7.5 x inches
Weight	25 lbs (11.3 kg)
Certification	Applicable sections GR-3125-CORE. UL safety listed.
Distribution ports	Up to 288
Distribution port adapters/connectors	LC/APC
Splitter compartment splitter capacity	9 splitters
Feeder input capacity	72
Parking lot capacity	72
<b>Splitter Modules</b>	
Splitter module input and output pig-tails	Reduced bend radius fiber terminated with LC/APC connectors
Test bandpass	1260–1360 nm, 1480–1500 nm, 1550–1560 nm
Overall bandpass	1260–1625 nm
Return loss at test bandpass	≥55 dB
Maximum insertion loss at test bandpass	Note: Specification includes the signal loss from the input and output connectors
1 x 2	4.3 with APC
1 x 4	7.8 dB with APC
1 x 8	10.9 dB with APC
1 x 16	14.1 dB with APC
1 x 32	17.3 dB with APC
1 x 64	21 dB with APC
2 x 16	14.7 dB with APC
2 x 32	18 with APC





**Figure 2. FDH 5000 Cabinet Dimensions**

## 2 BEFORE STARTING THE INSTALLATION

This section provides general installation considerations, unpacking and inspection procedures, and lists the tools and materials required for installing the FDH 5000 Cabinet.

### 2.1 Installation Overview

Installation of the FDH 5000 indoor/outdoor cabinet involves the following main tasks:

**Mounting the Cabinet** – The cabinet must be mounted on a vertical surface that is sufficiently strong to support the weight of the cabinet plus any additional loads that may be intentionally or accidentally applied to the cabinet. Typical mounting methods include pole-mounting and wall-mounting.

**Feeder Cable Installation** – The feeder cable must be routed to the cabinet and secured at the cable entry/exit point.

**Distribution Cable Installation** – The distribution cables must be routed to the cabinet and secured at the cable entry/exit point.

**Splitter Installation** – The splitter modules must be ordered separately and must be installed in the splitter compartment. When the splitters are inserted into the splitter compartment, the input connectors are mated with the feeder cable fiber inputs.

**Splitter Output Fiber Connections** – Service is enabled by connecting the splitter output fiber connectors to the subscriber distribution ports. Unused output fibers are temporarily “parked” in the storage panel until they are needed for service.

### 2.2 Unpacking and Inspection

This section provides instructions for opening the shipping boxes, verifying that all parts have been received, and verifying that no shipping damage has occurred.

Use the following procedure to unpack and inspect the cabinet and all accessories:

1. Open the shipping carton(s) and carefully unpack the cabinet and any accessories from the protective packing material.
2. Open the cabinet door (requires 216B key tool) and check for missing ship-along parts (see installation drawing included with cabinet) or broken parts. If there are damages, contact CommScope (see [Section 11](#)) for an RMA (Return Material Authorization) and to reorder if replacement is required.

### 2.3 Cabinet Installation Hardware

The cabinet is shipped with various loose parts that are provided for mounting the cabinet and installing the cables. Verify that the specified parts are received.

## 2.4 Grounding the Cabinet and OSP Cables

A grounding lug is provided on the underside of the cabinet for attaching a #6 solid copper grounding wire. The cabinet interior is equipped with three studs that may be used to bond OSP cables (with metallic elements) to the cabinet shell. Information on grounding is provided in the sections that cover cabinet mounting and cable installation.

## 2.5 Tools and Materials Required for Installation

The following basic tools and materials are required for all cabinet installations. The specific tools and materials required for the various mounting methods are listed in the sections that provide cabinet mounting instructions.

- Utility knife
- 216B key tool (accessory - used to open cabinet door)
- Tape measure
- Pen or marker
- Lifting equipment for hoisting the cabinet into position for mounting
- External grounding system with #6 copper wire (per local requirements)
- Wire cutter
- #2 Phillips screwdriver (splicing cabinets only)
- 3/8-inch nut driver (for securing cable strength member)
- Splicing equipment for splicing feeder and distribution cables (splicing cabinets only)
- OSP cable grounding kit (for OSP cables with metallic elements)
- APC LC connector cleaning kit
- Padlock (optional)

## 2.6 Outdoor and Indoor Applications

The FDH 5000 cabinet and all the components provided with the cabinet are designed to be installed in either an indoor or an outdoor environment and will meet the applicable standards for both applications. It is the installer's responsibility to ensure that all cables and external components used in the installation are also appropriate for the environment and will meet any standards requirements (including grounding, flammability, temperature, humidity, corrosion, etc.) that may apply.

## **2.7 Craft Requirements**

The FDH 5000 Cabinet may be assembled, mounted, and installed by one trained craftsperson.

## **2.8 Cabinet Mounting**

The next two sections provide instructions for the mounting the cabinet on either a utility pole or a wall. Use whichever procedure is appropriate for the installation.

### 3 MOUNTING THE CABINET ON A WOODEN UTILITY POLE

This section provides recommendations and procedures for mounting the FDH 5000 Cabinet on a wooden utility pole.

#### 3.1 General Recommendations for Pole-Mounting the Cabinet

The site chosen for the installation must conform to all local codes and any permits required must be obtained prior to the start of installation. The location must be accessible and provide adequate parking for worker and vehicle safety. The installed cabinet must not create a visual or physical obstruction to vehicular or pedestrian traffic. Sufficient space must be provided on all sides to facilitate cabinet installation and maintenance. The top of the installed cabinet must be a minimum of 72-inches above the ground when the cabinet is mounted on the pole.

Bond and Ground according to governing jurisdictions.

#### 3.2 Pole-Mounting Procedure

Use the following procedure to mount the cabinet on a wooden utility pole:

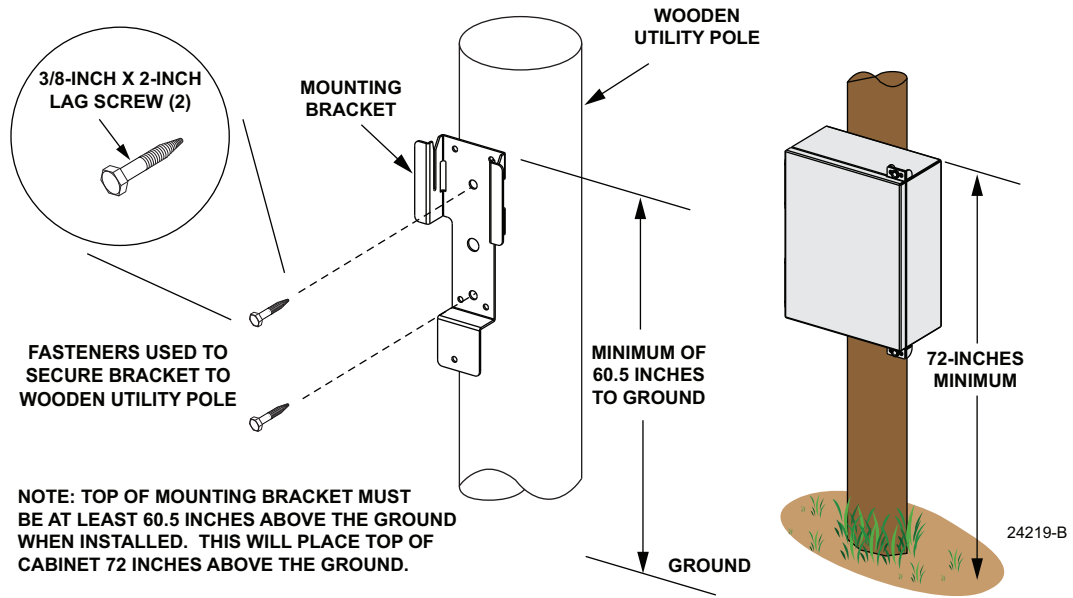


**Warning:** Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under a cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.

1. Obtain the following fasteners and tools:
  - 3/8-inch x 2 inch lag screw suitable for **exterior** application (2)
  - Drill
  - 9/32-inch drill bit
  - 1/2-inch drill bit (optional depending on pole condition)
  - 9/16-inch wrench
  - 216B key tool (accessory)

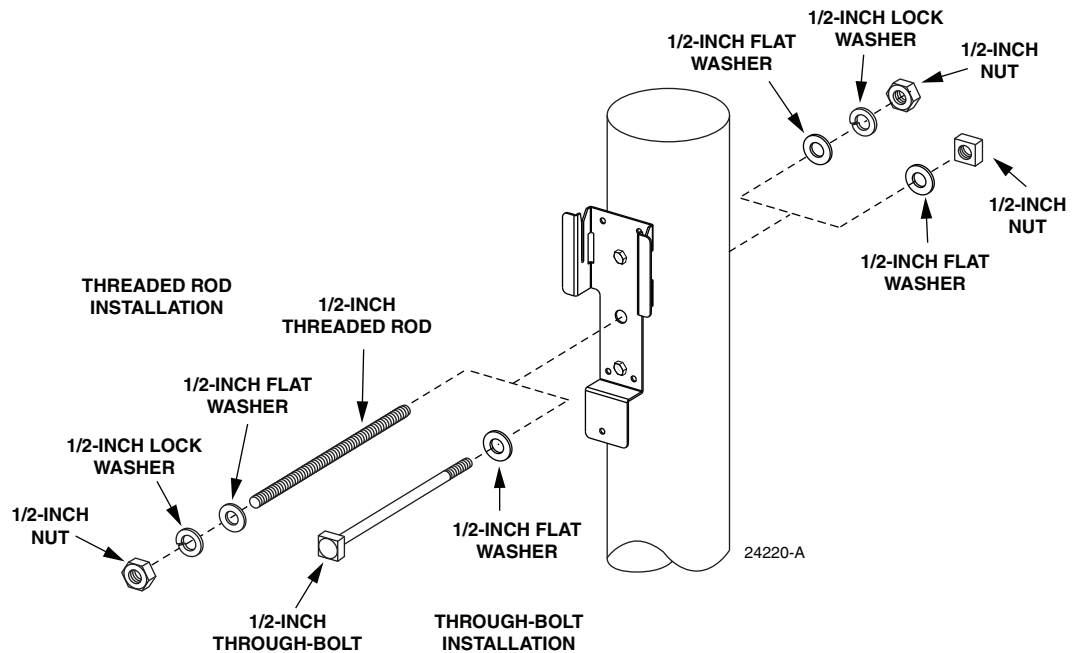
The following fasteners are optional depending on the condition of the pole:

- 1/2-inch through-bolt (1), 1/2-inch nut (1), 1/2-inch flat washer (2)
  - 1/2-inch threaded rod (1), 1/2-inch nut (1), 1/2-inch flat washer (2), 1/2-inch lock washer (2)
2. Using the mounting bracket as a guide, mark the location of the bracket mounting holes on the pole as shown in [Figure 3](#).
  3. Drill a 9/32-inch hole in the pole at each of the locations marked in step 2.
  4. Secure the mounting bracket to the pole using the two 3/8-inch x 2-inch lag screws. Tighten lag screws securely.



**Figure 3. Installing Mounting Bracket on a Wooden Utility Pole**

- ▶ **Note:** If the utility pole is in good condition, the two 3/8-inch lag screws will provide sufficient strength and holding power to permanently attach the cabinet to the pole. If the utility pole is in poor condition, it is recommended that **in addition** to the lag screws, a 1/2-inch threaded rod or through-bolt be used to secure the mounting bracket to the pole. Refer to [Figure 4](#) for the recommended installation procedure.
- ▶ **Note:** Cable conduit is recommended to contain the fiber cable starting at the ground to the cabinet.



**Figure 4. Threaded Rod or Through-Bolt Installation**

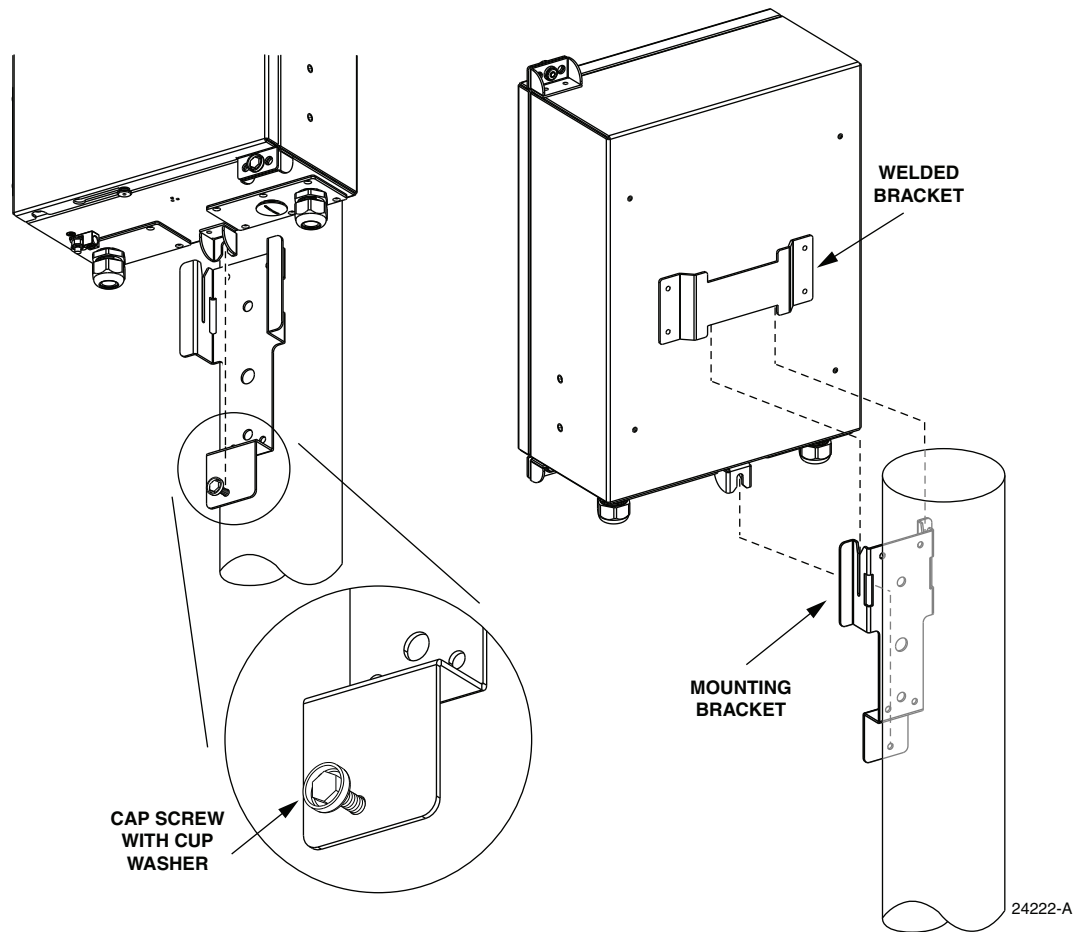
5. Using appropriate lifting equipment, hoist the cabinet into position for attachment to the mounting bracket.



**Danger:** Do not stand directly under the cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.

6. Hang the cabinet from the installed mounting bracket. The welded bracket on the back of the cabinet, shown in [Figure 5](#), fits into the two slots at the top of the mounting bracket. The partially installed cap screw at the bottom of the mounting bracket fits into the slotted tab at the bottom of the cabinet.
7. Tighten the partially installed cap screw at the bottom of the cabinet using the 216B key tool.

► **Note:** A cup washer is included with the cap screw to provide tamper resistance.



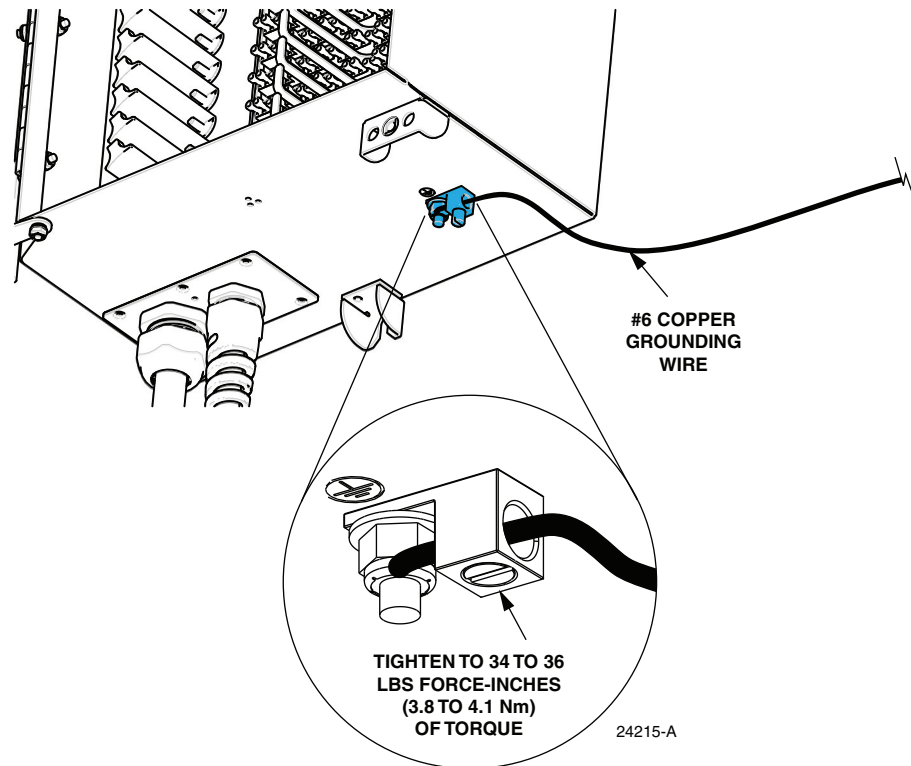
**Figure 5. Installing Cabinet on Pole-Mounted Bracket**

### **3.3 Grounding Wire Connection To Cabinet**

Use the following procedure to connect the grounding wire to the cabinet:

1. Locate the cabinet grounding lug which is mounted on the underside of the cabinet as shown in [Figure 6](#).





**Figure 6. Grounding Wire Connection To Cabinet**

2. Obtain a length of #6 AWG copper wire for use as a grounding wire.
3. Insert one end of the grounding wire into the cabinet grounding lug. Tighten the grounding lug set screw to 34 to 36 lbs-force inches (3.8 to 4.1 Nm) of torque.
4. Route the free end of the grounding wire to an approved ground source.
5. Cut the grounding wire to length and connect it to the ground source as specified by local code or practice.



**Warning:** Failure to properly tighten the screw on the grounding lug could result in improper grounding of the cabinet and result in performance or safety issues.

## 4 MOUNTING THE CABINET ON A WALL

This section provides recommendations and procedures for mounting the FDH 5000 Cabinet from either a wood-framed wall or a masonry wall. Use whichever procedure is appropriate for the application.

### 4.1 General Recommendations for Wall-Mounting the Cabinet

The site chosen for the installation must conform to all local codes and any permits required must be obtained prior to the start of installation. The location must be accessible and provide adequate parking for worker and vehicle safety. In addition, the installed cabinet must not create a visual or physical obstruction to vehicular or pedestrian traffic. Sufficient space must be provided on all sides to facilitate cabinet installation and maintenance.

Bond and Ground according to governing jurisdictions.

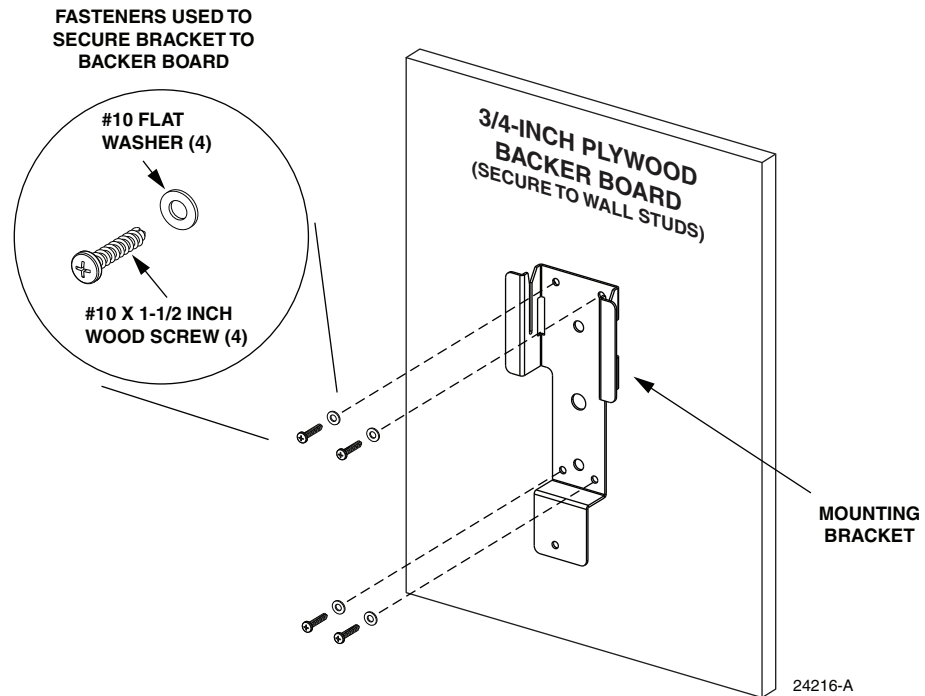
### 4.2 Wood-Framed Wall Mounting Procedure

Use the following procedure to mount the cabinet on a wood-framed wall:



**Warning:** Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under the cabinet as it is being hoisted into position for installation. A failure of the lifting equipment could result in serious personal injury.

1. Mount a plywood backer (not provided) on the wall in the location where the cabinet will be mounted as shown in [Figure 7](#). Use whatever tools and fasteners are required to firmly secure the backer to at least two (minimum) of the wall's interior 2x4 studs.
- ▶ **Note:** It is recommended that pressure-treated plywood with a minimum thickness of 0.75-inch (19.0 cm) be used as a backer board. The backer **must** be firmly secured to the interior framing of the wall to avoid a hazardous condition.
2. Obtain the following fasteners and tools:
  - #10 x 1-1/2-inch wood screws (4)
  - #10 flat washers (4)
  - Drill
  - 3/32-inch drill bit
  - Screwdriver drill bit (for wood screws)
  - 216B key tool (accessory)
3. Using the mounting bracket as a guide, mark the location of the bracket mounting holes on the plywood backer.
4. Drill a 3/32-inch pilot hole in the backer board at each of the locations marked in step 3.



**Figure 7. Securing Backer Board to Wall and Installing Mounting Bracket on Backer Board**

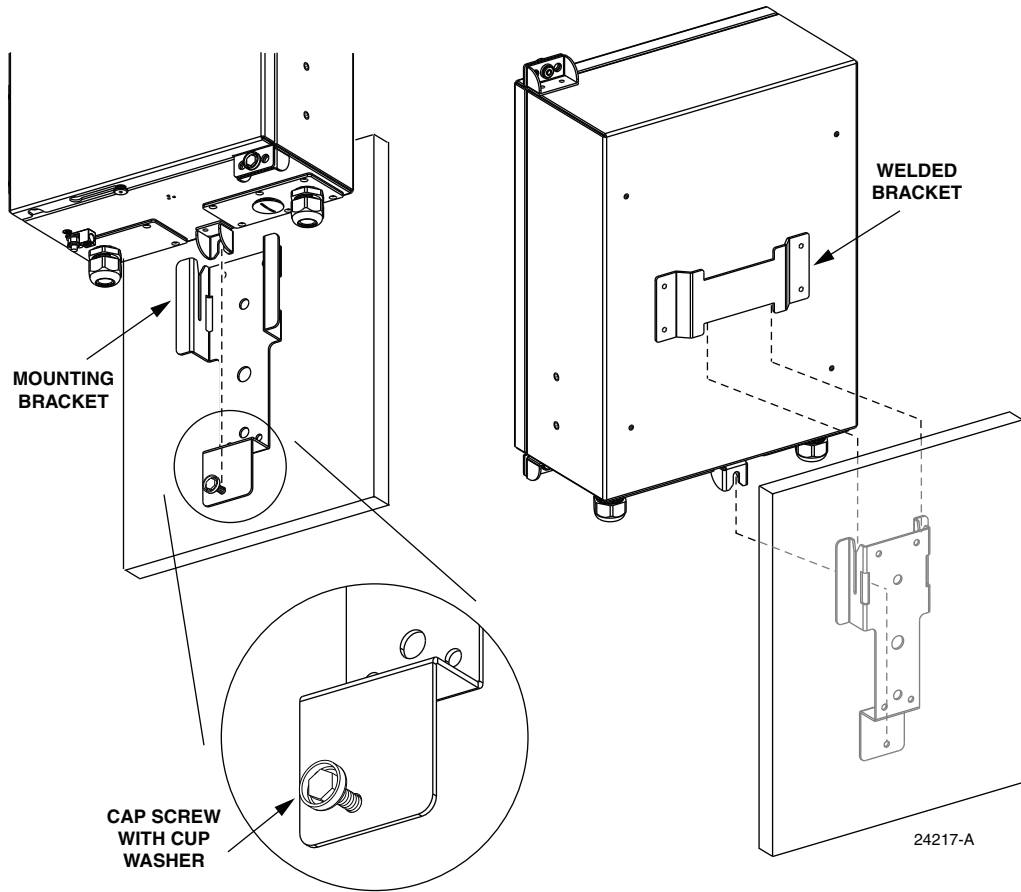
5. Secure the mounting bracket to the plywood backer using the four #10 x 1-1/2-inch wood screws and four #10 flat washers. Thread the wood screws into the pilots holes and tighten securely.
6. Using appropriate lifting equipment, hoist the cabinet into position for attachment to the mounting bracket.



**Danger:** Do not stand directly under the cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.

7. Hang the cabinet from the installed mounting bracket. The welded bracket on the back of the cabinet, shown in [Figure 8](#), fits into the two slots at the top of the mounting bracket. The partially installed cap screw at the bottom of the mounting bracket fits into the slotted tab at the bottom of the cabinet.
8. Securely tighten the partially installed cap screw at the bottom of the cabinet using the 216B key tool.

► **Note:** A cup washer is included with the cap screw to provide tamper resistance.



**Figure 8. Installing Cabinet on Wall-Mounted Bracket**

### 4.3 Masonry Wall Mounting Procedure

Use the following procedure to mount the cabinet on a masonry wall:

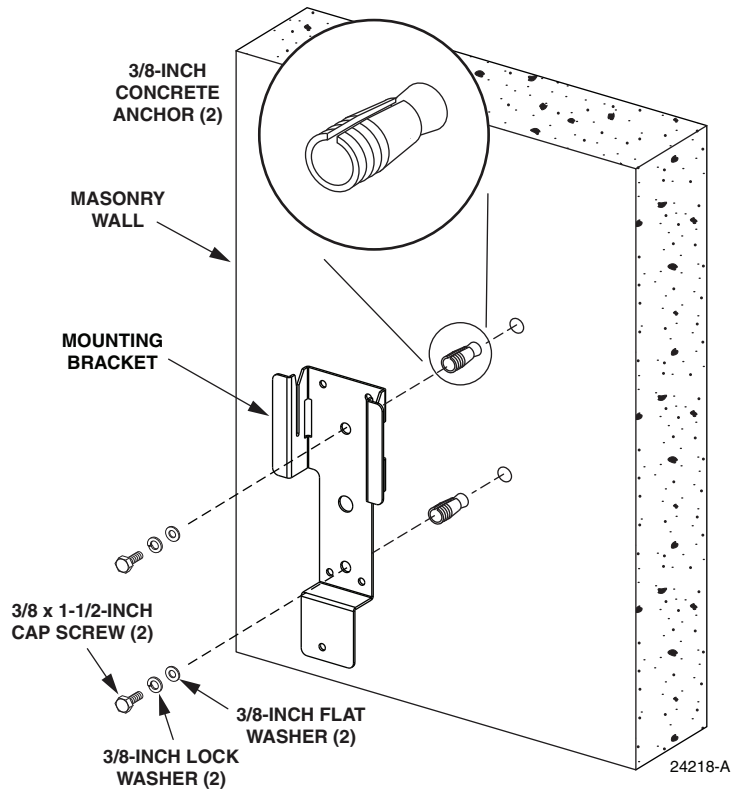


**Warning:** Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under the cabinet as it is being hoisted into position for installation. A failure of the lifting equipment could result in serious personal injury.

1. Obtain the following fasteners and tools:
  - 3/8-inch concrete anchor (2)
  - 3/8-inch x 1-1/2 inch hex head capscrew (2)
  - 3/8-inch flat washer (2)
  - 3/8-inch lock washer (2)
  - Drill
  - 5/8-inch masonry drill bit (check hole size with concrete anchor manufacturer)
  - 9/16-inch wrench
  - 216B key tool (accessory)

2. Using the mounting bracket as a guide, mark the location of the bracket mounting holes on the masonry wall as shown in [Figure 9](#).

► **Note:** Locate the mounting anchors as close as possible to the center of bricks or blocks.



**Figure 9. Installing Mounting Bracket on a Masonry Wall**

3. Drill a 5/8-inch hole (check hole size with anchor manufacturer) in the wall at each of the locations marked in step 2.
4. Secure the mounting bracket to the masonry wall using the two 3/8-inch x 1-1/2-inch cap screws, two 3/8-inch lock washers, and two 3/8-inch flat washers. Tighten cap screws securely.
5. Using appropriate lifting equipment, hoist the cabinet into position for attachment to the mounting bracket.



**Danger:** Do not stand directly under the cabinet as it is being hoisted into position for cable installation. A failure of the lifting equipment could result in serious personal injury.

6. Hang the cabinet from the installed mounting bracket. The welded bracket on the back of the cabinet (see [Figure 8](#)) fits into the two slots at the top of the mounting bracket. The partially installed cap screw at the bottom of the mounting bracket fits into the slotted tab at the bottom of the cabinet.

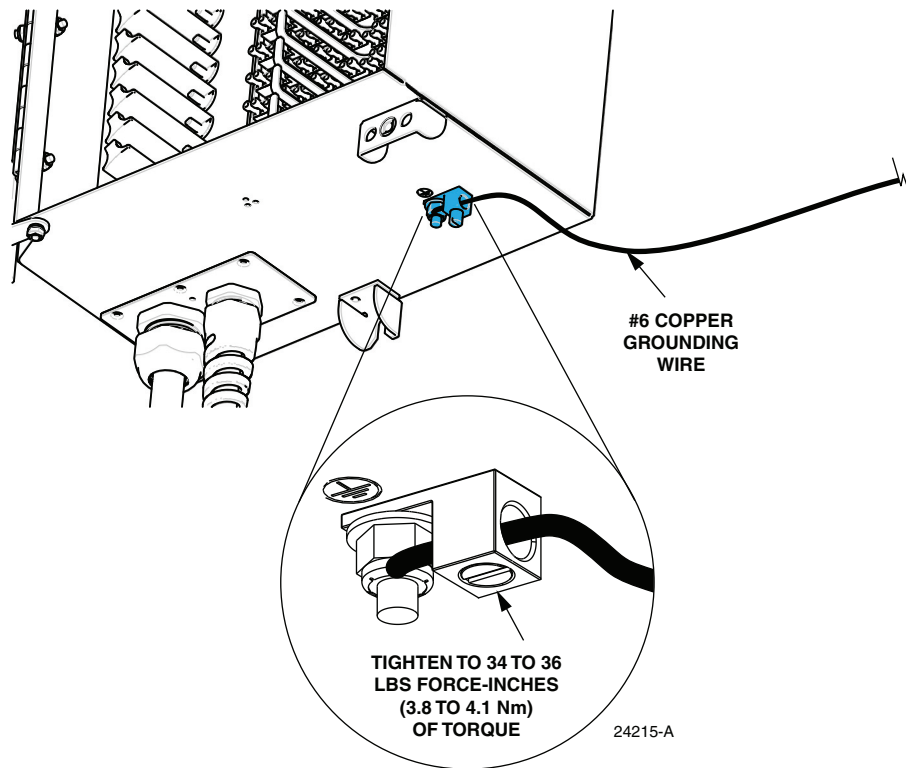
7. Tighten the partially installed cap screw at the bottom of the cabinet using the 216B key tool.

► **Note:** A cup washer is included with the cap screw to provide tamper resistance.

#### 4.4 Grounding Wire Connection To Cabinet

Use the following procedure to connect a grounding wire to the cabinet:

1. Locate the cabinet grounding lug which is mounted on the underside of the cabinet as shown in [Figure 10](#).



**Figure 10. Grounding Wire Connection To Cabinet**

2. Obtain a length of #6 AWG copper wire for use as a grounding wire.
3. Insert one end of the grounding wire into the cabinet grounding lug. Tighten the grounding lug set screw to 34 to 36 lbs-force inches (3.8 to 4.1 Nm) of torque.
4. Route the free end of the grounding wire to an approved ground source.
5. Cut the grounding wire to length and connect it to the ground source as specified by local code or practice.



**Warning:** Failure to properly tighten the screw on the grounding lug could result in improper grounding of the cabinet and result in performance or safety issues.

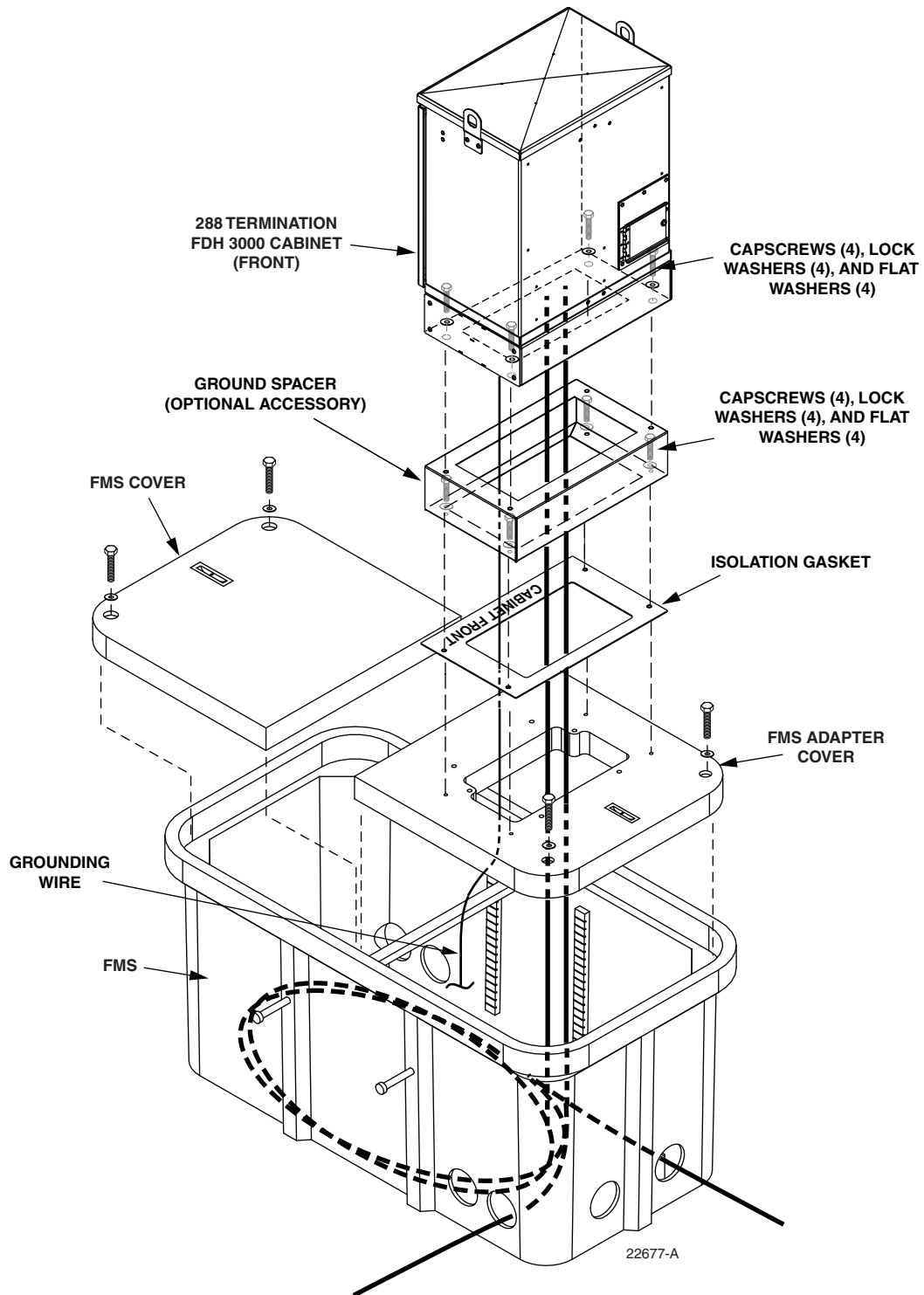
## 5 GROUND MOUNTING THE CABINET

### 5.1 Mounting the Cabinet on the FMS

Use the 216B key tool to un-latch and latch the cabinet door as needed during the mounting process. Refer to [Figure 11](#) as necessary when mounting the cabinet.



**Warning:** *Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under a cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.*

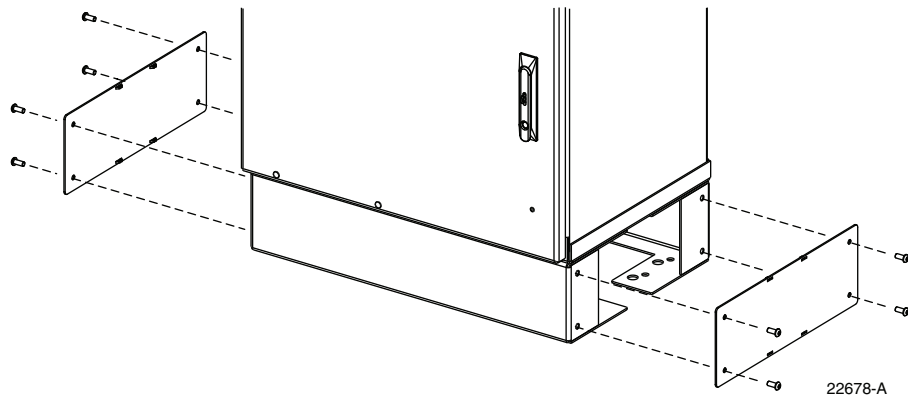


**Figure 11. Mounting the 288 Termination Cabinet With Splicing on the FMS**

Use the following procedure to mount the cabinet on the FMS:



1. Use a 3/16-inch hex-key to remove the screws that secure the access covers to the left and right sides of the cabinet ground spacer/riser as shown in [Figure 12](#).



**Figure 12. Removing Side Access Covers From Ground Spacer/Riser**

2. Remove the access covers from the ground spacer/riser and set aside both the covers and the screws for reuse.
3. Mount the FMS adapter cover on the FMS and secure using the two capscrews and flat washers provided. Tighten each capscrew securely.
4. Place the isolation gasket (provided with cabinet) on the adapter cover and align the holes in the gasket with the holes in the adapter cover. Make sure the wide side of the gasket is on the side of the adapter cover that corresponds to the front side of the cabinet.
5. If a ground spacer/riser (optional accessory) will be installed, place the spacer in position for mounting on the adapter cover. The isolation gasket installed in step 4 should remain in place between the adapter cover and ground spacer. If a ground spacer will not be installed, proceed to step 8.
6. Align the mounting holes in the spacer/riser with the mounting holes in the adapter cover.
7. Secure the spacer/riser to the adapter cover using the four capscrews, four lock washers, and four flat washers provided with the spacer. Tighten all capscrews securely.
8. Using appropriate lifting equipment, hoist the cabinet into position for mounting on the spacer/riser or adapter cover.



**Danger:** Do not stand directly under the cabinet as it is being hoisted into position for cable installation. A failure of the lifting equipment could result in serious personal injury.

9. Lower the cabinet onto the ground spacer/riser or adapter cover and align the mounting holes in the cabinet base with the threaded holes in the spacer/riser or adapter cover. If a spacer/riser was not installed, leave the isolation gasket (installed in step 4) in place on the adapter cover.

10. Secure the cabinet to the spacer/riser or adapter cover using the four capscrews, lock washers, and flat washers provided with the cabinet. Tighten all four capscrews securely.
11. Install the FMS sleeve cover on the FMS and secure using the two capscrews and washers provided. Tighten both capscrews securely.
  - ▶ **Note:** The FMS sleeve cover may be installed at a later time so the interior of the FMS sleeve to be accessed for cable installation, ground wire installation, or splicing.
12. The lifting eyes may be left in place or removed from the cabinet. To remove the lifting eyes, use the 3/16 hex-key to remove the lifting eye screws. Store the lifting eyes inside the cabinet and then re-install the lifting eye screws in the cabinet.

## 5.2 Mounting the Cabinet on the Pad Mount

Use the 216B key tool to un-latch and latch the cabinet door as needed during the mounting process. Refer to [Figure 16](#) as necessary when mounting the cabinet.

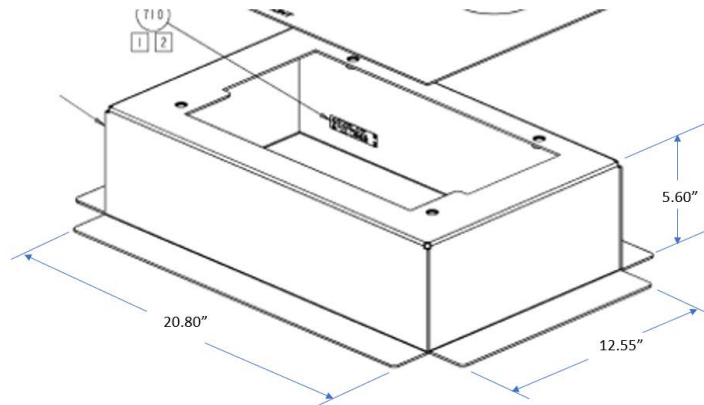


**Warning:** Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under a cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.

The Pad Mount Frame (PMF), shown in [Figure 13](#) is a stainless steel frame that provides a mounting base for the cabinet when embedded in a concrete foundation.



**Caution:** Mounting the cabinet directly on a concrete pad may cause chemical corrosive action to the cabinet. Use only the Pad Mount Frame (PMF) as a mounting base for the cabinet. Do not use caulking compounds as a sealer between the cabinet and the PMF.



**Figure 13. Pad Mount Frame Dimensions**

### 5.2.1 Installation Guidelines

The site chosen for the installation must conform to all local codes and any permits required must be obtained prior to the start of installation. The location must be accessible and provide adequate parking for worker and vehicle safety. Situate the concrete pad close to the trench that was used for routing the OSP fiber cables for the network distribution system.

The installed cabinet must not create a visual or physical obstruction to vehicular or pedestrian traffic. Ensure that there is sufficient space on all sides to facilitate cabinet installation. Depending on the landscaping requirements, the top surface of the concrete pad may be located from 0 to 3 inches (7.6 cm) above the surrounding grade.

### 5.2.2 Base Construction and Conduit Installation

Prepare a base for the concrete pad that meets all local code requirements. The base must have a footing of 4 to 6 inches (10.2 to 15.2 cm) of sand or gravel (per local practice) on firmly compacted soil. Refer to the construction diagram for details.

Install the cable conduit from below and position it so that the top of each upward bend will be located within the PMF opening at the indicated point. When installed, the top of the conduit should be located 1 to 2 inches (2.54 to 5.08 cm) below the top of the finished concrete pad. Install the conduit before pouring the pad.

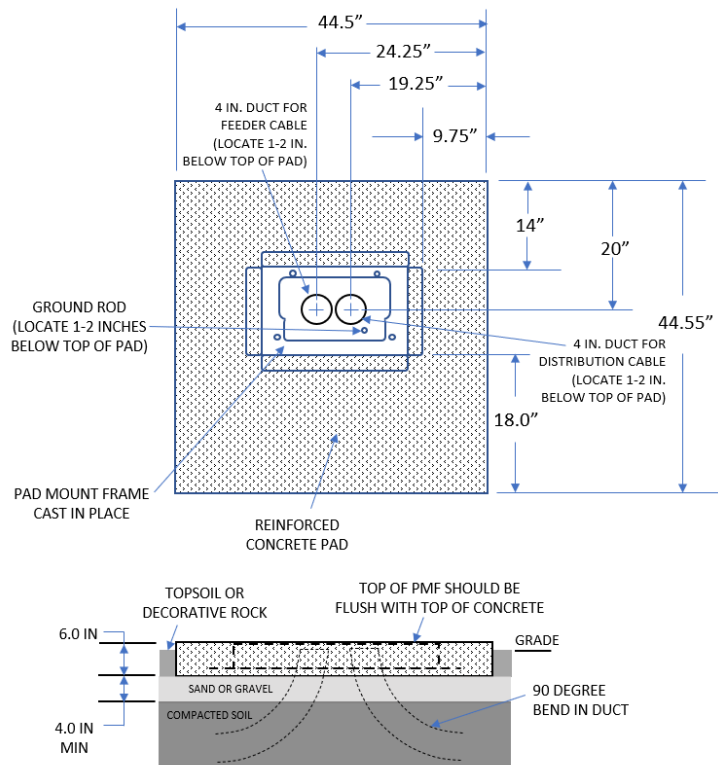
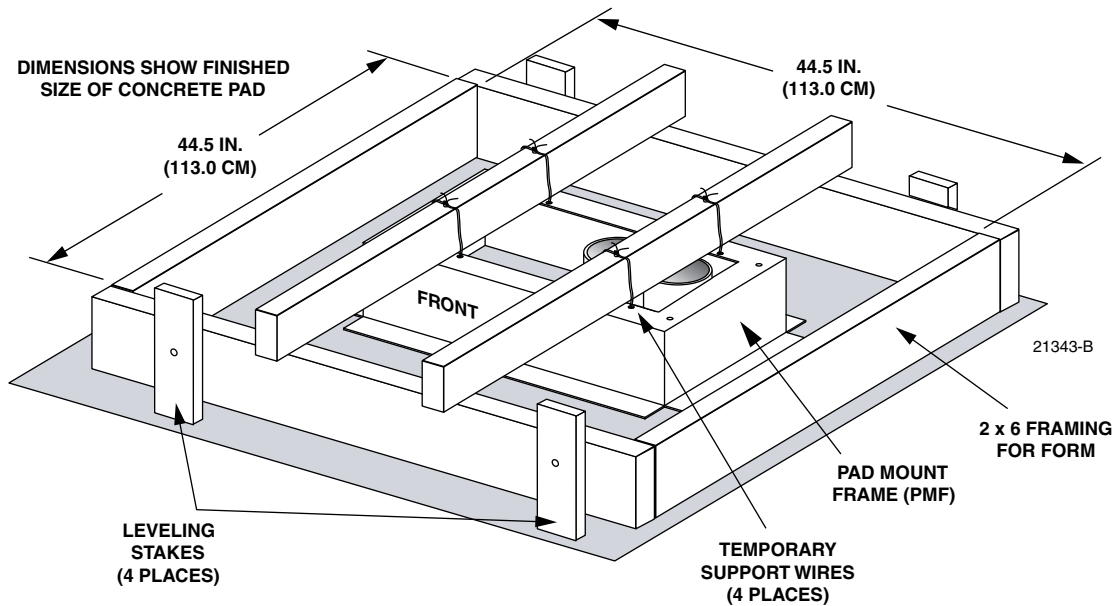


Figure 14. Constructing the Concrete Pad

### 5.2.3 Concrete Pad Construction

Use the following procedure to construct the concrete pad:

1. Build a wood form for the concrete pad using 2 x 6 framing lumber as shown in [Figure 16](#).
  2. Locate the PMF as shown in the construction diagram (see [Figure 14](#)). When installed, the top surface of the PMF must be flush and level with the top of the concrete pad.
- **Note:** Use temporary top framing to keep the top surface of the PMF flush and level with the top of the concrete pad (see [Figure 15](#)).
3. Place reinforcing material inside the form but outside of the PMF.
  4. Verify that the PMF and form are level. Depending on the landscaping requirements, the top surface of the concrete pad may be 0 to 3 inches (0 to 7.6 cm) above the final grade. The weld nuts are covered with plugs which must be left in place until the enclosure is mounted.



**Figure 15. Concrete Pad Framing**

5. Pour the concrete to form the pad but do not pour concrete into the center area of the PMF.
- **Note:** Allow some concrete to flow under the flanges on the bottom of the PMF so the PMF will be locked in place when the concrete hardens. However, do not allow concrete to fill the center of the PMF. If necessary, partially fill the center of the PMF with sand or gravel to prevent an inflow of concrete.

6. Remove the top framing and the temporary support wires when the concrete is ready to be finished.
7. Allow concrete to cure before proceeding with the installation.

### 5.2.4 Grounding System Installation

Install a grounding system (not provided) that meets all local electrical codes. Check local codes for grounding system installation, use of clamps, wire size, and any other grounding requirements. Typically, #6 AWG copper wire is used for the ground wire. If the grounding system includes a ground rod, install the rod (see [Figure 14](#)) within the PMF opening at the indicated point. When installed, the top of the rod should be located 1 to 2 inches (2.54 to 5.08 cm) below the top of the finished concrete pad. Leave sufficient slack in the grounding wire to allow it to be routed into the cabinet after the cabinet is mounted on the pad.

### 5.2.5 Mounting the Cabinet on the Concrete Pad

Use the 216B key tool to un-latch and latch the cabinet doors as needed during the mounting process. Refer to [Figure 16](#) as necessary when mounting the cabinet.



**Warning:** Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under a cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.

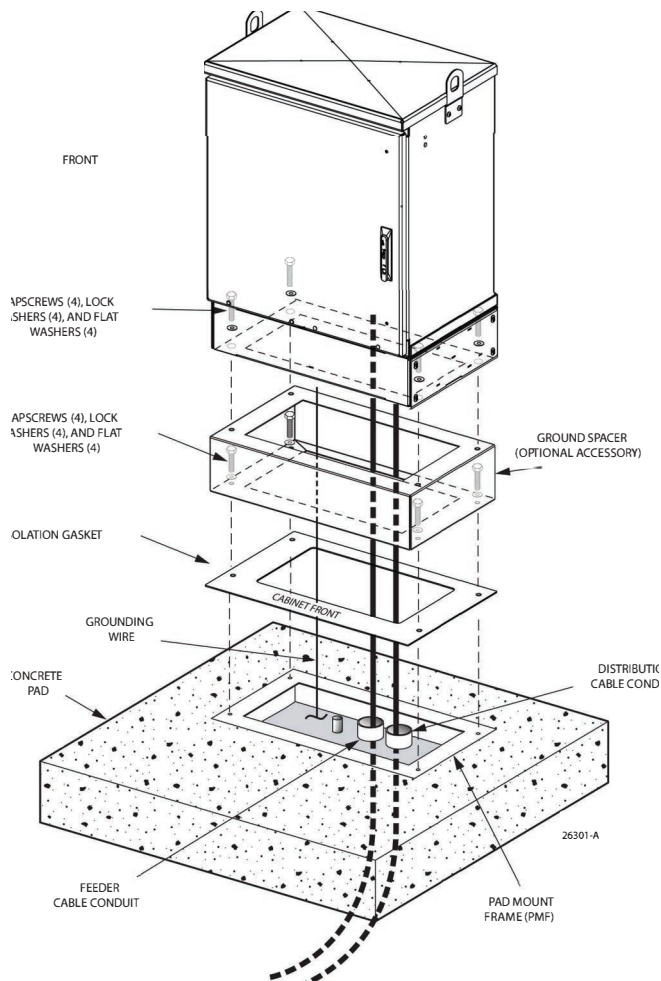
Use the following procedures to mount the cabinet on the concrete pad:

1. Use a 3/16-inch hex-key to remove the screws that secure the access covers to the left and right sides of the cabinet ground spacer/riser as shown in [Figure 17](#).
2. Remove the plastic plugs that are installed in the threaded corner holes of the PMF and clean off any concrete that may have adhered to the top of the PMF.
3. Place the isolation gasket (provided with cabinet) on the PMF and align the holes in the gasket with the holes in the PMF. Make sure the wide side of the gasket is on the side of the PMF that corresponds to the front side of the cabinet.
4. If a ground spacer/riser (accessory) will be installed, place the spacer/riser in position for mounting on the PMF. The isolation gasket installed in step 3 should remain in place between the PMF and spacer/riser. If a spacer/riser will not be installed, proceed to step 7.
5. Align the mounting holes in the spacer/riser with the mounting holes in the PMF.
6. Secure the spacer/riser to the PMF using the four capscrews, four lock washers, and four flat washers provided. Tighten all capscrews securely.
7. Using appropriate lifting equipment, hoist the cabinet several feet into the air to provide access to the feeder and distribution cables.

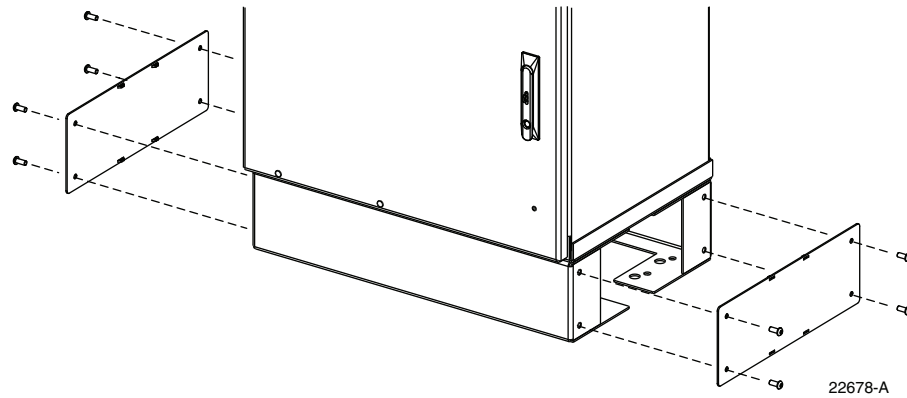


**Danger:** Do not stand directly under the cabinet as it is being hoisted into position for cable installation. A failure of the lifting equipment could result in serious personal injury.

- ▶ **Note:** Label or tag the stub end of each cable so it can be identified after it is routed to the splice enclosure.
  
- 8. Feed the stubbed feeder and distribution cables into the appropriate conduit sections and route to the splice enclosure (not provided).
  
- ▶ **Note:** A separate splice enclosure (not provided) is required for splicing the cabinet OSP feeder and distribution cables to the network cables.
  
- 9. Lower the cabinet onto the ground spacer/riser or PMF and align the mounting holes in the cabinet base with the threaded holes in the spacer/riser or PMF. If a spacer/riser was not installed, leave the isolation gasket (installed in step 3) in place on the PMF.
  
- ▶ **Note:** Illustration is for reference only (Figure 16. Mounting Cabinet on the Concrete Pad).



**Figure 16. Mounting Cabinet on the Concrete Pad**



**Figure 17. Removing Side Access Covers From Ground Spacer/Riser**

10. Secure the cabinet to the spacer/riser or PMF using the four capscrews, four lock washers, and four flat washers provided with the cabinet. Tighten all four capscrews securely.

## 6 INSTALL SPLITTER

### 6.1 Remove the tray out of the slot

1. Push the tabs on the right and left side of the slot with your finger and move the tray towards you. The tray will come out completely.

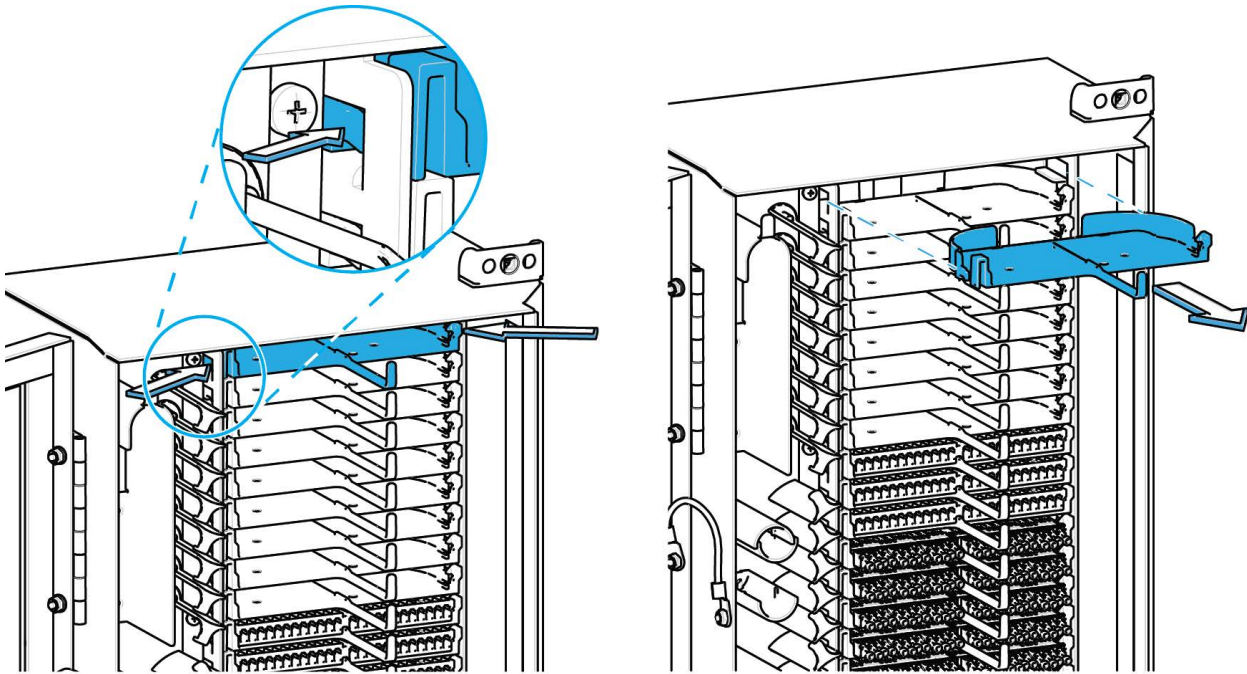


Figure 18. Remove the tray out of the slot

### 6.2 Remove the splitter from its original tray

1. Push the two snappers to the outside and lift the splitter out of the tray. The tray can be thrown away once it is removed from the splitter.



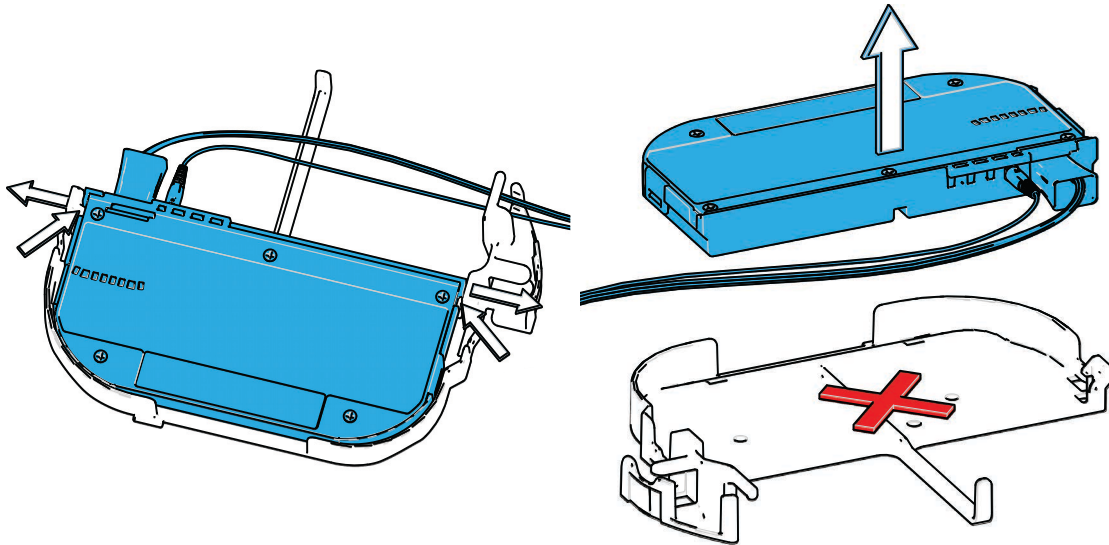


Figure 19. Remove splitter from its original tray

### 6.3 Install the splitter on the tray of the FDH 5000 cabinet

1. Align the splitter module with the tray and push the splitter inward until the splitter module clicks into place.

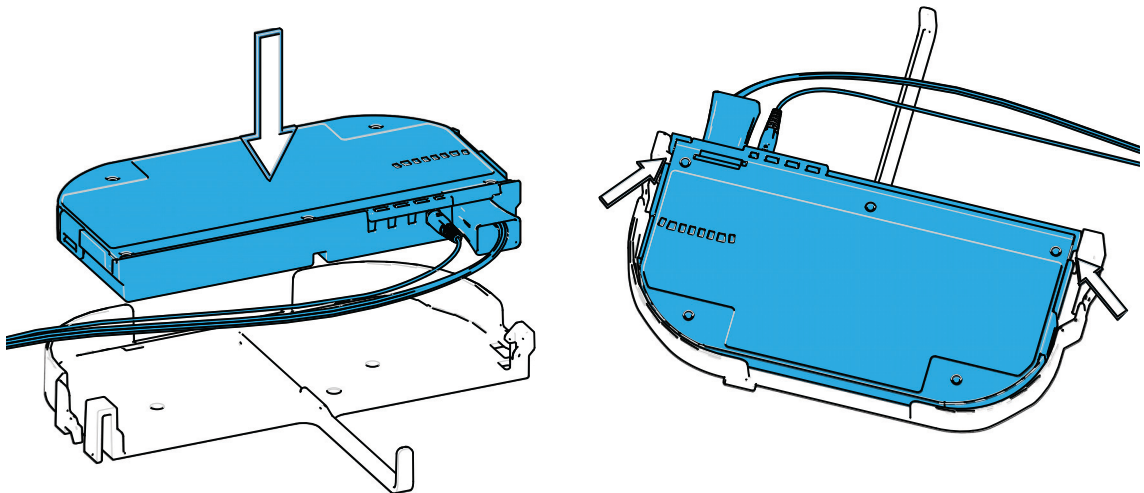


Figure 20. Install the splitter on the tray

### 6.4 Reinstall the tray

1. Align the tray with the designated slot. (Figure 22 shows the order of the installation of the splitters).
2. Push the tray inward until the tray clicks into place.

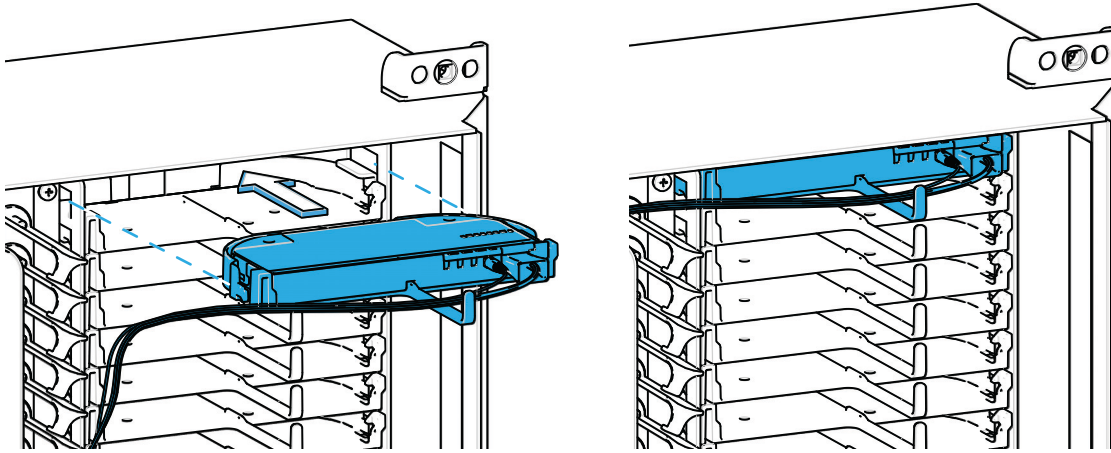


Figure 21. Reinstall the tray

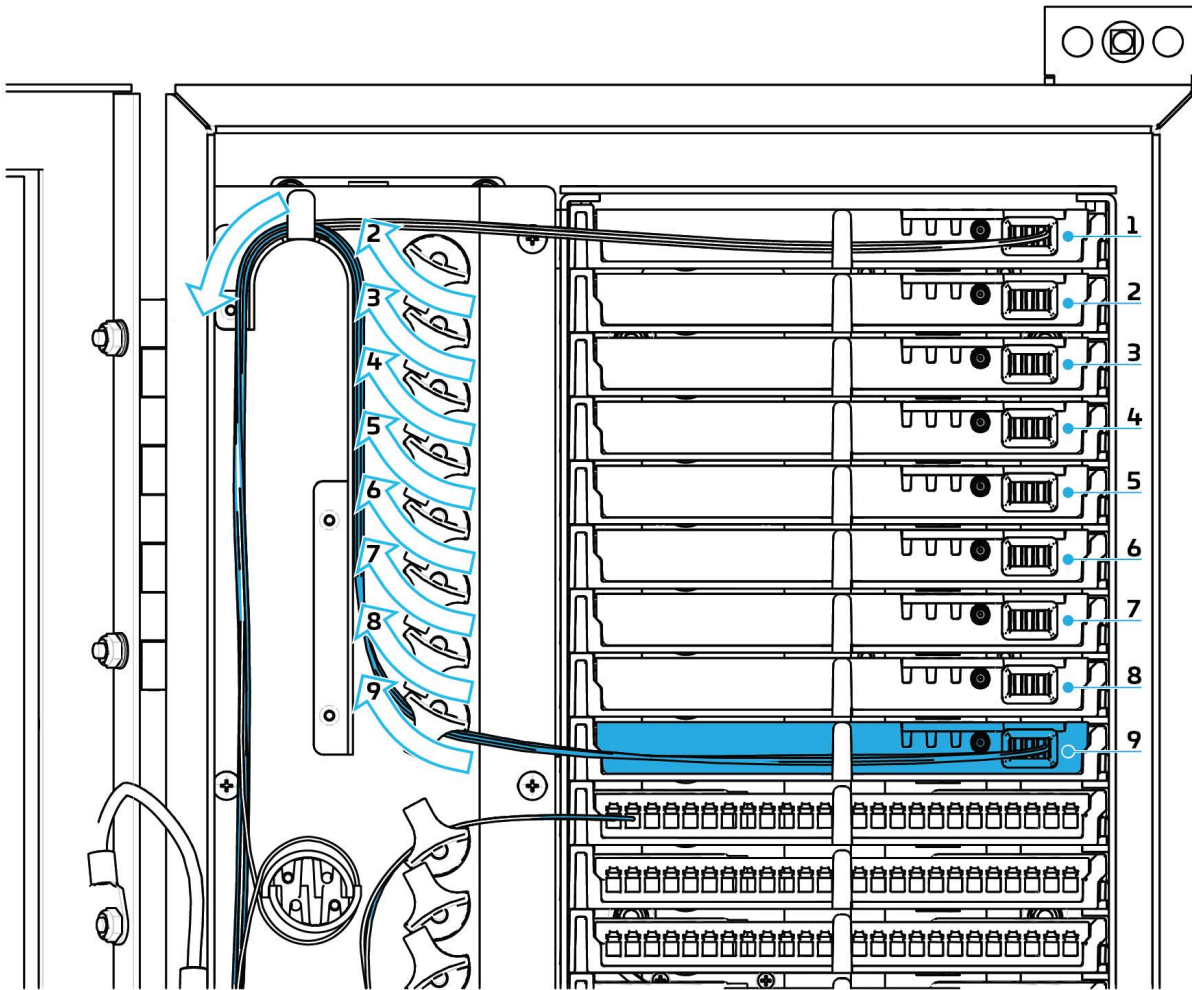
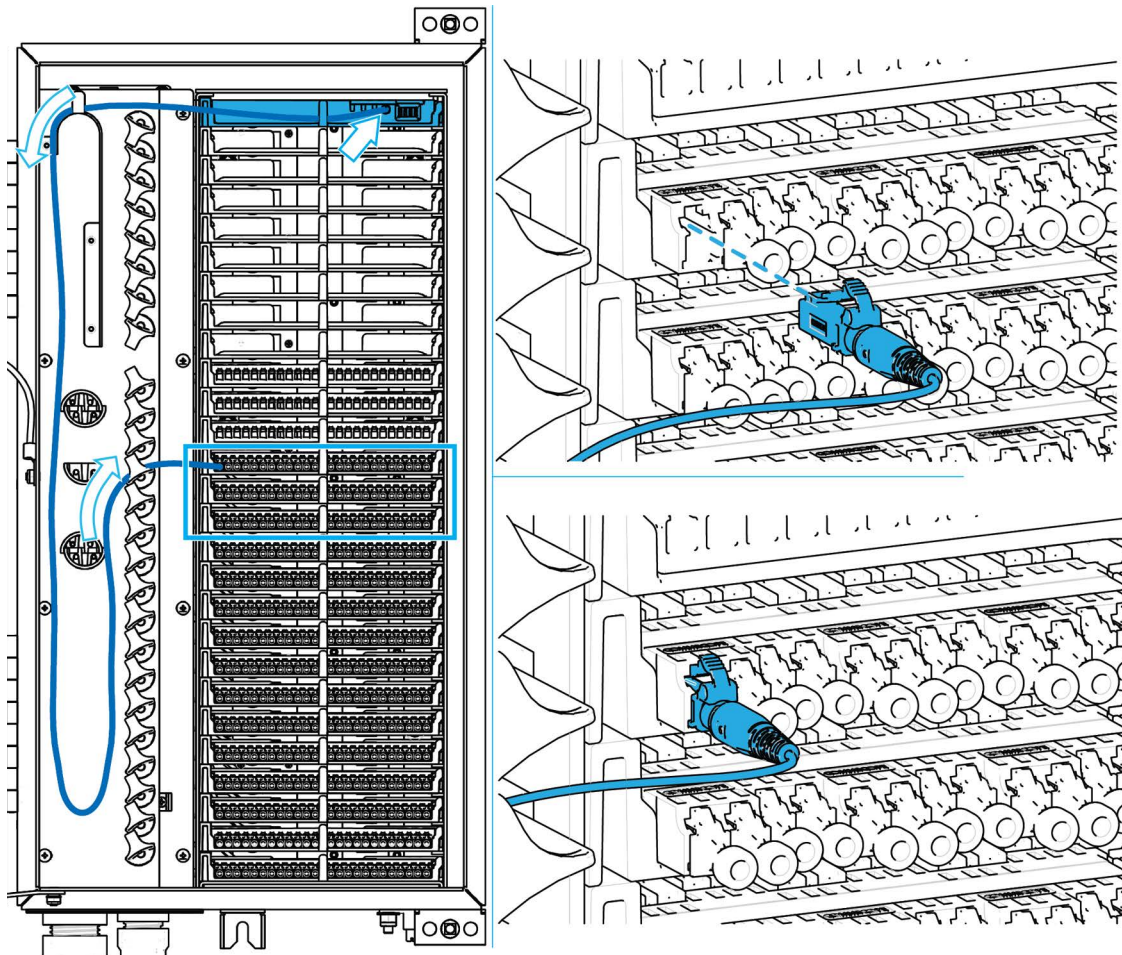


Figure 22. Order of the splitter trays

## 7 CONNECT FEEDER (INPUT)

1. Route the splitter input directly to the left within the cable guide (one guide per splitter module, see [Figure 22](#).) then around the drum at the top. Route the input connector downwards to the feeder ports.
2. Select the designated feeder (INPUT) port to connect the input of the splitter module (the feeder ports are the first 3 adapter packs in the adapter panel, see [Figure 23](#)).



**Figure 23. Connect feeder input**

► **Note:** FOR CLARITY ONLY THE INPUT FIBER IS SHOWN.

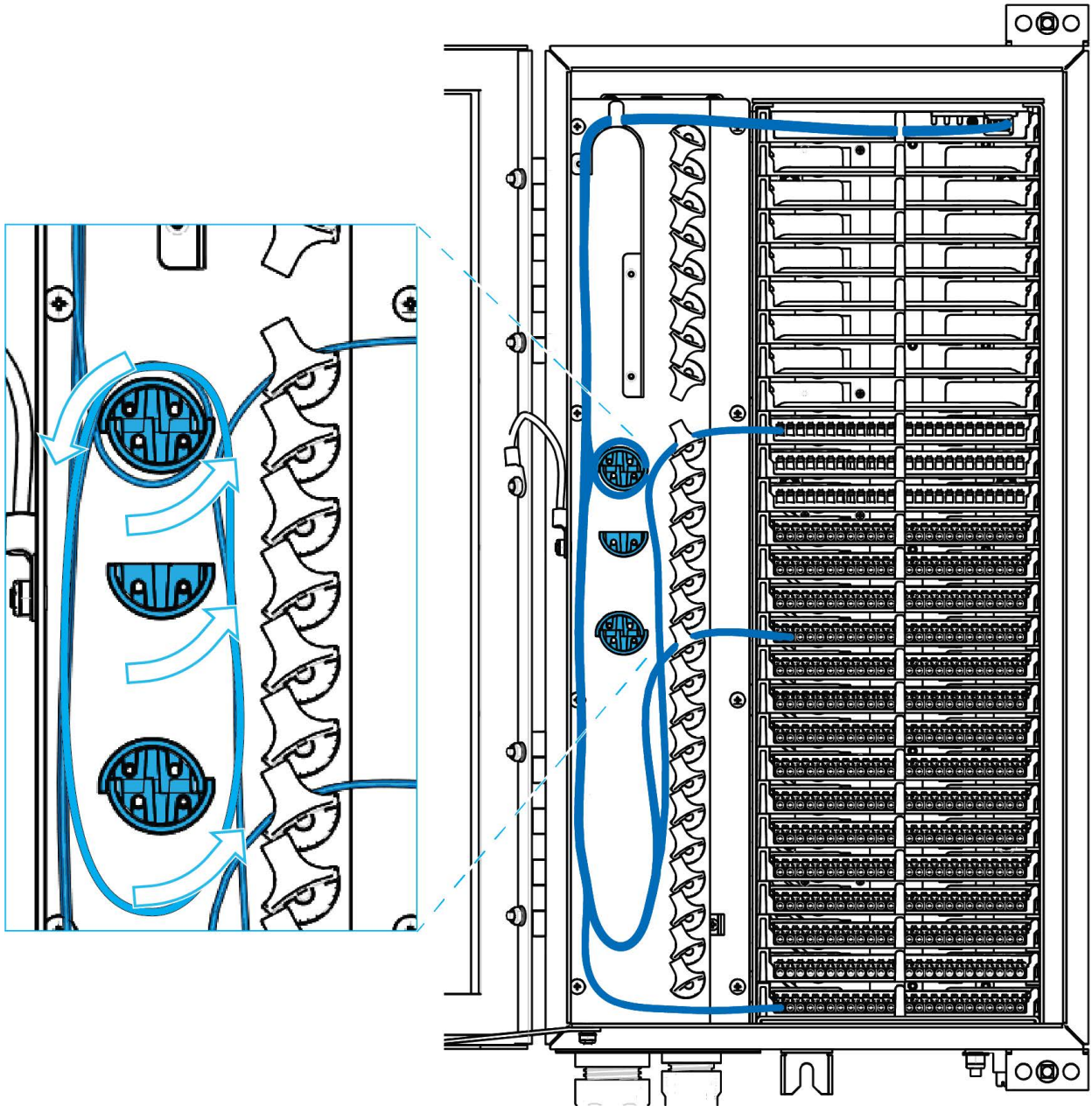
3. Remove the ferrule dust cap from the connector and the selected bulkhead adapter then clean the connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).



**Warning:** *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters or connectors. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*



4. Connect the connector to the designated feeder port, a clicking sound is noticed. The drums in the routing zone can be used to take up slack. Route and dress the fiber slack as shown in [Figure 24](#).



**Figure 24. routing zone - drums to take up slack**

5. Continue connecting each splitter input.

## 8 ENABLING SUBSCRIBER SERVICE

When a splitter module is initially installed, the output fiber connectors can be temporarily “parked” in the parking lot until they are needed. Service to a subscriber is enabled by removing an unused output fiber from the parking lot, routing it to the appropriate adapter pack, and then connecting it to the subscriber port.

Use the following procedure to route the output fibers to the parking lot. The parking lot are the three rows directly under the splitter compartment.

1. Route the splitter output directly to the left within the cable guide (one guide per splitter module, see [Figure 22](#)) then around the drum at the top. Route the output connector downwards to a position in the parking lot.
2. Slide the output connector with dust cap in a slot.

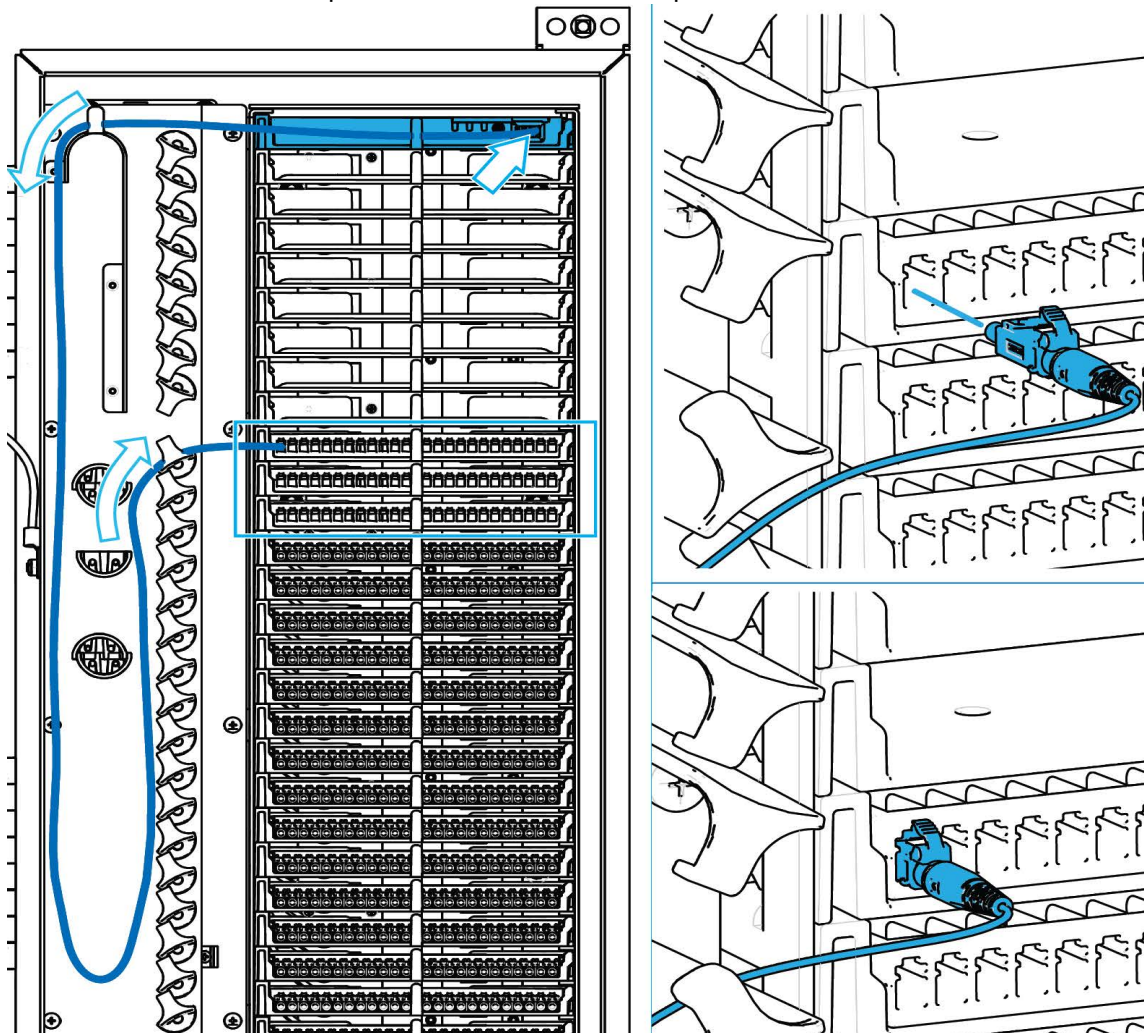
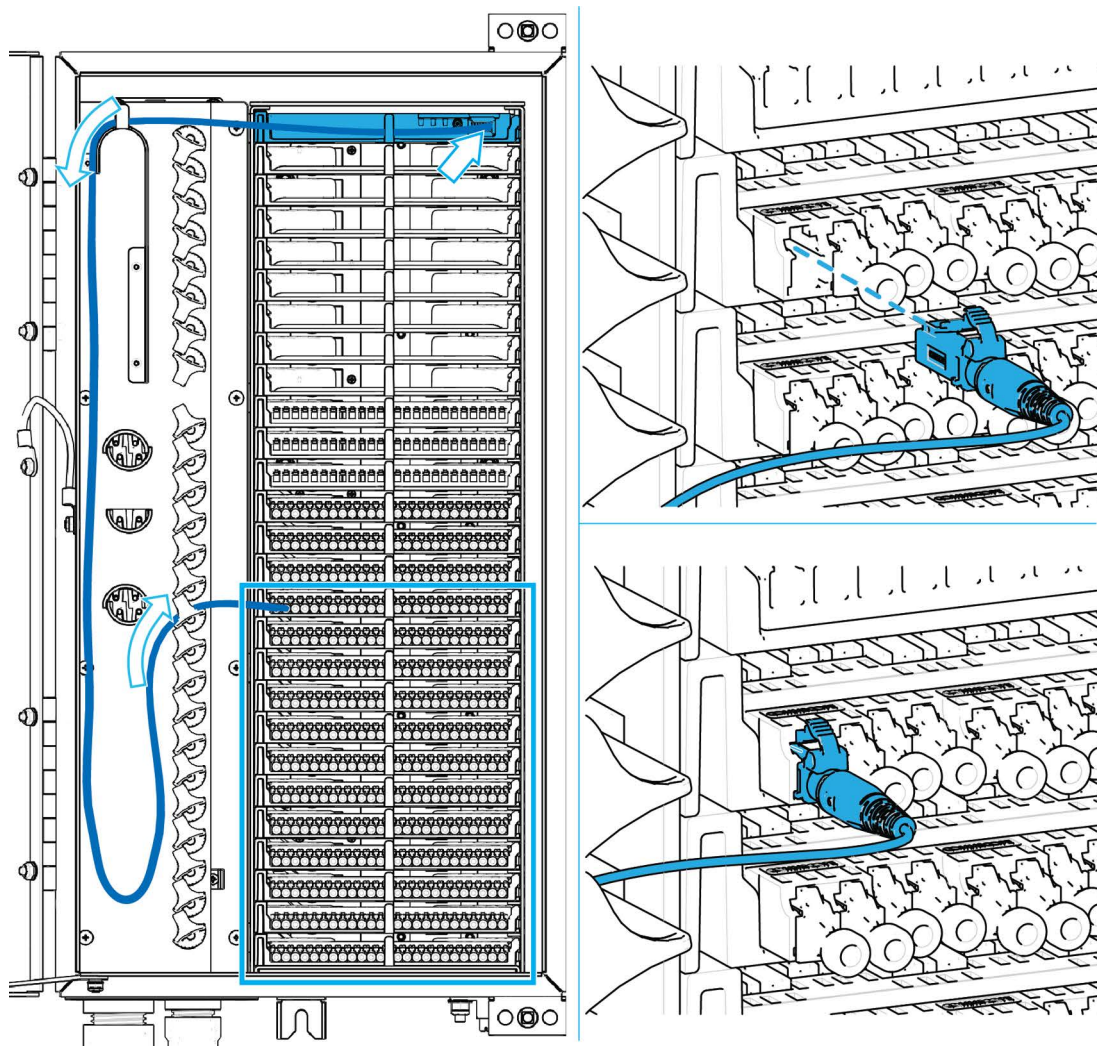


Figure 25. Temporarily use of parking lot

► **Note:** FOR CLARITY ONLY 1 OUTPUT FIBER IS SHOWN.

Use the following procedure to enable service to a subscriber:

1. Check the designation label on the cabinet door to determine the port number that corresponds to the address of the subscriber.
2. Select and remove an unused splitter output fiber from the parking lot as shown in [Figure 25](#) and carefully work it free of any other fibers, route it downwards to the subscriber adapter packs (12 last rows in the adapter panel).
3. Select the designated subscriber port to connect the selected output of the splitter module.



**Figure 26. connect subscriber**

► **Note:** FOR CLARITY ONLY 1 OUTPUT FIBER IS SHOWN.



4. Remove the ferrule dust cap from the connector and the selected bulkhead adapter then clean the connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).



**Warning:** *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters or connectors. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*

5. Connect the connector to the designated feeder port, a clicking sound is noticed.
6. The drums in the routing zone can be used to take up slack. Route and dress the fiber slack as shown in [Figure 26](#) and [Figure 24](#).

## 9 POINT TO POINT CONNECTION

Also a direct connection can be made in the FDH 5000 cabinet. A patch cord should be used.

Use the following procedure to make a point to point connection:

1. Select the designated feeder (INPUT) port. The feeder ports are the first 3 adapter packs in the adapter panel, see [Figure 23](#).
2. Select the designated subscriber port. The subscriber ports are the 12 last rows in the adapter panel, see [Figure 26](#).
3. Remove the ferrule dust cap from both connectors of the patch cord and the two selected bulkhead adapter then clean the connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).



**Warning:** *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters or connectors. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*

4. Connect the connector to the designated adapter port, a clicking sound is noticed.
5. The drums in the routing zone can be used to take up slack. Route and dress the fiber slack as shown in [Figure 27](#).



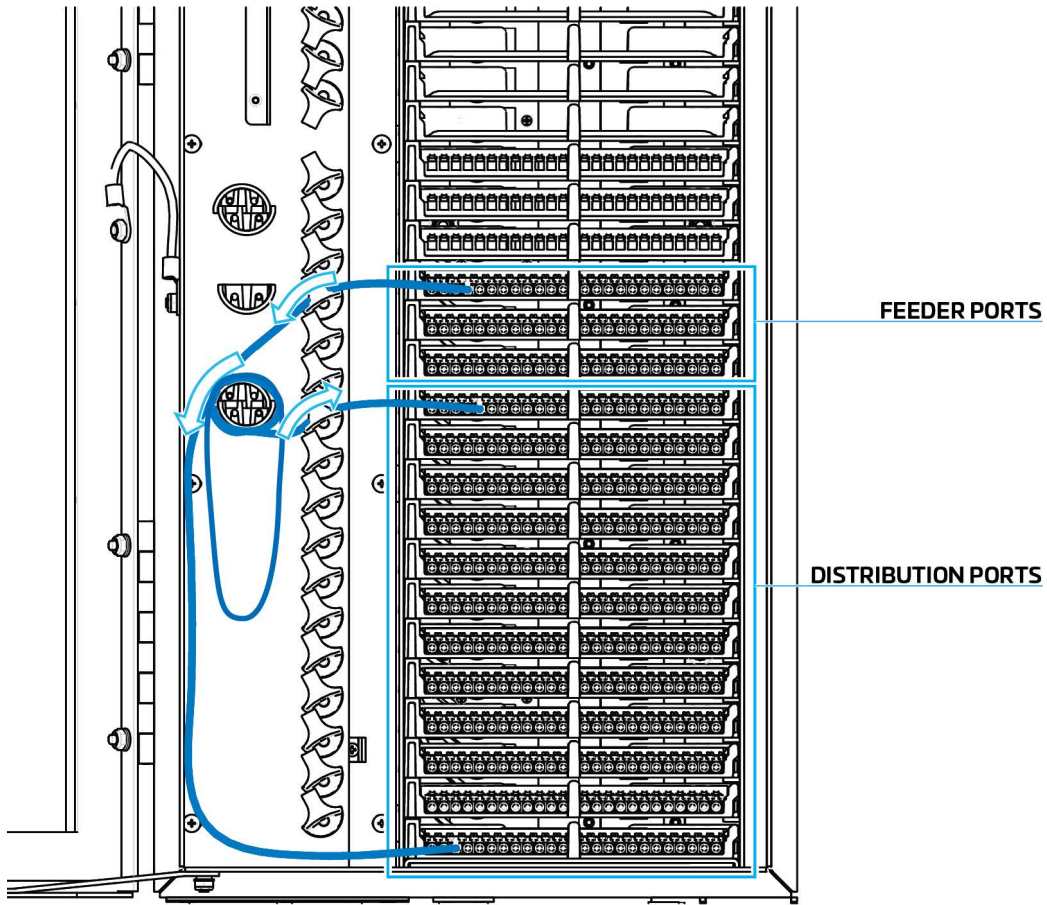


Figure 27. point to point connections

## 10 MAINTENANCE AND REPAIR PROCEDURES

The FDH 5000 cabinet requires no regular maintenance to insure continuous and satisfactory operation. Maintenance is limited to repairing or replacing any cabinet components that may be damaged or broken in the course of normal operation. The following sections provide procedures for repairing or replacing common cabinet components.

### 10.1 Painting

Brush-in-cap type bottles of paint are available for touching-up nicks and scratches in the factory coat of paint. Lightly sand the area to be painted and then clean it thoroughly to remove any dirt, dust, or foreign matter. Shake the paint bottle until thoroughly mixed and then apply a light coat of paint to the damaged area using the small brush attached to the cap. Wait until the paint is dry and then apply a second coat if necessary. When finished painting, replace the paint bottle cap and tighten securely. The catalog number for the paint kit is ACE-ACC-PTALMD. .

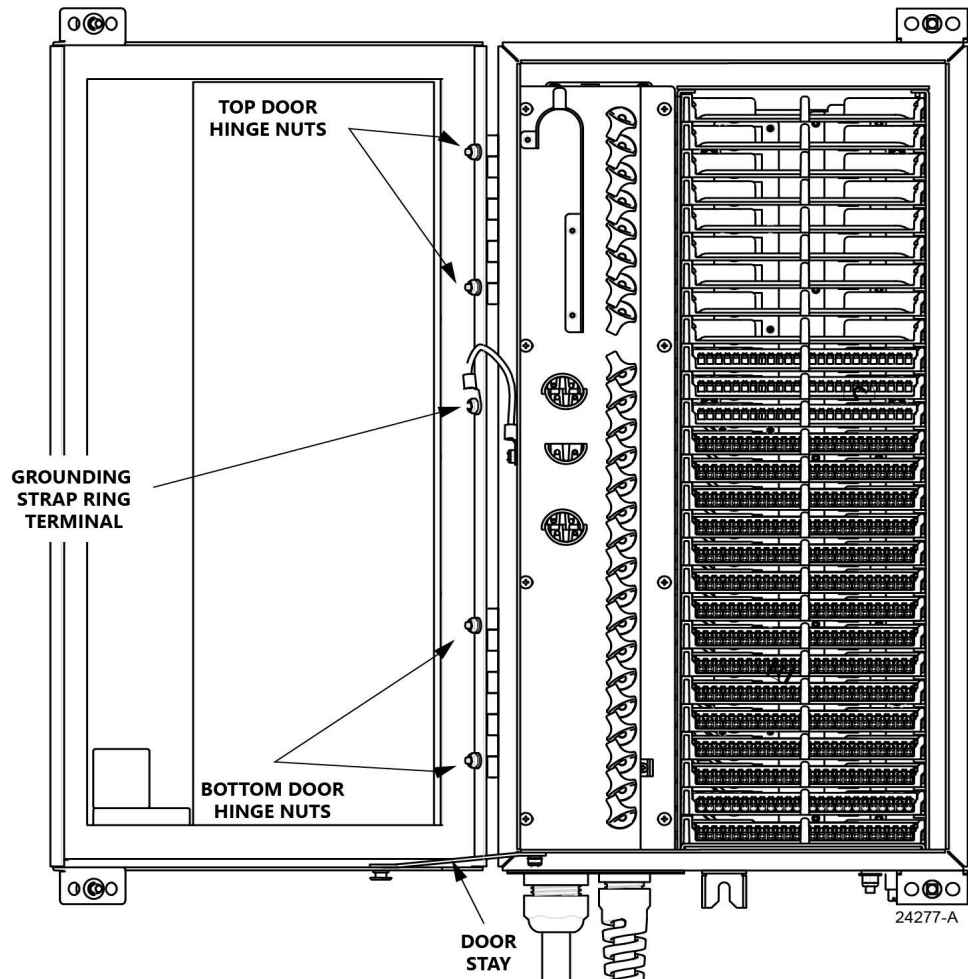
### 10.2 Door Gasket Replacement

Damaged door gaskets may be replaced using the door gasket kit which includes a roll of gasket material. The ideal installation temperature for the adhesive used on the replacement gaskets is between 60 and 100 °F (16 and 38 °C). Installation is not recommended if the temperature is below 50 °F (10 °C). Remove any damaged sections of gasket material from the door. If necessary, use a citrus based adhesive cleaner to remove any adhesive that may stay attached to the door. Cut replacement lengths of gasket material from the roll as needed. Remove the paper backing to expose the adhesive and then carefully apply the replacement gasket to the door. Take care not to leave any gaps between the meeting sections of the gasket strips.

### 10.3 Door Replacement

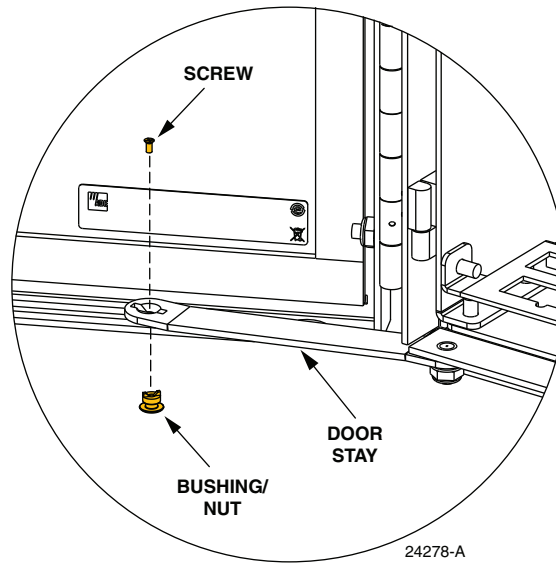
Damaged cabinet doors may be replaced using the door replacement kit. Use the following procedure to remove and replace the cabinet doors:

1. Open the cabinet doors and lock it in the open position as shown in [Figure 28](#).



**Figure 28. Door Replacement**

2. Use a 3/8-inch nut driver to remove the locking nut that secures the grounding strap ring terminal to the door. Save nut for reuse.
  3. Use a Phillips screwdriver to remove the screw and bushing/nut that secures the door stay to the bottom of the door as shown in [Figure 29](#). Save the screw and bushing/nut for reuse.
  4. Use a 3/8-inch nut driver to remove the locking nuts and flat washers that secure each hinge to the door. Save nuts and flat washers for reuse.
- **Note:** Support the door as the last nuts are removed to prevent the door from falling.
5. Carefully lift the door away from the cabinet.
  6. Transfer all designation information that may be recorded on the damaged door to the labels on the replacement door.
  7. Place the replacement door in position for installation on the hinges.

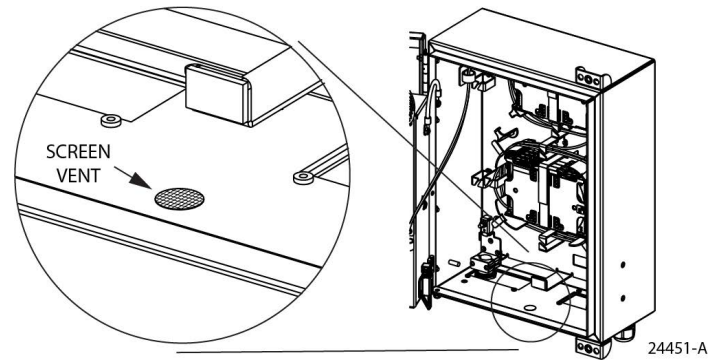


**Figure 29. Door Linkage Hardware**

8. Reinstall the locking nuts and flat washers (saved in step 4) that secure the hinges to the door.
9. Reinstall the locking nut (saved in step 2) that secures the grounding strap to the door.
10. Reinstall the screw and bushing/nut (saved in step 3) that secure the door stay to the bottom of the door.
11. Close door and check for proper operation.

#### **10.4 Screen Vent Service**

A screen vent, shown in [Figure 30](#), allows any moisture that may accumulate within the cabinet to be released. Periodically check the screen vent and remove any debris that may block the vent opening. In addition, wipe dry any moisture that may have accumulated at the bottom of the cabinet.



**Figure 30. Screen Vent**

## 11 TECHNICAL ASSISTANCE

Visit our website or contact your local CommScope representative for more information.

For technical assistance, customer service, or to report any missing/damaged parts, visit us at: <http://www.commscope.com/SupportCenter>.