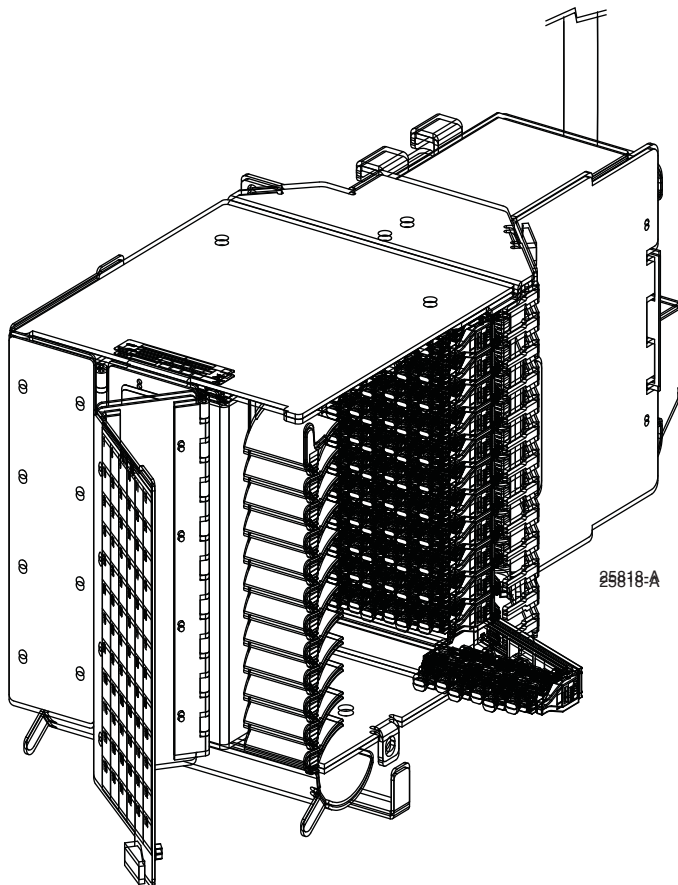


Next Generation Frame (NGF) 288 Position Fiber Termination Block (FTB) User Manual



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REVISION HISTORY

ISSUE	DATE	REASON FOR CHANGE
1	6/2014	Original.
2	January 2017	Updated to CommScope format.
C	March 2018	Corrected part number error on page 1.
D	November 2018	Updated to support pre-terminated FTBs.
E	February 2020	Updated page 6.

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ABOUT THIS MANUAL

This user manual provides the following information:

- A description of the 288 position Fiber Termination Blocks (FTBs); its components and terminology, typical applications, and typical accessories;
- Procedures for installing an FTB on any of the Next Generation Frame (NGF) racks;
- Procedures for terminating connectorized Outside Plant (OSP) cables, Intra-Facility Cables (IFC), or Fiber Optic Terminal (FOT) equipment patch cords at the FTB.

► **Note:** *The NGF Fiber Termination Blocks (FTBs) are designed to be used with 1.7mm or 2.0mm patchcords. 3.0mm patchcords should never be used due to the bulk build-up in the NGF solution.*

The procedures for installing the various NGF racks, including the Fiber Main Distribution Frame (FMDF), the Front Facing Fiber Main Distribution Frame (F3MDF), and the Slim Rack Fiber Distribution Frame, are provided in other CommScope publications (see “Related Publications,” below).

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:

<http://www.commscope.com/SupportCenter>

Title/Description	Publication Number
Next Generation Frame Fiber Main Distributing Frame User Manual Provides a complete description of the FMDF and procedures for installing the FMDF rack, the FTB, and the FCB.	TECP-90-273
Next Generation Frame Slim Rack Fiber Distributing Frame User Manual Provides a complete description of the slim rack frame and procedures for installing the FMDF rack, the FTB, and the FCB.	TECP-90-272
Next Generation Frame Fiber Combination Block User Manual Provides instructions for installing the FCB in the NGF rack.	TECP-90-279
Next Generation Frame 432 Position Fiber Termination Block User Manual Provides instructions for installing the FCB in the NGF rack.	TECP-91-003
Next Generation Frame Fiber Optic Terminal Storage Bay User Manual Provides instructions for installing the FOTSB with the FMDF rack.	TECP-90-270

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



Danger: *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 of the adapter packs. 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 fiber connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*

LIST OF ACRONYMS AND ABBREVIATIONS

The following acronyms are used in this manual:

FCB	Fiber Combination Block
F MDF	Fiber Main Distributing Frame
FOT	Fiber Optic Terminal
FOTSB	Fiber Optic Terminal Storage Bay
FTB	Fiber Termination Block
F3MDF	Front Facing Fiber Main Distributing Frame
IFC	Intra-Facility Fiber Cable
NGF	Next Generation Frame
OSP	Outside Plant
VAM	Value Added Module

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1 OVERVIEW AND DESCRIPTION

This section introduces the CommScope 288 position Fiber Termination Blocks (FTBs) and explains their primary function, primary components, options affecting installation, and available accessories. This section provides product specifications.

1.1 Description

1.1.1 FTB Primary Function

FTBs are used in conjunction with an NGF rack to provide a point for terminating connectorized fiber optic cables and for interconnecting or cross-connecting the terminated circuits using patch cords. Figure 1 shows an FTB (with stubbed cable) exploded from an NGF rack which also contains a second FTB.

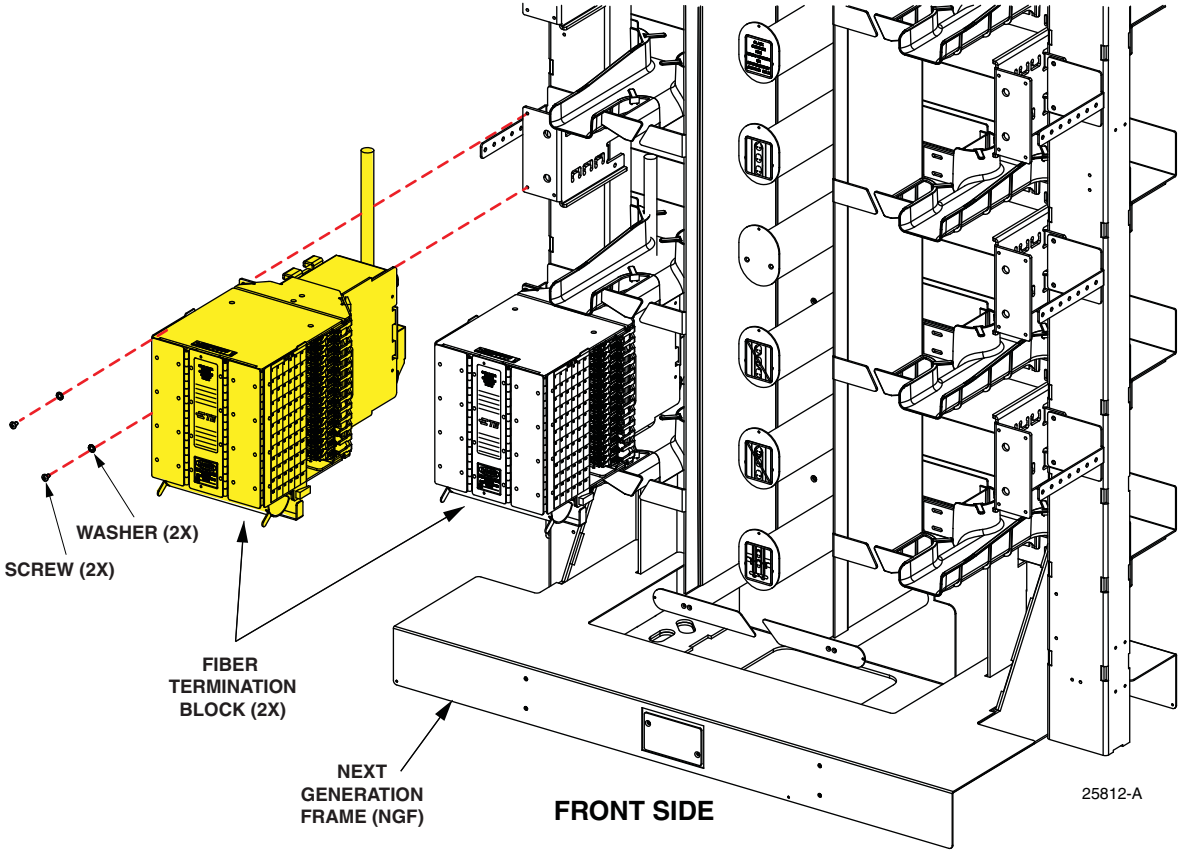


Figure 1. Fiber Termination Blocks and Frame

Connectorized OSP and IFC cables and FOT equipment patch cords terminate at the rear of the FTB. Cross-connect or interconnect patch cords connect to the front of the FTB. The FTB mounts on the NGF rack, which provides physical support and cable management. The FTB has a left or right orientation for installation on either the left or right side of the frame (as viewed from the front).

- **Note:** The NGF Fiber Termination Blocks (FTBs) are designed to be used with 1.7mm or 2.0mm patchcords. 3.0mm patchcords should never be used due to the bulk build-up in the NGF solution.

1.1.2 FTB Primary Components

A Fiber Termination Block consists of a sheet metal chassis that houses rows of sliding adapter packs and the necessary cable management for routing the fiber optic cables within the chassis. The 288 position chassis, shown in [Figure 2](#), accepts sliding adapter packs that each contain 12 LC adapters.

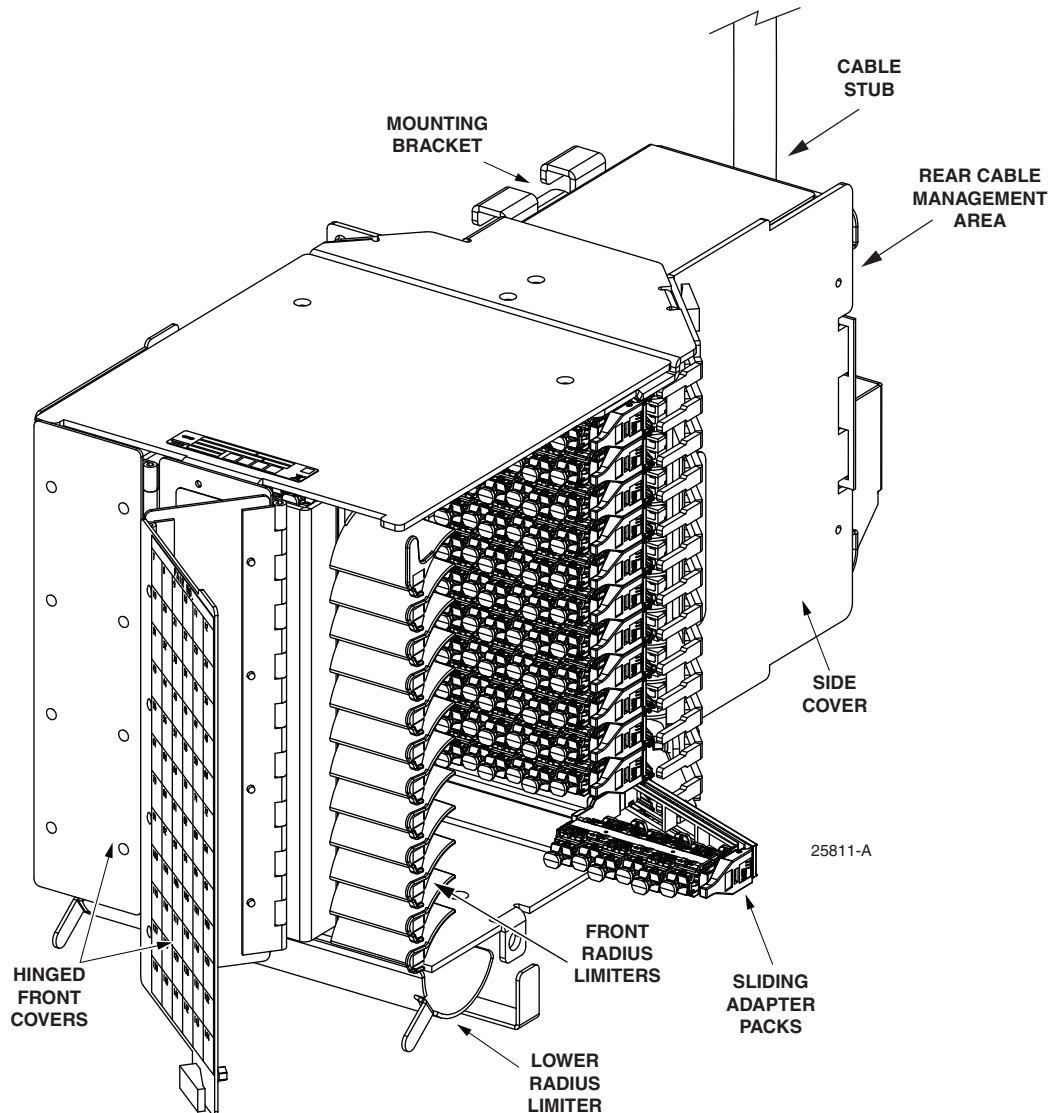


Figure 2. 288 Position Fiber Termination Block

The FTB chassis includes a removable side cover and two hinged front covers. The back of the FTB has features for clamping and routing OSP/IFC cables and equipment jumpers. Opening the FTB front covers provides access to the adapter packs (by sliding them out) and to the front radius limiters which facilitate the routing of interconnect or cross-connect patch cords. The front covers also include designation labels to identify the optical circuits.

1.1.3 Options That Affect Installation

The following FTB ordering options may affect the installation process:

- The FTB may be ordered pre-terminated or with MPO adapters on the rear, which allow connectorization with a high fiber count cable. In the pre-terminated version, the FTB is equipped with an installed OSP or IFC cable. One end of the cable is connected to the rear side of the adapters within the FTB. The other end of the OSP/IFC cable is unterminated. At the job site, the free end of the OSP/IFC cable must be uncoiled and then routed to another location for splicing or connection to the OSP or FOT equipment circuits. The FTB with MPO adapters does not include a pre-terminated OSP or IFC cable.
- The FTB may be ordered with a left or right orientation. The left-orientation FTB installs on the left side of the frame (when facing the front of the frame); the right-orientation FTB installs on the right side of the frame.

1.1.4 Accessories

The following accessories are available for use with the FTB:

- **IFC Cable Assemblies**—Are available with singlemode or multimode fiber in specified lengths and with specified connectors.
- **Patch Cords**—Are available with specified connectors in standard lengths.
- **Adapter Packs**—Are available separately to be used as either as replacements for existing adapter packs.
- **In-Line Attenuators**—Install between an adapter and connector. They can be mounted on either the front side or the rear side of an adapter pack.
- **Connector Cleaning Kit**—Provides all the materials required to correctly clean fiber.

1.1.5 Transportation and Storage

Products packaged in cartons may be stacked two high in transportation and storage.

1.2 Specifications

Table 1 provides specifications for the FTB.

Table 1. FTB Specifications

PARAMETER	SPECIFICATION	REMARKS
Physical		
Number of Fibers	288	
Connector types	UPC LC (front) APC 12-fiber MPO (rear)	MPO connectors on MPO version only
Environment		
Temperature		
Operating	−5° C to 50° C (23° F to 122° F)	
Storage	−40° C to 70° C (−45° F to 158° F)	
Relative Humidity		
Operating	Up to 80%	No condensation
Storage	Up to 95%	No condensation

2 UNPACKING AND INSPECTING THE PRODUCT

Use the following procedure to unpack and inspect the FTB:

- ▶ **Note:** Products packaged in cartons may be stacked two high in transportation and storage.
1. Inspect the exterior of the shipping container for evidence of rough handling that may have damaged the contents of the container.
 2. Unpack the FTB and inspect for possible damage.
 3. If damage is detected or if parts are missing, file a claim with the commercial carrier and then notify CommScope at <http://www.commscope.com/SupportCenter>
Save damaged carton for inspection by carrier.
 4. Refer to [Topic 6 on page 18](#) for CommScope contact information if required.
 5. Even if no damage is evident, save the shipping container in case the equipment requires shipment at a future date.

3 FTB INSTALLATION

3.1 Mounting FTB On Rack

Use the following procedure to mount the FTB on the NGF rack:

1. For an FTB that is not pre-terminated with IFC/OSP cable, remove the shipping bracket. Refer to [Figure 3](#).

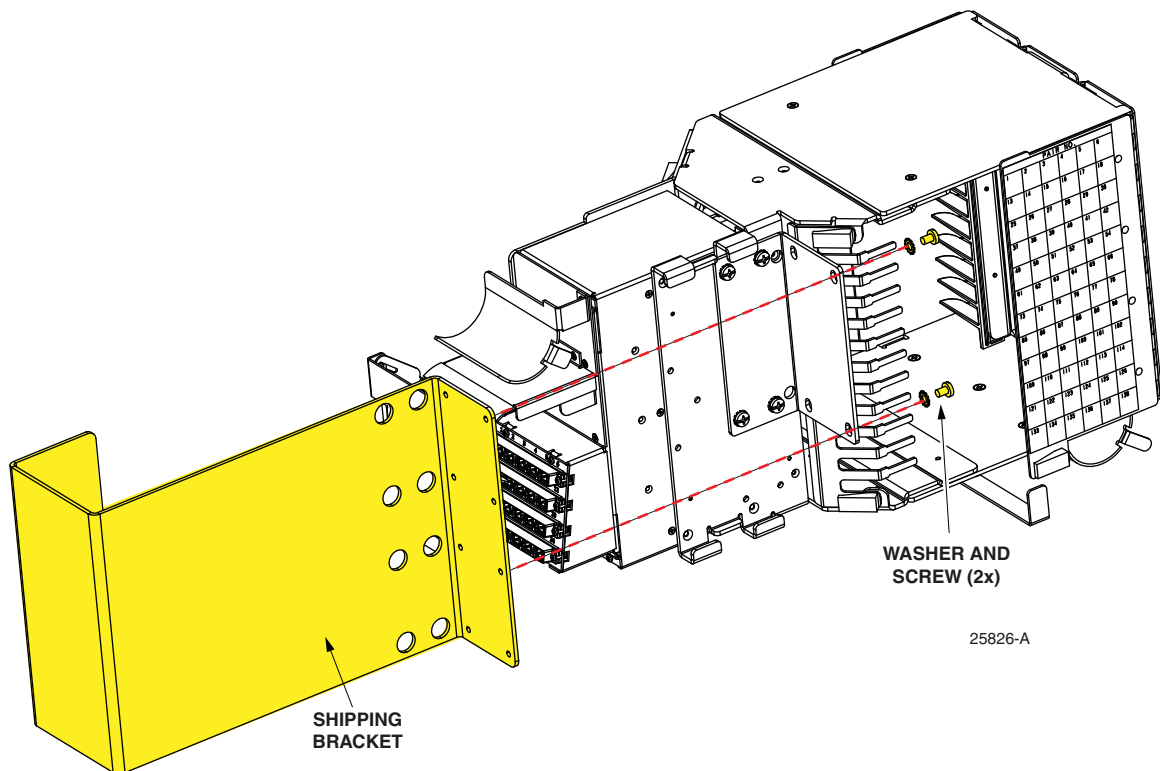


Figure 3. Shipping Bracket Removal From FTB

2. If the FTB does not have an IFC/OSP cable attached, proceed to step 4 and follow through to the end of the procedure. If the FTB has an IFC/OSP cable attached and the cable was pre-terminated at the factory, begin at step 3 below and follow through to the end of the procedure.
3. For a pre-terminated FTB with coiled cable, proceed as follows:

► **Note:** Always uncoil and route pre-terminated cable before installing the FTB.

- a. Place the FTB with coiled cable next to the NGF rack.

- b. If the FTB is not on a spool and was shipped in a carton, as shown in [Figure 4](#):
- Open the carton and lift out the components including the coiled cable and the FTB, which is packaged within protective foam. Refer to the installation drawing for a more detailed exploded view of the carton contents.

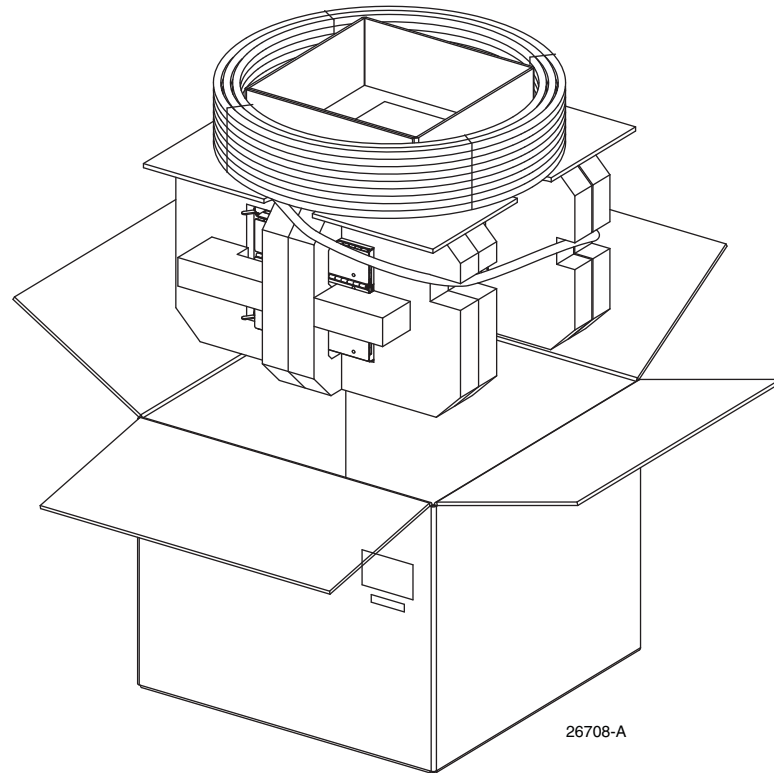


Figure 4. FTB in Carton

- Unwind the free end of the coiled cable and then route and install the cable within the building as required by the application. Leave sufficient slack at the frame end of the cable for mounting the FTB in the NGF rack.

► **Note:** Take care not to kink or twist the cable.

- Separate the FTB from the protective foam before installing into the rack.

c. If the FTB is on a spool:

- The FTB is mounted inside the cable spool and is designed to rotate as the cable is unwound from the spool.
- Unwind the free end of the cable from the spool, and then route and install the cable within the building as required by the application. Leave sufficient slack at the frame end of the cable for mounting the FTB in the NGF rack.
- Remove the four wing nuts from the top of the spool, and then remove the lid from the spool (see [Figure 5](#)).

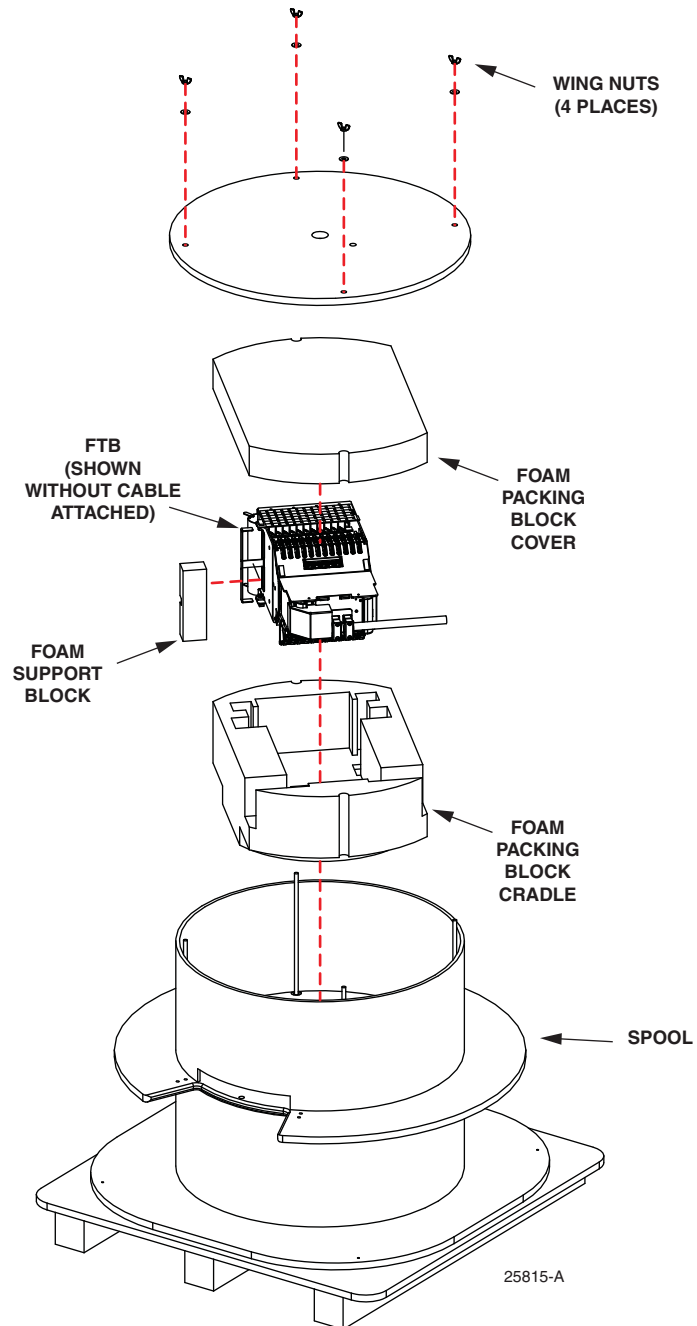


Figure 5. Pre-Terminated FTB Spool Assembly

- Remove the foam packing block from the top of the FTB, and then carefully lift the FTB out from the center of the spool with the foam cradle.

► **Note:** Take care not to kink or twist the cable.

- Separate the FTB from the cradle before installing into the rack.

4. Locate the designated mounting position for the FTB. In a new rack installation, the rack may be populated by starting at the bottom and working toward the top or by starting at the top and working toward the bottom. Left-oriented FTBs mount only on the left side of the rack and right-oriented FTBs mount only on the right side of the rack.
5. Slide the FTB onto the appropriate mounting bracket at the front of the rack (Figure 6).
6. Secure the FTB to the rack mounting bracket using the two #12-24 screws provided.
7. Remove the form support block from the radius limiter underneath the block.

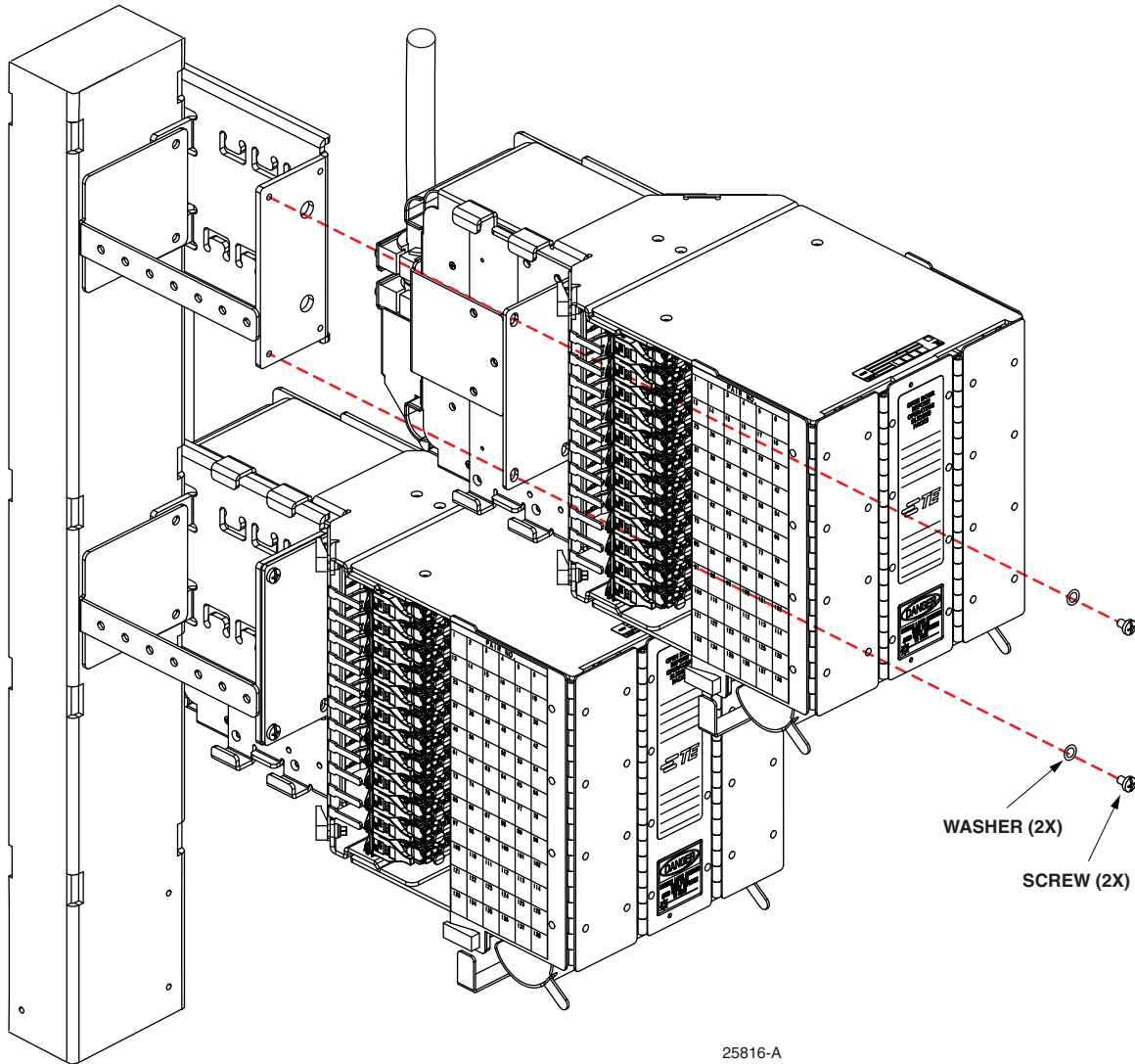


Figure 6. FTB Installation on Rack

8. If an IFC/OSP cable is attached to the FTB, place the cable between the FTB mounting brackets and the vertical cable brackets.
9. Repeat steps 1–9 for each FTB.

3.2 Securing IFC or OSP Cable to Rack

The method used for securing cables to the frame is determined by whether the cables enter the rack at the top or the bottom. Refer to [Figure 7](#) for the recommended method for placing and securing cables to the rack based on how the cables enter.

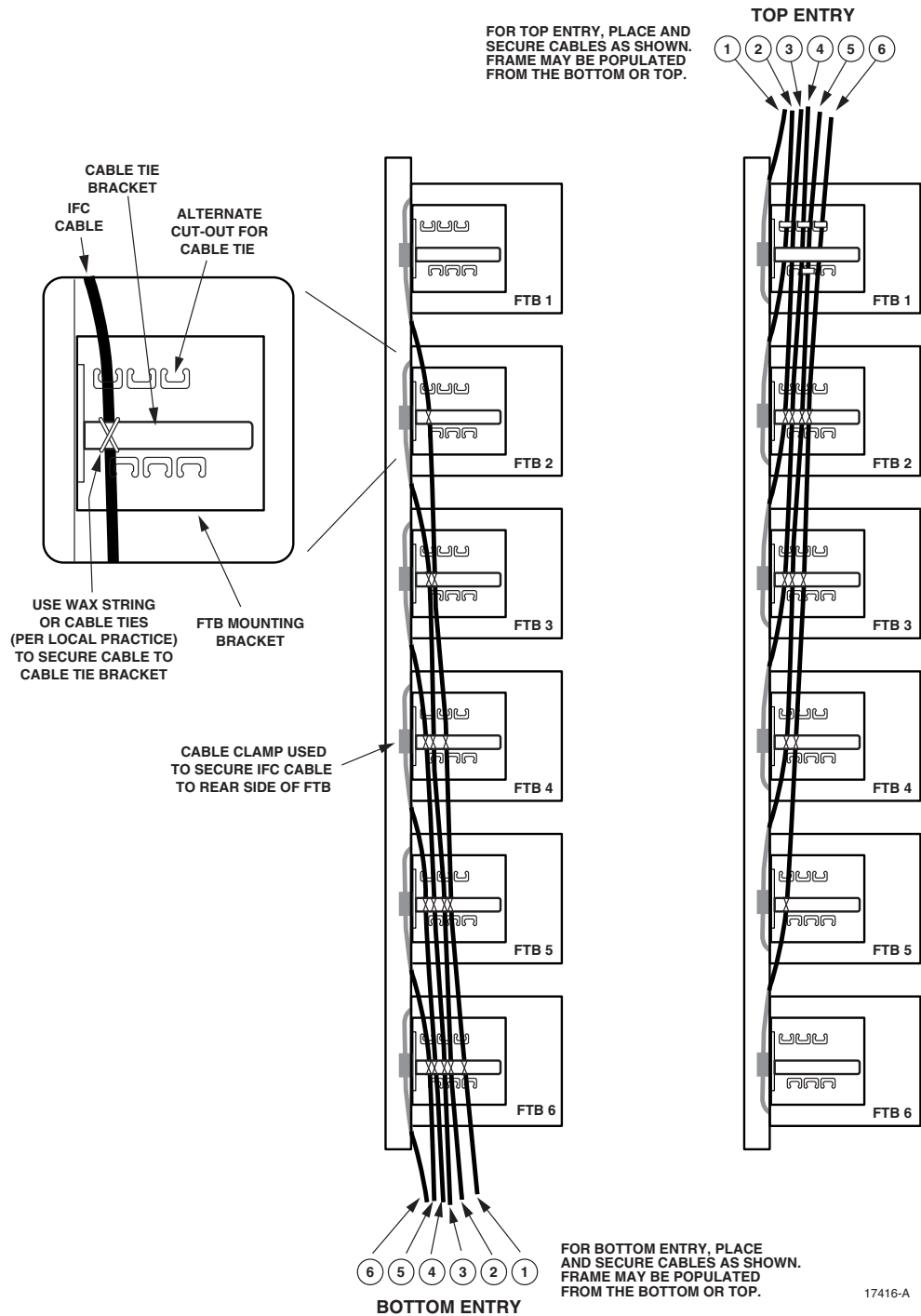


Figure 7. Securing IFC or OSP Cables to the NGF Rack

4 FOT EQUIPMENT PATCH CORD INSTALLATION

For FTBs without an IFC or OSP cable installed, MPO patch cords are used to terminate FOT equipment circuits at the back of the FTB. This section provides procedures for terminating the FOT patch cords at the FTB, routing them to the FOT equipment through either an overhead or underfloor fiber raceway system, and securing them at the NGF rack.

The FTB should be installed on the NGF frame (see [Section 3](#)) before starting this series of procedures.

4.1 Terminating Patch Cord at FTB

Begin installation by terminating the patch cord at the FTB as described in the following procedure. Then refer to the following sub-sections (whichever applies) for routing the patch cord between the NGF frame and the FOT equipment.

- 1. Locate the FTB within the NGF rack.
- 2. Route the patch cord around the radius limiter identified in [Figure 8](#).
- 3. Locate the adapter pack that houses the port for the required termination.
- 4. Remove the cover from the adapter, and then connect the patch cord connector to the appropriate adapter.
- 5. Use the basic process outlined in steps 1–4 for routing and terminating each FOT equipment patch cord at the FTB.

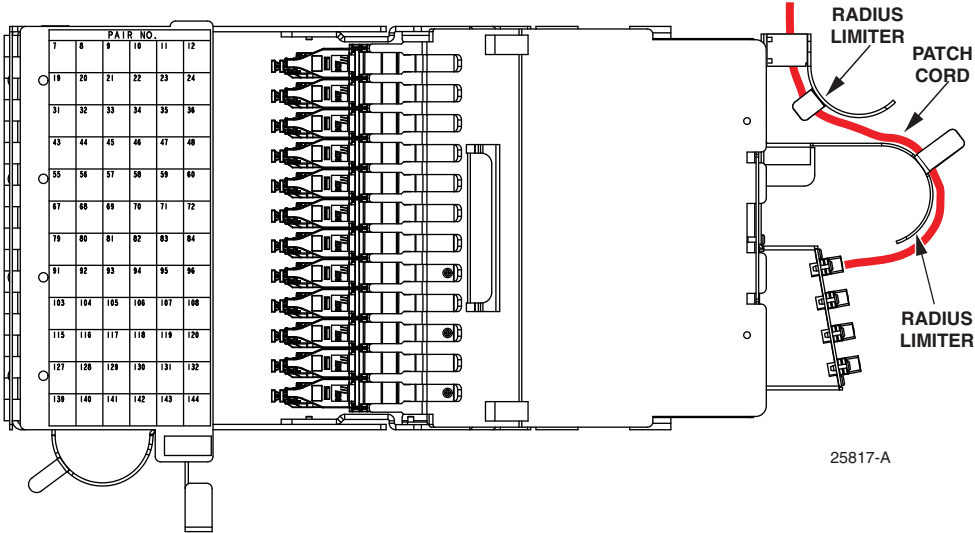


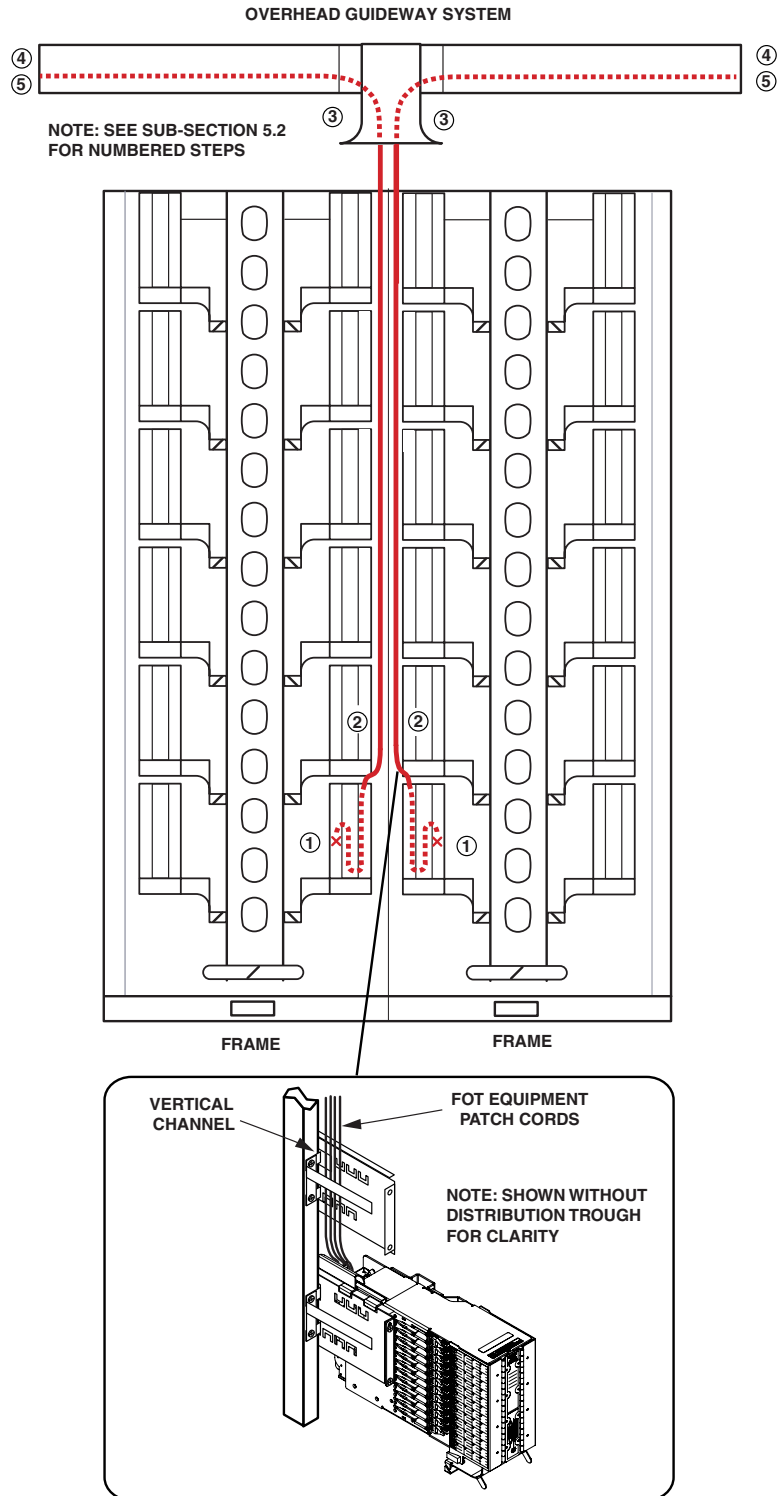
Figure 8. FOT Patch Cord Routing

4.2 Installing FOT Equipment Patch Cords—Overhead Without FOTSB

Use the following procedure to install FOT equipment patch cords when an overhead fiber raceway system will be used for routing and when a Fiber Optic Terminal Storage Bay (FOTSB) is not provided at the frame.

Refer to [Figure 9](#) for a diagram of the routing procedure.

1. Terminate the FOT equipment patch cords at the FTB as described in [Section 4.1](#).
- ▶ **Note:** Start with either the highest or lowest FTB and continue working in order from top-to-bottom or from bottom-to-top as each FTB is terminated.
2. Route the patch cord through the vertical channel at the side of the frame and into the overhead raceway system at the top of the frame.
3. Route the patch cord through the overhead raceway system to the FOT equipment.
4. Connect the patch cord to the FOT equipment.
5. Accumulate and store the excess patch cord length at the FOT equipment.
6. Repeat steps 1–5 as each FTB is terminated.



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Figure 9. Overhead FOT Equipment Patch Cord Installation (Without FOTSB)

4.3 Installing FOT Equipment Patch Cords—Overhead With FOTSB

Use the following procedure to install FOT equipment patch cords when an overhead fiber raceway system will be used for routing and when a Fiber Optic Terminal Storage Bay (FOTSB) is provided at the frame. Refer to [Figure 10](#) for a diagram of the routing procedure.

▶ **Note:** When using a FOTSB, always use up-configured FTBs.

1. Connect the patch cord to the FOT equipment.
2. Route the patch cord through the overhead raceway system to the top of the FOTSB.
3. Route the patch cord through the vertical cable guides to the bottom of the FOTSB.
4. Allow the patch cord slack to temporarily rest at the bottom of the FOTSB.
5. Terminate the patch cord at the FTB as described in [Section 4.1](#).
6. Route the patch cord over the adjacent bend radius limiter and through the FOTSB vertical cable guides to the bottom of the FOTSB.
7. Form a storage loop out of the excess patch cord length at the bottom of the FOTSB. Make sure the lower ends of the loop pass under the edge protector spools at the bottom of the FOTSB storage spool panel.
8. Store the excess patch cord slack by hanging the storage loop over the appropriate storage spool.

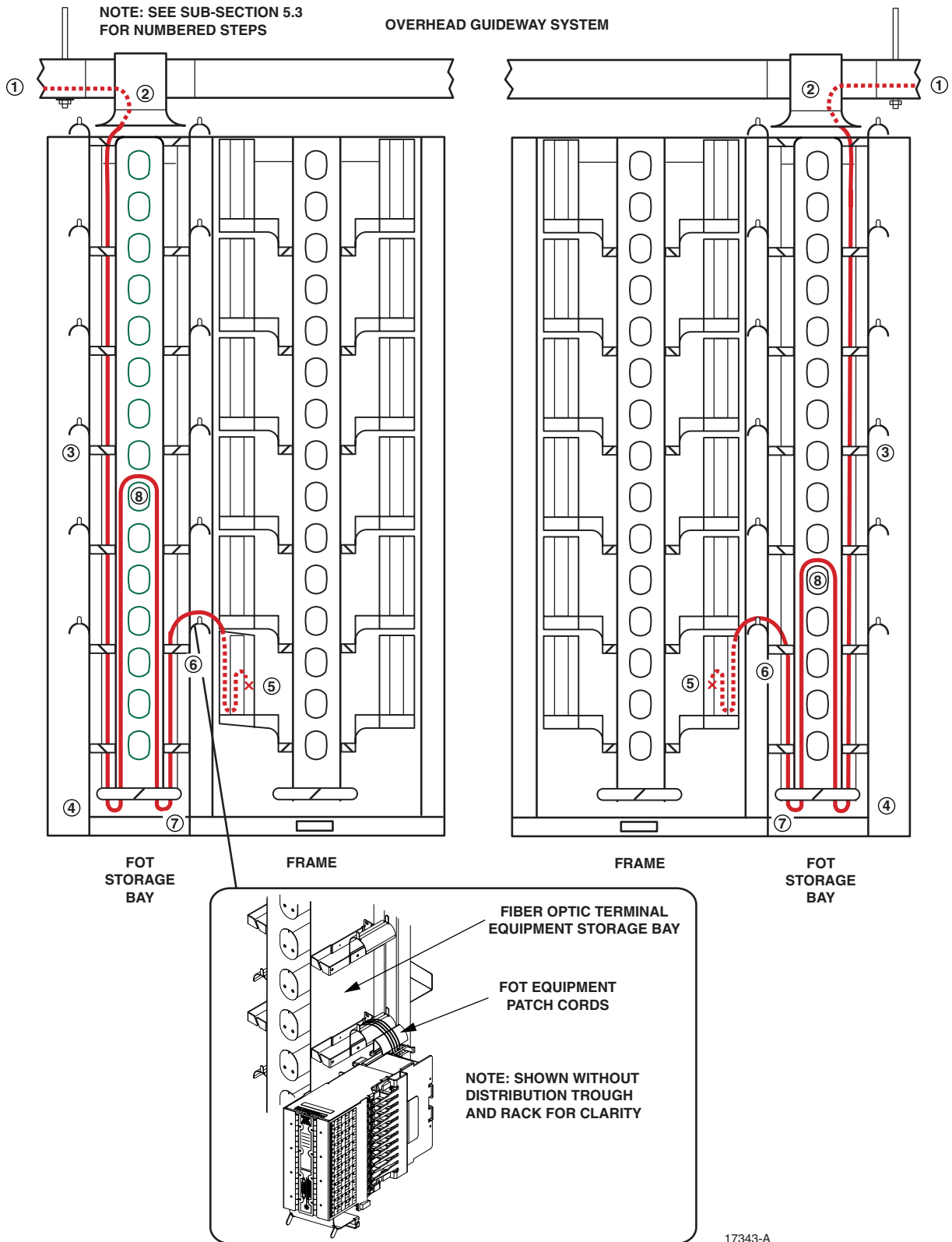


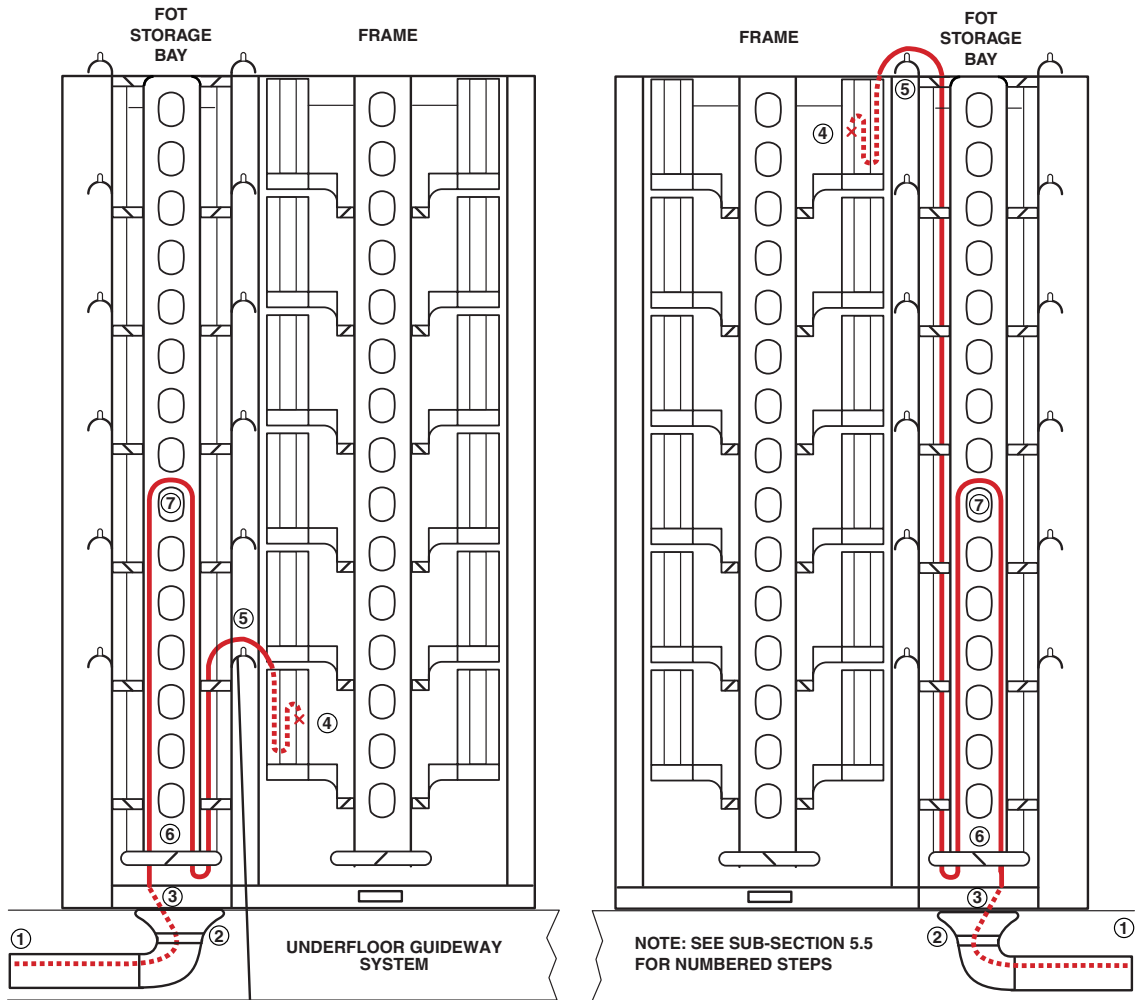
Figure 10. Overhead FOT Equipment Patch Cord Installation (With FOTSB)

4.4 Installing FOT Equipment Patch Cords—Underfloor With FOTSB

Use the following procedure to install FOT equipment patch cords when an underfloor fiber raceway system will be used for routing and when a Fiber Optic Terminal Storage Bay (FOTSB) is provided at the frame. Refer to [Figure 11](#) for a diagram of the routing procedure.

▶ **Note:** When using a FOTSB, always use up-configured FTBs.

1. Connect the patch cord to the FOT equipment.
2. Route the patch cord through the underfloor raceway system to the bottom of the FOTSB.
3. Allow the patch cord slack to temporarily rest at the bottom of the FOTSB.
4. Terminate the patch cord at the FTB as described in [Section 4.1](#).
5. Route the patch cord over the adjacent bend radius limiter and through the FOTSB vertical cable guides to the bottom of the FOTSB.
6. Form a storage loop out of the excess patch cord length at the bottom of the FOTSB. Make sure the lower ends of the loop pass under the edge protector spools at the bottom of the FOTSB storage spool panel.
7. Store the excess patch cord slack by hanging the storage loop over the appropriate storage spool.



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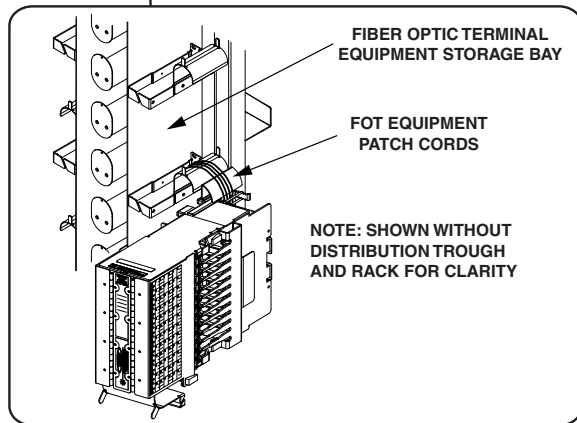


Figure 11. Underfloor FOT Equipment Patch Cord Installation (With FOTSB)

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